California Independent System Operator Corporation

Financial Statements
December 31, 2018 and 2017

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Report of Independent Auditors

To the Board of Governors and Management of the California Independent System Operator Corporation:

We have audited the accompanying financial statements of the California Independent System Operator Corporation, which comprise the statements of net position as of December 31, 2018 and 2017, and the related statements of revenues, expenses and changes in net position and of cash flows for the years then ended.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Company's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the California Independent System Operator Corporation as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

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Other Matters

Required Supplementary Information

The accompanying management's discussion and analysis on pages 3 through 12, schedule of changes in the net other post-employment benefit liability and related ratios, and schedule of employer contributions to the other post-employment benefit plan on pages 37 and 38 are required by accounting principles generally accepted in the United States of America to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in the appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audits were conducted for the purpose of forming an opinion on the financial statements that comprise the basic financial statements. The supplemental disclosure of the derivative financial instrument, congestion revenue rights, in Note 7 is presented for purposes of additional analysis and is not a required part of the basic financial statements. The information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves and other additional procedures, in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplemental information referred to above is fairly stated, in all material respects, in relation to the basic financial statements taken as a whole.

PricewaterhouseCoopers LLP

Sacramento, California
April 17, 2019

The following discussion and analysis of the California Independent System Operator Corporation (the "Company") provides an overview of the Company's financial activities for the years ended December 31, 2018 and 2017. This discussion and analysis should be read in conjunction with the Company's financial statements and accompanying notes, which follow this section.

Background

The Company, a nonprofit public benefit corporation, is responsible for ensuring the reliable and efficient use of the transmission grid in most of California and a part of Nevada. The Company operates this grid, which is one of the largest and most modern power grids in the world, as a balancing authority within the Western Electricity Coordinating Council. The Company conducts comprehensive planning for the future development of this grid.

In addition, the Company administers a competitive energy market that matches supply with demand, procures operating reserves and allocates space on transmission lines for delivering electricity efficiently, all of which ultimately benefits consumers. This market provides open and nondiscriminatory access to the transmission grid more than 200 market participants. The Company also administers the Western Energy Imbalance Market. This extension of the Company's real-time energy market facilitates transactions with and among several balancing authority areas in the western interconnection that are not a part of the grid the Company operates.

The Company's markets and its grid operations are regulated by the Federal Energy Regulatory Commission, and comply with standards set by the North American Electric Reliability Corporation and the Western Electricity Coordinating Council. A five-member Board of Governors (the "Board") appointed by the Governor of California and confirmed by the California State Senate governs the Company.

Financial Reporting

The Company's accounting records are maintained in accordance with generally accepted accounting principles for proprietary funds as prescribed by the Governmental Accounting Standards Board (GASB) and where not in conflict with GASB pronouncements, accounting principles prescribed by the Financial Accounting Standards Board ("FASB").

Cash held by the Company on behalf of market participants is recorded in a restricted asset account with a corresponding liability due to market participants in the Statements of Net Position. Except for the retention of restricted assets noted above, the financial statements reflect a net reporting of market activities wherein the financial statements do not include the revenues and expenses, cash flows, or assets and liabilities associated with the market transactions the Company facilitates.

Revenue

The Company charges a Grid Management Charge ("GMC") to market participants to recover the Company's operating costs, capital expenditures, debt service costs, and to provide for an operating reserve. The GMC is comprised of the following three service categories: market services, system operations and congestion revenue rights services.

The Company receives other revenues outside of its GMC charges including, but not limited to: fees paid for participation in the Western Energy Imbalance Market ("EIM"), generator interconnection studies, and for operation of the California-Oregon Intertie Path.

After accounting for other revenues, the Company establishes its annual net revenue requirement which is allocated to the three GMC service categories based on percentages established in the tariff. Category costs are then divided by forecasted volumes to establish the annual rates.

Liquidity
The Company's tariff allows for the GMC rates to be adjusted during the year to ensure collection of the revenue requirement. During the year, if forecasted revenues from any of the three GMC service categories is materially different, as defined in the tariff, from budgeted revenues, the Company may adjust the rate for the affected category to realign the forecast revenue with the budgeted revenue.

Per the tariff, the revenue requirement includes an operating reserve, which is 15% of the current year's operating and maintenance budget, and a debt service reserve, which is 25% of the debt service to be paid during the year. The Company's operating and debt service reserves were fully funded in 2018 and 2017. Furthermore, the Company maintains capital reserves in its unrestricted funds which consist of funds collected through the revenue requirement for future capital expenditures.

The Market and Reliability Coordinator Service
The Company's wholesale energy market is the vehicle for providing open-access transmission service to users of the transmission grid. It includes a day-ahead market for all twenty-four hours of the next operating day, and a real-time market that schedules resources in 15 minute intervals and dispatches them in 5 minute intervals. The day-ahead market clears supply and demand offers for short-term energy purchases and sales. The real-time market clears supply offers and the Company's forecast of demand. Together, these enable the economic scheduling and dispatch of generating resources to maintain continuous balance of supply and demand and management of congestion on the grid. The market also procures reserve capacity or ancillary services to maintain reliable operation under unexpected changes in grid conditions. In addition, the Company performs a settlement and clearing function by charging and collecting payments from users of these services and paying providers of such services.

The Company continues to develop market enhancements to increase reliability, efficiency and the accuracy of market results. The current market prices energy at the points it enters and leaves the grid, which increases transparency by sending signals for competitive investments in transmission and generation. The market operates on an advanced and flexible platform helping to integrate renewable resources as well as demand response. These enhancements increase the functionality and flexibility of the market system to meet the on-going needs of market participants.

The Company also operates the Western Energy Imbalance Market (the "EIM"). This extension of the Company's real-time energy market facilitates transactions with and among several balancing authority areas in the western interconnection that are not a part of the grid the Company operates. The EIM provides reliability, efficiency and renewable integration benefits to the West while also providing economic benefits to participants. The broader footprint for the real-time market provides more opportunities to integrate cleaner sources of energy, such as wind and solar, that may be produced in one area but needed in another. Seven balancing authorities are participating as of the end of 2018 and several others have committed to participate in the future.

In 2018, the Company announced its intent to offer Reliability Coordinator services for its balancing area and other interested parties in the Western interconnection. The Company filed with, and received approval from FERC for the rate design, terms and conditions for these services set to begin in July 2019. A Reliability Coordinator has the highest level of authority and responsibility for the reliable operation of the power grid, and has a wide-area view of the bulk electricity system. It is required to comply with federal and regional grid standards, and can authorize measures to prevent or mitigate system emergencies in day-ahead or real-time operations. As of January 2019, the Company had finalized agreements with 39 electrical balancing authorities and their transmission operators throughout the West to receive Reliability Coordinator services.

Backup Operations Facility

In November 2016, a new backup operations facility was completed and subsequently occupied. The site replaced a leased facility in Alhambra, CA, which was vacated in December 2016 although the lease did not expire until August, 2017.

Financial Highlights

Statements of Net Position, Statements of Revenues, Expenses and Changes in Net Position

In 2017, the Company implemented GASB Statement No. 75, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans* (“GABS 75”) which was retrospectively adopted in accordance with GASB implementation requirements. As a result, the affected 2016 amounts in the MD&A have been adjusted retrospectively to reflect those changes. Additionally, all of the 2016 column headings have been labeled “as restated” whether or not the amounts reflected were changed from the pronouncement.

The financial statements provide both short-term and long-term information about the Company’s financial status. The Statements of Net Position include all of the Company’s assets and liabilities, using the accrual method of accounting, and identify any assets which are restricted as a result of bond covenants or external commitments. The Statements of Net Position provide information about the nature and amount of resources and obligations at specific points in time.

The Statements of Revenues, Expenses and Changes in Net Position report all of the Company’s revenues and expenses during the year. The Statements of Cash Flows report the cash provided and used during the year by operating activities, as well as other cash sources such as investment income and debt financing, and other cash used such as payments for bond principal and capital additions.

Condensed Statements of Net Position (in millions)

	2018	2017	2016 As restated
Assets and Deferred Outflows			
Current assets	$ 423.6	$ 403.9	$ 436.1
Fixed assets, net	167.1	178.9	187.2
Other noncurrent assets	164.6	149.0	157.0
Deferred outflows	7.7	8.9	11.6
Total assets and deferred outflows	$ 763.0	$ 740.7	$ 791.9
Liabilities and Net Position			
Current liabilities	$ 398.9	$ 380.2	$ 446.7
Long-term debt, net of current portion	175.8	181.4	186.8
Other noncurrent liabilities	19.1	17.2	17.1
Deferred inflows	2.9	-	-
Net position	166.3	161.9	141.3
Total liabilities, deferred inflows and net position	$ 763.0	$ 740.7	$ 791.9

Assets

Current Assets (in millions)

	2018	2017	2016 As restated
Cash and cash equivalents	$ 324.9	$ 332.8	$ 363.5
Short-term investments	69.9	49.0	50.4
Accounts receivable and other assets	28.8	22.1	22.2
Total current assets	$ 423.6	$ 403.9	$ 436.1

2018 Compared to 2017

As of December 31, 2018, current assets increased by $19.7 million during the year. This net increase is largely due to increases in collateral funds and other market accounts held for market participants, and to higher accounts receivable.

2017 Compared to 2016

As of December 31, 2017, current assets decreased by $32.2 million during the year. This decrease is largely due to lower cash and cash equivalents of $30.7 million caused by decreases in collateral funds held for market participants.

