UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-Q

(Mark One)

☑ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2017.

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to .

Commission file no. 001-13831

Quanta Services, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**74-2851603**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

2800 Post Oak Boulevard, Suite 2600
Houston, Texas 77056
(Address of principal executive offices, including zip code)

(713) 629-7600
(Registrant's telephone number, including area code)

N/A
(Former name, former address and former fiscal year, if changed since last report)

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐
		Emerging growth company	☐

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of May 3, 2017, the number of outstanding shares of Common Stock of the Registrant was 148,111,606. As of the same date, 3,500,000 exchangeable shares of a Canadian subsidiary of the Registrant associated with one share of Series F Preferred Stock of the Registrant were outstanding, 449,929 exchangeable shares of a Canadian subsidiary of the Registrant associated with one share of Series G Preferred Stock of the Registrant were outstanding and an additional 36,183 exchangeable shares of certain other Canadian subsidiaries of the Registrant were outstanding.

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PART I — FINANCIAL INFORMATION

Item 1. ***Financial Statements.***

QUANTA SERVICES, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands, except share information)
(Unaudited)

	March 31, 2017	December 31, 2016
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 106,514	$ 112,183
Accounts receivable, net of allowances of $5,008 and $2,752	1,589,257	1,500,115
Costs and estimated earnings in excess of billings on uncompleted contracts	556,527	473,308
Inventories	89,973	88,548
Prepaid expenses and other current assets	132,642	114,591
Total current assets	2,474,913	2,288,745
Property and equipment, net of accumulated depreciation of $894,093 and $862,825	1,161,603	1,174,094
Other assets, net	116,219	101,028
Other intangible assets, net of accumulated amortization of $305,140 and $297,313	181,934	187,023
Goodwill	1,608,384	1,603,169
Total assets	$ 5,543,053	$ 5,354,059
LIABILITIES AND EQUITY		
Current Liabilities:		
Current maturities of long-term debt and short-term debt	$ 3,990	$ 7,563
Accounts payable and accrued expenses	995,914	922,819
Billings in excess of costs and estimated earnings on uncompleted contracts	264,834	274,846
Total current liabilities	1,264,738	1,205,228
Long-term debt and notes payable, net of current maturities	419,310	353,562
Deferred income taxes	197,712	192,834
Insurance and other non-current liabilities	262,482	259,733
Total liabilities	2,144,242	2,011,357
Commitments and Contingencies		
Equity:		
Common stock, $.00001 par value, 600,000,000 shares authorized, 148,560,886 and 144,710,773 shares issued, and 148,109,496 and 144,710,773 shares outstanding	1	1
Exchangeable Shares, no par value, 3,986,112 and 6,515,453 shares issued and outstanding	—	—
Series F Preferred Stock, $.00001 par value, 1 share authorized, issued and outstanding	—	—
Series G Preferred Stock, $.00001 par value, 1 share authorized, issued and outstanding	—	—
Additional paid-in capital	1,764,374	1,749,306
Retained earnings	1,924,348	1,876,081
Accumulated other comprehensive loss	(257,852)	(271,673)
Treasury stock, 451,390 and 0 common shares	(34,528)	(14,288)
Total stockholders' equity	3,396,343	3,339,427
Non-controlling interests	2,468	3,275
Total equity	3,398,811	3,342,702
Total liabilities and equity	$ 5,543,053	$ 5,354,059

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

QUANTA SERVICES, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share information)
(Unaudited)

	Three Months Ended March 31,	
	2017	2016
Revenues	$ 2,178,170	$ 1,713,737
Cost of services (including depreciation)	1,911,982	1,510,424
Gross profit	266,188	203,313
Selling, general and administrative expenses	184,552	158,524
Amortization of intangible assets	6,562	7,495
Operating income	75,074	37,294
Interest expense	(3,965)	(3,589)
Interest income	287	516
Equity in losses of unconsolidated affiliates	(603)	(181)
Other income (expense), net	239	262
Income before income taxes	71,032	34,302
Provision for income taxes	22,592	13,443
Net income	48,440	20,859
Less: Net income attributable to non-controlling interests	173	363
Net income attributable to common stock	$ 48,267	$ 20,496
Earnings per share attributable to common stock — basic and diluted	$ 0.31	$ 0.13
Shares used in computing earnings per share attributable to common stock:		
Weighted average basic shares outstanding	155,168	162,803
Weighted average diluted shares outstanding	155,168	162,806

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

QUANTA SERVICES, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2017	2016
Net income	$48,440	$20,859
Other comprehensive income, net of tax provision:		
Foreign currency translation adjustment, net of tax of $0 and $0	13,821	60,586
Other comprehensive income	13,821	60,586
Comprehensive income	62,261	81,445
Less: Comprehensive income attributable to non-controlling interests	173	363
Total comprehensive income attributable to Quanta stockholders	$62,088	$81,082

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

QUANTA SERVICES, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2017	2016
Cash Flows from Operating Activities of Continuing Operations:		
Net income	$ 48,440	$ 20,859
Adjustments to reconcile net income to net cash provided by (used in) operating activities of continuing operations—		
Depreciation	42,693	41,170
Amortization of intangible assets	6,562	7,495
Equity in losses of unconsolidated affiliates	603	181
Amortization of debt issuance costs	340	340
(Gain) loss on sale of property and equipment	1,841	(107)
Foreign currency loss	221	110
Provision for (recovery of) doubtful accounts	865	(983)
Deferred income tax provision (benefit)	(36)	2,716
Non-cash stock-based compensation	11,866	13,719
Changes in operating assets and liabilities, net of non-cash transactions	(117,206)	120,311
Net cash provided by (used in) operating activities of continuing operations	(3,811)	205,811
Cash Flows from Investing Activities of Continuing Operations:		
Proceeds from sale of property and equipment	4,801	5,089
Additions of property and equipment	(47,024)	(47,695)
Cash paid for acquisitions, net of cash acquired	(1,527)	(39,675)
Investments in and return of equity from unconsolidated affiliates	(3,725)	(2,225)
Cash received from (paid for) other investments, net	(1,701)	577
Cash withdrawn from restricted cash	1,912	—
Net cash used in investing activities of continuing operations	(47,264)	(83,929)
Cash Flows from Financing Activities of Continuing Operations:		
Borrowings under credit facility	697,211	654,416
Payments under credit facility	(631,441)	(729,603)
Payments on other long-term debt	(1,529)	(4,855)
Payments on short-term debt	(2,783)	(4,711)
Distributions to non-controlling interests	(980)	—
Payments related to tax withholding for share-based compensation	(16,192)	(6,072)
Exercise of stock options	25	51
Net cash provided by (used in) financing activities of continuing operations	44,311	(90,774)
Discontinued operations:		
Net cash used in investing activities	—	(5,643)
Net cash used in discontinued operations	—	(5,643)
Effect of foreign exchange rate changes on cash and cash equivalents	1,095	1,079
Net increase (decrease) in cash and cash equivalents	(5,669)	26,544
Cash and cash equivalents, beginning of period	112,183	128,771
Cash and cash equivalents, end of period	$ 106,514	$ 155,315

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

QUANTA SERVICES, INC. AND SUBSIDIARIES

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. BUSINESS AND ORGANIZATION:

Quanta Services, Inc. (Quanta) is a leading provider of specialty contracting services, offering infrastructure solutions primarily to the electric power, oil and gas and communications industries in the United States, Canada and Australia and select other international markets. Quanta reports its results under two reportable segments: (1) Electric Power Infrastructure Services and (2) Oil and Gas Infrastructure Services.

Electric Power Infrastructure Services Segment

The Electric Power Infrastructure Services segment provides comprehensive network solutions to customers in the electric power industry. Services performed by the Electric Power Infrastructure Services segment generally include the design, installation, upgrade, repair and maintenance of electric power transmission and distribution infrastructure and substation facilities along with other engineering and technical services. This segment also provides emergency restoration services, including the repair of infrastructure damaged by inclement weather, the energized installation, maintenance and upgrade of electric power infrastructure utilizing unique bare hand and hot stick methods and Quanta's proprietary robotic arm technologies, and the installation of "smart grid" technologies on electric power networks. In addition, this segment designs, installs and maintains renewable energy generation facilities, consisting of solar, wind and certain types of natural gas generation facilities, and related switchyards and transmission infrastructure. To a lesser extent, the segment also provides comprehensive communications infrastructure services to wireline, fiber and wireless carrier customers within the communications industry, and services in connection with the construction of electric power generation facilities, the design, installation, maintenance and repair of commercial and industrial wiring, and the installation of traffic networks and cable and control systems for light rail lines.

Oil and Gas Infrastructure Services Segment

The Oil and Gas Infrastructure Services segment provides comprehensive network solutions to customers involved in the development and transportation of natural gas, oil and other pipeline products. Services performed by the Oil and Gas Infrastructure Services segment generally include the design, installation, repair and maintenance of pipeline transmission and distribution systems, gathering systems, production systems, storage systems and compressor and pump stations, as well as related trenching, directional boring and mechanized welding services. In addition, this segment's services include pipeline protection, integrity testing, rehabilitation and replacement, and fabrication of pipeline support systems and related structures and facilities. Quanta also serves the offshore and inland water energy markets, primarily providing services to oil and gas exploration platforms, including mechanical installation (or "hook-ups"), electrical and instrumentation, pre-commissioning and commissioning, coatings, fabrication and marine asset repair. To a lesser extent, this segment designs, installs and maintains fueling systems, as well as water and sewer infrastructure.

Acquisitions

During 2016, Quanta completed five acquisitions. The results of four of the acquired companies are generally included in Quanta's Electric Power Infrastructure Services segment. These companies included an electrical infrastructure services company located in Australia, a utility contracting company located in Canada, a full service medium- and high-voltage powerline contracting company located in the United States and a telecommunications company located in Canada. Quanta also acquired a pipeline service contractor located in the United States, the results of which are generally included in Quanta's Oil and Gas Infrastructure Services segment. As these transactions were effective during 2016, the results have been included in Quanta's consolidated financial statements beginning on the respective dates of acquisition. These acquisitions should enable Quanta to further enhance its service offerings in the United States, Australia and Canada.

QUANTA SERVICES, INC. AND SUBSIDIARIES

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — *(Continued)*
(Unaudited)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

Principles of Consolidation

The consolidated financial statements of Quanta include the accounts of Quanta Services, Inc. and its wholly owned subsidiaries, which are also referred to as its operating units. The consolidated financial statements also include the accounts of certain of Quanta's investments in joint ventures, which are either consolidated or proportionately consolidated, as discussed in the following summary of significant accounting policies. Investments in affiliated entities in which Quanta does not have a controlling financial interest, but over which Quanta has significant influence, usually because Quanta holds a voting interest of between 20% and 50%, are accounted for using the equity method. All significant intercompany accounts and transactions have been eliminated in consolidation. Unless the context requires otherwise, references to Quanta include Quanta Services, Inc. and its consolidated subsidiaries.

Interim Condensed Consolidated Financial Information

These unaudited condensed consolidated financial statements have been prepared pursuant to the rules of the Securities and Exchange Commission (SEC). Certain information and footnote disclosures, normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States (US GAAP), have been condensed or omitted pursuant to those rules and regulations. Quanta believes that the disclosures made are adequate to make the information presented not misleading. In the opinion of management, all adjustments, consisting only of normal recurring adjustments, necessary to fairly state the financial position, results of operations, comprehensive income and cash flows with respect to the interim condensed consolidated financial statements have been included. The results of operations and comprehensive income for the interim periods are not necessarily indicative of the results for the entire fiscal year. The results of Quanta have historically been subject to significant seasonal fluctuations.

Quanta recommends that these unaudited condensed consolidated financial statements be read in conjunction with the audited consolidated financial statements and notes thereto of Quanta and its subsidiaries included in Quanta's Annual Report on Form 10-K for the year ended December 31, 2016, which was filed with the SEC on March 1, 2017.

Reclassifications

Quanta reclassified certain prior period amounts related to stock-based compensation on the statement of cash flows to conform to the current period presentation under a recently adopted accounting update.

Use of Estimates and Assumptions

The preparation of financial statements in conformity with US GAAP requires the use of estimates and assumptions by management in determining the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities known to exist as of the date the financial statements are published, and the reported amounts of revenues and expenses recognized during the periods presented. Quanta reviews all significant estimates affecting its consolidated financial statements on a recurring basis and records the effect of any necessary adjustments prior to their publication. Judgments and estimates are based on Quanta's beliefs and assumptions derived from information available at the time such judgments and estimates are made. Uncertainties with respect to such estimates and assumptions are inherent in the preparation of financial statements. Estimates are primarily used in Quanta's assessment of the allowance for doubtful accounts,

valuation of inventory, useful lives of assets, fair value assumptions in analyzing goodwill, other intangibles and long-lived asset impairments, equity and other investments, loan receivables, purchase price allocations, liabilities for self-insured and other claims and guarantees, multiemployer pension plan withdrawal liabilities, revenue recognition for construction contracts inclusive of contractual change orders and claims, share-based compensation, operating results of reportable segments, as well as the provision for income taxes and the calculation of uncertain tax positions.

Cash and Cash Equivalents

Quanta had cash and cash equivalents of $106.5 million and $112.2 million as of March 31, 2017 and December 31, 2016. Cash consisting of interest-bearing demand deposits is carried at cost, which approximates fair value. Quanta considers all highly liquid investments with an original maturity of three months or less at the time of purchase to be cash equivalents, which are carried at fair value. At March 31, 2017 and December 31, 2016, cash equivalents were $8.1 million and $8.8 million, and consisted primarily of money market investments and money market mutual funds and are discussed further in *Fair Value Measurements* below. As of March 31, 2017 and December 31, 2016, cash and cash equivalents held in domestic bank accounts were $17.5 million and $19.5 million, and cash and cash equivalents held in foreign bank accounts were $89.0 million and $92.7 million. As of March 31, 2017 and December 31, 2016, cash and cash equivalents held by Quanta's investments in joint ventures, which are either consolidated or proportionately consolidated, were $8.8 million and $11.5 million, of which $7.7 million and $10.0 million related to domestic joint ventures. Cash and cash equivalents held by the joint ventures are available to support the operations of the related joint ventures, but Quanta does not have access to that cash and cash equivalents for its other operations. Under the terms of the partnership agreements, Quanta generally has no right to the joint ventures' cash and cash equivalents other than participating in distributions and in the event of dissolution.

Current and Long-Term Accounts and Notes Receivable and Allowance for Doubtful Accounts

Quanta provides an allowance for doubtful accounts when collection of an account or note receivable is considered doubtful, and receivables are written off against the allowance when deemed uncollectible. Inherent in the assessment of the allowance for doubtful accounts are certain judgments and estimates regarding, among other factors, the customer's access to capital, the customer's willingness or ability to pay, general economic and market conditions, the ongoing relationship with the customer and uncertainties related to the resolution of disputed matters. Quanta considers accounts receivable delinquent after 30 days but does not generally include delinquent accounts in its analysis of the allowance for doubtful accounts unless the accounts receivable have been outstanding for at least 90 days. In addition to balances that have been outstanding for 90 days or more, Quanta also includes accounts receivable balances that relate to customers in bankruptcy or with other known difficulties in its analysis of the allowance for doubtful accounts. Material changes in Quanta's customers' business or cash flows, which may be impacted by negative economic and market conditions, could affect Quanta's ability to collect amounts due from them. As of March 31, 2017 and December 31, 2016, Quanta had allowances for doubtful accounts on current receivables of $5.0 million and $2.8 million. Long-term accounts receivable are included within other assets.

Should customers experience financial difficulties or file for bankruptcy, or should anticipated recoveries relating to receivables in existing bankruptcies or other workout situations fail to materialize, Quanta could experience reduced cash flows and losses in excess of current allowances provided.

QUANTA SERVICES, INC. AND SUBSIDIARIES

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — *(Continued)*
(Unaudited)

The balances billed but not paid by customers pursuant to retainage provisions in certain contracts are generally due upon completion of the contracts and acceptance by the customer. Based on Quanta's experience with similar contracts in recent years, the majority of the retainage balances at each balance sheet date are expected to be collected within the next twelve months. Current retainage balances as of March 31, 2017 and December 31, 2016 were $253.0 million and $231.0 million and were included in accounts receivable. Retainage balances with settlement dates beyond the next twelve months were included in other assets, net, and as of March 31, 2017 and December 31, 2016 were $9.4 million and $5.2 million.

Within accounts receivable, Quanta recognizes unbilled receivables in circumstances such as when revenues have been earned and recorded but the amount cannot be billed under the terms of the contract until a later date; costs have been incurred but are yet to be billed under cost-reimbursement type contracts; or amounts arise from routine lags in billing (for example, work completed one month but not billed until the next month). These balances do not include revenues accrued for work performed under fixed-price contracts as these amounts are recorded as costs and estimated earnings in excess of billings on uncompleted contracts. At March 31, 2017 and December 31, 2016, the balances of unbilled receivables included in accounts receivable were $296.7 million and $206.8 million.

Goodwill and Other Intangibles

Quanta has recorded goodwill in connection with its historical acquisitions of companies. Upon acquisition, these companies were either combined into one of Quanta's existing operating units or managed on a stand-alone basis as an individual operating unit. Goodwill recorded in connection with these acquisitions is subject to an annual assessment for impairment, which Quanta performs at the operating unit level for each operating unit that carries a balance of goodwill. Each of Quanta's operating units is organized into one of two internal divisions: the Electric Power Infrastructure Services Division and the Oil and Gas Infrastructure Services Division. As most of the companies acquired by Quanta provide multiple types of services for multiple types of customers, these divisional designations are based on the predominant type of work performed by each operating unit at the point in time the divisional designation is made. Goodwill is required to be measured for impairment at the reporting unit level, which represents the operating segment level or one level below the operating segment level for which discrete financial information is available. Quanta has determined that its individual operating units represent its reporting units for the purpose of assessing goodwill impairments.

Quanta has the option to first assess qualitative factors to determine whether it is necessary to perform the two-step fair value-based impairment test described below. If Quanta believes that, as a result of its qualitative assessment, it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the quantitative impairment test is required. Otherwise, no further testing is required. Quanta can choose to perform the qualitative assessment on none, some or all of its reporting units. Quanta can also bypass the qualitative assessment for any reporting unit in any period and proceed directly to step one of the impairment test, and then resume the qualitative assessment in any subsequent period. Qualitative indicators including deterioration in macroeconomic conditions, declining financial performance, or a sustained decrease in share price, among other things, may trigger the need for annual or interim impairment testing of goodwill associated with one or all of the reporting units.

Quanta's goodwill impairment assessment is performed at year-end, or more frequently if events or circumstances arise which indicate that goodwill may be impaired. For instance, a decrease in Quanta's market capitalization below book value, a significant change in business climate or loss of a significant customer, as well as the qualitative indicators referenced above, may trigger the need for interim impairment testing of goodwill for

QUANTA SERVICES, INC. AND SUBSIDIARIES

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — *(Continued)*
(Unaudited)

one or all of its reporting units. The first step of the two-step fair value based test involves comparing the fair value of each of Quanta's reporting units with its carrying value, including goodwill. If the carrying value of the reporting unit exceeds its fair value, the second step is performed. The second step compares the carrying amount of the reporting unit's goodwill to the implied fair value of its goodwill. If the implied fair value of goodwill is less than the carrying amount, an impairment loss would be recorded as a reduction to goodwill with a corresponding charge to operating expense.

Quanta determines the fair value of its reporting units using a weighted combination of the discounted cash flow, market multiple and market capitalization valuation approaches, with heavier weighting on the discounted cash flow method, as in management's opinion, this method currently results in the most accurate calculation of a reporting unit's fair value. Determining the fair value of a reporting unit requires judgment and the use of significant estimates and assumptions. Such estimates and assumptions include, among others, revenue growth rates, operating margins, discount rates, weighted average costs of capital and future market conditions. Quanta believes the estimates and assumptions used in its impairment assessments are reasonable and based on available market information, but variations in any of the assumptions could result in materially different calculations of fair value and determinations of whether or not an impairment is indicated.

Under the discounted cash flow method, Quanta determines fair value based on the estimated future cash flows of each reporting unit, discounted to present value using risk-adjusted industry discount rates, which reflect the overall level of inherent risk of a reporting unit and the rate of return an outside investor would expect to earn. Cash flow projections are derived from budgeted amounts and operating forecasts (typically a one-year model) plus an estimate of later period cash flows, all of which are evaluated by management. Subsequent period cash flows are developed for each reporting unit using growth rates that management believes are reasonably likely to occur, along with a terminal value derived from the reporting unit's earnings before interest, taxes, depreciation and amortization (EBITDA). The EBITDA multiples for each reporting unit are based on trailing twelve-month comparable industry data.

Under the market multiple and market capitalization approaches, Quanta determines the estimated fair value of each of its reporting units by applying transaction multiples to each reporting unit's projected EBITDA and then averaging that estimate with similar historical calculations using either a one, two or three year average. For the market capitalization approach, Quanta adds a reasonable control premium, which is estimated as the premium that would be received in a sale of the reporting unit in an orderly transaction between market participants.

For recently acquired reporting units, a step one impairment test may indicate an implied fair value that is substantially similar to the reporting unit's carrying value. Such similarities in value are generally an indication that management's estimates of future cash flows associated with the recently acquired reporting unit remain relatively consistent with the assumptions that were used to derive its initial fair value.

During the fourth quarter of 2016, a two-step fair-value based goodwill impairment analysis was performed for each of Quanta's reporting units, and no reporting units were evaluated solely on a qualitative basis. Step one of the analysis indicated that the implied fair value of each of Quanta's reporting units, other than recently acquired reporting units and the reporting units that recorded goodwill impairment charges in 2015, was substantially in excess of its carrying value.

As discussed generally above, when evaluating the 2016 step one impairment test results, management considered many factors in determining whether or not an impairment of goodwill for any reporting unit was

reasonably likely to occur in future periods, including future market conditions and the economic environment in which Quanta's reporting units were operating. Additionally, management considered the sensitivity of its fair value estimates to changes in certain valuation assumptions. After taking into account a 10% decrease in the fair value of each of Quanta's reporting units, two reporting units within Quanta's Oil and Gas Infrastructure Division had fair values below their respective carrying values. Quanta recorded asset impairment charges for these reporting units in 2015. The fair values determined in 2016 for these reporting units were consistent with the fair values determined in 2015, accordingly the fair values approximate the current carrying values. Circumstances such as market declines, unfavorable economic conditions, the loss of a major customer or other factors could increase the risk of impairment of goodwill in future periods.

If an operating unit experiences prolonged periods of declining revenues, operating margins or both, it may be at risk of failing step one of the goodwill impairment test. Certain operating units have experienced declines over the short-term due to challenging macroeconomic conditions in certain geographic areas and low oil and natural gas prices, which have negatively impacted customer spending and resulted in project cancellations and delays. Additionally, customer capital spending has been constrained as a result of an increasingly complex regulatory and permitting environment. Certain operating units within Quanta's Oil and Gas Infrastructure Services Division that primarily operate within the midstream and smaller-scale transmission market have continued to be negatively impacted by these factors. Goodwill and intangible assets associated with the operating units within Quanta's Oil and Gas Infrastructure Services Division that have been significantly impacted by the factors mentioned above were $69.8 million and $11.7 million at March 31, 2017. Quanta monitors these conditions and others to determine if it is necessary to perform step one of the fair-value based impairment test for one or more operating units prior to the annual impairment assessment. No interim impairment charges were recorded during the three months ended March 31, 2017. Although Quanta is not aware of circumstances that would lead to a goodwill impairment at a reporting unit currently, circumstances such as a continued market decline, the loss of a major customer or other factors could impact the valuation of goodwill in the future.

Quanta's intangible assets include customer relationships, backlog, trade names, non-compete agreements, patented rights and developed technology, all subject to amortization. The value of customer relationships is estimated as of the date a business is acquired based on the value-in-use concept utilizing the income approach, specifically the excess earnings method. The excess earnings analysis consists of discounting to present value the projected cash flows attributable to the customer relationships, with consideration given to customer contract renewals and estimated customer attrition rates, the importance or lack thereof of existing customer relationships to Quanta's business plan, income taxes and required rates of return. Quanta values backlog for acquired businesses as of the acquisition date based upon the contractual nature of the backlog within each service line, using the income approach to discount back to present value the cash flows attributable to the backlog. The value of trade names is estimated using the relief-from-royalty method of the income approach. This approach is based on the assumption that in lieu of ownership, a company would be willing to pay a royalty in order to exploit the related benefits of this intangible asset.

