HAWAIIAN ELECTRIC INDUSTRIES INC
Form 10-K
February 28, 2019

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D. C. 20549
FORM 10-K

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018
OR
[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number	Registrant; State of Incorporation; Address; and Telephone Number	I.R.S. Employer Identification No.
1-8503	HAWAIIAN ELECTRIC INDUSTRIES, INC., a Hawaii corporation 1001 Bishop Street, Suite 2900, Honolulu, Hawaii 96813 Telephone (808) 543-5662	99-0208097
1-4955	HAWAIIAN ELECTRIC COMPANY, INC., a Hawaii corporation 900 Richards Street, Honolulu, Hawaii 96813 Telephone (808) 543-7771	99-0040500

Securities registered pursuant to Section 12(b) of the Act:

Registrant	Title of each class	Name of each exchange on which registered
Hawaiian Electric Industries, Inc.	Common Stock, Without Par Value	New York Stock Exchange
Hawaiian Electric Company, Inc.	Guarantee with respect to 6.50% Cumulative Quarterly Income Preferred Securities Series 2004 (QUIPSSM) of HECO Capital Trust III	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

Registrant	Title of each class
Hawaiian Electric Industries, Inc.	None
Hawaiian Electric Company, Inc.	Cumulative Preferred Stock

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Hawaiian Electric Industries Inc. Yes X No Hawaiian Electric Company, Inc. Yes No X

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Hawaiian Electric Industries Inc. Yes No X Hawaiian Electric Company, Inc. Yes No X

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Hawaiian Electric Industries Inc. Yes X No Hawaiian Electric Company, Inc. Yes X No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).
Hawaiian Electric Industries Inc. Yes X No Hawaiian Electric Company, Inc. Yes X No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (section 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [ ]

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Hawaiian Electric Industries Inc.	Large accelerated filer X Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company	Hawaiian Electric Company, Inc.	Large accelerated filer Accelerated filer Non-accelerated filer X Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Hawaiian Electric Industries Inc. Yes No Hawaiian Electric Company, Inc. Yes No

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Hawaiian Electric Industries Inc. Yes No X Hawaiian Electric Company, Inc. Yes No X

	Aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrants as of	Number of shares of common stock outstanding of the registrants as of	
	June 30, 2018	June 30, 2018	February 13, 2019
Hawaiian Electric Industries, Inc. (HEI)	$3,734,558,104	108,879,245 (Without par value)	108,936,902 (Without par value)
Hawaiian Electric Company, Inc. (Hawaiian Electric)	None	16,142,216 ($6 2/3 par value)	16,751,488 ($6 2/3 par value)

DOCUMENTS INCORPORATED BY REFERENCE

Hawaiian Electric's Exhibit 99.1, consisting of:
Hawaiian Electric's Directors, Executive Officers and Corporate Governance—Part III
Hawaiian Electric's Executive Compensation—Part III
Hawaiian Electric's Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters—
Part III
Hawaiian Electric's Certain Relationships and Related Transactions, and Director Independence—Part III
Hawaiian Electric's Principal Accounting Fees and Services—Part III

Selected sections of Proxy Statement of HEI for the 2019 Annual Meeting of Shareholders to be filed-Part III

This combined Form 10-K represents separate filings by Hawaiian Electric Industries, Inc. and Hawaiian Electric Company, Inc. Information contained herein relating to any individual registrant is filed by each registrant on its own behalf. Hawaiian Electric makes no representations as to any information not relating to it or its subsidiaries.

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GLOSSARY OF TERMS

Defined below are certain terms used in this report:

Terms	Definitions
ABO	Accumulated benefit obligation
ADIT	Accumulated deferred income tax balances
AES Hawaii	AES Hawaii, Inc.
AFS	Available-for-sale
AFUDC	Allowance for funds used during construction
AOCI	Accumulated other comprehensive income (loss)
AOS	Adequacy of supply
APBO	Accumulated postretirement benefit obligation
ARO	Asset retirement obligations
ASB	American Savings Bank, F.S.B., a wholly-owned subsidiary of ASB Hawaii Inc.
ASB Hawaii	ASB Hawaii, Inc. (formerly American Savings Holdings, Inc.), a wholly-owned subsidiary of Hawaiian Electric Industries, Inc. and the parent company of American Savings Bank, F.S.B.
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
Btu	British thermal unit
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
Chevron	Chevron Products Company, which assigned their fuel oil supply contracts with the Utilities to Island Energy Services, LLC.
CIAC	Contributions in aid of construction
CIP CT-1	Campbell Industrial Park 110 MW combustion turbine No. 1
CIS	Customer Information System
Company	When used in Hawaiian Electric Industries, Inc. sections and in the Notes to Consolidated Financial Statements, “Company” refers to Hawaiian Electric Industries, Inc. and its direct and indirect subsidiaries, including, without limitation, Hawaiian Electric Company, Inc. and its subsidiaries (listed under Hawaiian Electric); ASB Hawaii, Inc. and its subsidiary, American Savings Bank, F.S.B.; Pacific Current, LLC and its subsidiaries, Hamakua Holdings, LLC (and its subsidiary, Hamakua Energy, LLC) and Mauo Holdings, LLC (and its subsidiary, Mauo, LLC); The Old Oahu Tug Service, Inc. (formerly Hawaiian Tug & Barge Corp.) and HEI Properties, Inc. (dissolved in 2015 and wound up in 2017). When used in Hawaiian Electric Company, Inc. sections, “Company” refers to Hawaiian Electric Company, Inc. and its direct subsidiaries.
Consolidated Financial Statements	HEI’s or Hawaiian Electric’s Consolidated Financial Statements, including notes, in Item 8 of this Form 10-K
Consumer Advocate	Division of Consumer Advocacy, Department of Commerce and Consumer Affairs of the State of Hawaii
CBRE	Community-based renewable energy
D&O	Decision and order from the PUC
DBEDT	State of Hawaii Department of Business Economic Development and Tourism
DBF	State of Hawaii Department of Budget and Finance
DG	Distributed generation
DER	Distributed energy resources
Dodd-Frank Act	Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010

DOH	State of Hawaii Department of Health
DRIP	HEI Dividend Reinvestment and Stock Purchase Plan
ECAC	Energy cost adjustment clause
ECRC	Energy cost recovery clause
EEPS	Energy Efficiency Portfolio Standards
EGU	Electrical generating unit
EIP	2010 Executive Incentive Plan, as amended
EPA	Environmental Protection Agency - federal
EPS	Earnings per share
ERISA	Employee Retirement Income Security Act of 1974, as amended
ERL	Environmental Response Law of the State of Hawaii

GLOSSARY OF TERMS (continued)

Terms	Definitions
ERP/EAM	Enterprise Resource Planning/Enterprise Asset Management
Exchange Act	Securities Exchange Act of 1934
FASB	Financial Accounting Standards Board
FDIC	Federal Deposit Insurance Corporation
FDICIA	Federal Deposit Insurance Corporation Improvement Act of 1991
federal	U.S. Government
FERC	Federal Energy Regulatory Commission
FHLB	Federal Home Loan Bank
FHLMC	Federal Home Loan Mortgage Corporation
FICO	Fair Isaac Corporation
Fitch	Fitch Ratings, Inc.
FNMA	Federal National Mortgage Association
FRB	Federal Reserve Board
GAAP	Accounting principles generally accepted in the United States of America
GHG	Greenhouse gas
GNMA	Government National Mortgage Association
Gramm Act	Gramm-Leach-Bliley Act of 1999
Hamakua Energy	Hamakua Energy, LLC, an indirect subsidiary of Pacific Current and successor in interest to Hamakua Energy Partners, L.P., an affiliate of Arclight Capital Partners (a Boston based private equity firm focused on energy infrastructure investments) and successor in interest to Encogen Hawaii, L.P.
Hawaii Electric Light	Hawaii Electric Light Company, Inc., an electric utility subsidiary of Hawaiian Electric Company, Inc.
Hawaiian Electric	Hawaiian Electric Company, Inc., an electric utility subsidiary of Hawaiian Electric Industries, Inc. and parent company of Hawaii Electric Light Company, Inc., Maui Electric Company, Limited, HECO Capital Trust III (unconsolidated financing subsidiary), Renewable Hawaii, Inc. and Uluwehiokama Biofuels Corp.
Hawaiian Electric's MD&A	Hawaiian Electric Company, Inc.'s Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7 of this Form 10-K
HEI	Hawaiian Electric Industries, Inc., direct parent company of Hawaiian Electric Company, Inc., ASB Hawaii, Inc., Pacific Current, LLC, The Old Oahu Tug Service, Inc. (formerly Hawaiian Tug & Barge Corp.) and HEI Properties, Inc. (dissolved in 2015 and wound up in 2017)
HEI's 2019 Proxy Statement	Selected sections of Proxy Statement for the 2019 Annual Meeting of Shareholders of Hawaiian Electric Industries, Inc. to be filed after the date of this Form 10-K and not later than 120 days after December 31, 2018, which are incorporated in this Form 10-K by reference
HEI's MD&A	Hawaiian Electric Industries, Inc.'s Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7 of this Form 10-K
HEIPI	HEI Properties, Inc. (dissolved in 2015 and wound up in 2017), a wholly-owned subsidiary of Hawaiian Electric Industries, Inc.
HEIRSP	Hawaiian Electric Industries Retirement Savings Plan
HELOC	Home equity line of credit
HPOWER	City and County of Honolulu with respect to a power purchase agreement for a refuse-fired plant
HTB	Hawaiian Tug & Barge Corp. On November 10, 1999, HTB sold substantially all of its operating assets and the stock of its subsidiary, Young Brothers, Limited, and changed its name to The Old

	Oahu Tug Services, Inc.
HTM	Held-to-maturity
IPP	Independent power producer
IRP	Integrated resource plan
IRR	Interest rate risk
Island Energy	Island Energy Services, LLC (a fuel oil supplier and subsidiary of One Rock Capital Partners, L.P.), who purchased Chevron’s Hawaii assets on November 1, 2016 and was assigned Chevron’s fuel oil supply contracts with the Utilities.
Kalaeloa	Kalaeloa Partners, L.P.
kV	Kilovolt
kW	Kilowatt/s (as applicable)
kWh	Kilowatthour/s (as applicable)
LNG	Liquefied natural gas
LSFO	Low sulfur fuel oil

GLOSSARY OF TERMS (continued)

Terms	Definitions
LTIP	Long-term incentive plan
MATS	Mercury and Air Toxics Standards
Maui Electric	Maui Electric Company, Limited, an electric utility subsidiary of Hawaiian Electric Company, Inc.
Mauo	Mauo, LLC, an indirect subsidiary of Pacific Current
MBtu	Million British thermal unit
MD&A	Management's Discussion and Analysis of Financial Condition and Results of Operations
Merger	As provided in the Merger Agreement (see below), merger of NEE Acquisition Sub II, Inc. with and into HEI, with HEI surviving, and then merger of HEI with and into NEE Acquisition Sub I, LLC, with NEE Acquisition Sub I, LLC surviving as a wholly owned subsidiary of NextEra Energy, Inc.
Merger Agreement	Agreement and Plan of Merger by and among HEI, NextEra Energy, Inc., NEE Acquisition Sub II, Inc. and NEE Acquisition Sub I, LLC, dated December 3, 2014 and terminated July 16, 2016
Moody's	Moody's Investors Service's
MOU	Memorandum of Understanding
MPIR	Major Project Interim Recovery
MSFO	Medium sulfur fuel oil
MSR	Mortgage servicing right
MW	Megawatt/s (as applicable)
MWh	Megawatthour/s (as applicable)
NA	Not applicable
NAAQS	National Ambient Air Quality Standard
NEE	NextEra Energy, Inc.
NEM	Net energy metering
NII	Net interest income
NM	Not meaningful
NPBC	Net periodic benefits costs
NPPC	Net periodic pension costs
O&M	Other operation and maintenance
OCC	Office of the Comptroller of the Currency
OPEB	Postretirement benefits other than pensions
OTS	Office of Thrift Supervision, Department of Treasury
OTTI	Other-than-temporary impairment
Pacific Current	Pacific Current, LLC, a wholly owned subsidiary of HEI and indirect parent company of Hamakua Energy and Mauo
PBO	Projected benefit obligation
PCB	Polychlorinated biphenyls
PGV	Puna Geothermal Venture
PIMs	Performance incentive mechanisms
PPA	Power purchase agreement
PPAC	Purchased power adjustment clause
PSD	Prevention of Significant Deterioration
PSIPs	Power Supply Improvement Plans
PUC	Public Utilities Commission of the State of Hawaii
PURPA	Public Utility Regulatory Policies Act of 1978
PV	Photovoltaic
QF	Qualifying Facility under the Public Utility Regulatory Policies Act of 1978

QTL	Qualified Thrift Lender
RAM	Rate adjustment mechanism
RBA	Revenue balancing account
Registrant	Each of Hawaiian Electric Industries, Inc. and Hawaiian Electric Company, Inc.
REIP	Renewable Energy Infrastructure Program
RFP	Request for proposals
RHI	Renewable Hawaii, Inc., a wholly-owned nonregulated subsidiary of Hawaiian Electric Company, Inc.
ROA	Return on assets
ROACE	Return on average common equity

GLOSSARY OF TERMS (continued)

Terms	Definitions
RORB	Return on rate base
RPS	Renewable portfolio standards
S&P	Standard & Poor’s
SEC	Securities and Exchange Commission
See	Means the referenced material is incorporated by reference (or means refer to the referenced section in this document or the referenced exhibit or other document)
SLHCs	Savings & Loan Holding Companies
SOIP	1987 Stock Option and Incentive Plan, as amended. Shares of HEI common stock reserved for issuance under the SOIP were deregistered and delisted in 2015.
Spin-Off	The previously planned distribution to HEI shareholders of all of the common stock of ASB Hawaii immediately prior to the Merger, which was terminated
SPRBs	Special Purpose Revenue Bonds
ST	Steam turbine
state	State of Hawaii
Tax Act	2017 Tax Cuts and Jobs Act (H.R. 1, An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018)
TDR	Troubled debt restructuring
Tesoro	Tesoro Hawaii Corporation dba BHP Petroleum Americas Refining Inc., a fuel oil supplier
TOOTS	The Old Oahu Tug Service, Inc., a wholly-owned subsidiary of Hawaiian Electric Industries, Inc.
Trust III	HECO Capital Trust III
UBC	Uluwehiokama Biofuels Corp., a wholly-owned nonregulated subsidiary of Hawaiian Electric Company, Inc.
Utilities	Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc. and Maui Electric Company, Limited
VIE	Variable interest entity

Cautionary Note Regarding Forward-Looking Statements

This report and other presentations made by Hawaiian Electric Industries, Inc. (HEI) and Hawaiian Electric Company, Inc. (Hawaiian Electric) and their subsidiaries contain “forward-looking statements,” which include statements that are predictive in nature, depend upon or refer to future events or conditions and usually include words such as “will,” “expects,” “anticipates,” “intends,” “plans,” “believes,” “predicts,” “estimates” or similar expressions. In additio statements concerning future financial performance, ongoing business strategies or prospects or possible future actions are also forward-looking statements. Forward-looking statements are based on current expectations and projections about future events and are subject to risks, uncertainties and the accuracy of assumptions concerning HEI and its subsidiaries (collectively, the Company), the performance of the industries in which they do business and economic, political and market factors, among other things. These forward-looking statements are not guarantees of future performance.

Risks, uncertainties and other important factors that could cause actual results to differ materially from those described in forward-looking statements and from historical results include, but are not limited to, the following:

- international, national and local economic and political conditions—including the state of the Hawaii tourism, defense and construction industries; the strength or weakness of the Hawaii and continental U.S. real estate markets (including the fair value and/or the actual performance of collateral underlying loans held by ASB, which could result in higher loan loss provisions and write-offs); decisions concerning the extent of the presence of the federal government and military in Hawaii; the implications and potential impacts of the Federal government partial shutdown, including the impact to our customers to pay their electric bills and/or bank loans and the impact on the state of Hawaii economy; the implications and potential impacts of U.S. and foreign capital and credit market conditions and federal, state and international responses to those conditions; and the potential impacts of global developments (including global economic conditions and uncertainties; unrest; conflicts or other crisis; the effects of changes that have or may occur in U.S. policy, such as with respect to immigration and trade; terrorist acts; and potential pandemics);
- the effects of future actions or inaction of the U.S. government or related agencies, including those related to the U.S. debt ceiling or budget funding, monetary policy, trade policy and tariffs, and other policy and regulation changes advanced or proposed by President Trump and his administration;
- weather, natural disasters (e.g., hurricanes, earthquakes, tsunamis, lightning strikes, lava flows and the potential effects of climate change, such as more severe storms, droughts, heat waves, and rising sea levels) and wildfires, including their impact on the Company’s and Utilities’ operations and the economy;
- the timing, speed and extent of changes in interest rates and the shape of the yield curve;
- the ability of the Company and the Utilities to access the credit and capital markets (e.g., to obtain commercial paper and other short-term and long-term debt financing, including lines of credit, and, in the case of HEI, to issue common stock) under volatile and challenging market conditions, and the cost of such financings, if available;
- the risks inherent in changes in the value of the Company’s pension and other retirement plan assets and ASB’s securities available for sale;
- changes in laws, regulations (including tax regulations), market conditions and other factors that result in changes in assumptions used to calculate retirement benefits costs and funding requirements;
- the impact of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) and of the rules and regulations that the Dodd-Frank Act requires to be promulgated, as amended by the Economic Growth, Regulatory Relief and Consumer Protection Act;
- increasing competition in the banking industry (e.g., increased price competition for deposits, or an outflow of deposits to alternative investments, which may have an adverse impact on ASB’s cost of funds);
- the potential delay by the Public Utilities Commission of the State of Hawaii (PUC) in considering (and potential disapproval of actual or proposed) renewable energy proposals and related costs; reliance by the Utilities on outside parties such as the state, independent power producers (IPPs) and developers; and uncertainties surrounding technologies, solar power, wind power, biofuels, environmental assessments required to meet renewable portfolio standards (RPS) goals and the impacts of implementation of the renewable energy proposals on future costs of electricity;
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the ability of the Utilities to develop, implement and recover the costs of implementing the Utilities' action plans included in their updated Power Supply Improvement Plans (PSIPs), Demand Response Portfolio Plan, Distributed Generation Interconnection Plan, Grid Modernization Plans, and business model changes, which have been and are continuing to be developed and updated in response to the orders issued by the PUC, the PUC's April 2014 statement of its inclinations on the future of Hawaii's electric utilities and the vision, business strategies and regulatory policy changes required to align the Utilities' business model with customer interests and the state's public policy goals, and subsequent orders of the PUC;

- capacity and supply constraints or difficulties, especially if generating units (utility-owned or IPP-owned) fail or measures such as demand-side management, distributed generation (DG), combined heat and power or other firm capacity supply-side resources fall short of achieving their forecasted benefits or are otherwise insufficient to reduce or meet peak demand;
- fuel oil price changes, delivery of adequate fuel by suppliers and the continued availability to the electric utilities of their energy cost adjustment clauses (ECACs) and energy cost recovery clauses (ECRC);
- the continued availability to the electric utilities or modifications of other cost recovery mechanisms, including the purchased power adjustment clauses (PPACs), rate adjustment mechanisms (RAMs) and pension and postretirement benefits other than pensions (OPEB) tracking mechanisms, and the continued decoupling of revenues from sales to mitigate the effects of declining kilowatthour sales;
- the ability of the Utilities to achieve performance incentive goals currently in place;
- the impact from the PUC's implementation of performance-based ratemaking for the Utilities pursuant to Act 005, Session Laws 2018, including the potential addition of new performance incentive mechanisms, third party proposals adopted by the PUC in its implementation of PBR, and the implications of not achieving performance incentive goals;
- the impact of fuel price levels and volatility on customer satisfaction and political and regulatory support for the Utilities;

- the risks associated with increasing reliance on renewable energy, including the availability and cost of non-fossil fuel supplies for renewable energy generation and the operational impacts of adding intermittent sources of renewable energy to the electric grid;
- the growing risk that energy production from renewable generating resources may be curtailed and the interconnection of additional resources will be constrained as more generating resources are added to the Utilities' electric systems and as customers reduce their energy usage;
- the ability of IPPs to deliver the firm capacity anticipated in their power purchase agreements (PPAs);
- the potential that, as IPP contracts near the end of their terms, there may be less economic incentive for the IPPs to make investments in their units to ensure the availability of their units;
- the ability of the Utilities to negotiate, periodically, favorable agreements for significant resources such as fuel supply contracts and collective bargaining agreements;
- new technological developments that could affect the operations and prospects of the Utilities and ASB or their competitors such as the commercial development of energy storage and microgrids and banking through alternative channels;
- cyber security risks and the potential for cyber incidents, including potential incidents at HEI, its third-party vendors, and its subsidiaries (including at ASB branches and electric utility plants) and incidents at data processing centers used, to the extent not prevented by intrusion detection and prevention systems, anti-virus software, firewalls and other general IT controls;
- failure in addressing issues in the stabilization of the Enterprise Resource Planning/Enterprise Asset Management (ERP/EAM) (ERP/EAM) system implementation could adversely affect the Utilities' ability to timely and accurately report financial information and make payments to vendors and employees;
- failure to achieve cost savings consistent with the minimum $244 million in ERP/EAM project-related benefits (including $141 million in operation and maintenance (O&M) benefits) to be delivered to customers over its 12-year estimated useful life;
- federal, state, county and international governmental and regulatory actions, such as existing, new and changes in laws, rules and regulations applicable to HEI, the Utilities and ASB (including changes in taxation, increases in capital requirements, regulatory policy changes, environmental laws and regulations (including resulting compliance costs and risks of fines and penalties and/or liabilities), the regulation of greenhouse gas emissions, governmental fees and assessments (such as Federal Deposit Insurance Corporation assessments), and potential carbon "cap and trade" legislation that may fundamentally alter costs to produce electricity and accelerate the move to renewable generation);
- developments in laws, regulations and policies governing protections for historic, archaeological and cultural sites, and plant and animal species and habitats, as well as developments in the implementation and enforcement of such laws, regulations and policies;
- discovery of conditions that may be attributable to historical chemical releases, including any necessary investigation and remediation, and any associated enforcement, litigation or regulatory oversight;
- decisions by the PUC in rate cases and other proceedings (including the risks of delays in the timing of decisions, adverse changes in final decisions from interim decisions and the disallowance of project costs as a result of adverse regulatory audit reports or otherwise);
- decisions by the PUC and by other agencies and courts on land use, environmental and other permitting issues (such as required corrective actions, restrictions and penalties that may arise, such as with respect to environmental conditions or RPS);
- potential enforcement actions by the Office of the Comptroller of the Currency (OCC), the Federal Reserve Board (FRB), the Federal Deposit Insurance Corporation (FDIC) and/or other governmental authorities (such as consent orders, required corrective actions, restrictions and penalties that may arise, for example, with respect to compliance deficiencies under existing or new banking and consumer protection laws and regulations or with respect to capital adequacy);
- the ability of the Utilities to recover increasing costs and earn a reasonable return on capital investments not covered by RAMs;
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- the risks associated with the geographic concentration of HEI’s businesses and ASB’s loans, ASB’s concentration in a single product type (i.e., first mortgages) and ASB’s significant credit relationships (i.e., concentrations of large loans and/or credit lines with certain customers);
- changes in accounting principles applicable to HEI and its subsidiaries, including the adoption of new U.S. accounting standards, the potential discontinuance of regulatory accounting, the effects of potentially required consolidation of variable interest entities (VIEs), or required capital/finance lease or on-balance-sheet operating lease accounting for PPAs with IPPs;
- downgrades by securities rating agencies in their ratings of the securities of HEI and Hawaiian Electric and their impact on results of financing efforts;
- faster than expected loan prepayments that can cause an acceleration of the amortization of premiums on loans and investments and the impairment of mortgage-servicing assets of ASB;
- changes in ASB’s loan portfolio credit profile and asset quality and/or mix which may increase or decrease the required level of provision for loan losses, allowance for loan losses and charge-offs;
- changes in ASB’s deposit cost or mix which may have an adverse impact on ASB’s cost of funds;
- the final outcome of tax positions taken by HEI and its subsidiaries;
- the risks of suffering losses and incurring liabilities that are uninsured (e.g., damages to the Utilities’ transmission and distribution system and losses from business interruption) or underinsured (e.g., losses not covered as a result of insurance deductibles or other exclusions or exceeding policy limits);
- the ability of the Company’s non-regulated subsidiary, Pacific Current, LLC, to achieve its performance and growth objectives, which in turn could affect its ability to service its non-recourse debt;
- the Company’s reliance on third parties and the risk of their non-performance; and
- other risks or uncertainties described elsewhere in this report (e.g., Item 1A. Risk Factors) and in other reports previously and subsequently filed by HEI and/or Hawaiian Electric with the Securities and Exchange Commission (SEC).

Forward-looking statements speak only as of the date of the report, presentation or filing in which they are made. Except to the extent required by the federal securities laws, HEI, Hawaiian Electric, ASB, Pacific Current and their subsidiaries undertake no obligation to publicly update or revise any forward-looking statements, whether written or oral and whether as a result of new information, future events or otherwise.

PART I

ITEM 1. BUSINESS

HEI Consolidated

HEI and subsidiaries and lines of business. HEI is a holding company with its subsidiaries principally engaged in electric utility, banking, and renewable/sustainable infrastructure investment businesses operating in the State of Hawaii. HEI was incorporated in 1981 under the laws of the State of Hawaii. HEI's predecessor, Hawaiian Electric, was incorporated under the laws of the Kingdom of Hawaii (now the State of Hawaii) on October 13, 1891. As a result of a 1983 corporate reorganization, Hawaiian Electric became an HEI subsidiary and common shareholders of Hawaiian Electric became common shareholders of HEI. As a holding company with no significant operations of its own, HEI's sources of funds are dividends or other distributions from its operating subsidiaries, borrowings, and sales of equity. The rights of HEI and its creditors and shareholders to participate in any distribution of the assets of any of HEI's subsidiaries are subject to the prior claims of the creditors and preferred shareholders of such subsidiary, except to the extent that claims of HEI in its capacity as a creditor are recognized as primary. The abilities of certain of HEI's subsidiaries to pay dividends or make other distributions to HEI are subject to contractual and regulatory restrictions (see Note 13 of the Consolidated Financial Statements). HEI is headquartered in Honolulu, Hawaii and has three reportable segments—Electric utility, Bank, and Other.

Electric Utility. Hawaiian Electric and its operating utility subsidiaries, Hawaii Electric Light Company, Inc. (Hawaii Electric Light) and Maui Electric Company, Limited (Maui Electric), are regulated electric public utilities that provide essential electric service to approximately 95% of Hawaii's population through the operation of five separate grids that serve communities on the islands of Oahu, Hawaii, and Maui, Lanai and Molokai. Hawaiian Electric's mission is to provide innovative energy leadership for Hawaii, to meet the needs and expectations of customers and communities, and to empower them with affordable, reliable and clean energy. The goal is to create a modern, flexible and dynamic electric grid that enables an optimal mix of distributed energy resources (such as private rooftop solar and battery storage), demand response, and grid-scale resources to achieve the statutory goal of 100% renewable energy by 2045. See also "Electric utility" section below.

Bank. HEI acquired American Savings Bank, F.S.B. (ASB) in 1988. ASB is one of the largest financial institutions in the State of Hawaii (based on total assets), with assets totaling approximately $7.0 billion as of December 31, 2018. ASB provides a wide array of banking and other financial services to consumers and businesses. See also "Bank" section below.

Other. The "Other" segment comprises HEI's corporate-level operating, general and administrative expenses and the results of Pacific Current, LLC (Pacific Current). Pacific Current was formed in September 2017 to focus on investing in non-regulated renewable energy and sustainable infrastructure in the State of Hawaii to help reach the state's sustainability goals. See also "Electric utility - Hawaii Electric Light firm capacity PPAs" section below and Note 2 of the Consolidated Financial Statements for additional information on Pacific Current activities. The "Other" segment also includes ASB Hawaii, Inc. (ASB Hawaii) (a holding company, formerly known as American Savings Holdings, Inc.), which owns ASB, and The Old Oahu Tug Service, Inc. (TOOTS), which administers certain employee and retiree-related benefit programs and monitors matters related to its predecessor's former maritime freight transportation operations.

Termination of proposed Merger. For information concerning the termination of HEI's Merger Agreement with NextEra Energy, Inc., see Note 16 of the Consolidated Financial Statements.

Additional information. For additional information about HEI, see HEI's MD&A, HEI's "Quantitative and Qualitative Disclosures about Market Risk" and HEI's Consolidated Financial Statements.

The Company's website address is www.hei.com, where annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports (last 10 years) are made available free of charge in the Investor Relations section as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC (and available at the SEC's website at www.sec.gov). The information on the Company's website is not incorporated by reference in this annual report on Form 10-K unless, and except to the extent, specifically incorporated herein by reference. HEI and Hawaiian Electric intend to continue to use HEI's website as a means of disclosing additional information. Accordingly, investors should routinely monitor such portions of HEI's website, in addition to following HEI's, Hawaiian Electric's and ASB's press releases, SEC filings and public conference calls and webcasts. Investors may also wish to refer to the PUC website at dms.puc.hawaii.gov/dms in order to review documents filed with and issued by the PUC. No information at the PUC website is incorporated herein by reference.

Regulation. HEI and Hawaiian Electric are each holding companies within the meaning of the Public Utility Holding Company Act of 2005 and implementing regulations, which requires holding companies and their subsidiaries to grant the Federal Energy Regulatory Commission (FERC) access to books and records relating to FERC's jurisdictional rates. FERC granted HEI and Hawaiian Electric a waiver from its record retention, accounting and reporting requirements, effective May 2006.

HEI is subject to an agreement entered into with the PUC (the PUC Agreement) which, among other things, requires PUC approval of any change in control of HEI. The PUC Agreement also requires HEI to provide the PUC with periodic financial information and other reports concerning intercompany transactions and other matters. It also prohibits the electric utilities from loaning funds to HEI or its nonutility subsidiaries and from redeeming common stock of the electric utility subsidiaries without PUC approval. Further, the PUC could limit the ability of the electric utility subsidiaries to pay dividends on their common stock. See also Note 13 of the Consolidated Financial Statements and “Electric utility—Regulation” below.

HEI and ASB Hawaii are subject to Federal Reserve Board (FRB) regulation, supervision and reporting requirements as savings and loan holding companies. As a result of the enactment of the Dodd-Frank Act, supervision and regulation of HEI and ASB Hawaii, as thrift holding companies, moved to the FRB, and supervision and regulation of ASB, as a federally chartered savings bank, moved to the Office of the Comptroller of the Currency (OCC) in July 2011. In the event the OCC has reasonable cause to believe that any activity of HEI or ASB Hawaii constitutes a serious risk to the financial safety, soundness or stability of ASB, the OCC is authorized to impose certain restrictions on HEI, ASB Hawaii and/or any of their subsidiaries. Possible restrictions include precluding or limiting: (i) the payment of dividends by ASB; (ii) transactions between ASB, HEI or ASB Hawaii, and their subsidiaries or affiliates; and (iii) any activities of ASB that might expose ASB to the liabilities of HEI and/or ASB Hawaii and their other affiliates. See also Note 13 of the Consolidated Financial Statements.

The Gramm-Leach-Bliley Act of 1999 (Gramm Act) permitted banks, insurance companies and investment firms to compete directly against each other, thereby allowing “one-stop shopping” for an array of financial services. Although the Gramm Act further restricted the creation of so-called “unitary savings and loan holding companies” (i.e., companies such as HEI whose subsidiaries include one or more savings associations and one or more nonfinancial subsidiaries), the unitary savings and loan holding company relationship among HEI, ASB Hawaii and ASB is “grandfathered” under the Gramm Act so that HEI and its subsidiaries will be able to continue to engage in their current activities so long as ASB maintains its qualified thrift lender (QTL) status test discussed under “Bank—Regulation—Qualified thrift lender test.” ASB met the QTL test at all times during 2018; however, the failure of ASB to satisfy the QTL test in the future could result in a need for HEI to divest ASB. Under the Gramm Act, any proposed sale of ASB would have to satisfy applicable statutory and regulatory requirements and potential acquirers of ASB would most likely be limited to companies that are already qualified as, or capable of qualifying as, either a traditional savings and loan association holding company or a bank holding company, or as one of the authorized financial holding companies permitted under the Gramm Act.

HEI is also affected by provisions of the Dodd-Frank Act relating to corporate governance and executive compensation, including provisions requiring shareholder “say on pay” and “say on pay frequency” votes, mandating additional disclosures concerning executive compensation and compensation consultants and advisors and further restricting proxy voting by brokers in the absence of instructions. See “Bank—Legislation and regulation” in HEI’s MD&A for a discussion of effects of the Dodd-Frank Act on HEI and ASB.

Environmental regulation. HEI and its subsidiaries are subject to federal and state statutes and governmental regulations pertaining to water quality, air quality and other environmental factors. See the “Environmental regulation” discussions in the “Electric utility” and “Bank” sections below.

Employees. The Company had full-time employees as follows:

December 31	2018	2017	2016	2015	2014
HEI	46	41	41	39	44
Hawaiian Electric and its subsidiaries	2,704	2,724	2,662	2,727	2,759
ASB	1,148	1,115	1,093	1,152	1,162
	3,898	3,880	3,796	3,918	3,965

The employees of HEI and its direct and indirect subsidiaries, other than the electric utilities, are not covered by any collective bargaining agreement. The International Brotherhood of Electrical Workers Local 1260 represents roughly half of the Utilities’ workforce covered by a collective bargaining agreement that expires on October 31, 2021.

Properties. HEI leases office space from nonaffiliated lessors in downtown Honolulu under leases that expire in December 2022. See “Electric Utility” and “Bank” sections for a description of properties they own and lease. Hamakua Energy, LLC owns a total of approximately 93 acres located on the Hamakua coast on the island of Hawaii. Its power plant is situated on approximately 59 acres and the remaining 34 acres includes surrounding parcels of which 30 acres are located on the ocean front.

Electric utility

Hawaiian Electric and subsidiaries and service areas. Hawaiian Electric, Hawaii Electric Light and Maui Electric (Utilities) are regulated operating electric public utilities engaged in the production, purchase, transmission, distribution and sale of electricity on the islands of Oahu; Hawaii; and Maui, Lanai and Molokai, respectively. In 2018, the electric utilities' revenues and net income amounted to approximately 89% and 71% respectively, of HEI's consolidated revenues and net income, compared to approximately 88% and 73% in 2017 and approximately 88% and 57% (impacted by a merger termination fee and other impacts at HEI corporate) in 2016, respectively.

The islands of Oahu, Hawaii, Maui, Lanai and Molokai have a combined population estimated at 1.4 million, or approximately 95% of the total population of the State of Hawaii, and comprise a service area of 5,815 square miles. The principal communities served include Honolulu (on Oahu), Hilo and Kona (on Hawaii) and Wailuku and Kahului (on Maui). The service areas also include numerous suburban communities, resorts, U.S. Armed Forces installations and agricultural operations. The state has granted Hawaiian Electric, Hawaii Electric Light and Maui Electric nonexclusive franchises, which authorize the Utilities to construct, operate and maintain facilities over and under public streets and sidewalks. Each of these franchises will continue in effect for an indefinite period of time until forfeited, altered, amended or repealed.

Sales of electricity.

Years ended December 31	2018		2017		2016	
(dollars in thousands)	Customer accounts*	Electric sales revenues	Customer accounts*	Electric sales revenues	Customer accounts*	Electric sales revenues
Hawaiian Electric	305,456	$ 1,789,527	304,948	$ 1,592,016	304,261	$ 1,466,225
Hawaii Electric Light	85,758	371,713	85,925	331,697	85,029	309,521
Maui Electric	71,875	364,967	71,352	323,882	70,872	306,767
	463,089	$ 2,526,207	462,225	$ 2,247,595	460,162	$ 2,082,513

* As of December 31.

Regulatory mechanisms. Each of the three utilities' rates is reset on a triennial cycle. The regulatory framework includes a number of mechanisms designed to provide utility financial stability during the transition toward the state's 100% renewable energy goals. For example, under the sales decoupling mechanism, the utilities are allowed to recover from customers, target test year revenues, independent of the level of kilowatt-hour (kWh) sales, which have declined as privately-owned distributed energy resources have been added to the grid and energy efficiency measures have been put into place. A summary of these regulatory mechanisms is as follows:

Mechanism	Description
Sales decoupling	Provides predictable revenue stream by fixing net revenues at the level approved in last rate case (revenues not linked to kWh sales)
Revenue adjustment mechanism (RAM)	Annually adjusts revenue to recover general inflation of operations and maintenance expenses and baseline plant additions between rate cases
Major Projects Interim Recovery adjustment mechanism (MPIR)	Reduces regulatory lag and permits recovery through the revenue balancing account (RBA) of costs (net of benefits) for major capital projects including, but not restricted to, projects to advance renewable energy
Energy cost and purchased power recovery/adjustment clauses	Allows for timely recovery of fuel and purchased power costs to reduce earnings volatility. Symmetrical fossil fuel cost risk sharing (98% customer/2% utility) mechanism established for Hawaiian Electric (Oahu) and utility upside/downside capped at $2.5 million (beginning in 2019)
Pension and post-employment benefit trackers	Allow tracking of pension and post-employment benefit costs and contributions above or below the cost included in rates in a separate regulatory asset/liability account
Renewable energy infrastructure program	Permits recovery of renewable energy infrastructure projects through a surcharge

Seasonality. kWh sales of the Utilities follow a seasonal pattern, but they do not experience extreme seasonal variations due to extreme weather variations experienced by some electric utilities on the U.S. mainland. kWh sales in

Hawaii tend to increase in the warmer, more humid months as a result of increased demand for air conditioning, and with cloudy and rainy weather due to lower production by privately owned customer generated PV systems.
Significant customers. The Utilities derived approximately 11% of their operating revenues in 2018, 2017 and 2016 from the sale of electricity to various federal government agencies. Hawaiian Electric continues to work with various federal agencies to implement measures that will help them achieve their energy reduction and renewable energy objectives.

Selected consolidated electric utility operating statistics.

Years ended December 31	2018	2017	2016	2015	2014
kWh sales (millions)					
Residential	2,410.8	2,334.5	2,332.7	2,396.5	2,379.7
Commercial	2,810.8	2,867.9	2,911.5	2,977.8	3,022.0
Large light and power	3,425.1	3,443.3	3,555.1	3,532.9	3,524.5
Other	42.1	44.7	46.0	49.3	50.0
	8,688.8	8,690.4	8,845.3	8,956.5	8,976.2
kWh net generated and purchased (millions)					
Net generated	4,966.4	4,888.4	4,940.4	5,124.5	5,131.3
Purchased	4,139.3	4,247.1	4,349.1	4,308.3	4,306.7
	9,105.7	9,135.5	9,289.5	9,432.8	9,438.0
Losses and system uses (%)	4.4	4.7	4.6	4.8	4.7
Energy supply (December 31)					
Net generating capability—MW	1,739	1,673	1,669	1,669	1,787
Firm and other purchased capability—MW[1]	517	551	551	555	575
	2,256	2,224	2,220	2,224	2,362
Net peak demand—MW[2]	1,598	1,584	1,593	1,610	1,554
Btu per net kWh generated	10,826	10,812	10,710	10,632	10,613
Average fuel oil cost per MBtu (cents)	1,420.2	1,114.3	862.3	1,206.5	2,087.6
Customer accounts (December 31)					
Residential	407,505	406,241	402,818	400,655	398,256
Commercial	54,075	53,732	55,089	54,878	54,924
Large light and power	696	656	670	659	596
Other	813	1,596	1,585	1,608	1,640
	463,089	462,225	460,162	457,800	455,416
Electric revenues (thousands)					
Residential	$788,028	$691,857	$638,776	$709,886	$879,605
Commercial	843,326	766,921	711,553	798,202	1,027,588
Large light and power	882,443	776,808	720,878	802,366	1,051,119
Other	12,410	12,009	11,306	13,356	17,163
	$2,526,207	$2,247,595	$2,082,513	$2,323,810	$2,975,475
Average revenue per kWh sold (cents)	29.07	25.86	23.54	25.90	33.15
Residential	32.69	29.64	27.38	29.62	36.96
Commercial	30.00	26.74	24.44	26.81	34.00
Large light and power	25.76	22.56	20.28	22.71	29.82
Other	29.47	26.82	24.61	27.05	34.36
Residential statistics					
Average annual use per customer account (kWh)	5,923	5,779	5,806	5,996	6,000
Average annual revenue per customer account	$1,936	$1,713	$1,590	$1,776	$2,218
Average number of customer accounts	407,044	403,983	401,796	399,674	396,640

1 Since May 2018, PGV has been offline due to lava flow on Hawaii Island; therefore, PGV’s capability has not been incorporated into the utility’s firm contract power capability as of December 31, 2018.

2 Sum of the net peak demands on all islands served, noncoincident and nonintegrated.

Generation statistics. The following table contains certain generation statistics as of and for the year ended December 31, 2018. The net generating and firm purchased capability available for operation at any given time may be more or less than shown because of capability restrictions or temporary outages for inspection, maintenance, repairs or unforeseen circumstances.

	Hawaiian Electric	Hawaii Electric Light	Maui Electric			
	Island of Oahu	Island of Hawaii	Island of Maui	Island of Lanai	Island of Molokai	Total
Net generating and firm purchased capability (MW) as of December 31, 2018[1]						
Conventional oil-fired steam units	999.5	50.1	35.9	—	—	1,085.5
Diesel	—	29.5	96.8	10.2	9.8	146.3
Combustion turbines (peaking units)	231.8	—	—	—	—	231.8
Other combustion turbines	—	46.3	—	—	2.2	48.5
Combined-cycle unit	—	56.3	113.6	—	—	169.9
Biodiesel	57.4	—	—	—	—	57.4
Firm contract power[2]	456.5	60.0	—	—	—	516.5
	1,745.2	242.2	246.3	10.2	12.0	2,255.9
Net peak demand (MW)[3]	1,190.0	190.8	206.2	5.4	6.0	1,598.4
Reserve margin	45.7 %	26.9 %	19.4 %	88.9 %	100.0 %	42.0 %
Annual load factor	63.5 %	68.1 %	60.7 %	65.4 %	60.7 %	65.0 %
kWh net generated and purchased (millions)	6,807.8	1,138.2	1,096.9	30.9	31.9	9,105.7

1 Hawaiian Electric units at normal ratings; Hawaii Electric Light and Maui Electric units at reserve ratings.

2 Nonutility generators - Hawaiian Electric: 208 MW (Kalaeloa Partners, L.P., oil-fired), 180 MW (AES Hawaii, Inc., coal-fired) and 68.5 MW (HPOWER, refuse-fired); Hawaii Electric Light: 60 MW (Hamakua Energy, LLC, oil-fired). Hawaii Electric Light also has a firm capacity PPA with PGV for 34.6 MW. However, since May 2018, PGV has been offline due to lava flow on Hawaii Island; therefore, PGV's capability has not been incorporated into the utility's firm contract power capability as of December 31, 2018.

3 Noncoincident and nonintegrated.

Generating reliability and reserve margin. Hawaiian Electric serves the island of Oahu and Hawaii Electric Light serves the island of Hawaii. Maui Electric has three separate electrical systems—one each on the islands of Maui, Molokai and Lanai. Hawaiian Electric, Hawaii Electric Light and Maui Electric have isolated electrical systems that are not currently interconnected to each other or to any other electrical grid and, thus, each maintains a higher level of reserve generation and cost structure than is typically carried by interconnected mainland U.S. utilities, which are able to share reserve capacity. These higher levels of reserve margins are required to meet peak electric demands, to provide for scheduled maintenance of generating units (including the units operated by IPPs relied upon for firm capacity) and to allow for the forced outage of the largest generating unit in the system.

Nonutility generation. The Utilities have supported state and federal energy policies which encourage the development of renewable energy sources that reduce the use of fuel oil as well as the development of qualifying facilities. The Utilities' renewable energy sources and potential sources range from wind, solar, photovoltaic, geothermal, wave and hydroelectric power to energy produced by the municipal waste and other biofuels.

The rate schedules of the electric utilities contain ECACs (replaced with the ECRCs for Hawaiian Electric and Hawaii Electric Light in 2019) and PPACs that allow them to recover costs of fuel and purchase power expenses.

In addition to the firm capacity PPAs described below, the electric utilities also purchase energy on an as-available basis directly from nonutility generators and through its Feed-In Tariff programs. The electric utilities also receive renewable energy from customers under its Net Energy Metering and Customer Grid Supply programs.

The PUC has allowed rate recovery for the firm capacity and purchased energy costs for the electric utilities' approved firm capacity and as-available energy PPAs.

Hawaiian Electric firm capacity PPAs. Hawaiian Electric currently has three major PPAs that provide a total of 456.5 MW of firm capacity, representing 26% of Hawaiian Electric's total net generating and firm purchased capacity on the Island of Oahu as of December 31, 2018.

In March 1988, Hawaiian Electric entered into a PPA with AES Hawaii, Inc. (AES Hawaii), a Hawaii-based, indirect subsidiary of The AES Corporation. The agreement with AES Hawaii, as amended (through Amendment No. 2), provides that, for a period of 30 years beginning September 1992, Hawaiian Electric will purchase 180 megawatts (MW) of firm capacity. The AES Hawaii coal-fired cogeneration plant utilizes a "clean coal" technology and is designed to sell sufficient steam to be a "Qualifying Facility" (QF) under the Public Utility Regulatory Policies Act of 1978 (PURPA). See "Commitments and contingencies–Power purchase agreements–AES Hawaii, Inc." in Note 3 of the Consolidated Financial Statements for an update regarding this PPA.

Under a 1988 PPA, as amended, Hawaiian Electric is committed to purchase 208 MW of firm capacity from Kalaeloa Partners, L.P. (Kalaeloa). The Kalaeloa facility, which is a QF, is a combined-cycle operation, consisting of two oil-fired combustion turbines burning low sulfur fuel oil (LSFO) and a steam turbine that utilizes waste heat from the combustion turbines. Hawaiian Electric and Kalaeloa are currently in negotiations to address the PPA term that ended on May 23, 2016. The PPA automatically extends on a month-to-month basis as long as the parties are still negotiating in good faith, but would end 60 days after either party notifies the other in writing that negotiations have terminated. Hawaiian Electric and Kalaeloa have agreed that neither party will terminate the PPA prior to October 31, 2019. This agreement contemplates continued negotiations between the parties and accounts for time needed for PUC approval of a negotiated resolution.

Hawaiian Electric also entered into a PPA in March 1986 and a firm capacity amendment in April 1991 with the City and County of Honolulu with respect to a refuse-fired plant (HPOWER). Under the PPA, as amended and restated, Hawaiian Electric is committed to purchase 68.5 MW of firm capacity annually through April 2033.

Hawaii Electric Light firm capacity PPAs. Hawaii Electric Light has two major PPAs that provide a total of 94.6 MW of firm capacity, representing 34% of Hawaii Electric Light's total net generating and firm purchased capacity on the Island of Hawaii as of December 31, 2018.

Hawaii Electric Light has a 35-year PPA, as amended, with Puna Geothermal Venture (PGV) for 34.6 MW of firm capacity from its geothermal steam facility, which will expire on December 31, 2027. Since May 2018, PGV facility has been offline due to lava flow on Hawaii Island. PGV is committed to restoring their facility to commercial operation and is currently in discussion with Hawaii Electric Light to rebuild the Pohoiki substation and transmission lines affected by the lava flow.

In October 1997, Hawaii Electric Light entered into an agreement with Encogen, which was succeeded by Hamakua Energy Partners, L. P. (HEP). The agreement requires Hawaii Electric Light to purchase up to 60 MW (net) of firm capacity for a period of 30 years, expiring on December 31, 2030. The dual-train combined-cycle (DTCC) facility, which primarily burns naphtha (a mixture of liquid hydrocarbons), consists of two oil-fired combustion turbines and a steam turbine that utilizes waste heat from the combustion turbines. In November 2017, Hamakua Energy, LLC, an indirect subsidiary of HEI, purchased the plant from HEP.

In May 2012, Hawaii Electric Light signed a PPA with Hu Honua Bioenergy, LLC (Hu Honua) for 21.5 MW of renewable, dispatchable firm capacity fueled by locally grown biomass on the island of Hawaii. This PPA was approved by the PUC in December 2013. See "Commitments and contingencies–Power purchase agreements–Hu Honua Bioenergy, LLC" in Note 3 of the Consolidated Financial Statements for an update regarding this PPA.

Maui Electric firm capacity PPAs. Maui Electric has no firm capacity PPAs.

Fuel oil usage and supply. The rate schedules of the Utilities include ECACs (replaced with ECRCs for Hawaiian Electric and Hawaii Electric Light in 2019) under which electric rates (and consequently the revenues of the electric utility subsidiaries generally) are adjusted for changes in the weighted-average price paid for fuel oil and certain components of purchased power, and the relative amounts of company-generated power and purchased power. See discussion of rates and issues relating to the ECAC below under "Rates," and "Electric utility—Material estimates and critical accounting policies–Revenues" in HEI's MD&A.

Hawaiian Electric's steam generating units consume low sulfur fuel oil (LSFO) and Hawaiian Electric's combustion turbine peaking units consume diesel, including Hawaiian Electric's Campbell Industrial Park generating facility which recently converted from B99 grade biodiesel to diesel.

Hawaii Electric Light's and Maui Electric's steam generating units burn industrial fuel oil (IFO) and Hawaii Electric Light's and Maui Electric's Maui combustion turbine generating units burn diesel. Hawaii Electric Light's and Maui

Electric's Maui, Molokai, and Lanai diesel engine generating units burn ultra-low-sulfur diesel.
See the fuel oil commitments information set forth in the "Fuel contracts" section in Note 3 of the Consolidated Financial Statements.

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The following table sets forth the average cost of fuel oil used by Hawaiian Electric, Hawaii Electric Light and Maui Electric to generate electricity in 2018, 2017 and 2016:

	Hawaiian Electric		Hawaii Electric Light		Maui Electric		Consolidated	
	$/Barrel	¢/MBtu	$/Barrel	¢/MBtu	$/Barrel	¢/MBtu	$/Barrel	¢/MBtu
2018	86.11	1,371.8	89.81	1,489.5	93.60	1,573.6	87.90	1,420.2
2017	67.96	1,087.1	68.02	1,125.2	72.29	1,214.6	68.78	1,114.3
2016	51.30	815.2	53.27	876.9	62.21	1,048.6	53.49	862.3

The average per-unit cost of fuel oil consumed to generate electricity for Hawaiian Electric, Hawaii Electric Light and Maui Electric reflects a different volume mix of fuel types and grades as follows:

	Hawaiian Electric		Hawaii Electric Light		Maui Electric	
	% LSFO	% Biodiesel/Diesel	% IFO	% Diesel	% IFO	% Diesel
2018	96	4	39	61	23	77
2017	95	5	43	57	23	77
2016	97	3	49	51	19	81

The prices that Hawaiian Electric, Hawaii Electric Light and Maui Electric pay for purchased energy from certain older nonutility generators are generally linked to the price of oil. The AES Hawaii energy prices vary primarily with an inflation index. The energy prices for Kalaeloa, which purchases LSFO from Par Hawaii Refining, LLC (PAR), vary primarily with the price of Asian crude oil. A portion of PGV energy prices are based on the electric utilities' respective short-run avoided energy cost rates (which vary with their composite fuel costs), subject to minimum floor rates specified in their approved PPA. Hamakua Energy energy prices vary primarily with the cost of naphtha.

The Utilities estimate that 66% of the net energy they generate will come from fossil fuel oil in 2019 compared to 68% in 2018. Hawaiian Electric generally maintains an average system fuel inventory level equivalent to 47 days of forward consumption. Hawaii Electric Light and Maui Electric generally maintain an average system fuel inventory level equivalent to approximately one month's supply of both IFO and diesel. The PPAs with AES Hawaii and Hamakua Energy require that they maintain certain minimum fuel inventory levels.

Since the Hawaii Clean Energy initiative was launched in 2008, liquid fuel consumption has continued to steadily decline. The liquid fuel consumption in 2018 was about 2.1 million barrels less than that consumed in 2008.

Rates. Hawaiian Electric, Hawaii Electric Light and Maui Electric are subject to the regulatory jurisdiction of the PUC with respect to rates, issuance of securities, accounting and certain other matters. See "Regulation" below. General rate increases require the prior approval of the PUC after public and contested case hearings. Rates for Hawaiian Electric and its subsidiaries include ECACs (replaced with the ECRCs for Hawaiian Electric and Hawaii Electric Light in 2019), and PPACs. Under current law and practices, specific and separate PUC approval is not required for each rate change pursuant to automatic rate adjustment clauses previously approved by the PUC. PURPA requires the PUC to periodically review the adjustment clauses related to energy cost of electric and gas utilities in the state, and such clauses, as well as the rates charged by the utilities generally, are subject to change. PUC approval is also required for all surcharges and adjustments before they are reflected in rates.

See "Electric utility–Most recent rate proceedings," and "Electric utility–Material estimates and critical accounting policies–Revenues" in HEI's MD&A and "Interim increases" and "Utility projects" under "Commitments and contingencies" i Note 3 of the Consolidated Financial Statements.

Competition. See "Electric utility–Competition" in HEI's MD&A.

Regulation. The PUC regulates the rates, issuance of securities, accounting and certain other aspects of the operations of Hawaiian Electric and its electric utility subsidiaries. See the previous discussion under "Rates" and the discussions under "Electric utility–Results of operations–Most recent rate proceedings."

On September 15, 2014, the State of Hawaii and the U.S. Department of Energy executed a MOU recognizing that Hawaii is embarking on the next phase of its clean energy future. The MOU provides the framework for a comprehensive, sustained effort to better realize its vast renewable energy potential and allow Hawaii to push forward in three main areas: the power sector, transportation and energy efficiency. This next phase is focused on stimulating deployment of clean energy infrastructure as a catalyst for economic growth, energy system innovation and test bed investments.

Energy efficiency. The PUC issued an order on January 3, 2012 approving a framework for Energy Efficiency Portfolio Standards (EEPS) that set 2008 as the initial base year for evaluation and linearly allocated the 2030 goal to interim incremental reduction goals of 1,375 GWH by 2015 and 975 GWH by each of the years 2020, 2025 and 2030. Pursuant to the PUC's EEPS framework, the PUC has contracted with a public benefits fee administrator to operate and manage energy efficiency programs, and any incentive and/or penalty mechanisms related to the achievement of the goals are at the discretion of the PUC.

The Division of Consumer Advocacy's 2018 Compliance Resolution Fund Report states that Hawaii continues to progress towards its 2020 Renewable Portfolio Standards and EEPS goals. The EEPS has contributed to lower kWh sales; however, the implementation of sales decoupling has delinked sales and revenues. See "Regulatory mechanisms" above.

Electrification of Transportation. In June 2018, the PUC initiated a proceeding to review the Utilities' Electrification of Transportation (EoT) Strategic Roadmap, which provided an economic analysis for light duty electric vehicles on the island of Oahu, Maui and Hawaii. In December 2018, the Utilities filed proposed tariffs for: (1) a commercial electric bus charging facility service pilot program; and (2) the assumed ownership and operation of certain fast charging stations on the island of Maui.

Renewable Portfolio Standards. In 2015, Hawaii's RPS law was amended to require electric utilities to meet an RPS of 15%, 30%, 40%, 70% and 100% by December 31, 2015, 2020, 2030, 2040 and 2045, respectively. Energy savings resulting from energy efficiency programs do not count toward the RPS since 2014 (only electrical generation using renewable energy as a source counts).

Affiliate transactions. Certain transactions between HEI's electric public utility subsidiaries (Hawaiian Electric, Hawaii Electric Light and Maui Electric) and HEI and affiliated interests (as defined by statute) are subject to regulation by the PUC.

In December 1996, the PUC issued an order in a docket to review the relationship between HEI and Hawaiian Electric and the effects of that relationship on the operations of Hawaiian Electric. The order required Hawaiian Electric to continue to provide the PUC with periodic status reports on its compliance with the PUC Agreement (pursuant to which HEI became the holding company of Hawaiian Electric). Hawaiian Electric files such status reports annually. In the order, the PUC also required the Utilities to present a comprehensive analysis of the impact that the holding company structure and investments in nonutility subsidiaries have on a case-by-case basis on the cost of capital to each utility in future rate cases and remove any such effects from the cost of capital. The Utilities have made presentations in their subsequent rate cases to support their positions that there was no evidence that would modify the PUC's finding that Hawaiian Electric's access to capital did not suffer as a result of HEI's involvement in nonutility activities and that HEI's diversification did not permanently raise or lower the cost of capital incorporated into the rates paid by Hawaiian Electric's utility customers.