Fixed Assets, Net (in millions)

	2018	2017	2016 As restated
Net assets in service	$ 150.2	$ 162.6	$ 173.7
Work-in-progress	16.9	16.3	13.5
Total fixed assets, net	$ 167.1	$ 178.9	$ 187.2

2018 Compared to 2017
Total fixed assets, net of accumulated depreciation, decreased in 2018 by $11.8 million compared to 2017. The decrease is primarily due to lower net assets in service of $12.4 million, as a result of the current year depreciation expense of $35.3 million, partially offset by new assets placed-in-service of $22.9 million. Work in-progress increased slightly by $0.6 million compared to 2017 due to the ongoing work to new capital projects during the year.

2017 Compared to 2016
Total fixed assets, net of accumulated depreciation, decreased in 2017 by $8.3 million compared to 2016. The decrease is primarily due to lower net assets in service of $11.1 million, as a result of the current year depreciation expense of $27.8 million, partially offset by new assets placed-in-service of $16.7 million. Work in-progress increased by $2.8 million compared to 2016 due to the ongoing work to new capital projects during the year.

Other Noncurrent Assets (in millions)

	2018	2017	2016 As restated
Long-term investments	$ 159.0	$ 143.3	$ 153.1
Other assets	5.6	5.7	3.8
Total other noncurrent assets	$ 164.6	$ 149.0	$ 156.9

2018 Compared to 2017
Other noncurrent assets increased by $15.6 million in 2018. This change is largely attributable to increased long-term investments amounting to $15.7 million during the year due to higher corporate reserves and to a shift to investing in longer-term assets.

2017 Compared to 2016
Other noncurrent assets decreased by $7.9 million in 2017. This change is largely attributable to decreased long-term investments amounting to $9.8 million during the year due to transfers to cash and cash equivalents and to short-term securities.

Deferred Outflows (in millions)

	2018	2017	2016 As restated
Unamortized other post employment benefit costs	$ -	$ 0.5	$ 2.6
Unamortized loss on refunding of bonds	7.7	8.4	9.0
Total deferred outflows	$ 7.7	$ 8.9	$ 11.6

2018 Compared to 2017
The decrease in the deferred outflows balance of $1.2 million is due to the current year reduction of the unamortized loss on refunding of bonds. There was no unamortized other post-employment benefit costs in 2018 due to net actuarial gains.

2017 Compared to 2016
The decrease in the deferred outflows balance of $2.7 million is due to the 2017 amortizations of the unamortized loss on refunding and the deferred actuarial losses of the postretirement medical plan.

Liabilities
Current Liabilities (in millions)

		2018		2017		2016 As restated
Accounts payable and accrued expenses	$	12.1	$	10.1	$	10.8
Accrued salaries and compensated absences		34.8		32.7		33.2
Current portion of long-term debt		5.0		4.8		4.6
Due to market participants		345.2		330.4		395.8
Generator noncompliance fines refund obligation		1.8		2.2		2.3
Total current liabilities	$	398.9	$	380.2	$	446.7

2018 Compared to 2017
Current liabilities at December 31, 2018 increased by $18.7 million during the year. This increase is primarily due to higher amounts due to market participants as a result of increases in the balances of collateral accounts of $8.2 million, market funds of $5.9 million and in nonrefundable deposits pending distribution of $2.6 million, partially offset by a decrease in interconnection study deposits of $1.9 million. Additionally, there were increases in the year-end balances for both accounts payable and accrued expenses of $2.0 million and accrued salaries and compensated absences of $2.2 million.

2017 Compared to 2016
Current liabilities at December 31, 2017 decreased by $66.5 million during the year. This decrease is primarily due to lower amounts due to market participants as a result of decreases in the balances of collateral accounts of $69.3 million and interconnection study deposits of $6.0 million partially offset by increases in nonrefundable deposits pending distribution of $1.0 million and market funds of $8.9 million.

Long-Term Debt (in millions)

Summarized activity of long-term debt for the year ended December 31, 2018, is as follows:

	Beginning of Year	Issuances (Payments/ Amortization)	End of Year
CIEDB Revenue Bonds, Series 2013	$ 178.3	$ (4.8)	$ 173.5
Unamortized net premium Series 2013 bonds	7.9	(0.6)	7.3
Total long-term debt	186.2	(5.4)	180.8
Less: Current portion	4.8	0.2	5.0
Total long-term debt, net of current portion	$ 181.4	$ (5.6)	$ 175.8

Summarized activity of long-term debt for the year ended December 31, 2017, is as follows:

	Beginning of Year	Issuances (Payments/ Amortization)	End of Year
CIEDB Revenue Bonds, Series 2013	$ 182.9	$ (4.6)	$ 178.3
Unamortized net premium Series 2013 bonds	8.5	(0.6)	7.9
Total long-term debt	191.4	(5.2)	186.2
Less: Current portion	4.6	0.2	4.8
Total long-term debt, net of current portion	$ 186.8	$ (5.4)	$ 181.4

As of December 31, 2018, the Company had an underlying rating of A+ from S&P, A1 by Moody's and A+ by Fitch. Fitch rates the Company's outstanding Series 2013 bonds at AA- due to the additional support of the pledged deed of trust on the Company's primary building.

2018 Compared to 2017

At December 31, 2018 the Company had $173.5 million of outstanding bonds issued through the California Infrastructure and Economic Development Bank ("CIEDB"). The decrease in long-term debt is primarily attributable to scheduled debt payments on the Series 2013 bonds in the amount of $4.8 million in 2018.

2017 Compared to 2016

At December 31, 2017 the Company had $178.3 million of outstanding bonds issued through the CIEDB. The decrease in long-term debt is primarily attributable to scheduled debt payments on the Series 2013 bonds in the amount of $4.6 million in 2017.

Other Noncurrent Liabilities (in millions)

		2018		2017		2016 As restated
Employee retirement plan obligations	$	19.1	$	17.2	$	17.1
Total other noncurrent liabilities	$	19.1	$	17.2	$	17.1

2018 Compared to 2017
Other noncurrent liabilities at December 31, 2018 were higher by $1.9 million. The increase is primarily due to liabilities associated with executive benefit plans of $0.6 million and in the post-retirement liability of $1.3 million.

2017 Compared to 2016
Other noncurrent liabilities at December 31, 2017 were higher by $0.1 million. The increase is primarily due to liabilities associated with executive benefit plans of $0.5 million, partially offset by a decrease in the post-retirement liability of $0.4 million.

Net Position (in millions)

		2018		2017		2016 As restated
Net investment in capital assets	$	11.7	$	24.0	$	23.2
Unrestricted		154.6		138.1		118.1
Total net position	$	166.3	$	162.1	$	141.3

2018 Compared to 2017
Net investment in capital assets at December 31, 2018 decreased by $12.1 million during the year. This decrease is primarily attributable to normal depreciation partially offset by a reduced commitment of funds for capital projects. The unrestricted component of the net position at December 31, 2018 increased by $16.5 million during the year primarily as a result of net cash flows from operations.

2017 Compared to 2016
Net investment in capital assets at December 31, 2017 increased by $0.6 million during the year. This slight increase is primarily attributable to the commitment of additional funds for capital projects, offset by normal depreciation. The unrestricted component of the net position at December 31, 2017 increased by $20.0 million during the year primarily as a result of net cash flows from operations.

Changes in Net Position

Condensed Statements of Revenues, Expenses and Changes in Net Position (in millions)

	2018	2017	2016 As restated
Operating revenues	$ 223.8	$ 220.6	$ 212.0
Operating expenses	213.7	194.9	198.0
Operating income	10.1	25.7	14.0
Other expenses, net	(5.7)	(5.1)	(6.5)
Change in net position	$ 4.4	$ 20.6	$ 7.5

Operating Revenues

2018 Compared to 2017

Total operating revenues increased during the year by $3.2 million. This is primarily due to an increase in GMC revenues of $1.1 million due to a higher revenue requirement and to increases in other revenues of $2.2 million primarily due to increased EIM administrative charges.

2017 Compared to 2016

Total operating revenues increased during the year by $8.6 million. This is primarily due to an increase in GMC revenues of $5.1 million due to a higher revenue requirement and to increases in other revenues of $3.5 million primarily due to increased EIM administrative charges.

Operating Expenses and Percentages (dollars in millions)

	2018	2017	2016 As restated
Salaries and related benefits	$ 127.7	$ 118.3	$ 117.8
Communication and technology costs	19.3	19.7	20.0
Legal and consulting costs	18.9	17.7	22.9
Leases, facilities and other administrative costs	12.5	11.5	12.5
Lease termination costs	0.0	(0.1)	1.0
Depreciation and amortization	35.3	27.8	23.8
Total operating expenses	$ 213.7	$ 194.9	$ 198.0
Salaries and related benefits	60 %	61 %	59 %
Communication and technology costs	9	10	10
Legal and consulting costs	9	9	12
Leases, facilities and other administrative costs	6	6	6
Lease termination costs	-	-	1
Depreciation and amortization	16	14	12
Total operating expenses (%)	100 %	100 %	100 %

2018 Compared to 2017

Operating expenses were $18.8 million higher for the year ended December 31, 2018, compared to the year ended December 31, 2017. This is due to higher salaries and related benefits of $9.4 million primarily as a result of increases in staffing and benefit costs and to a one-time charge in post-retirement costs. The ISO recognized the cost associated with changes to the eligibility terms of the post-retirement plan, which was approved in November 2018. In addition, depreciation expenses were higher by $7.5 million.