Quanta amortizes intangible assets based upon the estimated consumption of the economic benefits of each intangible asset, or on a straight-line basis if the pattern of economic benefits consumption cannot otherwise be reliably estimated. Intangible assets subject to amortization are reviewed for impairment and are tested for recoverability whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. For instance, a significant change in business climate or a loss of a significant customer, among other things, may trigger the need for interim impairment testing of intangible assets. An impairment loss would be recognized if the carrying amount of an intangible asset is not recoverable and its carrying amount exceeds its fair value.

QUANTA SERVICES, INC. AND SUBSIDIARIES

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — *(Continued)*
(Unaudited)

Investments in Affiliates and Other Entities

In the normal course of business, Quanta enters into various types of investment arrangements, each having unique terms and conditions. These investments may include equity interests held by Quanta in business entities, including general or limited partnerships, contractual joint ventures, or other forms of equity or profit participation. These investments may also include Quanta's participation in different financing structures such as the extension of loans to project specific entities, the acquisition of convertible notes issued by project specific entities, or other strategic financing arrangements. Quanta also enters into strategic partnerships with customers and infrastructure investors to provide fully integrated infrastructure services on certain projects, including planning and feasibility analysis, engineering, design, procurement, construction financing and investment and project operation and maintenance. These projects include public-private partnerships, private infrastructure projects and concessions, along with build, own, operate and transfer and build to suit arrangements. As part of this strategy, Quanta formed a partnership with select infrastructure investors that provides $750 million of capital available to invest in certain of these infrastructure projects, including $60 million from Quanta. Wholly owned subsidiaries of Quanta serve as the general partner of this partnership and as a separately operating registered investment adviser to manage the invested capital.

Quanta determines whether such investments involve a variable interest entity (VIE) based on the characteristics of the subject entity. If the entity is determined to be a VIE, then management determines if Quanta is the primary beneficiary of the entity and whether or not consolidation of the VIE is required. The primary beneficiary consolidating the VIE must normally have both (i) the power to direct the activities of a VIE that most significantly affect the VIE's economic performance and (ii) the obligation to absorb losses of the VIE or the right to receive benefits from the VIE, in either case that could potentially be significant to the VIE. When Quanta is deemed to be the primary beneficiary, the VIE is consolidated and the other party's equity interest in the VIE is accounted for as a non-controlling interest. In cases where Quanta determines that it has an undivided interest in the assets, liabilities, revenues and profits of an unincorporated VIE (e.g., a general partnership interest), such amounts are consolidated on a basis proportional to Quanta's ownership interest in the unincorporated entity.

Investments in entities of which Quanta is not the primary beneficiary, but over which Quanta has the ability to exercise significant influence, are accounted for using the equity method of accounting. Quanta's share of net income or losses from unconsolidated equity investments is included in equity in earnings (losses) of unconsolidated affiliates in the consolidated statements of operations when applicable. Equity investments are reviewed for impairment by assessing whether any decline in the fair value of the investment below the carrying value is other than temporary. In making this determination, factors such as the ability to recover the carrying amount of the investment and the inability of the investee to sustain an earnings capacity are evaluated in determining whether a loss in value should be recognized. Any impairment losses related to investments would be recognized in other expense. Equity method investments are carried at original cost and are included in other assets, net in the consolidated balance sheet and are adjusted for Quanta's proportionate share of the investees' income, losses and distributions.

Revenue Recognition

Through its Electric Power Infrastructure Services and Oil and Gas Infrastructure Services segments, Quanta designs, installs and maintains networks for customers in the electric power, oil and gas and communications industries. These services may be provided pursuant to master service agreements, repair and maintenance contracts and fixed price and non-fixed price installation contracts. Pricing under these contracts may be competitive unit price, cost-plus/hourly (or time and materials basis) or fixed price (or lump sum basis),

and the final terms and prices of these contracts are frequently negotiated with the customer. Under unit-based contracts, the utilization of an output-based measurement is appropriate for revenue recognition. Under these contracts, Quanta recognizes revenue as units are completed based on pricing established between Quanta and the customer for each unit of delivery, which best reflects the pattern in which the obligation to the customer is fulfilled. Under cost-plus/hourly and time and materials type contracts, Quanta recognizes revenue on an input basis, as labor hours are incurred and services are performed.

Revenues from fixed price contracts are recognized using the percentage-of-completion method, measured by the percentage of costs incurred to date to total estimated costs for each contract. These contracts provide for a fixed amount of revenues for the entire project. Such contracts provide that the customer accept completion of progress to date and compensate Quanta for services rendered, which may be measured in terms of units installed, hours expended, costs incurred to date compared to total estimated contract costs or some other measure of progress. Contract costs include all direct materials, labor and subcontract costs and those indirect costs related to contract performance, such as indirect labor, supplies, tools, repairs and depreciation costs. Much of the material associated with Quanta's work is owner-furnished and is therefore not included in contract revenues and costs. The cost estimation process is based on professional knowledge and experience of Quanta's engineers, project managers and financial professionals. Changes in job performance, job conditions and final contract settlements are factors that influence management's assessment of total contract value and the total estimated costs to complete those contracts and therefore, Quanta's profit recognition.

Actual revenues and project costs can vary, sometimes substantially, from previous estimates due to changes in a variety of factors including unforeseen circumstances not included in Quanta's cost estimates or covered by its contracts for which it cannot obtain adequate compensation, including concealed or unknown environmental conditions; changes in the cost of equipment, commodities, materials or labor; unanticipated costs or claims due to customer-caused delays, customer failure to provide required materials or equipment, errors in engineering, specifications or designs, project modifications, or contract termination and Quanta's inability to obtain reimbursement for such costs or recover on such claims; weather conditions; and quality issues requiring rework or replacement. These factors, along with other risks inherent in performing fixed price contracts may cause actual revenues and gross profits for a project to differ from previous estimates and could result in reduced profitability or losses on projects. Changes in these factors may result in revisions to costs and income, and their effects are recognized in the period in which the revisions are determined. These factors are routinely evaluated on a project by project basis throughout the project term, and the impact of corresponding revisions in management's estimates of contract value, contract cost and contract profit are recorded as necessary in the period in which the revisions are determined. Provisions for losses on uncompleted contracts are made in the period in which such losses are determined to be probable and the amount can be reasonably estimated.

Overall, Quanta's operating results for the three months ended March 31, 2017 were impacted by less than 5% as a result of aggregate changes in contract estimates related to projects that were in progress at December 31, 2016. Included within the operating results for the three months ended March 31, 2017 were losses from the natural gas pipeline project discussed in more detail below, which were largely offset by positive changes in estimates resulting from better than expected performance on an unrelated natural gas pipeline project. Quanta's operating results for the three months ended March 31, 2016 were impacted by less than 5% as a result of aggregate changes in contract estimates related to projects that were in progress at December 31, 2015; however, included in those changes was the impact of a loss on a power plant project in Alaska, which is further described below.

As noted above, Quanta experienced weather delays on a natural gas transmission project during the three months ended March 31, 2017, that resulted in an increase of the estimated total costs necessary to complete the

project. During the three months ended March 31, 2017, Quanta recognized losses on the project of $16.5 million. Quanta is in the process of developing potential claims; however, no revenues or cost recovery has been reflected in Quanta's estimate of total project losses at March 31, 2017. At March 31, 2017, this project was approximately 85% complete. As this project continues, it is possible that additional delays or other unforeseen circumstances could occur and result in the recognition of additional losses; however, such amounts cannot currently be estimated.

During 2016 and 2015, Quanta experienced performance issues on a power plant project in Alaska that resulted in an increase of the estimated total costs necessary to complete the project. During the three months ended March 31, 2016, Quanta recognized project losses of $21.3 million. This project was substantially completed during the fourth quarter of 2016.

The current asset "Costs and estimated earnings in excess of billings on uncompleted contracts" represents revenues recognized in excess of amounts billed for fixed price contracts. The current liability "Billings in excess of costs and estimated earnings on uncompleted contracts" represents billings in excess of revenues recognized for fixed price contracts.

Quanta may incur costs subject to change orders, whether approved or unapproved by the customer, and/or claims related to certain contracts. Quanta determines the probability that such costs will be recovered based upon evidence such as past practices with the customer, specific discussions or preliminary negotiations with the customer or verbal approvals. Quanta treats items as costs of contract performance in the period incurred if it is not probable that the costs will be recovered or will recognize revenue if it is probable that the contract price will be adjusted and can be reliably estimated.

As of March 31, 2017 and December 31, 2016, Quanta had recognized revenues of $147.1 million and $137.8 million related to change orders and/or claims that had been included as contract price adjustments on certain contracts which were in the process of being negotiated in the normal course of business.

These aggregate contract price adjustments represent management's best estimate of additional contract revenues which have been earned and which management believes are probable of collection. The amounts ultimately realized by Quanta upon final acceptance by its customers could be higher or lower than such estimated amounts; however, such amounts cannot currently be estimated.

Income Taxes

Quanta follows the liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are recorded for future tax consequences of temporary differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that are expected to be in effect when the underlying assets or liabilities are recovered or settled.

Quanta regularly evaluates valuation allowances established for deferred tax assets for which future realization is uncertain. The estimation of required valuation allowances includes estimates of future taxable income. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Quanta considers projected future taxable income and tax planning strategies in making this assessment. If actual future taxable income differs from these estimates, Quanta may not realize deferred tax assets to the extent estimated.

Quanta records reserves for income taxes related to certain tax positions in those instances where Quanta considers it more likely than not that additional taxes may be due in excess of amounts reflected on income tax

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returns filed. When recording reserves for expected tax consequences of uncertain positions, Quanta assumes that taxing authorities have full knowledge of the position and all relevant facts. Quanta continually reviews exposure to additional tax obligations, and as further information is known or events occur, changes in tax reserves may be recorded. To the extent interest and penalties may be assessed by taxing authorities on any underpayment of income tax, such amounts have been accrued and included in the provision for income taxes.

As of March 31, 2017, the total amount of unrecognized tax benefits relating to uncertain tax positions was $36.4 million, an increase from December 31, 2016 of $1.2 million. This increase in unrecognized tax benefits resulted primarily from tax positions to be taken for 2017. Although the Internal Revenue Service completed its examination related to tax years 2010, 2011 and 2012 during the year ended December 31, 2016, certain subsidiaries remain under examination by various U.S. state, Canadian and other foreign tax authorities for multiple periods. Quanta believes it is reasonably possible that within the next 12 months unrecognized tax benefits may decrease by up to $13.4 million as a result of settlement of these examinations or as a result of the expiration of certain statute of limitations periods.

U.S. federal and state and foreign income tax laws and regulations are voluminous and are often ambiguous. As such, Quanta is required to make many subjective assumptions and judgments regarding its tax positions that could materially affect amounts recognized in its future consolidated balance sheets and statements of operations and comprehensive income.

Earnings Per Share

Basic earnings per share attributable to common stock is computed using the weighted average number of common shares outstanding during the period, and diluted earnings per share attributable to common stock is computed using the weighted average number of common shares outstanding during the period adjusted for all potentially dilutive common stock equivalents, except in cases where the effect of the common stock equivalents would be antidilutive.

Self-Insurance

Quanta is insured for employer's liability, workers' compensation, auto liability and general liability claims. Under these programs, the deductible for employer's liability is $1.0 million per occurrence, the deductible for workers' compensation is $5.0 million per occurrence, and the deductibles for auto liability and general liability are $10.0 million per occurrence. Quanta is generally self-insured for all claims that do not exceed the amount of the applicable deductible. Quanta also has employee health care benefit plans for most employees not subject to collective bargaining agreements, of which the primary plan is subject to a deductible of $0.4 million per claimant per year.

Losses under all of these insurance programs are accrued based upon Quanta's estimate of the ultimate liability for claims reported and an estimate of claims incurred but not reported, with assistance from third-party actuaries. These insurance liabilities are difficult to assess and estimate due to unknown factors, including the severity of an injury, the extent of damage, the determination of Quanta's liability in proportion to other parties and the number of incidents not reported. The accruals are based upon known facts and historical trends, and management believes such accruals are adequate.

Collective Bargaining Agreements

Some of Quanta's operating units are parties to various collective bargaining agreements with unions that represent certain of their employees. The collective bargaining agreements expire at various times and have

typically been renegotiated and renewed on terms similar to those in the expiring agreements. The agreements require the operating units to pay specified wages, provide certain benefits to their union employees and contribute certain amounts to multiemployer pension plans and employee benefit trusts. Quanta's multiemployer pension plan contribution rates generally are specified in the collective bargaining agreements (usually on an annual basis), and contributions are made to the plans on a "pay-as-you-go" basis based on its union employee payrolls. The location and number of union employees that Quanta employs at any given time and the plans in which they may participate vary depending on the projects Quanta has ongoing at that time and the need for union resources in connection with those projects. Therefore, Quanta is unable to accurately predict the union employee payroll and the amount of the resulting multiemployer pension plan contribution obligation for future periods.

Stock-Based Compensation

Quanta recognizes compensation expense for restricted stock, restricted stock units (RSUs) and performance units to be settled in common stock based on the fair value of the awards at the date of grant, net of estimated forfeitures. The fair value of restricted stock awards, RSUs and performance units to be settled in common stock is determined based on the number of shares, RSUs or performance units granted and the closing price of Quanta's common stock on the date of grant. An estimate of future forfeitures is required in determining the period expense. Quanta uses historical data to estimate the forfeiture rate; however, these estimates are subject to change and may impact the value that will ultimately be recognized as compensation expense. The resulting compensation expense from time-based RSU and performance unit awards is recognized on a straight-line basis over the requisite service period, which is generally the vesting period, while compensation expense from performance-based RSU awards is recognized using the graded vesting method over the requisite service period. Payments made by Quanta to satisfy employees' tax withholding obligations associated with awards settled in common stock are classified as financing cash flows.

Compensation expense associated with liability based awards, such as RSUs that are expected to or may settle in cash, is recognized based on a remeasurement of the fair value of the award at the end of each reporting period. Upon settlement, the holders receive for each RSU an amount in cash equal to the fair market value on the settlement date of one share of Quanta common stock, as specified in the applicable award agreement. For additional information on Quanta's restricted stock, RSU and performance unit awards, see Note 9.

Functional Currency and Translation of Financial Statements

The U.S. dollar is the functional currency for the majority of Quanta's operations, which are primarily located within the United States. The functional currency for Quanta's foreign operations, which are primarily located in Canada and Australia, is typically the currency of the country in which the foreign operating unit is located. Generally, the currency in which the operating unit transacts the majority of its activities, including billings, financing, payroll and other expenditures, would be considered the functional currency. The treatment of foreign currency translation gains or losses is dependent upon management's determination of the functional currency of each operating unit. In preparing the consolidated financial statements, Quanta translates the financial statements of its foreign operating units from their functional currency into U.S. dollars. Statements of operations, comprehensive income and cash flows are translated at average monthly rates, while balance sheets are translated at month-end exchange rates. The translation of the balance sheet results in translation gains or losses, which are included as a separate component of equity under the caption "Accumulated other comprehensive income (loss)." Gains and losses arising from transactions which are not denominated in the operating units' functional currencies are included within other income (expense) in the statements of operations.

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Comprehensive Income

Components of comprehensive income include all changes in equity during a period except those resulting from changes in Quanta's capital related accounts. Quanta records other comprehensive income (loss) for foreign currency translation adjustments related to its foreign operations and for other revenues, expenses, gains and losses that are included in comprehensive income but excluded from net income.

Litigation Costs and Reserves

Quanta records reserves when the likelihood of incurring a loss is probable and the amount of loss can be reasonably estimated. Costs incurred for litigation are expensed as incurred. Further details are presented in Note 10.

Fair Value Measurements

The carrying values of cash equivalents, accounts receivable, accounts payable and accrued expenses approximate fair value due to the short-term nature of these instruments. The carrying value of variable rate debt also approximates fair value. For disclosure purposes, qualifying assets and liabilities are categorized into three broad levels based on the priority of the inputs used to determine their fair values. The fair value hierarchy gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). All of Quanta's cash equivalents were categorized as Level 1 assets at March 31, 2017 and December 31, 2016, as all values were based on unadjusted quoted prices for identical assets in an active market that Quanta has the ability to access.

In connection with Quanta's acquisitions, identifiable intangible assets acquired typically include goodwill, backlog, customer relationships, trade names, covenants not-to-compete, patented rights and developed technology. Quanta utilizes the fair value premise as the primary basis for its valuation procedures, which is a market-based approach to determine the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. Quanta periodically engages the services of an independent valuation firm when a new business is acquired to assist management with this valuation process, including assistance with the selection of appropriate valuation methodologies and the development of market-based valuation assumptions. Based on these considerations, management utilizes various valuation methods, including an income approach, a market approach and a cost approach, to determine the fair value of intangible assets acquired based on the appropriateness of each method in relation to the type of asset being valued. The assumptions used in these valuation methods are analyzed and compared, where possible, to available market data, such as industry-based weighted average costs of capital and discount rates, trade name royalty rates, public company valuation multiples and recent market acquisition multiples. In accordance with its annual impairment test during the quarter ended December 31, 2016, the carrying amounts of such assets, including goodwill, were compared to their fair values. The level of inputs used for these fair value measurements is the lowest level (Level 3). Quanta uses the assistance of third party specialists to develop valuation assumptions. Quanta believes that these valuation methods appropriately represent the methods that would be used by other market participants in determining fair value.

Quanta also uses fair value measurements in connection with the valuation of its investments in private company equity interests and financing instruments. These valuations require significant management judgment due to the absence of quoted market prices, the inherent lack of liquidity and the long-term nature of such assets. Typically, the initial costs of these investments are considered to represent fair market value, as such amounts are negotiated between willing market participants. On a quarterly basis, Quanta performs an evaluation of its

investments to determine if an other-than-temporary decline in the value of each investment has occurred and whether the recorded amount of each investment will be realizable. If an other-than-temporary decline in the value of an investment occurs, a fair value analysis would be performed to determine the degree to which the investment was impaired and a corresponding charge to earnings would be recorded during the period. These types of fair market value assessments are similar to other nonrecurring fair value measures used by Quanta, which include the use of significant judgment and available relevant market data. Such market data may include observations of the valuation of comparable companies, risk adjusted discount rates and an evaluation of the expected performance of the underlying portfolio asset, including historical and projected levels of profitability or cash flows. In addition, a variety of additional factors may be reviewed by management, including, but not limited to, contemporaneous financing and sales transactions with third parties, changes in market outlook and the third-party financing environment.

3. NEW ACCOUNTING PRONOUNCEMENTS:

Adoption of New Accounting Pronouncements

In July 2015, the FASB issued an update that requires inventory to be measured at the lower of either cost or net realizable value. When evidence exists that the net realizable value of inventory is lower than its cost, the difference will be recognized as a loss in earnings in the period in which it occurs. Quanta adopted this guidance effective January 1, 2017, and the adoption of the update did not have a significant impact on Quanta's consolidated financial statements or related disclosures.

In March 2016, the FASB issued an update that amends the accounting for share-based payments in several key areas, including the treatment and cash flow presentation of tax effects related to the settlement of share-based payments and the accounting for forfeitures of share-based awards. The new guidance requires companies with share-based payments to record all tax effects related thereto at settlement (or expiration) through income tax expense on the statement of operations rather than through additional paid-in capital (APIC) within equity. This update also requires excess tax benefits to be classified as an operating activity on the statement of cash flows rather than reclassified as a financing activity and requires cash paid by an employer when withholding shares for taxes to be presented as a financing activity. The update also allows companies to either account for forfeitures of share-based payments as they occur or to estimate forfeitures. This guidance is required to be applied prospectively except for the requirement to classify cash paid when withholding shares for the employee portion of taxes as a financing activity, which requires retrospective application. Quanta adopted this guidance effective January 1, 2017 and will continue to estimate forfeitures of share-based payments. Quanta anticipates increased volatility of income tax expense after adoption of this guidance, and during the three months ended March 31, 2017 recorded an income tax benefit of $4.9 million related to the settlement of share-based awards. APIC was not adjusted for amounts recorded prior to 2017, and therefore Quanta's retained earnings were not affected by the adoption of this guidance as of January 1, 2017. Additionally, $6.1 million was reclassified from an operating activity to a financing activity on the statement of cash flows for the three months ended March 31, 2016 associated with cash paid by Quanta to satisfy tax withholding obligations for share-settled awards.

In October 2016, the FASB issued an update that amends the consolidation guidance related to how a reporting entity that is the single decision maker of a VIE should treat indirect interests in the VIE held through related parties that are under common control with the reporting entity when determining whether it is the primary beneficiary of a VIE. A reporting entity has an indirect interest in a VIE if it has a direct interest in a related party that, in turn, has a direct interest in the VIE. Quanta adopted this guidance on January 1, 2017, and the adoption of the update did not have a significant impact on its consolidated financial statements or related disclosures.

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Accounting Standards Not Yet Adopted

In May 2014, the FASB issued an update that supersedes most current revenue recognition guidance, as well as some cost recognition guidance. The update requires that the recognition of revenue related to the transfer of goods or services to customers reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This update also requires new qualitative and quantitative disclosures about the nature, amount, timing and uncertainty of revenues and cash flows arising from customer contracts, including significant judgments and changes in judgments, information about contract balances and performance obligations, and assets recognized from costs incurred to obtain or fulfill a contract. In July 2015, the FASB affirmed its proposal to defer the effective date until fiscal years beginning on or after December 15, 2017. The guidance can be applied on a full retrospective or modified retrospective basis whereby the entity records a cumulative effect of initially applying this update at the date of initial application.

Quanta is currently evaluating the potential impact of this update on its consolidated financial statements. Quanta currently anticipates adopting the update using the modified retrospective transition method, which may result in a cumulative-effect adjustment recorded in retained earnings as of the beginning of the period of adoption. In addition, Quanta continues to monitor activity related to the new standard as well as working with various non-authoritative groups regarding industry clarifications and interpretations, which may impact Quanta's considerations and conclusions. While Quanta is still evaluating the requirements of this update, it currently does not expect the update to materially affect its results of operations, financial position or cash flows. This preliminary conclusion is based on Quanta's belief that it will generally continue to recognize revenues from long-term service contracts over time as services are performed and the underlying obligation to the customer is fulfilled. Quanta has identified and is in the process of implementing changes to its processes and internal controls to meet the reporting and disclosure requirements of this update and will adopt this update effective January 1, 2018.

In January 2016, the FASB issued an update that addresses certain aspects of recognition, measurement, presentation, and disclosure of financial instruments to provide users of financial statements with more decision-useful information. The new standard is effective for interim and annual periods beginning after December 15, 2017. Early adoption is permitted for financial statements of fiscal years or interim periods that have not been previously issued. Quanta is evaluating the impact of the new standard on its consolidated financial statements and will adopt the new standard by January 1, 2018.

In February 2016, the FASB issued an update that requires companies to recognize on the balance sheet the contractual right to use assets and liabilities corresponding to the rights and obligations created by lease contracts. The new standard is effective for interim and annual periods beginning after December 15, 2018. Early adoption is permitted for financial statements of fiscal years or interim periods that have not been previously issued. While Quanta continues to evaluate the effect of the standard on its consolidated financial statements, it is anticipated that the adoption of the standard will materially impact its statement of financial position.

In June 2016, the FASB issued an update that will change the way companies measure credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. The update will require companies to use an "expected loss" model for instruments measured at amortized cost and to record allowances for available-for-sale (AFS) debt securities rather than reduce the carrying amounts. The update will also require disclosure of information regarding how a company developed its allowance, including changes in the factors that influenced management's estimate of expected credit losses and the reasons for those changes. Companies will apply this standard's provisions as a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. The new standard is effective for

interim and annual reporting periods beginning after December 15, 2019, although early adoption is permitted for annual reporting periods beginning after December 15, 2018. Quanta is currently evaluating the potential impact of this authoritative guidance on its consolidated financial statements and will adopt this guidance by January 1, 2020.

In August 2016, the FASB issued an update intended to standardize the classification of certain transactions on the statement of cash flows. These transactions include contingent consideration payments made after a business combination, proceeds from the settlement of corporate-owned life insurance policies and distributions received from equity method investments. The new standard is effective for interim and annual reporting periods beginning after December 15, 2017, although early adoption is permitted, and requires application using a retrospective transition method. Quanta is currently evaluating the potential impact of this authoritative guidance on its consolidated financial statements and will adopt this guidance by January 1, 2018.