In December 2018, the PUC established a set of requirements governing transactions and sharing of information between the Utilities and its affiliates (Affiliate Transaction Requirements, ATRs), which was subsequently modified and clarified in January 2019 following the Utilities' motion for reconsideration. The PUC stated the intent of the ATRs is to establish safeguards to avoid potential market power benefits, cross-subsidization between regulated and unregulated activities. The requirements include rules on interactions with affiliates, information handling, business development, political activities, promotional activities, sales of products and services, and employee sharing restrictions. The ATRs include implementing an internal code of conduct, a compliance plan including policies and procedures to comply with the requirements, and having an audit conducted every three years that examines the compliance with the requirements. Penalties for non-compliance depend on the severity of the violation, and can range from daily fines to divestiture of the Utilities by the holding company.

Other regulations. The Utilities are not subject to regulation by the FERC under the Federal Power Act, except under Sections 210 through 212 (added by Title II of PURPA and amended by the Energy Policy Act of 1992), which permit the FERC to order electric utilities to interconnect with qualifying cogenerators and small power producers, and to wheel power to other electric utilities. Title I of PURPA, which relates to retail regulatory policies for electric utilities, and Title VII of the Energy Policy Act of 1992, which addresses transmission access, also apply to the Utilities. The Utilities are also required to file various operational reports with the FERC.

Because they are located in the State of Hawaii, Hawaiian Electric and its subsidiaries are exempt by statute from limitations set forth in the Powerplant and Industrial Fuel Use Act of 1978 on the use of petroleum as a primary energy source.

See also “HEI–Regulation” above.

Environmental regulation. Hawaiian Electric, Hawaii Electric Light and Maui Electric, like other utilities, are subject to periodic inspections by federal, state and, in some cases, local environmental regulatory agencies, including agencies responsible for the regulation of water quality, air quality, hazardous and other waste and hazardous materials. These inspections may result in the identification of items needing corrective or other action. Except as otherwise disclosed in this report (see “Risk Factors” in Item 1A and Note 3 of the Consolidated Financial Statements, which are incorporated herein by reference), the Company believes that each subsidiary has appropriately responded to environmental conditions requiring action and that, as a result of such actions, such environmental conditions will not have a material adverse effect on the Company or Hawaiian Electric.

Water quality controls. The generating stations, substations and other utility facilities operate under federal and state water quality regulations and permits, including, but not limited to, the Clean Water Act National Pollution Discharge Elimination System (governing point source discharges, including wastewater and storm water discharges) and the Safe Drinking Water Act Underground Injection Control (regulating disposal of wastewater into the subsurface). On February 1, 2018, the Ninth Circuit Court of Appeals ruled that under certain circumstances, discharges from underground injection control wells may require National Pollution Discharge Elimination System permits. This case is currently pending before the U.S. Supreme Court.

Oil pollution controls. The Oil Pollution Act of 1990 (OPA) establishes programs that govern actual or threatened oil releases and imposes strict liability on responsible parties for clean-up costs and damages to natural resources and property. The federal Environmental Protection Agency (EPA) regulations under OPA require certain facilities that use or store oil to prepare and implement Spill Prevention, Control and Countermeasures (SPCC) Plans in order to prevent releases of oil to navigable waters of the U.S. Certain facilities are also required to prepare and implement Facility Response Plans (FRPs) to ensure prompt and proper response to releases of oil. The utility facilities that are subject to SPCC Plan and FRP requirements have prepared and implemented SPCC Plans and FRPs.

Air quality controls. The Clean Air Act (CAA) establishes permitting programs to reduce air pollution. The CAA amendments of 1990, established the federal Title V Operating Permit Program (in Hawaii known as the Covered Source Permit program) to ensure compliance with all applicable federal and state air pollution control requirements. The 1977 CAA Amendments established the New Source Review (NSR) permitting program, which affect new or modified generating units by requiring a permit to construct under the CAA and the controls necessary to meet the National Ambient Air Quality Standards (NAAQS).

Title V operating permits have been issued for all of the Utilities’ affected generating units.

Hazardous waste and toxic substances controls. The operations of the electric utility are subject to EPA regulations that implement provisions of the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund), the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act (TSCA).

RCRA underground storage tank (UST) regulations require all facilities that use USTs for storing petroleum products to comply with established leak detection, spill prevention, standards for tank design and retrofits, financial assurance, operator training, and tank decommissioning and closure requirements. All of the Utilities’ USTs currently meet the applicable requirements.

The Emergency Planning and Community Right-to-Know Act under SARA Title III requires the Utilities to report potentially hazardous chemicals present in their facilities in order to provide the public with information so that emergency procedures can be established to protect the public in the event of hazardous chemical releases. Since January 1, 1998, the steam electric industry category has been subject to Toxics Release Inventory (TRI) reporting requirements.

The TSCA regulations specify procedures for the handling and disposal of polychlorinated biphenyls (PCBs), a compound found in some transformer and capacitor dielectric fluids. The TSCA regulations also apply to responses to releases of PCBs to the environment. The Utilities have instituted procedures to monitor compliance with these regulations and have implemented a program to identify and replace PCB transformers and capacitors in their systems. In April 2010, the EPA issued an Advance Notice of Proposed Rule Making announcing its intent to reassess PCB regulations. The EPA has ceased activity on the PCB reassessment.

Hawaii’s Environmental Response Law (ERL), as amended, governs releases of hazardous substances, including oil, to the environment in areas within the state’s jurisdiction. Responsible parties under the ERL are jointly, severally, and strictly liable for a release of a hazardous substance. Responsible parties include owners or operators of a facility where a hazardous substance is located and any person who at the time of disposal of the hazardous substance owned or operated any facility at which such hazardous substance was disposed.

The Utilities periodically discover leaking oil-containing equipment such as USTs, piping, and transformers. Each subsidiary reports releases from such equipment when and as required by applicable law and addresses the releases in compliance with applicable regulatory requirements.

Additional information. For additional information about Hawaiian Electric, see Hawaiian Electric's MD&A, Hawaiian Electric's "Quantitative and Qualitative Disclosures about Market Risk" and Hawaiian Electric's Consolidated Financial Statements, including the Notes thereto.

Properties. As of December 31, 2018, the Utilities' ownership in generating assets was as follows:

Property	Location (island)	Principal Fuel Type	Generating Capacity (MW)	Status
Hawaiian Electric:				
Waiau[1]	Oahu	LSFO / Diesel	480.8	Active
Kahe[1]	Oahu	LSFO	620.5	Active
Campbell Industrial Park (CIP)[1]	Oahu	Diesel	130.0	Active
Honolulu Power Plant[1]	Oahu	N/A	—	Deactivated in 2014
Schofield Generating Station[2]	Oahu	Biodiesel / Ultra low sulfur diesel	49.4	Active
West Loch PV Project[3]	Oahu	Renewable	20.0	Under construction
Hawaii Electric Light[4]:				
Shipman	Hawaii	N/A	—	Retired in 2015
Waimea	Hawaii	Ultra low sulfur diesel	7.5	Active
Keahole	Hawaii	Diesel / Ultra low sulfur diesel	77.6	Active
Puna	Hawaii	MSFO / Diesel	36.7	Active
Kanoelehua	Hawaii	MSFO / Ultra low sulfur diesel	55.4	Active
Distributed generators at substation sites	Hawaii	Ultra low sulfur diesel	5.0	Active
Maui Electric[5]:				
Kahului	Maui	MSFO	35.9	Active
Maalaea	Maui	Diesel	210.4	Active
Miki Basin	Lanai	Ultra low sulfur diesel	9.4	Active
Palaau	Molokai	Ultra low sulfur diesel	12.0	Active

[1] The four plants are situated on Hawaiian Electric-owned land having a combined area of 542 acres and three parcels of land totaling 5.7 acres under leases expiring between December 31, 2018 and June 30, 2021, with options to extend to June 30, 2026.

[2] Hawaiian Electric has a 35-year lease on 8.13 acres, effective September 1, 2016 (with an option to extend an additional 10 years), with the Department of the Army.

[3] Hawaiian Electric has a 37-year lease, effective July 1, 2017, with the Secretary of the Navy to install, operate and maintain a 20 MW renewable generation site on 102 acres.

[4] The plants (including a baseyard on the same parcel as the Hilo plant) are situated on Hawaii Electric Light-owned land having a combined area of approximately 44 acres. The distributed generators are located within Hawaii Electric Light-owned substation sites having a combined area of approximately four acres.

[5] The four plants are situated on Maui Electric-owned land having a combined area of 60.7 acres.

As of December 31, 2018, the Utilities ownership in fuel storage facilities was as follows:

Facility	Location (island)	Fuel Type	Capacity (barrels in thousands)	Generation Serviced
Hawaiian Electric:				
Barbers Point Tank Farm	Oahu	Low sulfur fuel oil	1,000	Kahe, Waiau
Generation sites - various (in aggregate)	Oahu	Low sulfur fuel oil	770	Various
Generation sites - various (in aggregate)	Oahu	Diesel	44	Various
Generation sites - various (in aggregate)	Oahu	Biodiesel	88	Various
Hawaii Electric Light[1]:				
Generation sites - various (in aggregate)	Hawaii	Medium sulfur fuel oil	48	Various
Generation sites - various (in aggregate)	Hawaii	Diesel	82	Various
Maui Electric[2]:				
Generation sites - various (in aggregate)	Maui	Medium sulfur fuel oil	81	Various
Generation sites - various (in aggregate)	Maui	Diesel	95	Various

[1] There are an additional 19,200 barrels of diesel and 22,770 barrels of MSFO storage capacity for Hawaii Electric Light-owned fuel off-site at Island Energy Services, LLC (Island Energy)-owned terminalling facilities (previously Chevron-owned).

[2] There are an additional 56,358 barrels of diesel oil storage capacity off-site at Aloha Petroleum, Ltd. (Aloha Petroleum)-owned terminalling facilities.

Other properties. The Utilities own overhead transmission and distribution lines, underground cables, pole (some jointly) and metal high voltage towers. Electric lines are located over or under public and nonpublic properties. Hawaiian Electric owns a total of 132 acres of land on which substations, transformer vaults, distribution baseyards and the Kalaeloa cogeneration facility are located. Hawaiian Electric also owns buildings and approximately 11.6 acres of land located in Honolulu which house its operating and engineering departments. It also leases an office building and certain office spaces in Honolulu, and a warehousing center in Kapolei.

Hawaii Electric Light owns 6 acres of land in Kona, which is used for a baseyard, and one acre of land in Hilo, which houses its accounting, customer services and administrative offices. Hawaii Electric Light also leases 3.7 acres of land for its baseyard in Hilo under a lease expiring in 2030. In addition, Hawaii Electric Light owns a total of approximately 100 acres of land, and leases a total of approximately 8.5 acres of land, on which hydro facilities, substations and switching stations, microwave facilities and transmission lines are located. The deeds to the sites located in Hilo contain certain restrictions, but the restrictions do not materially interfere with the use of the sites for public utility purposes.

Maui Electric’s administrative offices, as well as its engineering and distribution departments, are situated on 9.1 acres of Maui Electric-owned land in Kahului. Maui Electric also owns approximately 18 acres of land which house some of its substations, leases approximately 3,600 square feet of land for its telecommunication and microwave facilities, leases approximately 6,000 square feet of land at Kahului Harbor for pipeline purposes, and leases 17,958 square feet of land at Puunene for the Puunene Substation. Maui Electric also owns approximately 89 acres of undeveloped land at Waena, Palaau, and Kahului. Fuel storage facilities are located on Maui Electric-owned properties at Kahului Baseyard, Kahului Power Plant, Maalaea Power Plant, Miki Basin, Palaau, and Hana. Two, 1-MW stand-by diesel generators are located within the Maui Electric-owned land at Hana Substation.

See “Hawaiian Electric and subsidiaries and service areas” above for a discussion of the nonexclusive franchises of Hawaiian Electric and subsidiaries.

See “Generation statistics” above and “Limited insurance” in HEI’s MD&A for a further discussion of some of the electric utility properties.

Bank

General. ASB is one of the largest financial institutions headquartered in the State of Hawaii with assets of $7.0 billion and deposits of $6.2 billion, as of December 31, 2018. ASB is a full-service community bank serving both consumer and commercial customers and operates 49 branches on the islands of Oahu (34), Maui (6), Hawaii (5), Kauai (3), and Molokai (1). ASB was acquired by HEI in 1988, and prior to its acquisition, ASB was granted a federal savings bank charter in January 1987. Prior to that time, ASB had operated since 1925 as the Hawaii division of American Savings & Loan Association of Salt Lake City, Utah.

In 2018, ASB's revenues and net income amounted to approximately 11% and 41% of HEI's consolidated revenues and net income, respectively, compared to approximately 12% and 41% in 2017 and approximately 12% and 23% in 2016 (impacted by the merger termination fee).

At the time of HEI's acquisition of ASB, HEI agreed with the Office of Thrift Supervision, Department of Treasury's (OTS) predecessor regulatory agency that ASB's regulatory capital would be maintained at a level of at least 6% of ASB's total liabilities, or at such greater amount as may be required from time to time by regulation. Under the agreement, HEI's obligation to contribute additional capital to ensure that ASB would have the capital level required by the OTS was limited to a maximum aggregate amount of approximately $65.1 million. As of December 31, 2018, as a result of certain HEI contributions of capital to ASB over the years, HEI's maximum obligation under the agreement to contribute additional capital has been reduced to approximately $28.3 million. ASB is subject to OCC regulations on dividends and other distributions and ASB must receive a letter from the FRB communicating the OCC's and FRB's non-objection to the payment of any dividend ASB proposes to declare and pay to ASB Hawaii and HEI.

The following table sets forth selected data for ASB (average balances calculated using the average daily balances):

Years ended December 31	2018	2017	2016
Equity to assets ratio			
Average equity divided by average total assets	8.86 %	9.10 %	9.34 %
Return on assets			
Net income divided by average total assets	1.20	1.02	0.92
Return on equity			
Net income divided by average equity	13.51	11.20	9.90

Lending activities. See Note 4 of the Consolidated Financial Statements for the composition of ASB's loan portfolio.

Origination, purchase and sale of loans. Generally, residential and commercial real estate loans originated by ASB are collateralized by real estate located in Hawaii. For additional information, including information concerning the geographic distribution of ASB's mortgage-backed securities portfolio and the geographic concentration of credit risk, see Note 14 of the Consolidated Financial Statements. The demand for loans is primarily dependent on the Hawaii real estate market, business conditions, interest rates and loan refinancing activity.

Residential mortgage lending. ASB originates fixed rate and adjustable rate loans secured by single family residential property, including investor-owned properties, with maturities of up to 30 years. ASB's general policy is to require private mortgage insurance when the loan-to-value ratio of the property exceeds 80% of the lower of the appraised value or purchase price at origination. For non-owner-occupied residential properties, the loan-to-value ratio may not exceed 80% of the lower of the appraised value or purchase price at origination.

Construction and development lending. ASB provides fixed rate loans for the construction of one-to-four unit residential and commercial properties. Construction loan projects are typically short term in nature. Construction and development financing generally involves a higher degree of credit risk than long-term financing on improved, occupied real estate. Accordingly, construction and development loans are generally priced higher than loans collateralized by completed structures. ASB's underwriting, monitoring and disbursement practices with respect to construction and development financing are designed to ensure sufficient funds are available to complete construction projects. See "Bank—Loan portfolio risk elements" in HEI's MD&A and "Multifamily residential and commercial real estate lending" below.

Multifamily residential and commercial real estate lending. ASB provides permanent financing and construction and development financing collateralized by multifamily residential properties (including apartment buildings) and collateralized by commercial and industrial properties (including office buildings, shopping centers and warehouses) for its own portfolio as well as for participation with other lenders. Commercial real estate lending typically involves long lead times to originate and fund. As a result, production results can vary significantly from period to period.

Consumer lending. ASB offers a variety of secured and unsecured consumer loans. Loans collateralized by deposits are limited to 90% of the available account balance. ASB offers home equity lines of credit, clean energy loans, secured and unsecured VISA cards (through a third party issuer), checking account overdraft protection and other general purpose consumer loans.

Commercial lending. ASB provides both secured and unsecured commercial loans to business entities. This lending activity is designed to diversify ASB's asset structure, shorten maturities, improve rate sensitivity of the loan portfolio and attract commercial checking deposits. ASB offers commercial loans with terms up to ten years.

Loan origination fee and servicing income. In addition to interest earned on residential mortgage loans, ASB receives income from servicing loans, for late payments and from other related services. Servicing fees are received on loans originated and subsequently sold by ASB where ASB acts as collection agent on behalf of third-party purchasers. ASB charges the borrower at loan settlement a loan origination fee. See “Loans” in Note 1 of the Consolidated Financial Statements.

Deposits and sources of funds. Deposits continue to be the largest source of funds for ASB for use in lending, meeting liquidity requirements and making investments, and are affected by market interest rates, competition and management’s responses to these factors. Deposit retention and growth will remain challenging in the current environment due to competition for deposits and the low level of short-term interest rates. ASB borrows on a short-term basis to compensate for seasonal or other reductions in deposit flows. ASB may borrow on a longer-term basis to support expanded lending or investment activities. Advances from the FHLB of Des Moines and securities sold under agreements to repurchase continue to be additional sources of funds, but they are a higher cost source than deposits.

Competition. The banking industry in Hawaii is highly competitive. At December 31, 2018, there were 8 financial institutions insured by the FDIC headquartered in the State of Hawaii. While ASB is one of the largest financial institutions in Hawaii, based on total assets, ASB faces vigorous competition for deposits and loans from two larger banking institutions based in Hawaii and from smaller institutions that heavily promote their services in niche areas, such as providing financial services to small and medium-sized businesses, as well as national financial services organizations. Competition for loans and deposits comes primarily from other savings institutions, commercial banks, credit unions, securities brokerage firms, money market and mutual funds and other investment alternatives. ASB faces additional competition in seeking deposit funds from various types of corporate and government borrowers, including insurance companies. Competition for origination of mortgage loans comes primarily from mortgage banking and brokerage firms, commercial banks, other savings institutions, insurance companies and real estate investment trusts. See also “Bank—Executive overview and strategy” in HEI’s MD&A.

To remain competitive and continue building core franchise value, ASB continues to develop and introduce new products and services to meet the needs of its consumer and commercial customers. Additionally, the banking industry is constantly changing and ASB is making the investment in its people and technology necessary to adapt and remain competitive.

The primary factors in ASB’s competition for mortgage and other loans are the competitive interest rates and loan origination fees it charges, the wide variety of loan programs it offers and the quality and efficiency of the services it provides to borrowers and the business community. ASB believes that it is able to compete for such loans primarily through the competitive interest rates and loan fees it charges, the type of mortgage loan programs it offers and the efficiency and quality of the services it provides to individual borrowers and the business community.

The primary factors in competing for deposits are interest rates, the quality and range of services offered, marketing, convenience of locations, hours of operation, other non-branch channels such as online and mobile banking and perceptions of the institution’s financial soundness and safety. To meet competition, ASB offers a variety of savings and checking accounts at competitive rates, convenient business hours, convenient branch locations with interbranch deposit and withdrawal privileges at each branch, convenient automated teller machines and an upgrade of the ASB’s electronic banking platform. ASB also conducts advertising and promotional campaigns.

ASB has been diversifying its loan portfolio from single-family home mortgages to higher-spread, shorter-duration consumer, commercial and commercial real estate loans. The origination of consumer, commercial and commercial real estate loans involves risks and other considerations different from those associated with originating residential real estate loans. For example, the sources and level of competition may be different and credit risk is generally higher than for residential mortgage loans. These different risk factors are considered in the underwriting and pricing standards and in the allowance for loan losses established by ASB for its consumer, commercial and commercial real estate loans.

Regulation. ASB, a federally chartered saving bank, is subject to examination and comprehensive regulation by the Department of Treasury, OCC and the FDIC, and is subject to reserve requirements established by the Board of Governors of the Federal Reserve System. Regulation by these agencies focuses in large measure on the adequacy of

ASB's capital and the results of periodic "safety and soundness" examinations conducted by the OCC. In addition, ASB's holding companies are subject to the regulatory supervision of the FRB. See "HEI Consolidated–Regulation" above.
Capital requirements. The OCC, ASB's principal regulator, administers two sets of capital standards — minimum regulatory capital requirements and prompt corrective action requirements. The FDIC also has prompt corrective action capital requirements. As of December 31, 2018, ASB was in compliance with OCC minimum regulatory capital requirements and was "well-capitalized" within the meaning of OCC prompt corrective action regulations and FDIC capital regulations, as follows:

- ASB met applicable minimum regulatory capital requirements (noted in parentheses) as of December 31, 2018 with a Tier 1 leverage ratio of 8.7% (4.0%), a common equity Tier 1 capital ratio of 12.8% (4.5%), a Tier 1 capital ratio of 12.8% (6.0%) and a total capital ratio of 13.9% (8.0%).
- ASB met the capital requirements to be generally considered “well-capitalized” (noted in parentheses) as of December 31, 2018 with a Tier 1 leverage ratio of 8.7% (5.0%), a common equity Tier 1 capital ratio of 12.8% (6.5%), a Tier 1 capital ratio of 12.8% (8.0%) and a total capital ratio of 13.9% (10.0%).

The purpose of the prompt corrective action capital requirements is to establish thresholds for varying degrees of oversight and intervention by regulators. Declines in levels of capital, depending on their severity, will result in increasingly stringent mandatory and discretionary regulatory consequences. Capital levels may decline for any number of reasons, including reductions that would result if there were losses from operations, deterioration in collateral values or the inability to dispose of real estate owned (typically acquired by foreclosure). The regulators have substantial discretion in the corrective actions they might direct and could include restrictions on dividends and other distributions that ASB may make to HEI (through ASB Hawaii) and the requirement that ASB develop and implement a plan to restore its capital. Under an agreement with regulators entered into by HEI when it acquired ASB, HEI currently could be required to contribute to ASB up to an additional $28.3 million of capital, if necessary, to maintain ASB’s capital position.

In order to avoid restrictions on capital distributions and discretionary bonus payments to executive officers, a financial institution must hold a buffer of common equity tier 1 capital above its minimum capital requirements in an amount greater than 2.5% of total risk-weighted assets (capital conservation buffer) which is phased-in through 2019. As of December 31, 2018, ASB met the applicable capital requirements, including the fully phased-in capital conservation buffer.

See “Bank-Legislation and regulation” in HEI’s MD&A for the final capital rules under the Basel III regulatory capital framework.

Examinations. ASB is subject to periodic “safety and soundness” examinations and other examinations by the OCC. In conducting its examinations, the OCC utilizes the Uniform Financial Institutions Rating System adopted by the Federal Financial Institutions Examination Council, which system utilizes the “CAMELS” criteria for rating financial institutions. The six components in the rating system are: Capital adequacy, Asset quality, Management, Earnings, Liquidity and Sensitivity to market risk. The OCC examines and rates each CAMELS component. An overall CAMELS rating is also given, after taking into account all of the component ratings. A financial institution may be subject to formal regulatory or administrative direction or supervision such as a “memorandum of understanding” or a “cease and desist” order following an examination if its CAMELS rating is not satisfactory. An institution is prohibited from disclosing the OCC’s report of its safety and soundness examination or the component and overall CAMELS rating to any person or organization not officially connected with the institution as an officer, director, employee, attorney or auditor, except as provided by regulation. The OCC also regularly examines ASB’s information technology practices and its performance under Community Reinvestment Act measurement criteria.

The Federal Deposit Insurance Act, as amended, addresses the safety and soundness of the deposit insurance system, supervision of depository institutions and improvement of accounting standards. Pursuant to this Act, federal banking agencies have promulgated regulations that affect the operations of ASB and its holding companies (e.g., standards for safety and soundness, real estate lending, accounting and reporting, transactions with affiliates and loans to insiders).

FDIC regulations restrict the ability of financial institutions that fail to meet relevant capital measures to engage in certain activities, such as offering interest rates on deposits that are significantly higher than the rates offered by competing institutions. As of December 31, 2018, ASB was “well-capitalized” and thus not subject to these restrictions.

Deposit insurance coverage. The Federal Deposit Insurance Act, as amended, and regulations promulgated by the FDIC, govern insurance coverage of deposit accounts. In July 2010, the Dodd-Frank Act permanently raised the current standard maximum deposit insurance amount to $250,000. Generally, the amount of all deposits held by a depositor in the same capacity (even if held in separate accounts) is aggregated for purposes of applying the insurance limit.

See “Federal Deposit Insurance Corporation assessment” in Note 4 of the Consolidated Financial Statements for a discussion of FDIC deposit insurance assessment rates. Financing Corporation will continue to impose an assessment on average total assets minus average tangible equity to service the interest on Financing Corporation bond obligations. As of December 31, 2018, ASB's annual Financing Corporation assessment was 0.31 cents per $100 of average total assets minus average tangible equity.

Recent legislation and issuances. See "Bank–Legislation and regulation" in HEI's MD&A.

Affiliate transactions. Significant restrictions apply to certain transactions between ASB and its affiliates, including HEI and its direct and indirect subsidiaries. For example, ASB is prohibited from making any loan or other extension of credit to an entity affiliated with ASB unless the affiliate is engaged exclusively in activities which the FRB has determined to be permissible for bank holding companies. There are also various other restrictions which apply to certain transactions between ASB and certain executive officers, directors and insiders of ASB. ASB is also barred from making a purchase of or any investment in securities issued by an affiliate, other than with respect to shares of a subsidiary of ASB.

Financial derivatives and interest rate risk. ASB is subject to OCC rules relating to derivatives activities, such as interest rate swaps, interest rate lock commitments and forward commitments. See “Derivative financial instruments” in Note 4 of the Consolidated Financial Statements for a description of interest rate lock commitments and forward commitments used by ASB. Currently ASB does not use interest rate swaps to manage interest rate risk (IRR), but may do so in the future. Generally speaking, the OCC rules permit financial institutions to engage in transactions involving financial derivatives to the extent these transactions are otherwise authorized under applicable law and are safe and sound. The rules require ASB to have certain internal procedures for handling financial derivative transactions, including involvement of the ASB Board of Directors.

With the transfer of the regulatory jurisdiction from the OTS to the OCC, ASB has adopted terminology and IRR assessment, measurement and management practices consistent with OCC guidelines. Management believes ASB’s IRR processes are aligned with the Interagency Advisory on Interest Rate Risk Management and appropriate with earnings and capital levels, balance sheet complexity, business model and risk tolerance.

Liquidity. OCC regulations require ASB to maintain sufficient liquidity to ensure safe and sound operations. ASB’s principal sources of liquidity are customer deposits, borrowings, the maturity and repayment of portfolio loans and securities and the sale of loans into secondary market channels. ASB’s principal sources of borrowings are advances from the FHLB of Des Moines and securities sold under agreements to repurchase from broker/dealers. ASB is approved by the FHLB of Des Moines to borrow an amount of up to 35% of assets to the extent it provides qualifying collateral and holds sufficient FHLB of Des Moines stock. As of December 31, 2018, ASB’s unused FHLB of Des Moines borrowing capacity was approximately $2.0 billion. ASB utilizes growth in deposits, advances from the FHLB of Des Moines and securities sold under agreements to repurchase to fund maturing and withdrawable deposits, repay maturing borrowings, fund existing and future loans and make investments. As of December 31, 2018, ASB had loan commitments, undisbursed loan funds and unused lines and letters of credit of $1.9 billion. Management believes ASB’s current sources of funds will enable it to meet these obligations while maintaining liquidity at satisfactory levels.

Supervision. The Federal Deposit Insurance Corporation Improvement Act of 1991 (the FDICIA) establishes a statutory framework that is triggered by the capital level of a financial institution and subjects it to progressively more stringent restrictions and supervision as capital levels decline. The OCC rules implement the system of prompt corrective action. In particular, the rules define the relevant capital measures for the categories of “well capitalized,” “adequately capitalized,” “undercapitalized,” “significantly undercapitalized” and “critically undercapitalized.” As of December 31, 2018, ASB was “well-capitalized.”

Interest rates. FDIC regulations restrict the ability of financial institutions that are undercapitalized to offer interest rates on deposits that are significantly higher than the rates offered by competing institutions. As of December 31, 2018, ASB was “well capitalized” and thus not subject to these interest rate restrictions.

Qualified thrift lender test. ASB is a “qualified thrift lender” (QTL) under its federal thrift charter and, in order to maintain this status, ASB is required to maintain at least 65% of its assets in “qualified thrift investments,” measured on a monthly average basis in 9 out of the previous 12 months, which include housing-related loans (including mortgage-backed securities) as well as certain small business loans, education loans, loans made through credit card accounts and a basket (not exceeding 20% of total assets) of other consumer loans and other assets. Institutions that fail to maintain QTL status are subject to various penalties, including limitations on their activities. In ASB’s case, the activities of HEI, ASB Hawaii and HEI’s other subsidiaries would also be subject to restrictions if ASB failed to maintain its QTL status, and a failure or inability to comply with those restrictions could effectively result in the required divestiture of ASB. As of December 31, 2018, and at all times during 2018, ASB was a qualified thrift lender.

Federal Home Loan Bank System. ASB is a member of the FHLB System, which consists of 11 regional FHLBs, and ASB's regional bank is the FHLB of Des Moines. The FHLB System provides a central credit facility for member institutions. Historically, the FHLBs have served as the central liquidity facilities for savings associations and sources of long-term funds for financing housing. At such time as an advance is made to ASB or renewed, it must be collateralized by collateral from one of the following categories: (1) fully disbursed, whole first mortgages on improved residential property, or securities representing a whole interest in such mortgages; (2) securities issued, insured or guaranteed by the U.S. Government or any agency thereof; (3) FHLB deposits; and (4) other real estate-related collateral that has a readily ascertainable value and with respect to which a security interest can be perfected. The aggregate amount of outstanding advances collateralized by such other real estate-related collateral may not exceed 300% of ASB's capital.

ASB's required holding in the stock of the FHLB is both membership and activity-based. Membership is based on a percentage of total assets (0.12%) while the portion related to activity is based on a percentage of outstanding activity, mainly advances (4%). As of December 31, 2018, ASB was required and owned capital stock in the FHLB of Des Moines in the amount of $10 million.

Community Reinvestment. The Community Reinvestment Act (CRA) requires financial institutions to help meet the credit needs of their communities, including low- and moderate-income areas, consistent with safe and sound lending practices. The OCC will consider ASB's CRA record in evaluating an application for a new deposit facility, including the establishment of a branch, the relocation of a branch or office, or the acquisition of an interest in another bank. ASB currently holds an "outstanding" CRA rating.

Other laws. ASB is subject to federal and state consumer protection laws which affect deposit and lending activities, such as the Truth in Lending Act (TILA), the Truth in Savings Act, the Equal Credit Opportunity Act, the Real Estate Settlement Procedures Act (RESPA), the Home Mortgage Disclosure Act and several federal and state financial privacy acts intended to protect consumers' personal information and prevent identity theft, such as the Gramm Act and the Fair and Accurate Transactions Act. ASB is also subject to federal laws regulating certain of its lending practices, such as the Flood Disaster Protection Act, and laws requiring reports to regulators of certain customer transactions, such as the Currency and Foreign Transactions Reporting Act and the International Money Laundering Abatement and Anti-Terrorist Financing Act. ASB's relationship with Cetera Investment Services LLC and Cetera Investment Advisers LLC is also governed by regulations adopted by the FRB under the Gramm Act, which regulate "networking" relationships under which a financial institution refers customers to a broker-dealer for securities services and employees of the financial institution are permitted to receive a nominal fee for the referrals. These laws may provide for substantial penalties in the event of noncompliance.

Proposed legislation. See the discussion of proposed legislation in "Bank–Legislation and regulation" in HEI's MD&A.

Environmental regulation. ASB may be subject to the provisions of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Hawaii Environmental Response Law (ERL) and regulations promulgated thereunder, which impose liability for environmental cleanup costs on certain categories of responsible parties. CERCLA and ERL exempt persons whose ownership in a facility is held primarily to protect a security interest, provided that they do not participate in the management of the facility.

Additional information. For additional information about ASB, see the sections under "Bank" in HEI's MD&A, HEI's "Quantitative and Qualitative Disclosures about Market Risk" and HEI's Consolidated Financial Statements, including Note 4 thereto.

Properties. ASB owns or leases several office buildings in downtown Honolulu, owns land and an operations center in the Mililani Technology Park on the island of Oahu and owns land on which a number of its branches are located. The following table sets forth the number of bank branches owned and leased by ASB by island:

	Number of branches		
December 31, 2018	Owned	Leased	Total
Oahu	8	26	34
Maui	3	3	6
Hawaii	3	2	5
Kauai	2	1	3
Molokai	—	1	1
	16	33	49

As of December 31, 2018, the net book value (NBV) of branches and office facilities was $190 million ($184 million NBV of the land and improvements for the branches and office facilities owned by ASB and $6 million represents the NBV of ASB's leasehold improvements). The increase as of December 31, 2018 is primarily due to the construction costs of the new headquarters. As of December 31, 2017, the NBV of branches and office facilities of $75 million ($68 million NBV of the land and improvements for the branches and office facilities owned by ASB and $7 million represents the NBV of ASB's leasehold improvements). The leases expire on various dates through December 2040, but many of the leases have extension provisions.

As of December 31, 2018, ASB owned 113 automated teller machines.

Construction of New Headquarters. In the first quarter of 2017, ASB began construction of its new headquarters in downtown Honolulu. The project will cost an estimated $115 million and ASB expects to move into the facility in the first half of 2019. The headquarters will have approximately 370,000 square feet of space on eleven floors and consolidate five separate offices into one building where approximately 600 employees will work. In January 2019, ASB signed an agreement with a real estate broker to list two office facilities for sale as a result of the consolidation of employees into the new headquarters.

ITEM 1A. RISK FACTORS

The businesses of HEI and its subsidiaries involve numerous risks which, if realized, could have a material and adverse effect on the Company's financial statements. For additional information for certain risk factors enumerated below and other risks of the Company and its operations, see "Cautionary Note Regarding Forward-Looking Statements" above and HEI's MD&A, HEI's "Quantitative and Qualitative Disclosures about Market Risk," the Notes to the Consolidated Financial Statements, Hawaiian Electric's MD&A and Hawaiian Electric's "Quantitative and Qualitative Disclosures About Market Risk."

Holding company and company-wide risks.

HEI is a holding company that derives its income from its operating subsidiaries and depends on the ability of those subsidiaries to pay dividends or make other distributions to HEI and on its own ability to raise capital. HEI is a legal entity separate and distinct from its various subsidiaries. As a holding company with no significant operations of its own, HEI's cash flows and consequent ability to service its obligations and pay dividends on its common stock is dependent upon its receipt of dividends or other distributions from its operating subsidiaries and its ability to issue common stock or other equity securities and to incur additional debt. The ability of HEI's subsidiaries to pay dividends or make other distributions to HEI, in turn, is subject to the risks associated with their operations and to contractual and regulatory restrictions, including:

- the provisions of an HEI agreement with the PUC, which could limit the ability of HEI's principal electric public utility subsidiary, Hawaiian Electric, to pay dividends to HEI in the event that the consolidated common stock equity of the Utilities falls below 35% of total capitalization of the electric utilities;
- the provisions of an HEI agreement entered into with federal bank regulators in connection with its acquisition of its bank subsidiary, ASB, which require HEI to contribute additional capital to ASB (up to a maximum amount of additional capital of $28.3 million as of December 31, 2018 under the Regulatory Capital Maintenance/Dividend Agreement dated May 26, 1988, between HEI, HEIDI and the Federal Savings and Loan Insurance Corporation) upon request of the regulators in order to maintain ASB's regulatory capital at the level required by regulation;
- the minimum capital and capital distribution regulations of the OCC that are applicable to ASB and capital regulations that become applicable to HEI and ASB Hawaii;
- the receipt of a letter from the FRB communicating the OCC's and FRB's non-objection to the payment of any dividend ASB proposes to declare and pay to ASB Hawaii and HEI; and
- the provisions of preferred stock resolutions and debt instruments of HEI and its subsidiaries.

The Company, and its credit rating, is subject to risks associated with the Hawaii economy (in the aggregate and on an individual island basis), volatile U.S. capital markets and changes in the interest rate and credit market environment that have or could result in higher retirement benefit plan funding requirements, declines in ASB's interest rate margins and investment values, higher delinquencies and charge-offs in ASB's loan portfolio and restrictions on the ability of HEI or its subsidiaries to borrow money or issue securities. The two largest components of Hawaii's economy are tourism and the federal government (including the military). Because the core businesses of HEI's subsidiaries are providing local public electric utility services (through Hawaiian Electric and its subsidiaries) and banking services (through ASB) in Hawaii, the Company's operating results are significantly influenced by Hawaii's economy, which in turn is influenced by economic conditions in the mainland U.S. (particularly California) and Asia (particularly Japan) as a result of the impact of those conditions on tourism, by the impact of interest rates on the construction and real estate industries and by the impact of federal government spending in Hawaii, which can be affected by world conditions and, from time to time, the expiration of federal government appropriations bills.

HEI's and Hawaiian Electric's securities ratings only reflect the view, at the time the ratings are issued, of the applicable rating agency. There is no assurance that any such credit rating will remain in effect for any given period of time or that such rating will not be lowered, suspended or withdrawn entirely by the applicable rating agency if, in such rating agency's judgment, circumstances, such as current, past or future effects or events so warrant. Any such lowering, suspension or withdrawal of any rating may have an adverse effect on the availability of capital to the

Company or the market price or marketability of HEI’s and/or Hawaiian Electric’s securities, which could increase the cost of capital of HEI and Hawaiian Electric, and such increased costs, including interest charges, under HEI’s and/or Hawaiian Electric’s debt securities and credit facilities, would result in reductions in HEI’s consolidated net income in future periods. Further, if HEI’s or Hawaiian Electric’s commercial paper ratings were to be downgraded, HEI and Hawaiian Electric might not be able to sell commercial paper and might be required to draw on more expensive bank lines of credit or to defer capital or other expenditures. Neither HEI nor Hawaiian Electric management can predict future rating agency actions or their effects on the future cost of capital of HEI or Hawaiian Electric.

Changes in the U.S. capital markets can also have significant effects on the Company. For example, pension funding requirements are affected by the market performance of the assets in the master pension trust maintained for pension plans, and by the discount rate used to estimate the service and interest cost components of net periodic pension cost and value obligations. The Utilities' pension tracking mechanisms help moderate pension expense; however, the significant decline in 2008 in the value of the Company's defined benefit pension plan assets resulted in a substantial gap between the projected benefit obligations under the plans and the value of plan assets, resulting in increases in funding requirements. The increases have moderated in recent years as investment performance has improved.

Because the earnings of ASB depend primarily on net interest income, interest rate risk is a significant risk of ASB's operations. HEI and the Utilities are also exposed to interest rate risk primarily due to their periodic borrowing requirements, the discount rate used to determine pension funding requirements and the possible effect of interest rates on the electric utilities' rates of return. Interest rates are sensitive to many factors, including general economic conditions and the policies of government and regulatory authorities. HEI cannot predict future changes in interest rates, nor be certain that interest rate risk management strategies it or its subsidiaries have implemented will be successful in managing interest rate risk.

Interest rate risk also represents a market risk factor affecting the fair value of ASB's investment securities. Increases and decreases in prevailing interest rates generally translate into decreases and increases in the fair values of those instruments, respectively. Disruptions in the credit markets, a liquidity crisis in the banking industry or increased levels of residential mortgage delinquencies and defaults may result in decreases in the fair value of ASB's investment securities and an impairment that is other-than-temporary, requiring ASB to write down its investment securities. As of December 31, 2018, ASB's investment in U.S. Treasury, federal agency obligations, and mortgage-backed securities have an implicit guarantee from the U.S. government.

HEI and Hawaiian Electric and their subsidiaries may incur higher retirement benefits expenses and have and will likely continue to recognize substantial liabilities for retirement benefits. Retirement benefits expenses and cash funding requirements could increase in future years depending on numerous factors, including, but not limited to, the performance of the U.S. equity markets, trends in interest rates and health care costs, plan amendments, mortality improvements, new laws relating to pension funding and changes in accounting principles. For the Utilities, however, retirement benefits expenses, as adjusted by the pension and postretirement benefits other than pensions (OPEB) tracking mechanisms, have been an allowable expense for rate-making purposes.

The Company is subject to the risks associated with the geographic concentration of its businesses and current lack of interconnections that could result in service interruptions at the Utilities or higher default rates on loans held by ASB. The business of the Utilities is concentrated on the individual islands they serve in the State of Hawaii. Their operations are more vulnerable to service interruptions than are many U.S. mainland utilities because none of the systems of the Utilities are interconnected with the systems on the other islands they serve. Because of this lack of interconnections, it is necessary to maintain higher generation reserve margins than are typical for U.S. mainland utilities to help ensure reliable service. Service interruptions, including in particular extended interruptions that could result from a natural disaster or terrorist activity, could adversely impact the revenues and costs of some or all of the Utilities.

Substantially all of ASB's consumer loan customers are Hawaii residents. A significant portion of the commercial loan customers are located in Hawaii. While a majority of customers are on Oahu, ASB also has customers on the neighbor islands (whose economies have been weaker than Oahu during the last economic downturn). Substantially all of the real estate underlying ASB's residential and commercial real estate loans are located in Hawaii. These assets may be subject to a greater risk of default than other comparable assets held by financial institutions with other geographic concentrations in the event of adverse economic, political or business developments or natural disasters affecting Hawaii and the ability of ASB's customers to make payments of principal and interest on their loans.

Increasing competition and technological advances could cause HEI's businesses to lose customers or render their operations obsolete. The banking industry in Hawaii, and certain aspects of the electric utility industry, are competitive. The success of HEI's subsidiaries in meeting competition and responding to technological advances will continue to have a direct impact on HEI's consolidated financial performance. For example:

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ASB, one of the largest financial institutions in the state, is in direct competition for deposits and loans not only with two larger institutions that have substantial capital, technology and marketing resources, but also with smaller Hawaii institutions and other U.S. institutions, including credit unions, mutual funds, mortgage brokers, finance companies and investment banking firms. Larger financial institutions may have greater access to capital at lower costs, which could impair ASB's ability to compete effectively. New or significant advances in technology (e.g., significant advances in internet banking) could render the operations of ASB less competitive or obsolete.

- The Utilities face competition from IPPs; customer self-generation, with or without cogeneration; customer energy storage; and the potential formation of community-based, cooperative ownership or municipality structures for electrical service on all islands it serves. With the exception of certain identified projects, the Utilities are required to use competitive bidding to acquire a future generation resource unless the PUC finds competitive bidding to be unsuitable. The PUC set policies for distributed generation (DG) interconnection agreements and standby rates. The results of competitive bidding, competition from IPPs, customer self-generation, and potential cooperative ownership or municipality structures for electric utility service, and the rate at which technological developments facilitating nonutility generation of electricity, combined heat and power technology, off-grid microgrids, and customer energy storage may render the operations of the Utilities less competitive or outdated and adversely affect the Utilities and the results of their operations.

The Company may be subject to information technology and operational system failures, network disruptions, cyber attacks and breaches in data security that could adversely affect its businesses and reputation. The Company and its subsidiaries rely on information technology systems, some of which are managed or hosted by third party service providers, to manage its business data, communications, and other business processes. Such information technology systems may be vulnerable to cyberattacks or other security incidents, which could result in unauthorized access to confidential data or disruptions to operations. If the Company is unable to prevent or adequately respond to and resolve an incident, it may have a material impact on the Company’s operations or business reputation.

Utilities. The Utilities rely on evolving and increasingly complex operational and information systems, networks and other technologies, which are interconnected with the systems and network infrastructure owned by third parties to support a variety of business processes and activities, including procurement and supply chain, invoicing and collection of payments, customer relationship management, human resource management, the acquisition, generation and delivery of electrical service to customers, and to process financial information and results of operations for internal reporting purposes and to comply with regulatory financial reporting and legal and tax requirements. The Utilities use their systems and infrastructure to create, collect, store, and process sensitive information, including personal information regarding customers, employees and their dependents, retirees, and other individuals. Despite the Utilities security measures, all of their systems are vulnerable to disability, failures or unauthorized access caused by natural disasters, cybersecurity incidents, security breaches, user error, unintentional defects created by system changes, military or terrorist actions, power or communication failures or similar events. Any such failure could have a material adverse impact on the Utilities ability to process transactions and provide service, as well the Utilities’ financial condition and results of operations. Further, a data breach involving theft, improper disclosure, or other unauthorized access to or acquisition of confidential information could subject the Utilities to penalties for violation of applicable privacy laws, claims by third parties, and enforcement actions by government agencies. It could also reduce the value of proprietary information, and harm the reputation of the Utilities.

As noted by the U.S. Department of Homeland Security, the utility industry is continuing to experience an increase in the frequency and sophistication of cybersecurity incidents. The Utilities’ systems have been, and will likely continue to be, a target of attacks. Further, the Utilities’ operational networks may be subject to new cybersecurity risks due to modernizing and interconnecting existing infrastructure with new technologies and control systems, including those owned by third parties. Although the Utilities have not experienced a material cybersecurity breach to date, such incidents may occur and may have a material adverse effect on the Utilities in the future. In order to address cybersecurity risks to their information systems, the Utilities maintain security measures designed to protect their information technology systems, network infrastructure and other assets. The Utilities actively monitor developments in the area of cybersecurity and are involved in various related government and industry groups, and brief the Board quarterly on relevant cybersecurity issues. Although the Utilities continue to make investments in their cybersecurity program, including personnel, technologies, cyber insurance and training of Utilities personnel, there can be no assurance that these systems or their expected functionality will be implemented, maintained, or expanded effectively; nor can security measures completely eliminate the possibility of a cybersecurity breach. The Utility maintains cyber liability insurance that covers certain damages caused by cyber incidents. However, there is no guarantee that adequate insurance will continue to be available at rates the Utility believes are reasonable or that the costs of responding to and recovering from a cyber incident will be covered by insurance or recoverable in rates. If the Utilities’ cybersecurity measures were to be breached, the Utilities could suffer financial loss, business disruptions, liability to customers, regulatory intervention or damage to their reputation.

Due to the size, scope and complexity of the Utilities’ business, the development and maintenance of information technology systems to process and track information is critical and challenging. The Utilities often rely on third-party vendors to host, maintain, modify, and update its systems and these third-party vendors could cease to exist, fail to establish adequate processes to protect the Utilities systems and information, or experience internal or external security incidents. In addition, the Utilities are pursuing complex business transformation initiatives, which include establishing common processes across Hawaiian Electric, Hawaii Electric Light and Maui Electric and the upgrade or replacement of existing systems. Significant system changes increase the risk of system interruptions. Although the Utilities maintain change control processes to mitigate this risk, system interruptions may occur. Further, delay or failure to complete the integration of information systems and processes may result in delays in regulatory cost recovery, increased service interruptions of aging legacy systems, or the failure to realize the cost savings anticipated to be derived from these initiatives.

In the fourth quarter of 2018, the Utilities' new ERP/EAM system was placed into service. Any failure in addressing issues in the stabilization of the ERP/EAM system implementation could adversely affect the Utilities' ability to timely and accurately report financial information and make payments to vendors and employees. Additionally, one of the conditions imposed by the PUC's approval of the system is the requirement that the Utilities achieve cost savings consistent with a minimum of $244 million in ERP/EAM project-related benefits to be delivered to customers over the system's 12-year service life. If the Utilities are not able to achieve such minimum savings, the PUC could impose financial penalties, such as a reduction of revenue requirements that could adversely impact the Utilities' results of operations and financial condition.

The Utilities have disaster recovery plans in place to protect their businesses from information technology service interruptions. The disaster recovery plans, however, may not be successful in preventing the loss of customer data, service interruptions and disruptions to operations or damage to important facilities. If any of these systems fail to operate properly or becomes disabled and the Utilities' disaster recovery plans do not effectively resolve the issues in a timely manner, the Utilities could suffer financial loss, business disruptions, liability to customers, regulatory intervention or damage to their reputations.

ASB. ASB is highly dependent on its ability to process, on a daily basis, a large number of transactions and relies heavily on communication and information systems, including those of third party vendors and other service providers. Communication and information system failures can result from a variety of risks including, but not limited to, events that are wholly or partially out of ASB's control, such as communication line integrity, weather, terrorist acts, natural disasters, accidental disasters, unauthorized breaches of security systems, energy delivery systems, cyberattacks and other events.

ASB is under continuous threat of loss due to cyberattacks, especially as ASB continues to expand customer capabilities to utilize the Internet and other remote channels to transact business. Two of the most significant cyberattack risks that ASB faces are e-fraud and loss of sensitive customer data. Loss from e-fraud occurs when cybercriminals extract funds directly from customers' or ASB's accounts using fraudulent schemes that may include Internet-based funds transfers. ASB has been subject to e-fraud incidents historically. Loss of sensitive customer data are attempts to steal sensitive customer data, such as account numbers and social security numbers, through unauthorized access to computer systems, including computer hacking. Such attacks are less frequent, but could present significant reputational, legal and regulatory costs if successful. Intrusion detection and prevention systems, anti-virus software, firewalls and other general information technology controls have been put in place to detect and prevent cyberattacks or information system breaches. A disaster recovery plan has been developed in the event of a natural disaster, security breach, military or terrorist action, power or communication failure or similar event. The disaster recovery plan, however, may not be successful in preventing the loss of customer data, service interruptions, disruptions to operations or damage to important facilities. Although ASB devotes significant resources to maintain and regularly upgrade its systems and processes that are designed to protect the security of ASB's computer systems, software, networks and other technology assets and the confidentiality, integrity and availability of information belonging to ASB and its customers, there can be no assurance that such failures, interruptions or security breaches will not occur or, if they do occur, that they will be adequately corrected by ASB or its vendors.

If any of these systems fail to operate properly or become disabled even for a brief period of time, ASB could suffer financial loss, business disruptions, liability to customers, regulatory intervention or damage to its reputation, any of which could have a material adverse effect on ASB's financial condition and results of operations.

HEI's businesses could suffer losses that are uninsured due to a lack of affordable insurance coverage, unavailability of insurance coverage or limitations on the insurance coverage the Company does have. In the ordinary course of business, HEI and its subsidiaries purchase insurance coverages (e.g., property and liability coverages) to protect against loss of, or damage to, their properties and against claims made by third parties and employees for property damage or personal injuries. However, the protection provided by such insurance is limited in significant respects and, in some instances, there is no coverage. Certain of the insurance has substantial deductibles or has limits on the maximum amounts that may be recovered. For example, the Utilities' overhead and underground transmission and distribution systems (with the exception of substation buildings and contents) have a replacement value roughly estimated at $7 billion and are largely not insured against loss or damage because the amount of transmission and distribution system insurance available is limited and the premiums are cost prohibitive. Similarly, the Utilities have no business interruption insurance as the premiums for such insurance would be cost prohibitive, particularly since the Utilities are not interconnected to other systems. If a hurricane or other uninsured catastrophic natural disaster were to occur, and if the PUC were not to allow the affected Utilities to recover from ratepayers restoration costs and revenues lost from business interruption, the lost revenues and repair expenses could result in a significant decrease in HEI’s consolidated net income or in significant net losses for the affected periods.

ASB generally does not obtain credit enhancements, such as mortgagor bankruptcy insurance, but does require standard hazard and hurricane insurance and may require flood insurance for certain properties. ASB is subject to the risks of borrower defaults and bankruptcies, special hazard losses not covered by the required insurance and the insurance company's inability to pay claims on existing policies.

Increased federal and state environmental regulation will require an increasing commitment of resources and funds and could result in construction delays or penalties and fines for non-compliance. HEI and its subsidiaries are subject to federal, state and local environmental laws and regulations relating to air quality, water quality, hazardous substances, waste management, natural resources and health and safety, which regulate, among other matters, the operation of existing facilities, the construction and operation of new facilities and the proper cleanup and disposal of hazardous and toxic wastes and substances. These laws and regulations could result in increased capital, operating, and other costs. HEI or its subsidiaries are currently involved in investigatory or remedial actions at current, former or third-party sites and there is no assurance that the Company will not incur material costs relating to these sites. In addition, compliance with these legal requirements requires the Utilities to commit significant resources and funds toward, among other things, environmental monitoring, installation of pollution control equipment and payment of emission fees. These laws and regulations, among other things, require that certain environmental permits be obtained in order to construct or operate certain facilities, and obtaining such permits can entail significant expense and cause substantial construction delays. Also, these laws and regulations may be amended from time to time, including amendments that increase the burden and cost of compliance. For example, emission and/or discharge limits may be tightened, more extensive permitting requirements may be imposed and additional substances may become regulated. In addition, significant regulatory uncertainty exists regarding the impact of federal or state greenhouse gas (GHG) emission limits and reductions.

If HEI or its subsidiaries fail to comply with environmental laws and regulations, even if caused by factors beyond their control, that failure may result in civil or criminal penalties and fines or the cessation of operations.

Adverse tax rulings or developments could result in significant increases in tax payments and/or expense. Governmental taxing authorities could challenge a tax return position taken by HEI or its subsidiaries and, if the taxing authorities prevail, HEI's consolidated tax payments and/or expense, including applicable penalties and interest, could increase significantly.

The Company could be subject to the risk of uninsured losses in excess of its accruals for litigation matters. HEI and its subsidiaries are involved in routine litigation in the ordinary course of their businesses, most of which is covered by insurance (subject to policy limits and deductibles). However, other litigation may arise that is not routine or involves claims that may not be covered by insurance. Because of the uncertainties associated with litigation, there is a risk that litigation against HEI or its subsidiaries, even if vigorously defended, could result in costs of defense and judgment or settlement amounts not covered by insurance and in excess of reserves established in HEI's consolidated financial statements.

Changes in accounting principles and estimates could affect the reported amounts of the Company's assets and liabilities or revenues and expenses. HEI's consolidated financial statements are prepared in accordance with accounting principles generally accepted in the U.S. Changes in accounting principles (including the possible adoption of International Financial Reporting Standards or new U.S. accounting standards), or changes in the Company's application of existing accounting principles, could materially affect the financial statement presentation of HEI's or the Utilities' consolidated results of operations and/or financial condition. Further, in preparing the consolidated financial statements, management is required to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities and the reported amounts of revenues and expenses. Actual results could differ significantly from those estimates. Material estimates that are particularly susceptible to significant change include the amounts reported for electric utility revenues; allowance for loan losses; income taxes; investment securities, property, plant and equipment; regulatory assets and liabilities; derivatives; goodwill; pension and other postretirement benefit obligations; and contingencies and litigation.

The Utilities' financial statements reflect assets and costs based on cost-based rate-making regulations. Continued accounting in this manner requires that certain criteria relating to the recoverability of such costs through rates be met. If events or circumstances should change such that the criteria are no longer satisfied, the Utilities' expect that their regulatory assets (amounting to $833 million as of December 31, 2018), net of regulatory liabilities (amounting to $950 million as of December 31, 2018), would be charged to the statement of income in the period of discontinuance.

As a result of the 2017 Tax Cuts and Jobs Act (Tax Act), the Utilities were required to adjust their deferred tax assets and liabilities for the lower federal income tax rate, resulting in excess accumulated deferred income tax balances (ADIT). To the extent the ADIT was related to items included in regulatory rate base or ratemaking, the related net excess ADIT was reclassified to a regulatory liability that will be returned to customers through rates.

Changes in accounting principles can also impact HEI's consolidated financial statements. For example, if management determines that a PPA requires the consolidation of the IPP in the financial statements, the consolidation could have a material effect on Hawaiian Electric's and HEI's consolidated financial statements, including the recognition of a significant amount of assets and liabilities and, if such a consolidated IPP were operating at a loss and had insufficient equity, the potential recognition of such losses. Also, the adoption of ASU No. 2016-02, Leases (Topic 842), as amended, on January 1, 2019, had a significant impact on HEI's consolidated balance sheet, resulting in the recognition of $257 million in lease liabilities ($215 million related to the Utilities' PPAs) and $257 million in right-of-use assets.

Changes in the accounting principles for expected credit losses were issued by the FASB to replace existing impairment models, including replacing an "incurred loss" model for loans with a "current expected credit loss" model based on historical experience, current conditions and reasonable and supportable forecasts. The changes also require enhanced disclosures to help financial statement users better understand significant estimates and judgments used in estimating credit losses, as well as the credit quality and underwriting standards of an organization's portfolio. The Company plans to adopt the accounting principle changes in the first quarter of 2020 and has not yet determined the impact of the adoption. The new impairment model could have a material adverse impact on ASB's results of operations.

Electric utility risks.