2017 Compared to 2016

Operating expenses were $3.1 million lower for the year ended December 31, 2017, compared to the year ended December 31, 2016. This is primarily due to lower legal and consulting costs of $5.2 million as a result of changes in projects during the year and slight decreases in other expense categories. This was partially offset by higher depreciation expense of $4.0 million.

Other Income (Expense), Net (in millions)

	2018	2017	2016 As restated
Interest income	$ 2.5	$ 3.2	$ 2.0
Interest expense	(8.2)	(8.3)	(8.5)
Total other expense, net	$ (5.7)	$ (5.1)	$ (6.5)

2018 Compared to 2017

Total other expense increased by $0.6 million for the year ended December 31, 2018 compared to the year ended December 31, 2017. This increase is attributable to $0.7 million of lower interest income and $0.1 million of lower interest expense. The decrease in interest income is primarily due unrealized losses on the market value of investments as compared to gains in 2017. The slight decrease in interest expense is primarily due to lower outstanding debt as a result of bond repayments.

2017 Compared to 2016

Total other expense decreased by $1.4 million for the year ended December 31, 2017 compared to the year ended December 31, 2016. This decrease is attributable to $1.2 million of higher interest income and $0.2 million of lower interest expense. The increase in interest income is primarily due unrealized gains on the market value of investments as compared to losses in 2016. The decrease in interest expense is primarily due to lower outstanding debt as a result of bond repayments.

California Independent System Operator Corporation
Statements of Net Position
December 31, 2018 and 2017

	2018	2017
Assets and deferred outflows		
Current assets		
Cash and cash equivalents, including restricted amounts	$ 324,901	$ 332,767
Accounts receivable	22,383	16,404
Short-term investments, including restricted amounts	69,927	49,050
Other current assets	6,437	5,708
Total current assets	423,648	403,929
Noncurrent assets		
Long-term investments, including restricted amounts	159,012	143,281
Fixed assets, net	167,080	178,898
Other assets	5,579	5,743
Total noncurrent assets	331,671	327,922
Total assets	755,319	731,851
Deferred outflows		
Unamortized other post employment benefit costs	-	482
Unamortized loss on refunding of bonds	7,702	8,354
Total deferred outflows	7,702	8,836
Total assets and deferred outflows	$ 763,021	$ 740,687
Liabilities, deferred inflows and net position		
Current liabilities		
Accounts payable and accrued expenses	$ 12,126	$ 10,186
Accrued salaries and compensated absences	34,861	32,700
Current portion of long-term debt	4,970	4,765
Due to market participants	345,182	330,381
Generator noncompliance fines refund obligation	1,805	2,167
Total current liabilities	398,944	380,199
Noncurrent liabilities		
Long-term debt, net of current portion	175,788	181,372
Employee retirement plan obligations	19,067	17,218
Total noncurrent liabilities	194,855	198,590
Total liabilities	593,799	578,789
Deferred inflows		
Unamortized other post employment benefit costs	2,915	-
Total deferred inflows	2,915	-
Commitments and Contingencies (See Notes 10-12)		
Net position		
Net investment in capital assets	11,684	23,827
Unrestricted	154,623	138,071
Total net position	166,307	161,898
Total liabilities, deferred inflows and net position	$ 763,021	$ 740,687

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

California Independent System Operator Corporation
Statements of Revenues, Expenses and Changes in Net Position
Years Ended December 31, 2018 and 2017

	2018	2017
Operating revenues		
GMC revenue	$ 199,400	$ 198,307
Other revenues	24,488	22,298
Total operating revenues	223,888	220,605
Operating expenses		
Salaries and related benefits	127,712	118,341
Equipment leases and facility costs	2,201	2,182
Communications, technology and temporary staffing contracts	19,278	19,710
Legal and consulting services	18,961	17,728
Training, travel and professional dues	3,246	2,807
Insurance, administrative and other expenses	7,009	6,528
Lease termination, fines and loss on retirement of assets	-	(114)
Depreciation and amortization	35,338	27,765
Total operating expenses	213,745	194,947
Operating income from operations	10,143	25,658
Other income (expense)		
Interest income	2,516	3,214
Interest expense	(8,250)	(8,310)
Total other expense, net	(5,734)	(5,096)
Change in net position	4,409	20,562
Net position		
Beginning of year	161,898	141,336
End of year	$ 166,307	$ 161,898

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

California Independent System Operator Corporation
Statements of Cash Flows
Years Ended December 31, 2018 and 2017

	2018	2017
Cash flows from operating activities		
Receipts from scheduling coordinators for GMC	$ 198,534	$ 197,707
Other receipts	19,373	22,123
Payments to employees and to others for related benefits	(120,862)	(115,890)
Payments to vendors/others	(46,514)	(50,228)
Receipts from market participants	560,857	506,012
Payments to market participants	(546,056)	(571,488)
Net cash provided by/(used in) operating activities	65,332	(11,764)
Cash flows from capital and related financing activities		
Repayment of bonds	(4,765)	(4,625)
Purchases and development of fixed assets	(25,347)	(19,802)
Interest on debt	(8,656)	(8,825)
Net cash used in capital financing activities	(38,768)	(33,252)
Cash flows from investing activities		
Purchases of investments	(89,339)	(45,970)
Sales and maturities of investments	52,731	57,186
Interest received	2,178	3,096
Net cash (used in)/provided by investing activities	(34,430)	14,312
Net decrease in cash and cash equivalents, restricted and unrestricted	(7,866)	(30,704)
Cash and cash equivalents, restricted and unrestricted		
Beginning of year	332,767	363,471
End of year	$ 324,901	$ 332,767

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

California Independent System Operator Corporation
Statements of Cash Flows
Years Ended December 31, 2018 and 2017

	2018	2017
Supplemental information		
Cash paid for interest for bonds	$ 8,656	$ 8,825
Reconciliation of income from operations to net cash provided by/(used in) operating activities		
Operating income from operations	$ 10,143	$ 25,658
Adjustments to reconcile income from operations to net cash provided by operating activities		
Depreciation and amortization	35,338	27,765
Lease termination costs	-	(114)
Changes in operating assets, deferred outflows and liabilities		
Accounts receivable and other assets	(6,368)	(1,748)
Deferred inflows/outflows	3,397	2,148
Accounts payable and other accrued expenses	8,021	3
Due to market participants	14,801	(65,476)
Net cash provided by/(used in) operating activities	$ 65,332	$ (11,764)
Supplemental disclosure of noncash financing and investing activities		
Amortization of bond premium	$ 614	$ 631
Amortization of loss on refunding	(652)	(670)
Generator fines interest included in interest expense	362	95
Change in purchases and development of fixed assets included in accounts payable and accrued expenses	1,989	(764)

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

1. Organization and Operations

The Company, a nonprofit public benefit corporation, is responsible for ensuring the reliable and efficient use of the transmission grid in most of California and a part of Nevada. The Company operates this grid, which is one of the largest and most modern power grids in the world, as a balancing authority within the Western Electricity Coordinating Council. The Company conducts comprehensive planning for the future development of this grid.

The Company's wholesale energy market is the vehicle for providing open-access transmission service to users of the transmission grid. It includes a day-ahead market for all twenty-four hours of the next operating day, and a real-time market that schedules resources in 15 minute intervals and dispatches them in 5 minute intervals. The day-ahead market clears supply and demand offers for short-term energy purchases and sales. The real-time market clears supply offers and the Company's forecast of demand. Together, these enable the economic scheduling and dispatch of generating resources to maintain continuous balance of supply and demand and management of congestion on the grid. The market also procures reserve capacity or ancillary services to maintain reliable operation under unexpected changes in grid conditions.

The Company continues to develop market enhancements to increase reliability, efficiency and the accuracy of market results. The current market prices energy at the points it enters and leaves the grid, which increases transparency by sending signals for competitive investments in transmission and generation. The market operates on an advanced and flexible platform helping to integrate renewable resources as well as demand response. These enhancements increase the functionality and flexibility of the market system to meet the on-going needs of market participants.

The Company also operates the Western Energy Imbalance Market (the "EIM"). This extension of the Company's real-time energy market facilitates transactions with and among several balancing authority areas in the western interconnection that are not a part of the grid the Company operates. The EIM provides reliability, efficiency and renewable integration benefits to the West while also providing economic benefits to participants. The broader footprint for the real-time market provides more opportunities to integrate cleaner sources of energy, such as wind and solar, that may be produced in one area but needed in another. Seven balancing authorities are participating as of the end of 2018 and several others have committed to participate in the future.

In addition, the Company also performs a settlement and clearing function by charging and collecting payments from users of these services and paying providers of such services. Cash held by the Company on behalf of market participants is recorded in a restricted asset account with a corresponding liability due to market participants in the statements of net position. Except for the retention of restricted assets noted above, the Company's financial statements reflect a net reporting of market activities wherein the financial statements do not include the revenues and expenses, cash flows, or assets and liabilities associated with the market transactions it facilitates. GMC revenues have a priority claim against any market-related receipts. Any market defaults are allocated to market participants.

The Company is regulated by the Federal Energy Regulatory Commission and complies with standards set by the North American Electric Reliability Corporation and the Western Electricity Coordinating Council. A five-member Board of Governors (the "Board") appointed by the Governor of California and confirmed by the California State Senate governs the Company.