In October 2016, the FASB issued an update that will require a reporting entity to recognize the tax expense from the sale of an asset in the seller's tax jurisdiction when the transfer occurs, even though the pre-tax effects of that transaction are eliminated in consolidation. Any deferred tax asset that arises in the buyer's jurisdiction would also be recognized at the time of the transfer. The new guidance will not apply to intra-entity transfers of inventory. The income tax consequences from the sale of inventory from one member of a consolidated entity to another will continue to be deferred until the inventory is sold to a third party. The new standard is effective for interim and annual reporting periods beginning after December 15, 2017, although early adoption is permitted. The modified retrospective method will be required for transition to the new guidance, with a cumulative-effect adjustment recorded in retained earnings as of the beginning of the period of adoption. Quanta is currently evaluating the potential impact of this authoritative guidance on its consolidated financial statements and will adopt this guidance by January 1, 2018.

In November 2016, the FASB issued an update intended to standardize the classification of restricted cash and cash equivalents transactions on the statement of cash flows. The new standard is effective for interim and annual reporting periods beginning after December 15, 2017, although early adoption is permitted. The retrospective transition method will be required for this new guidance. Quanta is currently evaluating the potential impact of this authoritative guidance on its consolidated financial statements and will adopt this guidance by January 1, 2018.

In January 2017, the FASB issued an update intended to clarify the definition of a business to assist entities with evaluation of whether transactions should be accounted for as acquisitions or disposals of assets or businesses. The new definition requires that when substantially all of the fair value of the gross assets acquired or disposed of is concentrated in a single identifiable asset or group of similar identifiable assets, the asset or group is not a business. The update will require that to be considered a business, a set of assets and activities must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create output. Additionally, the update will remove the evaluation of whether a market participant could replace missing elements in order to consider the set of assets and activities a business, will provide more stringent criteria for sets without outputs and will narrow the definition of output. The new standard is effective for interim and annual reporting periods beginning after December 15, 2017, although early adoption is permitted for certain transactions. The prospective transition method will be required for this new guidance. Quanta is currently evaluating the potential impact of this authoritative guidance on its consolidated financial statements and will adopt this guidance by January 1, 2018.

Also in January 2017, the FASB issued an update intended to simplify the subsequent measurement of goodwill by eliminating the second step in the current two-step goodwill impairment test. The update will require

an entity to perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity will recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value, if applicable. Additionally, the update will eliminate the requirement that a reporting unit with a zero or negative carrying amount perform a qualitative assessment and the second step of the two-step goodwill impairment test and will instead require disclosure of the amount of goodwill allocated to each reporting unit with a zero or negative carrying amount of net assets. This update is effective for public entities for interim and annual reporting periods beginning after December 15, 2019, although early adoption is permitted for interim and annual goodwill impairment tests performed on testing dates after January 1, 2017. The prospective transition method will be required for this new guidance. Quanta is currently evaluating the potential impact of this authoritative guidance on its consolidated financial statements and will adopt this guidance by January 1, 2020.

4. ACQUISITIONS:

During 2016, Quanta completed five acquisitions. The results of four of the acquired companies are generally included in Quanta's Electric Power Infrastructure Services segment. These companies included an electrical infrastructure services company located in Australia, a utility contracting company located in Canada, a full service medium- and high-voltage powerline contracting company located in the United States and a telecommunications company located in Canada. Quanta also acquired a pipeline service contractor located in the United States, the results of which are generally included in Quanta's Oil and Gas Infrastructure Services segment. The aggregate consideration for these acquisitions consisted of $75.9 million paid or payable in cash, subject to certain adjustments, 70,840 shares of Quanta common stock valued at $1.5 million as of the settlement date of the applicable acquisition, and contingent consideration payments of up to $39.5 million, which will be paid if certain financial targets are achieved. Based on the estimated fair value of this contingent consideration, Quanta recorded an $18.7 million liability. As these transactions were effective during 2016, the results have been included in Quanta's consolidated financial statements beginning on the respective dates of acquisition. These acquisitions should enable Quanta to further enhance its service offerings in the United States, Australia and Canada.

Quanta is in the process of finalizing its assessments of the fair values of the acquired assets and assumed liabilities related to businesses acquired subsequent to March 31, 2016, and further adjustments to the purchase price allocations may occur. Quanta expects to complete the purchase accounting process as soon as practicable but no later than one year from the acquisition dates with possible updates primarily related to certain tax estimates. The aggregate purchase consideration of these businesses acquired in 2016 subsequent to March 31, 2016 was preliminarily allocated to acquired assets and assumed liabilities, which resulted in a preliminary allocation of $17.0 million of net tangible assets, $18.4 million of goodwill and $3.1 million of other intangible assets.

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The following table summarizes the aggregate consideration paid or payable as of March 31, 2017 for the 2016 acquisitions and presents the allocation of these amounts to the net tangible and identifiable intangible assets based on their estimated fair values as of the respective acquisition dates, inclusive of any purchase price adjustments. This allocation requires a significant use of estimates and is based on information that was available to management at the time these consolidated financial statements were prepared (in thousands).

	2016
Consideration:	
Value of Quanta common stock issued	$ 1,508
Cash paid or payable	75,941
Contingent consideration	18,683
Fair value of total consideration transferred or estimated to be transferred	$ 96,132
Current assets	$ 24,233
Property and equipment	44,863
Other assets	2,553
Identifiable intangible assets	11,467
Current liabilities	(12,477)
Deferred tax liabilities, net	(13,708)
Other long-term liabilities	(5,326)
Total identifiable net assets	51,605
Goodwill	44,527
	$ 96,132

The fair value of current assets acquired in 2016 included accounts receivable with a fair value of $14.4 million.

Goodwill represents the excess of the purchase price over the net amount of the fair values assigned to assets acquired and liabilities assumed. The 2016 acquisitions strategically expanded Quanta's Canadian, Australian and domestic electric power, oil and gas service and communications offerings, which Quanta believes contributes to the recognition of the goodwill. In connection with the 2016 acquisitions, goodwill of $24.2 million was recorded for the acquired businesses that were included within Quanta's Electric Power Infrastructure Services Division and $20.3 million was recorded for acquired businesses that were included within Quanta's Oil and Gas Infrastructure Services Division on the dates of acquisition. Goodwill of $2.0 million related to the 2016 acquisitions is expected to be deductible for income tax purposes.

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — *(Continued)*
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The unaudited supplemental pro forma results of operations have been provided for illustrative purposes only and do not purport to be indicative of the actual results that would have been achieved by the combined companies for the periods presented or that may be achieved by the combined companies in the future. Future results may vary significantly from the results reflected in the following pro forma financial information because of future events and transactions, as well as other factors (in thousands, except per share amounts):

	Three Months Ended March 31, 2016
Revenues	$ 1,730,177
Gross profit	$ 205,205
Selling, general and administrative expenses	$ 160,230
Amortization of intangible assets	$ 7,824
Net income	$ 20,757
Net income attributable to common stock	$ 20,394
Earnings per share attributable to common stock — basic and diluted	$ 0.13

The pro forma combined results of operations for the three months ended March 31, 2016 have been prepared by adjusting the historical results of Quanta to include the historical results of the 2016 acquisitions as if they occurred January 1, 2015. These pro forma combined historical results were also adjusted for the following: a reduction of interest expense as a result of the repayment of outstanding indebtedness of the acquired businesses, a reduction of interest income as a result of the cash consideration paid net of cash received, an increase in amortization expense due to the incremental intangible assets recorded related to the 2016 acquisitions, an increase or decrease in depreciation expense within cost of services related to the net impact of adjusting acquired property and equipment to the acquisition date fair value and conforming depreciable lives with Quanta's accounting policies, an increase in the number of outstanding shares of Quanta common stock and certain reclassifications to conform the acquired companies' presentation to Quanta's accounting policies. The pro forma results of operations do not include any adjustments to eliminate the impact of acquisition related costs or any cost savings or other synergies that resulted or may result from the acquisitions. As noted above, the pro forma results of operations do not purport to be indicative of the actual results that would have been achieved by the combined company for the periods presented or that may be achieved by the combined company in the future.

5. GOODWILL AND OTHER INTANGIBLE ASSETS:

A summary of changes in Quanta's goodwill is as follows (in thousands):

	Electric Power Infrastructure Services Division	Oil and Gas Infrastructure Services Division	Total
Balance at December 31, 2016:			
Goodwill	$ 1,253,979	$ 388,923	$1,642,902
Accumulated impairment	—	(39,733)	(39,733)
	1,253,979	349,190	1,603,169
Purchase price allocation adjustments	—	(659)	(659)
Foreign currency translation adjustments	3,354	2,520	5,874
Balance at March 31, 2017:			
Goodwill	1,257,333	391,551	1,648,884
Accumulated impairment	—	(40,500)	(40,500)
	$ 1,257,333	$ 351,051	$1,608,384

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Adjustments primarily represent changes in deferred tax liability estimates and would not have had a material impact on the consolidated financial statements in prior periods had these adjustments been booked at the respective acquisition dates.

Also, as described in Note 2, Quanta's operating units are organized into one of Quanta's two internal divisions and, accordingly, the goodwill associated with the operating units has been aggregated on a divisional basis in the table above. These divisions are closely aligned with Quanta's reportable segments and operating units are assigned to a division based on the predominant type of work performed. From time to time, operating units may be reorganized between divisions as business environments evolve.

Quanta's intangible assets subject to amortization and the remaining weighted average amortization periods related to such assets were as follows (in thousands except for weighted average amortization periods, which are in years):

	As of March 31, 2017			As of December 31, 2016			As of March 31, 2017
	Intangible Assets	Accumulated Amortization	Intangible Assets, Net	Intangible Assets	Accumulated Amortization	Intangible Assets, Net	Remaining Weighted Average Amortization Period in Years
Customer relationships	$246,049	$ (115,894)	$ 130,155	$244,329	$ (110,640)	$ 133,689	8.5
Backlog	134,152	(133,227)	925	133,592	(132,441)	1,151	0.7
Trade names	55,063	(13,773)	41,290	54,723	(12,855)	41,868	17.5
Non-compete agreements	29,325	(25,974)	3,351	29,212	(25,546)	3,666	2.8
Patented rights and developed technology	22,485	(16,272)	6,213	22,480	(15,831)	6,649	3.9
Total intangible assets subject to amortization	$487,074	$ (305,140)	$ 181,934	$484,336	$ (297,313)	$ 187,023	10.3

Amortization expense for intangible assets was $6.6 million and $7.5 million for the three months ended March 31, 2017 and 2016.

The estimated future aggregate amortization expense of intangible assets subject to amortization as of March 31, 2017 is set forth below (in thousands):

For the Fiscal Year Ending December 31,	
Remainder of 2017	$ 19,196
2018	24,414
2019	22,373
2020	21,081
2021	18,750
Thereafter	76,120
Total	$ 181,934

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — *(Continued)*
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6. PER SHARE INFORMATION:

Basic earnings per share attributable to common stock is computed using the weighted average number of common shares outstanding during the period, and diluted earnings per share attributable to common stock is computed using the weighted average number of common shares outstanding during the period adjusted for all potentially dilutive common stock equivalents, except in cases where the effect of the common stock equivalents would be antidilutive. The amounts used to compute the basic and diluted earnings per share attributable to common stock for the three months ended March 31, 2017 and 2016 are illustrated below (in thousands):

	Three Months Ended March 31,	
	2017	2016
Amounts attributable to common stock:		
Net income attributable to common stock	$ 48,267	$ 20,496
Weighted average shares:		
Weighted average shares outstanding for basic earnings per share attributable to common stock	155,168	162,803
Effect of dilutive stock options	—	3
Weighted average shares outstanding for diluted earnings per share attributable to common stock	155,168	162,806

For purposes of calculating diluted earnings per share attributable to common stock, there were no adjustments required to derive Quanta's net income attributable to common stock. Outstanding exchangeable shares that were issued pursuant to certain of Quanta's historical acquisitions (as further discussed in Note 8), which are exchangeable on a one-for-one basis with shares of Quanta common stock, have been included in the calculation of weighted average shares outstanding for basic and diluted earnings per share attributable to common stock for the three months ended March 31, 2017 and 2016 for the portion of the periods that they were outstanding.

7. DEBT OBLIGATIONS:

Quanta's long-term debt obligations consisted of the following (in thousands):

	March 31, 2017	December 31, 2016
Borrowings under credit facility	$ 417,732	$ 351,341
Other long-term debt, interest rates ranging from 3.8% to 4.3%	2,826	3,305
Capital leases, interest rates ranging from 2.5% to 6.2%	2,742	3,744
Total long-term debt obligations	423,300	358,390
Less — Current maturities of long-term debt	3,990	4,828
Total long-term debt obligations, net of current maturities	$ 419,310	$ 353,562

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Quanta's current maturities of long-term debt and short-term debt consisted of the following (in thousands):

	March 31, 2017	December 31, 2016
Short-term debt	$ —	$ 2,735
Current maturities of long-term debt	3,990	4,828
Current maturities of long-term debt and short-term debt	$ 3,990	$ 7,563

Credit Facility

On December 18, 2015, Quanta entered into an amended and restated credit agreement with various lenders that provides for a $1.81 billion senior secured revolving credit facility maturing on December 18, 2020. The entire amount available under the facility may be used by Quanta for revolving loans and letters of credit in U.S. dollars and certain alternative currencies. Up to $600.0 million of the facility may be used by certain subsidiaries of Quanta for revolving loans and letters of credit in certain alternative currencies. Up to $100.0 million of the facility may be used for swing line loans in U.S. dollars, up to $50.0 million of the facility may be used for swing line loans in Canadian dollars and up to $30.0 million of the facility may be used for swing line loans in Australian dollars. In addition, subject to the conditions specified in the credit agreement, Quanta has the option to increase the revolving commitments by up to $400.0 million from time to time upon receipt of additional commitments from new or existing lenders. Borrowings under the credit agreement are to be used to refinance existing indebtedness and for working capital, capital expenditures and other general corporate purposes.

As of March 31, 2017, Quanta had $323.2 million of outstanding letters of credit and bank guarantees, $223.9 million of which were denominated in U.S. dollars and $99.3 million of which were denominated in currencies other than the U.S. dollar, primarily in Australian or Canadian dollars. Quanta also had $417.7 million of outstanding revolving loans under the credit facility, $200.0 million of which were denominated in U.S. dollars and $217.7 million of which were denominated in Canadian dollars. The remaining $1.07 billion was available for revolving loans or new letters of credit or bank guarantees. Information on borrowings under Quanta's credit facility and the applicable interest rates during the three months ended March 31, 2017 and 2016 is as follows (dollars in thousands):

	Three Months Ended March 31,	
	2017	2016
Maximum amount outstanding under the credit facility during the period	$490,995	$518,607
Average daily amount outstanding under the credit facility	$409,481	$472,029
Weighted-average interest rate	2.61%	2.00%

Under the current credit agreement, amounts borrowed in U.S. dollars bear interest, at Quanta's option, at a rate equal to either (i) the Eurocurrency Rate (as defined in the credit agreement) plus 1.125% to 2.125%, as determined based on Quanta's Consolidated Leverage Ratio (as described below), or (ii) the Base Rate (as described below) plus 0.125% to 1.125%, as determined based on Quanta's Consolidated Leverage Ratio. Amounts borrowed as revolving loans under the credit agreement in any currency other than U.S. dollars bear interest at a rate equal to the Eurocurrency Rate plus 1.125% to 2.125%, as determined based on Quanta's Consolidated Leverage Ratio. Standby letters of credit issued under the credit agreement are subject to a letter of credit fee of 1.125% to 2.125%, based on Quanta's Consolidated Leverage Ratio, and Performance Letters of

QUANTA SERVICES, INC. AND SUBSIDIARIES

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Credit (as defined in the credit agreement) issued under the credit agreement in support of certain contractual obligations are subject to a letter of credit fee of 0.675% to 1.275%, based on Quanta's Consolidated Leverage Ratio. Quanta is also subject to a commitment fee of 0.20% to 0.40%, based on its Consolidated Leverage Ratio, on any unused availability under the credit agreement.

The Consolidated Leverage Ratio is the ratio of Quanta's Consolidated Funded Indebtedness to Consolidated EBITDA (as those terms are defined in the credit agreement). For purposes of calculating Quanta's Consolidated Leverage Ratio, Consolidated Funded Indebtedness is reduced by available cash and Cash Equivalents (as defined in the credit agreement) in excess of $25.0 million. The Base Rate equals the highest of (i) the Federal Funds Rate (as defined in the credit agreement) plus 0.5%, (ii) the prime rate publicly announced by Bank of America, N.A. and (iii) the Eurocurrency Rate plus 1.00%.

Subject to certain exceptions, the credit agreement is secured by substantially all the assets of Quanta and Quanta's wholly owned U.S. subsidiaries and by a pledge of all of the capital stock of Quanta's wholly owned U.S. subsidiaries and 65% of the capital stock of direct foreign subsidiaries of Quanta's wholly owned U.S. subsidiaries. Quanta's wholly owned U.S. subsidiaries also guarantee the repayment of all amounts due under the credit agreement. Subject to certain conditions, all collateral will automatically be released from the liens at any time Quanta maintains an Investment Grade Rating (defined in the credit agreement as two of the following three conditions being met: (i) a corporate credit rating that is BBB- or higher by Standard & Poor's Rating Services, (ii) a corporate family rating that is Baa3 or higher by Moody's Investors Services, Inc. or (iii) a corporate credit rating that is BBB- or higher by Fitch Ratings, Inc.).

The credit agreement contains certain covenants, including a maximum Consolidated Leverage Ratio and a minimum Consolidated Interest Coverage Ratio (as defined in the credit agreement). The credit agreement also limits certain acquisitions, mergers and consolidations, indebtedness, asset sales and prepayments of indebtedness and, subject to certain exceptions, prohibits liens on Quanta's assets. The credit agreement allows cash payments for dividends and stock repurchases subject to compliance with the following requirements (after giving effect to the dividend or stock repurchase): (i) no default or event of default under the credit agreement; (ii) continued compliance with the financial covenants in the credit agreement; and (iii) at least $100.0 million of availability under the credit agreement and/or cash and cash equivalents on hand. As of March 31, 2017, Quanta was in compliance with all of the covenants in the credit agreement.

The credit agreement provides for customary events of default and contains cross-default provisions with Quanta's underwriting, continuing indemnity and security agreement with its sureties and all of Quanta's other debt instruments exceeding $100.0 million in borrowings or availability. If an Event of Default (as defined in the credit agreement) occurs and is continuing, on the terms and subject to the conditions set forth in the credit agreement, the lenders may declare all amounts outstanding and accrued and unpaid interest immediately due and payable, require that Quanta provide cash collateral for all outstanding letter of credit obligations, terminate the commitments under the credit agreement, and foreclose on the collateral.

8. EQUITY:

Exchangeable Shares and Series F and Series G Preferred Stock

In connection with certain Canadian acquisitions, the former owners of the acquired companies received exchangeable shares of certain Canadian subsidiaries of Quanta, which may be exchanged at the option of the holders for Quanta common stock on a one-for-one basis. The holders of exchangeable shares can make an exchange only once in any calendar quarter and must exchange a minimum of either 50,000 shares or, if less, the

total number of remaining exchangeable shares registered in the name of the holder making the request. Additionally, in connection with two of such acquisitions, Quanta issued one share of Quanta Series F preferred stock and one share of Quanta Series G preferred stock (the Preferred Stock) to voting trusts on behalf of the respective holders of the exchangeable shares issued in such acquisitions. Each share of the Preferred Stock provides the holders of such exchangeable shares voting rights in Quanta common stock equivalent to the number of exchangeable shares outstanding at that time.

The holders of exchangeable shares associated with the Preferred Stock have rights equivalent to Quanta common stockholders with respect to voting, dividends and other economic rights. The holders of exchangeable shares not associated with the Preferred Stock have rights equivalent to Quanta common stockholders with respect to dividends and other economic rights but do not have voting rights.

During the quarters ended March 31, 2017 and 2016, 2.5 million and no exchangeable shares were exchanged for Quanta common stock. As of March 31, 2017, both shares of the Preferred Stock remained outstanding and 4.0 million exchangeable shares remained outstanding, of which 3.9 million were associated with the Preferred Stock.

Treasury Stock

Shares withheld for tax withholding obligations

Under the stock incentive plans described in Note 9, the tax withholding obligations of employees upon vesting of restricted stock, RSUs and performance units settled in common stock are typically satisfied by Quanta making such tax payments and withholding the number of vested shares having a value on the date of vesting equal to the tax withholding obligation. For the settlement of these employee tax liabilities, Quanta withheld 0.5 million and 0.3 million shares of Quanta common stock during the three months ended March 31, 2017 and 2016, with a total market value of $17.1 million and $7.1 million. These shares and the related costs to acquire them were accounted for as adjustments to the balance of treasury stock.

Notional amounts recorded related to deferred compensation plans

For RSUs and performance units that vest but the settlement of which are deferred under Quanta's deferred compensation plans, Quanta records an amount to treasury stock and an offsetting amount to APIC. No shares are recorded as treasury stock at vesting as the shares of Quanta common stock associated with deferred equity awards are not issued. Upon settlement of the deferred equity awards and issuance of the associated Quanta common stock, the original accounting entry is reversed. The net amounts recorded to treasury stock related to the deferred compensation plans during the three months ended March 31, 2017 and 2016 were $3.2 million and $7.4 million. An aggregate of $17.5 million was included in treasury stock for notional amounts related to deferred compensation plans at March 31, 2017.

Retirement of Treasury Stock

Effective December 1, 2016, Quanta retired 84.8 million shares of treasury stock. These retired shares were restored to the status of authorized and unissued shares as permitted by Delaware law. The retired stock had a carrying value of $1.95 billion. In accordance with Quanta's policy, Quanta recorded the formal retirement of treasury stock by deducting the par value from common stock and the excess of cost over par value from APIC.

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Stock repurchases

During the third quarter of 2015, Quanta's board of directors approved a stock repurchase program that authorized Quanta to purchase, from time to time through February 28, 2017, up to $1.25 billion of its outstanding common stock (the 2015 Repurchase Program). Repurchases under the 2015 Repurchase Program were made in open market and privately negotiated transactions, including pursuant to an accelerated share repurchase arrangement and an issuer repurchase plan. During 2015, Quanta repurchased 19.2 million shares of its common stock at a cost of $449.9 million in the open market under the 2015 Repurchase Program.

During the third quarter of 2015, Quanta also entered into an accelerated share repurchase arrangement (the ASR) to repurchase $750.0 million of its common stock under the 2015 Repurchase Program. Under the terms of the ASR, Quanta paid $750.0 million to JPMorgan Chase Bank, National Association, London Branch (JPMorgan) and initially received 25.7 million shares of its common stock. The fair market value of these 25.7 million shares at the time of delivery was $600.0 million, and the repurchased shares and the related cost to acquire them were accounted for as an adjustment to the balance of treasury stock during the third quarter of 2015, reducing the weighted-average number of basic and diluted common shares used to calculate Quanta's earnings per share. The $150.0 million remaining under the ASR was recorded as an adjustment to APIC during the third quarter of 2015 and was reclassified from APIC to treasury stock upon final settlement of the ASR on April 12, 2016. At final settlement and based on the final volume-weighted average share price during the term of the ASR, minus a discount and subject to other adjustments pursuant to the terms and conditions of the ASR, Quanta received 9.4 million additional shares of its common stock from JPMorgan. The 2015 Repurchase Program ended on February 28, 2017, and Quanta repurchased a total of 54.3 million shares of its common stock at a cost of $1.20 billion under the 2015 Repurchase Program. No common stock was repurchased in the three months ended March 31, 2017 or 2016 under any repurchase programs.

Other

Under Delaware corporate law, treasury stock is not counted for quorum purposes or entitled to vote.

Non-controlling Interests

Quanta holds investments in several joint ventures that provide infrastructure services under specific customer contracts. Quanta has determined that certain of these joint ventures are VIEs, with Quanta providing the majority of the infrastructure services to the joint venture, which management believes most significantly influences the economic performance of the joint venture. Management has concluded that Quanta is the primary beneficiary of each of the joint ventures determined to be VIEs and has accounted for each on a consolidated basis. The other parties' equity interests in these joint ventures have been accounted for as non-controlling interests in the condensed consolidated financial statements. Income attributable to the other joint venture members in the amounts of $0.2 million and $0.4 million for the three months ended March 31, 2017 and 2016 has been accounted for as a reduction of net income in deriving net income attributable to common stock. Equity in the consolidated assets and liabilities of these joint ventures that is attributable to the other joint venture members has been accounted for as non-controlling interests within total equity in the accompanying balance sheets.

The carrying value of the investments held by Quanta in all of its VIEs was $2.5 million and $3.3 million at March 31, 2017 and December 31, 2016. The carrying value of investments held by the non-controlling interests in these variable interest entities at March 31, 2017 and December 31, 2016 was $2.5 million and $3.3 million.