Actions of the PUC are outside the control of the Utilities and could result in inadequate or untimely rate increases, in rate reductions or refunds or in unanticipated delays, expenses or writedowns in connection with the construction of new projects. The rates the Utilities are allowed to charge for their services and the timeliness of permitted rate increases are among the most important items influencing the Utilities' results of operations, financial condition and liquidity. The PUC has broad discretion over the rates that the Utilities charge their customers. As part of the decoupling mechanism that the Utilities have implemented, each of the Utilities will file a rate case once every three years. Any adverse decision by the PUC concerning the level or method of determining electric utility rates, the items and amounts that may be included in rate base, the returns on equity or rate base found to be reasonable, the potential consequences of exceeding or not meeting such returns, or any prolonged delay in rendering a decision in a rate or other proceeding could have a material adverse effect on Hawaiian Electric's consolidated results of operations, financial condition and liquidity.

To improve the timing and certainty of the recovery of their costs, the Utilities have proposed and/or received approval of various cost recovery mechanisms including an ECAC (replaced with the ECRCs for Hawaiian Electric and Hawaii Electric Light in 2019), a PPAC, and pension and OPEB tracking mechanisms, as well as a decoupling mechanism, a major project interim recovery (MPIR) adjustment mechanism, and a renewable energy infrastructure program (REIP) surcharge. A change in, or the elimination of, any of these cost recovery mechanisms, could have a material adverse effect on the Utilities.

On April 18, 2018, the PUC issued an order, instituting a proceeding to investigate performance-based regulation (PBR). The PUC's implementation of performance-based ratemaking for the Utilities pursuant to Act 005, Session Laws 2018, could include, but is not limited to, the potential addition of new performance incentive mechanisms, the adoption of third party proposals by the PUC in its implementation of PBR, and penalties for not achieving performance incentive goals. The impacts of the implementation of PBR cannot be predicted and these impacts could have a material adverse effect on the Utilities.

The Utilities could be required to refund to their customers, with interest, revenues that have been or may be received under interim rate orders in their rate case proceedings and other proceedings, if and to the extent they exceed the amounts allowed in final orders.

Many public utility projects require PUC approval and various permits (e.g., environmental and land use permits) from other governmental agencies. Difficulties in obtaining, or the inability to obtain, the necessary approvals or permits, or any adverse decision or policy made or adopted, or any prolonged delay in rendering a decision, by an agency with respect to such approvals and permits, can result in significantly increased project costs or even cancellation of projects. In the event a project does not proceed, or if the PUC disallows cost recovery for all or part of a project, or if project costs exceed caps imposed by the PUC in its approval of the project, project costs may need to be written off in amounts that could result in significant reductions in Hawaiian Electric's consolidated net income.

Energy cost adjustment/recovery clauses. The rate schedules of each of the Utilities include ECACs (ECRCs for Hawaiian Electric and Hawaii Electric Light in 2019—see below) under which electric rates charged to customers are automatically adjusted for changes in the weighted-average price paid for fuel oil and certain components of purchased power, and the relative amounts of company-generated power and purchased power.

ECAC/ECRCs are subject to periodic review by the PUC. In recent rate cases, the PUC has approved an additional trigger that would allow a re-establishment of fuel usage efficiency targets under certain conditions and annual automatic adjustments of fuel usage efficiency targets for all Utilities. In the most recent Hawaiian Electric rate case, the PUC ordered an ECRC for Hawaiian Electric, which recovers all fuel and purchased energy expenses, a portion of which had previously been recovered through base rates. The PUC also ordered a scaled down version of a fossil fuel risk sharing mechanism proposed by Blue Planet, which provides for a 98/2% risk-sharing split between ratepayers and Hawaiian Electric, of fossil fuel prices above or below a baseline price and the fuel usage efficiency pass-through within a range, with an annual maximum exposure cap of $2.5 million in either direction and which became effective January 1, 2019. The PUC also approved an expansion of the range of fuel efficiencies for low sulfur fuel oil and a full pass through to customers the costs of diesel fuel and biodiesel fuel that represent the balance of the generation fuel usage subject to the risk sharing split.

In Hawaii Electric Light’s 2016 test year rate case, the PUC approved an expansion of the range of diesel fuel usage efficiencies under which fuel cost would be fully passed through to customers that became effective October 1, 2018. In February 2019, Hawaii Electric Light replaced the ECAC with an ECRC, which recovers all fuel and purchased energy expenses, a portion which was previously recovered in base rates.

In the interim decision and order in the Maui Electric 2018 test year rate case, the PUC approved the settlements between Maui Electric and the Consumer Advocate on the ECAC, which included retaining the existing range of fuel usage efficiencies at all three islands. The PUC will continue to examine Blue Planet’s proposed fossil fuel cost risk sharing mechanism, similar to what it proposed in the Hawaiian Electric 2017 test year rate case. A final decision and order in the Maui Electric 2018 test year rate case is pending. See “Most recent rate proceedings” in Note 3 of the Consolidated Financial Statements.

A change in, or the elimination of, the ECAC/ECRC could have a material adverse effect on the Utilities.

Electric utility operations are significantly influenced by weather conditions. The Utilities’ results of operations can be affected by the weather and natural disasters. Weather conditions, particularly temperature and humidity, directly influence the demand for electricity. In addition, severe weather and natural disasters, such as hurricanes, earthquakes, tsunamis, lava flows and lightning storms, some of which may become more severe or frequent as a result of global climate changes, can cause outages and property damage and require the Utilities to incur significant additional expenses that may not be recoverable.

Electric utility operations may be significantly influenced by climate change. While the timing, extent and ultimate effects of climate change cannot be determined with any certainty, climate change is predicted to result in sea level rise, which could potentially impact coastal and other low-lying areas (where much of the Utilities’ electric infrastructure is sited), and could cause erosion of beaches, saltwater intrusion into aquifers and surface ecosystems, higher water tables and increased flooding and storm damage due to heavy rainfall. The effects of climate change on the weather (for example, floods, hurricanes, heat waves or drought conditions, the latter of which could increase wildfire risk), sea levels, and water availability and quality, all have the potential to materially adversely affect the results of operations, financial condition and liquidity of the Utilities. For example, severe weather and its related impacts could cause significant harm to the Utilities’ physical facilities.

Electric utility operations depend heavily on third-party suppliers of fuel and purchased power. The Utilities rely on fuel suppliers and shippers, and IPPs to deliver fuel and power, respectively, in accordance with contractual agreements. Approximately 70% of the net energy generated or purchased by the Utilities in 2018 was generated from the burning of fossil fuel oil, and purchases of power by the Utilities provided about 45% of their total net energy generated and purchased for the same period. Failure or delay by fuel suppliers and shippers to provide fuel pursuant to existing contracts, or failure by a major IPP to deliver the firm capacity anticipated in its PPA, could disrupt the ability of the Utilities to deliver electricity and require the Utilities to incur additional expenses to meet the needs of their customers that may not be recoverable. In addition, as the IPP contracts near the end of their terms, there may be less economic incentive for the IPPs to make investments in their units to ensure the availability of their units. Also, as these contractual agreements end, the Utilities may not be able to purchase fuel and power on terms equivalent to the current contractual agreements.

The capacity provided by the Utilities’ generating resources and third-party purchased power may not be sufficient to meet customers’ energy requirements . The Utilities rely upon their generating resources and purchased power from third parties to meet their customers’ energy requirements. The Utilities update their generation capacity evaluation each year to determine the Utilities’ ability to meet reasonably expected demands for service and provide reasonable reserves for emergencies. These evaluations are impacted by a variety of factors, including customer energy demand, energy conservation and efficiency initiatives, economic conditions, and weather patterns. If the capacity provided by the Utilities’ generating resources and third-party purchased power is not adequate relative to customer demand, the Utilities may have to contract to buy more power from third parties, invest in additional generating facilities over the long-term, or extend the operating life of existing utility units. Any failure to meet customer energy requirements could negatively impact the satisfaction of the Utilities’ customers, which could have an adverse impact on the Utilities’ business and results of operations.

Electric utility generating facilities are subject to operational risks that could result in unscheduled plant outages, unanticipated and/or increased operation and maintenance expenses and increased power purchase costs. Operation of electric generating facilities involves certain risks which can adversely affect energy output and efficiency levels. Included among these risks are facility shutdowns or power interruptions due to insufficient generation or a breakdown or failure of equipment or processes. In addition, operations could be negatively impacted by interruptions in fuel supply, inability to negotiate satisfactory collective bargaining agreements when existing agreements expire or other labor disputes, inability to comply with regulatory or permit requirements, disruptions in delivery of electricity, operator error and catastrophic events such as earthquakes, tsunamis, hurricanes, fires, explosions, floods or other similar occurrences affecting the Utilities' generating facilities or transmission and distribution systems.

The Utilities may be adversely affected by new legislation or administrative actions. Congress, the Hawaii legislature and governmental agencies periodically consider legislation and other initiatives that could have uncertain or negative effects on the Utilities and their customers. Congress, the Hawaii legislature and governmental agencies have adopted, or are considering adopting, a number of measures that will significantly affect the Utilities, as described below.

Renewable Portfolio Standards law. In 2015, Hawaii's RPS law was amended to require electric utilities to meet an RPS of 15%, 30%, 40%, 70% and 100% by December 31, 2015, 2020, 2030, 2040 and 2045 respectively. Energy savings resulting from energy efficiency programs do not count toward the RPS after 2014. The Utilities are committed to achieving these goals and met the 2015 RPS; however, due to the exclusion of energy savings in calculating RPS after 2014 and risks such as potential delays in IPPs being able to deliver contracted renewable energy, it is possible the Utilities may not attain the required renewable percentages in the future, and management cannot predict the future consequences of failure to do so (including potential penalties to be assessed by the PUC).

On December 19, 2008, the PUC approved a penalty of $20 for every MWh that an electric utility is deficient under Hawaii's RPS law. The PUC noted, however, that this penalty may be reduced, in the PUC's discretion, due to events or circumstances that are outside an electric utility's reasonable control, to the extent the event or circumstance could not be reasonably foreseen and ameliorated, as described in the RPS law and in an RPS framework adopted by the PUC. In addition, the PUC ordered that the Utilities will be prohibited from recovering any RPS penalty costs through rates.

Renewable energy. In 2007, a measure was passed by the Hawaii legislature stating that the PUC may consider the need for increased renewable energy in rendering decisions on utility matters. Due to this measure, it is possible that, if energy from a renewable source is more expensive than energy from fossil fuel, the PUC may still approve the purchase of energy from the renewable source, resulting in higher costs.

Global climate change and greenhouse gas emissions reduction. National and international concern about climate change and the contribution of GHG emissions (including carbon dioxide emissions from the combustion of fossil fuels) to climate change have led to federal legislative and regulatory proposals and action by the state of Hawaii to reduce GHG emissions.

In July 2007, the State Legislature passed Act 234, which requires a statewide reduction of GHG emissions by January 1, 2020 to levels at or below the statewide GHG emission levels in 1990. On June 20, 2014, the Governor signed the final rules required to implement Act 234 and these rules went into effect on June 30, 2014. In general, Act 234 and the GHG rule require affected sources that have the potential to emit GHGs in excess of established thresholds to reduce their GHG emissions by 16% below 2010 emission levels by 2020. In accordance with State requirements, the Utilities submitted an Emissions Reduction Plan (EmRP) to the DOH on June 30, 2015. The Utilities submitted a revised EmRP on October 15, 2018, to reflect the partnership established between the Utilities and several IPPs. In this plan, the partnership has committed to a 16% reduction in GHG emissions in accordance with the rule.

The Utilities have taken, and continue to identify opportunities to take, direct action to reduce GHG emissions from their operations, including, but not limited to, supporting demand-side management programs that foster energy efficiency, using renewable resources for energy production and purchasing power from IPPs generated by renewable resources, and burning renewable biodiesel at selected Hawaiian Electric and Maui Electric generating units.

On April 24, 2018, Act 005, Session Laws 2018 was signed into law, which establishes performance metrics that the PUC shall consider while establishing performance incentives and penalty mechanisms under a performance-based ratemaking model. The law requires that the PUC establish these performance-based ratemaking mechanisms on or before January 1, 2020. The PUC opened a proceeding on April 18, 2018.

The foregoing legislation or legislation that now is, or may in the future be, proposed present risks and uncertainties for the Utilities.

The Utilities may be subject to increased operational challenges and their results of operations, financial condition and liquidity may be adversely impacted in meeting the commitments and objectives of clean energy initiatives and Renewable Portfolio Standards (RPS). The far-reaching nature of the Utilities' renewable energy commitments and the RPS goals present risks to the Company. Among such risks are: (1) the dependence on third-party suppliers of renewable purchased energy, which if the Utilities are unsuccessful in negotiating purchased power agreements with such IPPs or if a major IPP fails to deliver the anticipated capacity and/or energy in its purchased power agreement, could impact the Utilities' achievement of their commitments to RPS goals and/or the Utilities' ability to deliver reliable service; (2) delays in acquiring or unavailability of non-fossil fuel supplies for renewable generation; (3) the impact of intermittent power to the electrical grid and reliability of service if appropriate supporting infrastructure is not installed or does not operate effectively; (4) the likelihood that the Utilities may need to make substantial investments in related infrastructure, which could result in increased borrowings and, therefore, materially impact the financial condition and liquidity of the Utilities; and (5) the commitment to support a variety of initiatives, which, if approved by the PUC, may have a material impact on the results of operations and financial condition of the Utilities depending on their design and implementation. These initiatives include, but are not limited to, programs to enable more customer-sited generation (but studying distributed generation interconnections on a per-circuit basis). The implementation of these or other programs may adversely impact the results of operations, financial condition and liquidity of the Utilities.

Bank risks.

Fluctuations in interest rates could result in lower net interest income, impair ASB's ability to originate new loans or impair the ability of ASB's adjustable-rate borrowers to make increased payments or cause such borrowers to repay their adjustable-rate loans. Interest rate risk is a significant risk of ASB's operations. ASB's net interest income consists primarily of interest income received on fixed-rate and adjustable-rate loans, mortgage-backed securities and investments, less interest expense consisting primarily of interest paid on deposits and other borrowings. Interest rate risk arises when earning assets mature or when their interest rates change in a time frame different from that of the costing liabilities. Changes in market interest rates, including changes in the relationship between short-term and long-term market interest rates or between different interest rate indices, can impact ASB's net interest margin. See "Quantitative and Qualitative Disclosures about Market Risk."

Although ASB pursues an asset-liability management strategy designed to mitigate its risk from changes in market interest rates, unfavorable movements in interest rates could result in lower net interest income. Residential 1-4 family fixed-rate mortgage loans comprised about 41% of ASB's loan portfolio as of December 31, 2018 and do not re-price with movements in interest rates. ASB continues to face a challenging interest rate environment. The Federal Open Market Committee increased the federal funds rate in 2016, 2017 and 2018, which has caused the yield curve to flatten. Increases in market interest rates could have an adverse impact on ASB's cost of funds. Higher market interest rates could lead to higher interest rates paid on deposits and other borrowings. Significant increases in market interest rates, or the perception that an increase may occur, could adversely affect ASB's ability to originate new loans and grow. An increase in market interest rates, especially a sudden increase, could also adversely affect the ability of ASB's adjustable-rate borrowers to meet their higher payment obligations. If this occurred, it could cause an increase in nonperforming assets and charge-offs. Conversely, a decrease in interest rates or a mismatching of maturities of interest sensitive financial instruments could result in an acceleration in the prepayment of loans and mortgage-backed securities and impact ASB's ability to reinvest its liquidity in similar yielding assets.

Changes in the method for determining London Interbank Offered Rate (LIBOR) and the potential replacement of LIBOR may affect our loan portfolio and interest income on loans. On July 27, 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that it intends to phase out LIBOR by the end of 2021. It is unclear whether or not LIBOR will cease to exist at that time or if new methods of calculating LIBOR will be established such that it continues to exist after 2021. The U.S. Federal Reserve, in conjunction with the Alternative Reference Rates Committee, a steering committee composed of large U.S. financial institutions, announced replacement of U.S. dollar LIBOR with a new index calculated by short-term repurchase agreements, backed by U.S. Treasury securities called the Secured Overnight Financing Rate (SOFR). The potential effect of the elimination of LIBOR on ASB's LIBOR-indexed loan portfolio and interest income on loans cannot yet be determined.

ASB's operations are affected by factors that are beyond its control, that could result in lower revenues, higher expenses or decreased demand for its products and services. ASB's results of operations depend primarily on the income generated by the supply of and demand for its products and services, which primarily consist of loans and deposit services. ASB's revenues and expenses may be adversely affected by various factors, including:

- local, regional, national and other economic and political conditions that could result in declines in employment and real estate values, which in turn could adversely affect the ability of borrowers to make loan payments and the ability of ASB to recover the full amounts owing to it under defaulted loans;
- the ability of borrowers to obtain insurance and the ability of ASB to place insurance where borrowers fail to do so, particularly in the event of catastrophic damage to collateral securing loans made by ASB;
-

faster than expected loan prepayments that can cause an acceleration of the amortization of premiums on loans and investments and the impairment of mortgage servicing assets of ASB;

- changes in ASB's loan portfolio credit profiles and asset quality, which may increase or decrease the required level of allowance for loan losses;
- technological disruptions affecting ASB's operations or financial or operational difficulties experienced by any outside vendor on whom ASB relies to provide key components of its business operations, such as business processing, network access or internet connections;
- events of default and foreclosure of loans whereby ASB becomes the owner of a mortgage properties that presents environmental risk or potential clean up liability;

- the impact of legislative and regulatory changes, including changes affecting capital requirements, increasing oversight of and reporting by banks, or affecting the lending programs or other business activities of ASB;
- additional legislative changes regulating the assessment of overdraft, interchange and credit card fees, which can have a negative impact on noninterest income;
- public opinion about ASB and financial institutions in general, which, if negative, could impact the public's trust and confidence in ASB and adversely affect ASB's ability to attract and retain customers and expose ASB to adverse legal and regulatory consequences;
- increases in operating costs (including employee compensation expense and benefits and regulatory compliance costs), inflation and other factors, that exceed increases in ASB's net interest, fee and other income; and
- the ability of ASB to maintain or increase the level of deposits, ASB's lowest costing funds.

Banking and related regulations could result in significant restrictions being imposed on ASB's business or in a requirement that HEI divest ASB. ASB is subject to examination and comprehensive regulation by the Department of Treasury, the OCC and the FDIC, and is subject to reserve requirements established by the Board of Governors of the Federal Reserve System. In addition, the FRB is responsible for regulating ASB's holding companies, HEI and ASB Hawaii. The regulatory authorities have extensive discretion in connection with their supervisory and enforcement activities and examination policies to address not only ASB's compliance with applicable banking laws and regulations, but also capital adequacy, asset quality, management ability and performance, earnings, liquidity and various other factors.

Under certain circumstances, including any determination that ASB's relationship with HEI results in an unsafe and unsound banking practice, these regulatory authorities have the authority to restrict the ability of ASB to transfer assets and to make distributions to its shareholders (including payment of dividends to HEI), or they could seek to require HEI to sever its relationship with or divest its ownership of ASB. Payment by ASB of dividends to HEI may also be restricted by the OCC and FRB under its prompt corrective action regulations or its capital distribution regulations if ASB's capital position deteriorates. In order to maintain its status as a QTL, ASB is required to maintain at least 65% of its assets in "qualified thrift investments." Institutions that fail to maintain QTL status are subject to various penalties, including limitations on their activities. In ASB's case, the activities of HEI and HEI's other subsidiaries would also be subject to restrictions, and a failure or inability to comply with those restrictions could effectively result in the required divestiture of ASB. Federal legislation has also been proposed in the past that could operate to eliminate the thrift charter or the grandfathered status of HEI as a unitary thrift holding company, which in turn would result in a required divestiture of ASB. In the event of a required divestiture, federal law substantially limits the types of entities that could potentially acquire ASB.

Recent legislative and regulatory initiatives could have an adverse effect on ASB's business. The Dodd-Frank Act, which became law in July 2010, has had a substantial impact on the financial services industry. The Dodd-Frank Act establishes a framework through which regulatory reform will be written and changes to statutes, regulations or regulatory policies could affect HEI and ASB in substantial and unpredictable ways. A major component of the Dodd-Frank Act is the creation of the Consumer Financial Protection Bureau that has the responsibility for setting and enforcing clear, consistent rules relating to consumer financial products and services and has the authority to prohibit practices it finds to be unfair, deceptive or abusive. Compliance with any such directives could have adverse effects on ASB's revenues or operating costs. Failure to comply with laws, regulations or policies could result in sanctions by regulatory agencies, civil money penalties and/or reputation damage, which could have a material adverse effect on ASB's business, results of operations, financial condition and liquidity.

A large percentage of ASB's loans and securities are collateralized by real estate, and adverse changes in the real estate market and/or general economic or other conditions may result in loan losses and adversely affect the Company's profitability. As of December 31, 2018 approximately 82% of ASB's loan portfolio was comprised of loans primarily collateralized by real estate, most of which was concentrated in the State of Hawaii. During 2018, ASB's HELOC and residential 1-4 family portfolios grew by 7% and 1%, respectively, and now comprise 78% of total real estate loans. ASB's financial results may be adversely affected by changes in prevailing economic conditions, either nationally or in the state of Hawaii, including decreases in real estate values, adverse employment conditions, the monetary and fiscal policies of the federal and state government and other significant external events. Adverse changes in the economy may have a negative effect on the ability of borrowers to make timely repayments of their loans. A deterioration of the economic environment in Hawaii, including a material decline in the real estate market, further declines in home resales, a material external shock, or any environmental clean-up obligation, may also significantly impair the value of ASB’s collateral and ASB’s ability to sell the collateral upon foreclosure. In the event of a default, amounts received upon sale of the collateral may be insufficient to recover outstanding principal and interest. In addition, if poor economic conditions result in decreased demand for real estate loans, ASB’s profits may decrease if its alternative investments earn less income than real estate loans.

Expanding commercial, commercial real estate and consumer lending activities may result in higher costs and greater credit risk than residential lending activities due to the unique characteristics of these markets. ASB had been aggressively pursuing a strategy that included expanding its commercial, commercial real estate and consumer lines of business. If ASB elects to pursue commercial and commercial real estate loans in the future, such loans have a higher risk profile than residential loans. Though both commercial and commercial real estate loans have shorter terms and earn higher spreads than residential mortgage loans, these loan types generally entail higher underwriting and other service costs and present greater credit risks than traditional residential mortgages. Commercial loans are secured by the assets of the business and, upon default, any collateral repossessed may not be sufficient to repay the outstanding loan balance. In addition, loan collections are dependent on the borrower's continuing financial stability and, thus, are more likely to be affected by current economic conditions and adverse business developments. Commercial real estate properties tend to be unique and are more difficult to value than residential real estate properties. Commercial real estate loans may not be fully amortizing, meaning that they have a significant principal balance or "balloon" payment due at maturity. In addition, commercial real estate properties, particularly industrial and warehouse properties, are generally subject to relatively greater environmental risks than noncommercial properties and to the corresponding burdens and costs of compliance with environmental laws and regulations. Also, there may be costs and delays involved in enforcing rights of a property owner against tenants in default under terms of leases with respect to commercial properties. For example, a tenant may seek protection under bankruptcy laws, which could result in termination of the tenant's lease.

ASB also has a national syndicated lending portfolio where ASB is a participant in credit facilities agented by established and reputable national lenders. Management selectively chooses each deal based on conservative credit criteria to ensure a high-quality, well diversified portfolio. In the event the borrower encounters financial difficulties and ASB is unable to sell its participation interest in the loan in the secondary market, the bank is typically reliant on the originating lender for managing any loan workout or foreclosure proceedings that may become necessary. Accordingly, ASB has less control over such proceedings than loans it originates and may be required to accommodate the interests of other participating lenders in resolving delinquencies or defaults on participated loans, which could result in outcomes that are not fully consistent with ASB's preferred strategies. In addition, a significant proportion of ASB's syndicated loans are originated in states other than Hawaii and are subject to the local regional and regulatory risks specific to those states.

Similar to the national syndicated lending portfolio, ASB does not service commercial loans in which it has participation interests rather than being the lead or agent lender and is subject to the policies and practices of the agent lender, who is the loan servicer, in resolving delinquencies or defaults on participated loans.

The consumer loan portfolio primarily consists of personal unsecured loans with risk-based pricing. Repayment is based on the borrower's financial stability as these loans have no collateral and there is less assurance that ASB will be able to collect all payments due under these loans or have sufficient collateral to cover all outstanding loan balances.

ASB's allowance for loan losses may not cover actual loan losses. ASB's allowance for loan losses is the bank's estimate of probable losses inherent in its loan portfolio and is based on a continuing assessment of:

- existing risks in the loan portfolio;
- historical loss experience with ASB's loans;
- changes in collateral value; and
- current conditions (for example, economic conditions, real estate market conditions and interest rate environment).

If ASB's actual loan losses exceed its allowance for loan losses, it may incur losses, its financial condition may be materially and adversely affected, and additional capital may be required to enhance its capital position. In addition, various regulatory agencies, as an integral part of their examination process, regularly review the adequacy of ASB's allowance. These agencies may require ASB to establish additional allowances based on their judgment of the information available at the time of their examinations. No assurance can be given that ASB will not sustain loan losses in excess of present or future levels of its allowance for loan losses.

The Tax Act may impact the financial services industry with respect to the marketability of residential loans and home equity indebtedness. The Tax Act limits the deduction available for mortgage interest by reducing the amount of debt that can be treated as acquisition indebtedness from the current level of $1 million to $750,000. The Tax Act also suspends the deduction for interest on home equity indebtedness. The impact of these tax law changes on residential mortgage and home equity line of credit loan production cannot yet be determined.

ITEM 1B. UNRESOLVED STAFF COMMENTS

HEI: None.
Hawaiian Electric: Not applicable.

ITEM 2. PROPERTIES

HEI and Hawaiian Electric: See the "Properties" sections under "HEI," "Electric utility" and "Bank" in Item 1. Business above.

ITEM 3. LEGAL PROCEEDINGS

HEI and Hawaiian Electric: HEI and Hawaiian Electric (including their direct and indirect subsidiaries) may be involved in ordinary routine PUC proceedings, environmental proceedings and/or litigation incidental to their respective businesses. See the descriptions of legal proceedings (including judicial proceedings and proceedings before the PUC and environmental and other administrative agencies) in "Item 1. Business," in HEI's MD&A and in the Notes 3 and 4 of the Consolidated Financial Statements. The outcomes of litigation and administrative proceedings are necessarily uncertain and there is a risk that the outcome of such matters could have a material adverse effect on the financial position, results of operations or liquidity of HEI or one or more of its subsidiaries for a particular period in the future.

ITEM 4. MINE SAFETY DISCLOSURES

HEI and Hawaiian Electric: Not applicable.

EXECUTIVE OFFICERS OF THE REGISTRANT (HEI)

The executive officers of HEI are listed below. Messrs. Oshima and Wacker are officers of HEI subsidiaries rather than of HEI, but are deemed to be executive officers of HEI under SEC Rule 3b-7 promulgated under the 1934 Exchange Act. HEI executive officers serve from the date of their initial appointment and are reappointed annually by the HEI Board (or annually by the applicable HEI subsidiary board), and thereafter are appointed for one-year terms or until their successors have been duly appointed and qualified or until their earlier resignation or removal. HEI executive officers may also hold offices with HEI subsidiaries and affiliates in addition to their current positions listed below.

Name	Age	Business experience for last 5 years and prior positions with the Company
Constance H. Lau	66	HEI President and Chief Executive Officer since 5/06 HEI Director, 6/01 to 12/04 and since 5/06 Hawaiian Electric Chairman of the Board since 5/06 ASB Hawaii Director since 5/06 ASB Chairman of the Board since 5/06, Risk Committee member since 2012 and Director since 1999 · ASB Chief Executive Officer, 6/01 to 11/10, and President, 6/01 to 1/08 · ASB Senior Executive Vice President and Chief Operating Officer and Director, 12/99 to 5/01 · HEI Power Corp. Financial Vice President and Treasurer, 5/97 to 8/99 · HEI Treasurer, 4/89 to 10/99, and HEI Assistant Treasurer, 12/87 to 4/89 · Hawaiian Electric Treasurer 12/87 to 4/89 and Assistant Corporate Counsel, 9/84 to 12/87
Gregory C. Hazelton	54	HEI Executive Vice President, Chief Financial Officer and Treasurer since 3/18 HEI Executive Vice President and Chief Financial Officer, 4/17 to 3/18 HEI Senior Vice President, Finance, 10/16 to 4/17 · Prior to rejoining the Company in 2016: Northwest Natural Gas Company, Senior Vice President, Chief Financial Officer and Treasurer, 2/16 to 9/16, and Northwest Natural Gas Company, Senior Vice President and Chief Financial Officer, 6/15 to 2/16 · HEI Vice President, Finance, Treasurer and Controller, 8/13 to 6/15 · Prior to joining the Company in 2013: UBS Investment Bank, Managing Director, Global Power & Utilities Group 3/11 to 5/13
Alan M. Oshima	71	Hawaiian Electric President and Chief Executive Officer since 10/14 Hawaiian Electric Director, 2008 to 10/11 and since 10/14 HEI Charitable Foundation President since 10/11 · Hawaiian Electric Senior Executive Officer on loan from HEI, 5/14 to 9/14 · HEI Executive Vice President, Corporate and Community Advancement, 10/11 to 5/14
	56	ASB President and Chief Executive Officer since 11/10

Richard F. Wacker	ASB Director since 11/10

Family relationships; executive arrangements

There are no family relationships between any HEI executive officer and any other HEI executive officer or any HEI director or director nominee. There are no arrangements or understandings between any HEI executive officer and any other person pursuant to which such executive officer was selected.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

HEI:

Certain of the information required by this item is incorporated herein by reference to Note 13, “Regulatory restrictions on net assets” and Note 17, “Quarterly information (unaudited)” of the Consolidated Financial Statements and “Item 6. Selected Financial Data” and “Equity compensation plan information” under “Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters” of this Form 10-K.

HEI’s common stock is traded on the New York Stock Exchange under the ticker symbol “HE.” The total number of holders of record of HEI common stock (i.e., registered holders) as of February 13, 2019, was 5,840. On February 14, 2019, the HEI Board of Directors approved a 1 cent increase in the quarterly dividend from $0.31 per share to $0.32 per share, starting with the dividend in the first quarter of 2019.

Purchases of HEI common shares were made during the fourth quarter to satisfy the requirements of certain plans as follows:

ISSUER PURCHASES OF EQUITY SECURITIES

Period*	Total Number of Shares Purchased **	Average Price Paid per Share **	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs
October 1 to 31, 2018	33,983	$ 36.11	—	NA
November 1 to 30, 2018	14,796	$ 37.49	—	NA
December 1 to 31, 2018	181,966	$ 38.73	—	NA

NA Not applicable.

* Trades (total number of shares purchased) are reflected in the month in which the order is placed.

** The purchases were made to satisfy the requirements of the DRIP, the HEIRSP and the ASB 401(k) Plan for shares purchased for cash or by the reinvestment of dividends by participants under those plans and none of the purchases were made under publicly announced repurchase plans or programs. Average prices per share are calculated exclusive of any commissions payable to the brokers making the purchases for the DRIP, the HEIRSP and the ASB 401(k) Plan. Of the “Total number of shares purchased,” 198,345 of the 230,745 shares were purchased for the DRIP; 27,000 of the 230,745 shares were purchased for the HEIRSP; and 5,400 of the 230,745 shares were purchased for the ASB 401(k) Plan. The repurchased shares were issued for the accounts of the participants under registration statements registering the shares issued under these plans.

Hawaiian Electric:

Since a corporate restructuring on July 1, 1983, all the common stock of Hawaiian Electric has been held solely by its parent, HEI, and is not publicly traded. Accordingly, information required with respect to “Market information” and “holders” is not applicable to Hawaiian Electric.

The dividends declared and paid on Hawaiian Electric’s common stock for the quarters of 2018 and 2017 were as follows:

Quarters ended	2018	2017
(in thousands)		

March 31	$25,826	$21,942
June 30	25,826	21,942
September 30	25,827	21,941
December 31	25,826	21,942

Also, see “Liquidity and capital resources” in HEI’s MD&A.

See the discussion of regulatory and other restrictions on dividends or other distributions in Note 13 of the Consolidated Financial Statements.

ITEM 6. SELECTED FINANCIAL DATA

HEI:

Selected Financial Data

Hawaiian Electric Industries, Inc. and Subsidiaries

Years ended December 31	2018	2017	2016	2015	2014
(dollars in thousands, except per share amounts)					
Results of operations					
Revenues	$2,860,849	$2,555,625	$2,380,654	$2,602,982	$3,239,542
Net income for common stock	201,774	165,297	248,256	159,877	168,129
Basic earnings per common share	1.85	1.52	2.30	1.50	1.65
Diluted earnings per common share	1.85	1.52	2.29	1.50	1.63
Return on average common equity	9.5 %	7.9 %	12.4 %	8.6 %	9.6 %
Financial position *					
Total assets	$13,104,051	$12,534,160	$11,881,981	$11,275,931	$10,710,711
Deposit liabilities	6,158,852	5,890,597	5,548,929	5,025,254	4,623,415
Other bank borrowings	110,040	190,859	192,618	328,582	290,656
Long-term debt, net—other than bank	1,879,641	1,683,797	1,619,019	1,578,368	1,498,547
Preferred stock of subsidiaries – not subject to mandatory redemption	34,293	34,293	34,293	34,293	34,293
Common stock equity	2,162,280	2,097,386	2,066,753	1,927,640	1,790,573
Common equity ratio	52 %	53 %	56 %	53 %	52 %
Common stock					
Book value per common share *	$19.86	$19.28	$19.03	$17.94	$17.46
Dividends declared per common share	1.24	1.24	1.24	1.24	1.24
Dividend payout ratio	67 %	82 %	54 %	82 %	75 %
Market price to book value per common share *	184 %	188 %	174 %	161 %	192 %
Price earnings ratio **	19.8x	23.8x	14.4x	19.3x	20.3 x
Common shares outstanding (thousands) *	108,879	108,788	108,583	107,460	102,565
Weighted-average-basic	108,855	108,749	108,102	106,418	101,968
Shareholders ***	25,369	26,064	26,831	27,927	29,415
Employees *	3,898	3,880	3,796	3,918	3,965

* At December 31.

** Calculated using December 31 market price per common share divided by basic earnings per common share.

*** At December 31. Represents registered shareholders plus participants in the HEI Dividend Reinvestment and Stock Purchase Plan (DRIP) who are not registered shareholders. As of February 13, 2019, HEI had 5,840 registered shareholders (i.e., holders of record of HEI common stock), 22,601 DRIP participants and total shareholders of 25,318.

2018 results include the impact of the lower federal corporate tax rate as a result of the Tax Act, as well as certain tax return adjustments, such as an increased pension deduction made in conjunction with the filing of the Company’s 2017 tax returns, which resulted in a net income tax benefit of $5 million that lowered the effective tax rate due to the additional tax benefits realized that were associated with the rate differential. The lower tax rate was partially offset by other Tax Act changes, including the non-deductibility of excess executive compensation and various fringe benefit costs. 2017 results include a $14 million adjustment, primarily to reduce deferred tax net asset balances (not accounted for under Utility regulatory ratemaking) to reflect the lower rates enacted by the Tax Act (see Note 11 of the Consolidated Financial Statements) and $20 million ($11 million, net of tax impacts) lower in RAM revenues than the prior year due to expiration of a 2013 settlement agreement that allowed the accrual of RAM revenues on January 1 (vs. June 1) for years 2014 to 2016 at Hawaiian Electric. Results for 2016, 2015 and 2014 include merger- and spin-off-related income/(expenses), net of tax impacts, of $60 million, ($16 million), and ($5 million), respectively (see Note 16 of the Consolidated Financial Statements).

In 2018, the Company reclassified “Contributions in aid of construction” to “Property, plant and equipment, net,” which affects “Total assets” in the above table. Financial data for all prior periods have been updated to reflect the reclassification.

For 2014, under the two-class method of computing basic earnings per share, distributed earnings was $1.24 per share and undistributed earnings (loss) was $0.41 per share, for both unvested restricted stock awards and unrestricted common stock. For 2014, under the two-class method of computing diluted earnings per share, distributed earnings was $1.24 per share and undistributed earnings (loss) was $0.40 per share, respectively, for both unvested restricted stock awards and unrestricted common stock. There were no restricted stock awards outstanding during 2018, 2017, 2016 and 2015.

Hawaiian Electric:
Selected Financial Data
Hawaiian Electric Company, Inc. and Subsidiaries

Years ended December 31	2018	2017	2016	2015	2014
(in thousands)					
Results of operations					
Revenues	$2,546,525	$2,257,566	$2,094,368	$2,335,166	$2,987,323
Net income for common stock	143,653	119,951	142,317	135,714	137,641
Financial position *					
Utility plant	$7,092,483	$6,717,311	$6,327,102	$6,037,712	$5,753,965
Accumulated depreciation	(2,577,342)	(2,476,352)	(2,369,282)	(2,266,004)	(2,175,510)
Net utility plant	$4,515,141	$4,240,959	$3,957,820	$3,771,708	$3,578,455
Total assets	$5,967,503	$5,630,613	$5,431,903	$5,166,123	$5,083,589
Current portion of long-term debt	$—	$49,963	$—	$—	$—
Short-term borrowings from non-affiliates	25,000	4,999	—	—	—
Long-term debt, net	1,418,802	1,318,516	1,319,260	1,278,702	1,199,025
Common stock equity	1,957,641	1,845,283	1,799,787	1,728,325	1,682,144
Cumulative preferred stock-not subject to mandatory redemption	34,293	34,293	34,293	34,293	34,293
Capital structure	$3,435,736	$3,253,054	$3,153,340	$3,041,320	$2,915,462
Capital structure ratios (%)					
Debt (short-term borrowings, and long-term debt, net, including current portion)	42.0	42.2	41.8	42.1	41.1
Cumulative preferred stock	1.0	1.1	1.1	1.1	1.2
Common stock equity	57.0	56.7	57.1	56.8	57.7

* At December 31.

HEI owns all of Hawaiian Electric's common stock. Therefore, per share data is not meaningful.

2018 results include the impact of the lower federal corporate tax rate as a result of the Tax Act, the benefits of which were returned to customers through a reduction in revenue requirements, as well as certain tax return adjustments, such as an increased pension deduction made in conjunction with the filing of the Company's 2017 tax returns, which resulted in a net income tax benefit of $5 million that lowered the effective tax rate due to the additional tax benefits realized that were associated with the rate differential. The lower tax rate was partially offset by other Tax Act changes, including the non-deductibility of excess executive compensation and various fringe benefit costs. 2017 results include $20 million ($11 million, net of tax impacts) lower in RAM revenues than prior year due to expiration of 2013 settlement agreement that allowed the accrual of RAM revenues on January 1 (vs. June 1) for years 2014 to 2016 at Hawaiian Electric, and a $9 million adjustment, primarily to reduce deferred tax net asset balances (not accounted for under regulatory ratemaking) to reflect the lower rates enacted by Tax Act (see Note 11 of the Consolidated Financial Statements).

In 2018, the Utilities reclassified "Contributions in aid of construction" to "Total property, plant and equipment, net," which affects "Utility plant" and "Total assets" in the above table. Financial data for all prior periods have been updated to reflect the reclassification.

Financial data for periods prior to January 1, 2016 has been updated to reflect the retrospective application of ASU No. 2015-03 (Interest-Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs).

See "Cautionary Note Regarding Forward-Looking Statements" above, the "electric utility" sections and all information related to, or including, Hawaiian Electric and its subsidiaries in HEI's MD&A and "Commitments and contingencies" in Note 3 of the Consolidated Financial Statements for discussions of certain contingencies that could adversely affect future results of operations, financial condition and cash flows.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

HEI and Hawaiian Electric (in the case of Hawaiian Electric, only the information related to Hawaiian Electric and its subsidiaries):

The following discussion should be read in conjunction with the Consolidated Financial Statements and the related Notes that appear in Item 8 of this report. For information on factors that may cause HEI's and Hawaiian Electric's actual future results to differ from those currently contemplated by the relevant forward-looking statements, see "Forward-Looking Statements" at the front of this report and "Risk Factors" in Item 1A. The general discussion of HEI's consolidated results should be read in conjunction with the Electric utility and Bank segment discussions that follow.

HEI Consolidated

Executive overview and strategy. HEI is a holding company with operations primarily focused on Hawaii's electric utility and banking sectors. In 2017, HEI formed Pacific Current to make investments in non-regulated renewable energy and sustainable infrastructure projects. HEI has three reportable segments—Electric utility, Bank, and Other.

Electric utility. Hawaiian Electric, Hawaii Electric Light and Maui Electric (Utilities) are regulated operating electric public utilities engaged in the production, purchase, transmission, distribution and sale of electricity on the islands of Oahu; Hawaii; and Maui, Lanai and Molokai, respectively.

Bank. ASB is a full-service community bank serving both consumer and commercial customers in the State of Hawaii and has 49 branches on branches on the islands of Oahu (34), Maui (6), Hawaii (5), Kauai (3), and Molokai (1).

Other. The Other segment comprises HEI's corporate-level operating, general and administrative expenses and the results of Pacific Current.

A major focus of HEI's financial strategy is to grow core earnings/profitability of its Utilities and Bank in a controlled risk manner and improve operating, capital and tax efficiencies in order to support its dividend and deliver shareholder value, while at the same time, serving as a catalyst for change to improve the Hawaii economy, environment and community. Together, HEI's unique combination of power and financial services companies provides the Company with a strong balance sheet and the financial resources to invest in the strategic growth of its subsidiaries, while providing an attractive dividend for investors.

HEI is fully committed to a 100 percent renewable future for Hawaii. The Company's electric utility is on track to achieve the next RPS milestone of 30% in 2020—having achieved an RPS of 27% for 2018, with approximately 475 MW of additional renewable generation contracted under PPAs (subject to PUC approval). Since 2011, the Company's electric utility reduced the oil used to generate electricity by 1.58 million barrels and have cut greenhouse gas emissions by 18.9% compared to a 2010 baseline. Reports on the Company's sustainability efforts can be found at: www.hawaiianelectric.com/clean-energy-hawaii/sustainability-report.

HEI consolidated results of operations.

(dollars in millions, except per share amounts)	2018	% change	2017	% change	2016
Revenues	$2,861	12	$2,556	7	$2,381
Operating income	333	(4)	346	(3)	356
Merger termination fee	—	—	—	(100)	90
Net income for common stock	202	22	165	(33)	248
Net income (loss) by segment:					
Electric utility	$144	20	$120	(16)	$142
Bank	83	23	67	17	57
Other	(24)	(13)	(22)	NM	49
Net income for common stock	$202	20	$165	(33)	$248
Basic earnings per share	$1.85	22	$1.52	(34)	$2.30
Diluted earnings per share	$1.85	22	$1.52	(34)	$2.29
Dividends per share	$1.24	—	$1.24	—	$1.24
Weighted-average number of common shares outstanding (millions)	108.9	—	108.7	1	108.1
Dividend payout ratio	67%		82%		54%

NM Not meaningful.

In 2018, net income for HEI common stock increased 20% to $202 million ($1.85 diluted earnings per share), compared to $165 million ($1.52 diluted earnings per share) in 2017, due to $24 million and $16 million higher net income at the Utilities and the Bank, respectively, partially offset by $3 million higher net loss at the "other" segment. The increase in the Utilities' 2018 net income compared to 2017 was principally due to higher RAM/MPIR revenues, rate relief, the 2017 reduction of non-regulated deferred tax balances to reflect lower tax rates enacted by the Tax Act, partially offset by higher expenses. The increase in the Bank's net income was primarily due to higher net interest income as a result of an increase in earning asset balances and yields and lower income tax expense as a result of the lower federal corporate tax rates from the Tax Act, partially offset by higher compensation and provision for loans losses. The "other" segment's net loss was higher primarily due to higher interest and compensation expenses and lower tax benefits on expenses as a result of tax reform, partially offset by higher operating income from a full year of Pacific Current results. See "Electric utility," "Bank," and "HEI Consolidated—Other segment" sections below for additional information on year-to-year fluctuations.

In 2017, net income for HEI common stock was $165 million ($1.52 diluted earnings per common share), down (34)% from $248 million ($2.29 diluted earnings per common share) in 2016, primarily due to the merger termination fee paid in 2016 by NEE. Excluding NEE-related income and expenses ($60 million after-tax), the decrease in net income from 2016 to 2017 was composed of the Utilities' $22 million lower net income and the "other" segment's $10 million higher net loss, partly offset by ASB's $10 million higher net income. Impacting these results were $14.2 million ($9.2 million at the Utilities; $(1.0) million at ASB; $6.0 million at the "other" segment) of net loss, primarily composed of tax expenses/(benefits) to reduce deferred tax balances to reflect the lower rates enacted by the Tax Act and an ASB special employee bonus awarded after the passing of the Tax Act lowered corporate income taxes in the future.

The Company's effective tax rate was lower in 2018 compared to 2017, primarily due to the provision in the Tax Act that lowered the federal income tax rate from 35% to 21% and the related amortization of excess deferred income taxes. In addition, the rate was further lowered by certain adjustments made in conjunction with the filing of the Company's 2017 tax returns, including an increased pension deduction taken resulting in a net income tax benefit of $5 million associated with the rate differential. The lower tax rate was partially offset by other Tax Act changes, including the non-deductibility of excess executive compensation and various fringe benefit costs. The Company's effective tax rate was higher in 2017 compared to 2016 primarily due to the (1) 2017 adjustment to accumulated deferred income tax balances (ADIT) (exclusive of ADIT related to the regulated rate base of the Utilities) for the new federal corporate tax rate of 21%, (2) 2016 deductibility of previously non-tax-deductible merger costs and (3) higher tax benefits recognized in 2016 for the domestic production activities deduction (DPAD) related to the Utilities' generation activities.

Other segment. The "other" business segment (loss)/income includes results of the stand-alone corporate operations of HEI, ASB Hawaii, Inc. (ASB Hawaii), and Pacific Current, LLC.

(in millions)	2018	2017	Increase (decrease)	Primary reason(s)
Operating loss[1]	(16)	(17)	1	Higher 2018 corporate operating, general and administrative expenses ($19 million in 2018 vs $17 million in 2017) related to higher compensation, offset by higher Pacific Current (Hamakua Energy) operating income.
Interest expense & other	(16)	(10)	(6)	Increase due to higher average borrowings and higher average interest rates. Average borrowings increased due to $67 million of secured debt at Hamakua Energy (drawn in December 2017), higher commercial paper balances (primarily related to Mauo project construction), and a $100 million tranche B private placement drawn in December 2018 to fund a contribution of utility equity.
Income tax benefit	8	5	3	Higher tax benefit due to an increase in pretax operating losses and interest expense, partially offset by a lower tax rate due to the Tax Act, excluding a one-time charge for the remeasurement of deferred tax assets ($5.7 million) related to the Tax Act in 2017.

Net loss	(24)	(22)	(2)

[1] Hamakua Energy's sales to Hawaii Electric Light (a regulated affiliate) are eliminated in consolidation.

(in millions)	2017	2016	Increase (decrease)	Primary reason(s)
Operating loss	(17)	(22)	5	Lower operating, general and administrative expenses ($17 million in 2017 vs $18 million in 2016) as in 2016, HEI had approximately $1 million (expenses, net of reimbursements of expenses from NEE and insurance) of expenses related to the previously proposed merger with NEE.
Merger termination	—	90	(90)	
Interest expense & other	(10)	(10)	—	Lower average borrowings in 2017 compared to 2016. In November 2017, a 2.99% $150 million term loan was used to retire term loans with resetting interest periods based on LIBOR rates. In 2016, a 4.41% senior note was refinanced to a lower rate Eurodollar term loan. In late December 2017, Hamakua Energy closed on $67 million of 4.02% senior secured notes.
Income tax benefit (expense)	5	(9)	14	In 2017, HEI's other segment included $5.7 million of tax reform-related tax expense, primarily to reduce net deferred tax asset balances to reflect the lower federal tax rate. In 2016, HEI's other segment included $25 million of tax expense relating to the previously proposed merger and spin-off (net of taxes), comprised of taxes on merger termination fee and reimbursements of expenses from NEE and insurance ($34 million), partly offset by additional tax benefits on the previously non-tax-deductible merger- and spin-off-related expenses incurred in previous years ($6 million) and tax on 2016 merger-related expenses ($3 million). In 2016, HEI's results also included other tax benefits recognized as a result of moving out of a federal net operating loss position.
Net income (loss)	(22)	49	(71)	

Economic conditions. The statistical data in this section is from public third-party sources that management believes to be reliable (e.g., Department of Business, Economic Development and Tourism (DBEDT), University of Hawaii Economic Research Organization, U.S. Bureau of Labor Statistics, Department of Labor and Industrial Relations (DLIR), Hawaii Tourism Authority (HTA), Honolulu Board of REALTORS® and national and local newspapers).

Hawaii's tourism industry, a significant driver of Hawaii's economy, ended 2018 with growth in both visitor spending and arrivals. Visitor expenditures increased 6.8% and arrivals increased 5.9% in 2018 compared to 2017.

Hawaii's unemployment rate increased to 2.5% for December 2018, which was higher than the rate for December 2017 and lower than the national unemployment rate of 3.9%. It is also the second lowest unemployment rate in the nation.

Hawaii real estate activity, as indicated by the home resale market, experienced a growth in median sales prices for single family homes and condominiums in 2018. Median sales prices for single family residential homes and condominiums on Oahu through December 2018 were higher by 4.6% and 3.7%, respectively, over the same time period in 2017. The number of closed sales for single family residential homes and condominiums were down by -7.7% and -2.5%, respectively, through December of 2018, compared to same time period of 2017.

Hawaii's petroleum product prices reflect supply and demand in the Asia-Pacific region and the price of crude oil in international markets. Although the price of crude oil fluctuates month to month, the recent trend over the last quarter has been a decreasing one which followed a 2.5-year stretch of general increases.

At its December 2018 meeting, the Federal Open Market Committee (FOMC) decided to raise the target range for the federal funds rate from 2.25% to 2.50% in view of realized and expected labor market conditions and inflation.

At its meeting in January 2019, Hawaii's Council on Revenues lowered its forecast for growth in the State General Fund tax revenue in fiscal year 2019 from 5.0% to 4.2%. While the economy is still performing well, the Council's decision to lower the estimate was based on the expectation of slower economic growth than in the past year and uncertainty about the future. The hotel employee strike, which started in early October 2018 and impacted thousands of hotel workers, ended after nearly two months. The partial Federal government shutdown then took effect in late December 2018 until January 25, 2019 when a stopgap bill was passed and signed to temporarily reopen the government through February 15, 2019. Most of the state’s federal employees are defense-related and were not impacted by the shutdown. The two most popular visitor attractions, Hawaii Volcanoes National Park on the island of Hawaii and the USS Arizona Memorial at Pearl Harbor, remained open during the shutdown with the support of alternative funding sources. Potential risks to the Hawaii economy include visitor infrastructure constraints, tight labor markets paired with moderate income gain and high housing costs, creating inflationary pressures. International trade tariffs and natural disasters also remain a source of great uncertainty.

Liquidity and capital resources. As a result of the Tax Act, utility property is no longer eligible for bonus depreciation. Consequently, the initial cash requirement for future capital projects will generally increase approximately 10% because of the loss of the immediate tax benefit from bonus depreciation. The Company believes that its ability to generate cash, both internally from electric utility and banking operations and externally from issuances of equity and debt securities, commercial paper and bank borrowings, is adequate to maintain sufficient liquidity to fund its contractual obligations and commercial commitments, its forecasted capital expenditures and investments, its expected retirement benefit plan contributions and other cash requirements for the foreseeable future.

The consolidated capital structure of HEI (excluding deposit liabilities and other bank borrowings) was as follows:

December 31 (dollars in millions)	2018		2017	
Short-term borrowings—other than bank	$74	2 %	$118	3 %
Long-term debt, net—other than bank	1,880	45	1,684	43
Preferred stock of subsidiaries	34	1	34	1
Common stock equity	2,162	52	2,097	53
	$4,150	100%	$3,933	100%

HEI's commercial paper borrowings and line of credit facility were as follows:

(in millions)	Year ended December 31, 2018 Average balance	 End-of-period balance	December 31, 2017
Commercial paper	$ 50	$ 49	$ 63
Line of credit draws	—	—	—
Undrawn capacity under HEI's line of credit facility	—	150	150

Note: This table does not include Hawaiian Electric's separate commercial paper issuances and line of credit facilities and draws, which are disclosed below under "Electric utility—Financial Condition—Liquidity and capital resources." The maximum amount of HEI's short-term borrowings in 2018 was $74.5 million.

HEI utilizes short-term debt, typically commercial paper, to support normal operations, to refinance commercial paper, to retire long-term debt, to pay dividends and for other temporary requirements, including short-term financing needs of its subsidiaries. HEI also periodically makes short-term loans to Hawaiian Electric to meet Hawaiian Electric's cash requirements, including the funding of loans by Hawaiian Electric to Hawaii Electric Light and Maui Electric, but no such short-term loans to Hawaiian Electric were outstanding as of December 31, 2018. HEI periodically utilizes long-term debt, historically unsecured indebtedness, to fund investments in and loans to its subsidiaries to support their capital improvement or other requirements, to repay long-term and short-term indebtedness and for other corporate purposes. See Notes 5 and 6 of the Consolidated Financial Statements for a brief description of the Company's loans.

HEI has a $150 million line of credit facility with no amounts outstanding as of December 31, 2018. See Note 5 of the Consolidated Financial Statements.

The rating of HEI's commercial paper and debt securities could significantly impact the ability of HEI to sell its commercial paper and issue debt securities and/or the cost of such debt. As of February 13, 2019, the Fitch, Moody's and S&P ratings of HEI were as follows:

	Fitch	Moody's	S&P
Long-term issuer default and senior unsecured; long-term rating; corporate credit; respectively	BBB	WR*	BBB-
Commercial paper	F3	P-3	A-3
Outlook	Stable	Stable	Stable

* Moody's long-term debt rating was withdrawn because HEI does not currently have any outstanding, publicly traded debt. Moody's continues to rate Hawaiian Electric's long-term debt. See Electric utility MD&A.

Note: The above ratings reflect only the view, at the time the ratings are issued or affirmed, of the applicable rating agency, from whom an explanation of the significance of such ratings may be obtained. Such ratings are not recommendations to buy, sell or hold any securities; such ratings may be subject to revision or withdrawal at any time by the rating agencies; and each rating should be evaluated independently of any other rating.

Issuances of common stock through the Hawaiian Electric Industries, Inc. Dividend Reinvestment and Stock Purchase Plan (DRIP), Hawaiian Electric Industries Retirement Savings Plan (HEIRSP) and the ASB 401(k) Plan provided new capital of $30 million (approximately 1 million shares) in 2016. From January 1, 2016 through January 5, 2016, and from December 7, 2016 to date, HEI satisfied the share purchase requirements of the DRIP, HEIRSP and ASB 401(k) Plan through open market purchases of its common stock rather than new issuances. Also, from June 2, 2016 through August 9, 2016, HEI satisfied the share purchase requirements of the HEIRSP and ASB 401(k) Plan through open market purchases of its common stock.

Operating activities provided net cash of $499 million in 2018, $420 million in 2017 and $496 million in 2016.

Investing activities used net cash of $792 million in 2018, $815 million in 2017 and $736 million in 2016. In 2018, net cash used in investing activities was primarily due to capital expenditures, purchases of available-for-sale investment securities, net increase in loans held for investment, purchases of held-to-maturity investment securities, purchase of stock from Federal Home Loan Bank and contributions to low-income housing investments, partly offset by receipt of repayments from available-for-sale investment securities, contributions in aid of construction, proceeds from the sale of commercial loans, redemption of stock from Federal Home Loan Bank and repayments from held-to-maturity investment securities. In 2017, net cash used in investing activities was primarily due to a Hawaiian Electric's consolidated capital expenditures (net of contributions in aid of construction), Hamakua Energy's acquisition of a power plant and ASB's purchases of investment securities, partly offset by the repayments of investment securities, proceeds from sale of commercial loans and a net decrease in loans held for investment.

Financing activities provided net cash of $200 million in 2018, $378 million in 2017 and $219 million in 2016. In 2018, net cash provided by financing activities included proceeds from issuance of long-term debt, net increases in deposits and retail repurchase agreements, partly offset by payment of common and preferred stock dividends, long-term debt maturities and net decreases in short-term debt and other bank borrowings. In 2017, net cash provided by financing activities included net increases in deposits and long-term debt and net increases in short-term borrowings and ASB's retail repurchase agreements, partly offset by a net decrease in ASB's other borrowings and payment of common and preferred stock dividends.