2. Summary of Significant Accounting Policies

Method of Accounting

The accompanying financial statements have been prepared on an accrual basis of accounting in accordance with accounting principles for proprietary funds as prescribed by the Government Accounting Standards Board ("GASB"), and where not in conflict with GASB pronouncements, accounting principles prescribed by the Financial Accounting Standards Board ("FASB"). The Company uses the economic resources measurement focus and the accrual basis of accounting. Under this method, revenues are recorded when earned and expenses are recorded at the time liabilities are incurred.

Net Presentation of Market Activity

The Company is a central counterparty to the market transactions that it financially settles, with certain limited exceptions. The Company is a buyer to every seller and a seller to every buyer, but market participants are responsible for supplying electricity and other services to their customers. The Company's market participants are the primary obligors with respect to those obligations. In the event of a market default, the defaulted amount is allocated among market participants, in accordance with the tariff. Market participants continue to bear the credit risk associated with any financial defaults by other market participants. Accordingly, the Company's financial statements continue to reflect a net reporting of market activities and exclude the revenues and expenses, cash flows and assets and liabilities associated with the market transactions the Company facilitates.

Use of Estimates

The preparation of the financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could materially differ from those estimates.

Cash and Cash Equivalents

Cash and cash equivalents, restricted and unrestricted, include cash in bank accounts, money market funds and other highly liquid investments with original maturities of three months or less. Cash and cash equivalents are unrestricted unless specifically restricted by bond indentures or the tariff.

Accounts Receivable and Revenue Recognition

The GMC is based on rates filed with the Federal Energy Regulatory Commission and is designed to recover the Company's operating costs, capital expenditures, debt service costs, and to provide for an operating reserve. The GMC billings are recognized as revenue. The initial billings are based on estimated meter data submitted by market participants and therefore may be subject to adjustment over time to reflect the difference between actual meter data and initial estimates.

The GMC is comprised of the following three service categories: market services, system operations and congestion revenue rights services.

The operating reserve is calculated separately for each GMC service category and accumulates until the reserve becomes fully funded (at 15% of budgeted annual operating costs for each rate service category). At December 31, 2018, the operating reserve for each service category was fully funded. In accordance with the tariff, any surplus operating reserve balance is applied as a reduction in revenue requirements in the following year. The tariff allows GMC rates to be adjusted not more than once per quarter. The rate for a service category is adjusted if the difference in actual versus projected volumes used to set the rate is equal or greater than 2%, or if the difference in actual versus estimated annual revenues for the service category is equal or greater than $1.0 million. On August 1, 2018, rates for the system operations and market services categories were adjusted but no adjustments were made in 2017.

In addition, the Company bills the participants of the EIM an administrative charge based on gross imbalance EIM volumes and at a rate that is developed annually to recover the ongoing costs of operating the EIM. The EIM administrative charge is included in other revenues of the Company.

Generator Interconnection Studies

The Company is responsible for conducting generator interconnection studies at the request of project sponsors who are developing generating plants that would become connected to the transmission grid operated by the Company. The project sponsors are required to make a deposit before any studies are performed. Sponsors may withdraw their projects from the studies at any time.

In accordance with the tariff, the Company charges the project sponsors the actual costs of the studies. Related study costs include both internal costs and external costs and are recorded, when incurred, as operating expenses. As costs are incurred, the Company recognizes revenue for the same amount, which is recorded as a component of other revenues. The Company applies the deposits against the related receivable as costs are incurred. Certain deposits related to projects abandoned by the project sponsors are retained by the Company and distributed in accordance with the tariff. These distributions do not result in revenues or expenses recognized by the Company.

Generator Noncompliance Fines

From December 8, 2000 through June 30, 2001, the Company assessed noncompliance fines on participating generators that failed to fully comply with dispatch instructions when the Company was seeking to prevent an imminent or threatened system emergency. In accordance with the tariff, these fines are retained by the Company. The Company recorded the net realizable amount of such fines as revenue when the underlying noncompliance event occurred. However, the amount of the fines, which were based on the price of energy at the time, has changed over time as a result of the still ongoing litigation over the California electricity crisis that have changed those prices. The Company adjusts such amounts in recognition of these developments, which affect the ultimate recognition of the fines charged and payments of the liability.

Investments

Investments, unrestricted or restricted, include instruments with original maturities of greater than three months or, instruments that have no stated maturity and the holding period is intended to be long-term in nature. These investments primarily consist of U.S. government securities, U.S. agency securities, corporate debt securities, and equity and fixed income mutual funds. Income on investments and the gain or loss on the fair value of investments is recorded as a component of interest income.

Fixed Assets

Fixed assets are recorded at cost. Depreciation is computed using the straight-line method over the estimated useful lives of assets. Most of the Company's investment in fixed assets consists of the headquarters building and the backup facility, both of which are being depreciated over twenty to thirty years, and information systems, which are being depreciated over three to seven years. The cost of improvements to or replacement of fixed assets is capitalized. Interest incurred during development is capitalized. When assets are retired or otherwise disposed of, the cost and related depreciation are removed from the accounts and any resulting gain or loss is reflected in the Company's Statement of Changes in Revenues, Expenses and Changes in Net Position for the period. Repair and maintenance costs are expensed when incurred. The Company capitalizes direct costs of salaries and certain indirect costs to develop or obtain software for internal use. Costs related to software development during the preliminary stage of a project and training and maintenance costs are expensed as incurred. Costs related to abandoned projects are expensed when the decision to abandon is made.

Other Assets

Other assets include certain employee retirement plan trust accounts.

Compensated Absences

The Company accrues vacation leave when the employee becomes eligible for the benefit. The Company does not record sick leave or other leave as a liability since there are no cash payments for sick leave or other leave made when employees terminate or retire. At December 31, 2018 and 2017, the total accrued liability for vacation was $ 9.4 million and $9.0 million, respectively.

Income Taxes

The Company is exempt from federal income tax under Section 501(c) (3) of the U.S. Internal Revenue Service (IRS) Code and is exempt from California State franchise income taxes.

Net Position

The Company classifies its net position into three components:

- **Net investment in capital assets -** This component consists of capital assets, net of accumulated depreciation reduced by the outstanding debt balances, net of unamortized debt expenses.

- **Restricted** - This component consists of net assets with constraints placed on their use. Constraints include those imposed by debt covenants (excluding amounts considered in net capital, above) and by the Company's tariff and agreements with external parties.

- **Unrestricted** - This component consists of net assets that do not meet the definition of "invested in capital, net of related debt" or "restricted".

The Company had no restricted component of the net position at December 31, 2018 or 2017.

Concentration of Credit Risk

Financial instruments that subject the Company to credit risk consist primarily of accounts receivable relating to GMC billings due from market participants and cash and cash equivalents and investments.

Most of the Company's receivables are due from entities in the energy industry, including utilities, generation owners and other electricity market participants. For the years ended December 31, 2018 and 2017, approximately 43% and 47% of operating revenues, respectively, were from two market participants.

GMC revenues have a priority claim against any market-related receipts, which means that even if an entity defaults on an invoice containing a GMC charge, the Company receives the full GMC so long as sufficient funds were received on other market invoices.

The Company's concentration of credit risk related to cash and cash equivalents, and investments is described in Note 3.

3. Cash and Cash Equivalents and Investments

Investment Policy

The Company maintains an investment policy approved by its Board of Governors, which provides for the investment guidelines of the majority of the Company's unrestricted funds. The policy's guidelines address permissible investment types, credit risk, concentration of credit risk, interest rate risk, custodial credit risk and other investment portfolio parameters.

Restricted funds, such as bond proceeds and amounts due to market participants, are invested according to the Company's bond indentures and tariff, respectively, both of which are more restrictive than the investment policy. A portion of the Company's unrestricted funds, $12.9 million as of December 31, 2018, has been designated by the Company as assets related to the liabilities associated with the Company's Retiree Medical Plan. These assets are governed by a separate investment policy approved by the Board of Governors which is aligned with the Company's long-term pension obligations to fund postretirement health benefits.

Credit Risk

To mitigate the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment, the Company limits purchases of investments to those rated at the time of purchase by two of the following nationally recognized statistical rating organizations: Standard & Poor's, Moody's, and Fitch. The investment must have at least two ratings that meet a minimum rating of at least A-1 (or equivalent) for short-term obligations such as commercial paper and at least A- (or equivalent) for longer term obligations like corporate medium-term notes. In the event of split ratings, the lowest rating is considered the overall credit rating. This policy includes exceptions that allow the Company to invest in certificates of deposit issued by lower rated banks up to the FDIC insured limit and to hold investments that have been downgraded below the policy rating minimums if approved to do so by the Company's internal investment committee.

In October 2016, the Securities and Exchange Commission (SEC) introduced new Money Market Fund rules. The new rules require the use of a floating net asset (NAV) for institutional prime money market funds and provide boards with the ability to impose liquidity fees, as well as implement redemption gates, for all nongovernmental money market funds during periods of stress in the financial markets. Under normal circumstances a floating NAV money market fund investment would continue to meet the definition of a cash equivalent. However, in the event credit or liquidity issues arise causing a meaningful decrease of the money market investments below $1.0000 per share the classification of such investments as cash equivalents may not be appropriate. There were no credit or liquidity issues that resulted in meaningful decreases in the Company's money market investments in 2018. Therefore, amounts invested in money market funds remain classified as cash equivalents.