During the three months ended March 31, 2017 and 2016, distributions to non-controlling interests were $1.0 million and none. There were no other changes in equity as a result of transfers to/from the non-controlling interests during the three months ended March 31, 2017 or 2016. See Note 10 for further disclosures related to Quanta's joint venture arrangements.

9. EQUITY-BASED COMPENSATION:

Stock Incentive Plans

On May 19, 2011, Quanta's stockholders approved the 2011 Omnibus Equity Incentive Plan (the 2011 Plan). The 2011 Plan provides for the award of non-qualified stock options, incentive (qualified) stock options, stock appreciation rights, restricted stock, RSUs, stock bonus awards, performance compensation awards (including performance units and cash bonus awards) or any combination of the foregoing. The purpose of the 2011 Plan is to attract and retain key personnel and provide participants with additional performance incentives by increasing their proprietary interest in Quanta. Employees, directors, officers, consultants or advisors of Quanta or its affiliates are eligible to participate in the 2011 Plan, as are prospective employees, directors, officers, consultants or advisors of Quanta who have agreed to serve Quanta in those capacities. An aggregate of 11,750,000 shares of Quanta common stock may be issued pursuant to awards granted under the 2011 Plan.

Additionally, pursuant to the Quanta Services, Inc. 2007 Stock Incentive Plan (the 2007 Plan), which was adopted on May 24, 2007, Quanta may award restricted stock, incentive stock options and non-qualified stock options to eligible employees, directors, and certain consultants and advisors. An aggregate of 4,000,000 shares of common stock may be issued pursuant to awards granted under the 2007 Plan, and the 2007 Plan terminates on May 24, 2017. Quanta also has a Restricted Stock Unit Plan (the RSU Plan), pursuant to which RSUs may be awarded to certain employees and consultants of Quanta's Canadian operations.

The 2011 Plan, the 2007 Plan and the RSU Plan, together with certain plans assumed by Quanta in acquisitions, are referred to as the Plans.

Restricted Stock and RSUs to be Settled in Common Stock

During the three months ended March 31, 2017 and 2016, Quanta granted 1.1 million and 1.7 million RSUs to be settled in common stock under the Plans with weighted average grant date fair values of $38.18 and $21.95. The grant date fair value for awards of restricted stock and RSUs to be settled in common stock is based on the market value of Quanta common stock on the date of grant. Restricted stock and RSU awards to be settled in common stock are subject to forfeiture, restrictions on transfer and certain other conditions until vesting, which generally occurs in equal installments over a two-year or three-year period following the date of grant. During the restriction period, holders of restricted stock are entitled to vote and receive dividends on such shares.

During the three months ended March 31, 2017 and 2016, vesting activity consisted of 1.3 million and 1.2 million shares of restricted stock and RSUs settled in common stock with an approximate fair value at the time of vesting of $50.5 million and $25.3 million.

During the three months ended March 31, 2017 and 2016, Quanta recognized $11.2 million and $13.2 million in non-cash stock compensation expense related to restricted stock and RSUs to be settled in common stock. As of March 31, 2017, there was $54.0 million of total unrecognized compensation cost related to unvested RSUs to be settled in common stock granted to both employees and non-employees. This cost is expected to be recognized over a weighted average period of 2.08 years.

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Performance Units to be Settled in Common Stock

Performance units awarded pursuant to the 2011 Plan provide for the issuance of shares of common stock upon vesting. These performance units cliff-vest at the end of a three-year performance period based on achievement of company performance goals established by Quanta's compensation committee. The final amount of earned and vested performance units can range from 0% to 200% of the initial amount awarded based on the level of achievement of such goals, as determined by Quanta's compensation committee.

During the three months ended March 31, 2017 and 2016, Quanta granted 0.3 million and 0.2 million performance units to be settled in common stock under the 2011 Plan with a weighted average grant date fair value of $36.31 and $22.62 per unit. The grant date fair value for awards of performance units is based on the market value of Quanta common stock on the date of grant applied to the total number of performance units that Quanta anticipates will become earned and vest. This fair value is expensed ratably over the three-year performance period and is adjusted for fair value changes, so that the expense recognized is equivalent to the fair value of the final number of earned and vested performance units. During the three months ended March 31, 2017 and 2016, Quanta recognized $0.7 million and $0.5 million in compensation expense associated with performance units to be settled in common stock. During the three months ended March 31, 2017 and 2016, 0.1 million and no performance units vested, and 0.1 million and no shares of common stock were issued in connection with performance units.

RSUs to be Settled in Cash

Certain RSUs granted by Quanta under the Plans are settled solely in cash. These cash-settled RSUs are intended to provide plan participants with cash performance incentives that are substantially equivalent to the risks and rewards of equity ownership in Quanta, typically vest in equal installments over a two-year or three-year period following the date of grant, and are subject to forfeiture under certain conditions, primarily termination of service. Additionally, subject to certain restrictions, Quanta's non-employee directors may elect to cash settle a portion of their RSU awards, which generally vest upon conclusion of the director service year. For all RSUs settled in cash, the holders receive for each vested RSU an amount in cash equal to the fair market value of one share of Quanta common stock on the settlement date, as specified in the applicable award agreement.

Compensation expense related to RSUs to be settled in cash was $2.7 million and $1.5 million for the three months ended March 31, 2017 and 2016. Such expense is recorded in selling, general and administrative expenses. RSUs that are anticipated to be settled in cash are not included in the calculation of earnings per share, and the estimated earned value of such RSUs is classified as a liability. Quanta paid $2.4 million and $1.0 million to settle liabilities related to cash-settled RSUs in the three months ended March 31, 2017 and 2016. Accrued liabilities for the estimated earned value of outstanding RSUs to be settled in cash were $5.4 million and $5.1 million at March 31, 2017 and December 31, 2016.

10. COMMITMENTS AND CONTINGENCIES:

Investments in Affiliates and Other Entities

As described in Note 8, Quanta holds investments in certain joint ventures with third parties for the purpose of providing infrastructure services under certain customer contracts. Losses incurred by these joint ventures are generally shared ratably based on the percentage ownership of the joint venture members. However, each member of the joint venture typically is jointly and severally liable for all of the obligations of the joint venture

under the contract with the customer, and therefore can be liable for full performance of the contract with the customer. In circumstances where Quanta's participation in a joint venture qualifies as a general partnership, the joint venture partners are jointly and severally liable for all of the obligations of the joint venture, including obligations owed to the customer or any other person or entity. Quanta is not aware of circumstances that would lead to future claims against it for material amounts in connection with these joint and several liabilities.

In the joint venture arrangements entered into by Quanta, typically each joint venture party indemnifies the other party for any liabilities incurred in excess of the liabilities such other party is obligated to bear under the respective joint venture agreement. It is possible, however, that Quanta could be required to pay or perform obligations in excess of its share if the other party to the joint venture failed or refused to pay or perform its share of the obligations. Quanta is not aware of circumstances that would lead to future claims against it for material amounts that would not be indemnified.

During 2014, a limited partnership in which Quanta is a partner was selected for an engineering, procurement and construction (EPC) electric transmission project to construct approximately 500 kilometers of transmission line and two 500 kV substations. Quanta will provide turnkey EPC services for the entire project. As of March 31, 2017, Quanta had made aggregate contributions to this unconsolidated affiliate of $16.9 million and had received $2.9 million as a return of capital. Also as of March 31, 2017, Quanta had outstanding additional capital commitments associated with investments in an unconsolidated affiliate related to this project as follows (in thousands):

	Capital Commitments
Year Ending December 31 —	
Remainder of 2017 (1)	$ 30,733
2018	—
2019	23,785
Total capital commitments associated with investments in an unconsolidated affiliate related to an EPC electrical transmission project	$ 54,518

(1) A return of capital from unconsolidated affiliates of approximately $42.5 million is anticipated in August 2017 and is not included in these amounts.

Additionally, as of March 31, 2017, Quanta had outstanding capital commitments associated with investments in unconsolidated affiliates related to planned oil and gas infrastructure projects of $17.9 million, of which $1.2 million is expected to be paid in the second quarter of 2017. The remaining $16.7 million of these capital commitments is anticipated to be paid by May 31, 2022.

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Leases

Quanta leases certain land, buildings and equipment under non-cancelable lease agreements, including related party leases. The terms of these agreements vary from lease to lease, including some with renewal options and escalation clauses. The following schedule shows the future minimum lease payments under these leases as of March 31, 2017 (in thousands):

	Operating Leases
Year Ending December 31 —	
Remainder of 2017	$ 80,557
2018	75,010
2019	51,396
2020	30,566
2021	17,044
Thereafter	21,691
Total minimum lease payments	$ 276,264

Rent expense related to operating leases was $65.0 million and $56.4 million for the three months ended March 31, 2017 and 2016.

Quanta has guaranteed the residual value on certain of its equipment operating leases. Quanta has agreed to pay any difference between this residual value and the fair market value of the underlying asset at the date of termination of the leases. At March 31, 2017, the maximum guaranteed residual value was $573.3 million. Quanta believes that no significant payments will be made as a result of the difference between the fair market value of the leased equipment and the guaranteed residual value. However, there can be no assurance that significant payments will not be required in the future.

Committed Expenditures

Quanta has capital commitments for the expansion of its vehicle fleet in order to accommodate manufacturer lead times on certain types of vehicles. As of March 31, 2017, Quanta had issued $20.3 million of production orders with expected delivery dates in 2017. Although Quanta has committed to purchase these vehicles at the time of their delivery, Quanta anticipates that these orders will be assigned to third party leasing companies and made available to Quanta under certain of its master equipment lease agreements, thereby releasing Quanta from its capital commitments.

Legal Proceedings

Quanta is from time to time party to various lawsuits, claims and other legal proceedings that arise in the ordinary course of business. These actions typically seek, among other things, compensation for alleged personal injury, breach of contract and/or property damages, employment-related damages, punitive damages, civil penalties or other losses, or injunctive or declaratory relief. With respect to all such lawsuits, claims and proceedings, Quanta records a reserve when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. In addition, Quanta discloses matters for which management believes a material loss is at least reasonably possible. Except as otherwise stated below, none of these proceedings, separately or in the aggregate, are expected to have a material adverse effect on Quanta's consolidated financial

position, results of operations or cash flows. In all instances, management has assessed the matter based on current information and made a judgment concerning its potential outcome, giving due consideration to the nature of the claim, the amount and nature of damages sought and the probability of success. Management's judgment may prove materially inaccurate, and such judgment is made subject to the known uncertainties of litigation.

Lorenzo Benton v. Telecom Network Specialists, Inc., et al. In June 2006, plaintiff Lorenzo Benton filed a class action complaint in the Superior Court of California, County of Los Angeles, alleging various wage and hour violations against Telecom Network Specialists (TNS), a former subsidiary of Quanta. Quanta retained liability associated with this matter pursuant to the terms of Quanta's sale of TNS in December 2012. Benton seeks to represent a class of workers that includes all persons who worked on certain TNS projects, including individuals that TNS retained through numerous staffing agencies. The plaintiff class in this matter is seeking damages for unpaid wages, penalties associated with the failure to provide meal and rest periods and overtime wages, interest and attorneys' fees. In September 2015, the trial court certified the class as to workers from the various staffing companies at issue. In January 2017, the trial court granted a summary judgment motion filed by the plaintiff class and found that TNS was a joint employer of the class members and that it failed to provide adequate meal and rest breaks and failed to pay overtime wages. Quanta believes this decision is not supported by controlling law and continues to contest liability in this matter.

Additionally, in November 2007, TNS filed cross complaints for indemnity and breach of contract against the staffing agencies, which employed many of the individuals in question. In December 2012, the trial court heard cross-motions for summary judgment filed by TNS and the staffing agencies pertaining to TNS's demand for indemnity. The court denied TNS's motion and granted the motions filed by the staffing agencies; however, the California Appellate Court reversed the trial court's decision in part and instructed the trial court to reconsider its ruling. In February 2017, the court denied a new motion for summary judgment filed by the staffing companies and stated that the staffing companies were liable to TNS for any damages owed to the class members that the staffing companies employed.

The final amount of liability, if any, payable in connection with this matter remains the subject of pending litigation and will ultimately depend on various factors, including the outcome of Quanta's appeal of the trial court's ruling and the solvency of the staffing agencies. Based on review and analysis of the trial court's rulings, Quanta does not believe, at this time, that it is probable this matter will result in a material loss; however, a loss up to approximately $23 million remains reasonably possible upon final resolution of this matter.

For additional information regarding other pending legal proceedings, see *Collective Bargaining Agreements* in this Note 10.

Concentrations of Credit Risk

Quanta is subject to concentrations of credit risk related primarily to its cash and cash equivalents and net receivable position with customers, which includes amounts related to billed and unbilled accounts receivable and costs and estimated earnings in excess of billings on uncompleted contracts net of advanced billings with the same customer. Substantially all of Quanta's cash and cash equivalents are managed by what it believes to be high credit quality financial institutions. In accordance with Quanta's investment policies, these institutions are authorized to invest cash and cash equivalents in a diversified portfolio of what Quanta believes to be high quality cash and cash equivalent investments, which consist primarily of interest-bearing demand deposits, money market investments, money market mutual funds and investment grade commercial paper with original

maturities of three months or less. Although Quanta does not currently believe the principal amount of these cash and cash equivalents is subject to any material risk of loss, changes in economic conditions could impact the interest income Quanta receives from these investments. In addition, Quanta grants credit under normal payment terms, generally without collateral, to its customers, which include electric power and oil and gas companies, governmental entities, general contractors, and builders, owners and managers of commercial and industrial properties located primarily in the United States, Canada and Australia. Consequently, Quanta is subject to potential credit risk related to changes in business and economic factors throughout the United States, Canada and Australia, which may be heightened as a result of uncertain economic and financial market conditions that have existed in recent years. However, Quanta generally has certain statutory lien rights with respect to services provided. Historically, some of Quanta's customers have experienced significant financial difficulties, and others may experience financial difficulties in the future. These difficulties expose Quanta to increased risk related to collectability of billed and unbilled receivables and costs and estimated earnings in excess of billings on uncompleted contracts for services Quanta has performed.

At March 31, 2017 and December 31, 2016, one customer within Quanta's Electric Power Infrastructure Services segment accounted for approximately 16% of Quanta's consolidated net receivable position. The net receivable position for this customer was $300.4 million and $277.3 million at March 31, 2017 and December 31, 2016 and was related to two electric transmission projects located in remote regions of northeastern Canada. Included in the net receivable position for this customer were $191.1 million and $175.9 million of costs and estimated earnings in excess of billings on uncompleted contracts at March 31, 2017 and December 31, 2016. These net receivable balances were related to invoicing challenges and billing delays that resulted from extensive quality assurance documentation and administrative requirements. Quanta continues to work collaboratively with the customer to improve these processes. The net receivable position also included change orders and claims that Quanta is negotiating in the normal course of business. No other customers represented 10% or more of Quanta's consolidated net receivable position as of March 31, 2017 or December 31, 2016.

Additionally, two customers within Quanta's Oil and Gas Infrastructure Services segment each accounted for approximately 10% of Quanta's consolidated revenues during the three months ended March 31, 2017. No other customers represented 10% or more of Quanta's consolidated revenues for the three months ended March 31, 2017, and no customers represented 10% or more of Quanta's consolidated revenues for the three months ended March 31, 2016.

Self-Insurance

As discussed in Note 2, Quanta is insured for employer's liability, workers' compensation, auto liability, general liability and group health claims. As of March 31, 2017 and December 31, 2016, the gross amount accrued for insurance claims totaled $220.0 million and $218.2 million with $162.1 million and $162.0 million considered to be long-term and included in other non-current liabilities. Related insurance recoveries/receivables as of March 31, 2017 and December 31, 2016 were $8.1 million and $8.7 million, of which $0.4 million and $0.4 million were included in prepaid expenses and other current assets and $7.7 million and $8.3 million were included in other assets, net.

Letters of Credit

Certain of Quanta's vendors require letters of credit to ensure reimbursement for amounts they are disbursing on Quanta's behalf, such as to beneficiaries under its self-funded insurance programs. In addition, from time to time, certain customers require Quanta to post letters of credit to ensure payment to its

subcontractors and vendors and to guarantee performance under contracts. Such letters of credit are generally issued by a bank or similar financial institution, typically pursuant to Quanta's credit facility. Each letter of credit commits the issuer to pay specified amounts to the holder of the letter of credit if the holder demonstrates that Quanta has failed to perform specified actions. If this were to occur, Quanta would be required to reimburse the issuer of the letter of credit. Depending on the circumstances of such a reimbursement, Quanta may also be required to record a charge to earnings for the reimbursement. Quanta does not believe that it is likely that any material claims will be made under a letter of credit in the foreseeable future.

As of March 31, 2017, Quanta had $323.2 million in outstanding letters of credit and bank guarantees under its credit facility to secure its casualty insurance program and various contractual commitments. These are irrevocable stand-by letters of credit with maturities generally expiring at various times throughout 2017 and 2018. Upon maturity, it is expected that the majority of the letters of credit related to the casualty insurance program will be renewed for subsequent one-year periods.

Performance Bonds and Parent Guarantees

In certain circumstances, Quanta is required to provide performance bonds in connection with its contractual commitments. Quanta has indemnified its sureties for any expenses paid out under these performance bonds. These performance bonds expire at various times ranging from mechanical completion of the related projects to a period extending beyond contract completion in certain circumstances, and as such a determination of maximum potential amounts outstanding requires the use of certain estimates and assumptions. Such amounts can also fluctuate from period to period based upon the mix and level of Quanta's bonded operating activity. As of March 31, 2017, the total amount of the outstanding performance bonds was estimated to be approximately $3.4 billion. Quanta's estimated maximum exposure as it relates to the value of the performance bonds outstanding is lowered on each bonded project as the cost to complete is reduced, and each of its commitments under the performance bonds generally extinguishes concurrently with the expiration of its related contractual obligation. The estimated cost to complete these bonded projects was approximately $910 million as of March 31, 2017.

Additionally, from time to time, Quanta guarantees the obligations of its wholly owned subsidiaries, including obligations under certain contracts with customers, certain lease obligations and, in some states, obligations in connection with obtaining contractors' licenses. Quanta is not aware of any material obligations for performance or payment asserted against it under any of these guarantees.

Employment Agreements

Quanta has various employment agreements with certain executives and other employees, which provide for compensation and certain other benefits and for severance payments under certain circumstances. Certain employment agreements also contain clauses that become effective upon a change in control of Quanta, and Quanta may be obligated to pay certain amounts to such employees upon the occurrence of any of the defined change in control events.

Collective Bargaining Agreements

Some of Quanta's operating units are parties to various collective bargaining agreements with unions that represent certain of their employees. The collective bargaining agreements expire at various times and have typically been renegotiated and renewed on terms similar to those in the expiring agreements. From time to time,

QUANTA SERVICES, INC. AND SUBSIDIARIES

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — *(Continued)*
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Quanta is a party to grievance actions based on claims arising out of the collective bargaining agreements. The agreements require the operating units to pay specified wages, provide certain benefits to their union employees and contribute certain amounts to multiemployer pension plans and employee benefit trusts. Quanta's multiemployer pension plan contribution rates generally are specified in the collective bargaining agreements (usually on an annual basis), and contributions are made to the plans on a "pay-as-you-go" basis based on its union employee payrolls. The location and number of union employees that Quanta employs at any given time and the plans in which they may participate vary depending on the projects Quanta has ongoing at any time and the need for union resources in connection with those projects. Therefore, Quanta is unable to accurately predict its union employee payroll and the amount of the resulting multiemployer pension plan contribution obligation for future periods.

The Pension Protection Act of 2006 (PPA) also added special funding and operational rules generally applicable to plan years beginning after 2007 for multiemployer plans that are classified as "endangered," "seriously endangered" or "critical" status based on multiple factors (including, for example, the plan's funded percentage, cash flow position and whether it is projected to experience a minimum funding deficiency). Plans in these classifications must adopt measures to improve their funded status through a funding improvement or rehabilitation plan, as applicable, which may require additional contributions from employers (which may take the form of a surcharge on benefit contributions) and/or modifications to retiree benefits. Certain plans to which Quanta contributes or may contribute in the future are in "endangered," "seriously endangered" or "critical" status. The amount of additional funds, if any, that Quanta may be obligated to contribute to these plans in the future cannot be estimated due to uncertainty of the future levels of work that require the specific use of union employees covered by these plans, as well as the future contribution levels and possible surcharges on contributions applicable to these plans.

Quanta may be subject to additional liabilities imposed by law as a result of its participation in multiemployer defined benefit pension plans. For example, the Employee Retirement Income Security Act of 1974, as amended by the Multiemployer Pension Plan Amendments Act of 1980, imposes certain liabilities upon an employer who is a contributor to a multiemployer pension plan if the employer withdraws from the plan or the plan is terminated or experiences a mass withdrawal. These liabilities include an allocable share of the unfunded vested benefits in the plan for all plan participants, not merely the benefits payable to a contributing employer's own retirees. As a result, participating employers may bear a higher proportion of liability for unfunded vested benefits if other participating employers cease to contribute or withdraw, with the reallocation of liability being more acute in cases when a withdrawn employer is insolvent or otherwise fails to pay its withdrawal liability. Other than as described below, Quanta is not aware of any material amounts of withdrawal liability that have been incurred as a result of a withdrawal by any of Quanta's operating units from any multiemployer defined benefit pension plans.

2011 Central States Plan Withdrawal Liability. In the fourth quarter of 2011, certain Quanta subsidiaries withdrew from the Central States, Southeast and Southwest Areas Pension Plan (the Central States Plan). This withdrawal event was the result of an amendment to a collective bargaining agreement with the International Brotherhood of Teamsters (Teamsters) that eliminated certain employers' obligations to contribute to the Central States Plan, which was then in critical status and significantly underfunded as to its vested benefit obligations. The amendment was negotiated by the Pipe Line Contractors Association (PLCA) on behalf of its members, which include certain Quanta subsidiaries. Because certain other Quanta subsidiaries continued participation in the Central States Plan into 2012, the Quanta subsidiaries' withdrawals in 2011 effected only a partial withdrawal on behalf of Quanta for 2011. Quanta believed that the partial withdrawal was advantageous because it limited exposure to increased liability resulting from a future withdrawal event, at which point the Central States Plan

could have been further underfunded. Quanta and other PLCA members now contribute to a different multiemployer pension plan on behalf of the affected Teamsters employees. While certain additional Quanta subsidiaries continued participation in the Central States Plan into 2012, Quanta believes that such subsidiaries withdrew from the Central States Plan in 2012, thereby effecting a complete withdrawal as of December 30, 2012 for all Quanta subsidiaries.

In connection with the partial withdrawal in 2011, Quanta recorded a withdrawal liability of approximately $32.6 million in the fourth quarter of 2011 based on estimates received from the Central States Plan. The Central States Plan subsequently asserted that the withdrawal of the PLCA members, and thus Quanta's partial withdrawal, was not effective in 2011. The PLCA and Quanta believed at that time that a legally effective withdrawal had occurred during the fourth quarter of 2011, and this issue was litigated in the federal district court for the Northern District of Illinois, Eastern Division. In September 2013, the district court ruled in favor of the Central States Plan, and that decision was appealed by the PLCA. In July 2014, the Central States Plan provided Quanta with a Notice and Demand claiming partial withdrawal liability in the amount of $39.6 million and requiring Quanta to make payments on this assessment while the dispute is ongoing. In September 2015, the United States Court of Appeals for the Seventh Circuit ruled in favor of the PLCA and reversed the district court's previous ruling which had been in favor of the Central States Plan. Based on the outcome of the appeal, in January 2016, the Central States Plan issued a revised Notice and Demand claiming a partial withdrawal liability in the amount of $32.9 million.

Separately, in December 2013, the Central States Plan filed lawsuits against two of Quanta's other subsidiaries in connection with their withdrawal in 2012. In the first lawsuit, the Central States Plan alleged that the subsidiary elected to participate in the Central States Plan pursuant to the collective bargaining agreement under which it participated. Quanta argued that no such election was made and that any payments made to the Central States Plan were made in error. In July 2014, the parties reached an agreement to settle the lawsuit, and the court dismissed the case with prejudice. In the second lawsuit, the Central States Plan alleged that contributions made by the Quanta subsidiary to a new industry fund created after Quanta withdrew from the Central States Plan should have been made to the Central States Plan. This arguably would have extended the withdrawal date for this subsidiary to at least the end of 2013. Quanta disputed these allegations on the basis that it properly paid contributions to the new industry fund based on the terms of the collective bargaining agreement under which it participated and asserted that it terminated its obligation to contribute to the Central States Plan by the end of 2012. The parties both moved for summary judgment, and in March 2015, the court entered judgment in favor of Quanta. The Central States Plan filed a notice of appeal in April 2015, and in December 2015, the Central States Plan agreed to dismiss the appeal with prejudice.