Other than capital contributions from their parent company, intercompany services (and related intercompany payables and receivables), Hawaiian Electric's periodic short-term borrowings from HEI (and related interest) and the payment of dividends to HEI, the electric utility and bank segments are largely autonomous in their operating, investing and financing activities. (See the electric utility and bank segments' discussions of their cash flows in their respective "Financial condition-Liquidity and capital resources" sections below.) During 2018, Hawaiian Electric, ASB (through ASB Hawaii) and Pacific Current paid cash dividends to HEI of $103 million, $50 million and $1 million, respectively.

A portion of the net assets of Hawaiian Electric and ASB is not available for transfer to HEI in the form of dividends, loans or advances without regulatory approval. In the absence of an unexpected material adverse change in the financial condition of the electric utilities or ASB, such restrictions are not expected to significantly affect the operations of HEI, its ability to pay dividends on its common stock or its ability to meet its debt or other cash obligations. See Note 13 of the Consolidated Financial Statements.

Forecasted HEI consolidated "net cash used in investing activities" (excluding "investing" cash flows from ASB) for 2019 through 2021 consists primarily of the net capital expenditures of the Utilities, estimated to range from $1.2 billion to $1.4 billion over the next three years. In addition to the funds required for the Utilities' construction programs and debt maturities (see "Electric utility–Liquidity and capital resources"), approximately $50 million will be required in 2021 to repay HEI's $50 million private placement note maturing in March 2021, which is expected to be repaid with the proceeds from the issuance of commercial paper, bank borrowings, other medium- or long-term debt, common stock and/or dividends from subsidiaries. Additional debt and/or equity financing may be utilized to invest in the Utilities, bank or Pacific Current; to pay down commercial paper or other short-term borrowings; or to fund unanticipated expenditures not included in the 2019 through 2021 forecast, such as increases in the costs of or an acceleration of the construction of capital projects of the Utilities or unanticipated utility capital expenditures. In addition, existing debt may be refinanced prior to maturity with additional debt or equity financing (or both).

Selected contractual obligations and commitments. Information about payments under the specified contractual obligations and commercial commitments of HEI and its subsidiaries was as follows:
December 31, 2018

(in millions)	Less than 1 year	1-3 years	3-5 years	More than 5 years	Total
Contractual obligations					
Investment in qualifying affordable housing projects	$6	$11	$—	$1	$18
Time certificates	509	236	80	3	828
Other bank borrowings	110	—	—	—	110
Short-term borrowings	74	—	—	—	74
Long-term debt	4	154	360	1,372	1,890
Interest on CDs, other bank borrowings, short-term loan and long-term debt	95	170	150	797	1,212
Operating leases, service bureau contract, and maintenance agreements	24	34	15	11	84
Hawaiian Electric open purchase order obligations[1]	75	7	3	—	85
Hawaiian Electric fuel oil purchase obligations (estimate based on December 31, 2018 fuel oil prices)	140	16	—	—	156
Hawaiian Electric power purchase–minimum fixed capacity obligations	119	195	118	279	711
Liabilities for uncertain tax positions	—	2	—	—	2
Total (estimated)	$1,156	$825	$726	$2,463	$5,170

[1] Includes contractual obligations and commitments for capital expenditures and expense amounts.

The table above does not include other categories of obligations and commitments, such as deferred taxes, trade payables, amounts that will become payable in future periods under collective bargaining and other employment agreements and employee benefit plans, and potential refunds of amounts collected from ratepayers (e.g., under the earnings sharing mechanism). As of December 31, 2018, the fair value of the assets held in trusts to satisfy the obligations of the Company’s retirement benefit plans did not exceed the retirement benefit plans’ benefit obligation. Minimum funding requirements for retirement benefit plans have not been included in the tables above; however, see Note 9 of the Consolidated Financial Statements for 2019 estimated contributions.

See Note 3 of the Consolidated Financial Statements for a discussion of fuel and power purchase commitments. See Note 4 of the Consolidated Financial Statements for a further discussion of ASB’s commitments.

The Company adopted ASU No. 2016-02 on January 1, 2019, which had a material effect on its balance sheet as of January 1, 2019 due to the recognition of lease liabilities and right-of-use assets. See Note 1, “Summary of Significant Accounting Policies—Recent accounting pronouncements—Leases,” of the Consolidated Financial Statements.

Off-balance sheet arrangements. Although the Company and the Utilities have off-balance sheet arrangements, management has determined that it has no off-balance sheet arrangements that either have, or are reasonably likely to have, a current or future effect on the Company’s and the Utilities’ financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors, including the following types of off-balance sheet arrangements:

1. obligations under guarantee contracts,
2. retained or contingent interests in assets transferred to an unconsolidated entity or similar arrangements that serve as credit, liquidity or market risk support to that entity for such assets,
3. obligations under derivative instruments, and
4. obligations under a material variable interest held by the Company or the Utilities in an unconsolidated entity that provides financing, liquidity, market risk or credit risk support to the Company or the Utilities, or engages in leasing, hedging or research and development services with the Company or the Utilities.

Material estimates and critical accounting policies. In preparing financial statements, management is required to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities and the reported amounts of revenues and expenses. Actual results could differ significantly from those estimates.

Material estimates that are particularly susceptible to significant change include the amounts reported for pension and other postretirement benefit obligations; contingencies and litigation; income taxes; regulatory assets and liabilities; electric utility unbilled revenues; allowance for loan losses; and fair value. Management considers an accounting estimate to be material if it requires assumptions to be made that were uncertain at the time the estimate was made and changes in the assumptions selected could have a material impact on the estimate and on the Company's results of operations or financial condition.

In accordance with SEC Release No. 33-8040, "Cautionary Advice Regarding Disclosure About Critical Accounting Policies," management has identified the accounting policies it believes to be the most critical to the Company's financial statements--that is, management believes that the policies discussed below are both the most important to the portrayal of the Company's results of operations and financial condition, and currently require management's most difficult, subjective or complex judgments. The policies affecting both of the Company's two principal segments are discussed below and the policies affecting just one segment are discussed in the respective segment's section of "Material estimates and critical accounting policies." Management has reviewed the material estimates and critical accounting policies with the HEI Audit Committee and, as applicable, the Hawaiian Electric Audit Committee.

For additional discussion of the Company's accounting policies, see Note 1 of the Consolidated Financial Statements and for additional discussion of material estimates and critical accounting policies, see the electric utility and bank segment discussions below under the same heading.

Pension and other postretirement benefits obligations. The Company's reported costs of providing retirement benefits are dependent upon numerous factors resulting from actual plan experience and assumptions about future experience. For example, retirement benefits costs are impacted by actual employee demographics (including age and compensation levels), the level of contributions to the plans, earnings and realized and unrealized gains and losses on plan assets, and changes made to the provisions of the plans. Costs may also be significantly affected by changes in key actuarial assumptions, including the expected return on plan assets, the discount rate and mortality. The Company's accounting for retirement benefits under the plans in which the employees of the Utilities participate is also adjusted to account for the impact of decisions by the PUC. Changes in obligations associated with the factors noted above may not be immediately recognized as costs on the income statement, but generally are recognized in future years over the remaining average service period of plan participants.

Based on various assumptions in Note 9 of the Consolidated Financial Statements, sensitivities of the projected benefit obligation (PBO) and accumulated postretirement benefit obligation (APBO) as of December 31, 2018, associated with a change in certain actuarial assumptions, were as follows and constitute "forward-looking statements":

Actuarial assumption	Change in assumption in basis points	Impact on HEI Consolidated PBO or APBO	Impact on Consolidated Hawaiian Electric PBO or APBO
(dollars in millions)			
Pension benefits			
Discount rate	'+/- 50	(147)/166	(137)/156
Other benefits			
Discount rate	'+/- 50	(12)/13	(11)/12
Health care cost trend rate	'+/- 100	3/(3)	3/(3)

Also, see Notes 1 and 9 of the Consolidated Financial Statements.

Contingencies and litigation. The Company is subject to proceedings (including PUC proceedings), lawsuits and other claims. Management assesses the likelihood of any adverse judgments in or outcomes of these matters as well as potential ranges of probable losses, including costs of investigation. A determination of the amount of reserves required, if any, for these contingencies is based on an analysis of each individual case or proceeding often with the assistance of outside counsel. The required reserves may change in the future due to new developments in each matter or changes in approach in dealing with these matters, such as a change in settlement strategy.

In general, environmental contamination treatment costs are charged to expense, unless it is probable that the PUC would allow such costs to be recovered through future rates, in which case such costs would be capitalized as regulatory assets. Also, environmental costs are capitalized if the costs extend the life, increase the capacity, or improve the safety or efficiency of property; the costs mitigate or prevent future environmental contamination; or the costs are incurred in preparing the property for sale.

See Notes 3 and 4 of the Consolidated Financial Statements.

Income taxes. Deferred income tax assets and liabilities are established for the temporary differences between the financial reporting bases and the tax bases of the Company's assets and liabilities using tax rates expected to be in effect when such deferred tax assets or liabilities are realized or settled. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible.

Management evaluates its potential exposures from tax positions taken that have or could be challenged by taxing authorities. These potential exposures result because taxing authorities may take positions that differ from those taken by management in the interpretation and application of statutes, regulations and rules. Management considers the possibility of alternative outcomes based upon past experience, previous actions by taxing authorities (e.g., actions taken in other jurisdictions) and advice from its tax advisors. Management believes that the Company's provision for tax contingencies is reasonable. However, the ultimate resolution of tax treatments disputed by governmental authorities may adversely affect the Company's current and deferred income tax amounts.

See Note 11 of the Consolidated Financial Statements.

Following are discussions of the electric utility and bank segments. Additional segment information is shown in Note 2 of the Consolidated Financial Statements. The discussion concerning Hawaiian Electric should be read in conjunction with its consolidated financial statements and accompanying notes.

Electric utility

Executive overview and strategy. The Utilities provide electricity on all the principal islands in the state, other than Kauai, to approximately 95% of the state's population, and operate five separate grids. The Utilities' mission is to provide innovative energy leadership for Hawaii, to meet the needs and expectations of customers and communities, and to empower them with affordable, reliable and clean energy. The goal is to create a modern, flexible, and dynamic electric grid that enables an optimal mix of distributed energy resources, such as private rooftop solar, demand response, and grid-scale resources to enable the creation of smart, sustainable, resilient communities and achieve the statutory goal of 100% renewable energy by 2045.

Transition to renewable energy. The Utilities are fully committed to a 100 percent renewable future for Hawaii and are partnering with the State of Hawaii in achieving its Renewable Portfolio Standard goal of 100% renewable energy by 2045. Hawaii's RPS law requires electric utilities to meet an RPS of 15%, 30%, 40%, 70% and 100% by December 31, 2015, 2020, 2030, 2040 and 2045, respectively. The regulatory framework includes a number of mechanisms designed to provide utility financial stability during the transition toward the state's 100% renewable energy future. Under the sales decoupling mechanism, the utilities are allowed to recover from customers, target test year revenues, independent of the level of kWh sales, which have declined as privately-owned distributed energy resources have been added to the grid and energy efficiency measures have been put into place. Other regulatory mechanisms reduce regulatory lag, such as the major project interim recovery mechanism, which allow the utilities to recover and earn on certain approved major capital projects placed into service in between rate cases. See "Item 1. Business—HEI Consolidated" and "Decoupling" in Note 3 of the Consolidated Financial Statements.

The Utilities have made significant progress on the path to clean energy and have been successful in adding significant amounts of renewable energy resources to their electric systems and exceeded the 2015 RPS goal. The Utilities' RPS for 2018 was approximately 27% and is on track to achieve the 2020 RPS goal of 30%. (See "Developments in renewable energy efforts" below). Also, compared to 2011, the Utilities have reduced the use of oil to produce electricity by 1.58 million barrels. The combination of replacing fossil fuel generation with renewables, customer conservation efforts, and energy efficiency actions has allowed the Utilities to achieve its 2020 greenhouse gas emissions reduction target of 16% (compared to a 2010 baseline) ahead of schedule in 2014. As of the end of 2018, the Utilities have achieved a 18.9% decrease in greenhouse gas emissions compared to 2010.

Power Supply Improvement Plans and Integrated Grid Planning. The December 2016 PSIP Update Report accepted by the PUC in July 2017 includes the continued growth of private rooftop solar and describes the grid and generation modernization work needed to reliably integrate an estimated total of 165,000 private systems by 2030, and additional grid-scale renewable energy resources. In addition, the plans forecast the addition of 360 MW of grid-scale solar and 157 MW of grid-scale wind, with 8 MW derived from the first phase of the community-based renewable energy (CBRE) program. The plans also include 115 MW from Demand Response (DR) programs, which can shift customer use of electricity to times when more renewable energy is available, potentially increasing the capacity to add even more renewable resources. The December 2016 Update Report emphasizes work that is in progress or planned

through 2021 on each of the five islands the Utilities serve.
Achieving 100% renewable energy will require modernizing the grid through coordinated energy system planning in partnership with local communities and stakeholders. To accomplish this, the Utilities filed its Integrated Grid Planning (IGP) Report with the PUC on March 1, 2018, which provides an innovative systems approach to energy planning intended to yield the most cost-effective renewable energy pathways that incorporates customer and stakeholder input.

The PUC opened a docket for the IGP process that the Utilities had proposed. As required, the Utilities filed an IGP Work plan on December 14, 2018, describing the timing and scope of major activities that will occur in the IGP process.

Demand response programs. Pursuant to PUC orders, the Utilities are developing an integrated DR Portfolio Plan that will enhance system operations and reduce costs to customers. The reduction in cost for the customer will take the form of either rates or incentive-based programs that will compensate customers for their participation individually, or by way of engagements with turnkey service providers that contract with the Utilities to aggregate and deliver various grid services on behalf of participating customers and their distributed assets.

In October 2017, the PUC approved the Utilities request made in December 2015 to defer and recover certain computer software and software development costs for a DR Management System in an amount not to exceed $3.9 million, exclusive of AFUDC, through the Renewable Energy Infrastructure Program Surcharge. The Utilities placed the DR Management System in service in the first quarter of 2019. In 2019, the Utilities are expected to sign a number of multi-year Grid Services Purchase Agreements with third party aggregators. These contracts pay service providers to aggregate grid-supporting capabilities from customer-sited Distributed Energy Resources. The first of these five-year contracts in a not-to-exceed amount of $21 million has been executed and is expected to not only deliver benefit through efficient grid operations and avoided fuel costs over that 5-year period, but as the PUC considers Performance-based Regulation, demonstrated savings resulting from these contracts could results in shared savings for the Utilities. This complements the Utilities’ transformation and supports customer choice.

On January 25, 2018, the PUC approved the Utilities’ revised DR Portfolio tariff structure. The PUC supported the approach of working with aggregators to implement the DR portfolio, and ordered the Utilities to complete contracting by June 2018 and initiate first implementation by the third quarter of 2018. The Utilities have selected the aggregators and commenced negotiations in July 2018, with many technical requirements discussions held throughout 2018. The aggregator contracts will be finalized in the first quarter of 2019.

Grid modernization. The overall goal of the Grid Modernization Strategy is to deploy modern grid investments at an appropriate priority, sequence and pace to cost-effectively maximize flexibility, minimize the risk of redundancy and obsolescence, deliver customer benefits and enable greater DER and renewable energy integration. Under the Grid Modernization Strategy, new technology will help triple private rooftop solar and make use of rapidly evolving products including storage and advanced inverters. The Utilities have begun work to implement the Grid Modernization Strategy by issuing solicitations for advanced meters, a meter data management system, and a communications network. The Utilities filed an application with the PUC on June 21, 2018, for the first implementation phase, estimated to cost approximately $86 million and expected to be incurred over five years. Additional applications will be filed later to implement subsequent phases of the strategy.

Community-Based Renewable Energy. In December 2017, the PUC adopted a CBRE program framework which allows customers who cannot, or chose not to, take advantage of private rooftop solar to receive the benefits of renewable energy to help offset their monthly electric bills and support clean energy for Hawaii. The program has two phases.

The first phase, which commenced in July 2018, totals 8 MW of solar PV only with one credit rate for each island. The Utilities’ role is limited to administrative only during the first phase. As administrators, the Utilities will work with subscriber organizations to allocate capacity, answer general program questions, verify subscriber eligibility and process bill credits for subscribers. The Utilities are in the process of verifying the projects and awarding the capacity to interested subscriber organizations. The response has been positive; four of the five islands that the Utilities serve have received applications that equal or exceed what is allowed in phase 1.

The second phase will commence after review of the first full year of the first phase. The second phase is contemplated to be a larger capacity and include multiple credit rates (e.g., time of day) and various technologies. The Utilities will have the opportunity to develop self-build projects; however 50% of utility capacity will be reserved for low to moderate income customers.

Microgrid services tariff proceeding. On July 10, 2018, the PUC issued an order instituting a proceeding to investigate establishment of a microgrid services tariff, pursuant to Act 200 (July 10, 2018 Act). The PUC will issue subsequent order(s) establishing a statement of issues to be addressed in the order, and issue a procedural schedule to govern this proceeding, after the deadline for the filing of motions to intervene or participate.

Decoupling. See “Decoupling” in “Item 1. Business—HEI Consolidation” and Note 3 of the Consolidated Financial Statements for a discussion of decoupling.

As part of decoupling, the Utilities also track their rate-making ROACEs as calculated under the earnings sharing mechanism, which includes only items considered in establishing rates. At year-end, each utility’s rate-making ROACE is compared against its ROACE allowed by the PUC to determine whether earnings sharing has been triggered. Annual earnings

of a utility over and above the ROACE allowed by the PUC are shared between the utility and its ratepayers on a tiered basis. Earnings sharing credits are included in the annual decoupling filing for the following year. Results for 2018, 2017 and 2016 did not trigger the earnings sharing mechanism for the Utilities.
Regulated returns. Actual and PUC-allowed returns, as of December 31, 2018, were as follows:

%	Rate-making Return on rate base (RORB)*			ROACE**			Rate-making ROACE***		
Year ended December 31, 2018	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Hawaiian Electric	Hawaii Electric Light	Maui Electric
Utility returns	6.55	6.98	6.26	7.36	8.41	7.59	7.89	8.08	7.38
PUC-allowed returns	7.57	7.80	7.43	9.50	9.50	9.50	9.50	9.50	9.50
Difference	(1.02)	(0.82)	(1.17)	(2.14)	(1.09)	(1.91)	(1.61)	(1.42)	(2.12)

* Based on recorded operating income and average rate base, both adjusted for items not included in determining electric rates.
** Recorded net income divided by average common equity.
*** ROACE adjusted to remove items not included by the PUC in establishing rates, such as incentive compensation.
The gap between PUC-allowed ROACEs and the ROACEs actually achieved is primarily due to: the consistent exclusion of certain expenses from rates (for example, incentive compensation and charitable contributions), the recognition of annual RAM revenues on June 1 annually rather than on January 1, the low RBA interest rate (currently a short-term debt rate rather than the actual cost of capital), O&M increases and return on capital additions since the last rate case in excess of indexed escalations, and the first-year averaging convention for MPIR investments for rate base purposes.

Results of operations.

• 2018 vs. 2017

2018	2017	Increase (decrease)		(dollars in millions, except per barrel amounts)
$2,547	$2,258	$289		Revenues. Net increase largely due to:
			$180	higher fuel prices[1]
			70	higher purchased power energy costs[2]
			46	higher rate relief
			39	higher RAM and MPIR revenues
			(46)	Tax reform adjustment
761	588	173		Fuel oil expense. Increase due to higher fuel oil prices and higher kWh generated
639	587	52		Purchased power expense. Net increase due to:
			63	higher purchased power energy price
			(9)	lower kWh purchased
			(3)	lower PGV capacity charges
461	412	49		Operation and maintenance expense. Increase largely due to:
			24	reset of pension costs included in rates as part of rate case decisions
			4	higher ERP costs related to outside consultants
			3	25KV underground circuit repair work
			3	higher operation and maintenance expense for generation plants
			2	higher corrective maintenance for transmission and distribution facilities
			2	write-off of preliminary engineering costs for LNG projects
			2	write-off of smart grid costs
			2	higher medical premium costs
			2	higher workers' compensation claims
			2	operation expense for Schofield Generating Station placed in service in June
			2	Increased IT and cyber security costs
			1	one-time rent expense adjustment for existing substation land
444	408	36		Other expenses. Increase due to higher revenue taxes from higher revenue, coupled with higher depreciation expense for plant investments in 2017
242	264	(22)		Operating income. Decrease due to higher operation and maintenance and other expenses, and tax reform revenue adjustment, offset in part by higher RAM and MPIR revenues and rate relief
144	120	24		Net income for common stock. Increase due to higher RAM and MPIR revenues, rate relief and lower taxes, offset in part by higher expenses. See below for discussion on effective tax rate
7.6 %	6.6 %	1 %		Return on average common equity
87.90	68.78	19.12		Average fuel oil cost per barrel [1]
8,689	8,690	(1)		Kilowatthour sales (millions)
2,704	2,724	(20)		Number of employees (at December 31)

1 The rate schedules of the electric utilities currently contain energy cost adjustment clauses (ECACs) through which changes in fuel oil prices and certain components of purchased energy costs are passed on to customers.

2 The rate schedule of the electric utilities currently contain purchase power adjustment clauses (PPACs) through which changes in purchase power expenses (except purchased energy costs) are passed on to customers.

• 2017 vs. 2016

2017	2016	Increase (decrease)		(dollars in millions, except per barrel amounts)
$2,258	$2,094	$164		Revenues. Net increase largely due to:
			$150	higher fuel prices[1]
			40	higher purchased power energy costs[2]
			15	higher RAM revenue and interim rate increase at Hawaii Electric Light
			(2)	lower purchased power non-energy costs[2]
			(5)	lower kWh generated
			(12)	lower kWh purchased
			(20)	lower RAM revenues due to expiration of 2013 settlement agreement that allowed the accrual of RAM revenues on January 1 (vs. June 1) for years 2014 to 2016 at Hawaiian Electric
588	455	133		Fuel oil expense. Increase due to higher fuel oil prices, partially offset by lower kWh generated
587	563	24		Purchased power expense. Increase due to higher purchased power energy prices largely due to higher fuel prices, partly offset by lower kWh purchased[2]
412	400	12		Operation and maintenance expense. Net increase due to:
			9	higher overhaul costs due to more overhauls being performed in 2017
			5	higher ERP project costs (project commenced in 2017)
			3	higher transmission and distribution operation and maintenance costs
			1	higher Grid modernization consultant cost (none in 2016)
			1	write off of portion of deferred Geothermal RFP costs
			(3)	higher LNG consulting costs to negotiate LNG contract in 2016, which was subsequently terminated following HEI/Nextera merger termination
			(4)	higher PSIP consulting costs incurred in 2016, in order to complete the PSIP update in April 2016 and December 2016
408	387	21		Other expenses. Increase due to higher revenue taxes from higher revenue, coupled with higher depreciation expense for plant investments in 2016
264	290	(26)		Operating income. Decrease due to lower RAM revenues and higher operation and maintenance and other expenses
120	142	(22)		Net income for common stock. Decrease due to lower operating income and higher income taxes due to write-down of deferred tax assets to reflect the lower tax rates enacted by the Tax Act
6.6%	8.1%	(1.5)%		Return on average common equity
68.78	53.49	15.29		Average fuel oil cost per barrel[1]
8,690	8,845	(155)		Kilowatthour sales (millions)[3]
2,724	2,662	62		Number of employees (at December 31)

1 The rate schedules of the electric utilities currently contain energy cost adjustment clauses (ECACs) through which changes in fuel oil prices and certain components of purchased energy costs are passed on to customers.

2 The rate schedule of the electric utilities currently contains purchase power adjustment clauses (PPACs) through which changes in purchase power expenses (except purchased energy costs) are passed on to customers.

3 kWh sales were lower in 2017 when compared to the prior year due largely to continued energy efficiency and conservation efforts by customers and increasing levels of private customer-sited renewable generation.

Hawaiian Electric's effective tax rate (combined federal and state income tax rates) was lower in 2018 compared to 2017, primarily due to the provision in the Tax Act that lowered the federal income tax rate from 35% to 21% and the related amortization of excess deferred income taxes. In addition, the rate was further lowered by certain adjustments made in conjunction with the filing of the Company's 2017 tax returns, including an increased pension deduction taken resulting in a net income tax benefit of $5.3 million associated with the rate differential. The lower tax rate was partially offset by other Tax Act changes, including the non-deductibility of excess executive compensation and various fringe benefit costs.

Hawaiian Electric's effective tax rate (combined federal and state income tax rates) was higher for 2017 compared to 2016, primarily due to the impact of the 2017 adjustment to accumulated deferred income tax balances (exclusive of accumulated deferred income tax balances related to the regulated rate base of the Utilities) for the new federal corporate tax rate of 21%.

Most recent rate proceedings. Unless otherwise agreed or ordered, each electric utility is currently required by PUC order to initiate a rate proceeding every third year (on a staggered basis) to allow the PUC and the Consumer Advocate to regularly evaluate decoupling and to allow the utility to request electric rate increases to cover rising operating costs and the cost of plant and equipment, including the cost of new capital projects to maintain and improve service reliability and integrate more renewable energy. The PUC may grant an interim increase within 10 to 11 months following the filing of an application, but there is no guarantee of such an interim increase and interim amounts collected are refundable, with interest, to the extent they exceed the amount approved in the PUC's final D&O. The timing and amount of any final increase is determined at the discretion of the PUC. The adoption of revenue, expense, rate base and cost of capital amounts (including the ROACE and RORB) for purposes of an interim rate increase does not commit the PUC to accept any such amounts in its final D&O.

In 2018, final D&Os were issued by the PUC for the Hawaiian Electric 2017 rate case and the Hawaii Electric Light 2016 rate case. Interim rates for Maui Electric's 2018 rate case were effective on August 23, 2018, with a final D&O pending. In December 2018, Hawaii Electric Light filed its 2019 rate case.

Test year (dollars in millions)	Date (filed/ implemented)	Amount	% over rates in effect	ROACE (%)	RORB (%)	Rate base	Common equity %	Stipulated agreement reached with Consumer Advocate
Hawaiian Electric								
2017[1]								
Request	12/16/16	$106.4	6.9	10.60	8.28	$2,002	57.36	Yes
Interim increase	2/16/18	36.0	2.3	9.50	7.57	1,980	57.10	
Interim increase with Tax Act	4/13/18	(0.6)	—	9.50	7.57	1,993	57.10	
Final increase	9/1/18	(0.6)	—	9.50	7.57	1,993	57.10	
Hawaii Electric Light								
2016[2]								
Request	9/19/16	$19.3	6.5	10.60	8.44	$479	57.12	Yes
Interim increase	8/31/17	9.9	3.4	9.50	7.80	482	56.69	
Interim increase with Tax Act	5/1/18	1.5	0.5	9.50	7.80	481	56.69	
Final increase	10/1/18	—	—	9.50	7.80	481	56.69	
2019								
Request	12/14/18	$13.4	3.4	10.50	8.30	$537	56.91	
Maui Electric								
2018								
Request	10/12/17	$30.1	9.3	10.60	8.05	$473	56.94	Yes
Interim increase	8/23/18	12.5	3.82	9.50	7.43	462	57.02	

Note: The "Request" date reflects the application filing date for the rate proceeding. The "Interim increase" and "Final increase" date reflects the effective date of the revised schedules and tariffs as a result of the PUC-approved increase.

[1] Final decision and order was issued on June 22, 2018.

[2] Final decision and order was issued on June 29, 2018.

See also "Most recent rate proceedings" in Note 3 of the Consolidated Financial Statements.

The effects of the Tax Act on the Utilities' regulated operations accrued to the benefit of customers from the effective date of January 1, 2018 and were addressed in the Utilities' rate cases summarized above. Generally, the lower corporate income tax rate lowers the Utilities' revenue requirements through lower income tax expense and through the amortization of a regulatory liability for excess accumulated deferred income taxes (ADIT) resulting from the recording of ADIT in prior years at the higher income tax rate. The revenues collected in the first and a portion of the second quarters of 2018 reflected income taxes at the old 35% rate and consequently, the Utilities reduced revenues to the extent the income taxes collected in 2018 revenue exceeded the taxes accrued at the new 21% rate. This reduction was recorded to a regulatory liability and electric rates were adjusted in the second quarter to initiate the return of the 2018 excess to customers over various amortization periods. In addition, rates have been adjusted to begin returning the excess ADIT that was accumulated as of December 31, 2017. The Tax Act also excludes the Utilities' asset additions from qualifying for bonus depreciation (other than certain grandfathered utility property), which has the offsetting effect of increasing revenue requirement by lowering ADIT and thereby increasing rate base on a prospective basis.

Performance-based regulation and ratemaking legislation. See "Performance incentive mechanisms" and "Performance-based regulation proceeding" in Note 3 of the Consolidated Financial Statements.

Depreciation docket. In December 2016, the Utilities filed an application with the PUC for approval of changes in the depreciation and amortization rates and amortization period for CIAC, based on a 2015 Book Depreciation Study. In July 2018, the PUC approved the stipulated agreement between the Utilities and the Consumer Advocate, which among other things:

- Authorized the use of consolidated depreciation and amortization rates rather than separate depreciation and amortization rates for the three utilities
- Established revised depreciation and amortization rates for the three utilities
- Approved the implementation of the new depreciation and amortization rates and other changes to coincide with the effective date of the interim or final base rates approved in the subsequent rate case for each utility, beginning with Maui Electric's ongoing 2018 test year rate case

Developments in renewable energy efforts. Developments in the Utilities' efforts to further their renewable energy strategy include renewable energy projects discussed in Note 3 of the Consolidated Financial Statements and the following:

New renewable PPAs.

- South Maui Renewable Resources (2.87 MW solar) reached commercial operations on May 5, 2018, and Kuia Solar (2.87 MW solar) reached commercial operations on October 4, 2018. Each project's PPA with Maui Electric was approved by the PUC in February 2016, subject to certain modifications and conditions.
- In December 2014, the PUC approved a PPA for Renewable As-Available Energy dated October 3, 2013 between Hawaiian Electric and Na Pua Makani Power Partners, LLC (NPM) for a proposed 24-MW wind farm on Oahu. The NPM wind farm was expected to be placed into service by August 31, 2019, but has been delayed due to an appeal of the decision in the Habitat Conservation Permit contested case.
- In July 2017, the PUC approved, with certain modifications and conditions, three PPAs for solar energy on Oahu with Waipio PV, LLC for 45.9 MW, Lanikuhana Solar, LLC for 14.7 MW and Kawailoa Solar, LLC for 49.0 MW. The three projects are now owned by Clearway Energy Group LLC, which is an investment of Global Infrastructure Partners. The three projects are expected to be in service by the end of 2019.
- In July 2018, the PUC approved Maui Electric's PPA with Molokai New Energy Partners to purchase solar energy from a PV plus battery storage project. The 4.88 MW project will deliver no more than 2.64 MW at any time to the Molokai system and is expected to be in service by January 2020.

Tariffed renewable resources.

- As of December 31, 2018, there were approximately 461 MW, 98 MW and 108 MW of installed distributed renewable energy technologies (mainly PV) at Hawaiian Electric, Hawaii Electric Light and Maui Electric, respectively, for tariff-based private customer generation programs, namely Standard Interconnection Agreement, Net Energy Metering, Net Energy Metering Plus, Customer Grid Supply, Customer Self Supply, Customer Grid Supply Plus and Interim Smart Export. As of December 31, 2018, an estimated 28% of single-family homes on the islands of Oahu, Hawaii and Maui have installed private rooftop solar systems, and approximately 17% of the Utilities' total customers have solar systems.
- The Utilities began accepting energy from feed-in tariff projects in 2011. As of December 31, 2018, there were 33 MW, 3 MW and 5 MW of installed feed-in tariff capacity from renewable energy technologies at Hawaiian Electric, Hawaii Electric Light and Maui Electric, respectively.

Biofuel sources.

- In July 2018, the PUC approved Hawaiian Electric's 3-year biodiesel supply contract with Pacific Biodiesel Technologies, LLC (PBT) to supply 2 million to 4 million gallons of biodiesel at Hawaiian Electric's Schofield Generating Station and the Honolulu International Airport Emergency Power Facility (HIA Facility) and any other generating unit on Oahu, as necessary. The PBT contract became effective on November 1, 2018. Hawaiian Electric also has a spot buy contract with PBT to purchase additional quantities of biodiesel at or below the price of diesel. Some purchases of "at parity" biodiesel have been made under the spot purchase contract, which was recently extended through June 2019.

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- Hawaiian Electric has a contingency supply contract with REG Marketing & Logistics Group, LLC to also supply biodiesel to any generating unit on Oahu in the event PBT is not able to supply necessary quantities. This contingency contract has been extended to November 2019, and will continue with no volume purchase requirements.

Requests for renewable proposals, expressions of interest, and information.

- Under a request for proposal process governed by the PUC and monitored by independent observers, in February 2018, the Utilities issued RFPs for 220 MW of renewable generation on Oahu, 50 MW of renewable generation on Hawaii Island, and 60 MW of renewable generation on Maui. The Utilities selected a final award group for Hawaii Island in August 2018 and for Maui and Oahu in September 2018.

The Utilities executed in December 2018, a total of seven renewable generation PPAs utilizing photovoltaic technology paired with a battery storage system, subject to PUC approval, as follows:

Utilities	Number of contracts	Total photovoltaic size (MW)	BESS Size (MW/MWh)	Guaranteed commercial operation dates	Contract term (years)	Total projected annual payment (in millions)
Hawaiian Electric	3	127	127 / 508	12/31/2021	20	$ 27.9
Hawaii Electric Light	2	60	60 / 240	7/20/2021 & 6/30/2022	25	14.1
Maui Electric	2	75	75 / 300	7/20/2021 & 6/30/2022	25	17.6
Total	7	262	262 / 1048			$ 59.6

The Utilities are requesting PUC approval to recover the total projected annual payment of $59.6 million through the PPAC to the extent such costs are not included in base rates.

- In October 2017, the Utilities filed a draft request for proposal with the PUC for 40 MW of firm renewable generation on Maui (Maui Firm RFP) to be in service by the end of 2022. The Utilities are currently working with the independent observer for the Maui Firm RFP to update and revise the draft Maui Firm RFP for filing with the PUC for approval.
- In January 2017, Hawaiian Electric issued requests for Onshore Wind Expression of Interest to developers that are capable of developing utility scale onshore wind projects that are eligible to capture the federal Investment Tax Credit for Large Wind on the island of Oahu. In October 2018, Hawaiian Electric entered into a power purchase agreement with Eurus for a 46.8 MW onshore wind project, subject to PUC approval.

Legislation and regulation. Congress and the Hawaii legislature periodically consider legislation that could have positive or negative effects on the Utilities and their customers. Also see “Environmental regulation” in Note 3 and “Recent tax developments” in Note 11 of the Consolidated Financial Statements.

Clean Water Act Section 316(b). On August 14, 2014, the EPA published in the Federal Register the final regulations required by section 316(b) of the CWA designed to protect aquatic organisms from adverse impacts associated with existing power plant cooling water intake structures. The regulations were effective October 14, 2014 and apply to the cooling water systems for the steam generating units at three of Hawaiian Electric’s power plants on the island of Oahu. The regulations prescribe a process, including a number of required site-specific studies, for states to develop facility-specific entrainment and impingement controls to be incorporated in each facility’s National Pollutant Discharge Elimination System permit. Hawaiian Electric submitted the final site-specific studies to the DOH in December 2016 for the Honolulu and Waiau power plants and in September 2017 for the Kahe power plant. Hawaiian Electric will work with the DOH to identify the appropriate compliance methods for the 316(b) rule. Until new permits are issued by DOH, Hawaiian Electric is operating the facilities under administrative extensions under the prior permit. Final compliance costs may vary depending on the outcome of the final permit.

Impact of lava flows. In May 2018, a lava eruption occurred within the Leilani Estates subdivision, located along the lower East Rift Zone of Kilauea Volcano in the Puna district on the island of Hawaii, and affected approximately

3,000 of the 86,000 Hawaii Electric Light customers. As of December 31, 2018, there was no active flow. The flow damaged some of Hawaii Electric Light's property in the affected area and also resulted in the shutdown of independent power producer PGV's facilities. Hawaii Electric Light continues to serve the load of Hawaii Island without capacity from PGV. Hawaii Electric Light and PGV are in discussions on the requirements for PGV to return to service, however, the Utilities expect to meet its 2020 RPS goals without the return of PGV to service. The financial impact to Hawaii Electric Light has not been material.

Liquidity and capital resources. As a result of the Tax Act, utility property is no longer eligible for bonus depreciation. Consequently, the initial cash requirement for future capital projects will generally increase approximately 10% because of the loss of the immediate tax benefit from bonus depreciation. Management believes that Hawaiian Electric's ability, and that of its subsidiaries, to generate cash, both internally from operations and externally from issuances of equity and debt securities and commercial paper and draws on lines of credit, is adequate to maintain sufficient liquidity to fund their respective capital expenditures, investments, debt repayments, retirement benefit plan contributions and other cash requirements in the foreseeable future.

Hawaiian Electric's consolidated capital structure was as follows:

December 31	2018		2017	
(dollars in millions)				
Short-term borrowings	$25	1 %	$5	— %
Long-term debt, net	1,419	41	1,369	42
Preferred stock	34	1	34	1
Common stock equity	1,958	57	1,845	57
	$3,436	100%	$3,253	100%

Hawaiian Electric's commercial paper borrowings, borrowings from HEI, and line of credit facility were as follows:

	Year ended December 31, 2018		
(in millions)	Average balance	End-of-period balance	December 31, 2017
Short-term borrowings[1]			
Commercial paper	$ 85	$ —	$ 5
Line of credit draws	—	—	—
Borrowings from HEI	—	—	—
Undrawn capacity under line of credit facility	—	200	200

1 The maximum amount of external short-term borrowings by Hawaiian Electric during 2018 was $157 million. At December 31, 2018, Hawaiian Electric had no short-term borrowings from Hawaii Electric Light or Maui Electric.

Hawaiian Electric utilizes short-term debt, typically commercial paper, to support normal operations, to refinance short-term debt and for other temporary requirements. Hawaiian Electric also borrows short-term from HEI for itself and on behalf of Hawaii Electric Light and Maui Electric, and Hawaiian Electric may borrow from or loan to Hawaii Electric Light and Maui Electric on a short-term basis. The intercompany borrowings among the Utilities, but not the borrowings from HEI, are eliminated in the consolidation of Hawaiian Electric's financial statements. The Utilities periodically utilize long-term debt, borrowings of the proceeds of special purpose revenue bonds (SPRBs) issued by the Department of Budget and Finance of the State of Hawaii (DBF) and the issuance of privately placed unsecured senior notes bearing taxable interest, to finance the Utilities' capital improvement projects, or to repay short-term borrowings used to finance such projects. The PUC must approve issuances, if any, of equity and long-term debt securities by the Utilities.

Hawaiian Electric has a $200 million line of credit facility with no amounts outstanding at December 31, 2018. See Note 5 of the Consolidated Financial Statements.

As of February 13, 2019, the Fitch, Moody's and S&P ratings of Hawaiian Electric were as follows:

	Fitch	Moody's	S&P
Long-term issuer default, long-term issuer and corporate credit, respectively	BBB+	Baa2	BBB-
Commercial paper	F2	P-2	A-3
Senior unsecured debt/special purpose revenue bonds	A-	Baa2	BBB-
Hawaiian Electric-obligated preferred securities of trust subsidiary	*	Baa3	BB
Cumulative preferred stock (selected series)	*	Ba1	*
Subordinated debt	BBB	*	*
Outlook	Stable	Stable	Stable

* Not rated.

The above ratings reflect only the view, at the time the ratings are issued or affirmed, of the applicable rating agency, from whom an explanation of the significance of such ratings may be obtained. Such ratings are not recommendations to buy, sell or hold any securities; such ratings may be subject to revision or withdrawal at any time by the rating agencies; and each rating should be evaluated independently of any other rating.

SPRBs have been issued by the DBF to finance (and refinance) capital improvement projects of Hawaiian Electric and its subsidiaries, but the sources of their repayment are the non-collateralized obligations of Hawaiian Electric and its subsidiaries under loan agreements and notes issued to the DBF, including Hawaiian Electric's guarantees of its subsidiaries' obligations.

Upon PUC approval received in April 2018 (April 2018 Approval), on May 30, 2018, Hawaiian Electric, Hawaii Electric Light and Maui Electric issued through a private placement, $75 million, $15 million and $10 million, respectively, of unsecured senior notes bearing taxable interest. The April 2018 Approval also authorized the use of the expedited approval procedure to request for the remaining additional taxable debt to be issued during 2019 through 2021, with certain conditions, for up to $205 million and $15 million for Hawaiian Electric and Hawaii Electric Light, respectively. Maui Electric does not have authorization to issue additional taxable debt beyond 2018. See Note 6 of the Consolidated Financial Statements.

On February 26, 2019, the PUC approved Hawaiian Electric and Hawaii Electric Light's request to issue refunding special purpose revenue bonds (SPRBs) prior to December 31, 2020 to refinance their outstanding Series 2009 SPRBs in the amount of up to $90 million and $60 million, respectively.

On October 26, 2018, the Utilities requested PUC approval to issue SPRBs in the amounts of up to $70 million, $2.5 million and $7.5 million for Hawaiian Electric, Hawaii Electric Light and Maui Electric, respectively, prior to June 30, 2020, to finance the Utilities' capital improvement programs.

On November 29, 2018, Hawaiian Electric entered into a 364-day, $50 million term loan credit agreement that matures on November 28, 2019. Hawaiian Electric drew the first $25 million on November 29, 2018 and the second $25 million on January 31, 2019. See Note 5 of the Consolidated Financial Statements.

On January 31, 2019, the Utilities received PUC approval to issue the remaining authorized amounts under the April 2018 Approval in 2019 through 2020 (Hawaiian Electric up to $205 million and Hawaii Electric Light up to $15 million of taxable debt), as well as a supplemental increase to authorize the issuance of additional taxable debt to finance capital expenditures, repay long-term and/or short term debt used to finance or refinance capital expenditures, and/or to reimburse funds used for payment of capital expenditures, and to refinance the Utilities' 2004 junior subordinated deferrable interest debentures prior to maturity. In addition, the Utilities received approval to extend the period to issue additional taxable debt from December 31, 2021 to December 31, 2022. The new total "up to" amounts of taxable debt requested to be issued through December 31, 2022 are $410 million, $150 million and $130 million for Hawaiian Electric, Hawaii Electric Light and Maui Electric, respectively.

On October 22, 2018, the Utilities received PUC approval for the supplemental increase to issue and sell additional common stock in the amounts of up to $280 million for Hawaiian Electric and up to $100 million each for Hawaii Electric Light and Maui Electric, with the new total "up to" amounts of $430 million for Hawaiian Electric and $110 million each for Hawaii Electric Light and Maui Electric, and to extend the period authorized by the PUC to issue and sell common stock from December 31, 2021 to December 31, 2022. In December 2018, Hawaiian Electric sold $70.7 million of its common stock to HEI and Maui Electric sold $1.5 million of its common stock to Hawaiian Electric. Hawaii Electric Light did not issue common stock in 2018.

Cash flows.

	Years ended December 31				
(in thousands)	2018	Change	2017	Change	2016
Net cash provided by operating activities	$393,613	$58,427	$335,186	$(34,731)	$369,917
Net cash used in investing activities	(405,182)	(32,895)	(372,287)	(84,088)	(288,199)
Net cash provided by (used in) financing activities	34,929	59,597	(24,668)	7,213	(31,881)

2018 Cash Flows Compared to 2017:

Net cash provided by operating activities: The increase in net cash provided by operating activities in 2018 over 2017 was impacted by the following:

- Higher cash receipts from customers due to increased customer bills as a result of higher rates and higher fuel prices;
- Lower cash contributions made to retirement benefit plans in 2018 due to the application of the 2011 contributions in excess of NPPC to reduce the 2018 contributions to an amount less than NPPC; and
-

Offset by higher revenue taxes paid due to higher revenues resulting from higher rates and higher fuel prices, and higher income taxes paid due to lower deductions recognized in 2018.

Net cash used in investing activities: The increase in net cash used in investing activities in 2018 over 2017 was primarily driven by increased capital expenditures for construction activities and lower proceeds from contributions in aid of construction.

Net cash provided by financing activities: The increase in net cash provided by financing activities in 2018 over 2017 was primarily driven by higher proceeds from issuance of common stock and other bank borrowings, partially offset by higher common stock dividends paid in 2018.

2017 Cash Flows Compared to 2016:

Net cash provided by operating activities: The decrease in net cash provided by operating activities in 2017 over 2016 was impacted by the following:

- Lower cash from an increase in fuel oil stock due to an increase in fuel prices;
- Lower cash from an increase in unbilled revenues due to higher fuel prices; and
- Lower cash due to refund of federal income taxes in 2016 based on bonus depreciation enacted in the fourth quarter of 2015 (similar treatment was not granted in the fourth quarter of 2016).

Net cash used in investing activities: The increase in net cash used in investing activities in 2017 over 2016 was driven primarily by an increase in capital expenditures related to construction activities, offset by higher contributions in aid of construction and capital goods tax credit.

Net cash used in financing activities: The decrease in net cash used in financing activities in 2017 over 2016 was driven primarily by lower common stock dividends paid in 2017.

Forecast capital expenditures. For the five-year period 2019 through 2023, the Utilities forecast up to $2.2 billion of net capital expenditures, which could change over time based upon external factors such as the timing and scope of environmental regulations, unforeseen delays in permitting and timing of PUC decisions. Proceeds from the issuance of equity and long-term debt, cash flows from operating activities, temporary increases in short-term borrowings and existing cash and cash equivalents are expected to provide the funds needed for the net capital expenditures, to pay down commercial paper or other short-term borrowings, as well as to fund any unanticipated expenditures not included in the 2019 to 2023 forecast (such as increases in the costs or acceleration of capital projects, or unanticipated capital expenditures that may be required by new environmental laws and regulations).

Management periodically reviews capital expenditure estimates and the timing of construction projects. These estimates may change significantly as a result of many considerations, including changes in economic conditions, changes in forecasts of kWh sales and peak load, the availability of purchased power and changes in expectations concerning the construction and ownership of future generation units, the availability of generating sites and transmission and distribution corridors, the need for fuel infrastructure investments, the ability to obtain adequate and timely rate increases, escalation in construction costs, the effects of opposition to proposed construction projects and requirements of environmental and other regulatory and permitting authorities.

Selected contractual obligations and commitments. The following table presents aggregated information about total payments due from the Utilities during the indicated periods under the specified contractual obligations and commitments:

December 31, 2018	Payments due by period				
(in millions)	Less than 1 year	1-3 years	3-5 years	More than 5 years	Total
Short-term borrowings	$25	$—	$—	$—	$25
Long-term debt	—	96	152	1,179	1,427
Interest on long-term debt	68	128	125	761	1,082
Operating leases	6	11	4	3	24
Open purchase order obligations [1]	75	7	3	—	85
Fuel oil purchase obligations (estimate based on December 31, 2018 fuel oil prices)	140	16	—	—	156
Purchase power obligations-minimum fixed capacity charges	119	195	118	279	711
Liabilities for uncertain tax positions	—	2	—	—	2
Total (estimated)	$433	$455	$402	$2,222	$3,512

[1] Includes contractual obligations and commitments for capital expenditures and expense amounts.

The table above does not include other categories of obligations and commitments, such as deferred taxes, trade payables, amounts that will become payable in future periods under collective bargaining and other employment agreements and employee benefit plans and potential refunds of amounts collected from ratepayers (e.g., under the earnings sharing mechanism). As of December 31, 2018, the fair value of the assets held in trusts to satisfy the obligations of the Utilities' retirement benefit plans did not exceed the retirement benefit plans' benefit obligation. Minimum funding requirements for

retirement benefit plans have not been included in the table above. See Note 9 of the Consolidated Financial Statements for retirement benefit plan obligations and estimated contributions for 2019.
See Note 3 of the Consolidated Financial Statements for a discussion of fuel and power purchase commitments.
Competition. Although competition in the generation sector in Hawaii is moderated by the scarcity of generation sites, various permitting processes and lack of interconnections to other electric utilities, the PUC has promoted a more competitive electric industry environment through its decisions concerning competitive bidding and distributed generation (DG). An increasing amount of generation is provided by IPPs and customer distributed generation.
Competitive bidding. In December 2006, the PUC issued a decision that included a final competitive bidding framework, which became effective immediately. The final framework states, among other things, that: (1) a utility is required to use competitive bidding to acquire a future generation resource or a block of generation resources unless the PUC finds bidding to be unsuitable; (2) the framework does not apply in certain situations identified in the framework; (3) waivers from competitive bidding for certain circumstances will be considered; (4) the utility is required to select an independent observer from a list approved by the PUC whenever the utility or its affiliate seeks to advance a project proposal (i.e., in competition with those offered by bidders); (5) the utility may consider its own self-bid proposals in response to generation needs identified in its RFP; and (6) for any resource to which competitive bidding does not apply (due to waiver or exemption), the utility retains its traditional obligation to offer to purchase capacity and energy from a Qualifying Facility (QF) at avoided cost upon reasonable terms and conditions approved by the PUC.
Technological developments. New emerging and breakthrough technological developments (e.g., the commercial development of energy storage, grid support utility interactive inverters, fuel cells, DG, grid modernization, electrification of transportation, and generation from renewable sources) may impact the Utilities' future competitive position, results of operations, financial condition and liquidity. The Utilities continue to seek prudent opportunities to develop and implement advanced technologies that align with its technical and business plans.
Environmental matters. See "Electric utility—Regulation—Environmental regulation" under "Item 1. Business" and "Environmental regulation" in Note 3 of the Consolidated Financial Statements.
Commitments and contingencies. See Item 1A. Risk Factors, and Note 3 of the Consolidated Financial Statements for a discussion of important commitments and contingencies.
Material estimates and critical accounting policies. Also see "Material estimates and critical accounting policies" for Consolidated HEI above.
Property, plant and equipment. The Utilities believe that the PUC will allow recovery of property, plant and equipment in its electric rates. If the PUC does not allow recovery of any such costs, the electric utility would be required to write off the disallowed costs at that time. See the discussion under "Utility projects" in Note 3 of the Consolidated Financial Statements concerning costs of major projects that have not yet been approved for inclusion in the applicable utility's rate base.
Regulatory assets and liabilities. The Utilities are regulated by the PUC. In accordance with accounting standards for regulatory operations, the Company's and the Utilities' financial statements reflect assets, liabilities, revenues and costs of the Utilities based on current cost-based rate-making regulations. The actions of regulators can affect the timing of recognition of revenues, expenses, assets and liabilities.
Regulatory liabilities represent amounts collected from customers for costs that are expected to be incurred in the future, or amounts collected in excess of costs incurred that are refundable to customers. Regulatory assets represent incurred costs that have been deferred because their recovery in future customer rates is probable. As of December 31, 2018, the consolidated regulatory liabilities and regulatory assets of the Utilities amounted to $950 million and $833 million, respectively, compared to $881 million and $869 million as of December 31, 2017, respectively. Regulatory liabilities and regulatory assets are itemized in Note 3 of the Consolidated Financial Statements. Management continually assesses whether the regulatory assets are probable of future recovery by considering factors such as changes in the applicable regulatory environment. Because current rates include the recovery of regulatory assets existing as of the last rate case and rates in effect allow the Utilities to earn a reasonable rate of return, management believes that the recovery of the regulatory assets as of December 31, 2018 is probable. This determination assumes continuation of the current political and regulatory climate in Hawaii and is subject to change in the future.

Management believes that the operations of the Utilities currently satisfy the criteria for regulatory accounting. If events or circumstances should change so that those criteria are no longer satisfied, the Utilities expect that their regulatory assets, net of regulatory liabilities, would be charged to the statement of income in the period of discontinuance, which may result in a material adverse effect on the Company's and the Utilities' results of operations, financial condition and liquidity.

Revenues. Electric utility revenues are based on rates authorized by the PUC and include revenues applicable to estimated energy consumed in the accounting period, but not yet billed to customers (Unbilled revenues), and RBA revenues or refunds for the difference between PUC-approved target revenues and recorded adjusted revenues, which delinks revenues from kWh sales. Unbilled revenues represent an estimate of energy consumed by customers subsequent to the date of the last meter reading to the end of the current reporting period. As of December 31, 2018, Unbilled revenues amounted to $122 million and the RBA revenues recognized in 2018 amounted to $46 million.
The rate schedules of the Utilities include ECACs (replaced with ECRCs for Hawaiian Electric and Hawaii Electric Light in 2019) under which electric rates are adjusted for changes in the weighted-average price paid for fuel oil and certain components of purchased power, and the relative amounts of company-generated power and purchased power.
The rate schedules of the Utilities also include PPACs under which electric rates are more closely aligned with purchase power costs incurred. If the ECAC/ECRCs, PPACs or RBAs were lost or adversely modified, it could result in a material adverse effect on the Company’s and the Utilities’ results of operations, financial condition and liquidity.
Consolidation of variable interest entities. A business enterprise must evaluate whether it should consolidate a variable interest entity (VIE). The Utilities evaluate the impact of applying accounting standards for consolidation to its relationships with IPPs with whom the Utilities execute new PPAs or execute amendments of existing PPAs. A possible outcome of the analysis is that Hawaiian Electric or its subsidiaries may be found to meet the definition of a primary beneficiary of a VIE, which finding may result in the consolidation of the IPP in the Consolidated Financial Statements. The consolidation of IPPs could have a material effect on the Consolidated Financial Statements, including the recognition of a significant amount of assets and liabilities, and, if such a consolidated IPP were operating at a loss and had insufficient equity, the potential recognition of such losses. The Utilities do not know how the consolidation of IPPs would be treated for regulatory or credit ratings purposes. See Notes 1 and 3 of the Consolidated Financial Statements.

Bank

Executive overview and strategy. ASB, headquartered in Honolulu, Hawaii, is a full-service community bank serving both consumer and commercial customers. ASB is one of the largest financial institutions in Hawaii and ended 2018 with assets of $7.0 billion and net income of $83 million, compared to assets of $6.8 billion as of December 31, 2017 and net income of $67 million in 2017.

ASB provides a wide range of financial products and services, and in order to remain competitive and continue building core franchise value, ASB is focused on deepening customer relationships and developing and introducing new products and services in order to meet market needs. Additionally, the banking industry is constantly changing and ASB is making the investments in people and technology necessary to adapt and remain competitive, facilitate process improvements in order to deliver a continuously better experience for its customers, and be a more efficient bank. ASB's continued focus has been on efficient growth to maximize profitability and capital efficiency, as well as control expenses. Key strategies to drive organic growth include:

1. deepening customer relationships;
2. building out product and service offerings to open new segments;
3. fully deploying online and remotely-assisted account opening capabilities; and
4. prioritizing efficiency actions to gain earnings leverage on organic growth.

The interest rate environment and the quality of ASB's assets will continue to influence its financial results. A flattened yield curve as a result of an increase in short-term interest rates and excess liquidity in the financial system have made it challenging to grow the bank's loan portfolio and find investments with adequate risk-adjusted returns. The potential for compression of ASB's margin when interest rates rise is a risk that is actively managed.

As part of its interest rate risk management process, ASB uses simulation analysis to measure net interest income sensitivity to changes in interest rates (see "Quantitative and Qualitative Disclosures about Market Risk"). ASB then employs strategies to limit the impact of changes in interest rates on net interest income. ASB's key strategies to manage interest rate risk include:

1. attracting and retaining low-cost deposits, particularly those in non-interest bearing transaction accounts;
2. diversifying the loan portfolio with higher-spread, shorter-maturity loans and/or variable rate loans;
3. focusing investment growth in securities that exhibit less extension risk (i.e., risk of longer average lives) as rates rise.

ASB's loan quality benefited in 2018 from increasing property values, more financial flexibility of borrowers, and overall general economic improvement in the state of Hawaii. ASB's net charge-offs as a percentage of total average loans was 0.34% for 2018 compared to 0.27% for 2017. The higher net charge-off ratio was primarily due to charge offs of consumer loans. ASB's provision for loan losses increased from $10.9 million for 2017 to $14.7 million for 2018, primarily due to additional reserves for the consumer loan portfolio, partly offset by lower reserves required for the commercial and commercial real estate loan portfolios as a result of improved credit quality in those loan portfolios.

Results of operations.