Concentration of Credit Risk
This is the risk of loss associated with the percentage of an entity's investment in a single issuer. The Company's investment policy limits investments in any single issuer to no more than 5% of the portfolio, with exceptions relating to obligations issued by or fully guaranteed as to principal and interest by the United States, federal agencies or United States government sponsored enterprises, pooled investments such as money market funds, and investments procured in connection with Company bond offerings. As of December 31, 2018, other than the security exceptions described above, the Company had no investments in any one issuer representing more than 5% of total cash and cash equivalents and investments.

Custodial Credit Risk
Custodial credit risk is the risk that, in the event of the failure of a depository financial institution or counterparty, the Company will not be able to recover the value of its deposits, investments or collateral securities that are in the possession of an outside party.

The Company may maintain balances in bank accounts exceeding the FDIC insured level of $250,000. In the event of a bank default, the Company's deposits may not be returned. The Company had unrestricted noninterest-bearing bank deposits in amounts of $0.4 million and $0.1 million at December 31, 2018 and 2017, respectively. Additionally, the Company had restricted noninterest-bearing bank deposits in amounts of $20.9 million and $3.2 million at December 31, 2018 and 2017, respectively. All other investments purchased by the Company, by policy, are held in custodial accounts by third-party custodians and are registered in the Company's name, thereby minimizing any custodial credit risk.

Interest Rate Risk
Changes in interest rates may adversely affect the fair value of the Company's investments and its cash flows. The nature of the Company's investment needs and cash flows requires the majority of its investments to have maturities of one year or less. The investment policy further limits the maximum maturity of any investment to five years with the exception of bond proceeds and the assets associated with the Retiree Medical Plan liabilities. The fair value of the resulting short-term investment portfolio is therefore, less affected by rising interest rates. The cash flows from short-term portfolios can be more affected by declining interest rates as maturing investments are reinvested at lower interest rates.

Summary of Balances

At December 31, 2018, the Company's cash, cash equivalents and investments consist of the following (in thousands):

		Remaining Maturities (in Years)			
Description	**Credit Rating***	**Less than 1**	**1 - 5**	**More than 5**	**Total**
Cash and cash equivalents - unrestricted					
Deposits		$ 1,401	$ -	$ -	$ 1,401
Money Market Funds	AAAm	36,695			36,695
		38,096	-	-	38,096
Cash and cash equivalents - restricted					
Deposits		28,983			28,983
Money Market Funds	AAAm	257,822			257,822
		286,805	-	-	286,805
Total cash and cash equivalents		324,901	-	-	324,901
Short term investments - unrestricted					
Mutual Funds	Unrated	15,167			15,167
Certificate of Deposits	FDIC Insured	3,543			3,543
Government-sponsored Enterprises	AAA	1,973			1,973
Government-sponsored Enterprises	AA+	6,448			6,448
U.S Treasury	AA+	20,892			20,892
Corporate Notes	AA	1,501			1,501
Corporate Notes	AA-	2,716			2,716
Corporate Notes	A+	1,993			1,993
Corporate Notes	A	2,581			2,581
Corporate Notes	A-	995			995
		57,809	-	-	57,809
Short term investments - restricted					
Certificate of Deposits	FDIC Insured	12,118			12,118
		12,118	-	-	12,118
Total short-term investments		69,927	-	-	69,927
Long-term investments - unrestricted					
Affinity Insurance Ltd.	Unrated			37	37
Certificate of Deposits	FDIC Insured		4,341		4,341
Mutual Funds	Unrated		33,057		33,057
U.S. Treasury	AA+		39,723		39,723
Government-sponsored enterprises	AA+		22,248		22,248
Corporate Notes	AAA		989		989
Corporate Notes	AA+		1,964		1,964
Corporate Notes	AA-		1,936		1,936
Corporate Notes	A+		3,947		3,947
Corporate Notes	A		5,548		5,548
Corporate Notes	A-		881		881
Corporate Notes	BBB+		2,604		2,604
		-	117,238	37	117,275
Long-term investments - restricted					
Certificate of Deposits	FDIC Insured		41,737		41,737
Total long-term investments		-	158,975	37	159,012
Total cash, cash equivalents and investments		$ 394,828	$ 158,975	$ 37	$ 553,840

* Represents S&P rating.

At December 31, 2017, the Company's cash, cash equivalents and investments consist of the following (in thousands):

Description	Credit Rating*	Remaining Maturities (in Years) Less than 1	1 - 5	More than 5	Total
Cash and cash equivalents - unrestricted					
Deposits		$ 98	$ -	$ -	$ 98
Money Market Funds	AAAm	59,050			59,050
		59,148	-	-	59,148
Cash and cash equivalents - restricted					
Deposits		11,739			11,739
Money Market Funds	AAAm	261,880			261,880
		273,619	-	-	273,619
Total cash and cash equivalents		332,767	-	-	332,767
Short term investments - unrestricted					
Certificate of Deposits	FDIC Insured	4,360			4,360
Government-sponsored Enterprises	AAA	1,008			1,008
Government-sponsored Enterprises	AA+	11,989			11,989
U.S Treasury	AA+	10,963			10,963
Corporate Notes	A+	1,499			1,499
Corporate Notes	A	2,503			2,503
Corporate Notes	A-	999			999
Corporate Notes	BBB+	3,727			3,727
		37,048	-	-	37,048
Short term investments - restricted					
Certificate of Deposits	FDIC Insured	12,002			12,002
		12,002	-	-	12,002
Total short-term investments		49,050	-	-	49,050
Long-term investments - unrestricted					
Affinity Insurance Ltd.	Unrated			37	37
Certificate of Deposits	FDIC Insured		3,303		3,303
Mutual Funds	Unrated		9,564		9,564
U.S. Treasury	AA+		28,679		28,679
Government-sponsored enterprises	AAA		1,970		1,970
Government-sponsored enterprises	AA+		26,768		26,768
Corporate Notes	AAA		996		996
Corporate Notes	AA+		1,982		1,982
Corporate Notes	AA		1,533		1,533
Corporate Notes	AA-		5,699		5,699
Corporate Notes	A+		5,018		5,018
Corporate Notes	A		8,257		8,257
Corporate Notes	A-		4,097		4,097
Corporate Notes	BBB+		1,497		1,497
		-	99,363	37	99,400
Long-term investments - restricted					
Certificate of Deposits	FDIC Insured		43,881		43,881
Total long-term investments		-	143,244	37	143,281
Total cash, cash equivalents and investments		$ 381,817	$ 143,244	$ 37	$ 525,098

* Represents S&P rating.

The Company's cash, cash equivalents and investments at December 31 consist of unrestricted and restricted funds as follows (in thousands):

	2018	2017
Unrestricted funds, operating account	$ 213,180	$ 195,597
Restricted funds, market partipants	340,660	329,501
Total cash, cash equivalents and investments	$ 553,840	$ 525,098

Cash, cash equivalents and investments restricted for market participants consist of the following at December 31 (in thousands):

	2018	2017
Security deposits	$ 185,469	$ 177,294
Market funds pending settlement	75,384	70,726
Pass-through fees due to others	11,975	10,722
Generator interconnection study deposits	59,710	61,885
Non-refundable deposits pending distribution	8,122	8,874
Total amounts restricted for market participants	$ 340,660	$ 329,501

Cash, cash equivalents and investments restricted for market participants consist of amounts held by the Company to be remitted to market participants or others on their behalf. Security deposits are amounts received from market participants who are required to post collateral for their transactions in the Company's markets. Market funds pending settlement consist of amounts collected during the settlement and clearing function that will pass-through to market participants in subsequent periods. Pass-through fees due to others consist of amounts collected from market participants that will be paid to market participants for summer reliability, startup costs and emission costs. Generator interconnection study deposits are amounts collected for future studies. Nonrefundable deposits consist of interconnection amounts which are nonrefundable to project sponsors in accordance with tariff requirements.

4. Fixed Assets

Changes in the Company's fixed assets for the year ended December 31, 2018, are as follows (in thousands):

	2017	Additions and Transfers In	Disposals and Transfers Out	2018
Nondepreciable fixed assets				
Land	$ 10,561	$ -	$ -	$ 10,561
Work-in-progress	16,292	23,520	(22,960)	16,852
	26,853	23,520	(22,960)	27,413
Depreciable fixed assets				
Regional transmission operator software	406,984	19,328	(4,474)	421,838
Regional transmission operator hardware	28,539	3,000	(10,785)	20,754
Communication equipment	12,077	213	(1,457)	10,833
ISO Facilities (HQ and Lincoln)	161,365	152	-	161,517
Furniture, fixtures and other	15,646	267	(14)	15,899
	624,611	22,960	(16,730)	630,841
Less: Accumulated depreciation	(472,566)	(35,338)	16,730	(491,174)
	152,045	(12,378)	-	139,667
Total fixed assets, net	$ 178,898	$ 11,142	$ (22,960)	$ 167,080

Changes in the Company's fixed assets for the year ended December 31, 2017, are as follows (in thousands):

	2016	Additions and Transfers In	Disposals and Transfers Out	2017
Nondepreciable fixed assets				
Land	$ 10,552	$ 9	$ -	$ 10,561
Work-in-progress	13,513	19,493	(16,714)	16,292
	24,065	19,502	(16,714)	26,853
Depreciable fixed assets				
Regional transmission operator software	398,718	11,895	(3,629)	406,984
Regional transmission operator hardware	28,105	1,640	(1,206)	28,539
Communication equipment	10,816	1,513	(252)	12,077
ISO Facilities (HQ and Lincoln)	163,835	1,046	(3,516)	161,365
Furniture, fixtures and other	15,731	610	(695)	15,646
	617,205	16,704	(9,298)	624,611
Less: Accumulated depreciation	(454,099)	(27,765)	9,298	(472,566)
	163,106	(11,061)	-	152,045
Total fixed assets, net	$ 187,171	$ 8,441	$ (16,714)	$ 178,898

The Company capitalized interest related to the development of fixed assets of $0.2 million and $0.5 million for the years ending December 31, 2018 and 2017, respectively.