The ultimate liability associated with the complete withdrawal of Quanta's subsidiaries from the Central States Plan will depend on various factors, including interpretations of the terms of the collective bargaining agreements under which the subsidiaries participated and whether exemptions from withdrawal liability applicable to construction industry employers will be available. In March 2014, the Central States Plan provided revised estimates indicating that the total withdrawal liability based on certain withdrawal scenarios from 2011 through 2014 could range between $40.1 million and $55.4 million, which Quanta believes to be the range of reasonably possible loss for this matter. Additionally, based on those estimates and allowing for the exclusion of amounts believed by management to have been improperly included in such estimates, Quanta recorded an adjustment to cost of services during the three months ended March 31, 2014 to increase the recognized withdrawal liability to an amount within the range communicated to Quanta by the Central States Plan. Given the unknown nature of some of the factors mentioned above, the final withdrawal liability cannot yet be determined with certainty. Accordingly, it is reasonably possible that the amount owed upon final resolution of these matters

could be materially higher than the expense Quanta had recognized through March 31, 2017. Although Quanta disputes the total liability owed to the Central States Plan, it continues to make monthly payments according to the terms of the January 2016 Notice and Demand while the parties determine the final withdrawal liability. As of March 31, 2017, Quanta had made payments totaling $19.1 million toward the withdrawal liability assessment.

2013 Central States Plan Withdrawal Liability. On October 9, 2013, Quanta acquired a company that experienced a complete withdrawal from the Central States Plan prior to the date of acquisition. Prior to the acquisition, the Central States Plan issued a Notice and Demand to the acquired company claiming a withdrawal liability in the total amount of $6.9 million and requiring payments to be made on this assessment while the dispute is ongoing. In connection with the acquisition, Quanta recorded an initial liability of $4.8 million related to this withdrawal liability, and a portion of the purchase price for the acquired company was deposited into an escrow account to fund any withdrawal obligation in excess of the initial liability recorded. In January 2016, the Central States Plan issued a revised Notice and Demand claiming a withdrawal liability in the amount of $4.8 million. Although Quanta continues to dispute the total liability owed to the Central States Plan, it continues to make monthly payments according to the terms of this revised Notice and Demand while the parties determine the final withdrawal liability. As of March 31, 2017, payments totaling $3.7 million had been made toward the withdrawal liability assessment.

The final amount of withdrawal liability payable in connection with this matter remains the subject of a pending arbitration proceeding and will ultimately depend on various factors, including the outcome of the PLCA litigation described above. However, the acquired company's withdrawal from the Central States Plan is not expected to have a material impact on Quanta's financial condition, results of operations or cash flows.

Indemnities

Quanta generally indemnifies its customers for the services it provides under its contracts, as well as other specified liabilities, which may subject Quanta to indemnity claims and liabilities and related litigation. Additionally, in connection with certain acquisitions and dispositions, Quanta has indemnified various parties against specified liabilities that those parties might incur in the future. The indemnities under acquisition or disposition agreements are usually contingent upon the other party incurring liabilities that reach specified thresholds. As of March 31, 2017, except as otherwise set forth above in *Legal Proceedings*, Quanta does not believe any material liabilities for claims exist against it in connection with any of these indemnity obligations.

In the normal course of Quanta's acquisition transactions, Quanta obtains rights to indemnification from the sellers or former owners of acquired companies for certain risks, liabilities and obligations arising from their prior operations, such as performance, operational, safety, workforce or tax issues, some of which Quanta may not have discovered during due diligence. However, the indemnities may not cover all of Quanta's exposure for such pre-acquisition matters, and the indemnitors may be unwilling or unable to pay the amounts owed to Quanta. Accordingly, Quanta may incur expenses for which it is not reimbursed. Quanta is currently in the process of identifying certain pre-acquisition obligations associated with non-U.S. payroll taxes that may be due from a business acquired by Quanta in 2013. As of March 31, 2017, Quanta had recorded $11.4 million as its best estimate of the pre-acquisition tax obligations and a corresponding indemnification asset, as management expects to recover from the indemnity counterparties any amounts that Quanta may be required to pay in connection with any such obligations.

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — *(Continued)*
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11. SEGMENT INFORMATION:

Quanta presents its operations under two reportable segments: (1) Electric Power Infrastructure Services and (2) Oil and Gas Infrastructure Services. This structure is generally based on the broad end-user markets for Quanta's services. See Note 1 for additional information regarding Quanta's reportable segments.

Quanta's segment results are derived from the types of services provided across its operating units in each of the end user markets described above. Quanta's entrepreneurial business model allows each of its operating units to serve the same or similar customers and to provide a range of services across end user markets. Quanta's operating units are organized into one of two internal divisions, namely, the Electric Power Infrastructure Services Division and the Oil and Gas Infrastructure Services Division. These internal divisions are closely aligned with the reportable segments described above based on their operating units' predominant type of work.

Reportable segment information, including revenues and operating income by type of work, is gathered from each operating unit for the purpose of evaluating segment performance in support of Quanta's market strategies. These classifications of Quanta's operating unit revenues by type of work for segment reporting purposes can at times require judgment on the part of management. Quanta's operating units may perform joint infrastructure service projects for customers in multiple industries, deliver multiple types of network services under a single customer contract or provide service across industries. For example, Quanta performs joint trenching projects to install distribution lines for electric power and natural gas customers.

In addition, Quanta's integrated operations and common administrative support at each of its operating units require that certain allocations of shared and indirect costs, such as facility costs and indirect operating expenses, including depreciation and general and administrative costs, be made to determine operating segment profitability. Corporate costs, such as payroll and benefits, employee travel expenses, facility costs, professional fees, acquisition costs and amortization related to intangible assets are not allocated.

Summarized financial information for Quanta's reportable segments is presented in the following table (in thousands):

	Three Months Ended March 31,	
	2017	**2016**
Revenues:		
Electric Power Infrastructure Services	$ 1,219,502	$ 1,187,002
Oil and Gas Infrastructure Services	958,668	526,735
Consolidated	$ 2,178,170	$ 1,713,737
Operating income (loss):		
Electric Power Infrastructure Services	$ 99,672	$ 87,324
Oil and Gas Infrastructure Services	38,817	5,841
Corporate and non-allocated costs	(63,415)	(55,871)
Consolidated	$ 75,074	$ 37,294
Depreciation:		
Electric Power Infrastructure Services	$ 22,086	$ 22,945
Oil and Gas Infrastructure Services	17,364	15,801
Corporate and non-allocated costs	3,243	2,424
Consolidated	$ 42,693	$ 41,170

QUANTA SERVICES, INC. AND SUBSIDIARIES

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Separate measures of Quanta's assets and cash flows by reportable segment, including capital expenditures, are not produced or utilized by management to evaluate segment performance. Quanta's fixed assets, which are held at the operating unit level, include operating machinery, equipment and vehicles, as well as office equipment, buildings and leasehold improvements, and are used on an interchangeable basis across its reportable segments. As such, for reporting purposes, total depreciation expense is allocated each quarter among Quanta's reportable segments based on the ratio of each reportable segment's revenue contribution to consolidated revenues.

Foreign Operations

During the three months ended March 31, 2017 and 2016, Quanta derived $655.5 million and $352.4 million of its revenues from foreign operations. Of Quanta's foreign revenues, 83% and 78% were earned in Canada during the three months ended March 31, 2017 and 2016. In addition, Quanta held property and equipment of $329.1 million and $320.7 million in foreign countries, primarily Canada, as of March 31, 2017 and December 31, 2016.

12. SUPPLEMENTAL CASH FLOW INFORMATION:

The net effect of changes in operating assets and liabilities, net of non-cash transactions, on cash flows from operating activities of continuing operations is as follows (in thousands):

	Three Months Ended March 31,	
	2017	2016
Accounts and notes receivable	$ (94,838)	$ 158,995
Costs and estimated earnings in excess of billings on uncompleted contracts	(80,710)	(52,467)
Inventories	(1,269)	4,537
Prepaid expenses and other current assets	(4,282)	1,826
Accounts payable and accrued expenses and other non-current liabilities	69,489	(23,644)
Billings in excess of costs and estimated earnings on uncompleted contracts	(11,814)	35,938
Other, net	6,218	(4,874)
Net change in operating assets and liabilities, net of non-cash transactions	$ (117,206)	$ 120,311

Additional supplemental cash flow information is as follows (in thousands):

	Three Months Ended March 31,	
	2017	2016
Cash (paid) received during the period for —		
Interest paid related to continuing operations	$ (3,462)	$ (2,441)
Income taxes paid related to continuing operations	$ (8,217)	$ (6,486)
Income taxes paid related to discontinued operations	$ —	$ (5,643)
Income tax refunds related to continuing operations	$ 2,206	$ 894

Item 2. ***Management's Discussion and Analysis of Financial Condition and Results of Operations.***

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our condensed consolidated financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q (Quarterly Report) and with our Annual Report on Form 10-K for the year ended December 31, 2016, which was filed with the Securities and Exchange Commission (SEC) on March 1, 2017 and is available on the SEC's website at www.sec.gov and on our website, which is www.quantaservices.com. The discussion below contains forward-looking statements that are based upon our current expectations and are subject to uncertainty and changes in circumstances. Actual results may differ materially from these expectations due to inaccurate assumptions and known or unknown risks and uncertainties, including those identified in *Uncertainty of Forward-Looking Statements and Information* below and Item 1A. *Risk Factors* of Part II of this Quarterly Report.

Introduction

We are a leading provider of specialty contracting services, offering infrastructure solutions primarily to the electric power, oil and gas and communications industries in the United States, Canada and Australia and select other international markets. The services we provide include the design, installation, upgrade, repair and maintenance of infrastructure within each of the industries we serve, such as electric power transmission and distribution networks, substation facilities, renewable energy facilities, and pipeline transmission and distribution systems and facilities.

We report our results under two reportable segments: (1) Electric Power Infrastructure Services and (2) Oil and Gas Infrastructure Services. This structure is generally focused on broad end-user markets for our services. Our consolidated revenues for the three months ended March 31, 2017 were $2.18 billion, of which 56.0% was attributable to the Electric Power Infrastructure Services segment and 44.0% was attributable to the Oil and Gas Infrastructure Services segment.

Our customers include many of the leading companies in the industries we serve. We have developed strong strategic alliances with numerous customers and strive to develop and maintain our status as a preferred vendor to our customers. We enter into various types of contracts, including competitive unit price, hourly rate, cost-plus (or time and materials basis), and fixed price (or lump sum basis), the final terms and prices of which are frequently negotiated with the customer. Although the terms of our contracts vary considerably, most are made on either a unit price or fixed price basis in which we agree to do the work for a price per unit of work performed (unit price) or for a fixed amount for the entire project (fixed price). We complete a substantial majority of our fixed price projects, other than certain large transmission projects, within one year, while we frequently provide maintenance and repair work under open-ended unit price or cost-plus master service agreements that are renewable periodically.

We recognize revenue on our unit price and cost-plus contracts as units are completed or services are performed. For our fixed price contracts, we record revenues as work on the contract progresses on a percentage-of-completion basis. Under this method, revenue is recognized based on the percentage of total costs incurred to date in proportion to total estimated costs to complete the contract. Fixed price contracts generally include retainage provisions under which a percentage of the contract price is withheld until the project is complete and has been accepted by our customer.

For internal management purposes, we are organized into two internal divisions, namely, the Electric Power Infrastructure Services Division and the Oil and Gas Infrastructure Services Division. These internal divisions are closely aligned with the reportable segments described above based on the predominant type of work provided by the operating units within each division.

Reportable segment information, including revenues and operating income by type of work, is gathered from each operating unit for the purpose of evaluating segment performance in support of our market strategies.

These classifications of our operating unit revenues by type of work for segment reporting purposes can at times require judgment on the part of management. Our operating units may perform joint infrastructure service projects for customers in multiple industries, deliver multiple types of infrastructure services under a single customer contract or provide services across industries. For example, we perform joint trenching projects to install distribution lines for electric power and natural gas customers. Our integrated operations and common administrative support at each of our operating units requires that certain allocations, including allocations of shared and indirect costs, such as facility costs, indirect operating expenses including depreciation, and general and administrative costs, be made to determine operating segment profitability. Corporate costs, such as payroll and benefits, employee travel expenses, facility costs, professional fees, acquisition costs and amortization related to intangible assets are not allocated.

The Electric Power Infrastructure Services segment provides comprehensive network solutions to customers in the electric power industry. Services performed by the Electric Power Infrastructure Services segment generally include the design, installation, upgrade, repair and maintenance of electric power transmission and distribution infrastructure and substation facilities along with other engineering and technical services. This segment also provides emergency restoration services, including the repair of infrastructure damaged by inclement weather, the energized installation, maintenance and upgrade of electric power infrastructure utilizing unique bare hand and hot stick methods and our proprietary robotic arm technologies, and the installation of "smart grid" technologies on electric power networks. In addition, this segment designs, installs and maintains renewable energy generation facilities, consisting of solar, wind and certain types of natural gas generation facilities, and related switchyards and transmission infrastructure. To a lesser extent, the segment also provides comprehensive communications infrastructure services to wireline, fiber and wireless carrier customers within the communications industry, and services in connection with the construction of electric power generation facilities, the design, installation, maintenance and repair of commercial and industrial wiring, and the installation of traffic networks and cable and control systems for light rail lines.

The Oil and Gas Infrastructure Services segment provides comprehensive network solutions to customers involved in the development and transportation of natural gas, oil and other pipeline products. Services performed by the Oil and Gas Infrastructure Services segment generally include the design, installation, repair and maintenance of pipeline transmission and distribution systems, gathering systems, production systems, storage systems and compressor and pump stations, as well as related trenching, directional boring and mechanized welding services. In addition, this segment's services include pipeline protection, integrity testing, rehabilitation and replacement, and fabrication of pipeline support systems and related structures and facilities. We also serve the offshore and inland water energy markets, primarily providing services to oil and gas exploration platforms, including mechanical installation (or "hook-ups"), electrical and instrumentation, pre-commissioning and commissioning, coatings, fabrication and marine asset repair. To a lesser extent, this segment designs, installs and maintains fueling systems, as well as water and sewer infrastructure.

We also enter into strategic partnerships with customers and infrastructure investors to provide fully integrated infrastructure services on certain projects, including planning and feasibility analysis, engineering, design, procurement, construction financing and investment and project operation and maintenance. These projects include public-private partnerships, private infrastructure projects and concessions, along with build, own, operate and transfer and build to suit arrangements. As part of this strategy, we formed a partnership with select infrastructure investors that provides $750 million of capital available to invest in certain of these infrastructure projects, including $60 million from us.

Recent Investments, Acquisitions and Divestitures

Acquisitions

During 2016, we completed five acquisitions. The results of four of the acquired companies are generally included in our Electric Power Infrastructure Services segment. These companies included an electrical

infrastructure services company located in Australia, a utility contracting company located in Canada, a full service medium- and high-voltage powerline contracting company located in the United States and a telecommunications company located in Canada. We also acquired a pipeline service contractor located in the United States, the results of which are generally included in our Oil and Gas Infrastructure Services segment. The aggregate consideration for these acquisitions consisted of $75.9 million paid or payable in cash, subject to certain adjustments, 70,840 shares of Quanta common stock valued at $1.5 million as of the settlement date of the applicable acquisition, and contingent consideration payments of up to $39.5 million, which will be paid if certain financial targets are achieved. Based on the estimated fair value of this contingent consideration, we have recorded an $18.7 million liability. As these transactions were effective during 2016, the results have been included in our consolidated financial statements beginning on the respective dates of acquisition. These acquisitions should enable us to further enhance our service offerings in the United States, Canada and Australia.

Backlog

Backlog is not a term recognized under United States generally accepted accounting principles (US GAAP); however, it is a common measurement used in our industry. Our methodology for determining backlog may not be comparable to the methodologies used by other companies.

Our backlog represents the amount of consolidated revenues that we expect to realize from future work under construction contracts, long-term maintenance contracts and master service agreements (MSAs). These estimates include revenues from the remaining portion of firm orders not yet completed and on which work has not yet begun, as well as revenues from change orders, renewal options, and funded and unfunded portions of government contracts to the extent that they are reasonably expected to occur. For purposes of calculating backlog, we include 100% of estimated revenues attributable to consolidated joint ventures and variable interest entities (VIEs). The following table presents our total backlog by reportable segment as of March 31, 2017 and December 31, 2016, along with an estimate of the backlog amounts expected to be realized within 12 months of each balance sheet date (in thousands):

	Backlog as of March 31, 2017		Backlog as of December 31, 2016	
	12 Month	Total	12 Month	Total
Electric Power Infrastructure Services	$ 3,573,047	$ 6,757,344	$ 3,369,373	$ 6,657,431
Oil and Gas Infrastructure Services	1,878,344	2,481,922	2,483,963	3,092,341
Total	$ 5,451,391	$ 9,239,266	$ 5,853,336	$ 9,749,772

Revenue estimates included in our backlog can be subject to change as a result of project accelerations, cancellations or delays due to various factors, including but not limited to commercial issues, regulatory requirements and adverse weather. These factors can also cause revenue amounts to be realized in periods and at levels different than originally projected. During the three month period ended March 31, 2017, we reduced our 12-month backlog for the Oil and Gas Infrastructure Services segment by approximately $100 million as a result of a cancellation of a natural gas pipeline project, for which we received a termination fee. Generally, our customers are not contractually committed to specific volumes of services under our MSAs, and most of our contracts may be terminated, typically upon 30 to 90 days' notice, even if we are not in default under the contract. We determine the estimated amount of backlog for work under MSAs by using recurring historical trends inherent in current MSAs, factoring in seasonal demand and projected customer needs based upon ongoing communications with the customer. In addition, many of our MSAs are subject to renewal options. As of March 31, 2017 and December 31, 2016, MSAs accounted for 43% and 42% of our estimated 12-month backlog and 53% of total backlog. There can be no assurance as to our customers' actual requirements or that our estimates are accurate.

Seasonality; Fluctuations of Results; Economic Conditions

Our revenues and results of operations can be subject to seasonal and other variations. These variations are influenced by weather, customer spending patterns, bidding seasons, receipt of required regulatory approvals, permits and rights of way, project timing and schedules, and holidays. Typically, our revenues are lowest in the first quarter of the year because cold, snowy or wet conditions can cause delays on projects. In addition, many of our customers develop their capital budgets for the coming year during the first quarter and do not begin infrastructure projects in a meaningful way until their capital budgets are finalized. Second quarter revenues are typically higher than those in the first quarter, as some projects begin, but continued cold and wet weather can often impact second quarter productivity. Third quarter revenues are typically the highest of the year, as a greater number of projects are underway, and weather is more accommodating. Generally, revenues during the fourth quarter of the year are lower than the third quarter but higher than the second quarter. Many projects are completed in the fourth quarter, and revenues are often impacted positively by customers seeking to spend their capital budgets before the end of the year; however, the holiday season and inclement weather can sometimes cause delays, reducing revenues and increasing costs. Any quarter may be positively or negatively affected by atypical weather patterns in any of the areas we serve, such as severe weather, excessive rainfall or unusual winter weather, making it difficult to predict these variations and their effect on particular projects quarter to quarter. The timing of project awards and unanticipated changes in project schedules as a result of delays or accelerations can also create variations in the level of operating activity from quarter to quarter.

These seasonal impacts are typical for our U.S. operations, but as our foreign operations continue to grow, we may see a lessening of this pattern impacting our quarterly revenues. For example, revenues in Canada are often higher in the first quarter as projects are accelerated so that work can be completed prior to the break up, or seasonal thaw, as productivity is adversely affected by wet ground conditions during the warmer spring and summer months. Also, although revenues from Australia and other international operations have not been significant relative to our overall revenues to date, their seasonal patterns may differ from those in North America and may impact our seasonality more in the future.

Additionally, our industry can be highly cyclical. Our volume of business may be adversely affected by declines or delays in new projects due to cyclicality, which may vary by geographic region, including the United States, Canada and Australia. Project schedules, particularly in connection with larger, longer-term projects, can also create fluctuations in the services provided, which may adversely affect us in a given period. For example, in connection with larger, more complicated projects, the timing of obtaining permits and other approvals may be delayed, and we may need to maintain a portion of our workforce and equipment in an underutilized capacity to ensure we are strategically positioned to deliver on such projects when they move forward. Examples of other items that may cause our results or demand for our services to fluctuate materially from quarter to quarter include: the financial condition of our customers and their access to capital; margins of projects performed during any particular period; regional, national and global economic and market conditions; our customers' capital spending, including on larger pipeline and electrical infrastructure projects; natural gas and oil prices; the timing of acquisitions, the timing and magnitude of acquisition and integration costs associated with acquisitions; dispositions; equity in earnings (losses) of unconsolidated affiliates; impairments of goodwill, intangible assets, long-lived assets or investments; effective tax rates and interest rates. Accordingly, our operating results in any particular period may not be indicative of the results that can be expected for any other period. Please read *Outlook* and *Understanding Margins* for additional discussion of trends and challenges that may affect our financial condition, results of operations and cash flows.

Understanding Margins

Our gross margin is gross profit expressed as a percentage of revenues, and our operating margin is operating income expressed as a percentage of revenues. Cost of services, which is subtracted from revenues to obtain gross profit, consists primarily of salaries, wages and benefits to employees, depreciation, fuel and other equipment expenses, equipment rentals, subcontracted services, insurance, facilities expenses, materials and parts

and supplies. Selling, general and administrative expenses and amortization of intangible assets are then subtracted from gross profit to obtain operating income. Various factors, some that are controllable and some that are not, can impact our margins on a quarterly or annual basis.

Seasonal and geographical. As discussed previously, seasonal patterns can have a significant impact on margins. Generally, business is slower in the winter months versus the warmer months of the year, resulting in lower productivity and consequently reducing our ability to cover fixed costs. This can be offset somewhat by increased demand for electrical service and repair work resulting from severe weather. Additionally, project schedules, including when projects begin and when they are completed, may impact margins. The mix of business conducted in the areas we serve will also affect margins, as some of the areas we serve offer the opportunity for higher margins than others due to the geographic characteristics associated with the physical location where the work is being performed. Such characteristics include whether the project is performed in an urban versus a rural setting or in a mountainous area or in open terrain. Site conditions, including unforeseen underground conditions, can also impact margins.

Weather. Adverse or favorable weather conditions can impact gross margins in a given period. For example, snowfall or rainfall in the areas in which we operate may negatively impact our revenues and margins due to reduced productivity, as projects may be delayed or temporarily placed on hold until weather conditions improve. Conversely, in periods when weather remains dry and temperatures are accommodating, more work can be done, sometimes with less cost, which would have a favorable impact on margins. In some cases, severe weather, such as hurricanes and ice storms, can provide us with higher margin emergency restoration service work, which generally has a positive impact on margins.

Revenue mix. The mix of revenues derived from the industries we serve and the types of services we provide within an industry will impact margins, as certain industries and services provide higher margin opportunities. Additionally, changes in our customers' spending patterns in each of the industries we serve can cause an imbalance in supply and demand and, therefore, affect margins and mix of revenues by industry served.

Service and maintenance versus installation. Installation work is often performed on a fixed price basis, while maintenance work is often performed under pre-established or negotiated prices or cost-plus pricing arrangements. Margins for installation work may vary from project to project, and may be higher than maintenance work, as work obtained on a fixed price basis has higher risk than other types of pricing arrangements. We typically derive approximately 30% of our annual revenues from maintenance work, but a higher portion of installation work in any given period may affect our gross margins for that period.

Subcontract work. Work that is subcontracted to other service providers generally yields lower margins. An increase in subcontract work in a given period may contribute to a decrease in margins. We typically subcontract approximately 20% to 25% of our work to other service providers.

Materials versus labor. Typically, our customers are responsible for supplying their own materials on projects; however, for some of our contracts, we may agree to procure all or part of the required materials. Margins may be lower on projects where we furnish a significant amount of materials, as our mark-up on materials is generally lower than on our labor costs. In a given period, an increase in the percentage of work with higher materials procurement requirements may decrease our overall margins.