- 2018 vs. 2017

(in millions)	2018	2017	Increase (decrease)	Primary reason(s)
Interest income	$258	$236	$ 22	Higher interest income was due to higher average earning asset balances and an increase in yields on earning assets. ASB’s average investment and mortgage-backed securities portfolio balance for 2018 increased by $240 million compared to the average balance in 2017 as ASB purchased investments with liquidity not used to fund the loan portfolio. The average loan portfolio balance for 2018 was $54 million higher than 2017 primarily due to increases in the average HELOC, residential and consumer loan portfolio balances of $55 million, $45 million and $35 million, respectively. The growth in these loan portfolios was consistent with ASB’s portfolio mix targets and loan growth strategy. The average commercial and commercial real estate loan portfolio balances decreased by $51 million and $28 million, respectively, primarily due to ASB’s strategic decision to reduce the balances in certain commercial and national loan portfolios to improve credit quality in those portfolios. The yield on earning assets increased 18 basis points as the increase in short-term interest rates during the year repriced the adjustable rate loans upward and increased the yields for the investment securities.
Noninterest income	56	62	(6)	Noninterest income was lower in 2018 compared to 2017 primarily due to lower fees from other financial services as a result of debit card interchange expenses being netted against income beginning in 2018. Prior year’s debit card interchange expenses were recorded in other noninterest expense. This change was in accordance with the new revenue recognition accounting standard. See Note 8 of the Consolidated Financial Statements for additional information on the new revenue recognition standard. ASB also had lower fee income on deposit products and mortgage banking income. The lower mortgage banking income was due to lower residential loan production and ASB’s decision to portfolio a larger portion of the residential loan production.
Revenues	314	298	16	The increase in revenues was due to higher interest income, partly offset by lower noninterest income.
Interest expense	15	12	3	Higher interest expense was due to an increase in term certificate balances and increased rates for term certificates, money market accounts and repurchase agreements, partly offset by the payoff of a matured FHLB advance. Average deposit balances for 2018 increased by $342 million compared to 2017 due to an increase in core deposits and time certificates of $249 million and $93 million, respectively. The other borrowings average balance decreased by $36 million primarily due to the payoff of a matured FHLB advance.
Provision for loan losses	15	11	4	The provision for loan losses for 2018 was primarily due to an increase in reserves for the consumer loan portfolio as a result of growth and increased net charge-offs. The provision for loan losses benefited from the release of reserves in the commercial, commercial real estate and HELOC loan portfolios as a result of improving credit trends. The provision for loan losses for 2017 was primarily due to an increase in reserves for the consumer loan portfolio as a result of growth and increased net charge-offs.

				The commercial and commercial real estate loan portfolios released reserves as a result of lower portfolio balances and improved credit trends.
Noninterest expense	176	175	1	Higher noninterest expense was primarily due to higher compensation and employee benefit costs partly offset by lower other noninterest expenses as a result of debit card interchange expenses for 2018 being netted against debit card interchange income within noninterest income.
Expenses	206	198	8	The increase in expenses was primarily due to increases in interest expense and higher provision for loan losses.
Operating income	108	100	8	Higher interest income was partly offset by lower noninterest income, higher provision for loan losses, higher interest expense and higher noninterest expenses.
Net income	83	67	16	The increase in net income was the result of higher operating income and lower income tax expense due to the Tax Act.
Return on average equity [1]	13.5 %	11.2 %	2.3 %	

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- 2017 vs. 2016

(in millions)	2017	2016	Increase (decrease)	Primary reason(s)
Interest income	$236	$219	$ 17	Higher interest income was due to higher average earning asset balances and an increase in yields on earning assets. ASB's average investment and mortgage-backed securities portfolio balance for 2017 increased by $345 million compared to the average balance in 2016 as ASB purchased investments with liquidity not used to fund the loan portfolio. The average loan portfolio balance for 2017 was $11 million lower than 2016 primarily due to a decrease in the average commercial loan portfolio balance of $112 million. The decrease was due to the strategic reduction of the national syndicated lending portfolio ($88 million decrease in average balance) and paydowns in the commercial portfolio. The average consumer, HELOC and commercial real estate loan balances increased by $56 million, $29 million and $15 million, respectively. The growth in these loan portfolios was consistent with ASB's portfolio mix targets and loan growth strategy. The yield on earning assets increased 8 basis points as the increase in short-term interest rates during the year repriced the adjustable rate loans upward and increased the yields for the investment securities.
Noninterest income	62	67	(5)	Noninterest income was lower due to a decrease in mortgage banking income and lower fee income from other financial products. The lower mortgage banking income was due to lower residential loan production and ASB's decision to portfolio a larger portion of the residential loan production.
Revenues	298	286	12	The increase in revenues was due to higher interest income, partly offset by lower noninterest income.
Interest expense	12	13	(1)	Lower interest expense was due to the payoff of a maturing other borrowing, partly offset by higher interest expense from an increase in average interest-bearing liabilities. Average deposit balances for 2017 increased by $451 million compared to 2016 due to an increase in core deposits and time certificates of $319 million and $132 million, respectively. The other borrowings average balance decreased by $94 million primarily due to a decrease in repurchase agreements.
Provision for loan losses	11	17	(6)	Lower provision for loan losses for 2017 was primarily due to a decrease in reserves for the commercial and commercial real estate loan portfolios as a result of lower portfolio balances and improving credit trends, partly offset by increased provision for loan losses for the consumer loan portfolio as a result of growth and increased charge-offs. The provision for loan losses in 2016 was used primarily to establish loan loss reserves for the growth in the commercial real estate and consumer loan portfolios and additional reserve levels for specific commercial credits.
Noninterest expense	175	168	7	Higher noninterest expense was primarily due to higher compensation and employee benefit costs.
Expenses	198	198	—	Expenses were flat as higher noninterest expense was offset by lower interest expense and provision for loan losses.
Operating income	100	88	12	Higher interest income and lower provision for loan losses, partly offset by lower noninterest income and higher noninterest expenses.
Net income	67	57	10	The increase in net income was the result of higher operating income and lower income tax expense due to the Tax Act.

Return on average equity [1]	11.2 %	9.9 %	1.3 %

[1] Calculated using the average daily balances.

See Note 4 of the Consolidated Financial Statements for a discussion of guarantees and further information about ASB.

Average balance sheet and net interest margin. The following table provides a summary of average balances, including major categories of interest-earning assets and interest-bearing liabilities:

	2018			2017			2016		
(dollars in thousands)	Average balance	Interest[1] income/ expense	Yield/ rate (%)	Average balance	Interest[1] income/ expense	Yield/ rate (%)	Average balance	Interest[1] income/ expense	Yield/ rate (%)
Assets:									
Interest-earning deposits	$50,658	$940	1.86	$79,927	$898	1.12	$75,092	$383	0.51
FHLB stock	9,726	351	3.60	10,770	208	1.93	11,153	191	1.72
Investment securities									
Taxable	1,503,036	35,862	2.39	1,265,240	27,291	2.16	934,469	18,592	1.99
Non-taxable	17,485	771	4.41	15,427	655	4.24	717	28	3.87
Total investment securities	1,520,521	36,633	2.41	1,280,667	27,946	2.18	935,186	18,620	1.99
Loans									
Residential 1-4 family	2,122,895	86,936	4.10	2,077,705	86,934	4.18	2,074,564	88,274	4.26
Commercial real estate	860,155	39,579	4.60	887,890	37,806	4.26	872,694	35,940	4.12
Home equity line of credit	944,065	34,634	3.67	889,360	30,001	3.37	859,955	28,249	3.28
Residential land	14,935	823	5.51	16,837	1,011	6.00	18,850	1,118	5.93
Commercial	579,765	26,689	4.60	631,170	27,405	4.34	743,586	29,743	4.00
Consumer	240,414	31,802	13.23	205,334	24,098	11.74	149,287	16,450	11.02
Total loans [2,3]	4,762,229	220,463	4.63	4,708,296	207,255	4.40	4,718,936	199,774	4.23
Total interest-earning assets	6,343,134	258,387	4.07	6,079,660	236,307	3.89	5,740,367	218,968	3.81
Allowance for loan losses	(53,593)			(55,629)			(54,338)		
Noninterest-earning assets	606,304			546,523			507,850		
Total Assets	$6,895,845			$6,570,554			$6,193,879		
Liabilities and Shareholder's Equity:									
Savings	$2,334,681	1,639	0.07	$2,278,396	1,567	0.07	$2,117,186	1,402	0.07
Interest-bearing checking	1,006,839	706	0.07	902,678	238	0.03	839,339	173	0.02
Money market	140,225	602	0.43	142,068	168	0.12	160,700	202	0.13
Time certificates	789,926	11,044	1.40	696,799	7,687	1.10	565,135	5,390	0.95
Total interest-bearing deposits	4,271,671	13,991	0.33	4,019,941	9,660	0.24	3,682,360	7,167	0.19
Advances from Federal Home Loan Bank	41,855	845	2.02	79,374	2,245	2.83	101,597	3,160	3.11
Securities sold under agreements to repurchase	99,162	703	0.71	97,535	251	0.26	169,730	2,428	1.43
Total interest-bearing liabilities	4,412,688	15,539	0.35	4,196,850	12,156	0.29	3,953,687	12,755	0.32
Noninterest bearing liabilities:									
Deposits	1,763,331			1,672,780			1,559,132		

Other	108,976	102,789	102,302
Shareholder's equity	610,850	598,135	578,758
Total Liabilities and Shareholder's Equity	$6,895,845	$6,570,554	$6,193,879
Net interest income	$242,848	$224,151	$206,213
Net interest margin (%)[4]	3.83	3.69	3.59

1 Interest income includes taxable equivalent basis adjustments of $0.2 million for 2018 based upon a federal statutory tax rate of 21%, and $0.2 million and $0.01 million for 2017 and 2016, respectively, based upon a federal statutory rate of 35%.

2 Includes loans held for sale, at lower of cost or fair value, of $2.3 million, $7.4 million and $5.4 million as of December 31, 2018, 2017 and 2016, respectively.

3 Includes recognition of net deferred loan fees of $0.1 million, $1.7 million and $2.8 million for 2018, 2017 and 2016 respectively, together with interest accrued prior to suspension of interest accrual on nonaccrual loans.

4 Defined as net interest income, on a fully taxable equivalent basis, as a percentage of average total interest-earning assets.

The following table shows the effect on net interest income of (1) changes in interest rates (change in weighted-average interest rate multiplied by prior year average balance) and (2) changes in volume (change in average balance multiplied by prior period weighted-average interest rate). Any remaining change is allocated to the above two categories on a pro rata basis.

	2018 vs. 2017			2017 vs. 2016		
(in thousands)	Rate	Volume	Total	Rate	Volume	Total
Interest income						
Interest-earning deposits	$455	$(413)	$42	$488	$27	$515
FHLB stock	165	(22)	143	24	(7)	17
Investment securities						
Taxable	3,100	5,471	8,571	1,691	7,008	8,699
Non-taxable	27	89	116	3	624	627
Total investment securities	3,127	5,560	8,687	1,694	7,632	9,326
Loans						
Residential 1-4 family	(1,768)	1,770	2	(1,488)	148	(1,340)
Commercial real estate	2,972	(1,199)	1,773	1,234	632	1,866
Home equity line of credit	2,740	1,893	4,633	781	971	1,752
Residential land	(79)	(109)	(188)	13	(120)	(107)
Commercial	1,587	(2,303)	(716)	2,395	(4,733)	(2,338)
Consumer	3,284	4,420	7,704	1,134	6,514	7,648
Total loans	8,736	4,472	13,208	4,069	3,412	7,481
Total increase in interest income	12,483	9,597	22,080	6,275	11,064	17,339
Interest expense						
Savings	—	(72)	(72)	—	(165)	(165)
Interest-bearing checking	(431)	(37)	(468)	(56)	(9)	(65)
Money market	(436)	2	(434)	13	21	34
Time certificates	(2,253)	(1,104)	(3,357)	(928)	(1,369)	(2,297)
Advances from Federal Home Loan Bank	528	872	1,400	267	648	915
Securities sold under agreements to repurchase	(448)	(4)	(452)	1,433	744	2,177
Total decrease (increase) in interest expense	(3,040)	(343)	(3,383)	729	(130)	599
Increase in net interest income	$9,443	$9,254	$18,697	$7,004	$10,934	$17,938

Earning assets, costing liabilities, contingencies and other factors. Earnings of ASB depend primarily on net interest income, which is the difference between interest earned on earning assets and interest paid on costing liabilities. The interest rate environment has been impacted by disruptions in the financial markets over a period of several years. These conditions have begun to moderate with the interest rate increases in the past year resulting in an increase in ASB’s net interest income and net interest margin.

Loan originations and mortgage-backed securities are ASB’s primary earning assets.

Loan portfolio. ASB’s loan volumes and yields are affected by market interest rates, competition, demand for financing, availability of funds and management’s responses to these factors. The following table sets forth the composition of ASB’s loans held for investment:

December 31	2018		2017		2016		2015		2014	
(dollars in thousands)	Balance	% of total	Balance	% of total	Balance	% of total	Balance	% of total	Balance	% of total
Real estate: [1]										
Residential 1-4 family	$2,143,397	44.3	$2,118,047	45.3	$2,048,051	43.2	$2,069,665	44.8	$2,044,205	46.0
Commercial real estate	748,398	15.4	733,106	15.7	800,395	16.9	690,561	14.9	531,917	12.0
Home equity line of credit	978,237	20.2	913,052	19.6	863,163	18.2	846,294	18.3	818,815	18.4
Residential land	13,138	0.3	15,797	0.3	18,889	0.4	18,229	0.4	16,240	0.4
Commercial construction	92,264	1.9	108,273	2.3	126,768	2.7	100,796	2.2	96,438	2.2
Residential construction	14,307	0.3	14,910	0.3	16,080	0.3	14,089	0.3	18,961	0.4
Total real estate	3,989,741	82.4	3,903,185	83.5	3,873,346	81.7	3,739,634	80.9	3,526,576	79.4
Commercial	587,891	12.1	544,828	11.7	692,051	14.6	758,659	16.4	791,757	17.8
Consumer	266,002	5.5	223,564	4.8	178,222	3.7	123,775	2.7	122,656	2.8
Total loans	4,843,634	100.0	4,671,577	100.0	4,743,619	100.0	4,622,068	100.0	4,440,989	100.0
Less: Deferred fees and discounts	(613)		(809)		(4,926)		(6,249)		(6,338)	
Allowance for loan losses	(52,119)		(53,637)		(55,533)		(50,038)		(45,618)	
Total loans, net	$4,790,902		$4,617,131		$4,683,160		$4,565,781		$4,389,033	

[1] Includes renegotiated loans.

The increase in the loans balance in 2018 was primarily due to growth in the HELOC, consumer, commercial and residential 1-4 family loan portfolios, which were portfolios targeted in ASB’s loan growth strategy.

The decrease in the loans balance in 2017 was primarily due to decreases in the commercial, commercial real estate, and commercial construction loan portfolios, partly offset by growth in the residential 1-4 family, HELOC, and consumer loan portfolios. The decrease in the commercial loan portfolio was primarily due to the strategic reductions in the portfolio, including a $75 million reduction in ASB’s nationally syndicated loan portfolio. The decrease in the commercial real estate loan portfolio was primarily due to paydown of a large commercial real estate credit. The growth in the residential 1-4 family, HELOC and consumer loan portfolios were consistent with ASB’s loan growth strategy.

The increase in the loans balance in 2016 was primarily due to growth in the commercial real estate, consumer, commercial construction and HELOC loan portfolios as a result of demand for these loan types, partly offset by a decrease in the commercial and residential 1-4 family loan portfolios. The growth in the commercial real estate, consumer, commercial construction and HELOC loan portfolios was consistent with ASB’s loan growth strategy. The decrease in the commercial loan portfolio was due to the strategic reduction of ASB’s nationally syndicated loan portfolio by $93 million. The decrease in the residential loan portfolio was due to ASB’s decision to sell a portion of its loan production with low interest rates to control its interest rate risk.

The increase in the loans balance in 2015 was primarily due to growth in commercial real estate, HELOC and residential 1-4 family loan portfolios, partly offset by a decrease in the commercial loan portfolio. The growth in the commercial real estate, HELOC and residential loan portfolios was driven by demand for this loan type and was consistent with ASB’s loan growth strategy.

The following table summarizes loans held for investment based upon contractually scheduled principal payments allocated to the indicated maturity categories:

December 31	2018			
Due	In 1 year or less	After 1 year through 5 years	After 5 years	Total
(in millions)				
Commercial – Fixed	$66	$ 111	$ 23	$200
Commercial – Adjustable	157	213	18	388
Total commercial	223	324	41	588
Commercial construction – Fixed	—	—	—	—
Commercial construction – Adjustable	28	26	38	92
Total commercial construction	28	26	38	92
Residential construction – Fixed	14	—	—	14
Residential construction – Adjustable	—	—	—	—
Total residential construction	14	—	—	14
Total loans – Fixed	80	111	23	214
Total loans – Adjustable	185	239	56	480
Total loans	$265	$ 350	$ 79	$694

Home equity — key credit statistics. Attention has been given by regulators and rating agencies to the potential for increased exposure to credit losses associated with HELOCs that were originated during the period of rapid home price appreciation between 2003 and 2007 as they have reached the end of their 10-year, interest-only payment periods. Once the interest only payment period has ended, payments are reset to include principal repayments along with interest. ASB does not have a large exposure to HELOCs originated between 2003 and 2007. Nearly all of ASB's HELOC originations prior to 2008 consisted of amortizing equity lines that have structured principal payments during the draw period. These older equity lines represent 2% of the HELOC portfolio and are included in the amortizing balances identified in the loan portfolio table below.

December 31	2018	2017
Outstanding balance of home equity loans (in thousands)	$978,237	$913,052
Percent of portfolio in first lien position	49.2 %	48.0 %
Net charge-off (recovery) ratio	0.01 %	(0.03)%
Delinquency ratio	0.46 %	0.28 %

			End of draw period – interest only			Current
December 31, 2018	Total	Interest only	2019-2020	2021-2023	Thereafter	amortizing
Outstanding balance (in thousands)	$978,237	$740,431	$38,912	$133,819	$567,700	$237,806
% of total	100 %	76 %	4 %	14 %	58 %	24 %

The HELOC portfolio makes up 20% of the total loan portfolio and is generally an interest-only revolving loan for a 10-year period, after which time the HELOC outstanding balance converts to a fully amortizing variable-rate term loan with a 20-year amortization period. This product type comprises 76% of the total HELOC portfolio and is the current product offering. Borrowers also have a "Fixed Rate Loan Option" to convert a part of their available line of credit into a 5, 7 or 10-year fully amortizing fixed-rate loan with level principal and interest payments. As of December 31, 2018, approximately 22% of the portfolio balances were amortizing loans under the Fixed Rate Loan Option.

Loan portfolio risk elements. When a borrower fails to make a required payment on a loan and does not cure the delinquency promptly, the loan is classified as delinquent. If delinquencies are not cured promptly, ASB normally commences a collection action, including foreclosure proceedings in the case of real estate secured loans. In a foreclosure action, the property collateralizing the delinquent debt is sold at a public auction in which ASB may participate as a bidder to protect its interest. If ASB is the successful bidder, the property is classified as real estate owned until it is sold. As of December 31, 2018 and 2017, ASB had $0.4 million and $0.1 million, respectively, of real estate acquired in settlement of loans.

In addition to delinquent loans, other significant lending risk elements include: (1) loans which accrue interest and are 90 days or more past due as to principal or interest, (2) loans accounted for on a nonaccrual basis (nonaccrual loans), and (3) loans on which various concessions are made with respect to interest rate, maturity, or other terms due to the inability of the borrower to service the obligation under the original terms of the agreement (troubled debt restructured loans). ASB loans that were 90 days or more past due on which interest was being accrued as of December 31, 2018, 2017, 2016, 2015 and 2014 were immaterial or nil. The following table sets forth certain information with respect to nonaccrual and troubled debt restructured (TDR) loans:

December 31	2018	2017	2016	2015	2014
(dollars in thousands)					
Nonaccrual loans—					
Real estate:					
Residential 1-4 family	$12,037	$12,598	$11,154	$20,554	$19,253
Commercial real estate	—	—	223	1,188	5,112
Home equity line of credit	6,348	4,466	3,080	2,254	1,087
Residential land	436	841	878	970	720
Commercial construction	—	—	—	—	—
Residential construction	—	—	—	—	—
Total real estate	18,821	17,905	15,335	24,966	26,172
Commercial	4,278	3,069	6,708	20,174	10,053
Consumer	4,196	2,617	1,282	895	661
Total nonaccrual loans	$27,295	$23,591	$23,325	$46,035	$36,886
Troubled debt restructured loans not included above—					
Real estate:					
Residential 1-4 family	$10,194	$10,982	$14,450	$13,962	$13,525
Commercial real estate	915	1,016	1,346	—	—
Home equity line of credit	11,597	6,584	4,934	2,467	480
Residential land	1,622	425	2,751	4,713	7,130
Commercial construction	—	—	—	—	—
Residential construction	—	—	—	—	—
Total real estate	24,328	19,007	23,481	21,142	21,135
Commercial	1,527	1,741	14,146	1,104	2,972
Consumer	62	66	10	—	—
Total troubled debt restructured loans	$25,917	$20,814	$37,637	$22,246	$24,107

In 2018, nonaccrual loans increased $3.7 million primarily due to increases in HELOC, consumer, and commercial nonaccrual loans of $1.9 million, $1.6 million and $1.2 million, respectively. ASB evaluates a restructured loan transaction to determine if the borrower is in financial difficulty and if the restructured terms are considered concessions—typically terms that are out of market, beyond normal or reasonable standards, or otherwise not available to a non-troubled borrower in the normal marketplace. A loan classified as TDR must meet both criteria of financial difficulty and concession. Accruing TDR loans increased by $5.1 million primarily due to a $5.0 million increase in HELOC loans classified as TDR.

In 2017, nonaccrual loans increased slightly by $0.3 million primarily due to higher nonaccrual residential 1-4 family, HELOC and consumer loans of $1.4 million, $1.4 million and $1.3 million, respectively. Nonaccrual commercial loans decreased by $3.6 million. Accruing TDR loans decreased by $16.8 million in 2017 primarily due to decreases of $12.4 million, $3.5 million, and $2.3 million of commercial, residential 1-4 family, and residential land loans, respectively, classified as TDRs.

In 2016, nonaccrual loans decreased $22.7 million primarily due to upgrades of specific commercial and commercial real estate loans, payoff of a troubled commercial loan and a segment of residential mortgages transferred to held-for-sale. Nonaccrual commercial and residential loans decreased by $13.5 million and $9.4 million, respectively. Accruing TDR loans increased $15.4 million in 2016 primarily due to increases of $13.0 million and $2.5 million of commercial and HELOC loans, respectively, classified as TDR. The increase in commercial loans classified as TDR was primarily due to two commercial credits being classified as TDR.

In 2015, nonaccrual loans increased $9.1 million primarily due to higher nonaccrual commercial loans of $10.1 million. TDR loans decreased $1.9 million in 2015 primarily due to decreases of $2.4 million and $1.9 million of residential land and commercial loans, respectively, classified as TDR. HELOC loans classified as TDR increased by $2.0 million.

Impact of nonperforming loans on interest income. The following table presents the gross interest income for both nonaccrual and restructured loans that would have been recognized if such loans had been current in accordance with their original contractual terms, and had been outstanding throughout the period or since origination if held for only part of the period. The table also presents the interest income related to these loans that was actually recognized for the period.

(dollars in millions)	Year ended December 31, 2018
Gross amount of interest income that would have been recorded if the loans had been current in accordance with original contractual terms, and had been outstanding throughout the period or since origination, if held for only part of the period [1]	$ 2
Interest income actually recognized	1
Total interest income foregone	$ 1

1 Based on the contractual rate that was being charged at the time the loan was restructured or placed on nonaccrual status.

See "Allowance for loan losses" in Note 4 of the Consolidated Financial Statements for information with respect to nonperforming assets.

Allowance for loan losses. See "Allowance for loan losses" in Note 4 of the Consolidated Financial Statements for the tables which sets forth the allocation of ASB's allowance for loan losses.
The following table presents the changes in the allowance for loan losses:

(dollars in thousands)	2018	2017	2016	2015	2014
Allowance for loan losses, January 1	$53,637	$55,533	$50,038	$45,618	$40,116
Provision for loan losses	14,745	10,901	16,763	6,275	6,126
Charge-offs					
Real estate:					
Residential 1-4 family	128	826	639	356	987
Commercial real estate	—	—	—	—	—
Home equity line of credit	353	14	112	205	196
Residential land	18	210	138	—	81
Commercial construction	—	—	—	—	—
Residential construction	—	—	—	—	—
Total real estate	499	1,050	889	561	1,264
Commercial	2,722	4,006	5,943	1,074	1,872
Consumer	17,296	11,757	7,413	4,791	2,414
Total charge-offs	20,517	16,813	14,245	6,426	5,550
Recoveries					
Real estate:					
Residential 1-4 family	74	157	421	226	1,180
Commercial real estate	—	—	—	—	—
Home equity line of credit	257	308	59	80	752
Residential land	179	482	461	507	469
Commercial construction	—	—	—	—	—
Residential construction	—	—	—	—	—
Total real estate	510	947	941	813	2,401
Commercial	2,136	1,852	1,093	2,773	1,636
Consumer	1,608	1,217	943	985	889

Total recoveries	4,254	4,016	2,977	4,571	4,926
Net charge-offs	16,263	12,797	11,268	1,855	624
Allowance for loan losses, December 31	$52,119	$53,637	$55,533	$50,038	$45,618
Ratio of allowance for loan losses to loans held for investment	1.08 %	1.15 %	1.17 %	1.08 %	1.03 %
Ratio of provision for loan losses during the year to average total loans	0.31 %	0.23 %	0.36 %	0.14 %	0.14 %
Ratio of net charge-offs during the year to average total loans	0.34 %	0.27 %	0.24 %	0.04 %	0.01 %

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The following table sets forth the allocation of ASB's allowance for loan losses and the percentage of loans in each category to total loans:

December 31	2018			2017			2016		
(dollars in thousands)	Allow-ance balance	Allowance to loan receivable %	Loan receivable % of total	Allow-ance balance	Allowance to loan receivable %	Loan receivable % of total	Allow-ance balance	Allowance to loan receivable %	Loan receivable % of total
Real estate:									
Residential 1-4 family	$1,976	0.09	44.3	$2,902	0.14	45.3	$2,873	0.14	43.2
Commercial real estate	14,505	1.94	15.4	15,796	2.15	15.7	16,004	2.00	16.9
Home equity line of credit	6,371	0.65	20.2	7,522	0.82	19.6	5,039	0.58	18.2
Residential land	479	3.65	0.3	896	5.67	0.3	1,738	9.20	0.4
Commercial construction	2,790	3.02	1.9	4,671	4.31	2.3	6,449	5.09	2.7
Residential construction	4	0.03	0.3	12	0.08	0.3	12	0.07	0.3
Total real estate	26,125	0.65	82.4	31,799	0.81	83.5	32,115	0.83	81.7
Commercial	9,225	1.57	12.1	10,851	1.99	11.7	16,618	2.40	14.6
Consumer	16,769	6.30	5.5	10,987	4.91	4.8	6,800	3.82	3.7
Total allowance for loan losses	$52,119	1.08	100.0	$53,637	1.15	100.0	$55,533	1.17	100.0

December 31	2015			2014		
(dollars in thousands)	Allowance balance	Allowance to loan receivable %	Loan receivable % of total	Allowance balance	Allowance to loan receivable %	Loan receivable % of total
Real estate:						
Residential 1-4 family	$4,186	0.20	44.8	$4,662	0.23	46.0
Commercial real estate	11,342	1.64	14.9	8,954	1.68	12.0
Home equity line of credit	7,260	0.86	18.3	6,982	0.85	18.4
Residential land	1,671	9.17	0.4	1,875	11.55	0.4
Commercial construction	4,461	4.43	2.2	5,471	5.67	2.2
Residential construction	13	0.09	0.3	28	0.15	0.4
Total real estate	28,933	0.77	80.9	27,972	0.79	79.4
Commercial	17,208	2.27	16.4	14,017	1.77	17.8
Consumer	3,897	3.15	2.7	3,629	2.96	2.8
Total allowance for loan losses	$50,038	1.08	100.0	$45,618	1.03	100.0

In 2018, ASB's allowance for loan losses decreased by $1.5 million primarily due to lower loan loss reserves required for the commercial, commercial construction, commercial real estate and HELOC loan portfolios as a result of improving credit trends, partly offset by additional loan loss reserves for the consumer loan portfolio. Total delinquencies of $26.0 million at December 31, 2018 was an increase of $2.4 million compared to total delinquencies of $23.6 million at December 31, 2017 primarily due to increases in delinquent consumer, HELOC and residential 1-4 family loans, partly offset by decreases in delinquent commercial loans. The ratio of delinquent loans to total loans increased slightly from 0.51% of total outstanding loans at December 31, 2017 to 0.54% of total outstanding loans at December 31, 2018. Net charge-offs for 2018 were $16.3 million, an increase of $3.5 million compared to $12.8 million at December 31, 2017 primarily due to an increase in consumer loan portfolio charge-offs as a result of ASB's strategic expansion of its unsecured consumer loan portfolio product offering with risk-based pricing. ASB's provision for loan losses was $14.7 million, an increase of $3.8 million compared to the provision for loan losses of $10.9 million for 2017. The increase was due to additional reserves for the consumer loan portfolio, partly offset by lower reserves required for the commercial, commercial construction, commercial real estate and HELOC loan portfolios as result of improved credit quality in those loan portfolios.

In 2017, ASB’s allowance for loan losses decreased by $1.9 million primarily due to lower loan loss reserves required for the commercial, commercial construction, and commercial real estate loan portfolios as a result of a decrease in the portfolio balances and improving credit trends, partly offset by additional loan loss reserves for the consumer and HELOC loan portfolios. Total delinquencies of $23.6 million at December 31, 2017 was a slight increase of $0.5 million compared to total delinquencies of $23.1 million at December 31, 2016 primarily due to increases in delinquent commercial and consumer loans, offset by decreases in delinquent residential 1-4 family and commercial real estate loans. The ratio of delinquent loans to total loans increased slightly from 0.49% of total loans outstanding at December 31, 2016 to 0.51% of total loans outstanding at

December 31, 2017. Net charge-offs for 2017 were $12.8 million, an increase of $1.5 million compared to $11.3 million for 2016 primarily due to an increase in consumer loan portfolio charge-offs as a result of the strategic expansion of ASB's unsecured consumer loan product offering with risk-based pricing. ASB's provision for loan losses was $10.9 million, a decrease of $5.9 million compared to the provision for loan losses of $16.8 million for 2016. The decrease was primarily due to the release of reserves for commercial real estate and commercial loan portfolios due to lower outstanding balances and improved credit quality, partly offset by an increase in loss reserves for the consumer loan portfolio.

In 2016, ASB's allowance for loan losses increased by $5.5 million primarily due to growth in the commercial real estate and consumer loan portfolios and increases in reserves for the commercial real estate and unsecured consumer loan portfolios. Total delinquencies of $23.1 million at December 31, 2016 was $3.0 million lower than total delinquencies of $26.1 million at December 31, 2015 primarily due to the movement of $6 million of residential loans to held-for-sale. The ratio of delinquent loans to total loans decreased from 0.57% of total loans outstanding at December 31, 2015 to 0.49% of total loans outstanding at December 31, 2016. Net charge-offs for 2016 were $11.3 million, an increase of $9.4 million compared to $1.9 million for 2015 primarily due to charge-offs of specific commercial loans and an increase in consumer loan charge-offs as a result of the strategic expansion of ASB's unsecured consumer loan product offering with risk-based pricing. ASB's provision for loan losses was $16.8 million for 2016, an increase of $10.5 million compared to the provision for loan losses of $6.3 million for 2015. The increase in provision for loan losses was driven by growth in the commercial real estate and consumer loan portfolios as well as specific reserves for a few commercial loans.

In 2015, ASB's allowance for loan losses increased by $4.4 million primarily due to growth in the commercial real estate loan portfolio ($159 million or 29.8% growth in outstanding balances) and increases in reserves for commercial loans. Overall loan quality remained strong as total delinquencies of $26.1 million at December 31, 2015 was a slight increase of $0.6 million compared to total delinquencies of $25.5 million at December 31, 2014 primarily due to an increase in delinquent consumer loans. The ratio of delinquent loans to total loans decreased slightly from 0.58% of total loans outstanding at December 31, 2014 to 0.57% of total loans outstanding at December 31, 2015. Net charge-offs for 2015 were $1.9 million, an increase of $1.3 million compared to $0.6 million for 2014 primarily due to an increase in consumer loan charge-offs as result of the strategic expansion of ASB's unsecured consumer loan product offering with risk-based pricing. ASB's provision for loan losses was $6.3 million for 2015, an increase of $0.2 million compared to the provision for loan losses of $6.1 million for 2014.

Investment securities. ASB's investment portfolio was comprised as follows:

December 31	2018			2017			2016		
(dollars in thousands)	Balance	% of total		Balance	% of total		Balance	% of total	
U.S. Treasury and federal agency obligations	$154,349	10	%	$184,298	13	%	$192,281	18	%
Mortgage-backed securities — issued or guaranteed by U.S. Government agencies or sponsored agencies	1,303,291	85		1,245,988	86		897,474	81	
Corporate bonds	49,132	3		—	—		—	—	
Mortgage revenue bonds	23,636	2		15,427	1		15,427	1	
Total investment securities	$1,530,408	100	%	$1,445,713	100	%	$1,105,182	100	%

Currently, ASB's investment portfolio consists of U.S. Treasury and federal agency obligations, mortgage-backed securities, corporate bonds and mortgage revenue bonds. ASB owns mortgage-backed securities issued or guaranteed by the U.S. government agencies or sponsored agencies, including the Federal National Mortgage Association (FNMA), Federal Home Loan Mortgage Corporation (FHLMC), Government National Mortgage Association (GNMA) and Small Business Administration (SBA). The weighted-average yield on investments during 2018, 2017 and 2016 was 2.41%, 2.18% and 1.99%, respectively. ASB did not maintain a portfolio of securities held for trading during 2018, 2017 and 2016.

As of December 31, 2018 and 2017, ASB had $141.9 million and $44.5 million, respectively, of investment securities that were purchased and classified as held-to-maturity. There were no investment securities classified as held-to-maturity as of December 31, 2016. The investment securities were classified as held-to-maturity to enhance the bank’s capital management in a rising rate environment. ASB considers the held-to-maturity classification of these investment securities to be appropriate as ASB has the positive intent and ability to hold these securities to maturity. Principal and interest on mortgage-backed securities issued by FNMA, FHLMC, GNMA and SBA are guaranteed by the issuer and, in the case of GNMA and SBA, backed by the full faith and credit of the U.S. government. U.S. Treasury securities are also backed by the full faith of the U.S. government. The increase in investment securities was due to the purchase of agency mortgage-backed and credit securities, corporate bonds, and a mortgage revenue bond with excess liquidity.

The net unrealized losses on ASB’s investment securities were primarily caused by movements in interest rates. All contractual cash flows of those investments are guaranteed by an agency of the U.S. government. Based upon ASB’s evaluation at December 31, 2018, 2017, and 2016 there was no indicated impairment as ASB expects to collect the contractual cash flows for these investments. See “Investment securities” in Note 1 of the Consolidated Financial Statements for a discussion of securities impairment assessment.

As of December 31, 2018, 2017, and 2016, ASB did not have any private-issue mortgage-backed securities. ASB does not have any exposure to securities backed by subprime mortgages. See “Investment securities” in Note 4 of the Consolidated Financial Statements for a discussion of other-than-temporarily impaired securities.

The following table summarizes the current amortized cost of ASB’s investment portfolio (excluding stock of the FHLB of Des Moines, which has no contractual maturity) and weighted average yields as of December 31, 2018. Mortgage-backed securities are shown separately because they are typically paid in monthly installments over a number of years.

(dollars in millions)	In 1 year or less	After 1 year through 5 years	After 5 years through 10 years	After 10 years	Mortgage-backed securities	Total[1]
U.S. Treasury and federal agency obligations	$20	$78	$59	$—	$ —	$157
Mortgage-backed securities — issued or guaranteed by U.S. Government agencies or sponsored agencies	—	—	—	—	1,334	1,334
Corporate bonds	—	32	18	—	—	50
Mortgage revenue bonds[2]	—	8	—	15	—	23
	$20	$118	$77	$15	$ 1,334	$1,564
Weighted average yield	1.52%	2.60 %	2.67 %	4.68%	2.50 %	2.53 %

[1] As of December 31, 2018, no investment exceeded 10% of ASB’s shareholder’s equity.

[2] Weighted average yield on the mortgage revenue bonds is computed on a tax equivalent basis using a federal statutory tax rate of 21%.

Stock in FHLB. As of December 31, 2018, 2017 and 2016, ASB’s stock in FHLB of Des Moines ($10 million, $10 million and $11 million, respectively) was carried at cost because it can only be redeemed at par. The amount that ASB is required to invest in FHLB stock is determined by FHLB requirements. In 2018, 2017 and 2016, ASB received cash dividends of $350,000, $208,000 and $191,000, respectively, on its FHLB Stock.

Deposits and other borrowings. As of December 31, 2018 ASB’s costing liabilities consisted of 98% deposits and 2% other borrowings, compared to costing liabilities of 97% deposits and 3% other borrowings as of December 31, 2017. ASB’s deposits are obtained primarily from residents of Hawaii. Net deposit inflow or outflow, measured as the year-over-year difference in year-end deposits, was an inflow of $268 million in 2018, compared to an inflow of $342 million in 2017 and $524 million in 2016.

The following table presents the average deposits and average rates by type of deposit. Average balances have been calculated using the average daily balances.

Years ended December 31	2018			2017			2016	
(dollars in thousands)	Average balance	% of total interest-bearing deposits	Weighted average rate %	Average balance	% of total interest-bearing deposits	Weighted average rate %	Average balance	% c tota inte dep
Interest-bearing deposit liabilities								
Savings	$2,334,681	54.6 %	0.07 %	$2,278,396	56.7 %	0.07 %	$2,117,186	57.
Checking	1,006,839	23.6	0.07	902,678	22.5	0.03	839,339	22.
Money market	140,225	3.3	0.43	142,068	3.5	0.12	160,700	4.4
Certificate	789,926	18.5	1.40	696,799	17.3	1.10	565,135	15.
	$4,271,671	100.0 %	0.33 %	$4,019,941	100.0 %	0.24 %	$3,682,360	100

Total interest-bearing deposit liabilities			
Total noninterest-bearing demand deposit liabilities	1,763,331	1,672,780	1,559,132
Total deposit liabilities	$6,035,002	$5,692,721	$5,241,492

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The following table presents the amount of time certificates of deposit of $100,000 or more, segregated by time remaining until maturity:

(in thousands)	Amount
Three months or less	$237,347
Greater than three months through six months	84,572
Greater than six months through twelve months	41,447
Greater than twelve months	136,861
	$500,227

Other borrowings consist of advances from the FHLB and securities sold under agreements to repurchases. See “Other borrowings” in Note 4 of the Consolidated Financial Statements. ASB may obtain advances from the FHLB of Des Moines provided that certain standards related to creditworthiness have been met. Advances are collateralized by a blanket pledge of certain notes held by ASB and the mortgages securing them. To the extent that advances exceed the amount of mortgage loan collateral pledged to the FHLB of Des Moines, the excess must be covered by qualified marketable securities held under the control of and at the FHLB of Des Moines or at an approved third-party custodian. FHLB advances generally are available to meet seasonal and other withdrawals of deposit accounts, to expand lending and to assist in the effort to improve asset and liability management. FHLB advances are made pursuant to several different credit programs offered from time to time by the FHLB of Des Moines. Securities sold under agreements to repurchase are accounted for as financing transactions and the obligations to repurchase these securities are recorded as liabilities in the consolidated balance sheets. ASB pledges investment securities as collateral for securities sold under agreements to repurchase. All such agreements are subject to master netting arrangements, which provide for conditional right of set-off in case of default by either party; however, ASB presents securities sold under agreements to repurchase on a gross basis in the balance sheet.

The decrease in other borrowings in 2018 was due to the payoff of a maturing FHLB advance and a decrease in business repurchase agreements.

The decrease in other borrowings in 2017 was due to the payoff of a maturing FHLB advance, offset by an increase in business repurchase agreements. The decrease in other borrowings in 2016 was due to a decrease in public and business repurchase agreements and the maturity of a repurchase agreement with a broker/dealer.

As of December 31, 2018, the unused borrowing capacity with the FHLB of Des Moines was $2.0 billion. The FHLB of Des Moines continues to be an important source of liquidity for ASB.

Other factors. Interest rate risk is a significant risk of ASB’s operations and also represents a market risk factor affecting the fair value of ASB’s investment securities. Increases and decreases in prevailing interest rates generally translate into decreases and increases in the fair value of the investment securities, respectively. In addition, changes in credit spreads also impact the fair values of the investment securities.

As of December 31, 2018, ASB had an unrealized loss, net of taxes, on available-for-sale investment securities (including securities pledged for repurchase agreements) in AOCI of $24.4 million compared to an unrealized loss, net of taxes, of $15.0 million as of December 31, 2017. See “Quantitative and Qualitative Disclosures About Market Risk.”

Legislation and regulation. ASB is subject to extensive regulation, principally by the OCC and the FDIC. Depending on ASB’s level of regulatory capital and other considerations, these regulations could restrict the ability of ASB to compete with other institutions and to pay dividends to its shareholder. See the discussion below under “Liquidity and capital resources.” Also see “Federal Deposit Insurance Corporation Assessment” in Note 4 of the Consolidated Financial Statements.

Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). Regulation of the financial services industry, including regulation of HEI, ASB Hawaii and ASB, has changed and will continue to change as a result of the enactment of the Dodd-Frank Act, which became law in July 2010. Importantly for HEI, ASB Hawaii and ASB, under the Dodd-Frank Act all of the functions of the OTS transferred on July 21, 2011 to the OCC, the FDIC, the FRB and the Consumer Financial Protection Bureau (Bureau). Supervision and regulation of HEI and ASB Hawaii, as thrift holding companies, moved to the FRB, and supervision and regulation of ASB, as a federally chartered savings bank, moved to the OCC. While the laws and regulations applicable to HEI and ASB did not generally change, the applicable laws and regulations are being interpreted, and new and amended regulations may be adopted, by the FRB, the OCC and the Bureau. In addition, HEI will continue to be required to serve as a source of strength to ASB in the event of its financial distress. The Dodd-Frank Act also imposed new restrictions on the ability of a savings bank to pay dividends should it fail to remain a qualified thrift lender. At all times during 2018, ASB was a qualified thrift lender.

ASB may also be subject to new state regulation because of a provision in the Dodd-Frank Act that acknowledges that a federal savings bank may be subject to state regulation and allows federal law to preempt a state consumer financial law on a "case by case" basis only when (1) the state law would have a discriminatory effect on the bank compared to that on a bank chartered in that state, (2) the state law prevents or significantly interferes with a bank's exercise of its power or (3) the state law is preempted by another federal law.

Final Capital Rules. On July 2, 2013, the FRB finalized its rule implementing the Basel III regulatory capital framework. The final rule would apply to banking organizations of all sizes and types regulated by the FRB and the OCC, except bank holding companies subject to the FRB's Small Bank Holding Company Policy Statement and Savings & Loan Holding Companies (SLHCs) substantially engaged in insurance underwriting or commercial activities. HEI currently meets the requirements of the exemption as a top-tier grandfathered unitary SLHC that derived, as of June 30 of the previous calendar year, either 50% or more of its total consolidated assets or 50% or more of its total revenues on an enterprise-wide basis (calculated under GAAP) from activities that are not financial in nature pursuant to Section 4(k) of the Bank Holding Company Act. The FRB is temporarily excluding these SLHCs from the final rule while it considers a proposal relating to capital and other requirements for SLHC intermediate holding companies (such as ASB Hawaii). The FRB indicated that it would release a proposal on intermediate holding companies that would specify the criteria for establishing and transferring activities to intermediate holding companies and propose to apply the FRB's capital requirements to such intermediate holding companies. The FRB has not yet issued such a proposal, or a proposal on how to apply the Basel III capital rules to SLHCs that are substantially engaged in commercial or insurance underwriting activities, such as grandfathered unitary SLHCs like HEI.

Pursuant to the final rule and consistent with the proposals, all banking organizations, including covered holding companies, would initially be subject to the following minimum regulatory capital requirements: a common equity Tier 1 capital ratio of 4.5%, a Tier 1 capital ratio of 6%, a total capital ratio of 8% of risk-weighted assets and a tier 1 leverage ratio of 4%, and these requirements would increase in subsequent years. In order to avoid restrictions on capital distributions and discretionary bonus payments to executive officers, the final rule requires a banking organization to hold a buffer of common equity tier 1 capital above its minimum capital requirements in an amount greater than 2.5% of total risk-weighted assets (capital conservation buffer). In addition, a countercyclical capital buffer would expand the capital conservation buffer by up to 2.5% of a banking organization's total risk-weighted assets for advanced approaches banking organizations. The final rule would establish qualification criteria for common equity, additional tier 1 and tier 2 capital instruments that help to ensure their ability to absorb losses. All banking organizations would be required to calculate risk-weighted assets under the standardized approach, which harmonizes the banking agencies' calculation of risk-weighted assets and addresses shortcomings in capital requirements identified by the agencies. The phased-in effective dates of the capital requirements under the final rule are:

Minimum Capital Requirements

Effective dates	1/1/2015	1/1/2016	1/1/2017	1/1/2018	1/1/2019
Capital conservation buffer		0.625 %	1.25 %	1.875 %	2.50 %
Common equity Tier 1 ratio + conservation buffer	4.50 %	5.125 %	5.75 %	6.375 %	7.00 %
Tier 1 capital ratio + conservation buffer	6.00 %	6.625 %	7.25 %	7.875 %	8.50 %
Total capital ratio + conservation buffer	8.00 %	8.625 %	9.25 %	9.875 %	10.50 %
Tier 1 leverage ratio	4.00 %	4.00 %	4.00 %	4.00 %	4.00 %
Countercyclical capital buffer — not applicable to ASB		0.625 %	1.25 %	1.875 %	2.50 %

The final rule was effective January 1, 2015 for ASB. As of December 31, 2018, ASB met the new capital requirements with a Common equity Tier-1 ratio of 12.8%, a Tier-1 capital ratio of 12.8%, a Total capital ratio of 13.9% and a Tier-1 leverage ratio of 8.7%.

Subject to the timing and final outcome of the FRB's SLHC intermediate holding company proposal, HEI anticipates that the capital requirements in the final rule will eventually be effective for HEI or ASB Hawaii as well. If the fully phased-in capital requirements were currently applicable to HEI, management believes HEI would satisfy the capital requirements, including the fully phased-in capital conservation buffer. Management cannot predict what final rule the FRB may adopt concerning intermediate holding companies or their impact on ASB Hawaii, if any.

Liquidity and capital resources.

December 31	2018	% change	2017	% change
(dollars in millions)				
Total assets	$7,028	3	$6,799	6
Investment securities	1,530	6	1,446	31
Loans held for investment, net	4,791	4	4,617	(1)
Deposit liabilities	6,159	5	5,891	6
Other bank borrowings	110	(42)	191	(1)

As of December 31, 2018, ASB was one of Hawaii's largest financial institutions based on assets of $7.0 billion and deposits of $6.2 billion.

ASB's principal sources of liquidity are customer deposits, borrowings and the maturity and repayment of portfolio loans and securities. ASB's deposits as of December 31, 2018 were $268 million higher than December 31, 2017. ASB's principal sources of borrowings are advances from the FHLB and securities sold under agreements to repurchase from broker/dealers and commercial account holders. As of December 31, 2018, FHLB borrowings totaled $45 million, representing 0.6% of assets. ASB is approved to borrow from the FHLB up to 35% of ASB's assets to the extent it provides qualifying collateral and holds sufficient FHLB stock. As of December 31, 2018, ASB's unused FHLB borrowing capacity was approximately $2.0 billion. As of December 31, 2018, securities sold under agreements to repurchase totaled $65 million, representing 0.9% of assets. ASB utilizes deposits, advances from the FHLB and securities sold under agreements to repurchase to fund maturing and withdrawn deposits, repay maturing borrowings, fund existing and future loans and purchase investment and mortgage-backed securities. As of December 31, 2018, ASB had commitments to borrowers for loans and unused lines and letters of credit of $1.9 billion, of which, commitments to lend to borrowers whose loan terms have been modified in troubled debt restructurings were nil. Management believes ASB's current sources of funds will enable it to meet these obligations while maintaining liquidity at satisfactory levels.

As of December 31, 2018 and 2017, ASB had $27.3 million and $23.6 million of loans on nonaccrual status, respectively, or 0.6% and 0.5% of net loans outstanding, respectively. As of December 31, 2018 and 2017, ASB had $0.4 million and $0.1 million, respectively, of real estate acquired in settlement of loans.

In 2018, operating activities provided cash of $123 million. Net cash of $368 million was used by investing activities primarily due to purchases of available-for-sale investment securities of $224 million, net increase in loans receivable of $189 million, purchases of held-to-maturity investment securities of $103 million, capital expenditures of $73 million and contributions to low-income housing investments of $14 million, partly offset by receipt of repayments from available-for-sale investment securities of $219 million, proceeds from the sale of commercial loans of $7 million, repayments from held-to-maturity investment securities of $6 million and proceeds from the redemption of bank owned life insurance of $3 million. Financing activities provided net cash of $137 million primarily due to a net increase in deposits of $166 million, proceeds from FHLB advances of $696 million and a net increase in retail repurchase agreements of $27 million, partly offset by principal payments on FHLB advances of $701 million and common stock dividends to HEI (through ASB Hawaii) of $50 million.

ASB believes that maintaining a satisfactory regulatory capital position provides a basis for public confidence, affords protection to depositors, helps to ensure continued access to capital markets on favorable terms and provides a foundation for growth. FDIC regulations restrict the ability of financial institutions that are not well-capitalized to compete on the same terms as well-capitalized institutions, such as by offering interest rates on deposits that are significantly higher than the rates offered by competing institutions. As of December 31, 2018, ASB was well-capitalized (see Note 4 of the Consolidated Financial Statements for ASB's capital ratios).

For a discussion of ASB dividends, see "Common stock equity" in Note 4 of the Consolidated Financial Statements.

See "Commitments" and "Contingency" in Note 4 of the Consolidated Financial Statements for a discussion of commitments and contingencies and off-balance sheet arrangements.

Material estimates and critical accounting policies. Also see "Material estimates and critical accounting policies" for Consolidated HEI above.

Allowance for loan losses. See Note 1 of the Consolidated Financial Statements and the discussion above under “Earning assets, costing liabilities and other factors.” ASB maintains an allowance for loan losses believed to be adequate to absorb losses inherent in its loan portfolio. The level of allowance for loan losses is based on a continuing assessment of existing risks in the loan portfolio, historical loss experience, changes in collateral values and current conditions (for example, economic conditions, real estate market conditions and interest rate environment). The allowance for loan losses is allocated to loan types using both a formula-based approach applied to groups of loans and an analysis of certain individual loans for impairment. The formula-based approach emphasizes loss factors primarily derived from actual historical default and loss rates, which are combined with an assessment of certain qualitative factors to determine the allowance amounts allocated to the various loan categories. Adverse changes in any of these factors could result in higher charge-offs and provision for loan losses.

ASB disaggregates the loan portfolio into loan segments for purposes of determining the allowance for loan losses. Commercial, commercial real estate, and commercial construction loans are defined as non-homogeneous loans. ASB utilizes a risk rating system for evaluating the credit quality of such loans. Loans are rated based on the degree of risk at origination and periodically thereafter, as appropriate. Values are applied separately to the probability of default (borrower risk) and loss given default (transaction risk). ASB utilizes a numerical-based, risk rating “PD Model” that takes into consideration fiscal year-end financial information of the borrower and identified financial attributes including retained earnings, operating cash flows, interest coverage, liquidity and leverage that demonstrate a strong correlation with default to assign default probabilities at the borrower level. In addition, a loss given default value is assigned to each loan to measure loss in the event of default based on loan specific features such as collateral that mitigates the amount of loss in the event of default. Together the PD Model and loss given default construct provide a quantitative, data driven and consistent framework for measuring risk within the portfolio, on a loan by loan basis and for the ultimate collectability of each loan.

Residential, consumer and credit scored business loans are considered homogeneous loans, which are typically underwritten based on common, uniform standards. For the homogeneous portfolio, the quality of the loan is best indicated by the repayment performance of an individual borrower. ASB supplements performance data with external credit bureau data and credit scores such as the Fair Isaac Corporation (FICO) score on a quarterly basis. ASB has built portfolio loss models for each major segment based on the combination of internal and external data to predict the probability of default at the loan level.

ASB also considers qualitative factors in determining the allowance for loan losses. These include but are not limited to adjustments for changes in policies and procedures in underwriting, monitoring or collections, economic conditions, portfolio mix, lending and risk management personnel, results of internal audit and quality control reviews, collateral values and any concentrations of credit.

The reserve for unfunded commitments is maintained at a level believed by management to be sufficient to absorb estimated probable losses related to unfunded credit facilities and is included in accounts payable and other liabilities in the consolidated balance sheets. The determination of the adequacy of the reserve is based upon an evaluation of the unfunded credit facilities, including an assessment of historical commitment utilization experience, credit risk grading and historical loss rates. This process takes into consideration the same risk elements that are analyzed in the determination of the adequacy of the allowance for loan losses, as discussed above. Net adjustments to the reserve for unfunded commitments are included in other noninterest expense in the consolidated statements of income.

Management believes its allowance for loan losses adequately estimates actual loan losses that will ultimately be incurred. However, such estimates are based on currently available information and historical experience, and future adjustments may be required from time to time to the allowance for loan losses based on new information and changes that occur (e.g., due to changes in economic conditions, particularly in Hawaii). Actual losses could differ from management’s estimates, and these differences and subsequent adjustments could be material.

Fair value. Fair value estimates are based on the price that would be received to sell an asset, or paid upon the transfer of a liability, in an orderly transaction between market participants at the measurement date. The fair value estimates are generally determined based on assumptions that market participants would use in pricing the asset or liability and are based on market data obtained from independent third party sources. However, in certain cases, ASB uses its own assumptions based on the best information available in certain circumstances. These valuations are estimates at a specific point in time, based on relevant market information, information about the financial instrument and judgments regarding future expected loss experience, economic conditions, risk characteristics of various financial instruments and other factors. These estimates do not reflect any premium or discount that could result if ASB were to sell its entire holdings of a particular financial instrument at one time. Because no active trading market exists for a portion of its financial instruments, fair value estimates cannot be determined with precision. Changes in the underlying assumptions used, including discount rates and estimates of future cash flows, could significantly affect the estimates. In addition, the tax ramifications related to the realization of the unrealized gains and losses could have a significant effect on fair value estimates, but have not been considered in making such estimates.

ASB classifies its financial assets and liabilities that are measured at fair value in accordance with the three-level valuation hierarchy. Level 1 valuations are based on quoted prices, unadjusted for identical instruments traded in active markets. Level 2 valuations are based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active or model-based techniques for which all significant assumptions are observable in the market. Level 3 valuations are based on model-based techniques that use at least one significant assumption not observable in the market or significant management judgment or estimation. See “Fair value measurements” in Note 1 of the Consolidated Financial Statements).

Significant assets measured at fair value on a recurring basis include ASB’s mortgage-backed securities available for sale. These instruments are priced using an external pricing service and are classified as Level 2 within the fair value hierarchy. The third-party pricing services use a variety of methods to determine fair value including quoted prices for similar securities in an active market, yield spreads for similar trades, adjustments for liquidity, size, collateral characteristics, historic and generic prepayment speeds and other observable market factors. To enhance the robustness of the pricing process, ASB compares its standard third-party vendor’s price with that of another third-party vendor. If the prices are within an acceptable tolerance range, the price of the standard vendor will be accepted. If the variance is beyond the tolerance range, an evaluation will be conducted by the investment manager and a challenge to the price may be made. Fair value in such cases will be based on the value that best reflects the data and observable characteristics of the security. In all cases, the fair value used will have been independently determined by a third-party pricing vendor or non-affiliated broker.

Fair value is also used on a nonrecurring basis to evaluate certain assets for impairment or for disclosure purposes. Examples of nonrecurring uses of fair value include mortgage servicing rights accounted for by the amortization method, loan impairments for certain loans, real estate acquired in settlement of loans and goodwill.