5. Generator Noncompliance Fines

In 2000 and 2001, the Company billed generator noncompliance fines to market participants, of which the Company collected $60.7 million. Generally, these fines were assessed at a rate corresponding to twice the highest price paid in the Company's markets for energy. Because the prices for this period are being adjusted as a result of the Federal Energy Regulatory Commission Refund Case, as described in Note 12, the amount of the fines to be retained by the Company is being reduced, with any surplus collections being refunded with interest to market participants. The Company accrues interest in accordance with rulings of the Federal Energy Regulatory Commission on the portion of fines collected in excess of the estimated realizable amount, which is to be refunded to market participants when the amounts are settled. The ultimate settlement of fines is expected after the conclusion of the proceedings in the Federal Energy Regulatory Commission Refund Case and the financial settlement of the California Power Exchange (Cal PX).

Based on estimates of the mitigated energy prices, the Company recorded fine revenues totaling $29.5 million as opposed to the $60.7 million collected, resulting in a refund liability of $31.2 million before interest. The Company reduced its refund liability (and associated interest obligation) by distributing funds to market participants that approximately equal its refund liability in connection with settlement agreements approved by the Federal Energy Regulatory Commission, including a distribution of $43.9 million in 2010.

Each year, the Company adjusts its estimated refund liability based on updated information it obtains related to interest and other factors that will serve to change the estimated amount of generator fine proceeds the Company will ultimately retain, which consequently modifies the generator fine collections that will be returned to market participants.

Based on estimates obtained in 2018 from parties involved in these proceedings and an updated estimate of the proportionate allocation of shortfalls to the Company in 2018, there was a decrease in the estimated liability of $0.4 million. As of December 31, 2018, the Company estimates the remaining liability (including interest) related to generator noncompliance fines to be $1.8 million.

There are significant uncertainties associated with the final settlement of generator noncompliance fines. While the estimated liability stated above is based on the best information available, adjustments are likely to occur in the future to the estimated liability associated with interest and other shortfalls that will be incurred by the Cal PX, and allocated to the Company in connection with final disposition of the funds and obligations arising from the events of 2000 and 2001.

6. Long-term Debt and Related Agreements

Long-term debt consists of the following at December 31 (in thousands):

	2018	2017
CIEDB Revenue Bonds, Series 2013 Fixed interest rates of 2.00% - 5.25% with maturities through 2039	$ 173,515	$ 178,280
Unamortized net premium Series 2013 bonds	7,243	7,857
Total long-term debt	180,758	186,137
Less: Current portion	(4,970)	(4,765)
Total long-term debt, net of current portion	$ 175,788	$ 181,372

Summarized activity of long-term debt for the year ended December 31, 2018, is as follows (in thousands):

	Beginning of Year	Payments	End of Year
CIEDB Revenue Bonds, Series 2013	$ 178,280	$ (4,765)	$ 173,515
Total long-term debt	$ 178,280	$ (4,765)	$ 173,515

Summarized activity of long-term debt for the year ended December 31, 2017, is as follows (in thousands):

	Beginning of Year	Payments	End of Year
CIEDB Revenue Bonds, Series 2013	$ 182,905	$ (4,625)	$ 178,280
Total long-term debt	$ 182,905	$ (4,625)	$ 178,280

Scheduled future debt service payments for these bonds as of December 31, 2018, are as follows (in thousands):

	Principal	Interest	Total
2019	$ 4,970	$ 8,456	$ 13,426
2020	5,165	8,242	13,407
2021	5,395	8,005	13,400
2022	5,640	7,760	13,400
2023	5,885	7,489	13,374
2024 – 2039	146,460	66,209	212,669
Total debt service payments	$ 173,515	$ 106,161	$ 279,676

The Series 2013 bonds are supported by a pledge of the Company's revenues and operating reserves. In addition, the bonds are supported by a deed of trust on the Company's headquarters building and land.

Interest expense recorded by the Company related to long-term debt includes interest paid on the bonds (net of interest capitalized to fixed assets) and amortization of the bond premium.

7. Supplemental Disclosure of Derivative Financial Instruments – Congestion Revenue Rights ("CRRs")

As described in Note 2, the Company is the central counterparty to market participant transactions which includes CRRs. CRRs are financial instruments that enable market participants to reduce their congestion-related price risk when delivering or selling energy on the grid. A CRR provides an economic hedging mechanism against congestion charges that can be transacted by market participants separately from transmission service. These instruments are considered derivative financial instruments for accounting purposes, which would require presentation at fair value if they were recognized as assets and liabilities of the Company.

Consistent with its role in facilitating other market transactions, the Company facilitates the allocation, auctioning and ultimate settlement of CRRs in its market, but does not have economic risks and rewards associated with these financial instruments. Any market defaults are allocated to market participants. As such, they are not recognized as assets and liabilities in the Company's Statements of Net Position. However, unlike other market transactions administered by the Company, CRRs can be outstanding for extended periods of time. At December 31, 2018, the average life of the Company's CRRs was 3.9 years and there were a total of 100 CRR holders, compared to 4.0 years and 102 CRR holders at December 31, 2017. The estimated net fair value of both the CRR assets and liabilities as of December 31, 2018 was $940.5 million related to a total of 610,212 megawatts, which vary in length from one month to several years. This is compared to $555.5 million related to a total of 929,488 megawatts at December 31, 2017. The value of each megawatt of CRR is a function of numerous factors including the length of period the CRR covers.

While these amounts are not presented in the Statements of Net Position, their estimated net fair value is disclosed for informational purposes given their longer term nature. Their fair value was determined based on several factors including actual auction prices transacted in the most recent annual and monthly auction processes, the Company's models which calculate the estimated value of all transmission constraints, net present value discounting and other factors. In addition to the high level of uncertainty associated with these inputs to the valuation calculation model, changes to actual or anticipated flows and constraints on the transmission system managed by the Company or in the value of electricity flowing on the transmission system create volatility that can significantly affect CRR values. Changes in generation, load, weather, and transmission outages are other factors that can have immediate and significant impact on CRR values.

The following is a summary of CRR megawatts, by type, outstanding at December 31, 2018:

Type (in Megawatts)	
Monthly (January 2019)	32,025
Annual (February - December 2019)	250,347
Long Term (January 2019 - December 2028)	327,840
Total CRRs (Megawatts)	610,212

The following is a summary of CRR megawatts, by type, outstanding at December 31, 2017:

Type (in Megawatts)	
Monthly (January 2018)	68,505
Annual (February - December 2018)	532,872
Long Term (January 2018 - December 2027)	328,111
Total CRRs (Megawatts)	929,488

8. Fair Value of Financial Instruments

Accounting guidance for fair value measurement requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard establishes a three-tier fair value hierarchy based on the level of independent, objective evidence surrounding the inputs used to measure fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The fair value hierarchy is as follows:

Level 1 Applies to assets or liabilities for which there are quoted prices in active markets that are accessible at the measurement date for identical unrestricted assets or liabilities.

Level 2 Applies to assets or liabilities for which there are inputs other than quoted prices that are observable for the asset or liability such as quoted prices for similar assets or liabilities in active markets; quoted prices for identical assets or liabilities in markets with insufficient volume or infrequent transactions (less active markets); or model-derived valuations in which significant inputs and significant value drivers are observable or can be derived principally from, or corroborated by, observable market data.

Level 3 Applies to assets or liabilities for which there are unobservable inputs to the valuation methodology that are significant to the measurement of the fair value of the assets or liabilities.

The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and considers factors specific to the asset or liability. Financial assets and liabilities are classified in their entirety based on the level of input that is considered most significant to the fair value measurement.

The Company's assets measured at fair value on a recurring basis at December 31, 2018, were as follows (in thousands):

	Total	Level 1	Level 2	Level 3
Cash:	$ 30,384	$ -	$ -	$ -
Cash equivalents:				
Money market funds	294,517	294,517		
Short-term investments:				
Publicly traded mutual funds	15,167	15,167		
U.S. Treasury securities	20,892		20,892	
U.S. government agency securities	8,421		8,421	
Negotiable certificates of deposit	15,661		15,661	
Corporate debt securities	9,786		9,786	
Long-term investments:				
U.S. Treasury securities	39,723		39,723	
U.S. government agency securities	22,248		22,248	
Negotiable certificates of deposit	46,078		46,078	
Corporate debt securities	17,869		17,869	
Publicly traded mutual funds	33,057	33,057		
Captive insurance investment	37			37
Total cash, cash equivalents and investments	$ 553,840	$ 342,741	$ 180,678	$ 37

The Company's assets measured at fair value on a recurring basis at December 31, 2017, were as follows (in thousands):

	Total	Level 1	Level 2	Level 3
Cash:	$ 11,837	$ -	$ -	$ -
Cash equivalents:				
Money market funds	320,930	320,930		
Short-term investments:				
U.S. Treasury securities	10,963		10,963	
U.S. government agency securities	12,997		12,997	
Negotiable certificates of deposit	16,362		16,362	
Corporate debt securities	8,728		8,728	
Long-term investments:				
U.S. Treasury securities	28,679		28,679	
U.S. government agency securities	28,738		28,738	
Negotiable certificates of deposit	47,184		47,184	
Corporate debt securities	29,079		29,079	
Publicly traded mutual funds	9,564	9,564		
Captive insurance investment	37			37
Total cash, cash equivalents and investments	$ 525,098	$ 330,494	$ 182,730	$ 37

Level 1 money market funds and publicly traded mutual funds are determined by using quoted prices in active markets. Level 2 fixed income securities are priced using quoted market prices for similar instruments or nonbinding market prices that are corroborated by observable market data. Level 3 assets are nonnegotiable instruments which require the use of unobservable inputs in determining fair value.