Size, scope and complexity of projects. We may experience a decrease or fluctuations in margins when larger, more complex electric transmission and pipeline projects across the industries we serve experience significant delays. Larger projects with higher voltage capacities, larger diameter throughput capacities, increased construction or design complexities, more difficult terrain requirements or longer distance requirements typically yield opportunities for higher margins as we assume a greater degree of performance risk and allow for a higher degree of utilization of our resources for longer construction timeframes. Conversely, smaller or less complex electric transmission and pipeline projects typically provide lower margin opportunities

as there are a greater number of competitors capable of performing in this market, and competitors at times may more aggressively pursue available volumes of work to absorb fixed costs. A greater mix of smaller scale or less complex electric transmission and pipeline work also could negatively impact margins due to the inefficiency of transitioning between a greater number of smaller projects versus continuous production on fewer larger projects. Our margins may be further impacted by delays in the timing of larger projects or temporary decreases in capital spending by our customers, as we may choose to maintain a portion of our workforce and equipment in an underutilized capacity to ensure we are strategically positioned to deliver on larger, more complicated electric transmission or pipeline projects when they move forward.

Depreciation. We include depreciation in cost of services. This is common practice in our industry, but it can make comparability of our margins to those of other companies difficult. This must be taken into consideration when comparing us to other companies.

Insurance. As discussed in *Liquidity and Capital Resources — Self-Insurance*, we are insured for employer's liability, workers' compensation, auto liability and general liability claims. We also have employee health care benefit plans for most employees not subject to collective bargaining agreements. Margins could be impacted by fluctuations in insurance accruals as additional claims arise and as circumstances and conditions of existing claims change.

Performance risk. Margins may fluctuate because of the volume of work and the impacts of pricing and job productivity, which can be affected both favorably and negatively by, among other things, weather, geography, customer decisions and crew productivity. For example, when comparing a service contract between a current quarter and the comparable prior year's quarter, factors affecting the gross margins associated with the revenues generated by the contract may include pricing under the contract, the volume of work performed under the contract, the mix of the type of work specifically being performed and the productivity of the crews performing the work. Productivity can be influenced by many factors, including where the work is performed (e.g., rural versus urban area or mountainous or rocky area versus open terrain), whether the work is on an open or encumbered right of way, the impact of inclement weather, the effects of environmental restrictions or regulatory delays, or the performance of third parties on a project. These types of factors are not practicable to quantify through accounting data, but each of these items may individually or in the aggregate have a direct impact on the gross margin of a specific project.

Foreign currency risk. Our financial performance is reported on a U.S. dollar-denominated basis but is partially subject to fluctuations in foreign currency exchange rates. Fluctuations in exchange rates relative to the U.S. dollar, primarily the Canadian and Australian dollars, could cause material fluctuations in comparisons of our results of operations between periods.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of compensation and related benefits to management, administrative salaries and benefits, marketing, office rent and utilities, communications, professional fees, bad debt expense, acquisition costs, gains and losses on the sale of property and equipment, letter of credit fees and maintenance, training and conversion costs related to the implementation of an information technology solution.

Results of Operations

As previously discussed, we have acquired certain businesses, the results of which have been included in the following results of operations beginning on their respective acquisition dates. The following table sets forth selected statements of operations data and such data as a percentage of revenues for the three month periods indicated (dollars in thousands):

Consolidated Results

	Three Months Ended March 31,			
	2017		2016	
Revenues	$2,178,170	100.0%	$1,713,737	100.0%
Cost of services (including depreciation)	1,911,982	87.8	1,510,424	88.1
Gross profit	266,188	12.2	203,313	11.9
Selling, general and administrative expenses	184,552	8.5	158,524	9.3
Amortization of intangible assets	6,562	0.3	7,495	0.4
Operating income	75,074	3.4	37,294	2.2
Interest expense	(3,965)	(0.1)	(3,589)	(0.2)
Interest income	287	—	516	—
Equity in losses of unconsolidated affiliates	(603)	—	(181)	—
Other income (expense), net	239	—	262	—
Income before income taxes	71,032	3.3	34,302	2.0
Provision for income taxes	22,592	1.1	13,443	0.8
Net income	48,440	2.2	20,859	1.2
Less: Net income attributable to non-controlling interests	173	—	363	—
Net income attributable to common stock	$ 48,267	2.2%	$ 20,496	1.2%

Three months ended March 31, 2017 compared to the three months ended March 31, 2016

Revenues. Revenues increased $464.4 million, or 27.1%, to $2.18 billion for the three months ended March 31, 2017. Contributing to the increase was a $431.9 million increase in revenues from oil and gas infrastructure services and a $32.5 million increase in revenues from electric power infrastructure services. The increase in revenues from oil and gas infrastructure services primarily resulted from increased capital spending by our customers on larger pipeline transmission projects, as certain of these projects, after experiencing regulatory and permitting delays, moved into full construction during the second half of 2016 and remained in full construction during the first quarter of 2017. The increase in revenues from electric power infrastructure services resulted primarily from increased customer spending associated with larger transmission services, $18.7 million in additional emergency restoration services revenues and approximately $10 million in revenues from acquired companies. Foreign currency exchange rates also favorably impacted revenues by approximately $20 million during the three months ended March 31, 2017, primarily attributable to the strengthening of the Canadian dollar against the U.S. dollar.

Gross profit. Gross profit increased $62.9 million, or 30.9%, to $266.2 million for the three months ended March 31, 2017. Gross profit as a percentage of revenues increased to 12.2% for the three months ended March 31, 2017 from 11.9% for the three months ended March 31, 2016. The increases in gross profit and gross profit as a percentage of revenues were primarily due to the increase in revenues described above, as well as greater contributions from larger pipeline project margins and the incremental emergency restoration services

revenues mentioned above, which both typically yield higher margins. Also, last year's first quarter was negatively impacted by $21.3 million of project losses related to a power plant project in Alaska, which was substantially completed later in 2016.

Selling, general and administrative expenses. Selling, general and administrative expenses increased $26.0 million, or 16.4%, to $184.6 million for the three months ended March 31, 2017. This increase was primarily attributable to $17.2 million in higher compensation costs, largely associated with higher incentive compensation based on current levels of profitability, as well as annual compensation increases and increased personnel to support business growth; $5.8 million in higher attorneys' fees and related expenses due to ongoing and resolved litigation, $4.2 million of which was associated with a matter involving our prior disposition of certain communications operations that was resolved in the three months ended March 31, 2017; and a $1.9 million loss associated with the planned sale of a construction barge. Other increases primarily include additional costs related to the support of increased revenues and costs associated with ongoing technology and business development initiatives. Partially offsetting these increases were $6.3 million in severance costs associated with the departure of our former president and chief executive officer and severance and restructuring costs primarily associated with certain operations within the Oil and Gas Infrastructure Services segment recognized in the three months ended March 31, 2016. Selling, general and administrative expenses as a percentage of revenues decreased to 8.5% for the three months ended March 31, 2017 from 9.3% for the three months ended March 31, 2016. This decrease was due primarily to the increase in revenues.

Amortization of intangible assets. Amortization of intangible assets decreased $0.9 million to $6.6 million for the three months ended March 31, 2017. This decrease was primarily due to reduced amortization expense from previously acquired intangible assets as certain of these assets became fully amortized, partially offset by increased amortization of intangible assets associated with acquired companies.

Interest expense. Interest expense increased $0.4 million to $4.0 million for the three months ended March 31, 2017 due to a higher weighted average interest rate during the first quarter of 2017, partially offset by decreased borrowing activity.

Provision for income taxes. The provision for income taxes was $22.6 million for the three months ended March 31, 2017, with an effective tax rate of 31.8%. The provision for income taxes was $13.4 million for the three months ended March 31, 2016, with an effective tax rate of 39.2%. The lower effective tax rate for the three months ended March 31, 2017 was primarily due to a discrete income tax benefit of $4.9 million associated with an accounting update adopted on January 1, 2017 that amended the accounting for share-based payments. The new guidance requires companies with share-based payments to record all tax effects related thereto at settlement (or expiration) through income tax expense on the statement of operations rather than through additional paid-in capital (APIC) within equity.

Other comprehensive income. Other comprehensive income, net of taxes was a gain of $13.8 million in the three months ended March 31, 2017 compared to a gain of $60.6 million in the three months ended March 31, 2016. The gain in the three months ended March 31, 2017 was due to a strengthening of foreign currencies associated with our international operations, primarily the Canadian and Australian dollars, against the U.S. dollar as of March 31, 2017 when compared to exchange rates for those same currencies as of December 31, 2016. Similarly, the gain in the three months ended March 31, 2016 was due to a strengthening of foreign currencies associated with our international operations, primarily the Canadian and Australian dollars, against the U.S. dollar as of March 31, 2016 when compared to exchange rates for those same currencies as of December 31, 2015.

Segment Results

The following table sets forth segment revenues and segment operating income (loss) for the periods indicated (dollars in thousands):

	Three Months Ended March 31,			
	2017		2016	
Revenues:				
Electric Power Infrastructure Services	$1,219,502	56.0%	$1,187,002	69.3%
Oil and Gas Infrastructure Services	958,668	44.0	526,735	30.7
Consolidated revenues from external customers	$2,178,170	100.0%	$1,713,737	100.0%
Operating income (loss):				
Electric Power Infrastructure Services	$ 99,672	8.2%	$ 87,324	7.4%
Oil and Gas Infrastructure Services	38,817	4.0	5,841	1.1
Corporate and non-allocated costs	(63,415)	N/A	(55,871)	N/A
Consolidated operating income	$ 75,074	3.4%	$ 37,294	2.2%

Three months ended March 31, 2017 compared to the three months ended March 31, 2016

Electric Power Infrastructure Services Segment Results

Revenues for this segment increased $32.5 million, or 2.7%, to $1.22 billion for the three months ended March 31, 2017. This increase was primarily due to increased customer spending associated with larger electric transmission projects, $18.7 million in additional emergency restoration services revenues and approximately $10 million in revenues from acquired companies. Foreign currency exchange rates also favorably impacted revenues by approximately $8 million during the three months ended March 31, 2017, primarily attributable to the strengthening of the Canadian dollar against the U.S. dollar. Partially offsetting these increases was a decrease in renewable power project related revenues, and to a lesser extent, a reduction in revenues associated with a power plant project in Alaska that was substantially completed in the fourth quarter of 2016.

Operating income increased $12.3 million, or 14.1%, to $99.7 million for the three months ended March 31, 2017. Operating income as a percentage of segment revenues increased to 8.2% for the three months ended March 31, 2017 from 7.4% for the three months ended March 31, 2016. These increases primarily resulted from the prior period being negatively impacted by $21.3 million of project losses recognized during the three months ended March 31, 2016 related to a power plant project in Alaska, as well as from the positive impact of incremental emergency restoration services revenues in the three months ended March 31, 2017, which typically yield higher margins. Partially offsetting these items were lower electric transmission margins primarily due to a larger Canadian transmission project that has been recorded at lower margins to address performance risk associated with challenging project conditions, as well as variations due to typical seasonality and the timing of project start dates and completions.

Oil and Gas Infrastructure Services Segment Results

Revenues for this segment increased $431.9 million, or 82.0%, to $958.7 million for the three months ended March 31, 2017. This increase was primarily the result of increased capital spending by our customers on larger pipeline transmission projects, as certain of these projects, after experiencing regulatory and permitting delays, moved into full construction during the second half of 2016 and remained in full construction during the first quarter of 2017. Revenues also increased as a result of foreign currency exchange rates during the three months ended March 31, 2017, which favorably impacted our international operations by approximately $12 million and were primarily attributable to the strengthening of the Canadian dollar against the U.S. dollar.

Operating income increased $33.0 million to $38.8 million for the three months ended March 31, 2017. Operating income as a percentage of segment revenues increased to 4.0% for the three months ended March 31, 2017 from 1.1% for the three months ended March 31, 2016. These increases were primarily due to greater contributions from larger pipeline projects, which typically yield higher margins. In addition, overall higher revenues in the segment allowed for better coverage of fixed and overhead costs. Also contributing to the increase in operating income was the favorable impact of a termination fee associated with a project cancellation. These increases were partially offset by the negative impact of adverse weather conditions on certain projects during the quarter, as well as lower margins on two distribution MSAs due to unexpected delays in the release of work after crews were mobilized. Operating income and operating income as a percentage of revenues in the three months ended March 31, 2017 were also impacted by a $1.9 million loss associated with the planned sale of a construction barge, while the first quarter of 2016 was impacted by approximately $2 million in severance and restructuring costs.

During the three months ended March 31, 2017, we experienced weather delays on a natural gas transmission project that resulted in an increase of the estimated total costs necessary to complete the project. During the three months ended March 31, 2017, we recognized losses on the project of $16.5 million. We are in the process of developing potential claims; however, no revenues or cost recovery has been reflected in our estimate of total project losses at March 31, 2017. At March 31, 2017, this project was approximately 85% complete. As this project continues, it is possible that additional delays or other unforeseen circumstances could occur and result in the recognition of additional losses on this project; however, such amounts cannot currently be estimated.

Corporate and Non-allocated Costs

Certain selling, general and administrative expenses and amortization of intangible assets are not allocated to segments. Corporate and non-allocated costs for the quarter ended March 31, 2017 increased $7.5 million to $63.4 million as compared to the quarter ended March 31, 2016. This increase was primarily due to the $4.2 million of attorneys' fees and related expenses associated with a matter involving our prior disposition of certain communications operations that was resolved in the three months ended March 31, 2017. The remaining increase was related to increased corporate functions, including $3.5 million of higher compensation costs, largely associated with higher incentive compensation based on current levels of profitability, and $1.8 million of increased costs associated with information technology initiatives. These increases were partially offset by $4.0 million in costs associated with the departure of our former president and chief executive officer recognized in the three months ended March 31, 2016.

Liquidity and Capital Resources

Cash Requirements

Our cash and cash equivalents totaled $106.5 million and $112.2 million as of March 31, 2017 and December 31, 2016. As of March 31, 2017 and December 31, 2016, cash and cash equivalents held in domestic bank accounts were $17.5 million and $19.5 million, and cash and cash equivalents held in foreign bank accounts were $89.0 million and $92.7 million. As of March 31, 2017 and December 31, 2016, cash and cash equivalents held by our investments in joint ventures, which are either consolidated or proportionately consolidated, were $8.8 million and $11.5 million, of which $7.7 million and $10.0 million related to domestic joint ventures. Cash and cash equivalents held by the joint ventures are available to support the operations of the related joint ventures, but we do not have access to that cash and cash equivalents for our other operations. Under the terms of the partnership agreements, we generally have no right to a joint venture's cash and cash equivalents other than participating in distributions and in the event of dissolution.

We were in compliance with the covenants under our credit agreement at March 31, 2017. We anticipate that our cash and cash equivalents on hand, existing borrowing capacity under our credit facility, and our future cash flows from operations will provide sufficient funds to enable us to meet our future operating needs and our planned capital expenditures, as well as facilitate our ability to grow through acquisitions or otherwise in the foreseeable future.

Our industry is capital intensive, and we expect the need for substantial capital expenditures to continue into the foreseeable future to meet the anticipated demand for our services. Capital expenditures are expected to total $210 million to $225 million for 2017, of which we have spent $47.0 million through March 31, 2017.

We also evaluate opportunities for strategic acquisitions from time to time that may require cash, as well as opportunities to make investments in strategic partnerships with customers and infrastructure investors where we anticipate performing services such as project management, engineering, procurement or construction services. These investment opportunities exist in the markets and industries we serve and may require the use of cash in the form of debt or equity investments.

Management continues to monitor the financial markets and general national and global economic conditions for factors that may affect our liquidity and capital resources. We consider our cash and cash equivalents investment policies to be conservative in that we maintain a diverse portfolio of what we believe to be high-quality cash and cash equivalent investments with short-term maturities. Accordingly, we do not anticipate that any weakness in the capital markets will have a material impact on the principal amounts of our cash and cash equivalents or our ability to rely upon our credit facility for funds. To date, we have experienced no loss of or lack of access to our cash or cash equivalents or funds under our credit facility; however, we can provide no assurances that access to our invested cash and cash equivalents or availability under our credit facility will not be impacted in the future by adverse conditions in the financial markets.

We could be subject to additional U.S. income and foreign withholding taxes if we were to repatriate cash that is indefinitely reinvested outside of the United States. Because of the number and variability of assumptions required, it is not practicable to determine the amount of any additional U.S. tax liability that may result if we decide to no longer indefinitely reinvest foreign earnings outside the United States. If our intentions or U.S. tax laws change in the future, there may be a significant negative impact on the provision for income taxes and cash flows as a result of recording an incremental tax liability in the period such change occurs.

Sources and Uses of Cash

As of March 31, 2017, we had cash and cash equivalents of $106.5 million and working capital of $1.21 billion. We also had $323.2 million of outstanding letters of credit and bank guarantees, $223.9 million of which was denominated in U.S. dollars and $99.3 million of which was denominated in currencies other than the U.S. dollar, primarily in Australian or Canadian dollars. We also had $417.7 million of outstanding revolving loans under our credit facility, $200.0 million of which was denominated in U.S. dollars and $217.7 million of which was denominated in Canadian dollars. As of March 31, 2017, our $1.81 billion senior secured revolving credit facility, which matures on December 18, 2020, had $1.07 billion available for revolving loans or issuing new letters of credit or bank guarantees.

Operating Activities

Cash flow from operations is primarily influenced by demand for our services and operating margins but can also be influenced by working capital needs associated with the various types of services that we provide. In particular, working capital needs may increase when we commence large volumes of work under circumstances where project costs, primarily associated with labor, equipment and subcontractors, are required to be paid before the receivables resulting from the work performed are billed and collected. Accordingly, changes within working capital in accounts receivable, costs and estimated earnings in excess of billings on uncompleted contracts, and billings in excess of costs and estimated earnings on uncompleted contracts are normally related and are typically affected on a collective basis by changes in revenue due to both changes in the timing and volume of work performed and variability in the timing of customer billings and payments. Additionally, working capital needs are generally higher during the summer and fall months due to increased demand for our services when favorable weather conditions exist in many of the regions in which we operate. Conversely, working capital assets are typically converted to cash during the winter months. These seasonal trends can be offset by changes in the timing of projects which can be impacted by project delays or accelerations and other economic factors that may affect customer spending.

Operating activities of continuing operations used net cash of $3.8 million during the three months ended March 31, 2017 as compared to $205.8 million provided during the three months ended March 31, 2016. This decrease in cash flows from operating activities of continuing operations was partly due to additional working capital requirements associated with an increase in the number and size of oil and gas infrastructure projects that moved into full construction during the second half of 2016 and remained in full construction during the first quarter of 2017. In addition, the timing of revenues was more heavily weighted toward the last month of the first quarter of 2017, partly due to emergency restoration work performed in March. Also contributing to the decrease in cash flows from operating activities of continuing operations were invoicing challenges and billing delays on two related electric transmission projects located in remote regions of northeastern Canada which resulted from extensive quality assurance documentation and administrative requirements. We continue to work collaboratively with this customer to improve the invoicing and billing processes on these projects. These decreases were partially offset by the positive impact of improved operating results.

Days sales outstanding (DSO) as of March 31, 2017 was 78 days, as compared to 76 days at March 31, 2016. This increase was primarily due to the impact of invoicing challenges and billing delays on the two related large electric transmission projects in remote regions of northeastern Canada discussed above and more favorable billing terms for certain projects ongoing in 2016 as compared to projects ongoing in 2017. DSO is calculated by using the sum of current accounts receivable, net of allowance (which includes retainage and unbilled balances), plus costs and estimated earnings in excess of billings on uncompleted contracts less billings in excess of costs and estimated earnings on uncompleted contracts, divided by average revenues per day during the quarter.

Investing Activities

During the three months ended March 31, 2017, investing activities of continuing operations used net cash of $47.3 million as compared to $83.9 million used in the three months ended March 31, 2016. Investing activities of continuing operations in the first quarter of 2017 included $47.0 million used for capital expenditures, partially offset by $4.8 million of proceeds from the sale of property and equipment. Investing activities of continuing operations in the first quarter of 2016 included $47.7 million used for capital expenditures and $39.7 million used in connection with acquisitions, partially offset by $5.1 million of proceeds from the sale of property and equipment.

Our industry is capital intensive, and we expect the need for substantial capital expenditures to continue into the foreseeable future to meet the anticipated demand for our services. In addition, although we did not close any acquisitions in the three months ended March 31, 2017, we expect to continue to pursue strategic acquisitions and investments, although we cannot predict the timing or magnitude of the potential cash outlays for these initiatives.

Financing Activities

During the three months ended March 31, 2017, net cash provided by financing activities of continuing operations was $44.3 million as compared to net cash used of $90.8 million in the three months ended March 31, 2016. Financing activities of continuing operations in the three months ended March 31, 2017 included $65.8 million of net borrowings under our credit facility, partially offset by $16.2 million of payments to satisfy tax withholding obligations associated with share-based compensation. Financing activities of continuing operations in the three months ended March 31, 2016 included $75.2 million of net repayments under our credit facility and $6.1 million of payments to satisfy tax withholding obligations associated with share-based compensation. Net borrowings during the three months ended March 31, 2017 were primarily utilized to fund additional working capital requirements associated with the increase in number and size of oil and gas infrastructure projects that moved into full construction during the second half of 2016 and continued into 2017. We anticipate that these projects will provide positive operating cash flows during the remainder of 2017 that will be available to reduce net borrowings.

Stock Repurchases

During the third quarter of 2015, our board of directors approved a stock repurchase program that authorized us to purchase, from time to time through February 28, 2017, up to $1.25 billion of our outstanding common stock (the 2015 Repurchase Program). Repurchases under the 2015 Repurchase Program were made in open market and privately negotiated transactions, including pursuant to an accelerated share repurchase arrangement and an issuer repurchase plan. During 2015, we repurchased 19.2 million shares of our common stock at a cost of $449.9 million in the open market under the 2015 Repurchase Program.

During the third quarter of 2015, we also entered into an accelerated share repurchase arrangement (the ASR) to repurchase $750.0 million of our common stock under the 2015 Repurchase Program. Under the terms of the ASR, we paid $750.0 million to JPMorgan Chase Bank, National Association, London Branch (JPMorgan) and initially received 25.7 million shares of our common stock. The fair market value of these 25.7 million shares at the time of delivery was $600.0 million, and the repurchased shares and the related cost to acquire them were accounted for as an adjustment to the balance of treasury stock during the third quarter of 2015, reducing the weighted-average number of basic and diluted common shares used to calculate our earnings per share. The $150.0 million remaining under the ASR was recorded as an adjustment to APIC during the third quarter of 2015 and was reclassified from APIC to treasury stock upon final settlement of the ASR on April 12, 2016. At final settlement and based on the final volume-weighted average share price during the term of the ASR, minus a discount and subject to other adjustments pursuant to the terms and conditions of the ASR, we received 9.4 million additional shares of our common stock from JPMorgan. The 2015 Repurchase Program ended on February 28, 2017, and we repurchased a total of 54.3 million shares of our common stock at a cost of $1.20 billion under the 2015 Repurchase Program. No common stock was repurchased in the three months ended March 31, 2017 or 2016 under any repurchase programs.

Debt Instruments

Credit Facility

On December 18, 2015, we entered into an amended and restated credit agreement with various lenders that provides for a $1.81 billion senior secured revolving credit facility maturing on December 18, 2020. The entire amount available under the facility may be used by us for revolving loans and letters of credit in U.S. dollars and certain alternative currencies. Up to $600.0 million of the facility may be used by certain of our subsidiaries for revolving loans and letters of credit in certain alternative currencies. Up to $100.0 million of the facility may be used for swing line loans in U.S. dollars, up to $50.0 million of the facility may be used for swing line loans in Canadian dollars and up to $30.0 million of the facility may be used for swing line loans in Australian dollars. In addition, subject to the conditions specified in the credit agreement, we have the option to increase the revolving commitments by up to $400.0 million from time to time upon receipt of additional commitments from new or existing lenders. Borrowings under the credit agreement are to be used to refinance existing indebtedness and for working capital, capital expenditures and other general corporate purposes.

As of March 31, 2017, we had $323.2 million of outstanding letters of credit and bank guarantees, $223.9 million of which were denominated in U.S. dollars and $99.3 million of which were denominated in currencies other than the U.S. dollar, primarily in Australian or Canadian dollars. We also had $417.7 million of outstanding revolving loans under the credit facility, $200.0 million of which were denominated in U.S. dollars and $217.7 million of which were denominated in Canadian dollars. The remaining $1.07 billion was available for revolving loans or new letters of credit or bank guarantees.