See “Investment securities” and “Derivative financial instruments” in Note 4 and Note 15 of the Consolidated Financial Statements for additional information regarding ASB’s fair value measurements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

HEI and Hawaiian Electric (in the case of Hawaiian Electric, only the information related to Hawaiian Electric and its subsidiaries is applicable):

The Company manages various market risks in the ordinary course of business, including credit risk and liquidity risk. The Company believes the electric utility and the “other” segment’s exposures to these two risks were not material as of December 31, 2018.

Credit risk for ASB is the risk that borrowers or issuers of securities will not be able to repay their obligations to the bank. Credit risk associated with ASB’s lending portfolios is controlled through its underwriting standards, loan rating of commercial and commercial real estate loans, on-going monitoring by loan officers, credit review and quality control functions in these lending areas and adequate allowance for loan losses. Credit risk associated with the securities portfolio is mitigated through investment portfolio limits, experienced staff working with analytical tools, monthly fair value analysis and on-going monitoring and reporting such as investment watch reports and loss sensitivity analysis. See “Allowance for loan losses” above and in Note 4 of the Consolidated Financial Statements.

Liquidity risk for ASB is the risk that the bank will not meet its obligations when they become due. Liquidity risk is mitigated by ASB’s asset/liability management process, on-going analytical analysis, monitoring and reporting information such as weekly cash-flow analyses and maintenance of liquidity contingency plans.

The Utilities are exposed to some commodity price risk primarily related to their fuel supply and IPP contracts. The Utilities’ commodity price risk is substantially mitigated so long as they have their current ECAC/ECRCs in their rate schedules. The Utilities currently have no hedges against its commodity price risk.

The Company currently has no direct exposure to market risk from trading activities nor foreign currency exchange rate risk.

The Company considers interest rate risk to be a very significant market risk as it could potentially have a significant effect on the Company’s results of operations, financial condition and liquidity, especially as it relates to ASB, but also as it may affect the discount rate used to determine retirement benefit liabilities, the market value of retirement benefit plans’ assets and the Utilities’ allowed rates of return. Interest rate risk can be defined as the exposure of the Company’s earnings to adverse movements in interest rates.

Bank interest rate risk

The Company’s success is dependent, in part, upon ASB’s ability to manage interest rate risk (IRR). ASB’s interest-rate risk profile is strongly influenced by its primary business of making fixed-rate residential mortgage loans and taking in retail deposits. Large mismatches in the amounts or timing between the maturity or repricing of interest sensitive assets or liabilities could adversely affect ASB’s earnings and the market value of its interest-sensitive assets and liabilities in the event of

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significant changes in the level of interest rates. Many other factors also affect ASB's exposure to changes in interest rates, such as general economic and financial conditions, customer preferences and competition for loans or deposits. ASB's Asset/Liability Management Committee (ALCO), whose voting members are officers and employees of ASB, is responsible for managing interest rate risk and carrying out the overall asset/liability management objectives and activities of ASB as approved by the ASB Board Risk Committee. ALCO establishes policies under which management monitors and coordinates ASB's assets and liabilities.

See Note 4 of the Consolidated Financial Statements for a discussion of the use of rate lock commitments on loans held for sale and forward sale contracts to manage some interest rate risk associated with ASB's residential loan sale program.

Management of ASB measures interest-rate risk using simulation analysis with an emphasis on measuring changes in net interest income (NII) and the market value of interest-sensitive assets and liabilities in different interest-rate environments. The simulation analysis is performed using a dedicated asset/liability management software system enhanced with a mortgage prepayment model and a collateralized mortgage obligation database. The simulation software is capable of generating scenario-specific cash flows for all instruments using the specified contractual information for each instrument and product specific prepayment assumptions for mortgage loans and mortgage-backed securities.

NII sensitivity analysis measures the change in ASB's twelve-month, pretax NII in alternate interest rate scenarios. NII sensitivity is measured as the change in NII in the alternate interest-rate scenarios as a percentage of the base case NII. The base case interest-rate scenario is established using the current yield curve and assumes interest rates remain constant over the next twelve months. The alternate scenarios are created by assuming "rate ramps" or gradual interest changes and accomplished by moving the yield curve in a parallel fashion, over the next twelve-month period, in increments of +/- 100 basis points. The simulation model forecasts scenario-specific principal and interest cash flows for the interest-bearing assets and liabilities, and the NII is calculated for each scenario. Key balance sheet modeling assumptions used in the NII sensitivity analysis include: the size of the balance sheet remains relatively constant over the simulation horizon and maturing assets or liabilities are reinvested in similar instruments in order to maintain the current mix of the balance sheet. In addition, assumptions are made about the prepayment behavior of mortgage-backed assets, future pricing spreads for new assets and liabilities and the speed and magnitude with which deposit rates change in response to changes in the overall level of interest rates. Other NII sensitivity analysis may include scenarios such as yield curve twists or non-static balance sheet changes (such as changes to key balance sheet drivers).

Consistent with OCC guidelines, the market value or economic capitalization of ASB is measured as economic value of equity (EVE). EVE represents the theoretical market value of ASB's net worth and is defined as the present value of expected net cash flows from existing assets minus the present value of expected cash flows from existing liabilities plus the present value of expected net cash flows from existing off-balance sheet contracts. Key assumptions used in the calculation of ASB's EVE include the prepayment behavior of loans and investments, the possible distribution of future interest rates, pricing spreads for assets and liabilities in the alternate scenarios and the rate and balance behavior of deposit accounts with indeterminate maturities. EVE is calculated in multiple scenarios. As with the NII simulation, the base case is represented by the current yield curve. Alternate scenarios are created by assuming immediate parallel shifts in the yield curve in increments of +/- 100 basis points (bp) up to + 300 bp. The change in EVE is measured as the change in EVE in a given rate scenario from the base case and expressed as a percentage. To gain further insight into the IRR profile, additional analysis is periodically performed in alternate scenarios including rate shifts of greater magnitude and changes in key balance sheet drivers.

ASB's interest-rate risk sensitivity measures as of December 31, 2018 and 2017 constitute "forward-looking statements" and were as follows:

	Change in NII (gradual change in interest rates)		Change in EVE (instantaneous change in interest rates)	
Change in interest rates (basis points)	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
+300	2.5 %	3.0 %	10.0 %	(8.0)%

+200	1.9	2.4	8.1	(4.0)
+100	1.1	1.6	5.1	(0.6)
-100	(2.3)	(2.7)	(11.0)	(6.0)

The NII profile under the rising interest rate scenarios was less asset sensitive for all rate increases as of December 31, 2018 compared to December 31, 2017. NII asset sensitivity has been slowly decreasing as rising rates have slowed prepayment expectations, reducing the amount of the fixed-rate mortgage and mortgage-backed investment portfolios available to reprice in rising rate scenarios. In addition, the fixed-rate portion of the HELOC portfolio grew, further reducing the amount available to reprice in rising rate scenarios.

ASB’s base EVE increased to $1.49 billion as of December 31, 2018 compared to $1.18 billion as of December 31, 2017, due to the growth and mix of the balance sheet and longer duration of core deposits. Growth in the investment and loan portfolios was funded primarily with core deposits.

In the third quarter of 2018, ASB’s biennial core deposit study was conducted by a third party as part of its regular process. As a result of the study, the duration of ASB’s core deposits extended compared to ASB’s core deposit duration at December 31, 2017. This had the effect of improving our base EVE and increasing EVE sensitivity.

EVE sensitivity shifted from liability to asset sensitive as of December 31, 2018, primarily due to core deposit study enhancements leading to a higher retention rate and longer duration. The extension of core deposit duration provides greater capacity for hedging long duration assets. Although market rate increases have been slowing prepayments and extending duration in the residential loan and mortgage-backed investment portfolios, the longer duration of core deposits mitigates this exposure.

The computation of the prospective effects of hypothetical interest rate changes on the NII sensitivity and the percentage change in EVE is based on numerous assumptions, including relative levels of market interest rates, loan prepayments, balance changes and pricing strategies, and should not be relied upon as indicative of actual results. To the extent market conditions and other factors vary from the assumptions used in the simulation analysis, actual results may differ materially from the simulation results. Furthermore, NII sensitivity analysis measures the change in ASB’s twelve-month, pretax NII in alternate interest rate scenarios, and is intended to help management identify potential exposures in ASB’s current balance sheet and formulate appropriate strategies for managing interest rate risk. The simulation does not contemplate any actions that ASB management might undertake in response to changes in interest rates. Further, the changes in NII vary in the twelve-month simulation period and are not necessarily evenly distributed over the period. These analyses are for analytical purposes only and do not represent management’s views of future market movements, the level of future earnings, or the timing of any changes in earnings within the twelve-month analysis horizon. The actual impact of changes in interest rates on NII will depend on the magnitude and speed with which rates change, actual changes in ASB’s balance sheet, and management’s responses to the changes in interest rates.

Other than bank interest rate risk

The Company’s general policy is to manage “other than bank” interest rate risk through use of a combination of short-term debt, long-term debt and preferred securities. As of December 31, 2018, the Company was exposed to “other than bank” interest rate risk because of its periodic borrowing requirements, the impact of interest rates on the discount rate and the market value of plan assets used to determine retirement benefits expenses and obligations (see “Pension and other postretirement benefits obligations” in HEI’s MD&A and “Retirement benefits” in Notes 1 and 9 of the Consolidated Financial Statements) and the possible effect of interest rates on the electric utilities’ allowed rates of return. Other than these exposures, management believes its exposure to “other than bank” interest rate risk is not material. The Company’s long-term debt, in the form of borrowings of proceeds of revenue bonds, privately-placed senior notes and bank term loans, is at fixed rates (see Note 15 of the Consolidated Financial Statements for the fair value of long-term debt, net-other than bank).

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

HEI and Hawaiian Electric:

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Hawaiian Electric Industries, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Hawaiian Electric Industries, Inc. and subsidiaries (the "Company") as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows, for the years ended December 31, 2018 and 2017, and the related notes and the schedules listed in the Index at Item 15(a)(2) (collectively referred to as the "financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the years ended December 31, 2018 and 2017, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework (2013) issued by COSO.

Basis for Opinions

The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express an opinion on these financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the financial statements included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures to respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP
Honolulu, Hawaii
February 28, 2019
We have served as the Company’s auditor since 2017.

Report of Independent Registered Public Accounting Firm
To the Board of Directors and Shareholders of
Hawaiian Electric Industries, Inc.

In our opinion, the consolidated statements of income, comprehensive income, changes in shareholders’ equity, and cash flows for the year ended December 31, 2016 present fairly, in all material respects, the results of operations and cash flows of Hawaiian Electric Industries, Inc. and its subsidiaries for the year ended December 31, 2016, in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedules listed in the index appearing under Item 15(a)(2) for the year ended December 31, 2016 present fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedules are the responsibility of the Company’s management. Our responsibility is to express an opinion on these financial statements and financial statement schedules based on our audit. We conducted our audit of these financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
Los Angeles, California
February 24, 2017

Report of Independent Registered Public Accounting Firm
To the Shareholder and the Board of Directors of Hawaiian Electric Company, Inc.

Opinion on the Financial Statements
We have audited the accompanying consolidated balance sheets and statements of capitalization of Hawaiian Electric Company, Inc. and subsidiaries (the "Company") as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in common stock equity, and cash flows, for the years ended December 31, 2018 and 2017, and the related notes and the schedules listed in the Index at Item 15(a)(2) (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the years ended December 31, 2018 and 2017, in conformity with accounting principles generally accepted in the United States of America.
Basis for Opinion
These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.
We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.
/s/ Deloitte & Touche LLP
Honolulu, Hawaii
February 28, 2019
We have served as the Company's auditor since 2017.

Report of Independent Registered Public Accounting Firm
To the Board of Directors and Shareholder of
Hawaiian Electric Company, Inc.

In our opinion, the consolidated statements of income, comprehensive income, changes in common stock equity, and cash flows for the year ended December 31, 2016 present fairly, in all material respects, the results of operations and cash flows of Hawaiian Electric Company, Inc. and its subsidiaries for the year ended December 31, 2016, in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 15(a)(2) for the year ended December 31, 2016 presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audit. We conducted our audit of these financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
Los Angeles, California
February 24, 2017

Consolidated Statements of Income
Hawaiian Electric Industries, Inc. and Subsidiaries

Years ended December 31	2018	2017	2016
(in thousands, except per share amounts)			
Revenues			
Electric utility	$2,546,525	$2,257,566	$2,094,368
Bank	314,275	297,640	285,924
Other	49	419	362
Total revenues	2,860,849	2,555,625	2,380,654
Expenses			
Electric utility	2,304,864	1,994,042	1,804,298
Bank	206,040	198,104	197,697
Other	16,589	17,246	22,821
Total expenses	2,527,493	2,209,392	2,024,816
Operating income (loss)			
Electric utility	241,661	263,524	290,070
Bank	108,235	99,536	88,227
Other	(16,540)	(16,827)	(22,459)
Total operating income	333,356	346,233	355,838
Merger termination fee	—	—	90,000
Retirement defined benefits expense—other than service costs	(5,962)	(7,942)	(7,663)
Interest expense, net – other than on deposit liabilities and other bank borrowings	(88,677)	(78,972)	(75,803)
Allowance for borrowed funds used during construction	4,867	4,778	3,144
Allowance for equity funds used during construction	10,877	12,483	8,325
Income before income taxes	254,461	276,580	373,841
Income taxes	50,797	109,393	123,695
Net income	203,664	167,187	250,146
Preferred stock dividends of subsidiaries	1,890	1,890	1,890
Net income for common stock	$201,774	$165,297	$248,256
Basic earnings per common share	$1.85	$1.52	$2.30
Diluted earnings per common share	$1.85	$1.52	$2.29
Weighted-average number of common shares outstanding	108,855	108,749	108,102
Net effect of potentially dilutive shares	291	184	207
Weighted-average shares assuming dilution	109,146	108,933	108,309

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Comprehensive Income
Hawaiian Electric Industries, Inc. and Subsidiaries

Years ended December 31 (in thousands)	2018	2017	2016
Net income for common stock	$201,774	$165,297	$248,256
Other comprehensive income (loss), net of taxes:			
Net unrealized losses on available-for sale investment securities:			
Net unrealized losses on available-for sale investment securities arising during the period, net of tax benefits of $3,468, $2,886 and $3,763 for 2018, 2017 and 2016, respectively	(9,472)	(4,370)	(5,699)
Reclassification adjustment for net realized gains included in net income, net of taxes of nil, nil and $238 for 2018, 2017 and 2016, respectively	—	—	(360)
Derivatives qualified as cash flow hedges:			
Effective portion of foreign currency hedge net unrealized losses arising during the period, net of tax benefits of nil, nil and $179 for 2018, 2017 and 2016, respectively	—	—	(281)
Unrealized interest rate hedging gain (loss), net of tax (expense) benefit of $151, nil and nil for 2018, 2017 and 2016, respectively	(436)	—	—
Reclassification adjustment to net income, net of (taxes) benefits of nil, $289 and $(76) for 2018, 2017 and 2016, respectively	—	454	(119)
Retirement benefit plans:			
Net gains (losses) arising during the period, net of (taxes) benefits of $9,810, $(41,129) and $27,703 for 2018, 2017 and 2016, respectively	(28,101)	65,531	(43,510)
Adjustment for amortization of prior service credit and net losses recognized during the period in net periodic benefit cost, net of tax benefits of $7,317, $10,041 and $9,267 for 2018, 2017 and 2016, respectively	21,015	15,737	14,518
Reclassification adjustment for impact of D&Os of the PUC included in regulatory assets, net of (taxes) benefits of $(2,887), $49,523 and $(18,206) for 2018, 2017 and 2016, respectively	8,325	(78,724)	28,584
Other comprehensive loss, net of taxes	(8,669)	(1,372)	(6,867)
Comprehensive income attributable to Hawaiian Electric Industries, Inc.	$193,105	$163,925	$241,389

The accompanying notes are an integral part of these consolidated financial statements.

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Consolidated Balance Sheets
Hawaiian Electric Industries, Inc. and Subsidiaries

December 31		2018		2017
(dollars in thousands)				
ASSETS				
Cash and cash equivalents		$169,208		$261,881
Accounts receivable and unbilled revenues, net		325,672		263,209
Available-for-sale investment securities, at fair value		1,388,533		1,401,198
Held-to-maturity investment securities, at amortized cost		141,875		44,515
Stock in Federal Home Loan Bank, at cost		9,958		9,706
Loans held for investment, net		4,790,902		4,617,131
Loans held for sale, at lower of cost or fair value		1,805		11,250
Property, plant and equipment, net				
Land	$102,925		$102,588	
Plant and equipment	7,118,709		6,598,751	
Construction in progress	267,714		312,204	
	7,489,348		7,013,543	
Less – accumulated depreciation	(2,659,230)	4,830,118	(2,553,295)	4,460,248
Regulatory assets		833,426		869,297
Other		530,364		513,535
Goodwill		82,190		82,190
Total assets		$13,104,051		$12,534,160
LIABILITIES AND SHAREHOLDERS' EQUITY				
Liabilities				
Accounts payable		$214,773		$193,714
Interest and dividends payable		28,254		25,837
Deposit liabilities		6,158,852		5,890,597
Short-term borrowings—other than bank		73,992		117,945
Other bank borrowings		110,040		190,859
Long-term debt, net—other than bank		1,879,641		1,683,797
Deferred income taxes		372,518		388,430
Regulatory liabilities		950,236		880,770
Defined benefit pension and other postretirement benefit plans liability		538,384		509,514
Other		580,788		521,018
Total liabilities		10,907,478		10,402,481
Preferred stock of subsidiaries - not subject to mandatory redemption		34,293		34,293
Commitments and contingencies (Notes 3 and 4)				
Shareholders' equity				
Preferred stock, no par value, authorized 10,000,000 shares; issued: none		—		—
Common stock, no par value, authorized 200,000,000 shares; issued and outstanding: 108,879,245 shares and 108,787,807 shares at December 31, 2018 and 2017, respectively		1,669,267		1,662,491
Retained earnings		543,623		476,836
Accumulated other comprehensive loss, net of tax benefits				
Net unrealized losses on securities	$(24,423)		$(14,951)	
Unrealized losses on derivatives	(436)		—	

Retirement benefit plans	(25,751)	(50,610)	(26,990)	(41,941)
Total shareholders' equity		2,162,280		2,097,386
Total liabilities and shareholders' equity		$13,104,051		$12,534,160

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Changes in Shareholders' Equity
Hawaiian Electric Industries, Inc. and Subsidiaries

	Common stock		Retained	Accumulated other comprehensive	
(in thousands, except per share amounts)	Shares	Amount	earnings	income (loss)	Total
Balance, December 31, 2015	107,460	$1,629,136	$324,766	$ (26,262)	$1,927,640
Net income for common stock	—	—	248,256	—	248,256
Other comprehensive loss, net of tax benefits	—	—	—	(6,867)	(6,867)
Issuance of common stock:					
Dividend reinvestment and stock purchase plan	859	26,844	—	—	26,844
Retirement savings and other plans	264	9,298	—	—	9,298
Share-based expenses and other, net	—	(4,368)	—	—	(4,368)
Common stock dividends ($1.24 per share)	—	—	(134,050)	—	(134,050)
Balance, December 31, 2016	108,583	1,660,910	438,972	(33,129)	2,066,753
Net income for common stock	—	—	165,297	—	165,297
Other comprehensive loss, net of tax benefits	—	—	—	(1,372)	(1,372)
Reclass of AOCI for tax rate reduction impact	—	—	7,440	(7,440)	—
Issuance of common stock:					
Retirement savings and other plans	205	4,664	—	—	4,664
Share-based expenses and other, net	—	(3,083)	—	—	(3,083)
Common stock dividends ($1.24 per share)	—	—	(134,873)	—	(134,873)
Balance, December 31, 2017	108,788	1,662,491	476,836	(41,941)	2,097,386
Net income for common stock	—	—	201,774	—	201,774
Other comprehensive loss, net of tax benefits	—	—	—	(8,669)	(8,669)
Issuance of common stock:					
Retirement savings and other plans	91	2,650	—	—	2,650
Share-based expenses and other, net	—	4,126	—	—	4,126
Common stock dividends ($1.24 per share)	—	—	(134,987)	—	(134,987)
Balance, December 31, 2018	108,879	$1,669,267	$543,623	$ (50,610)	$2,162,280

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Cash Flows
Hawaiian Electric Industries, Inc. and Subsidiaries

Years ended December 31	2018	2017	2016
(in thousands)			
Cash flows from operating activities			
Net income	$203,664	$167,187	$250,146
Adjustments to reconcile net income to net cash provided by operating activities			
Depreciation of property, plant and equipment	214,036	200,658	194,273
Other amortization	41,593	21,340	10,473
Provision for loan losses	14,745	10,901	16,763
Loans originated and purchased, held for sale	(109,537)	(115,104)	(236,769)
Proceeds from sale of loans, held for sale	112,182	127,951	236,062
Deferred income taxes	(9,368)	37,835	47,118
Share-based compensation expense	7,792	5,404	4,789
Allowance for equity funds used during construction	(10,877)	(12,483)	(8,325)
Other	(4,219)	(3,324)	(12,422)
Changes in assets and liabilities			
Increase in accounts receivable and unbilled revenues, net	(64,321)	(12,875)	(898)
Decrease (increase) in fuel oil stock	7,054	(20,794)	4,786
Decrease (increase) in regulatory assets	9,252	(17,256)	(18,273)
Increase (decrease) in accounts, interest and dividends payable	21,528	34,985	(9,643)
Change in prepaid and accrued income taxes, tax credits and utility revenue taxes	29,429	20,685	39,109
Increase in defined benefit pension and other postretirement benefit plans liability	20,871	882	1,587
Change in other assets and liabilities, net	15,488	(25,551)	(23,118)
Net cash provided by operating activities	499,312	420,441	495,658
Cash flows from investing activities			
Available-for-sale investment securities purchased	(224,335)	(528,379)	(533,956)
Principal repayments on available-for-sale investment securities	218,930	220,231	219,845
Proceeds from sale of available-for-sale investment securities	—	—	16,423
Purchases of held-to-maturity investment securities	(103,184)	(44,515)	—
Proceeds from repayments or maturities of held-to-maturity investment securities	5,720	—	—
Purchase of stock from Federal Home Loan Bank	(28,292)	(2,868)	(7,773)
Redemption of stock from Federal Home Loan Bank	28,040	4,380	7,233
Net decrease (increase) in loans held for investment	(189,352)	15,887	(194,042)
Proceeds from sale of commercial loans	7,149	36,760	52,299
Proceeds from sale of real estate acquired in settlement of loans	589	1,019	829
Proceeds from sale of real estate held for sale	—	—	1,764
Capital expenditures	(537,369)	(495,187)	(330,043)
Contributions in aid of construction	30,599	64,733	30,100
Contributions to low income housing investments	(14,499)	(17,505)	—
Acquisition of business	—	(76,323)	—
Other, net	13,945	6,468	856
Net cash used in investing activities	(792,059)	(815,299)	(736,465)

(continued)

Consolidated Statements of Cash Flows (continued)
Hawaiian Electric Industries, Inc. and Subsidiaries

Years ended December 31	2018	2017	2016
Cash flows from financing activities			
Net increase in deposit liabilities	165,880	341,668	523,675
Net increase (decrease) in short-term borrowings with original maturities of three months or less	(18,999)	67,992	(103,063)
Proceeds from issuance of short-term debt	25,000	125,000	—
Repayment of short-term debt	(50,000)	(75,000)	—
Net increase (decrease) in retail repurchase agreements	26,556	61,776	(43,601)
Proceeds from other bank borrowings	696,000	59,500	180,835
Repayments of other bank borrowings	(701,000)	(123,034)	(272,902)
Proceeds from issuance of long-term debt	250,000	532,325	115,000
Repayment of long-term debt and funds transferred for redemption of special purpose revenue bonds	(53,887)	(465,000)	(75,000)
Withheld shares for employee taxes on vested share-based compensation	(996)	(3,828)	(2,416)
Net proceeds from issuance of common stock	—	—	13,220
Common stock dividends	(134,987)	(134,873)	(117,274)
Preferred stock dividends of subsidiaries	(1,890)	(1,890)	(1,890)
Other	(1,603)	(6,349)	2,197
Net cash provided by financing activities	200,074	378,287	218,781
Net decrease in cash and cash equivalents	(92,673)	(16,571)	(22,026)
Cash and cash equivalents, January 1	261,881	278,452	300,478
Cash and cash equivalents, December 31	$169,208	$261,881	$278,452

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Income
Hawaiian Electric Company, Inc. and Subsidiaries

Years ended December 31	2018	2017	2016
(in thousands)			
Revenues	$2,546,525	$2,257,566	$2,094,368
Expenses			
Fuel oil	760,528	587,768	454,704
Purchased power	639,307	586,634	562,740
Other operation and maintenance	461,491	411,907	399,931
Depreciation	203,626	192,784	187,061
Taxes, other than income taxes	239,912	214,949	199,862
Total expenses	2,304,864	1,994,042	1,804,298
Operating income	241,661	263,524	290,070
Allowance for equity funds used during construction	10,877	12,483	8,325
Retirement defined benefits expense—other than service costs	(3,631)	(6,003)	(5,602)
Interest expense and other charges, net	(73,348)	(69,637)	(66,824)
Allowance for borrowed funds used during construction	4,867	4,778	3,144
Income before income taxes	180,426	205,145	229,113
Income taxes	34,778	83,199	84,801
Net income	145,648	121,946	144,312
Preferred stock dividends of subsidiaries	915	915	915
Net income attributable to Hawaiian Electric	144,733	121,031	143,397
Preferred stock dividends of Hawaiian Electric	1,080	1,080	1,080
Net income for common stock	$143,653	$119,951	$142,317

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Comprehensive Income
Hawaiian Electric Company, Inc. and Subsidiaries

Years ended December 31	2018	2017	2016
(in thousands)			
Net income for common stock	$143,653	$119,951	$142,317
Other comprehensive income (loss), net of taxes:			
Derivatives qualified as cash flow hedges:			
Effective portion of foreign currency hedge net unrealized losses arising during the period, net of tax benefits of nil, nil and $179 for 2018, 2017 and 2016, respectively	—	—	(281)
Reclassification adjustment to net income, net of (taxes) benefits of nil, $289 and $(110) for 2018, 2017 and 2016, respectively	—	454	(173)
Retirement benefit plans:			
Net gains (losses) arising during the period, net of (taxes) benefits of $9,024, $(39,587) and $27,153 for 2018, 2017 and 2016, respectively	(26,019)	63,105	(42,631)
Adjustment for amortization of prior service credit and net losses recognized during the period in net periodic benefit cost, net of tax benefits of $6,594, $9,221 and $8,442 for 2018, 2017 and 2016, respectively	19,012	14,477	13,254
Reclassification adjustment for impact of D&Os of the PUC included in regulatory assets, net of (taxes) benefits of $(2,887), $49,523 and $(18,206) for 2018, 2017 and 2016, respectively	8,325	(78,724)	28,584
Other comprehensive income (loss), net of taxes	1,318	(688)	(1,247)
Comprehensive income attributable to Hawaiian Electric Company, Inc.	$144,971	$119,263	$141,070

The accompanying notes are an integral part of these consolidated financial statements.

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Consolidated Balance Sheets
Hawaiian Electric Company, Inc. and Subsidiaries

December 31	2018	2017
(in thousands)		
Assets		
Property, plant and equipment		
Utility property, plant and equipment		
Land	$49,667	$49,330
Plant and equipment	6,809,671	6,404,887
Less accumulated depreciation	(2,577,342)	(2,476,352)
Construction in progress	233,145	263,094
Utility property, plant and equipment, net	4,515,141	4,240,959
Nonutility property, plant and equipment, less accumulated depreciation of $1,255 and $1,251 as of December 31, 2018 and 2017, respectively	6,961	7,580
Total property, plant and equipment, net	4,522,102	4,248,539
Current assets		
Cash and cash equivalents	35,877	12,517
Customer accounts receivable, net	177,896	127,889
Accrued unbilled revenues, net	121,738	107,054
Other accounts receivable, net	6,215	7,163
Fuel oil stock, at average cost	79,935	86,873
Materials and supplies, at average cost	55,204	54,397
Prepayments and other	32,118	25,355
Regulatory assets	71,016	88,390
Total current assets	579,999	509,638
Other long-term assets		
Regulatory assets	762,410	780,907
Other	102,992	91,529
Total other long-term assets	865,402	872,436
Total assets	$5,967,503	$5,630,613
Capitalization and liabilities		
Capitalization (see Consolidated Statements of Capitalization)		
Common stock equity	$1,957,641	$1,845,283
Cumulative preferred stock – not subject to mandatory redemption	34,293	34,293
Commitments and contingencies (Note 3)		
Long-term debt, net	1,418,802	1,318,516
Total capitalization	3,410,736	3,198,092
Current liabilities		
Current portion of long-term debt	—	49,963
Short-term borrowings from non-affiliate	25,000	4,999
Accounts payable	171,791	159,610
Interest and preferred dividends payable	23,215	22,575
Taxes accrued, including revenue taxes	233,333	199,101
Regulatory liabilities	17,977	3,401
Other	60,003	59,456
Total current liabilities	531,319	499,105
Deferred credits and other liabilities		
Deferred income taxes	383,197	394,041
Regulatory liabilities	932,259	877,369

Unamortized tax credits	91,522	90,369
Defined benefit pension and other postretirement benefit plans liability	503,659	472,948
Other	114,811	98,689
Total deferred credits and other liabilities	2,025,448	1,933,416
Total capitalization and liabilities	$5,967,503	$5,630,613

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Capitalization
Hawaiian Electric Company, Inc. and Subsidiaries

December 31	2018	2017
(dollars in thousands, except par value)		
Common stock equity		
Common stock of $6 2/3 par value		
Authorized: 50,000,000 shares. Outstanding: 16,751,488 shares and 16,142,216 shares at December 31, 2018 and 2017, respectively	$ 111,696	$ 107,634
Premium on capital stock	681,305	614,675
Retained earnings	1,164,541	1,124,193
Accumulated other comprehensive income (loss), net of taxes-retirement benefit plans	99	(1,219)
Common stock equity	1,957,641	1,845,283

Cumulative preferred stock not subject to mandatory redemption
Authorized: 5,000,000 shares of $20 par value and 7,000,000 shares of $100 par value.

Series	Par Value		Shares outstanding December 31, 2018 and 2017	2018	2017
(dollars in thousands, except par value and shares outstanding)					
C-4 1/4%	$ 20	(Hawaiian Electric)	150,000	$ 3,000	$ 3,000
D-5%	20	(Hawaiian Electric)	50,000	1,000	1,000
E-5%	20	(Hawaiian Electric)	150,000	3,000	3,000
H-5 1/4%	20	(Hawaiian Electric)	250,000	5,000	5,000
I-5%	20	(Hawaiian Electric)	89,657	1,793	1,793
J-4 3/4%	20	(Hawaiian Electric)	250,000	5,000	5,000
K-4.65%	20	(Hawaiian Electric)	175,000	3,500	3,500
G-7 5/8%	100	(Hawaii Electric Light)	70,000	7,000	7,000
H-7 5/8%	100	(Maui Electric)	50,000	5,000	5,000
			1,234,657	34,293	34,293

(continued)

Consolidated Statements of Capitalization (continued)
Hawaiian Electric Company, Inc. and Subsidiaries

December 31	2018	2017
(in thousands)		
Long-term debt		
Obligations to the State of Hawaii for the repayment of Special Purpose Revenue Bonds (subsidiary obligations unconditionally guaranteed by Hawaiian Electric):		
3.10%, Refunding series 2017A, due 2026	$125,000	$125,000
4.00%, Refunding series 2017B, due 2037	140,000	140,000
3.25%, Refunding series 2015, due 2025	47,000	47,000
6.50%, Series 2009, due 2039	150,000	150,000
Total obligations to the State of Hawaii	$462,000	$462,000
Other long-term debt – unsecured:		
Taxable senior notes:		
4.38%, Series 2018A, due 2028	$67,500	$—
4.53%, Series 2018B, due 2033	17,500	—
4.72%, Series 2018C, due 2048	15,000	—
4.31%, Series 2017A, due 2047	50,000	50,000
4.54%, Series 2016A, due 2046	40,000	40,000
5.23%, Series 2015A, due 2045	80,000	80,000
3.83%, Series 2013A, due 2020	14,000	14,000
4.45%, Series 2013A and 2013B, due 2022	52,000	52,000
4.84%, Series 2013A, 2013B and 2013C, due 2027	100,000	100,000
5.65%, Series 2013B and 2013C, due 2043	70,000	70,000
3.79%, Series 2012A, paid in 2018	—	50,000
4.03%, Series 2012B, due 2020	82,000	82,000
4.55%, Series 2012B and 2012C, due 2023	100,000	100,000
4.72%, Series 2012D, due 2029	35,000	35,000
5.39%, Series 2012E, due 2042	150,000	150,000
4.53%, Series 2012F, due 2032	40,000	40,000
Total taxable senior notes	913,000	863,000
6.50 %, series 2004, Junior subordinated deferrable interest debentures, due 2034	51,546	51,546
Total other long-term debt – unsecured	964,546	914,546
Total long-term debt	1,426,546	1,376,546
Less unamortized debt issuance costs	7,744	8,067
Less current portion long-term debt, net of unamortized debt issuance costs	—	49,963
Long-term debt, net	1,418,802	1,318,516
Total capitalization	$3,410,736	$3,198,092

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Changes in Common Stock Equity
Hawaiian Electric Company, Inc. and Subsidiaries

(in thousands)	Common stock Shares	Common stock Amount	Premium on capital stock	Retained earnings	Accumulated other comprehensive income (loss)	Total
Balance, December 31, 2015	15,805	$105,388	$578,930	$1,043,082	$ 925	$1,728,325
Net income for common stock	—	—	—	142,317	—	142,317
Other comprehensive loss, net of tax benefits	—	—	—	—	(1,247)	(1,247)
Issuance of common stock, net of expenses	215	1,430	22,561	—	—	23,991
Common stock dividends	—	—	—	(93,599)	—	(93,599)
Balance, December 31, 2016	16,020	106,818	601,491	1,091,800	(322)	1,799,787
Net income for common stock	—	—	—	119,951	—	119,951
Other comprehensive loss, net of tax benefits	—	—	—	—	(688)	(688)
Reclass of AOCI for tax rate reduction impact	—	—	—	209	(209)	—
Issuance of common stock, net of expenses	122	816	13,184	—	—	14,000
Common stock dividends	—	—	—	(87,767)	—	(87,767)
Balance, December 31, 2017	16,142	107,634	614,675	1,124,193	(1,219)	1,845,283
Net income for common stock	—	—	—	143,653	—	143,653
Other comprehensive income, net of taxes	—	—	—	—	1,318	1,318
Issuance of common stock, net of expenses	609	4,062	66,630	—	—	70,692
Common stock dividends	—	—	—	(103,305)	—	(103,305)
Balance, December 31, 2018	16,751	$111,696	$681,305	$1,164,541	$ 99	$1,957,641

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Cash Flows
Hawaiian Electric Company, Inc. and Subsidiaries

Years ended December 31	2018	2017	2016
(in thousands)			
Cash flows from operating activities			
Net income	$145,648	$121,946	$144,312
Adjustments to reconcile net income to net cash provided by operating activities			
Depreciation of property, plant and equipment	203,626	192,784	187,061
Other amortization	26,602	8,498	6,935
Deferred income taxes	(7,982)	38,037	74,386
Allowance for equity funds used during construction	(10,877)	(12,483)	(8,325)
Other	(1,570)	(1,066)	(3,700)
Changes in assets and liabilities			
Decrease (increase) in accounts receivable	(50,917)	2,914	8,551
Increase in accrued unbilled revenues	(14,684)	(15,361)	(7,184)
Decrease (increase) in fuel oil stock	6,938	(20,443)	4,786
Decrease (increase) in materials and supplies	(807)	(718)	750
Decrease (increase) in regulatory assets	9,252	(17,256)	(18,273)
Increase (decrease) in accounts payable	24,358	25,734	(10,614)
Change in prepaid and accrued income taxes, tax credits and revenue taxes	25,036	29,862	2,123
Increase in defined benefit pension and other postretirement benefit plans liability	18,746	604	484
Change in other assets and liabilities	20,244	(17,866)	(11,375)
Net cash provided by operating activities	393,613	335,186	369,917
Cash flows from investing activities			
Capital expenditures	(445,863)	(441,598)	(320,437)
Contributions in aid of construction	30,599	64,733	30,100
Other	10,082	4,578	2,138
Net cash used in investing activities	(405,182)	(372,287)	(288,199)
Cash flows from financing activities			
Common stock dividends	(103,305)	(87,767)	(93,599)
Preferred stock dividends of Hawaiian Electric and subsidiaries	(1,995)	(1,995)	(1,995)
Proceeds from issuance of common stock	70,700	14,000	24,000
Proceeds from issuance of long-term debt	100,000	315,000	40,000
Repayment of long-term debt and funds transferred for redemption of special purpose revenue bonds	(50,000)	(265,000)	—
Net increase (decrease) in short-term borrowings from non-affiliates and affiliate with original maturities of three months or less	(4,999)	4,999	—
Proceeds from other borrowings	25,000	—	—
Other	(472)	(3,905)	(287)
Net cash provided by (used in) financing activities	34,929	(24,668)	(31,881)
Net increase (decrease) in cash and cash equivalents	23,360	(61,769)	49,837
Cash and cash equivalents, January 1	12,517	74,286	24,449
Cash and cash equivalents, December 31	$35,877	$12,517	$74,286

The accompanying notes are an integral part of these consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1 · Summary of significant accounting policies

General

Hawaiian Electric Industries, Inc. (HEI) is a holding company with direct and indirect subsidiaries principally engaged in electric utility, banking, and renewable/sustainable infrastructure investment businesses operating in the State of Hawaii. HEI owns Hawaiian Electric Company, Inc. (Hawaiian Electric), ASB Hawaii, Inc., an intermediate holding company, that owns American Savings Bank, F.S.B. (ASB), and Pacific Current, LLC (Pacific Current), which indirectly owns Hamakua Energy, LLC (Hamakua Energy) and Mauo, LLC (Mauo).

Hawaiian Electric and its wholly owned operating subsidiaries, Hawaii Electric Light Company, Inc. (Hawaii Electric Light) and Maui Electric Company, Limited (Maui Electric), are regulated public electric utilities (collectively, the Utilities) in the business of generating, purchasing, transmitting, distributing and selling electric energy on all major islands in Hawaii other than Kauai. See Note 2.

ASB is a federally chartered savings bank providing a full range of banking services to individual and business customers through its branch system in Hawaii.

Hamakua Energy, owns and operates a 60-megawatt (MW) combined-cycle power plant, which sells the power it produces only to Hawaii Electric Light. Mauo is a commercial-scale, solar-plus-storage project (8.6 MW of solar and 42.3 MW of storage) currently under construction on the islands of Oahu and Maui.

Basis of presentation. In preparing the consolidated financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP), management is required to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities and the reported amounts of revenues and expenses. Actual results could differ significantly from those estimates. Material estimates that are particularly susceptible to significant change for HEI and its subsidiaries (collectively, the Company) include the amounts reported for investment securities (ASB only); property, plant and equipment; pension and other postretirement benefit obligations; contingencies and litigation; income taxes; regulatory assets and liabilities (Utilities only); electric utility unbilled revenues (Utilities only); and allowance for loan losses (ASB only).

Consolidation. The HEI consolidated financial statements include the accounts of HEI and its subsidiaries. The Hawaiian Electric consolidated financial statements include the accounts of Hawaiian Electric and its subsidiaries, except for HECO Capital Trust III (Trust III), which is accounted for under the equity method because Hawaiian Electric does not have a controlling financial interest or variable interest in Trust III, but has the ability to exercise significant influence. When HEI or Hawaiian Electric has a controlling financial interest in another entity (usually, majority voting interest), that entity is consolidated. Investments in companies over which the Company or the Utilities have the ability to exercise significant influence, but not control, are accounted for using the equity method. The consolidated financial statements exclude variable interest entities (VIEs) when the Company or the Utilities are not the primary beneficiaries. See Note 3 for information regarding Trust III unconsolidated VIEs. In general, intercompany amounts are eliminated in consolidation (see Note 2 for exceptions).

Cash and cash equivalents. The Utilities consider cash on hand, deposits in banks, money market accounts, certificates of deposit, short-term commercial paper of non-affiliates and liquid investments (with original maturities of three months or less) to be cash and cash equivalents. The Company considers the same items to be cash and cash equivalents as well as ASB’s deposits with the Federal Home Loan Bank (FHLB), federal funds sold (excess funds that ASB loans to other banks overnight at the federal funds rate) and securities purchased under resale agreements. Additionally, ASB is required by the Federal Reserve System to maintain noninterest-bearing cash reserves equal to a percentage of deposits. The reserve requirement for ASB at December 31, 2018 and 2017 was $28.1 million and $17.9 million, respectively.

Property, plant and equipment. Property, plant and equipment are reported at cost. Self-constructed electric utility plant includes engineering, supervision, administrative and general costs and an allowance for the cost of funds used during the construction period. These costs are recorded in construction in progress and are transferred to utility plant when construction is completed and the facilities are either placed in service or become useful for public utility purposes. Costs for betterments that make utility plant more useful, more efficient, of greater durability or of greater capacity are also capitalized. Upon the retirement or sale of electric utility plant, generally no gain or loss is recognized. The cost of the plant retired is charged to accumulated depreciation. Amounts collected from customers for cost of removal are included in regulatory liabilities. See discussion regarding "Utility projects" in Note 3.

Depreciation. Depreciation is computed primarily using the straight-line method over the estimated lives of the assets being depreciated. Electric utility plant additions in the current year are depreciated beginning January 1 of the following year in accordance with rate-making. Electric utility plant has lives ranging from 16 to 88 years for production plant, from 10 to 79 years for transmission and distribution plant and from 5 to 65 years for general plant. The Utilities' composite annual depreciation rate, which includes a component for cost of removal, was 3.2% in 2018, 2017 and 2016.

Leases. HEI, the Utilities and ASB have entered into lease agreements for the use of equipment and office space. The provisions of some of the lease agreements contain renewal options.

HEI's consolidated operating lease expense was $21 million, $20 million and $19 million in 2018, 2017 and 2016, respectively. The Utilities' operating lease expense was $11 million, $11 million and $10 million in 2018, 2017 and 2016, respectively. HEI's consolidated and the Utilities' future minimum lease payments are as follows:

(in millions)	HEI	Hawaiian Electric
2019	$11	$ 6
2020	9	6
2021	8	5
2022	5	2
2023	4	2
Thereafter	12	3
	$49	$ 24

Retirement benefits. Pension and other postretirement benefit costs are charged primarily to expense and electric utility plant (in the case of the Utilities). Funding for the Company's qualified pension plans (Plans) is based on actuarial assumptions adopted by the Pension Investment Committee administering the Plans. The participating employers contribute amounts to a master pension trust for the Plans in accordance with the funding requirements of the Employee Retirement Income Security Act of 1974, as amended (ERISA), including changes promulgated by the Pension Protection Act of 2006, and considering the deductibility of contributions under the Internal Revenue Code. The Company generally funds at least the net periodic pension cost during the year, subject to limits and targeted funded status. Under a pension tracking mechanism approved by the Public Utilities Commission of the State of Hawaii (PUC), the Utilities generally will make contributions to the pension fund at the greater of the minimum level required under the law or net periodic pension cost.

Certain health care and/or life insurance benefits are provided to eligible retired employees and the employees' beneficiaries and covered dependents. The Company generally funds the net periodic postretirement benefit costs other than pensions (except for executive life) for postretirement benefits other than pensions (OPEB), while maximizing the use of the most tax-advantaged funding vehicles, subject to cash flow requirements and reviews of the funded status with the consulting actuary. The Utilities must fund OPEB costs as specified in the OPEB tracking mechanisms, which were approved by the PUC. Future decisions in rate cases could further impact funding amounts.

Environmental expenditures. The Company and the Utilities are subject to numerous federal and state environmental statutes and regulations. In general, environmental contamination treatment costs are charged to expense. Environmental costs are capitalized if the costs extend the life, increase the capacity, or improve the safety or efficiency of property; the costs mitigate or prevent future environmental contamination; or the costs are incurred in preparing the property for sale. Environmental costs are either capitalized or charged to expense when environmental assessments and/or remedial efforts are probable and the cost can be reasonably estimated. The Utilities review their sites and measure the liability quarterly by assessing a range of reasonably likely costs of each identified site using currently available information, including existing technology, presently enacted laws and regulations, experience gained at similar sites, and the probable level of involvement and financial condition of other potentially responsible parties.

Income taxes. Deferred income tax assets and liabilities are established for the temporary differences between the financial reporting bases and the tax bases of the Company’s and the Utilities’ assets and liabilities at federal and state tax rates expected to be in effect when such deferred tax assets or liabilities are realized or settled. As a result of the 2017 Tax Cuts and Jobs Act (Tax Act), the accumulated deferred income tax balances (ADIT) were adjusted in 2017 for the lower federal income tax rate expected to be in effect when the deferred tax assets or liabilities are realized or settled. See further discussion under “Recent tax developments” in Note 11. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

income during the periods in which those temporary differences become deductible. Valuation allowances are established when necessary to reduce deferred income tax assets to the amount expected to be realized.

HEI and the Utilities' investment tax credits are deferred and amortized over the estimated useful lives of the properties to which the credits relate (and for the Utilities, this treatment is in accordance with Accounting Standards Codification (ASC) Topic 980, "Regulated Operations").

The Utilities are included in the consolidated income tax returns of HEI. However, income tax expense has been computed for financial statement purposes as if each utility filed a separate income tax return and Hawaiian Electric filed a consolidated Hawaiian Electric income tax return.

Governmental tax authorities could challenge a tax return position taken by the Company. The Company and the Utilities use a "more-likely-than-not" recognition threshold and measurement standard for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return.

Fair value measurements. Fair value estimates are estimates of the price that would be received to sell an asset, or paid upon the transfer of a liability, in an orderly transaction between market participants at the measurement date. The fair value estimates are generally determined based on assumptions that market participants would use in pricing the asset or liability and are based on market data obtained from independent sources. However, in certain cases, the Company and the Utilities use their own assumptions about market participant assumptions based on the best information available in the circumstances. These valuations are estimates at a specific point in time, based on relevant market information, information about the financial instrument and judgments regarding future expected loss experience, economic conditions, risk characteristics of various financial instruments and other factors. These estimates do not reflect any premium or discount that could result if the Company or the Utilities were to sell its entire holdings of a particular financial instrument at one time. Because no active trading market exists for a portion of the Company's and the Utilities' financial instruments, fair value estimates cannot be determined with precision. Changes in the underlying assumptions used, including discount rates and estimates of future cash flows, could significantly affect the estimates. In addition, the tax ramifications related to the realization of the unrealized gains and losses could have a significant effect on fair value estimates, but have not been considered in making such estimates.

The Company and the Utilities group their financial assets measured at fair value in three levels outlined as follows:

Level 1:	Inputs to the valuation methodology are quoted prices, unadjusted, for identical assets or liabilities in active markets. A quoted price in an active market provides the most reliable evidence of fair value and is used to measure fair value whenever available.
Level 2:	Inputs to the valuation methodology include quoted prices for similar assets or liabilities in active markets; inputs to the valuation methodology include quoted prices for identical or similar assets or liabilities in markets that are not active; or inputs to the valuation methodology that are derived principally from or can be corroborated by observable market data by correlation or other means.
Level 3:	Inputs to the valuation methodology are unobservable and significant to the fair value measurement. Level 3 assets and liabilities include financial instruments whose value is determined using discounted cash flow methodologies, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

Classification in the hierarchy is based upon the lowest level input that is significant to the fair value measurement of the asset or liability. For instruments classified in Level 1 and 2 where inputs are primarily based upon observable market data, there is less judgment applied in arriving at the fair value. For instruments classified in Level 3, management judgment is more significant due to the lack of observable market data.

Fair value is also used on a nonrecurring basis to evaluate certain assets for impairment or for disclosure purposes. Examples of nonrecurring uses of fair value include mortgage servicing rights accounted for by the amortization method, loan impairments for certain loans, real estate acquired in settlement of loans, goodwill and asset retirement obligations (AROs).

Earnings per share (HEI only). Basic earnings per share (EPS) is computed by dividing net income for common stock by the weighted-average number of common shares outstanding for the period. Diluted EPS is computed similarly, except that dilutive common shares for stock compensation and the equity forward transactions are added to the denominator.

Impairment of long-lived assets and long-lived assets to be disposed of. The Company and the Utilities review long-lived assets and certain identifiable intangibles for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount or fair value, less costs to sell.

Recent accounting pronouncements.

Revenues from contracts with customers. In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)." The core principle of the guidance in ASU No. 2014-09 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU No. 2014-09 also requires disclosure of the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers.

The Company and Hawaiian Electric adopted ASU No. 2014-09 (and subsequently issued revenue-related ASUs, as applicable) in the first quarter of 2018. There was no cumulative effect adjustment and no impact on the timing or pattern of revenue recognition, but ASU No. 2014-09 required changes with respect to the Company's and Hawaiian Electric's revenue disclosures. See Note 8.

Financial instruments. In January 2016, the FASB issued ASU No. 2016-01, "Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities," which, among other things:

- Requires equity investments (except those accounted for under the equity method of accounting, or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income.
- Requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes.
- Requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset (i.e., securities or loans and receivables).
- Eliminates the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost.

The Company adopted ASU No. 2016-01 in the first quarter of 2018 and the impact of adoption was not material to the Company's and Hawaiian Electric's consolidated financial statements.

Cash flows. In August 2016, the FASB issued ASU No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments," which provides guidance on eight specific cash flow issues - debt prepayment or debt extinguishment costs, settlement of zero-coupon debt instruments or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing, contingent consideration payments made after a business combination, proceeds from the settlement of insurance claims, proceeds from the settlement of corporate-owned life insurance policies (including bank-owned life insurance policies), distributions received from equity method investees, beneficial interests in securitization transactions, and separately identifiable cash flows and application of the predominance principle.

The Company adopted ASU No. 2016-15 in the first quarter of 2018 using a retrospective transition method and there was no impact from the adoption to the Company's and Hawaiian Electric's consolidated statements of cash flows.

Restricted cash. In November 2016, the FASB issued ASU No. 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash," which requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents.

The Company adopted ASU No. 2016-18 in the first quarter of 2018 using a retrospective transition method and the impact of adoption was not material to the Company's and Hawaiian Electric's consolidated statements of cash flows.

Definition of a Business. In January 2017, the FASB issued ASU No. 2017-01, "Business Combinations-Clarifying the Definition of a Business." This update clarifies the definition of a business and adds guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The Company adopted ASU No. 2017-01 in the first quarter of 2018 and the impact of adoption was not material to the Company's and Hawaiian Electric's consolidated financial statements.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Net periodic pension cost and net periodic postretirement benefit cost. In March 2017, the FASB issued ASU No. 2017-07, "Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost," which requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. It also requires the other components of net periodic pension cost (NPPC) and net periodic postretirement benefit cost (NPBC) as defined in paragraphs 715-30-35-4 and 715-60-35-9 to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. Additionally, only the service cost component is eligible for capitalization under GAAP, when applicable.

The Company adopted ASU No. 2017-07 in the first quarter of 2018: (1) retrospectively for the presentation in the income statement of the service cost component and the other components of NPPC and NPBC, and (2) prospectively for the capitalization in assets of the service cost component of NPPC and NPBC for Hawaiian Electric and its subsidiaries. HEI and ASB do not capitalize pension and OPEB costs. The Company and Hawaiian Electric elected the practical expedient that permits an entity to use the amounts disclosed in its pension and other postretirement benefit plan note for the prior comparative periods as the estimation basis for applying the retrospective presentation requirements.

The PUC approved in the Utilities' rate cases, stipulated agreements to defer non-service cost components of NPPC and NPBC, which would have been capitalized prior to ASU No. 2017-07, as part of each utility's pension tracking mechanisms. Such treatment is effective starting in 2018 and continues until each utility's next rate case. In each utility's next rate case, rates established would include recovery of the deferred non-service cost components and the Utilities' will seek approval to capitalize only the service components of NPPC and NPBC going forward, which reflects the requirements of ASU No.2017-07.

The adoption of ASU 2017-07 in the first quarter of 2018 did not have an impact on 2018 net income. The following table summarizes the impact to the prior period financial statements of the adoption of ASU No. 2017-07:

(in thousands)	2017 As previously filed	2017 Adjustment from adoption of ASU No. 2017-07	2017 As currently reported	2016 As previously filed	2016 Adjustment from adoption of ASU No. 2017-07	2016 As currently reported
HEI Consolidated Statements of Income						
Expenses						
Electric utility	$2,000,045	$ (6,003)	$1,994,042	$1,809,900	$ (5,602)	$1,804,298
Bank	198,924	(820)	198,104	198,572	(875)	197,697
Other	18,365	(1,119)	17,246	24,007	(1,186)	22,821
Total expenses	$2,217,334	$ (7,942)	$2,209,392	$2,032,479	$ (7,663)	$2,024,816
Operating income						
Electric utility	$257,521	$ 6,003	$263,524	$284,468	$ 5,602	$290,070
Bank	98,716	820	99,536	87,352	875	88,227
Other	(17,946)	1,119	(16,827)	(23,645)	1,186	(22,459)
Total operating income	$338,291	$ 7,942	$346,233	$348,175	$ 7,663	$355,838
Retirement defined benefits expense--other than service costs	$—	$ (7,942)	$(7,942)	$—	$ (7,663)	$(7,663)
Hawaiian Electric Consolidated Statements of Income						
Other operation and maintenance	$417,910	$ (6,003)	$411,907	$405,533	$ (5,602)	$399,931
Total expense	2,000,045	(6,003)	1,994,042	1,809,900	(5,602)	1,804,298
Operating income	257,521	6,003	263,524	284,468	5,602	290,070

Retirement defined benefits expense--other than service costs	—	(6,003	) (6,003	) —	(5,602	) (5,602)
Hawaiian Electric Consolidating Statements of Income (in Note 3)						
Hawaiian Electric (parent only)						
Other operation and maintenance	279,440	(5,049	) 274,391	273,176	(5,058	) 268,118
Total expense	1,425,655	(5,049	) 1,420,606	1,277,245	(5,058	) 1,272,187
Operating income	172,849	5,049	177,898	197,139	5,058	202,197
Retirement defined benefits expense--other than service costs	—	(5,049	) (5,049	) —	(5,058	) (5,058)

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

(in thousands)	2017 As previously filed	2017 Adjustment from adoption of ASU No. 2017-07	2017 As currently reported	2016 As previously filed	2016 Adjustment from adoption of ASU No. 2017-07	2016 As currently reported
Hawaiian Electric Consolidating Statements of Income (in Note 3)						
Hawaii Electric Light						
Other operation and maintenance	$66,277	$ (93)	$66,184	$63,897	$ 319	$64,216
Total expense	287,868	(93)	287,775	266,823	319	267,142
Operating income	45,599	93	45,692	44,562	(319)	44,243
Retirement defined benefits expense--other than service costs	—	(93)	(93)	—	319	319
Maui Electric						
Other operation and maintenance	72,193	(861)	71,332	68,460	(863)	67,597
Total expense	286,522	(861)	285,661	265,832	(863)	264,969
Operating income	39,156	861	40,017	42,873	863	43,736
Retirement defined benefits expense--other than service costs	—	(861)	(861)	—	(863)	(863)
ASB Statements of Income Data (in Note 4)						
Compensation and employee benefits	95,751	(820)	94,931	90,117	(875)	89,242
Other expense	19,324	820	20,144	18,487	875	19,362

Derivatives and Hedging. In August 2017, the FASB issued ASU No. 2017-12, “Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities,” which is intended to improve and simplify accounting rules around hedge accounting. The amendments in ASU No. 2017-12 improve the financial reporting of hedging relationships to better portray the economic results of an entity’s risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results in the financial statements. The amendments also expand and refine hedge accounting for both nonfinancial and financial risk components and align the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements. For public business entities, the new guidance is effective for annual periods beginning after December 15, 2018, including interim periods within those annual periods, but early adoption is permitted. The Company early adopted ASU No. 2017-12 in the second quarter of 2018, with an effective date of April 1, 2018, and the adoption did not have a material impact on the Company’s consolidated financial statements.

Leases. In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842),” which requires that lessees recognize a liability to make lease payments (the lease liability) and a right-of-use (ROU) asset, representing its right to use the underlying asset for the lease term, for all leases (except short-term leases) at the commencement date. For finance leases, a lessee is required to recognize interest on the lease liability separately from amortization of the ROU asset in the consolidated statements of income. For operating leases, a lessee is required to recognize a single lease cost, calculated so that the cost of the lease is allocated over the lease term on a generally straight-line basis.