The fair value of the employee retirement plan trust accounts at December 31, 2018 and 2017 was $3.9 million and $3.3 million, respectively. These accounts are invested in cash equivalents and publicly traded mutual funds and are classified as Level 1 assets.

The fair value of the Company's long-term debt as of December 31, 2018 and 2017 was $190.0 million and $199.8 million respectively. The fair value of fixed rate long-term debt, which includes the short-term portion, is based on current market quotes which are classified as a Level 2 on the fair value hierarchy at both December 31, 2018 and 2017.

The carrying values reported in the balance sheet for current assets and liabilities, excluding amounts discussed above, approximate fair value.

Additionally, the Company had $10.4 million and $11.0 million at December 31, 2018 and 2017, respectively, in trust related to the post-employment medical benefit plan (see Note 9). At December 31, 2018 and 2017, these trust assets consist primarily of mutual funds and are classified as Level 1 within the fair value hierarchy.

9. Employee Benefit Plans

The Company maintains a number of employee benefit plans. A description of the plans and key provisions is included below. Obligations included in the Company's Statements of Net Position related to these plans consist of the following at December 31 (in thousands):

	2018	2017
Post-employment medical benefit plan	$ 15,164	$ 13,874
Executive pension restoration plan	2,709	2,294
Executive savings plan	1,194	1,050
Total employee retirement plan obligations	$ 19,067	$ 17,218

Post-Employment Medical Benefit Plan
Plan Description
The Company sponsors the California ISO Retirees Medical Plan, a single employer defined benefit plan, to provide post-employment health care benefits to all eligible employees who retire from the Company and meet certain eligibility requirements. The plan was amended in November 2018 effective January 1, 2019. As of January 1, 2019, the plan is closed to new hires and rehires. Additionally, eligibility for retirement was changed to age 55 with at least 10 years of continuous service, whose combined age and years of continuous service equals or exceeds 70. For employees born after January 1, 1969, pre-65 spousal coverage ends on the participants' 75th birth date. Post-65 spousal coverage is unchanged; a spouse who is removed from pre-65 coverage may obtain coverage once they reach age 65.

Depending on years of service, the Company pays between 60% and 70% of the premiums on the coverage elections made by the beneficiaries not to exceed $8,000 per year for individual retiree coverage and $16,000 per year for retiree plus spouse and/or dependent. Plan benefits are available to eligible retirees and to their spouses, domestic partners and eligible dependents, as provided for under the terms of the plan. Current plan coverage extends for the lifetime of the participants and their beneficiaries, except for dependents, which generally terminates at age 26.

The Plan provides a monthly amount per post-65 retiree and eligible post-65 dependents towards the cost of enrolling in any of the Medicare supplemental programs, and at the Company's discretion, may increase the allowance annually. Supplemental program costs in excess of the provided monthly amount are the responsibility of the retirees and or dependents.

There are 552 active employees of which, 91 are fully eligible to retire and 68 retirees, eligible to receive benefits pursuant to the plan as of December 31, 2018.

Funding and Investment Policy

The Company has established a trust for the purposes of funding the plan. The trust was established as a tax-exempt voluntary employees' beneficiary association. All assets of the trust are to be used for the exclusive benefit of the participants and beneficiaries of the plan. Although the Company has fiscal accountability for these assets and holds them in a fiduciary capacity, the assets are not considered assets of the Company and are therefore not included in the Statements of Net Position of the Company. As of December 31, 2018 and 2017, the trust assets were $10.4 million and $11.0 million, respectively. The Plan issues audited trust financial statements annually, which are available upon request.

The Company's current funding policy is to annually contribute an amount such that the total amount in the trust approximates the actuarially determined liability attributable to retirees and their spouses and to active participants who are fully eligible to retire. Based on this current funding policy, the trust was fully funded at December 31, 2018. The Company does not provide funding into the trust related to future obligations associated with employees who have not become eligible to retire, although, as part of its rate structure, the Company collects annual amounts associated with future other post-employment benefit ("OPEB") obligations for all employees. As a result, assets equivalent to the actuarially determined liability attributable to employees not yet eligible to retire are segregated in a separate custody account. The amounts are adjusted annually to match the current actuarially determined liability. These segregated assets are reported in the Company's Statements of Net Position.

The assets of both the trust and the Company's segregated funds are invested in accordance with the Board approved California ISO Retirees Medical Plan Investment Policy. In general, the assets are invested in a mix of equity and fixed income mutual funds.

The Company also currently funds disbursements for the employer portion of the premiums on the coverage elections made by the pre-65 beneficiaries, their spouse and, if any, dependents, and the monthly contributions to the post-65 retirees and their post-65 dependents from the segregated funds.

Net OPEB Liability ("NOL")

The Company's annual OPEB liabilities as of December 31, 2018 and 2017, respectively, was determined by an actuarial valuation as of those dates.

Actuarial Methods and Assumptions

The total OPEB liability in the December 31, 2018 and 2017 actuarial valuations were determined using actuarial assumptions, applied to all respective periods included in the measurement. The following significant actuarial methods and assumptions were used in the calculation.

	2018	**2017**
Discount Rate	6.00%	5.90%
Expected Long-term Rate of Return on Plan Assets	6.00%	5.90%
Rate of Compensation Increase	3.00%	3.00%
Current Health Care Cost Trend Rate	6.33%	6.67%
Ultimate Health Care Cost Trend Rate	5.00%	5.00%
Year of Ultimate Trend Rate	2023	2023

Mortality rates were based using separate rates for non-annuitants (based on RP-2014 "Employees" table without collar or amount adjustments with scale MP-2014 projections removed back to 2006, projected generationally using Scale MP-2017) and annuitants (based on RP-2014 "Healthy Annuitants" table without collar or amount adjustments with scale MP-2014 projections removed back to 2006, projected generationally using Scale MP-2017).

The expected long term return on assets assumption reflects the Company's estimate of future experience for the trust asset returns reflecting the Plan's current asset allocation and any expected changes during the current plan year, current market conditions and the Company's expectations for future market conditions. The long-term rate of return was determined using a building-block method in which best estimate ranges of expected investment rates of return over the next 20 years are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighing the expected future real rates of return by the current asset allocation percentage. The current asset allocation and best estimates of the rates of return for each major asset class are summarized in the following table.

Asset Class	**Asset Allocation**	**Long-Term Expected Rate of Return**
International stocks	25.1 %	7.25 %
BarCap aggregate funds	27.2	4.00
Large-cap stocks	18.5	7.25
10-year TIPS	10.2	3.62
Cash equivalents	11.7	3.37
Small cap stocks	3.7	6.86
Mid-cap stocks	3.6	7.25
Total	100 %	

The expected long term return on assets is also used as the discount rate for all periods of projected benefit payments to determine the total OPEB liability since the Company's contributions to the Plan are made at rates equal to the actuarially determined contribution rates. Additionally, the Plan's fiduciary net position is projected to be available to make all projected OPEB payments for all current and future retirees.

The actuarial assumptions employed in the development of the OPEB liability and other financial reporting have been selected in accordance with the Actuarial Standards of Practice, which required that each significant assumption is appropriate for the purpose of the measurement; takes into account historical and current economic data that is relevant as of the measurement date; reflects expected future experience and has no significant bias (i.e., it is not significantly optimistic or pessimistic).

OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB

The Company's annual OPEB expenses at December 31, 2018 and 2017 are as follows (in thousands):

	2018	2017
OPEB Expense		
Service cost	$ 1,366	$ 1,369
Interest cost	1,525	1,470
Changes in benefit terms	3,634	-
Differences between expected and actual experience	(81)	71
Changes in assumptions	(294)	131
Expected return on assets	(652)	(562)
Differences between expected and actual return on assets	72	(193)
Annual OPEB expense	$ 5,570	$ 2,286

For the year ended December 31, 2018, the Company reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources (in thousands):

	Outflows	Inflows
Differences between expected and actual experience	$ 1,045,285	$ (1,901,018)
Changes in assumptions	905,537	(3,448,613)
Net difference between projected and actual earnings on OPEB investments	484,003	-

Amounts reported as of December 31, 2018 as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

	Amount
During fiscal year ending 12/31/2019	$ (302,360)
During fiscal year ending 12/31/2020	(302,360)
During fiscal year ending 12/31/2021	(301,747)
During fiscal year ending 12/31/2022	(109,778)
During fiscal year ending 12/31/2023	(375,062)
During fiscal year ending after 12/31/2024	(1,523,499)

The following table presents the sensitivity of the net OPEB liability to changes in the discount rate and health care cost trend rates if it was separately calculated using a 1% lower or 1% higher than the current discount rate or health cate cost trend rate.