Under our current credit agreement, amounts borrowed in U.S. dollars bear interest, at our option, at a rate equal to either (i) the Eurocurrency Rate (as defined in the credit agreement) plus 1.125% to 2.125%, as determined based on our Consolidated Leverage Ratio (as described below), or (ii) the Base Rate (as described below) plus 0.125% to 1.125%, as determined based on our Consolidated Leverage Ratio. Amounts borrowed as revolving loans under the credit agreement in any currency other than U.S. dollars bear interest at a rate equal to

the Eurocurrency Rate plus 1.125% to 2.125%, as determined based on our Consolidated Leverage Ratio. Standby letters of credit issued under the credit agreement are subject to a letter of credit fee of 1.125% to 2.125%, based on our Consolidated Leverage Ratio, and Performance Letters of Credit (as defined in the credit agreement) issued under the credit agreement in support of certain contractual obligations are subject to a letter of credit fee of 0.675% to 1.275%, based on our Consolidated Leverage Ratio. We are also subject to a commitment fee of 0.20% to 0.40%, based on our Consolidated Leverage Ratio, on any unused availability under the credit agreement.

The Consolidated Leverage Ratio is the ratio of our Consolidated Funded Indebtedness to Consolidated EBITDA (as those terms are defined in the credit agreement). For purposes of calculating our Consolidated Leverage Ratio, Consolidated Funded Indebtedness is reduced by available cash and Cash Equivalents (as defined in the credit agreement) in excess of $25.0 million. The Base Rate equals the highest of (i) the Federal Funds Rate (as defined in the credit agreement) plus 0.5%, (ii) the prime rate publicly announced by Bank of America, N.A. and (iii) the Eurocurrency Rate plus 1.00%.

Subject to certain exceptions, the credit agreement is secured by substantially all of our assets and the assets of our wholly owned U.S. subsidiaries and by a pledge of all of the capital stock of our wholly owned U.S. subsidiaries and 65% of the capital stock of direct foreign subsidiaries of our wholly owned U.S. subsidiaries. Our wholly owned U.S. subsidiaries also guarantee the repayment of all amounts due under the credit agreement. Subject to certain conditions, all collateral will automatically be released from the liens at any time we maintain an Investment Grade Rating (defined in the credit agreement as two of the following three conditions being met: (i) a corporate credit rating that is BBB- or higher by Standard & Poor's Rating Services, (ii) a corporate family rating that is Baa3 or higher by Moody's Investors Services, Inc. or (iii) a corporate credit rating that is BBB- or higher by Fitch Ratings, Inc.).

The credit agreement contains certain covenants, including a maximum Consolidated Leverage Ratio and a minimum Consolidated Interest Coverage Ratio (as defined in the credit agreement). The credit agreement also limits certain acquisitions, mergers and consolidations, indebtedness, asset sales and prepayments of indebtedness and, subject to certain exceptions, prohibits liens on our assets. The credit agreement allows cash payments for dividends and stock repurchases subject to compliance with the following requirements (after giving effect to the dividend or stock repurchase): (i) no default or event of default under the credit agreement; (ii) continued compliance with the financial covenants in the credit agreement; and (iii) at least $100.0 million of availability under the credit agreement and/or cash and cash equivalents on hand. As of March 31, 2017, we were in compliance with all of the covenants in the credit agreement.

The credit agreement provides for customary events of default and contains cross-default provisions with our underwriting, continuing indemnity and security agreement with our sureties and all of our other debt instruments exceeding $100.0 million in borrowings or availability. If an Event of Default (as defined in the credit agreement) occurs and is continuing, on the terms and subject to the conditions set forth in the credit agreement, the lenders may declare all amounts outstanding and accrued and unpaid interest immediately due and payable, require that we provide cash collateral for all outstanding letter of credit obligations, terminate the commitments under the credit agreement, and foreclose on the collateral.

Off-Balance Sheet Transactions

As is common in our industry, we have entered into certain off-balance sheet arrangements in the ordinary course of business that result in risks not directly reflected in our balance sheets. Our significant off-balance sheet transactions include liabilities associated with non-cancelable operating leases, letter of credit obligations, commitments to purchase equipment, surety guarantees related to performance bonds, certain multiemployer pension plan liabilities and obligations relating to our investments and joint venture arrangements. Certain joint venture structures involve risks not directly reflected in our balance sheets. For certain joint ventures, we have guaranteed all of the obligations of the joint venture under a contract with the customer. Additionally, other joint

venture arrangements qualify as a general partnership, for which we are jointly and severally liable for all of the obligations of the joint venture. In our joint venture arrangements, typically each joint venture party indemnifies the other party for any liabilities incurred in excess of the liabilities such other party is obligated to bear under the respective joint venture agreement. Other than as discussed in this report, we have not engaged in any material off-balance sheet financing arrangements through special purpose entities, and we have no material guarantees of the work or obligations of third parties.

Leases

We enter into non-cancelable operating leases for many of our facility, vehicle and equipment needs. These leases allow us to conserve cash by paying a monthly lease rental fee for use of facilities, vehicles and equipment rather than purchasing them. We may decide to cancel or terminate a lease before the end of its term, in which case we are typically liable to the lessor for the remaining lease payments under the term of the lease.

We have guaranteed the residual value of the underlying assets under certain of our equipment operating leases at the date of termination of such leases. We have agreed to pay any difference between this residual value and the fair market value of each underlying asset as of the lease termination date. As of March 31, 2017, the maximum guaranteed residual value was $573.3 million. We believe that no significant payments will be made as a result of the difference between the fair market value of the leased equipment and the guaranteed residual value. However, there can be no assurance that future significant payments will not be required.

Letters of Credit

Certain of our vendors require letters of credit to ensure reimbursement for amounts they disburse on our behalf, such as to beneficiaries under our self-funded insurance programs. In addition, from time to time, certain customers require us to post letters of credit to ensure payment to our subcontractors and vendors under those contracts and to guarantee performance under our contracts. Such letters of credit are generally issued by a bank or similar financial institution, typically pursuant to our credit agreement. Each letter of credit commits the issuer to pay specified amounts to the holder of the letter of credit if the holder claims that we have failed to perform specified actions. If this were to occur, we would be required to reimburse the issuer of the letter of credit. Depending on the circumstances of such a reimbursement, we may also be required to record a charge to earnings for the reimbursement. We do not believe that it is likely that any material claims will be made under a letter of credit in the foreseeable future.

As of March 31, 2017, we had $323.2 million in outstanding letters of credit and bank guarantees to secure our casualty insurance program and various contractual commitments. These are irrevocable stand-by letters of credit with maturities generally expiring at various times throughout 2017 and 2018. Upon maturity, it is expected that the majority of the letters of credit related to the casualty insurance program will be renewed for subsequent one-year periods.

Performance Bonds and Parent Guarantees

Many customers, particularly in connection with new construction, require us to post performance and payment bonds issued by a financial institution known as a surety. These bonds provide a guarantee to the customer that we will perform under the terms of a contract and that we will pay subcontractors and vendors. If we fail to perform under a contract or to pay subcontractors and vendors, the customer may demand that the surety make payments or provide services under the bond. We must reimburse the surety for any expenses or outlays it incurs. Under our underwriting, continuing indemnity and security agreement with our sureties and with the consent of the lenders that are party to our credit agreement, we have granted security interests in certain of our assets to collateralize our obligations to the sureties. Subject to certain conditions and consistent with terms of our credit agreement, these security interests will be automatically released if we maintain a credit rating that meets two of the following three conditions: (i) a corporate credit rating that is BBB- or higher by

Standard & Poor's Rating Services, (ii) a corporate family rating that is Baa3 or higher by Moody's Investors Services, Inc. or (iii) a corporate credit rating that is BBB- or higher by Fitch Ratings, Inc. We may be required to post letters of credit or other collateral in favor of the sureties or our customers in the future. Posting letters of credit in favor of the sureties or our customers would reduce the borrowing availability under our credit facility. To date, we have not been required to make any reimbursements to our sureties for bond-related costs. We believe that it is unlikely that we will have to fund significant claims under our surety arrangements in the foreseeable future. As of March 31, 2017, the total amount of outstanding performance bonds was estimated to be approximately $3.4 billion. Our estimated maximum exposure as it relates to the value of performance bonds outstanding is lowered on each bonded project as the cost to complete is reduced, and each of our commitments under the performance bonds generally extinguishes concurrently with the expiration of our related contractual obligation. The estimated cost to complete these bonded projects was approximately $910 million as of March 31, 2017.

Additionally, from time to time, we guarantee the obligations of our wholly owned subsidiaries, including obligations under certain contracts with customers, certain lease obligations, certain joint venture arrangements and, in some states, obligations in connection with obtaining contractors' licenses. We are not aware of any material obligations for performance or payment asserted against us under any of these guarantees.

Contractual Obligations

As of March 31, 2017, our future contractual obligations were as follows (in thousands):

	Total	Remainder of 2017	2018	2019	2020	2021	Thereafter
Long-term debt - principal (1)	$ 420,558	$ 2,826	$ —	$ —	$ 417,732	$ —	$ —
Operating lease obligations	276,264	80,557	75,010	51,396	30,566	17,044	21,691
Capital lease and related interest obligations (2)	2,742	934	1,150	658	—	—	—
Equipment purchase commitments	20,291	20,291	—	—	—	—	—
Capital commitment related to investments in unconsolidated affiliates (3)	55,704	31,919	—	23,785	—	—	—
Total	$ 775,559	$ 136,527	$ 76,160	$ 75,839	$ 448,298	$ 17,044	$ 21,691

(1) Amounts were recorded in our March 31, 2017 condensed consolidated balance sheet and included $417.7 million of outstanding revolving loans under our credit facility, which bear interest at variable market rates. Assuming the principal amount outstanding at March 31, 2017 remained outstanding and the interest rate in effect at March 31, 2017 remained the same, the annual cash interest expense with respect to the credit facility would be approximately $9.9 million, payable for the remainder of the term of the facility, which matures in December 2020.

(2) Principal amounts of capital lease obligations were recorded in our March 31, 2017 condensed consolidated balance sheet.

(3) A return of capital from unconsolidated affiliates of approximately $42.5 million is anticipated in August 2017 and is not included in these amounts. As of March 31, 2017, we had made aggregate contributions to this unconsolidated affiliate of $16.9 million and had received $2.9 million as a return of capital.

Equipment Purchase Commitments

We have committed capital for the expansion of our vehicle fleet in order to accommodate manufacturer lead times on certain types of vehicles. As of March 31, 2017, production orders for $20.3 million had been

issued with delivery dates scheduled to occur throughout the remainder of 2017. Although we have committed to the purchase of these vehicles at the time of their delivery, we intend that these orders will be assigned to third party leasing companies and made available to us under certain of our master equipment lease agreements, which will release us from our capital commitment.

Capital Commitments Related to Investments in Unconsolidated Affiliates

We have excluded from the Contractual Obligations table additional capital commitments associated with investments in unconsolidated affiliates related to planned oil and gas infrastructure projects of $16.7 million because we are unable to determine the exact timing of these capital commitments. We anticipate these commitments to be paid by May 31, 2022, and as specific commitment amounts and their timing are determined, we will reflect such amounts in the Contractual Obligations table.

Unrecognized Tax Benefits

During 2016, the Internal Revenue Service completed its examination related to tax years 2010, 2011 and 2012; however, certain subsidiaries remain under examination by various U.S. state, Canadian and other foreign tax authorities for multiple periods, and the amount of unrecognized tax benefits could therefore increase or decrease as a result of the expiration of certain statute of limitations periods or settlements of these examinations. We believe it is reasonably possible that within the next 12 months unrecognized tax benefits may decrease by up to $13.4 million due to the expiration of certain statute of limitations periods or settlements of the examinations.

Multiemployer Pension Plans

The previously presented table of estimated contractual obligations does not reflect the obligations under the multiemployer pension plans in which our union employees participate. Some of our operating units are parties to various collective bargaining agreements that require us to provide to the employees subject to these agreements specified wages and benefits, as well as to make contributions to multiemployer pension plans. Our multiemployer pension plan contribution rates generally are specified in the collective bargaining agreements (usually on an annual basis), and contributions are made to the plans on a “pay-as-you-go” basis based on our union employee payrolls. The location and number of union employees that we employ at any given time and the plans in which they may participate vary depending on the projects we have ongoing at any time and the need for union resources in connection with those projects. Therefore, we are unable to accurately predict our union employee payroll and the amount of the resulting multiemployer pension plan contribution obligations for future periods.

We may also be required to make additional contributions to our multiemployer pension plans if they become underfunded, and these additional contributions will be determined based on our union employee payrolls. The Pension Protection Act of 2006 added special funding and operational rules generally applicable to plan years beginning after 2007 for multiemployer plans that are classified as “endangered,” “seriously endangered” or “critical” status. Plans in these classifications must adopt measures to improve their funded status through a funding improvement or rehabilitation plan, as applicable, which may require additional contributions from employers (which may take the form of a surcharge on benefit contributions) and/or modifications to retiree benefits. A number of multiemployer plans to which our operating units contribute or may contribute in the future are in “endangered,” “seriously endangered” or “critical” status. The amount of additional funds, if any, that we may be obligated to contribute to these plans in the future cannot be reasonably estimated and are not included in the above table due to uncertainty of the future levels of work that require the specific use of the union employees covered by these plans, as well as the future contribution levels and possible surcharges on contributions applicable to these plans.

We may also have additional liabilities imposed by law as a result of our participation in multiemployer defined benefit pension plans. The Employee Retirement Income Security Act of 1974, as amended by the

Multiemployer Pension Plan Amendments Act of 1980, imposes certain liabilities upon employers who are contributors to a multiemployer plan if the employer withdraws from the plan or the plan is terminated or experiences a mass withdrawal. These liabilities include an allocable share of the unfunded vested benefits in the plan for all plan participants, not merely the benefits payable to a contributing employer's own retirees. Other than as noted below, we are not aware of any material amounts of withdrawal liability that have been or are expected to be incurred as a result of a withdrawal by any of our operating units from any multiemployer defined benefit pension plans.

2011 Central States Plan Withdrawal Liability. In the fourth quarter of 2011, certain of our subsidiaries withdrew from the Central States, Southeast and Southwest Areas Pension Plan (the Central States Plan). This withdrawal event was the result of an amendment to a collective bargaining agreement with the International Brotherhood of Teamsters (Teamsters) that eliminated certain employers' obligations to contribute to the Central States Plan, which was then in critical status and significantly underfunded as to its vested benefit obligations. The amendment was negotiated by the Pipe Line Contractors Association (PLCA) on behalf of its members, which include certain of our subsidiaries. Because certain of our other subsidiaries continued participation in the Central States Plan into 2012, the subsidiaries' withdrawals in 2011 effected only a partial withdrawal on our behalf in 2011. We believed that the partial withdrawal was advantageous because it limited exposure to increased liability resulting from a future withdrawal event, at which point the Central States Plan could have been further underfunded. We and other PLCA members now contribute to a different multiemployer pension plan on behalf of the affected Teamsters employees. While certain of our subsidiaries continued participation in the Central States Plan into 2012, we believe that such subsidiaries withdrew from the Central States Plan in 2012, thereby effecting a complete withdrawal as of December 30, 2012 for all Quanta subsidiaries.

In connection with the partial withdrawal in 2011, we recorded a withdrawal liability of approximately $32.6 million in the fourth quarter of 2011 based on estimates received from the Central States Plan. The Central States Plan subsequently asserted that the withdrawal of the PLCA members, and thus our partial withdrawal, was not effective in 2011. The PLCA and Quanta believed at that time that a legally effective withdrawal had occurred during the fourth quarter of 2011, and this issue was litigated in the federal district court for the Northern District of Illinois, Eastern Division. In September 2013, the district court ruled in favor of the Central States Plan, and that decision was appealed by the PLCA. In July 2014, the Central States Plan provided us with a Notice and Demand claiming partial withdrawal liability in the amount of $39.6 million and requiring Quanta to make payments on this assessment while the dispute is ongoing. In September 2015, the United States Court of Appeals for the Seventh Circuit ruled in favor of the PLCA and reversed the district court's previous ruling, which had been in favor of the Central States Plan. Based on the outcome of the appeal, in January 2016, the Central States Plan issued a revised Notice and Demand claiming partial withdrawal liability in the amount of $32.9 million.

Separately, in December 2013, the Central States Plan filed lawsuits against two of our subsidiaries in connection with their withdrawal in 2012. In the first lawsuit, the Central States Plan alleged that the subsidiary elected to participate in the Central States Plan pursuant to the collective bargaining agreement under which it participated. We argued that no such election was made and that any payments made to the Central States Plan were made in error. In July 2014, the parties reached an agreement to settle the lawsuit, and the court dismissed the case with prejudice. In the second lawsuit, the Central States Plan alleged that contributions made by our subsidiary to a new industry fund created after we withdrew from the Central States Plan should have been made to the Central States Plan. This arguably would have extended our withdrawal date for this subsidiary to at least the end of 2013. We disputed these allegations on the basis that we properly paid contributions to the new industry fund based on the terms of the collective bargaining agreement under which we participated and asserted that we terminated our obligation to contribute to the Central States Plan by the end of 2012. The parties both moved for summary judgment, and in March 2015, the court entered judgment in our favor. The Central States Plan filed a notice of appeal in April 2015, and in December 2015, the Central States Plan agreed to dismiss the appeal with prejudice.

The ultimate liability associated with the complete withdrawal of our subsidiaries from the Central States Plan will depend on various factors, including interpretations of the terms of the collective bargaining agreements under which the subsidiaries participated and whether exemptions from withdrawal liability applicable to construction industry employers will be available. In March 2014, the Central States Plan provided revised estimates indicating that the total withdrawal liability based on certain withdrawal scenarios from 2011 through 2014 could range between $40.1 million and $55.4 million, which we believe to be the range of reasonably possible loss for this matter. Additionally, based on those estimates and allowing for the exclusion of amounts believed by management to have been improperly included in such estimates, we recorded an adjustment to cost of services during the three months ended March 31, 2014 to increase the recognized withdrawal liability to an amount within the range communicated to us by the Central States Plan. Given the unknown nature of some of the factors mentioned above, the final withdrawal liability cannot yet be determined with certainty. Accordingly, it is reasonably possible that the amount owed upon final resolution of these matters could be materially higher than the expense we recognized through March 31, 2017. Although we dispute the total liability owed to the Central States Plan, we continue to make monthly payments according to the terms of the January 2016 Notice and Demand while the parties determine the final withdrawal liability. As of March 31, 2017, we had made payments totaling $19.1 million toward the withdrawal liability assessment.

2013 Central States Plan Withdrawal Liability. On October 9, 2013, we acquired a company that experienced a complete withdrawal from the Central States Plan prior to the date of acquisition. Prior to the acquisition, the Central States Plan issued a Notice and Demand to the acquired company claiming a withdrawal liability in the total amount of $6.9 million and requiring payments to be made on this assessment while the dispute is ongoing. In connection with the acquisition, we recorded an initial liability of $4.8 million related to this withdrawal liability, and a portion of the purchase price for the acquired company was deposited into an escrow account to fund any withdrawal obligation in excess of the initial liability recorded. In January 2016, the Central States Plan issued a revised Notice and Demand claiming a withdrawal liability in the amount of $4.8 million. Although we continue to dispute the total liability owed to the Central States Plan, we continue to make monthly payments according to the terms of this revised Notice and Demand while the parties determine the final withdrawal liability. As of March 31, 2017, payments totaling $3.7 million had been made toward the withdrawal liability assessment.

The final amount of withdrawal liability payable in connection with this matter remains the subject of a pending arbitration proceeding and will ultimately depend on various factors, including the outcome of the PLCA litigation described above. However, the acquired company's withdrawal from the Central States Plan is not expected to have a material impact on our financial condition, results of operations or cash flows.

Letters of Credit Fees and Commitment Fees

We have excluded from the Contractual Obligations table interest associated with letters of credit fees and commitment fees under our credit facility because the outstanding letters of credit, availability and applicable interest rates and fees are variable. For additional information regarding the interest rates and fees associated with borrowings under our credit facility, see *Liquidity and Capital Resources — Debt Instruments — Credit Facility* above.

Self-Insurance

We are insured for employer's liability, workers' compensation, auto liability and general liability claims. Under these programs, the deductible for employer's liability is $1.0 million per occurrence, the deductible for workers' compensation is $5.0 million per occurrence, and the deductibles for auto liability and general liability are $10.0 million per occurrence. We are generally self-insured for all claims that do not exceed the amount of the applicable deductible. In connection with our casualty insurance programs, we are required to issue letters of credit to secure our self-insured obligations. We also have employee health care benefit plans for most employees not subject to collective bargaining agreements, of which the primary plan is subject to a deductible of $0.4 million per claimant per year.

Losses under all of these insurance programs are accrued based upon our estimate of the ultimate liability for claims reported and an estimate of claims incurred but not reported, with assistance from third-party actuaries. These insurance liabilities are difficult to assess and estimate due to unknown factors, including the severity of an injury, the extent of damage, the determination of our liability in proportion to other parties and the number of incidents not reported. The accruals are based upon known facts and historical trends, and management believes such accruals are adequate. As of March 31, 2017 and December 31, 2016, the gross amount accrued for insurance claims totaled $220.0 million and $218.2 million with $162.1 million and $162.0 million considered to be long-term and included in other non-current liabilities. Related insurance recoveries/receivables as of March 31, 2017 and December 31, 2016 were $8.1 million and $8.7 million of which $0.4 million and $0.4 million were included in prepaid expenses and other current assets and $7.7 million and $8.3 million were included in other assets, net.

We renew our insurance policies on an annual basis, and therefore deductibles and levels of insurance coverage may change in future periods. In addition, insurers may cancel our coverage or determine to exclude certain items from coverage, or we may elect not to obtain certain types or incremental levels of insurance if we believe that the cost to obtain such coverage exceeds the additional benefits obtained. In any such event, our overall risk exposure would increase, which could negatively affect our results of operations, financial condition and cash flows. The Contractual Obligations table excludes commitments associated with our insurance liabilities, as we are unable to determine the timing of payments related to these obligations.

Concentrations of Credit Risk

We are subject to concentrations of credit risk related primarily to our cash and cash equivalents and our net receivable position with customers, which includes amounts related to billed and unbilled accounts receivable and costs and estimated earnings in excess of billings on uncompleted contracts net of advanced billings with the same customer. Substantially all of our cash and cash equivalents are managed by what we believe to be high credit quality financial institutions. In accordance with our investment policies, these institutions are authorized to invest cash and cash equivalents in a diversified portfolio of what we believe to be high quality investments, which primarily include interest-bearing demand deposits, money market investments, money market mutual funds and investment grade commercial paper with original maturities of three months or less. Although we do not currently believe the principal amount of these cash and cash equivalents is subject to any material risk of loss, changes in economic conditions could impact the interest income we receive from these investments. In addition, we grant credit under normal payment terms, generally without collateral, to our customers, which include electric power and oil and gas companies, governmental entities, general contractors, and builders, owners and managers of commercial and industrial properties located primarily in the United States, Canada and Australia. Consequently, we are subject to potential credit risk related to changes in business and economic factors throughout the United States, Canada and Australia, which may be heightened as a result of uncertain economic and financial market conditions that have existed in recent years. However, we generally have certain statutory lien rights with respect to services provided. Historically, some of our customers have experienced significant financial difficulties, and others may experience financial difficulties in the future. These difficulties expose us to increased risk related to collectability of billed and unbilled receivables and costs and estimated earnings in excess of billings on uncompleted contracts for services we have performed.

At March 31, 2017 and December 31, 2016, one customer within our Electric Power Infrastructure Services segment accounted for approximately 16% of our consolidated net receivable position. The net receivable position for this customer was $300.4 million and $277.3 million at March 31, 2017 and December 31, 2016 and was related to two electric transmission projects located in remote regions of northeastern Canada. Included in the net receivable position for this customer were $191.1 million and $175.9 million of costs and estimated earnings in excess of billings on uncompleted contracts at March 31, 2017 and December 31, 2016. These net receivable balances were related to invoicing challenges and billing delays that resulted from extensive quality assurance documentation and administrative requirements. We continue to work collaboratively with the customer to improve these processes. The net receivable position also included change orders and claims that we

are negotiating in the normal course of business. No other customers represented 10% or more of our consolidated net receivable position as of March 31, 2017 or December 31, 2016.

Additionally, two customers within Quanta's Oil and Gas Infrastructure Services segment each accounted for approximately 10% of our consolidated revenues during the three months ended March 31, 2017. No other customers represented 10% or more of our consolidated revenues for the three months ended March 31, 2017, and no customers represented 10% or more of our consolidated revenues for the three months ended March 31, 2016.