The Company adopted ASU No. 2016-02 on January 1, 2019 and used the effective date as the date of initial application. Consequently, financial information for dates and periods before January 1, 2019 will not be updated and the disclosures required under the new standard will not be provided (i.e., the Company will continue to report comparative periods presented in the financial statements in the period of adoption under ASC 840, including the required disclosures under ASC 840).

The new standard provides a number of optional practical expedients in transition. The Company has elected the practical expedient package under which the Company will not have to reassess its prior conclusions about whether any expired or existing contracts are or contain leases, whether there is a change in lease classification for any expired or existing leases under the new standard, or whether there were initial direct costs for any existing leases that would be treated differently under the new standard.

The most significant effect of the new standard relates to the recognition of new ROU assets and lease liabilities on the Company’s balance sheet for purchase power agreements and real estate operating leases. On adoption, the Company recognized additional lease liabilities of approximately $257 million for the Company and approximately $236 million for the

Utilities ($215 million related to PPAs), with corresponding ROU assets of the same amount based on the present value of the remaining minimum rental payments under current leasing standards for existing operating leases.

The new standard also provides practical expedients for an entity's ongoing accounting. The Company has elected the short-term lease recognition exemption for all of its leases that qualify, which means the Company will not recognize lease liabilities and ROU assets for all leases that have lease terms that are 12 months or less. The Company has elected the practical expedient to not separate lease and non-lease components for its real estate leases. The Utilities also elected the practical expedient to not assess all existing land easements that were not previously accounted for in accordance with ASC 840.

Credit losses. In June 2016, the FASB issued ASU No. 2016-13, "Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments," which is intended to improve financial reporting by requiring timelier recording of credit losses on loans and other financial instruments held by financial institutions and other organizations. ASU No. 2016-13 requires the measurement of all expected credit losses for financial assets held at the reporting date (based on historical experience, current conditions and reasonable and supportable forecasts) and enhanced disclosures to help financial statement users better understand significant estimates and judgments used in estimating credit losses, as well as the credit quality and underwriting standards of an organization's portfolio. In addition, ASU No. 2016-13 amends the accounting for credit losses on available-for-sale (AFS) debt securities and purchased financial assets with credit deterioration. The other-than-temporary impairment model of accounting for credit losses on AFS debt securities will be replaced with an estimate of expected credit losses only when the fair value is below the amortized cost of the asset. The length of time the fair value of an AFS debt security has been below the amortized cost will no longer impact the determination of whether a credit loss exists. The AFS debt security model will also require the use of an allowance to record the estimated losses (and subsequent recoveries). The accounting for the initial recognition of the estimated expected credit losses for purchased financial assets with credit deterioration would be recognized through an allowance for credit losses with an offset to the cost basis of the related financial asset at acquisition (i.e., there is no impact to net income at initial recognition).

The Company plans to adopt ASU No. 2016-13 in the first quarter of 2020. The guidance is to be applied on a modified retrospective basis with the cumulative effect of initially applying the amendments recognized in retained earnings at the date of initial application. The Company has assembled a project team that meets regularly to evaluate the provisions of this ASU, identify additional data requirements necessary and determine an approach for implementation. The team has assigned roles and responsibilities and developed key tasks to complete and a general timeline to be followed. The Company is evaluating the effect that this ASU will have on the consolidated financial statements and disclosures. Economic conditions and the composition of the Company's loan portfolio at the time of adoption will influence the extent of the adopting accounting adjustment.

Compensation-retirement benefits-defined benefit plans. In August 2018, the FASB issued ASU 2018-14, "Compensation-Retirement Benefits-Defined Benefit Plans-General (Subtopic 715-20): Disclosure Framework-Changes to the Disclosure Requirements for Defined Benefit Plans," which makes minor changes to the disclosure requirements for employers that sponsor defined benefit pension and/or other postretirement benefit plans. The new guidance eliminates requirements for certain disclosures that are no longer considered cost beneficial and requires new ones that the FASB considers pertinent. ASU No. 2018-14 is effective for fiscal years ending after December 15, 2020. The Company is evaluating the impact of the adoption of ASU No. 2018-14 on its financial statement disclosures, but does not expect it to have a material impact.

Reclassifications. Reclassifications made to prior year-end financial statements to conform to 2018 presentation include a reclassification of contributions in aid of construction (CIAC) balances to "Property, plant and equipment, net" and "Total property, plant and equipment, net" for the Company and Hawaiian Electric, respectively, which reduced the amounts of the respective balances.

Electric utility

Regulation by the Public Utilities Commission of the State of Hawaii (PUC). The Utilities are regulated by the PUC and account for the effects of regulation under FASB ASC Topic 980, "Regulated Operations." As a result, the Utilities' financial statements reflect assets, liabilities, revenues and expenses based on current cost-based rate-making regulations (see Note 3—"Regulatory assets and liabilities." Their continued accounting under ASC Topic 980 generally requires that rates are established by an independent, third-party regulator; rates are designed to recover the costs of providing service; and it is reasonable to assume that rates can be charged to, and collected from, customers.

The rate schedules of the Utilities include energy cost adjustment clauses (ECACs) and energy costs recovery clauses (ECRCs) under which electric rates are adjusted for changes in the weighted-average price paid for fuel oil and certain components of purchased power, and the relative amounts of company-generated power and purchased power. The rate schedules also include purchased power adjustment clauses (PPACs) under which the remaining purchase power expenses are recovered through surcharge mechanisms. The amounts collected through the ECAC/ECRCs and PPACs are required to be reconciled quarterly.

Accounts receivable. Accounts receivable are recorded at the invoiced amount. The Utilities generally assess a late payment charge on balances unpaid from the previous month. The allowance for doubtful accounts is the Utilities' best estimate of the amount of probable credit losses in the Utilities existing accounts receivable. At December 31, 2018 and 2017, the allowance for customer accounts receivable, accrued unbilled revenues and other accounts receivable was $1.5 million and $1.2 million, respectively.

Contributions in aid of construction. The Utilities receive contributions from customers for special construction requirements. As directed by the PUC, contributions are amortized on a straight-line basis over 30 to 55 years as an offset against depreciation expense. The carrying value of CIAC is included in property, plant and equipment, net.

Electric utility revenues. Revenues related to electric service are generally recorded when service is rendered and include revenues applicable to energy consumed in the accounting period but not yet billed to the customers. The Utilities also record revenue under a decoupling mechanism. See "Decoupling" discussion in Note 3 Electric Utility segment.

Repairs and maintenance costs. Repairs and maintenance costs for overhauls of generating units are generally expensed as they are incurred.

Allowance for funds used during construction (AFUDC). AFUDC is an accounting practice whereby the costs of debt and equity funds used to finance plant construction are credited on the statement of income and charged to construction in progress on the balance sheet. If a project under construction is delayed for an extended period of time, AFUDC on the delayed project may be stopped after assessing the causes of the delay and probability of recovery. The weighted-average AFUDC rate was 7.3% in 2018, 7.7% in 2017 and 7.6% in 2016, and reflected quarterly compounding.

Bank (HEI only)

Investment securities. Investments in debt securities are classified as held-to-maturity (HTM), trading or available-for-sale (AFS). ASB determines the appropriate classification at the time of purchase. Debt securities that ASB intends to and has the ability to hold to maturity are classified as HTM securities and reported at amortized cost. Marketable debt securities that are bought and held principally for the purpose of selling them in the near term are classified as trading securities and reported at fair value, with unrealized gains and losses included in earnings. Marketable debt securities not classified as either HTM or trading securities are classified as AFS and reported at fair value. Unrealized gains and losses for AFS securities are excluded from earnings and reported on a net basis in accumulated other comprehensive income (AOCI) until realized.

Interest income is recorded on an accrual basis. Discounts and premiums on securities are accreted or amortized into interest income using the interest method over the remaining contractual lives of the agency obligation securities and the estimated lives of the mortgage-backed securities adjusted for anticipated prepayments. ASB uses actual prepayment experience and estimates of future prepayments to determine the constant effective yield necessary to apply the interest method of income recognition. The discounts and premiums on the agency obligations portfolio are accreted or amortized on a prospective basis using expected contractual cash flows. The discounts and premiums on the mortgage-backed securities portfolio are accreted or amortized on a retrospective basis using changes in anticipated prepayments. This method requires a retrospective adjustment of the effective yield each time ASB changes the estimated life as if the new estimate had been known since the original acquisition date of the securities. Estimates of future prepayments are based on the underlying collateral characteristics and historic or projected prepayment behavior of each security. The specific identification method is used in determining realized gains and losses on the sales of securities.

For securities that are not trading securities, individual securities are assessed for impairment at least on a quarterly basis, and more frequently when economic or market conditions warrant. A security is impaired if the fair value of the security is less than its carrying value at the financial statement date. When a security is impaired, ASB determines whether this impairment is temporary or other-than-temporary. If ASB does not expect to recover the entire amortized cost basis of the security or there is a change in the expected cash flows, an OTTI exists. If ASB intends to sell the security, or will more likely than not be required to sell the security before recovery of its amortized cost, the OTTI must be recognized in earnings. If ASB does not intend to sell the security, and it is not more likely than not that ASB will be required to sell the security before recovery of its amortized cost, the OTTI must be separated into the amount representing the credit loss and the amount related to all other factors. The amount of OTTI related to the credit loss is recognized in earnings, while the remaining OTTI is recognized in AOCI. Based on ASB’s evaluation as of December 31, 2018, 2017 and 2016, there was no indicated impairment as the bank expects to collect the contractual cash flows for these investments.

Stock in Federal Home Loan Bank (FHLB) is carried at cost and is reviewed at least quarterly for impairment, with valuation adjustments recognized in noninterest income.

Loans. ASB carries loans at amortized cost less the allowance for loan losses, loan origination fees (net of direct loan origination costs), commitment fees and purchase premiums and discounts. Interest on loans is credited to income as it is earned. Discounts and premiums are accreted or amortized over the life of the loans using the interest method.

Loan origination fees (net of direct loan origination costs) are deferred and recognized as an adjustment in yield over periods not exceeding the contractual life of the loan using the interest method or taken into income when the loan is paid off or sold. Nonrefundable commitment fees (net of direct loan origination costs, if applicable) received for commitments to originate or purchase loans are deferred and, if the commitment is exercised, recognized as an adjustment of yield over the life of the loan using the interest method. Nonrefundable commitment fees received for which the commitment expires unexercised are recognized as income upon expiration of the commitment.

Loans held for sale are stated at the lower of cost or estimated fair value on an aggregate basis. Premiums, discounts and net deferred loan fees are not amortized while a loan is classified as held for sale. A sale is recognized only when the consideration received is other than beneficial interests in the assets sold and control over the assets is transferred irrevocably to the buyer. Gains or losses on sales of loans are recognized at the time of sale and are determined by the difference between the net sales proceeds and the allocated basis of the loans sold.

Allowance for loan losses. ASB maintains an allowance for loan losses to absorb losses inherent in its loan portfolio. The level of allowance for loan losses is based on a continuing assessment of existing risks in the loan portfolio, historical loss experience, changes in collateral values and current conditions (e.g., economic conditions, real estate market conditions and interest rate environment). The allowance for loan losses is allocated to loan types using both a formula-based approach applied to groups of loans and an analysis of certain individual loans for impairment. The formula-based approach emphasizes loss factors primarily derived from actual historical default and loss rates, which are combined with an assessment of certain qualitative factors to determine the allowance amounts allocated to the various loan categories. Adverse changes in any of these factors could result in higher charge-offs and provision for loan losses.

ASB disaggregates its portfolio loans into portfolio segments for purposes of determining the allowance for loan losses. Commercial, commercial real estate, and commercial construction loans are defined as non-homogeneous loans and ASB utilizes a risk rating system for evaluating the credit quality of the loans. Non-homogeneous loans are also categorized into the regulatory asset quality classifications-Pass, Special Mention, Substandard, Doubtful, and Loss based on credit quality. ASB utilizes a numerical-based, risk rating “PD Model” that takes into consideration fiscal year-end financial information of the borrower and identified financial attributes including retained earnings, operating cash flows, interest coverage, liquidity and leverage that demonstrate a strong correlation with default to assign default probabilities at the borrower level. In addition, a loss given default (LGD) value is assigned to each loan to measure loss in the event of default based on loan specific features such as collateral that mitigates the amount of loss in the event of default.

Residential, consumer and credit scored business loans are considered homogeneous loans, which are typically underwritten based on common, uniform standards. For the homogeneous portfolio, the quality of the loan is best indicated by the repayment performance of an individual borrower. ASB supplements performance data with external credit bureau data and credit scores such as the Fair Isaac Corporation (FICO) score on a quarterly basis. ASB has built portfolio loss models for each major segment based on the combination of internal and external data to predict the probability of default at the loan level.

ASB also considers qualitative factors in determining the allowance for loan losses. These include but are not limited to adjustments for changes in policies and procedures in underwriting, monitoring or collections, economic conditions, portfolio mix, lending and risk management personnel, results of internal audit and quality control reviews, collateral values and any concentrations of credit.

The reserve for unfunded commitments is maintained at a level believed by management to be sufficient to absorb estimated probable losses related to unfunded credit facilities and is included in accounts payable and other liabilities in the consolidated balance sheets. The determination of the adequacy of the reserve is based upon an evaluation of the unfunded credit facilities, including an assessment of historical commitment utilization experience, credit risk grading and historical loss rates. This process takes into consideration the same risk elements that are analyzed in the determination of the adequacy of the allowance for loan losses, as discussed above. Net adjustments to the reserve for unfunded commitments are included in other noninterest expense in the consolidated statements of income.

The allowance for loan losses is based on currently available information and historical experience, and future adjustments may be required from time to time to the allowance for loan losses based on new information and changes that occur (e.g., due to changes in economic conditions, particularly in Hawaii). Actual losses could differ from management's estimates, and these differences and subsequent adjustments could be material.

Nonperforming loans. Loans are generally placed on nonaccrual status when contractually past due 90 days or more, or earlier if the probability of collection is insufficient to warrant further accrual. All interest that is accrued but not collected is reversed. A loan may be returned to accrual status if (i) principal and interest payments have been brought current and repayment of the remaining contractual principal and interest is expected to be made, (ii) the loan has otherwise become well-secured and in the process of collection, or (iii) the borrower has been making regularly scheduled payments in full for the prior six months and it is reasonably assured that the loan will be brought fully current within a reasonable period. Cash receipts on nonaccruing loans are generally applied to reduce the unpaid principal balance.

Loans considered to be uncollectible are charged-off against the allowance for loan losses. The amount and timing of charge-offs on loans includes consideration of the loan type, length of delinquency, insufficiency of collateral value, lien priority and the overall financial condition of the borrower. Recoveries on loans previously charged-off are credited back to the allowance for loan losses. Loans that have been charged-off against the allowance for loan losses are periodically monitored to evaluate whether further adjustments to the allowance are necessary.

Loans in the commercial and commercial real estate portfolio are charged-off when the loan is risk rated "Doubtful" or "Loss." The loan or a portion thereof is determined to be uncollectible after considering the borrower's overall financial condition and collateral deficiency. A commercial or commercial real estate loan is considered uncollectible when: (a) the borrower is delinquent in principal or interest 90 days or more; (b) significant improvement in the borrower's repayment capacity is doubtful; and/or (c) collateral value is insufficient to cover outstanding indebtedness and no other viable assets or repayment sources exist.

Loans in the residential mortgage and home equity portfolios are charged-off when the loan or a portion thereof is determined to be uncollectible after considering the borrower's overall financial condition and collateral deficiency. Such loan is considered uncollectible when: (a) the borrower is delinquent in principal or interest 180 days or more; (b) it is probable that collateral value is insufficient to cover outstanding indebtedness and no other viable assets or repayment sources exist; (c) notification of the borrower's bankruptcy is received or the borrower's debt is discharged in bankruptcy and the loan is not reaffirmed; or (d) in cases where ASB is in a subordinate position to other debt, the senior lien holder has foreclosed and ASB's junior lien is extinguished.

Other consumer loans are generally charged-off when the balance becomes 120 days delinquent.

Loans modified in a troubled debt restructuring. Loans are considered to have been modified in a troubled debt restructuring (TDR) when, due to a borrower's financial difficulties, ASB makes concessions to the borrower that it would not otherwise consider for a non-troubled borrower. Modifications may include interest rate reductions, interest only payments for an extended period of time, protracted terms such as amortization and maturity beyond the customary length of time found in the normal market place, and other actions intended to minimize economic loss and to provide alternatives to foreclosure or repossession of collateral. Generally, a nonaccrual loan that has been modified in a TDR remains on nonaccrual status until the borrower has demonstrated sustained repayment performance for a period of six consecutive months. However, performance prior to the modification, or significant events that coincide with the modification, are included in assessing whether the borrower can meet the new terms and may result in the loan being returned to accrual status at the time of loan modification or after a shorter performance period. If the borrower's ability to meet the revised payment schedule is uncertain, or there is reasonable doubt over the full collectability of principal and interest, the loan remains on nonaccrual status.

Real estate acquired in settlement of loans. ASB records real estate acquired in settlement of loans at fair value, less estimated selling expenses. ASB obtains appraisals based on recent comparable sales to assist management in estimating the fair value of real estate acquired in settlement of loans. Subsequent declines in value are charged to expense through a valuation allowance. Costs related to holding real estate are charged to operations as incurred.

Goodwill. Goodwill is initially recorded as the excess of the purchase price over the fair value of the net assets acquired in a business combination and is subsequently evaluated at least annually for impairment during the fourth quarter. At December 31, 2018 and 2017, the amount of goodwill was $82.2 million. The goodwill relates to ASB and is the Company's only intangible asset with an indefinite useful life.

To determine if there was an impairment to the book value of goodwill pertaining to ASB, the fair value of ASB was estimated using a valuation method based on a market approach and discounted cash flow method with each method having an equal weighting in determining the fair value of ASB. The market approach considers publicly traded financial institutions and measures the institutions' market values as a multiple to (1) net income and (2) book equity. The median market value multiples for net income and book equity from the selected institutions were applied to ASB's net income and book equity to calculate ASB's fair value using the market approach. The discounted cash flow method values a company on a going concern basis and is based on the concept that the future benefits derived from a particular company can be measured by its sustainable after-tax cash flows in the future. For the three years ended December 31, 2018, there has been no impairment of goodwill.

Mortgage banking. Mortgage loans held for sale are stated at the lower of cost or estimated fair value on an aggregate basis. Premiums, discounts and net deferred loan fees are not amortized while a loan is classified as held-for-sale. A sale is recognized only when the consideration received is other than beneficial interests in the assets sold and control over the assets is transferred irrevocably to the buyer. Gains or losses on sales of loans are recognized at the time of sale and are determined by the difference between the net sales proceeds and the allocated basis of the loans sold.

ASB is obligated to subsequently repurchase a loan if the purchaser discovers a standard representation or warranty violation such as noncompliance with eligibility requirements, customer fraud or servicing violations. This primarily occurs during a loan file review. ASB considers and records a reserve for loan repurchases if appropriate.

ASB recognizes a mortgage servicing asset when a mortgage loan is sold with servicing rights retained. This mortgage servicing right (MSR) is initially capitalized at its presumed fair value based on market data at the time of sale and accounted for in subsequent periods at the lower of amortized cost or fair value. Mortgage servicing assets or liabilities are included as a component of gain on sale of loans. Under ASC Topic 860, "Transfers and Servicing," ASB amortizes the MSRs in proportion to and over the period of estimated net servicing income and assess for impairment at each reporting date.

ASB's MSRs are stratified based on predominant risk characteristics of the underlying loans including loan type such as fixed-rate 15- and 30-year mortgages and note rate in bands primarily of 50 to 100 basis points. For each stratum, fair value is calculated by discounting expected net income streams using discount rates that reflect industry pricing for similar assets. Expected net income streams are estimated based on industry assumptions regarding prepayment expectations and income and expenses associated with servicing residential mortgage loans for others.

ASB uses a present value cash flow model using techniques described above to estimate the fair value of MSRs. Because observable market prices with exact terms and conditions may not be readily available, ASB compares the fair value of MSRs to an estimated value calculated by an independent third-party on a semi-annual basis. The third-party relies on both published and unpublished sources of market related assumptions and their own experience and expertise to arrive at a value. ASB uses the third-party value only to assess the reasonableness of fair value generated by the valuation model.

Impairment is recognized through a valuation allowance for each stratum when the carrying amount exceeds fair value, with any associated provision recorded as a component of loan servicing fees included in "Revenues - bank" in the consolidated statements of income. A direct write-down is recorded when the recoverability of the valuation allowance is deemed to be unrecoverable.

Loan servicing fee income represents income earned for servicing mortgage loans owned by investors. It includes mortgage servicing fees and other ancillary servicing income, net of guaranty fees. Servicing fees are generally calculated on the outstanding principal balances of the loans serviced and are recorded as income when earned.

Tax credit investments. ASB invests in limited liability entities formed to operate qualifying affordable housing projects.

The affordable housing investments provide tax benefits to investors in the form of tax deductions from operating losses and tax credits. As a limited partner, ASB has no significant influence over the operations. These investments are initially recorded at the initial capital contribution with a liability recognized for the commitment to contribute additional capital over the term of the investment.

ASB uses the proportional amortization method of accounting for its investments. Under the proportional amortization method, ASB amortizes the cost of its investments in proportion to the tax credits and other tax benefits it receives.

The amortization, tax credits and tax benefits are reported as a component of income tax expense.
For these limited liability entities, ASB assesses whether it is the primary beneficiary of the limited liability entity, which is a variable interest entity (VIE). The primary beneficiary of a VIE is determined to be the party that meets both of the following criteria: (i) has the power to make decisions that most significantly affect the economic performance of the VIE; and (ii) has the obligation to absorb losses or the right to receive benefits that in either case could potentially be significant to the VIE. Generally, ASB, as a limited partner, is not deemed to be the primary beneficiary as it does not meet the power criterion, i.e., no

power to direct the activities of a VIE that most significantly impact the VIE's economic performance and no direct ability to unilaterally remove the general partner.

All tax credit investments are evaluated for potential impairment at least annually, or more frequently, when events or conditions indicate that it is deemed probable that ASB will not recover its investment. If an investment is determined to be impaired, it is written down to its estimated fair value and the new cost basis of the investment is not adjusted for subsequent recoveries in value. As of December 31, 2018, ASB did not have any impairment losses resulting from forfeiture or ineligibility of tax credits or other circumstances related to its low-income housing tax credit (LIHTC) investments.

At December 31, 2018 and 2017, the carrying amount of LIHTC investments was $67.6 million and $59.0 million, respectively, and included in other assets in the consolidated balance sheets.

ASB's unfunded commitments to fund its LIHTC investments were $18.1 million and $15.8 million as of December 31, 2018 and 2017, respectively. These unfunded commitments are unconditional and legally binding and are recorded in accounts payable and other liabilities with an increase in other assets in the consolidated balance sheets.

The table below summarizes the amounts in income tax expense related to ASB's LIHTC investments:

Years ended December 31	2018	2017	2016
(in millions)			
Amounts in income taxes related to low-income housing tax credit investments			
Amortization recognized in the provision for income taxes	$(7.7)	$(7.4)	$(5.8)
Tax credits and other tax benefits recognized in the provision for income taxes	10.9	10.7	8.4
Net benefit to income tax expense	$3.2	$3.3	$2.6

Note 2 · Segment financial information

The electric utility and bank segments are strategic business units of the Company that offer different products and services and operate in different regulatory environments. The accounting policies of the segments are the same as those described for the Company in the summary of significant accounting policies, except as otherwise indicated and except that federal and state income taxes for each segment are calculated on a "stand-alone" basis. HEI evaluates segment performance based on net income. Each segment accounts for intersegment sales and transfers as if the sales and transfers were to third parties (i.e., at current market prices). Intersegment revenues consist primarily of Hamakua Energy revenues, interest, rent and preferred stock dividends.

Electric utility

Hawaiian Electric and its wholly owned operating subsidiaries, Hawaii Electric Light and Maui Electric, are public electric utilities in the business of generating, purchasing, transmitting, distributing and selling electric energy on all major islands in Hawaii other than Kauai, and are regulated by the PUC. The utility subsidiaries are aggregated within the electric utility segment because they: (1) are involved in the business of supplying electric energy in the same geographical location (i.e., the State of Hawaii), (2) have similar production processes that comprise electric generation, (3) serve similar customers within their franchise territories (e.g., residential, commercial and industrial customers), (4) use similar electric grids to distribute the energy to their customers, (5) are regulated by the PUC and undergo similar rate-making processes, (6) have similar economic characteristics and (7) perform financial reporting oversight and management of the business at the consolidated level.

Bank

ASB is a federally chartered savings bank that provides a full range of banking services to individual and business customers through its branch system in Hawaii. ASB is subject to examination and comprehensive regulation by the Office of the Comptroller of the Currency (OCC) and the Federal Deposit Insurance Corporation (FDIC), and is subject to reserve requirements established by the Board of Governors of the Federal Reserve System.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Other
“Other” includes amounts for the holding companies (HEI and ASB Hawaii, Inc.), Pacific Current, and other subsidiaries not qualifying as reportable segments, and intercompany eliminations.
Pacific Current. Pacific Current was formed in September 2017 to focus on investing in non-regulated renewable energy and sustainable infrastructure in the State of Hawaii to help reach the state’s sustainability goals. Pacific Current’s investments through its subsidiaries, Hamakua Energy, LLC and Mauo, LLC, are as follows:
Hamakua power plant. On November 24, 2017, Hamakua Energy, LLC acquired Hamakua Energy Partners, L.P.’s 60-MW combined cycle power plant and other assets from affiliates of ArcLight Capital Partners, a private equity firm. The plant sells all the power it produces to Hawaii Electric Light under an existing power purchase agreement (PPA) that expires in 2030.
Solar + Storage Power Purchase Agreement (PPA). On February 2, 2018, Mauo, LLC executed definitive agreements to acquire a solar-plus-storage PPA for a multi-site, commercial-scale project that will provide 8.6 MW of solar capacity and 42.3 MWH of storage capacity on the islands of Maui and Oahu. The PPA has a 15-year term with an option to extend for an additional five years. The system is being constructed by a third party contractor under an Engineering, Procurement and Construction (EPC) contract that was contemporaneously negotiated and executed by Mauo, LLC. The EPC contract provides a fixed price for the purchase of the completed system, a project completion schedule and performance obligations designed to match the requirements of the PPA. Mauo, LLC plans fund the construction of the project with a construction facility that will be repaid at the commercial operation date (ultimately with cash from investment tax credits, state renewable tax credits and non-recourse project debt). There are five separate project sites, which are expected to be placed into service during 2019 and 2020.
Segment financial information was as follows:

(in thousands)	Electric utility	Bank	Other	Total
2018				
Revenues from external customers	$2,546,472	$314,275	$ 102	$2,860,849
Intersegment revenues (eliminations)	53	—	(53)	—
Revenues	2,546,525	314,275	49	2,860,849
Depreciation and amortization	230,228	21,443	3,958	255,629
Interest expense, net	73,348	15,539	15,329	104,216
Income (loss) before income taxes	180,426	106,578	(32,543)	254,461
Income taxes (benefit)	34,778	24,069	(8,050)	50,797
Net income (loss)	145,648	82,509	(24,493)	203,664
Preferred stock dividends of subsidiaries	1,995	—	(105)	1,890
Net income (loss) for common stock	143,653	82,509	(24,388)	201,774
Capital expenditures	445,863	72,666	18,840	537,369
Assets (at December 31, 2018)	5,967,503	7,027,894	108,654	13,104,051
2017				
Revenues from external customers	$2,257,455	$297,640	$ 530	$2,555,625
Intersegment revenues (eliminations)	111	—	(111)	—
Revenues	2,257,566	297,640	419	2,555,625
Depreciation and amortization	201,282	19,416	1,300	221,998
Interest expense, net	69,637	12,156	9,335	91,128
Income (loss) before income taxes	205,145	98,716	(27,281)	276,580
Income taxes (benefit)	83,199	31,719	(5,525)	109,393
Net income (loss)	121,946	66,997	(21,756)	167,187
Preferred stock dividends of subsidiaries	1,995	—	(105)	1,890

Net income (loss) for common stock	119,951	66,997	(21,651)	165,297
Capital expenditures	441,598	53,272	317	495,187
Assets (at December 31, 2017)[1]	5,630,613	6,798,659	104,888	12,534,160

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands)	Electric utility	Bank	Other	Total
2016				
Revenues from external customers	$2,094,224	$285,924	$ 506	$2,380,654
Intersegment revenues (eliminations)	144	—	(144)	—
Revenues	2,094,368	285,924	362	2,380,654
Depreciation and amortization	193,996	9,813	937	204,746
Interest expense, net	66,824	12,755	8,979	88,558
Income before income taxes	229,113	87,352	57,376	373,841
Income taxes	84,801	30,073	8,821	123,695
Net income	144,312	57,279	48,555	250,146
Preferred stock dividends of subsidiaries	1,995	—	(105)	1,890
Net income for common stock	142,317	57,279	48,660	248,256
Capital expenditures	320,437	9,394	212	330,043
Assets (at December 31, 2016)[1]	5,431,903	6,421,357	28,721	11,881,981

[1] Contributions in aid of construction balances were reclassified from liabilities to “Property, plant and equipment, net” and “Total property, plant and equipment, net” for the Company and Hawaiian Electric, respectively, which reduced the amounts of the respective balances.

Intercompany electricity sales of the Utilities to the bank and “other” segments are not eliminated because those segments would need to purchase electricity from another source if it were not provided by the Utilities and the profit on such sales is nominal.

Bank fees that ASB charges the Utilities and “other” segments are not eliminated because those segments would pay fees to another financial institution if they were to bank with another institution and the profit on such fees is nominal.

Hamakua Energy’s sales to Hawaii Electric Light (a regulated affiliate) are eliminated in consolidation.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Note 3 · Electric utility segment

Regulatory assets and liabilities. Regulatory assets represent deferred costs and accrued decoupling revenues which are expected to be recovered through rates over PUC-authorized periods. Generally, the Utilities do not earn a return on their regulatory assets; however, they have been allowed to recover interest on certain regulatory assets and to include certain regulatory assets in rate base. Regulatory liabilities represent amounts included in rates and collected from ratepayers for costs expected to be incurred in the future, or amounts collected in excess of costs incurred that are refundable to customers. For example, the regulatory liability for cost of removal in excess of salvage value represents amounts that have been collected from ratepayers for costs that are expected to be incurred in the future to retire utility plant. Generally, the Utilities include regulatory liabilities in rate base or are required to apply interest to certain regulatory liabilities. In the table below, noted in parentheses are the original PUC authorized amortization or recovery periods and, if different, the remaining amortization or recovery periods as of December 31, 2018 are noted.

Regulatory assets were as follows:

December 31 (in thousands)	2018	2017
Retirement benefit plans (balance primarily varies with plans' funded statuses)	$624,126	$637,204
Income taxes (1-55 years)	114,076	118,201
Decoupling revenue balancing account and RAM regulatory asset (1-2 years)	49,560	64,087
Unamortized expense and premiums on retired debt and equity issuances (19-30 years; 6-18 years remaining)	10,065	11,993
Vacation earned, but not yet taken (1 year)	10,820	11,224
Other (1-50 years; 1-46 years remaining)	24,779	26,588
	$833,426	$869,297
Included in:		
Current assets	$71,016	$88,390
Long-term assets	762,410	780,907
	$833,426	$869,297

Regulatory liabilities were as follows:

December 31 (in thousands)	2018	2017
Cost of removal in excess of salvage value (1-60 years)	$491,006	$453,986
Income taxes (1-55 years)	413,339	406,324
Retirement benefit plans (5 years beginning with respective utility's next rate case)	9,546	9,961
Other (5 years; 1-2 years remaining)	36,345	10,499
	$950,236	$880,770
Included in:		
Current liabilities	$17,977	$3,401
Long-term liabilities	932,259	877,369
	$950,236	$880,770

The regulatory asset and liability relating to retirement benefit plans was recorded as a result of pension and OPEB tracking mechanisms adopted by the PUC in rate case decisions for the Utilities in 2007 (see Note 9).

Major customers. The Utilities received 11% ($273 million), 11% ($239 million) and 11% ($226 million) of their operating revenues from the sale of electricity to various federal government agencies in 2018, 2017 and 2016, respectively.

Cumulative preferred stock. The following series of cumulative preferred stock are redeemable only at the option of the respective company at the following prices in the event of voluntary liquidation or redemption:

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

December 31, 2018	Voluntary liquidation price	Redemption price
Series		
C, D, E, H, J and K (Hawaiian Electric)	$ 20	$ 21
I (Hawaiian Electric)	20	20
G (Hawaii Electric Light)	100	100
H (Maui Electric)	100	100

Hawaiian Electric is obligated to make dividend, redemption and liquidation payments on the preferred stock of each of its subsidiaries if the respective subsidiary is unable to make such payments, but this obligation is subordinated to Hawaiian Electric's obligation to make payments on its own preferred stock.

Related-party transactions. HEI charged the Utilities $5.9 million, $6.2 million and $6.5 million for general management and administrative services in 2018, 2017 and 2016, respectively. The amounts charged by HEI to its subsidiaries for services provided by HEI employees are allocated primarily on the basis of time expended in providing such services.

For the year ended December 31, 2018 and from the period November 24, 2017 to December 31, 2017, Hamakua Energy, LLC (an indirect subsidiary of HEI) sold energy and capacity to Hawaii Electric Light (subsidiary of Hawaiian Electric and indirect subsidiary of HEI) under a PPA in the amount of $56 million and $3 million, respectively.

Hawaiian Electric's short-term borrowings from HEI totaled nil at December 31, 2018 and 2017. The interest charged on short-term borrowings from HEI is based on the lower of HEI's or Hawaiian Electric's effective weighted average short-term external borrowing rate. If both HEI and Hawaiian Electric do not have short-term external borrowings, the interest is based on the average of the effective rate for 30-day dealer-placed commercial paper quoted by the Wall Street Journal plus 0.15%.

Borrowings among the Utilities are eliminated in consolidation. Interest charged by HEI to Hawaiian Electric was not material for the years ended December 31, 2018 and 2017.

HECO Capital Trust III. Trust III, a wholly-owned unconsolidated subsidiary of Hawaiian Electric, was created and exists for the exclusive purposes of (i) issuing in March 2004 2,000,000 6.50% Cumulative Quarterly Income Preferred Securities, Series 2004 (2004 Trust Preferred Securities) ($50 million aggregate liquidation preference) to the public and trust common securities ($1.5 million aggregate liquidation preference) to Hawaiian Electric, (ii) investing the proceeds of these trust securities in 2004 Debentures issued by Hawaiian Electric in the principal amount of $31.5 million and issued by Hawaii Electric Light and Maui Electric each in the principal amount of $10 million, (iii) making distributions on these trust securities and (iv) engaging in only those other activities necessary or incidental thereto.

The 2004 Trust Preferred Securities are mandatorily redeemable at the maturity of the underlying debt on March 18, 2034, which maturity may be extended to no later than March 18, 2053; and are currently redeemable at the issuer's option without premium. The 2004 Debentures, together with the obligations of the Utilities under an expense agreement and Hawaiian Electric's obligations under its trust guarantee and its guarantee of the obligations of Hawaii Electric Light and Maui Electric under their respective debentures, are the sole assets of Trust III. Taken together, Hawaiian Electric's obligations under the Hawaiian Electric debentures, the Hawaiian Electric indenture, the subsidiary guarantees, the trust agreement, the expense agreement and trust guarantee provide, in the aggregate, a full, irrevocable and unconditional guarantee of payments of amounts due on the Trust Preferred Securities.

Trust III's balance sheet as of December 31, 2018 consisted of $51.5 million of 2004 Debentures; $50.0 million of 2004 Trust Preferred Securities; and $1.5 million of trust common securities. Trust III's income statement for 2018 consisted of $3.4 million of interest income received from the 2004 Debentures; $3.3 million of distributions to holders of the Trust Preferred Securities; and $0.1 million of common dividends on the trust common securities to Hawaiian Electric. As long as the 2004 Trust Preferred Securities are outstanding, Hawaiian Electric is not entitled to

receive any funds from Trust III other than pro-rata distributions, subject to certain subordination provisions, on the trust common securities. In the event of a default by Hawaiian Electric in the performance of its obligations under the 2004 Debentures or under its Guarantees, or in the event any of the Utilities elect to defer payment of interest on any of their respective 2004 Debentures, then Hawaiian Electric will be subject to a number of restrictions, including a prohibition on the payment of dividends on its common stock.
Unconsolidated variable interest entities.
Power purchase agreements. As of December 31, 2018, the Utilities had four PPAs for firm capacity (as PGV has been offline since May 2018 due to lava flow on Hawaii Island) and other PPAs with IPPs and Schedule Q providers (i.e.,

customers with cogeneration and/or power production facilities who buy power from or sell power to the Utilities), none of which is currently required to be consolidated as VIEs.

Pursuant to the current accounting standards for VIEs, the Utilities are deemed to have a variable interest in Kalaeloa Partners, L.P. (Kalaeloa), AES Hawaii, Inc. (AES Hawaii) and the predecessor of Hamakua Energy by reason of the provisions of the PPA that the Utilities have with the three IPPs. However, management has concluded that the Utilities are not the primary beneficiary of Kalaeloa, AES Hawaii and the predecessor of Hamakua Energy because the Utilities do not have the power to direct the activities that most significantly impact the three IPPs' economic performance nor the obligation to absorb their expected losses, if any, that could potentially be significant to the IPPs. Thus, the Utilities have not consolidated Kalaeloa, AES Hawaii and the predecessor of Hamakua Energy in its consolidated financial statements. In November 2017, HEI acquired the Hamakua project through Hamakua Energy, an indirect subsidiary of Pacific Current, and has consolidated it in HEI's consolidated financial statements since the date of the acquisition.

For the other PPAs with IPPs, the Utilities have concluded that the consolidation of the IPPs was not required because either the Utilities do not have variable interests in the IPPs due to the absence of an obligation in the PPAs for the Utilities to absorb any variability of the IPPs, or the IPP was considered a "governmental organization," and thus excluded from the scope of accounting standards for VIEs. Two IPPs of as-available energy declined to provide the information necessary for Utilities to determine the applicability of accounting standards for VIEs.

If information is ultimately received from the IPPs, a possible outcome of future analyses of such information is the consolidation of one or both of such IPPs in the Consolidated Financial Statements. The consolidation of any significant IPP could have a material effect on the Consolidated Financial Statements, including the recognition of a significant amount of assets and liabilities and, if such a consolidated IPP were operating at a loss and had insufficient equity, the potential recognition of such losses. If the Utilities determine they are required to consolidate the financial statements of such an IPP and the consolidation has a material effect, the Utilities would retrospectively apply accounting standards for VIEs to the IPP.

Commitments and contingencies.

Fuel contracts. The Utilities have fuel supply contracts with Island Energy Services, LLC (IES), for low sulfur fuel oil (LSFO), diesel, industrial fuel oil (IFO), and ultra-low sulfur diesel (ULSD), through December 31, 2019. On January 21, 2019, the Utilities and PAR Hawaii Refining, LLC, a Hawaii corporation (PAR), entered into a fuel supply contract for the Utilities' LSFO, high sulfur fuel oil (HSFO), No. 2 diesel (Diesel), and ULSD requirements (Contract), which is effective upon approval by the PUC and terminates on December 31, 2022. This Contract will supply all LSFO, HSFO, Diesel and ULSD for the islands of Oahu, Maui, Molokai and Hawaii. If PAR is unable to provide LSFO, HSFO, Diesel and/or ULSD the Contract allows the Utilities to purchase LSFO, HSFO, Diesel and/or ULSD from another supplier. The Contract will automatically renew upon the conclusion of the original term for successive terms of 1 year beginning on January 1, 2023 unless a party gives written termination notice at least 120 days before the beginning of an extension.

The Contract is subject to approval of the PUC, and can be terminated by either party if approval is not received by January 22, 2020 or if the Utilities' request for PUC approval is denied. If PUC approves the Contract prior to December 31, 2019, the existing fuel contracts with IES will terminate as agreed with IES under a mutual termination and release agreement entered into on November 28, 2018.

All of the costs incurred under the fuel supply contracts with IES are included in the Utilities' respective ECAC/ECRCs to the extent such costs are not recovered through the base rates, and the costs incurred under the contract with PAR are requested to be recovered in the Utilities' respective ECAC/ECRCs to the extent such costs are not recovered through base rates.

Based on the purchase price per barrel as of December 31, 2018, the estimated cost of minimum purchases under the fuel supply contracts is $140 million in 2019. The actual cost of purchases in 2019 could vary substantially from this estimate of minimum purchases as a result of changes in market prices, quantities actually purchased, entry into new supply contracts and/or other factors. The Utilities purchased $0.7 billion, $0.6 billion and $0.4 billion of fuel under contractual agreements in 2018, 2017 and 2016, respectively.

Contingencies. The Utilities are subject in the normal course of business to pending and threatened legal proceedings. Management does not anticipate that the aggregate ultimate liability arising out of these pending or threatened legal proceedings will be material to its financial position. However, the Utilities cannot rule out the possibility that such outcomes could have a material effect on the results of operations or liquidity for a particular reporting period in the future.

Interim increases. For the year ended December 31, 2018, the Utilities recognized $10 million of revenues with respect to the Maui Electric 2018 rate case interim order. Such amounts recorded are subject to refund, with interest, if they exceed amounts in a final order.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Power purchase agreements. Purchases from all IPPs were as follows:

Years ended December 31	2018	2017	2016
(in millions)			
Kalaeloa	$216	$180	$152
AES Hawaii	140	140	149
HPOWER	69	67	71
Puna Geothermal Venture	15	38	28
Hamakua Energy	56	35	29
Hawaiian Commercial & Sugar	—	—	1
Wind IPPs	107	97	113
Solar IPPs	29	27	15
Other IPPs[1]	7	3	5
Total IPPs	$639	$587	$563

[1] Includes hydro power and other PPAs

As of December 31, 2018, the Utilities had four firm capacity PPAs for a total of 516.5 megawatts (MW) of firm capacity. Since May 2018, PGV facility with 34.6 MW of firm capacity has been offline due to lava flow on Hawaii Island. The PUC allows rate recovery for energy and firm capacity payments to IPPs under these agreements. Assuming that each of the agreements remains in place for its current term (and as amended) and the minimum availability criteria in the PPAs are met, aggregate minimum fixed capacity charges are expected to be approximately $0.1 billion per year for 2019 through 2023 and a total of $0.3 billion in the period from 2024 through 2048.

In general, the Utilities base their payments under the PPAs upon available capacity and actual energy supplied and they are generally not required to make payments for capacity if the contracted capacity is not available, and payments are reduced, under certain conditions, if available capacity drops below contracted levels. In general, the payment rates for capacity have been predetermined for the terms of the agreements. Energy payments will vary over the terms of the agreements. The Utilities pass on changes in the fuel component of the energy charges to customers through the ECAC/ECRC in their rate schedules. The Utilities do not operate, or participate in the operation of, any of the facilities that provide power under the agreements. Title to the facilities does not pass to Hawaiian Electric or its subsidiaries upon expiration of the agreements, and the agreements do not contain bargain purchase options for the facilities.

Purchase power adjustment clause. The PUC has approved purchased power adjustment clauses (PPACs) for the Utilities. Purchased power capacity, O&M and other non-energy costs previously recovered through base rates are now recovered in the PPACs and, subject to approval by the PUC, such costs resulting from new purchased power agreements can be added to the PPACs outside of a rate case. Purchased energy costs continue to be recovered through the ECAC/ECRC to the extent they are not recovered through base rates.

AES Hawaii, Inc. Under a PPA entered into in March 1988, as amended (through Amendment No. 2) for a period of 30 years ending September 2022, Hawaiian Electric agreed to purchase 180 MW of firm capacity from AES Hawaii. In August 2012, Hawaiian Electric filed an application with the PUC seeking an exemption from the PUC’s Competitive Bidding Framework to negotiate an amendment to the PPA to purchase 186 MW of firm capacity, and amend the energy pricing formula in the PPA. The PUC approved the exemption in April 2013, but Hawaiian Electric and AES Hawaii were not able to reach agreement on the amendment. In June 2015, AES Hawaii filed an arbitration demand regarding a dispute about whether Hawaiian Electric was obligated to buy up to 9 MW of additional capacity based on a 1992 letter. Hawaiian Electric responded to the arbitration demand and in October 2015, AES Hawaii and Hawaiian Electric entered into a settlement agreement to stay the arbitration proceeding. The settlement agreement included certain conditions precedent which, if satisfied, would have released the parties from the claims under the arbitration proceeding. Among the conditions precedent was the successful negotiation and PUC approval of an amendment to the existing PPA.

In February 2018, Hawaiian Electric reached agreement with AES Hawaii on Amendment No. 4. However, in June 2018, the PUC issued an order suspending the Amendment No. 4 docket pending a DOH decision on AES' request for approval of its Emission Reduction Plan and partnership with Hawaiian Electric. If approved by the PUC, Amendment No. 4 will resolve AES Hawaii's claims.

Hu Honua Bioenergy, LLC (Hu Honua). In May 2012, Hawaii Electric Light signed a PPA, which the PUC approved in December 2013, with Hu Honua Bioenergy, LLC (Hu Honua) for 21.5 MW of renewable, dispatchable firm capacity fueled by locally grown biomass from a facility on the island of Hawaii. Under the terms of the PPA, the Hu Honua plant was scheduled to be in service in 2016. However, Hu Honua encountered construction delays, failed to meet its obligations under the PPA and failed to provide adequate assurances that it could perform or had the financial means to perform. Hawaii Electric Light terminated the PPA on March 1, 2016. On November 30, 2016, Hu Honua filed a civil complaint in the United States District Court for the District of Hawaii that included claims purportedly arising out of the termination of Hu Honua's PPA. On May 26, 2017, Hawaii Electric Light and Hu Honua entered into a settlement agreement that will settle all claims related to the termination of the original PPA. The settlement agreement was contingent on the PUC's approval of an amended and restated PPA between Hawaii Electric Light and Hu Honua dated May 5, 2017. In July 2017, the PUC approved the amended and restated PPA, which becomes effective once the PUC's order is final and non-appealable. On August 25, 2017, the PUC's approval was appealed by a third party. The appeal is still pending. Hu Honua expects to be ready to be on-line by the end of March 2019.

Utility projects. Many public utility projects require PUC approval and various permits from other governmental agencies. Difficulties in obtaining, or the inability to obtain, the necessary approvals or permits can result in significantly increased project costs or even cancellation of projects. In the event a project does not proceed, or if it becomes probable the PUC will disallow cost recovery for all or part of a project, or if PUC-imposed caps on project costs are expected to be exceeded, project costs may need to be written off in amounts that could result in significant reductions in Hawaiian Electric's consolidated net income.

Enterprise Resource Planning/Enterprise Asset Management (ERP/EAM) implementation project. On August 11, 2016, the PUC approved the Utilities' request to commence the ERP/EAM implementation project, subject to certain conditions, including a $77.6 million cap on cost recovery as well as a requirement that the Utilities achieve future cost savings consistent with a minimum of $244 million in ERP/EAM project-related benefits to be delivered to customers over the system's 12-year service life. The decision and order (D&O) approved the deferral of certain project costs and allowed the accrual of allowance for funds used during construction (AFUDC), but limited the AFUDC rate to 1.75%.

The ERP/EAM Implementation Project went live in October 2018. As of December 31, 2018, the Utilities considered the project implementation completed with incurred costs of $77.5 million of which $16.7 million were charged to O&M expenses, $2.6 million relate to capital costs and $58.2 million are deferred costs. In the Hawaiian Electric 2017 rate case, a settlement agreement approved by the PUC included authorization for the deferred project costs to accrue a return at 1.75% after the project went into service and until the deferred project costs are included in rate base, and for amortization of the deferred costs to not begin until the amortization expense is incorporated in rates and the unamortized deferred project costs are included in rate base. As of December 31, 2018, the accrued carrying costs after the project went into service amounted to $0.2 million.

In February 2019, the PUC approved a methodology for passing the benefits of the new ERP/EAM system to customers developed by the Utilities in collaboration with the Consumer Advocate. The minimum of $244 million in customer benefits to be delivered over the 12-year service life is comprised of $141 million in future net O&M expense reductions and $103 million in future cost avoidance related to capital cost and tax cost. The O&M expense reduction commitments will be recognized as regulatory liabilities between rate cases and passed through to customers as reductions in rates in rate cases. The Utilities will file semi-annual reports detailing the O&M expense reduction benefits, capital cost avoidance benefits, and tax avoidance benefits.

Schofield Generating Station Project. In June 2018, Hawaiian Electric placed into service an approximately 50 MW utility-owned and operated firm, renewable and dispatchable generation facility at Schofield Barracks. The project is located on land leased from the U.S. Army under a 35-year lease. PUC orders resulted in a project cost cap of $157.3 million of which capital costs up to $141.6 million (90% of the cost cap) are recoverable through the Major Project Interim Recovery (MPIR) adjustment mechanism. (See "Decoupling" section below for MPIR guidelines and cost recovery discussion.) Project costs incurred as of December 31, 2018 amounted to $144.9 million. Cost recovery of capital costs in excess of $141.6 million is to be addressed in the next general rate case.

West Loch PV Project. In June 2017, the PUC approved the expenditure of funds for Hawaiian Electric to build, own and operate a utility-owned, grid-tied 20-MW (ac) solar facility on property owned by the Department of the Navy, including a proposed project cost cap of $67 million and a performance guarantee to provide energy at 9.56 cents/kWh or less to the system.

In approving the project, the PUC agreed that the project is eligible for recovery of costs offset by related net benefits under the newly-established MPIR adjustment mechanism. (See “Decoupling” section below for MPIR guidelines and cost recovery discussion.) Hawaiian Electric has provided supplemental materials, as requested by the PUC, to support meeting the MPIR guidelines, accompanied by system performance guarantee and cost savings sharing mechanisms. A decision on these matters is pending.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Hawaiian Electric executed a fixed-price Engineering, Procurement, and Construction (EPC) contract for the project on December 6, 2017. The EPC contract includes the cost of the solar panels for the project, which is not subject to modification due to any tariffs that may be imposed under the current photovoltaic (PV) cell and module import tariffs. Construction of the facility began in the second quarter of 2018, and the facility is expected to be placed in service in the second quarter of 2019. Project costs incurred as of December 31, 2018 amounted to $38.6 million.

Hawaiian Telcom. The Utilities each had separate agreements for the joint ownership and maintenance of utility poles with Hawaiian Telcom, Inc. (Hawaiian Telcom), the respective county or counties in which each utility operates and other third parties, such as the State of Hawaii. The agreements set forth various circumstances requiring pole removal/installation/replacement and the sharing of costs among the joint pole owners. The agreements allowed for the cost of work done by one joint pole owner to be shared by the other joint pole owners based on the apportionment of costs in the agreements. The Utilities maintained, replaced and installed the majority of the jointly-owned poles in each of the respective service territories, and billed the other joint pole owners for their respective share of the costs. The counties and the State had been reimbursing the Utilities for their share of the costs. However, Hawaiian Telcom had been delinquent in reimbursing the Utilities for its share of the costs.

Hawaiian Telcom's delinquency was resolved by new agreements with Hawaiian Telcom approved by the PUC in October 2018. These new agreements provide for the purchase by the Utilities of Hawaiian Telcom's interest in all the joint poles, and licensing and operating agreements between the Utilities and Hawaiian Telcom subsequent to the transfer of the joint pole interest to the Utilities, and a settlement on the amount Hawaiian Telcom owed the Utilities under the joint ownership and maintenance agreements. The Utilities' consideration of approximately $48 million for Hawaiian Telcom's interest in the poles was offset in part by the settlement of the outstanding receivables owed by Hawaiian Telcom to the Utilities of $19.1 million ($12.3 million at Hawaiian Electric, $5.5 million at Hawaii Electric Light, and $1.3 million at Maui Electric). The remaining consideration for acquiring Hawaiian Telcom's interest in the joint poles will be settled through the set-off of fees for unbilled poles (since the delinquency and dispute were raised) and for attachment fees and license fees for 2018, and future license fees due from Hawaiian Telcom, after which Hawaiian Telcom will make cash payments for license fees under the agreement.

Environmental regulation. The Utilities are subject to environmental laws and regulations that regulate the operation of existing facilities, the construction and operation of new facilities and the proper cleanup and disposal of hazardous waste and toxic substances.

Hawaiian Electric, Hawaii Electric Light and Maui Electric, like other utilities, periodically encounter petroleum or other chemical releases associated with current or previous operations. The Utilities report and take action on these releases when and as required by applicable law and regulations. The Utilities believe the costs of responding to such releases identified to date will not have a material effect, individually or in the aggregate, on Hawaiian Electric's consolidated results of operations, financial condition or liquidity.

Former Molokai Electric Company generation site. In 1989, Maui Electric acquired by merger Molokai Electric Company. Molokai Electric Company had sold its former generation site (Site) in 1983, but continued to operate at the Site under a lease until 1985. The EPA has since identified environmental impacts in the subsurface soil at the Site. Although Maui Electric never operated at the Site or owned the Site property, after discussions with the EPA and the DOH Maui Electric agreed to undertake additional investigations at the Site and an adjacent parcel that Molokai Electric Company had used for equipment storage (the Adjacent Parcel) to determine the extent of environmental contamination. A 2011 assessment by a Maui Electric contractor of the Adjacent Parcel identified environmental impacts, including elevated polychlorinated biphenyls (PCBs) in the subsurface soils. In cooperation with the DOH and EPA, Maui Electric is further investigating the Site and the Adjacent Parcel to determine the extent of impacts of PCBs, residual fuel oils, and other subsurface contaminants. Maui Electric has a reserve balance of $2.7 million as of December 31, 2018, representing the probable and reasonably estimable cost to complete the additional investigation and estimated cleanup costs at the Site and the Adjacent Parcel; however, final costs of remediation will depend on the results of continued investigation.

Pearl Harbor sediment study. In July 2014, the U.S. Navy notified Hawaiian Electric of the Navy's determination that Hawaiian Electric is a Potentially Responsible Party responsible for the costs of investigation and cleanup of PCB contamination in sediment in the area offshore of the Waiau Power Plant as part of the Pearl Harbor Superfund Site. The Navy has completed a remedial investigation and a feasibility study (FS) for the remediation of contaminated sediment at several locations in Pearl Harbor and issued its Final FS Report on June 29, 2015. The Navy released the Proposed Plan on February 2, 2016 and the Record of Decision on September 26, 2018 for the Pearl Harbor Sediment Remediation. In the Record of Decision the Navy refined its estimate for the costs of remediation for the site to be $3.4 million.

On March 23, 2015, Hawaiian Electric received a letter from the EPA requesting that Hawaiian Electric submit a work plan to assess potential sources and extent of PCB contamination onshore at the Waiau Power Plant. Onshore sampling at the

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Waiau Power Plant was completed in two phases in December 2015 and June 2016. Appropriate remedial measures are being developed to address the extent of the onshore contamination, and any associated costs have not yet been determined.

As of December 31, 2018, the reserve account balance recorded by Hawaiian Electric to address the PCB contamination was $4.8 million. The reserve balance represents the estimable cost for the onshore investigation and the remediation of PCB contamination in the offshore sediment. The final remediation costs will depend on the assessment of potential source control requirements for onshore sediment and actual offshore cleanup costs.

Asset retirement obligations. AROs represent legal obligations associated with the retirement of certain tangible long-lived assets, are measured as the present value of the projected costs for the future retirement of specific assets and are recognized in the period in which the liability is incurred if a reasonable estimate of fair value can be made. The Utilities' recognition of AROs have no impact on their earnings. The cost of the AROs is recovered over the life of the asset through depreciation. AROs recognized by the Utilities relate to legal obligations associated with the retirement of plant and equipment, including removal of asbestos and other hazardous materials.

The Utilities recorded AROs related to the removal of retired generating units at Hawaiian Electric's Honolulu and Waiau power plants, certain types of transformers and underground storage tanks, and the abandonment of fuel pipelines, underground injection and supply wells. In 2017, for the retired generating unit removal projects, the AROs were reassessed (resulting in a downward revision in estimated cash flows), the removal projects were completed and the AROs were reduced to nil.