	2018	2017	2016
Change in NOL with 1.0% increase in discount rate	$ (3,383)	$ (3,381)	$ (3,313)
Change in NOL with 1.0% decrease in discount rate	4,232	4,228	4,156
Change in NOL with 1.0% increase in health care trend rates	301	365	374
Change in NOL with 1.0% decrease in health care trend rates	(290)	(343)	(355)

Required Supplementary Information (Unaudited)
Schedule of Changes in the Net OPEB Liability and Related Ratios

The schedule below presents the Company's total OPEB liability, the plan fiduciary position, net OPEB liability and related ratios (dollars in thousands):

	2018	2017	2016
Total OPEB liability ("TOL")			
Service cost	$ 1,366	$ 1,369	$ 1,166
Interest cost	1,525	1,470	1,175
Changes in benefit terms	3,634	-	-
Differences between expected and actual experience	(1,326)	(951)	1,593
Changes in assumptions	(3,699)	(228)	1,380
Benefit payments	(883)	(587)	(426)
Net change in TOL	617	1,073	4,888
TOL - beginning	24,920	23,847	18,959
TOL - ending	25,537	24,920	23,847
Plan fiduciary net position ("PFNP")			
Employer contributions	841	384	269
Net investment income	(675)	1,522	534
Benefit payment	(883)	(587)	(426)
Active subsidy	42	204	157
Net change in PFNP	(675)	1,523	534
PFNP - beginning	11,048	9,525	8,991
PFNP - ending	10,373	11,048	9,525
Net OPEB liability	$ 15,164	$ 13,872	$ 14,322
PFNP as a percentage of TOL	40.62%	44.33%	39.94%
Covered-employee payroll	$ 72,478	$ 69,960	$ 68,984
NOL as a percentage of covered-employee payroll	20.92%	19.83%	20.76%

Schedule of Employer Contributions to the OPEB Plan

The schedule below reflects the Company's contributions relative to the actuarially determined contributions for the plan (dollars in thousands):

	2018	2017	2016
Actuarially determined contribution	$ -	$ 619	$ -
Contribution in relation to the actuarially determined contribution	841	384	269
Contribution deficiency (excess)	$ (841)	$ 235	$ (269)
Covered-employee payroll	$ 72,478	$ 69,960	$ 68,984
Contribution as a percentage of covered-employee payroll	1.2%	0.5%	0.4%

Notes to Schedule

Valuation date:
Actuarially determined contribution rates are calculated as of December 31

Methods and assumptions used to determine contibution rates:

Actuarial cost method:	Entry age normal
Amortization period	Average future service for all participants as of 1/1/2019, where inactive participants are assumed to have zero average future service.
Asset valuation method	Investments in the trust fund are valued on the basis of their fair market value
Inflation	2.5%
Salary increases	3.0%, average, including inflation
Termination and retirement age	The termination and retirement rates have been updated to reflect current experience

Executive Pension Restoration Plan
The Company sponsors the Executive Pension Restoration Plan, a nonqualified defined contribution plan, which allows certain officers of the Company to make contributions and receive Company contributions in excess of the 401(k) contribution limits set forth by IRS regulations as described in the retirement savings benefits plan below.

The contributions and earnings thereon are held in a trust and the balances as of December 31, 2018 and 2017, were $2.7 million and $2.3 million, respectively, and are included in Other Assets with a corresponding liability in Employee Retirement Plan Obligations. In connection with this plan, the Company recognized expenses for contributions of $240,000 and $215,000 in 2018 and 2017, respectively.

Executive Savings Plan
The Company sponsors the Executive Savings Plan, a nonqualified defined contribution plan under section 457(b) of the IRS Code. The Company contributes a percentage of each officer's annual base compensation to the plan. Officers may elect to make voluntary contributions, subject to statutory limitations. The contributions and earnings thereon are held in a trust and the balance as of December 31, 2018 and 2017 was $1.2 million and $1.0 million, respectively, and are included in Other Assets, with a corresponding liability in Employee Retirement Plan Obligations. In connection with this plan, the Company recognized expenses of $153,700 and $138,000 in 2018 and 2017, respectively.

Retirement Savings Benefits Plan
The Company sponsors a defined contribution retirement plan, the California ISO Retirement Savings Benefits Plan (the "Retirement Plan") that is subject to the provisions of the Employee Retirement Income Security Act of 1974 and covers substantially all employees. The Retirement Plan is administered by the Company with the assistance of a third party. The assets of the plan are held separately from Company assets and are not combined with the assets in the Statements of Net Position.

Employees may elect to contribute up to fifty percent of their eligible compensation to the Retirement Plan, subject to statutory limitations. The Company matches contributions up to six percent of an employees' eligible compensation and an additional contribution equal to five percent of eligible compensation for employees with less than five years of service, or seven percent for employees who have at least five years but not more than ten years of service. An additional contribution of one percent of eligible compensation is also made by the Company for each five year increment of service after an employees' ten year anniversary.

Employee contributions to the Retirement Plan for 2018 and 2017 were $9.3 million and $8.6 million, respectively. The Company contributions to the Retirement Plan for 2018 and 2017 were $9.9 million and $9.7 million, respectively.

10. Insurance Programs and Claims

The Company is exposed to various risks of loss related to torts; theft, damage to, and destruction of assets; errors and omissions; nonperformance of duty; injuries to employees; and natural disasters. The Company maintains various commercial and mutual insurance plans that provide coverage for most claims in excess of specific dollar thresholds. Primary insurance policies have coverage limits set based on the Company's assessment of reasonable exposure within that risk category, with consideration of insurance types and coverage limits for comparable entities. Additionally, the Company maintains excess liability coverage that provides umbrella coverage for certain exposures. Losses incurred below insurance deductibles are expensed as incurred. In the last three years, the Company did not incur any claims in excess of the coverage described above.

The Company is a participant in a group captive insurance company for workers compensation insurance coverage. The Company's annual net insurance costs for such coverage vary based on claims incurred at the Company, and to a lesser extent, claims activity of other members of the captive insurance company. The Company's annual insurance expense is limited through reinsurance and risk sharing arrangements of the captive to an additional percentage of the initial base premium paid.

11. Lease Commitments

The Company has long-term operating leases that expire at various times through 2031.

The following are the future minimum payments under these agreements as of December 31, 2018 (in thousands):

2019	$	190
2020		195
2021		199
2022		203
2023–2031		1,796
Total lease commitments	$	2,583

The Company leased office space in Alhambra, which previously served as the backup operations center prior to the relocation, in December 2016, to the facility in Lincoln. The lease expired in August 2017. Although the Company was no longer using the leased space, the Company was required to pay monthly rent through August 2017, and other on-going costs associated with the lease. Lease costs of approximately $0.2 million were charged to operating expense in 2018 and 2017, respectively.

12. Contingencies

The Federal Energy Regulatory Commission Refund Case

In 2000 and 2001, the California energy markets, including those managed by the Company, experienced high prices, shortages of energy and reserves, rolling blackouts and liquidity problems for many market participants. Some market participants, including the California Power Exchange (Cal PX), filed for bankruptcy.

Purchasers of energy during this period sought refunds at the Federal Energy Regulatory Commission. In a proceeding that is still ongoing, the Federal Energy Regulatory Commission has issued a series of orders related to mitigating the clearing prices in markets administered by the Company and the Cal PX for the period from October 2, 2000 through June 20, 2001. Several of the Company's market participants have settled their liability arising from this case and related proceedings. Management believes the ultimate outcome of the proceeding will have no material financial impact on the Company as these refund amounts are funded and will ultimately be resettled among market participants, except for the Generator Noncompliance Fines, as described in Note 5.

Market Billing Disputes in Good Faith Negotiations
As part of the tariff and applicable contracts, the Company has dispute resolution processes for market participants to register disagreements regarding information reflected in the settlement statements or billing amounts for market activity.

Market disputes are addressed in the normal course of operations, some of which result in adjustments to previously issued settlement statements. When adjustments are made, the adjustment amounts are reallocated to market participants, with no net cost or credit being realized by the Company. With respect to pending market disputes at December 31, 2018, including those that have escalated to good faith negotiations, management believes that any settlements or market awards would be resettled against the market with no liability to the Company.

Indemnifications
The Company's bylaws require its annual financial statements to include disclosures about certain payments made by the Company related to indemnification of officers and Board members. There were no such payments in 2018 or 2017.

Other Matters
The Company, during the ordinary course of its operations, has been involved in various lawsuits and claims. In addition, the Company is subject to compliance with mandatory reliability standards promulgated by the North American Electric Reliability Corporation and approved by the Federal Energy Regulatory Commission, which if violated could result in penalties assessed to the Company.

There are currently some pending claims against the Company as well as matters related to alleged violations of the mandatory reliability standards. Management is of the opinion that none of these matters will have a material adverse impact on the financial position or results of the operations of the Company.

13. Subsequent Events

The Company evaluates events or transactions that occur after December 31, 2018, but before financial statements are issued for potential recognition or disclosure in the financial statements. The Company has evaluated all subsequent events through April 17, 2019, the date the financial statements were issued, and notes the event below.

On January 29, 2019, Pacific Gas & Electric, Corp. (PG&E), one of the Company's largest customers, filed for bankruptcy reorganization. During these proceedings, PG&E is continuing business operations as normal with the support of $5.5 billion of new financing under arrangements approved by the bankruptcy court. PG&E has paid all market invoices in full and on time, including invoices for pre-petition activity and the Grid Management Charge due to the Company. The Company does not believe there is a risk to its Grid Management Charge even if PG&E were to default on these invoices, because the Company has a priority claim on all market revenue as explained in Note 1.