Changes to the ARO liability included in "Other liabilities" on Hawaiian Electric's balance sheet were as follows:

(in thousands)	2018	2017
Balance, January 1	$6,035	$25,589
Accretion expense	282	10
Liabilities incurred	1,058	5,370
Liabilities settled	(74)	(527)
Revisions in estimated cash flows	1,125	(24,407)
Balance, December 31	$8,426	$6,035

The Utilities have not recorded AROs for assets that are expected to operate indefinitely or where the Utilities cannot estimate a settlement date (or range of potential settlement dates). As such, ARO liabilities are not recorded for certain asset retirement activities, including various Utilities-owned generating facilities and certain electric transmission, distribution and telecommunications assets resulting from easements over property not owned by the Utilities.

Regulatory proceedings.

Decoupling. Decoupling is a regulatory model that is intended to provide utility financial stability and facilitate meeting the State of Hawaii's goals to transition to a clean energy economy and achieve an aggressive renewable portfolio standard. The decoupling model implemented in Hawaii in 2011, allows the utilities to recover from customers through annual rate adjustments, target test year revenues, independent of the level of kWh sales, which have declined as privately-owned distributed energy resources have been added to the grid and energy efficiency measures have been put into place. The decoupling mechanism has the following major components: (1) monthly revenue balancing account (RBA) revenues or refunds for the difference between PUC-approved target revenues and recorded adjusted revenues, which delinks revenues from kilowatthour sales, (2) rate adjustment mechanism (RAM) revenues for escalation in certain operation and maintenance (O&M) expenses and rate base changes, (3) major project interim recovery component (MPIR), (4) performance incentive mechanisms (PIMs), and (5) an earnings sharing mechanism, which would provide for a reduction of revenues between rate cases in the event the utility exceeds the ROACE allowed in its most recent rate case. Under the decoupling tariff approved in 2011, the prior year accrued RBA revenues (regulatory asset) and the annual RAM amount are billed from June 1 of each year through May 31 of the following year, which is within 24 months following the end of the year in which they are recorded as required by the accounting standard for alternative revenue programs. Under the decoupling mechanism, triennial general rate cases are required.

Rate adjustment mechanism. The RAM is based on the lesser of: a) an inflationary adjustment for certain O&M expenses and return on investment for certain rate base changes, or b) cumulative annual compounded increase in Gross Domestic Product Price Index applied to annualized target revenues (the RAM Cap). Annualized target revenues reset upon the issuance of an interim or final D&O in a rate case.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

The RAM Cap impacted the Utilities' recovery of capital investments as follows:

- Hawaiian Electric's RAM revenues were limited to the RAM Cap in 2017 and 2018.
- Maui Electric's RAM revenues in 2017 and 2018 were below the RAM Cap.
- Hawaii Electric Light's RAM revenues in 2017 and 2018 were below the RAM Cap.

For the RAM years 2014 - 2016, Hawaiian Electric was allowed to record RAM revenue beginning on January 1 and to bill such amounts from June 1 of the applicable year through May 31 of the following year. Subsequent to 2016, Hawaiian Electric reverted to the RAM provisions initially approved in March 2011— i.e., RAM is both accrued and billed from June 1 of each year through May 31 of the following year.

Major project interim recovery. On April 27, 2017, the PUC issued an order that provided guidelines for interim recovery of revenues to support major projects placed in service between general rate cases.

Projects eligible for recovery through the MPIR adjustment mechanism are major projects (i.e., projects with capital expenditures net of customer contributions in excess of $2.5 million), including, but not restricted to, renewable energy, energy efficiency, utility scale generation, grid modernization and smaller qualifying projects grouped into programs for review. The MPIR adjustment mechanism provides the opportunity to recover revenues for approved costs of eligible projects placed in service between general rate cases wherein cost recovery is limited by a revenue cap and is not provided by other effective recovery mechanisms. The request for PUC approval must include a business case and all costs that are allowed to be recovered through the MPIR adjustment mechanism must be offset by any related benefits. The guidelines provide for accrual of revenues approved for recovery upon in-service date to be collected from customers through the annual RBA tariff. Capital projects that are not recovered through the MPIR would be included in the RAM and be subject to the RAM Cap, until the next rate case when the Utilities would request recovery in base rates.

The PUC approved recovery of capital costs under the MPIR for Schofield Generating Station, which increased revenues in July through December 2018 by $3.4 million and will be collected in customer bills beginning in June 2019. On December 14, 2018, the PUC approved recovery of net operation and maintenance costs for the Schofield Generating Station through the MPIR adjustment mechanism, with accrual commencing as of October 1, 2018, which totaled $0.5 million for 2018. In February 2019, Hawaiian Electric submitted an MPIR filing for 2019 (which accrued effective January 1, 2019) that included the 2019 return on project amount (up to the capped amount) in rate base, depreciation and incremental O&M expenses, for collection from June 2020 through May 2021.

Performance incentive mechanisms. The PUC has ordered the following performance incentive mechanisms (PIM).

- Service Quality performance incentives are measured on a calendar-year basis beginning in 2018. The PIM tariff requires the performance targets, deadbands and the amount of maximum financial incentives used to determine the PIM financial incentive levels for each of the PIMs to be re-determined upon issuance of an interim or final order in a general rate case for each utility.
- Service Reliability Performance measured by System Average Interruption Duration and Frequency Indexes (penalties only). Target performance is based on each utility's historical 10-year average performance with a deadband of one standard deviation. The maximum penalty for each performance index is 20 basis points applied to the common equity share of each respective utility's approved rate base (or maximum penalties of approximately $6.7 million - for both indices in total for the three utilities).
- Call Center Performance measured by the percentage of calls answered within 30 seconds. Target performance is based on the annual average performance for each utility for the most recent 8 quarters with a deadband of 3% above and below the target. The maximum penalty or incentive is 8 basis points applied to the common equity share of each respective utility's approved rate base (or maximum penalties or incentives of approximately $1.3 million - in total for the three utilities).
- The Utilities accrued $2.1 million in estimated net service quality penalties for 2018, which will be reflected in the 2019 annual decoupling filing and will reduce customer rates in the period June 1, 2019 through May 31, 2020.
- Demand Response measured by the demand response resources acquired in 2018. The award is up to 5% of the aggregate annual contract value for cost-effective demand response capability contracted with aggregators by

December 31, 2018. The maximum award is $0.5 million for the three utilities in total and there are no penalties. This incentive applied to one-time performance in 2018 only. No reward is expected for 2018 performance.

- Procurement of low-cost variable renewable resources through the request for proposal process in 2018 measured by comparison of the procurement price to target prices. The incentive is a percentage of the savings determined by

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

comparing procured price to a target of 11.5 cents per kilowatt-hour for renewable projects with storage capability and 9.5 cents per kilowatt-hour for energy-only renewable projects. There are two phases to this incentive. Phase 1 has an incentive of 20% of the savings for purchased power agreements filed by December 31, 2018 and subsequently approved by the PUC, with a cap of $3.5 million for the three utilities in total. Phase 2 has scaled incentives of 15%, 10% and 5% of the savings for purchased power agreements filed in January, February and March 2019, respectively, and subsequently approved by the PUC, with a cap of $3 million for the three utilities in total. There are no penalties. The Utilities submitted seven agreements for PUC approval in December 2018 which may qualify for rewards. Rewards, if qualified, will be accrued when the contract is approved by the PUC.

Annual decoupling filings. The net annual incremental amounts to be collected (refunded) from June 1, 2018 through May 31, 2019 are as follows:

(in millions)	Hawaiian Electric	Hawaii Electric Light	Maui Electric
2018 Annual incremental RAM adjusted revenues*	$ 13.8	$ 3.4	$ 2.0
Annual change in accrued RBA balance as of December 31, 2017 (and associated revenue taxes)	$ 6.6	$ 0.7	$ 3.2
2017 Tax Act Adjustment **	$ —	$ —	$ (2.8)
Net annual incremental amount to be collected under the tariffs	$ 20.4	$ 4.1	$ 2.4

* The 2018 annual RAM adjusted revenues for Maui Electric terminated on August 23, 2018, the effective date of interim increase tariff rates that were implemented pursuant to the Interim D&O issued in the Maui Electric consolidated 2015 and 2018 rate case.

** Maui Electric incorporated a $2.8 million adjustment into its 2018 annual decoupling filing to incorporate the impact of the lower corporate income tax rate and the exclusion of the domestic production activities deduction, as a result of the 2017 Tax Cuts and Jobs Act (the Tax Act). Tax adjustments for Hawaiian Electric and Hawaii Electric Light are described in the discussion below of their respective on-going rate cases.

Performance-based regulation proceeding. On April 18, 2018, the PUC issued an order, instituting a proceeding to investigate performance-based regulation (PBR). The PUC intends to provide a forum to collaboratively develop modifications or new components to better align utility and customer interests. The PUC stated that PBR seeks to utilize both revenue adjustment mechanisms and performance mechanisms to more strongly align utilities' incentives with customer interests.

The order stated that, in general, the PUC is interested in ratemaking elements and/or mechanisms that result in:

- Greater cost control and reduced rate volatility;
- Efficient investment and allocation of resources regardless of classification as capital or operating expense;
- Fair distribution of risks between utilities and customers; and
- Fulfillment of State policy goals.

Through this investigation, the PUC intends to: (1) identify specific areas of utility performance that should be improved; (2) determine appropriate metrics for measuring successful outcomes in those areas; and (3) establish reasonable financial rewards and/or penalties that are sufficient to incent the utility to achieve those outcomes.

The proceeding has two phases. Phase 1 examines the current regulatory framework and identifies those areas of utility performance that are deserving of further focus in Phase 2. The PUC provided staff reports to the parties, held technical workshops and the parties filed briefs on: 1) goals and outcomes and 2) assessment of the existing regulatory framework and 3) metrics. PUC staff issued a Phase 1 proposal, and parties scheduled to file statements of position in March 2019 and reply statements of position in April 2019. PUC order related to Phase 1 will be issued after reply statements of position. Phase 2 will address design and implementation of performance incentive mechanisms, revenue adjustment mechanisms and other regulatory reforms.

Performance-based ratemaking legislation. On April 24, 2018, Act 005, Session Laws 2018 was signed into law, which establishes performance metrics that the PUC shall consider while establishing performance incentives and penalty mechanisms under a performance-based ratemaking model. The law requires that the PUC establish these performance-based ratemaking mechanisms on or before January 1, 2020. The PUC opened a proceeding on April 18, 2018. See “Performance-based regulation proceeding” above.

Most recent rate proceedings.

Hawaiian Electric consolidated 2014 and 2017 test year rate cases. On February 16, 2018, Hawaiian Electric implemented an interim increase of $36 million. On April 13, 2018, Hawaiian Electric implemented an additional interim rate adjustment to adjust rates for the impact of the Tax Act. On June 22, 2018, the PUC issued its Final D&O, approving final rate relief of a $37.7 million increase before the Tax Act impact reduction of $38.3 million, based on an ROACE of 9.5% and an overall rate of return of 7.57%. The PUC indicated that a revised energy cost recovery clause (ECRC) mechanism shall reflect a 98%/2% fossil fuel generation cost risk-sharing split between ratepayers and Hawaiian Electric, with an annual maximum upside/downside capped at $2.5 million for the utility. On December 7, 2018, the PUC approved the ECRC tariff, consistent with the rate case order, with an effective date of January 1, 2019.

Maui Electric consolidated 2015 and 2018 test year rate cases. On August 9, 2018, the PUC approved an interim rate increase based on a stipulated settlement between Maui Electric and the Consumer Advocate of $12.5 million over revenues at current effective rates based on 7.43% rate of return (which incorporates a ROACE of 9.5% and a capital structure that includes a 57% common equity capitalization) on a $462 million rate base, with the depreciation rates approved in July 2018. Interim rates went into effect on August 23, 2018.

Hawaii Electric Light 2016 and 2019 test year rate cases. In August 2017, the PUC issued an order granting an interim rate increase of $9.9 million based on the Stipulated Settlement Letter of Hawaii Electric Light and the Consumer Advocate filed on July 11, 2017 and an ROACE of 9.5% and subject to refund with interest, if it exceeds amounts allowed in a final order. The interim rate increase was implemented on August 31, 2017. On May 1, 2018, Hawaii Electric Light implemented an interim rate reduction of $9.9 million which was primarily to incorporate the effects of the Tax Act. On June 29, 2018, the PUC issued its Final D&O, approving the rates implemented in the interim rate reduction.

On December 14, 2018, Hawaii Electric Light filed an application for a general rate increase for its 2019 test year rate case, requesting an increase of $13.4 million over revenues at current effective rates (for a 3.4% increase in revenues), based on an 8.3% rate of return (which incorporates a ROACE of 10.5%).

Tax Cuts and Jobs Act impact on utility rates. The Utilities began tracking the impact of the Tax Cuts and Jobs Act of 2017 (Tax Act) as of January 1, 2018. Each Utility accrued regulatory liabilities for estimated tax savings from January 1 to the date incorporated in rates. The Tax Act reductions were incorporated in rates as follows:

- Hawaiian Electric (based on the 2017 test year rate case) - effective April 13, 2018.
- Hawaii Electric Light (based on the 2016 test year rate case) - effective May 1, 2018.
- Maui Electric's rates were adjusted for the Tax Act as follows:
- adjustments for the period January 1, 2018 through May 31, 2018 are in the annual Revenue Balancing Account adjustment, which became effective on June 1, 2018,
    - adjustments for the period June 1, 2018 through August 22, 2018 are embedded in the Revenue Balancing Account, which will be incorporated in rates on June 1, 2019, and
- adjustments from August 23, 2018 and thereafter are incorporated in interim rates as a result of the 2018 test year rate case.

See discussion in "Decoupling" section above.

Consolidating financial information. Hawaiian Electric is not required to provide separate financial statements or other disclosures concerning Hawaii Electric Light and Maui Electric to holders of the 2004 Debentures, which was issued by Hawaii Electric Light and Maui Electric to HECO Capital Trust III (Trust III) since all of their voting capital stock is owned, and their obligations with respect to these securities have been fully and unconditionally guaranteed, on a subordinated basis, by Hawaiian Electric. Consolidating information is provided below for Hawaiian Electric and each of its subsidiaries for the periods ended and as of the dates indicated.

Hawaiian Electric also unconditionally guarantees Hawaii Electric Light's and Maui Electric's obligations (a) to the State of Hawaii for the repayment of principal and interest on Special Purpose Revenue Bonds issued for the benefit of Hawaii Electric Light and Maui Electric, (b) under their respective private placement note agreements and the Hawaii Electric Light notes and Maui Electric notes issued thereunder (see Hawaiian Electric and Subsidiaries' Consolidated Statements of Capitalization) and (c) relating to the trust preferred securities of Trust III (see above under unconsolidated variable interest entities). Hawaiian Electric is also obligated, after the satisfaction of its obligations on its own preferred stock, to make dividend, redemption and liquidation payments on Hawaii Electric Light's and Maui Electric's preferred stock if the respective subsidiary is unable to make such payments.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating statement of income
Year ended December 31, 2018

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments	Hawaiian Electric Consolidated
Revenues	$1,802,550	375,493	368,700	—	(218) [1]	$2,546,525
Expenses						
Fuel oil	523,706	90,792	146,030	—	—	760,528
Purchased power	494,450	95,838	49,019	—	—	639,307
Other operation and maintenance	313,346	70,396	77,749	—	—	461,491
Depreciation	137,410	40,235	25,981	—	—	203,626
Taxes, other than income taxes	170,363	34,850	34,699	—	—	239,912
Total expenses	1,639,275	332,111	333,478	—	—	2,304,864
Operating income	163,275	43,382	35,222	—	(218)	241,661
Allowance for equity funds used during construction	9,208	478	1,191	—	—	10,877
Equity in earnings of subsidiaries	45,393	—	—	—	(45,393) [2]	—
Retirement defined benefits expense—other than service costs	(2,649)	(417)	(565)	—	—	(3,631)
Interest expense and other charges, net	(52,180)	(11,836)	(9,550)	—	218 [1]	(73,348)
Allowance for borrowed funds used during construction	4,019	276	572	—	—	4,867
Income before income taxes	167,066	31,883	26,870	—	(45,393)	180,426
Income taxes	22,333	6,868	5,577	—	—	34,778
Net income	144,733	25,015	21,293	—	(45,393)	145,648
Preferred stock dividends of subsidiaries	—	534	381	—	—	915
Net income attributable to Hawaiian Electric	144,733	24,481	20,912	—	(45,393)	144,733
Preferred stock dividends of Hawaiian Electric	1,080	—	—	—	—	1,080
Net income for common stock	$143,653	24,481	20,912	—	(45,393)	$143,653

Consolidating statement of comprehensive income
Year ended December 31, 2018

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments	Hawaiian Electric Consolidated
Net income for common stock	$143,653	24,481	20,912	—	(45,393)	$143,653
Other comprehensive income (loss), net of taxes:						
Retirement benefit plans:						
Net losses arising during the period, net of tax benefits	(26,019)	(6,090)	(5,004)	—	11,094 [1]	(26,019)
Adjustment for amortization of prior service credit and net losses recognized during the period in net periodic benefit cost, net of tax benefits	19,012	2,819	2,423	—	(5,242) [1]	19,012
Reclassification adjustment for impact of D&Os of the PUC included in regulatory assets, net of	8,325	3,305	2,788	—	(6,093) [1]	8,325

taxes							
Other comprehensive income, net of taxes	1,318	34	207	—	(241	)	1,318
Comprehensive income attributable to common shareholder	$ 144,971	24,515	21,119	—	(45,634	)	$ 144,971

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating statement of income
Year ended December 31, 2017

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments	Hawaiian Electric Consolidated
Revenues	$1,598,504	333,467	325,678	—	(83) [1]	$2,257,566
Expenses						
Fuel oil	408,204	63,894	115,670	—	—	587,768
Purchased power	454,189	87,772	44,673	—	—	586,634
Other operation and maintenance	274,391	66,184	71,332	—	—	411,907
Depreciation	130,889	38,741	23,154	—	—	192,784
Taxes, other than income taxes	152,933	31,184	30,832	—	—	214,949
Total expenses	1,420,606	287,775	285,661	—	—	1,994,042
Operating income	177,898	45,692	40,017	—	(83)	263,524
Allowance for equity funds used during construction	10,896	554	1,033	—	—	12,483
Equity in earnings of subsidiaries	38,057	—	—	—	(38,057) [2]	—
Retirement defined benefits expense—other than service costs	(5,049)	(93)	(861)	—	—	(6,003)
Interest expense and other charges, net	(48,277)	(11,799)	(9,644)		83 [1]	(69,637)
Allowance for borrowed funds used during construction	4,089	238	451	—	—	4,778
Income before income taxes	177,614	34,592	30,996	—	(38,057)	205,145
Income taxes	56,583	13,912	12,704	—	—	83,199
Net income	121,031	20,680	18,292	—	(38,057)	121,946
Preferred stock dividends of subsidiaries	—	534	381	—	—	915
Net income attributable to Hawaiian Electric	121,031	20,146	17,911	—	(38,057)	121,031
Preferred stock dividends of Hawaiian Electric	1,080	—	—	—	—	1,080
Net income for common stock	$119,951	20,146	17,911	—	(38,057)	$119,951

Consolidating statement of comprehensive income
Year ended December 31, 2017

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments	Hawaiian Electric Consolidated
Net income for common stock	$119,951	20,146	17,911	—	(38,057)	$119,951
Other comprehensive income (loss), net of taxes:						
Derivatives qualified as cash flow hedges:						
Reclassification adjustment to net income, net of tax benefits	454	—	—	—	—	454
Retirement benefit plans:						
Net losses arising during the period, net of tax benefits	63,105	3,093	7,329	—	(10,422) [1]	63,105
Adjustment for amortization of prior service credit and net losses recognized during the period in net periodic benefit cost, net of tax	14,477	1,903	1,619	—	(3,522) [1]	14,477

benefits							
Reclassification adjustment for impact of D&Os of the PUC included in regulatory assets, net of taxes	(78,724)	(4,994)	(9,003)	—	13,997	[1]	(78,724)
Other comprehensive income (loss), net of taxes	(688)	2	(55)	—	53		(688)
Comprehensive income attributable to common shareholder	$ 119,263	20,148	17,856	—	(38,004)		$ 119,263

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating statement of income
Year ended December 31, 2016

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments		Hawaiian Electric Consolidated
Revenues	$1,474,384	311,385	308,705	—	(106)	[1]	$2,094,368
Expenses							
Fuel oil	305,359	55,094	94,251	—	—		454,704
Purchased power	431,009	81,018	50,713	—	—		562,740
Other operation and maintenance	268,118	64,216	67,597	—	—		399,931
Depreciation	126,086	37,797	23,178	—	—		187,061
Taxes, other than income taxes	141,615	29,017	29,230	—	—		199,862
Total expenses	1,272,187	267,142	264,969	—	—		1,804,298
Operating income	202,197	44,243	43,736	—	(106)		290,070
Allowance for equity funds used during construction	6,659	765	901	—	—		8,325
Equity in earnings of subsidiaries	42,391	—	—	—	(42,391)	[2]	—
Retirement defined benefits expense—other than service costs	(5,058)	319	(863)	—	—		(5,602)
Interest expense and other charges, net	(45,839)	(11,555)	(9,536)	—	106	[1]	(66,824)
Allowance for borrowed funds used during construction	2,484	294	366	—	—		3,144
Income before income taxes	202,834	34,066	34,604	—	(42,391)		229,113
Income taxes	59,437	12,277	13,087	—	—		84,801
Net income	143,397	21,789	21,517	—	(42,391)		144,312
Preferred stock dividends of subsidiaries	—	534	381	—	—		915
Net income attributable to Hawaiian Electric	143,397	21,255	21,136	—	(42,391)		143,397
Preferred stock dividends of Hawaiian Electric	1,080	—	—	—	—		1,080
Net income for common stock	$142,317	21,255	21,136	—	(42,391)		$142,317

Consolidating statement of comprehensive income
Year ended December 31, 2016

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments		Hawaiian Electric Consolidated
Net income for common stock	$142,317	21,255	21,136	—	(42,391)		$142,317
Other comprehensive income (loss), net of taxes:							
Derivatives qualified as cash flow hedges:							
Effective portion of foreign currency hedge net unrealized losses arising during the period, net of tax benefits	(281)	—	—	—	—		(281)
Less: reclassification adjustment to net income, net of taxes	(173)	—	—	—	—		(173)
Retirement benefit plans:							
Net losses arising during the period, net of tax benefits	(42,631)	(5,141)	(5,447)	—	10,588	[1]	(42,631)
	13,254	1,718	1,549	—	(3,267)	[1]	13,254

Adjustment for amortization of prior service credit and net losses recognized during the period in net periodic benefit cost, net of tax benefits							
Reclassification adjustment for impact of D&Os of the PUC included in regulatory assets, net of tax benefits	28,584	3,269	3,852	—	(7,121	) [1]	28,584
Other comprehensive loss, net of tax benefits	(1,247)	(154)	(46)	—	200		(1,247)
Comprehensive income attributable to common shareholder	$141,070	21,101	21,090	—	(42,191	)	$ 141,070

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating balance sheet
December 31, 2018

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments	Hawaiian Electric Consolidated
Assets						
Property, plant and equipment						
Utility property, plant and equipment						
Land	$40,449	5,606	3,612	—	—	$49,667
Plant and equipment	4,456,090	1,259,553	1,094,028	—	—	6,809,671
Less accumulated depreciation	(1,523,861)	(547,848)	(505,633)	—	—	(2,577,342)
Construction in progress	193,677	8,781	30,687	—	—	233,145
Utility property, plant and equipment, net	3,166,355	726,092	622,694	—	—	4,515,141
Nonutility property, plant and equipment, less accumulated depreciation	5,314	115	1,532	—	—	6,961
Total property, plant and equipment, net	3,171,669	726,207	624,226	—	—	4,522,102
Investment in wholly-owned subsidiaries, at equity	576,838	—	—	—	(576,838) [2]	—
Current assets						
Cash and cash equivalents	16,732	15,623	3,421	101	—	35,877
Customer accounts receivable, net	125,960	26,483	25,453	—	—	177,896
Accrued unbilled revenues, net	88,060	17,051	16,627	—	—	121,738
Other accounts receivable, net	21,962	3,131	3,033	—	(21,911) [1]	6,215
Fuel oil stock, at average cost	54,262	11,027	14,646	—	—	79,935
Materials and supplies, at average cost	30,291	7,155	17,758	—	—	55,204
Prepayments and other	23,214	5,212	3,692	—	—	32,118
Regulatory assets	60,093	3,177	7,746	—	—	71,016
Total current assets	420,574	88,859	92,376	101	(21,911)	579,999
Other long-term assets						
Regulatory assets	537,708	120,658	104,044	—	—	762,410
Other	69,749	15,944	17,299	—	—	102,992
Total other long-term assets	607,457	136,602	121,343	—	—	865,402
Total assets	$4,776,538	951,668	837,945	101	(598,749)	$5,967,503
Capitalization and liabilities						
Capitalization						
Common stock equity	$1,957,641	295,874	280,863	101	(576,838) [2]	$1,957,641
Cumulative preferred stock–not subject to mandatory redemption	22,293	7,000	5,000	—	—	34,293
Long-term debt, net	1,000,137	217,749	200,916	—	—	1,418,802
Total capitalization	2,980,071	520,623	486,779	101	(576,838)	3,410,736
Current liabilities						
Short-term borrowings-non-affiliate	25,000	—	—	—	—	25,000
Accounts payable	126,384	20,045	25,362	—	—	171,791
Interest and preferred dividends payable	16,203	4,203	2,841	—	(32) [1]	23,215
Taxes accrued	164,747	34,128	34,458	—	—	233,333

Regulatory liabilities	7,699	4,872	5,406	—	—	17,977
Other	46,391	15,077	20,414	—	(21,879) [1]	60,003
Total current liabilities	386,424	78,325	88,481	—	(21,911)	531,319
Deferred credits and other liabilities						
Deferred income taxes	271,438	54,936	56,823	—	—	383,197
Regulatory liabilities	657,210	176,101	98,948	—	—	932,259
Unamortized tax credits	60,271	16,217	15,034	—	—	91,522
Defined benefit pension and other postretirement benefit plans liability	359,174	73,147	71,338	—	—	503,659
Other	61,950	32,319	20,542	—	—	114,811
Total deferred credits and other liabilities	1,410,043	352,720	262,685	—	—	2,025,448
Total capitalization and liabilities	$4,776,538	951,668	837,945	101	(598,749)	$5,967,503

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating balance sheet
December 31, 2017

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments	Hawaiian Electric Consolidated
Assets						
Property, plant and equipment						
Utility property, plant and equipment						
Land	$40,392	5,922	3,016	—	—	$49,330
Plant and equipment	4,144,472	1,207,043	1,053,372	—	—	6,404,887
Less accumulated depreciation	(1,451,612)	(528,024)	(496,716)	—	—	(2,476,352)
Construction in progress	231,571	8,182	23,341	—	—	263,094
Utility property, plant and equipment, net	2,964,823	693,123	583,013	—	—	4,240,959
Nonutility property, plant and equipment, less accumulated depreciation	5,933	115	1,532	—	—	7,580
Total property, plant and equipment, net	2,970,756	693,238	584,545	—	—	4,248,539
Investment in wholly-owned subsidiaries, at equity	557,013	—	—	—	(557,013) [2]	—
Current assets						
Cash and cash equivalents	2,059	4,025	6,332	101	—	12,517
Advances to affiliates	—	—	12,000	—	(12,000) [1]	—
Customer accounts receivable, net	86,987	22,510	18,392	—	—	127,889
Accrued unbilled revenues, net	77,176	15,940	13,938	—	—	107,054
Other accounts receivable, net	11,376	2,268	1,210	—	(7,691) [1]	7,163
Fuel oil stock, at average cost	64,972	8,698	13,203	—	—	86,873
Materials and supplies, at average cost	28,325	8,041	18,031	—	—	54,397
Prepayments and other	17,928	4,514	2,913	—	—	25,355
Regulatory assets	76,203	5,038	7,149	—	—	88,390
Total current assets	365,026	71,034	93,168	101	(19,691)	509,638
Other long-term assets						
Regulatory assets	557,464	122,783	100,660	—	—	780,907
Other	60,157	16,311	15,061	—	—	91,529
Total other long-term assets	617,621	139,094	115,721	—	—	872,436
Total assets	$4,510,416	903,366	793,434	101	(576,704)	$5,630,613
Capitalization and liabilities						
Capitalization						
Common stock equity	$1,845,283	286,647	270,265	101	(557,013) [2]	$1,845,283
Cumulative preferred stock–not subject to mandatory redemption	22,293	7,000	5,000	—	—	34,293
Long-term debt, net	924,979	202,701	190,836	—	—	1,318,516
Total capitalization	2,792,555	496,348	466,101	101	(557,013)	3,198,092
Current liabilities						
Current portion of long-term debt	29,978	10,992	8,993	—	—	49,963
Short-term borrowings-non-affiliate	4,999	—	—	—	—	4,999
Short-term borrowings-affiliate	12,000	—	—	—	(12,000) [1]	—

Accounts payable	121,328	17,855	20,427	—	—		159,610
Interest and preferred dividends payable	15,677	4,174	2,735	—	(11	) [1]	22,575
Taxes accrued	133,839	34,950	30,312	—	—		199,101
Regulatory liabilities	607	1,245	1,549	—	—		3,401
Other	43,121	9,818	14,197	—	(7,680	) [1]	59,456
Total current liabilities	361,549	79,034	78,213	—	(19,691	)	499,105
Deferred credits and other liabilities							
Deferred income taxes	281,223	56,955	55,863	—	—		394,041
Regulatory liabilities	613,329	169,139	94,901	—	—		877,369
Unamortized tax credits	59,039	16,167	15,163	—	—		90,369
Defined benefit pension and other postretirement benefit plans liability	340,983	66,447	65,518	—	—		472,948
Other	61,738	19,276	17,675	—	—		98,689
Total deferred credits and other liabilities	1,356,312	327,984	249,120	—	—		1,933,416
Total capitalization and liabilities	$4,510,416	903,366	793,434	101	(576,704	)	$5,630,613

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating statements of changes in common stock equity

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments	Hawaiian Electric Consolidated
Balance, December 31, 2015	$1,728,325	292,702	263,725	101	(556,528)	$1,728,325
Net income for common stock	142,317	21,255	21,136	—	(42,391)	142,317
Other comprehensive loss, net of tax benefits	(1,247)	(154)	(46)	—	200	(1,247)
Issuance of common stock, net of expenses	23,991	(5)	—	—	5	23,991
Common stock dividends	(93,599)	(22,507)	(25,261)	—	47,768	(93,599)
Balance, December 31, 2016	1,799,787	291,291	259,554	101	(550,946)	1,799,787
Net income for common stock	119,951	20,146	17,911	—	(38,057)	119,951
Other comprehensive income (loss), net of taxes	(688)	2	(55)	—	53	(688)
Issuance of common stock, net of expenses	14,000	4	4,801	—	(4,805)	14,000
Common stock dividends	(87,767)	(24,796)	(11,946)	—	36,742	(87,767)
Balance, December 31, 2017	1,845,283	286,647	270,265	101	(557,013)	1,845,283
Net income for common stock	143,653	24,481	20,912	—	(45,393)	143,653
Other comprehensive income, net of taxes	1,318	34	207	—	(241)	1,318
Issuance of common stock, net of expenses	70,692	1	1,498	—	(1,499)	70,692
Common stock dividends	(103,305)	(15,289)	(12,019)	—	27,308	(103,305)
Balance, December 31, 2018	$1,957,641	295,874	280,863	101	(576,838)	$1,957,641

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating statement of cash flows
Year ended December 31, 2018

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments		Hawaiian Electric Consolidated
Cash flows from operating activities							
Net income	$144,733	25,015	21,293	—	(45,393)	[2]	$ 145,648
Adjustments to reconcile net income to net cash provided by operating activities							
Equity in earnings of subsidiaries	(45,493)	—	—	—	45,393	[2]	(100)
Common stock dividends received from subsidiaries	27,408	—	—	—	(27,308)	[2]	100
Depreciation of property, plant and equipment	137,410	40,235	25,981	—	—		203,626
Other amortization	20,956	5,069	577	—	—		26,602
Deferred income taxes	(9,806)	(341)	2,165	—	—		(7,982)
Allowance for equity funds used during construction	(9,208)	(478)	(1,191)	—	—		(10,877)
Other	(1,033)	(213)	(324)	—	—		(1,570)
Changes in assets and liabilities:							
Increase in accounts receivable	(51,656)	(4,867)	(8,614)	—	14,220	[1]	(50,917)
Increase in accrued unbilled revenues	(10,884)	(1,111)	(2,689)	—	—		(14,684)
Decrease (increase) in fuel oil stock	10,710	(2,329)	(1,443)	—	—		6,938
Decrease (increase) in materials and supplies	(1,966)	886	273	—	—		(807)
Decrease (increase) in regulatory assets	12,192	71	(3,011)	—	—		9,252
Increase in accounts payable	14,748	6,104	3,506	—	—		24,358
Change in prepaid and accrued income taxes, tax credits and revenue taxes	24,438	(2,118)	3,047	—	(331)	[1]	25,036
Increase (decrease) in defined benefit pension and other postretirement benefit plans liability	17,178	(760)	2,328	—	—		18,746
Change in other assets and liabilities	18,484	8,186	7,794	—	(14,220)	[1]	20,244
Net cash provided by operating activities	298,211	73,349	49,692	—	(27,639)		393,613
Cash flows from investing activities							
Capital expenditures	(330,531)	(54,553)	(60,779)	—	—		(445,863)
Contributions in aid of construction	24,828	3,499	2,272	—	—		30,599
Advances from (to) affiliates	—	—	12,000	—	(12,000)	[1]	—
Other	3,226	1,182	3,843	—	1,831	[1], [2]	10,082
Net cash used in investing activities	(302,477)	(49,872)	(42,664)	—	(10,169)		(405,182)
Cash flows from financing activities							
Common stock dividends	(103,305)	(15,289)	(12,019)	—	27,308	[2]	(103,305)
Preferred stock dividends of Hawaiian Electric and subsidiaries	(1,080)	(534)	(381)	—	—		(1,995)
Proceeds from issuance of common stock	70,700	—	1,500	—	(1,500)	[2]	70,700
Proceeds from issuance of long-term debt	75,000	15,000	10,000	—	—		100,000

Repayment of long-term debt	(30,000)	(11,000)	(9,000)	—	—		(50,000)
Net decrease in short-term borrowings from non-affiliates and affiliate with original maturities of three months or less	(16,999)	—	—	—	12,000	[1]	(4,999)
Proceeds from other bank borrowings	25,000	—	—	—	—		25,000
Other	(377)	(56)	(39)	—	—		(472)
Net cash provided by (used in) financing activities	18,939	(11,879)	(9,939)	—	37,808		34,929
Net increase (decrease) in cash and cash equivalents	14,673	11,598	(2,911)	—	—		23,360
Cash and cash equivalents, January 1	2,059	4,025	6,332	101	—		12,517
Cash and cash equivalents, December 31	$16,732	15,623	3,421	101	—		$ 35,877

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating statement of cash flows
Year ended December 31, 2017

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments		Hawaiian Electric Consolidated
Cash flows from operating activities							
Net income	$121,031	20,680	18,292	—	(38,057)	[2]	$ 121,946
Adjustments to reconcile net income to net cash provided by operating activities							
Equity in earnings of subsidiaries	(38,157)	—	—	—	38,057	[2]	(100)
Common stock dividends received from subsidiaries	36,867	—	—	—	(36,742)	[2]	125
Depreciation of property, plant and equipment	130,889	38,741	23,154	—	—		192,784
Other amortization	2,398	3,225	2,875	—	—		8,498
Deferred income taxes	26,342	3,954	8,004	—	(263)	[1]	38,037
Allowance for equity funds used during construction	(10,896)	(554)	(1,033)	—	—		(12,483)
Other	(1,154)	430	(342)	—	—		(1,066)
Changes in assets and liabilities:							
Decrease (increase) in accounts receivable	1,817	(359)	45	—	1,411	[1]	2,914
Increase in accrued unbilled revenues	(11,355)	(2,376)	(1,630)	—	—		(15,361)
Increase in fuel oil stock	(17,733)	(469)	(2,241)	—	—		(20,443)
Decrease (increase) in materials and supplies	1,603	(661)	(1,660)	—	—		(718)
Increase in regulatory assets	(8,395)	(4,007)	(4,854)	—	—		(17,256)
Increase (decrease) in accounts payable	23,519	(3,547)	5,762	—	—		25,734
Change in prepaid and accrued income taxes, tax credits and revenue taxes	16,716	7,961	5,362	—	(177)	[1]	29,862
Increase (decrease) in defined benefit pension and other postretirement benefit plans liability	709	52	(157)	—	—		604
Change in other assets and liabilities	(16,213)	(433)	166	—	(1,411)	[1]	(17,891)
Net cash provided by operating activities	257,988	62,637	51,743	—	(37,182)		335,186
Cash flows from investing activities							
Capital expenditures	(339,279)	(52,077)	(50,242)	—	—		(441,598)
Contributions in aid of construction	57,527	4,293	2,913	—	—		64,733
Advances from (to) affiliates	—	3,500	(2,000)	—	(1,500)	[1]	—
Other	(1,711)	649	400	—	5,240	[1],[2]	4,578
Net cash used in investing activities	(283,463)	(43,635)	(48,929)	—	3,740		(372,287)
Cash flows from financing activities							
Common stock dividends	(87,767)	(24,796)	(11,946)	—	36,742	[2]	(87,767)
Preferred stock dividends of Hawaiian Electric and subsidiaries	(1,080)	(534)	(381)	—	—		(1,995)
Proceeds from the issuance of common stock	14,000	—	4,800	—	(4,800)	[2]	14,000
	202,000	28,000	85,000	—	—		315,000

Proceeds from the issuance of long-term debt							
Funds transferred for redemption of special purpose revenue bonds	(162,000)	(28,000)	(75,000)	—	—		(265,000)
Net increase in short-term borrowings from non-affiliates and affiliate with original maturities of three months or less	3,499	—	—	—	1,500	[1]	4,999
Other	(2,506)	(396)	(1,003)	—	—		(3,905)
Net cash provided by (used in) financing activities	(33,854)	(25,726)	1,470	—	33,442		(24,668)
Net increase (decrease) in cash and cash equivalents	(59,329)	(6,724)	4,284	—	—		(61,769)
Cash and cash equivalents, January 1	61,388	10,749	2,048	101	—		74,286
Cash and cash equivalents, December 31	$2,059	4,025	6,332	101	—		$ 12,517

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Consolidating statement of cash flows
Year ended December 31, 2016

(in thousands)	Hawaiian Electric	Hawaii Electric Light	Maui Electric	Other subsidiaries	Consolidating adjustments		Hawaiian Electric Consolidated
Cash flows from operating activities							
Net income	$143,397	21,789	21,517	—	(42,391)	[2]	$ 144,312
Adjustments to reconcile net income to net cash provided by operating activities							
Equity in earnings of subsidiaries	(42,491)	—	—	—	42,391	[2]	(100)
Common stock dividends received from subsidiaries	47,843	—	—	—	(47,768)	[2]	75
Depreciation of property, plant and equipment	126,086	37,797	23,178	—	—		187,061
Other amortization	2,979	1,817	2,139	—	—		6,935
Deferred income taxes	54,721	7,027	12,661	—	(23)	[1]	74,386
Allowance for equity funds used during construction	(6,659)	(765)	(901)	—	—		(8,325)
Other	(2,517)	(750)	(433)	—	—		(3,700)
Changes in assets and liabilities:							
Decrease (increase) in accounts receivable	10,175	(718)	1,776	—	(2,682)	[1]	8,551
Increase in accrued unbilled revenues	(5,741)	(1,033)	(410)	—	—		(7,184)
Decrease in fuel oil stock	2,216	81	2,489	—	—		4,786
Decrease (increase) in materials and supplies	993	(515)	272	—	—		750
Increase in regulatory assets	(16,161)	(1,243)	(869)	—	—		(18,273)
Increase (decrease) in accounts payable	(10,247)	768	(1,135)	—	—		(10,614)
Change in prepaid and accrued income taxes, tax credits and revenue taxes	2,933	2,645	(3,478)	—	23	[1]	2,123
Increase (decrease) in defined benefit pension and other postretirement benefit plans liability	599	53	(168)	—	—		484
Change in other assets and liabilities	(11,682)	(78)	(2,272)	—	2,682	[1]	(11,350)
Net cash provided by operating activities	296,444	66,875	54,366	—	(47,768)		369,917
Cash flows from investing activities							
Capital expenditures	(236,425)	(51,344)	(32,668)	—	—		(320,437)
Contributions in aid of construction	23,611	3,412	3,077	—	—		30,100
Advances from (to) affiliates	—	12,000	(2,500)	—	(9,500)	[1]	—
Other	1,932	175	31	—	—		2,138
Net cash used in investing activities	(210,882)	(35,757)	(32,060)	—	(9,500)		(288,199)
Cash flows from financing activities							
Common stock dividends	(93,599)	(22,507)	(25,261)	—	47,768	[2]	(93,599)
Preferred stock dividends of Hawaiian Electric and subsidiaries	(1,080)	(534)	(381)	—	—		(1,995)
Proceeds from the issuance of common stock	24,000	—	—	—	—		24,000
Proceeds from the issuance of long-term debt	40,000	—	—	—	—		40,000
Net decrease in short-term borrowings from non-affiliates and affiliate with original maturities of three months or less	(9,500)	—	—	—	9,500	[1]	—
Other	(276)	(10)	(1)	—	—		(287)

Net cash used in financing activities	(40,455)	(23,051)	(25,643)	—	57,268	(31,881)
Net increase (decrease) in cash and cash equivalents	45,107	8,067	(3,337)	—	—	49,837
Cash and cash equivalents, January 1	16,281	2,682	5,385	101	—	24,449
Cash and cash equivalents, December 31	$61,388	10,749	2,048	101	—	$ 74,286

Explanation of consolidating adjustments on consolidating schedules:
[1] Eliminations of intercompany receivables and payables and other intercompany transactions.
[2] Elimination of investment in subsidiaries, carried at equity.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Note 4· Bank segment (HEI only)
Selected financial information
American Savings Bank, F.S.B.
Statements of Income Data

Years ended December 31	2018	2017	2016
(in thousands)			
Interest and dividend income			
Interest and fees on loans	$220,463	$207,255	$199,774
Interest and dividends on investment securities	37,762	28,823	19,184
Total interest and dividend income	258,225	236,078	218,958
Interest expense			
Interest on deposit liabilities	13,991	9,660	7,167
Interest on other borrowings	1,548	2,496	5,588
Total interest expense	15,539	12,156	12,755
Net interest income	242,686	223,922	206,203
Provision for loan losses	14,745	10,901	16,763
Net interest income after provision for loan losses	227,941	213,021	189,440
Noninterest income			
Fees from other financial services	18,937	22,796	22,384
Fee income on deposit liabilities	21,311	22,204	21,759
Fee income on other financial products	7,052	7,205	8,707
Bank-owned life insurance	5,057	5,539	4,637
Mortgage banking income	1,493	2,201	6,625
Gains on sale of investment securities, net	—	—	598
Other income, net	2,200	1,617	2,256
Total noninterest income	56,050	61,562	66,966
Noninterest expense			
Compensation and employee benefits	98,387	94,931	89,242
Occupancy	17,073	16,699	16,321
Data processing	14,268	13,280	13,030
Services	10,847	10,994	11,054
Equipment	7,186	7,232	6,938
Office supplies, printing and postage	6,134	6,182	6,075
Marketing	3,567	3,501	3,489
FDIC insurance	2,713	2,904	3,543
Other expense	17,238	20,144	19,362
Total noninterest expense	177,413	175,867	169,054
Income before income taxes	106,578	98,716	87,352
Income taxes	24,069	31,719	30,073
Net income	$82,509	$66,997	$57,279

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Reconciliation to amounts per HEI Consolidated Statements of Income*:

Years ended December 31	2018	2017	2016
(in thousands)			
Interest and dividend income	$258,225	$236,078	$218,958
Noninterest income	56,050	61,562	66,966
*Revenues-Bank	314,275	297,640	285,924
Total interest expense	15,539	12,156	12,755
Provision for loan losses	14,745	10,901	16,763
Total noninterest expense	177,413	175,867	169,054
Less: Retirement defined benefits expense—other than service costs	(1,657)	(820)	(875)
*Expenses-Bank	206,040	198,104	197,697
*Operating income-Bank	108,235	99,536	88,227
Add back: Retirement defined benefits expense—other than service costs	1,657	820	875
Income before income taxes	$106,578	$98,716	$87,352

Statements of Comprehensive Income Data

Years ended December 31	2018	2017	2016
(in thousands)			
Net income	$82,509	$66,997	$57,279
Other comprehensive income (loss), net of taxes:			
Net unrealized losses on available-for sale investment securities:			
Net unrealized losses on available-for sale investment securities arising during the period, net of tax benefits of $3,468, $2,886 and $3,763 for 2018, 2017 and 2016, respectively	(9,472)	(4,370)	(5,699)
Reclassification adjustment for net realized gains included in net income, net of taxes of nil, nil and $238 for 2018, 2017 and 2016, respectively	—	—	(360)
Retirement benefit plans:			
Adjustment for amortization of prior service credit and net losses recognized during the period in net periodic benefit cost, net of tax benefits of $1,108, $812 and $566 for 2018, 2017 and 2016, respectively	2,353	1,231	857
Other comprehensive loss, net of tax benefits	(7,119)	(3,139)	(5,202)
Comprehensive income	$75,390	$63,858	$52,077

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Balance Sheets Data

December 31		2018		2017
(in thousands)				
Assets				
Cash and due from banks		$122,059		$140,934
Interest-bearing deposits		4,225		93,165
Investment securities				
Available-for-sale, at fair value		1,388,533		1,401,198
Held-to-maturity, at amortized cost (fair value of $142,057 and $44,412 at December 31, 2018 and 2017, respectively)		141,875		44,515
Stock in Federal Home Loan Bank, at cost		9,958		9,706
Loans held for investment		4,843,021		4,670,768
Allowance for loan losses		(52,119)		(53,637)
Net loans		4,790,902		4,617,131
Loans held for sale, at lower of cost or fair value		1,805		11,250
Other		486,347		398,570
Goodwill		82,190		82,190
Total assets		$7,027,894		$6,798,659
Liabilities and shareholder's equity				
Deposit liabilities–noninterest-bearing		$1,800,727		$1,760,233
Deposit liabilities–interest-bearing		4,358,125		4,130,364
Other borrowings		110,040		190,859
Other		124,613		110,356
Total liabilities		6,393,505		6,191,812
Commitments and contingencies				
Common stock		1		1
Additional paid in capital		347,170		345,018
Retained earnings		325,286		292,957
Accumulated other comprehensive loss, net of tax benefits				
Net unrealized losses on securities	$(24,423)		$(14,951)	
Retirement benefit plans	(13,645)	(38,068)	(16,178)	(31,129)
Total shareholder's equity		634,389		606,847
Total liabilities and shareholder's equity		$7,027,894		$6,798,659

December 31	2018	2017
(in thousands)		
Other assets		
Bank-owned life insurance	$151,172	$148,775
Premises and equipment, net	214,415	136,270
Accrued interest receivable	20,140	18,724
Mortgage servicing rights	8,062	8,639
Low-income housing investments	67,626	59,016
Real estate acquired in settlement of loans, net	406	133
Other	24,526	27,013
	$486,347	$398,570
Other liabilities		
Accrued expenses	$54,084	$39,312

Federal and state income taxes payable	2,012	3,736
Cashier's checks	26,906	27,000
Advance payments by borrowers	10,183	10,245
Other	31,428	30,063
	$124,613	$110,356

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Bank-owned life insurance is life insurance purchased by ASB on the lives of certain key employees, with ASB as the beneficiary. The insurance is used to fund employee benefits through tax-free income from increases in the cash value of the policies and insurance proceeds paid to ASB upon an insured’s death.
The increase in premises and equipment, net was due to the expenditures of $76.5 million for the new campus project.
Investment securities. The major components of investment securities were as follows:

					Gross unrealized losses					
		Gross	Gross	Estimated	Less than 12 months			12 months or longer		
(dollars in thousands)	Amortized cost	unrealized gains	unrealized losses	fair value	Number of issues	Fair value	Amount	Number of issues	Fair value	Amount
December 31, 2018										
Available-for-sale										
U.S. Treasury and federal agency obligations	$156,694	$62	$(2,407)	$154,349	5	$25,882	$(208)	19	$118,405	$(2,199
Mortgage-backed securities — issued or guaranteed by U.S. Government agencies or sponsored agencies	1,192,169	789	(31,542)	1,161,416	22	129,011	(1,330)	145	947,890	(30,212
Corporate bonds	49,398	103	(369)	49,132	6	23,175	(369)	—	—	—
Mortgage revenue bonds	23,636	—	—	23,636	—	—	—	—	—	—
	$1,421,897	$954	$(34,318)	$1,388,533	33	$178,068	$(1,907)	164	$1,066,295	$(32,411
Held-to-maturity										
Mortgage-backed securities — issued or guaranteed by U.S. Government agencies or sponsored agencies	$141,875	$1,446	$(1,264)	$142,057	3	$29,814	$(400)	2	$31,505	$(864
	$141,875	$1,446	$(1,264)	$142,057	3	$29,814	$(400)	2	$31,505	$(864
December 31, 2017										
Available-for-sale										
U.S. Treasury and federal agency obligations	$185,891	$438	$(2,031)	$184,298	15	$83,137	$(825)	8	$62,296	$(1,206
Mortgage-backed securities — issued or guaranteed by U.S. Government agencies or sponsored agencies	1,220,304	793	(19,624)	1,201,473	67	653,635	(6,839)	77	459,912	(12,785
Mortgage revenue bond	15,427	—	—	15,427	—	—	—	—	—	—
	$1,421,622	$1,231	$(21,655)	$1,401,198	82	$736,772	$(7,664)	85	$522,208	$(13,991

Held-to-maturity												
Mortgage-backed securities — issued or guaranteed by U.S. Government agencies or sponsored agencies	$44,515	$1	$(104	)	$44,412	2	$35,744	$(104	)	—	$—	$—
	$44,515	$1	$(104	)	$44,412	2	$35,744	$(104	)	—	$—	$—

ASB does not believe that the investment securities that were in an unrealized loss position as of December 31, 2018, represent an OTTI. Total gross unrealized losses were primarily attributable to change in market conditions. On a quarterly basis the investment securities are evaluated for changes in financial condition of the issuer. Based upon ASB’s evaluation, all securities held within the investment portfolio continue to be investment grade by one or more agencies. The contractual cash flows of the U.S. Treasury, federal agency obligations and agency mortgage-backed securities are backed by the full faith and credit guaranty of the United States government or an agency of the government. ASB does not intend to sell the securities before the recovery of its amortized cost basis and there have been no adverse changes in the timing of the contractual cash flows for the securities. ASB did not recognize OTTI for 2018, 2017 and 2016.

U.S. Treasury, federal agency obligations, corporate bonds, and mortgage revenue bonds have contractual terms to maturity. Mortgage-backed securities have contractual terms to maturity, but require periodic payments to reduce principal. In addition, expected maturities will differ from contractual maturities because borrowers have the right to prepay the underlying mortgages.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

The contractual maturities of investment securities were as follows:

December 31, 2018	Amortized Cost	Fair value
(in thousands)		
Available-for-sale		
Due in one year or less	$20,002	$19,955
Due after one year through five years	117,549	116,508
Due after five years through ten years	76,750	75,227
Due after ten years	15,427	15,427
	229,728	227,117
Mortgage-backed securities — issued or guaranteed by U.S. Government agencies or sponsored agencies	1,192,169	1,161,416
Total available-for-sale securities	$1,421,897	$1,388,533
Held-to-maturity		
Mortgage-backed securities — issued or guaranteed by U.S. Government agencies or sponsored agencies	$141,875	$142,057
Total held-to-maturity securities	$141,875	$142,057

The proceeds, gross gains and losses from sales of available-for-sale securities were as follows:

Years ended December 31	2018	2017	2016
(in millions)			
Proceeds	$ —	$ —	$16.4
Gross gains	—	—	0.6
Gross losses	—	—	—

Interest income from taxable and non-taxable investment securities were as follows:

Years ended December 31	2018	2017	2016
(in thousands)			
Taxable	$37,153	$28,398	$19,166
Non-taxable	609	425	18
	$37,762	$28,823	$19,184

ASB pledged securities with a market value of approximately $546.1 million and $411.4 million as of December 31, 2018 and 2017, respectively, as collateral for public funds and other deposits, automated clearinghouse transactions with Bank of Hawaii, borrowing at the discount window of the Federal Reserve Bank of San Francisco, and deposits in ASB's bankruptcy account with the Federal Reserve Bank of San Francisco. As of December 31, 2018 and 2017, securities with a carrying value of $92.0 million and $165.1 million, respectively, were pledged as collateral for securities sold under agreements to repurchase.

Stock in FHLB. As of December 31, 2018 and 2017, ASB's stock in FHLB was carried at cost ($10.0 million and $9.7 million, respectively) because it can only be redeemed at par and it is a required investment based on measurements of ASB's capital, assets and borrowing levels.

Quarterly and as conditions warrant, ASB reviews its investment in the stock of the FHLB for impairment. ASB evaluated its investment in FHLB stock for OTTI as of December 31, 2018, consistent with its accounting policy. ASB did not recognize an OTTI loss for 2018, 2017 and 2016 based on its evaluation of the underlying investment. Future deterioration in the FHLB's financial position and/or negative developments in any of the factors considered in ASB's impairment evaluation may result in future impairment losses.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Loans. The components of loans were summarized as follows:

December 31	2018	2017
(in thousands)		
Real estate:		
Residential 1-4 family	$2,143,397	$2,118,047
Commercial real estate	748,398	733,106
Home equity line of credit	978,237	913,052
Residential land	13,138	15,797
Commercial construction	92,264	108,273
Residential construction	14,307	14,910
Total real estate	3,989,741	3,903,185
Commercial	587,891	544,828
Consumer	266,002	223,564
Total loans	4,843,634	4,671,577
Less: Deferred fees and discounts	(613)	(809)
Allowance for loan losses	(52,119)	(53,637)
Total loans, net	$4,790,902	$4,617,131

ASB’s policy is to require private mortgage insurance on all real estate loans when the loan-to-value ratio of the property exceeds 80% of the lower of the appraised value or purchase price at origination. For non-owner occupied residential properties, the loan-to-value ratio may not exceed 80% of the lower of the appraised value or purchase price at origination.

ASB services real estate loans for investors (principal balance of $1.2 billion as of December 31, 2018, 2017 and 2016), which are not included in the accompanying balance sheets data. ASB reports fees earned for servicing such loans as income when the related mortgage loan payments are collected and charges loan servicing cost to expense as incurred.

As of December 31, 2018 and 2017, ASB had pledged loans with an amortized cost of approximately $2.7 billion and $2.4 billion, respectively, as collateral to secure advances from the FHLB.

As of December 31, 2018 and 2017, the aggregate amount of loans to directors and executive officers of ASB and its affiliates and any related interests (as defined in Federal Reserve Board (FRB) Regulation O) of such individuals, was $24.0 million and $23.8 million, respectively. As of December 31, 2018 and 2017, $18.3 million and $18.7 million of the loan balances, respectively, were to related interests of individuals who are directors of ASB. All such loans were made at ASB’s normal credit terms.

Allowance for loan losses. As discussed in Note 1, ASB must maintain an allowance for loan losses that is adequate to absorb estimated probable credit losses associated with its loan portfolio.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

The allowance for loan losses (balances and changes) and financing receivables were as follows:

(in thousands)	Residential 1-4 family	Commercial real estate	Home equity line of credit	Residential land	Commercial construction	Residential construction	Commercial	Consumer	Total
December 31, 2018									
Allowance for loan losses:									
Beginning balance	$2,902	$15,796	$7,522	$896	$4,671	$ 12	$10,851	$10,987	$53,637
Charge-offs	(128)	—	(353)	(18)	—	—	(2,722)	(17,296)	(20,517)
Recoveries	74	—	257	179	—	—	2,136	1,608	4,254
Provision	(872)	(1,291)	(1,055)	(578)	(1,881)	(8)	(1,040)	21,470	14,745
Ending balance	$1,976	$14,505	$6,371	$479	$2,790	$ 4	$9,225	$16,769	$52,119
Ending balance: individually evaluated for impairment	$876	$7	$701	$6	$—	$ —	$628	$4	$2,222
Ending balance: collectively evaluated for impairment	$1,100	$14,498	$5,670	$473	$2,790	$ 4	$8,597	$16,765	$49,897
Financing Receivables:									
Ending balance	$2,143,397	$748,398	$978,237	$13,138	$92,264				