Legal Proceedings

We are from time to time party to various lawsuits, claims and other legal proceedings that arise in the ordinary course of business. These actions typically seek, among other things, compensation for alleged personal injury, breach of contract and/or property damages, employment-related damages, punitive damages, civil penalties or other losses, or injunctive or declaratory relief. With respect to all such lawsuits, claims and proceedings, we record a reserve when it is probable that a loss has been incurred and the amount of loss can be reasonably estimated. In addition, we disclose matters for which management believes a material loss is at least reasonably possible. See *Legal Proceedings* and *Collective Bargaining Agreements* in Note 10 of the Notes to Condensed Consolidated Financial Statements in Item 1.*Financial Statements* of Part I of this Quarterly Report for additional information regarding litigation, claims and other legal proceedings.

Related Party Transactions

In the normal course of business, we enter into transactions from time to time with related parties. Our significant related party transactions typically take the form of facility leases with prior owners of certain acquired companies.

New Accounting Pronouncements

Adoption of New Accounting Pronouncements

In July 2015, the FASB issued an update that requires inventory to be measured at the lower of either cost or net realizable value. When evidence exists that the net realizable value of inventory is lower than its cost, the difference will be recognized as a loss in earnings in the period in which it occurs. We adopted this guidance effective January 1, 2017, and the adoption of the update did not have a significant impact on our consolidated financial statements or related disclosures.

In March 2016, the FASB issued an update that amends the accounting for share-based payments in several key areas, including the treatment and cash flow presentation of tax effects related to the settlement of share-based payments and the accounting for forfeitures of share-based awards. The new guidance requires companies with share-based payments to record all tax effects related thereto at settlement (or expiration) through income tax expense on the statement of operations rather than through APIC within equity. This update also requires excess tax benefits to be classified as an operating activity on the statement of cash flows rather than reclassified as a financing activity and requires cash paid by an employer when withholding shares for the employee portion of taxes to be presented as a financing activity. The update also allows companies to either account for forfeitures of share-based payments as they occur or to estimate forfeitures. This guidance is required to be applied prospectively except for the requirement to classify cash paid when withholding shares for taxes as a financing activity, which requires retrospective application. We adopted this guidance effective January 1, 2017 and will continue to estimate forfeitures of share-based payments. Quanta anticipates increased volatility of income tax expense upon adoption of this guidance, and during the three months ended March 31, 2017 recorded an income tax benefit of $4.9 million related to the settlement of share-based awards. Additional paid-in capital was not adjusted for amounts recorded prior to 2017, and therefore our retained earnings were not affected by the

adoption of this guidance as of January 1, 2017. Additionally, $6.1 million was reclassified from an operating activity to a financing activity on our statement of cash flows for the three months ended March 31, 2016 associated with cash paid by us associated with shares withheld for taxes.

In October 2016, the FASB issued an update that amends the consolidation guidance related to how a reporting entity that is the single decision maker of a VIE should treat indirect interests in the VIE held through related parties that are under common control with the reporting entity when determining whether it is the primary beneficiary of a VIE. A reporting entity has an indirect interest in a VIE if it has a direct interest in a related party that, in turn, has a direct interest in the VIE. We adopted this guidance on January 1, 2017, and the adoption of the update did not have a significant impact on our consolidated financial statements or related disclosures.

Accounting Standards Not Yet Adopted

In May 2014, the FASB issued an update that supersedes most current revenue recognition guidance as well as some cost recognition guidance. The update requires that the recognition of revenue related to the transfer of goods or services to customers reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This update also requires new qualitative and quantitative disclosures about the nature, amount, timing and uncertainty of revenues and cash flows arising from customer contracts, including significant judgments and changes in judgments, information about contract balances and performance obligations, and assets recognized from costs incurred to obtain or fulfill a contract. In July 2015, the FASB affirmed its proposal to defer the effective date until fiscal years beginning on or after December 15, 2017. The guidance can be applied on a full retrospective or modified retrospective basis whereby the entity records a cumulative effect of initially applying this update at the date of initial application.

We are currently evaluating the potential impact of this update on our consolidated financial statements. We currently anticipate adopting the update using the modified retrospective transition method, which may result in a cumulative-effect adjustment recorded in retained earnings as of the beginning of the period of adoption. In addition, we continue to monitor activity related to the new standard as well as working with various non-authoritative groups regarding industry clarifications and interpretations, which may impact our considerations and conclusions. While we are still evaluating the requirements of this update, we currently do not expect the update to materially affect our results of operations, financial position or cash flows. This preliminary conclusion is based on our belief that we will generally continue to recognize revenues from long-term service contracts over time as services are performed and the underlying obligation to the customer is fulfilled. We have identified and are in the process of implementing changes to our processes and internal controls to meet the reporting and disclosure requirements of this update and will adopt this update effective January 1, 2018.

In January 2016, the FASB issued an update that addresses certain aspects of recognition, measurement, presentation, and disclosure of financial instruments to provide users of financial statements with more decision-useful information. The new standard is effective for interim and annual periods beginning after December 15, 2017. Early adoption is permitted for financial statements of fiscal years or interim periods that have not been previously issued. We are evaluating the impact of the new standard on our consolidated financial statements and will adopt the new standard by January 1, 2018.

In February 2016, the FASB issued an update that requires companies to recognize on the balance sheet the contractual right of use assets and liabilities corresponding to the rights and obligations created by lease contracts. The new standard is effective for interim and annual periods beginning after December 15, 2018. Early adoption is permitted for financial statements of fiscal years or interim periods that have not been previously issued. While we continue to evaluate the effect of the standard on our consolidated financial statements, it is anticipated that the adoption of the standard will materially impact our statement of financial position.

In June 2016, the FASB issued an update that will change the way companies measure credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. The update will require companies to use an "expected loss" model for instruments measured at amortized cost and to record allowances for available-for-sale (AFS) debt securities rather than reduce the carrying amounts. The update will also require disclosure of information regarding how a company developed its allowance, including changes in the factors that influenced management's estimate of expected credit losses and the reasons for those changes. Companies will apply this standard's provisions as a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. The new standard is effective for interim and annual reporting periods beginning after December 15, 2019, although early adoption is permitted for annual reporting periods beginning after December 15, 2018. We are currently evaluating the potential impact of this authoritative guidance on our consolidated financial statements and will adopt this guidance by January 1, 2020.

In August 2016, the FASB issued an update intended to standardize the classification of certain transactions on the statement of cash flows. These transactions include contingent consideration payments made after a business combination, proceeds from the settlement of corporate-owned life insurance policies and distributions received from equity method investments. The new standard is effective for interim and annual reporting periods beginning after December 15, 2017, although early adoption is permitted, and requires application using a retrospective transition method. We are currently evaluating the potential impact of this authoritative guidance on our consolidated financial statements and will adopt this guidance by January 1, 2018.

In October 2016, the FASB issued an update that will require a reporting entity to recognize the tax expense from the sale of an asset in the seller's tax jurisdiction when the transfer occurs, even though the pre-tax effects of that transaction are eliminated in consolidation. Any deferred tax asset that arises in the buyer's jurisdiction would also be recognized at the time of the transfer. The new guidance will not apply to intra-entity transfers of inventory. The income tax consequences from the sale of inventory from one member of a consolidated entity to another will continue to be deferred until the inventory is sold to a third party. The new standard is effective for interim and annual reporting periods beginning after December 15, 2017, although early adoption is permitted. The modified retrospective method will be required for transition to the new guidance, with a cumulative-effect adjustment recorded in retained earnings as of the beginning of the period of adoption. We are currently evaluating the potential impact of this authoritative guidance on our consolidated financial statements and will adopt this guidance by January 1, 2018.

In November 2016, the FASB issued an update intended to standardize the classification of restricted cash and cash equivalents transactions on the statement of cash flows. The new standard is effective for interim and annual reporting periods beginning after December 15, 2017, although early adoption is permitted. The retrospective transition method will be required for this new guidance. We are currently evaluating the potential impact of this authoritative guidance on our consolidated financial statements and will adopt this guidance by January 1, 2018.

In January 2017, the FASB issued an update intended to clarify the definition of a business to assist entities with evaluation of whether transactions should be accounted for as acquisitions or disposals of assets or businesses. The new definition requires that when substantially all of the fair value of the gross assets acquired or disposed of is concentrated in a single identifiable asset or group of similar identifiable assets, the asset or group is not a business. The update will require that to be considered a business, a set of assets and activities must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create output. Additionally, the update will remove the evaluation of whether a market participant could replace missing elements in order to consider the set of assets and activities a business, will provide more stringent criteria for sets without outputs and will narrow the definition of output. The new standard is effective for interim and annual reporting periods beginning after December 15, 2017, although early adoption is permitted for certain transactions. The prospective transition method will be required for this new guidance. We are currently evaluating the potential impact of this authoritative guidance on our consolidated financial statements and will adopt this guidance by January 1, 2018.

Also in January 2017, the FASB issued an update intended to simplify the subsequent measurement of goodwill by eliminating the second step in the current two-step goodwill impairment test. The update will require an entity to perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity will recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value, if applicable. Additionally, the update will eliminate the requirement that a reporting unit with a zero or negative carrying amount perform a qualitative assessment and the second step of the two-step goodwill impairment test and will instead require disclosure of the amount of goodwill allocated to each reporting unit with a zero or negative carrying amount of net assets. This update is effective for public entities for interim and annual reporting periods beginning after December 15, 2019, although early adoption is permitted for interim and annual goodwill impairment tests performed on testing dates after January 1, 2017. The prospective transition method will be required for this new guidance. We are currently evaluating the potential impact of this authoritative guidance on our consolidated financial statements and will adopt this guidance by January 1, 2020.

Outlook

We believe there are growth opportunities across the industries we serve and continue to have a positive long-term outlook. Overall, favorable end-market drivers have spurred demand for infrastructure services in both our electric power infrastructure and oil and gas infrastructure segments, and we believe both segments are generally entering a renewed multiyear up-cycle. We are focused on long-term growth and continuing to distinguish ourselves through safe execution and best-in-class field leadership. We will pursue opportunities designed to enhance Quanta's core business and leadership position in the industry and provide innovative solutions to our customers. We believe Quanta's unique operating model and entrepreneurial mindset will continue to provide us the foundation to generate long-term value for all of our stakeholders.

However, we and our customers continue to operate in a fluid business environment, with gradual improvement in the United States and Canadian economies yet continuing uncertainty in the marketplace overall. Certain of our end markets remain challenged as oil and natural gas prices and the broader energy market have not recovered or fully stabilized from the significant decline that began in mid-2014. Though our Canadian operations have stabilized, the Canadian economy has been significantly affected due to the influence of the energy industry on the country's economy, which in turn has adversely impacted both our electric power and oil and gas infrastructure services operations in Canada. Our customers also face stringent regulatory and environmental requirements, which have resulted in construction delays in some cases, particularly for larger electric transmission and pipeline projects. While these various challenges have negatively affected our operations in the past and may in the future, we believe that our financial and operational strength will enable us to manage these challenges and uncertainties, and we remain optimistic about our near-term and long-term opportunities.

Electric Power Infrastructure Services Segment

Certain portions of the North American electric grid are aging and require significant upgrades, maintenance and expansion to meet current and future demands for reliable power delivery. Over the past several years, many utilities across North America have begun to implement plans to upgrade their transmission systems in order to improve reliability and reduce congestion. Among other things, these activities include new construction, structure change-outs, line upgrades and maintenance projects on many transmission systems. In addition, state renewable portfolio standards, which set required or voluntary standards for how much power is to be generated from renewable energy sources, can result in the need for additional transmission lines and substations to transport the power from these facilities, which are often in remote locations, to demand centers. Other factors, such as the reliability standards issued by the North American Electric Reliability Corporation and other regulatory actions, are also driving transmission system upgrades and expansions. We believe these factors create significant opportunities for our transmission infrastructure services.

Demand for electricity in North America is expected to grow over the long term. Certain segments of the North American electric power grid are not adequate to efficiently serve the power needs of the future. The electric power grid is aging and, in some cases, lacks redundancy. The increasing demand for electricity, coupled with these issues, has affected and will continue to affect reliability, requiring utilities to upgrade and expand their existing transmission and distribution systems. Current federal legislation also requires the power industry to meet federal reliability standards for its transmission and distribution systems. We expect these system upgrades could result in increased spending and increased demand for our services over the long term.

As demand for power grows, the need for new power generation facilities is expected to grow. The development of new traditional power generation facilities, as well as renewable energy sources such as solar, wind and certain types of natural gas generation facilities, requires new or expanded transmission infrastructure to transport power to demand centers. Renewable energy sources in particular often require significant transmission infrastructure due to their remote location. As a result, we anticipate that future development of new power generation will lead to increased demand over the long term for our electric transmission design and construction services, as well as our substation engineering and installation services.

The significant improvement in access to natural gas resources from unconventional shale formations in the United States and Canada, driven by technological advancements, has dramatically increased the near- and long-term supply of natural gas in North America. This increase in supply has also resulted in low natural gas prices for the past several years. As a result, it is anticipated that the amount of electricity generated by natural gas powered plants will increase and, for the foreseeable future, the majority of fossil fuel generation facilities built in North America will be fueled by natural gas. Further, the Environmental Protection Agency has implemented certain emissions regulations that have resulted in the development of natural gas generation facilities to replace coal generation plants that are being retired. To the extent these dynamics continue, they are expected to result in the need for additional North American transmission and substation infrastructure to interconnect new natural gas fired generation facilities. It is also anticipated that modifications to and reengineering of existing transmission and substation infrastructure will be required as existing coal and nuclear generation facilities are retired or shut down.

We consider renewable energy, including solar and wind generation facilities, to be an ongoing opportunity for our engineering, project management and installation services. Concerns about greenhouse gas emissions, as well as the goal of reducing reliance on power generation from fossil fuels, have created demand for more renewable energy sources. Renewable portfolio standards, which mandate that renewable energy constitute a specified percentage of a utility's power generation by a specified date, exist in many states. We believe that our comprehensive services, industry knowledge and experience in the design, installation and maintenance of renewable energy facilities will enable us to support renewable energy efforts. However, we believe there is some uncertainty whether some of these projects will advance to award and construction. The economic feasibility of renewable energy projects, and therefore the attractiveness of investment in such projects, may depend on the availability of tax incentive programs or the ability of the project developer to take advantage of such incentives. There is no assurance that the government will extend existing tax incentives or create new incentive or funding programs.

The Federal Energy Regulatory Commission (FERC) issued FERC Order No. 1000 to promote more efficient and cost-effective development of new transmission facilities. The order establishes transmission planning and cost allocation requirements intended to facilitate multi-state electric transmission lines and to encourage competition by removing, under certain conditions, federal rights of first refusal from FERC-approved tariffs and agreements. In the short-term, we believe implementation of and compliance with the order has created some confusion and uncertainty for utilities and regulators, which has adversely impacted the timing of some potential transmission projects and spending, and that modifications may be necessary to spur certain intended transmission investment. If these challenges are resolved, we believe FERC Order No. 1000 has the potential to favorably impact electric transmission line development over time, particularly for large, high-voltage electric transmission projects.

Several existing, pending or proposed legislative or regulatory actions may also positively affect demand for the services provided by this segment in the long term, particularly in connection with electric power infrastructure and renewable energy spending. For example, legislative or regulatory action that alleviates some of the siting and right-of-way challenges that impact transmission projects would potentially accelerate future transmission line construction. We also anticipate increased infrastructure spending by our customers as a result of regulation requiring the power industry to meet federal reliability standards for its transmission and distribution systems and providing incentives to the industry to invest in and improve maintenance on its systems.

The regulatory and environmental permitting processes remain a hurdle for some proposed transmission and renewable energy projects, and these factors continue to create uncertainty as to timing of this spending. In the near-term, our electric power infrastructure services operations have been impacted by regulatory delays, particularly for large transmission projects. However, we expect many of these projects to move forward over a multi-year period. The timing and scope of projects can also be affected by other factors such as siting, right-of-way and unfavorable economic and market conditions. We anticipate many of these issues to be overcome and spending on transmission projects to be active over the next few years, and we currently have a number of these projects underway and expect this segment's backlog to remain strong throughout 2017.

In the near-term, margins in our Electric Power Infrastructure Services segment have experienced pressure as construction of several large, high-voltage transmission projects has been delayed due to the challenging regulatory approval and permitting environment. Due to these delays and the general expectation that these projects have not been cancelled, we believe there have been excess transmission contractor resources in the small and medium size transmission marketplace in some areas, resulting in increased competition and pricing pressure for those services. These factors, in addition to challenging regional economic conditions, have impacted our Canadian operations in particular. Over the past few quarters, we believe these competitive pressures and Canadian economic conditions have begun to stabilize. We will remain focused on maintaining our pricing discipline and believe competitive pressures could recede further as large, high-voltage transmission projects move forward and the small and medium size transmission market continues to grow and/or contractors adjust further to the current environment.

We benefited from increases in electric power distribution spending throughout the last several years, despite continued economic and political uncertainties. We believe there is an ongoing need for utilities to sustain investment in their distribution systems in order to properly maintain system reliability and capacity. In addition, a number of utilities are implementing system upgrades or "hardening" programs in response to severe weather events that have occurred over the past few years, which is also increasing distribution investment in some regions of the United States. We also anticipate that utilities will continue to integrate "smart grid" technologies into their distribution systems over time to improve grid management and create efficiencies.

The need to ensure available specialized labor resources for projects also drives strategic relationships with customers. In addition, several industry and market trends are prompting customers to seek ongoing service arrangements. These trends include an aging utility workforce and labor availability issues, increasing pressure to reduce costs and improve reliability, and increasing duration and complexity of customer capital programs. Due to these and other factors, we believe customer demand for labor resources will continue to increase, possibly outpacing the supply of industry resources. We recognize that our ability to take advantage of this opportunity is also limited by our ability to employ, train and retain the necessary skilled personnel, and that an aging utility workforce and labor availability issues affect us as well. As a result, we are taking proactive steps to develop our workforce, including through the establishment and expansion of our training facility for electric power, pipeline and communications training.

Within our electric power infrastructure services segment, we also perform communications infrastructure services in North America and Latin America. In these geographic areas, consumer and commercial demand for

communication and data intensive, high-bandwidth wireline and wireless services and applications is driving significant investment in wireline and wireless infrastructure and the deployment of new technologies.

In North America, we believe there is increasing desire to upgrade or build fiber optic networks that are closer or connected to the end user. The percentage of locations in North America that are directly connected to fiber optic networks is low, which we believe could require many years of investment and network expansion. Additionally, plans for densification and network improvements to existing wireless networks and for the deployment of new wireless networks continue in North America. For example, many providers are planning for the deployment of 5G networks over the coming years, which we believe will require significant investment in new small cellular networks and fiber optic backhaul networks to handle the large expected increase in data traffic. There are similar consumer and commercial demands for interconnectivity and services in Latin America; however, the region is significantly behind North America with respect to wireline and wireless network development. Most of Latin America relies on 3G wireless technology where wireless coverage is available and there is little 4G wireless coverage. Further, fiber optic and other high-speed networks are not widely available in many areas of Latin America. Governments in some Latin American countries are also working to implement initiatives to interconnect less developed areas to each other and to more developed areas for communication, economic and quality of life purposes. As a result of these near and longer-term industry trends, we believe there is meaningful demand for our communications engineering and construction services.

Certain international regions present significant opportunities for growth over time across many of our operations. We are evaluating ways in which we can strategically apply our expertise in various foreign countries where infrastructure enhancements are increasingly important. For example, we are actively pursuing opportunities in growth markets where we can leverage our technology or proprietary work methods, such as our energized services, to establish a presence. In Canada, we are leveraging our electric power infrastructure services resources, relationships and reputation to expand and grow our communication infrastructure services operations. In addition, over the last several years we have successfully developed our communication infrastructure services operations in several Latin American countries that could enable us to expand our infrastructure services to that region.

Oil and Gas Infrastructure Services Segment

We continue to see growth opportunities in our Oil and Gas Infrastructure Services segment, primarily in the installation and maintenance of larger pipeline and related facilities, as well as pipeline integrity, natural gas distribution systems and specialty services such as horizontal directional drilling. In certain areas of North America, the existing pipeline system infrastructure is insufficient to support future development of unconventional shale formations and the Canadian oil sands. We believe that the development of such resources, though facing challenges in the near term, may continue over the long term and that building this infrastructure would take a number of years, which we expect should increase demand for our services over the long term.

Despite our positive long-term outlook, a challenging regulatory and permitting environment has caused delays of some larger pipeline projects during the past several years. These dynamics resulted in below average larger pipeline construction opportunities for us and the industry and negatively impacted our Oil and Gas Infrastructure Services segment margins, in part as a result of our inability to adequately cover certain fixed costs. Margins for larger pipeline projects are also subject to significant performance risk, which can arise from adverse weather conditions, challenging geography, customer decisions and crew productivity. Our specific opportunities in the larger pipeline business are sometimes difficult to predict because of the seasonality of the bidding and construction cycles within the industry.

A number of larger pipeline projects from the North American shale formations and Canadian oil sands to power plants, refineries and other demand centers are in various stages of development. Most of the larger pipeline projects we are working on, have in backlog or see as future potential opportunities are driven by natural gas production and demand. We believe the abundant natural gas supply, combined with attractive prices, will

increase demand for natural gas in the future. The U.S. Energy Information Administration has stated that the number of natural gas-fired power plants built will increase significantly over the next two decades. Power generation from renewable energy sources also continues to increase and become a larger percentage of the overall power generation mix. We also believe natural gas will be the fuel of choice to provide backup power generation during times when renewable energy sources are not available. These factors could create a need for additional pipeline infrastructure to connect natural gas supplies to demand centers.

In addition, the abundance, low price and long-term supply of North American natural gas has resulted in efforts to develop liquefied natural gas (LNG) export facilities in the United States, Canada and Australia, which could provide pipeline and related facilities development opportunities for us. Natural gas prices in various international markets are significantly higher than North American natural gas prices, making the economics of exporting North American natural gas to international markets attractive. A number of LNG export facilities are in various stages of planning, permitting and development in the United States and Canada. Although we cannot be certain how many of these projects will move forward, as they could be affected by changing pricing and economic conditions, we believe our comprehensive service offerings and broad geographic presence enable us to competitively pursue pipeline and related facilities infrastructure opportunities that become available.

We also see a number of larger oil pipeline project opportunities, particularly in Canada. Although many of these projects are still developing, a significant number of projects have been awarded to us and other pipeline contractors in recent years and are moving towards construction. Given the costs and time required to bring a larger pipeline project from conception to construction, we believe many of our customers view such projects as important, strategic pieces of infrastructure, have a long-term perspective regarding their needs, and are not primarily influenced by short term commodity price fluctuations.

In certain areas of North America, pipeline takeaway capacity is not sufficient to economically move oil from production areas to demand centers for current and/or anticipated future oil production. As a result, certain proposed larger oil pipeline projects are being developed and have secured producers under contractual arrangements, making these projects economically viable despite the decline in oil prices. Several of these projects are intended to move oil from the Canadian oil sands to the east and west coast of Canada in order to access demand markets in Europe, Asia and other areas.

While there is risk that these projects will not move forward or could be delayed, we are encouraged by the proposed larger pipeline development plans and the successful progression of certain larger pipeline projects, which we believe is indicative of an improved and favorable large pipeline market over the next several years in North America. We expect to execute on a significant number of larger pipeline projects during 2017, though this activity could be more pronounced in the first half of 2017. However, if oil and natural gas prices decline further or remain at lower levels for a prolonged period, our outlook may change and demand for our oil and natural gas infrastructure services could be materially impacted.

We also believe there are growth opportunities for some of our other pipeline services, including pipeline integrity, rehabilitation and replacement services, over the long-term. The U.S. Department of Transportation has implemented regulatory legislation through the Pipeline and Hazardous Materials Safety Administration (PHMSA) relating to pipeline integrity requirements. PHMSA continues to develop, propose and implement additional safety and pipeline integrity regulation for liquid and natural gas pipelines. To the extent finalized and implemented, the proposed new regulations would strengthen requirements for safety, operation, inspection and maintenance of pipelines and provide pipeline operators with regulatory certainty. Further, these measures would require that pipeline integrity testing requirements increase in stringency and frequency, which we expect to result in an increase in spending by our customers on pipeline integrity initiatives. We also operate an engineering, research and development business that develops and owns pipeline inspection tools that could benefit from this dynamic. We believe our ability to offer a complete pipeline integrity turnkey solution to pipeline companies and gas utilities positions us to take advantage of available opportunities.

We are also experiencing an increase in demand for our natural gas distribution services as a result of improved economic conditions, lower natural gas prices and a significant need to upgrade and replace aging infrastructure. A number of states, particularly states in the northeast United States that have cities and areas with older natural gas distribution infrastructure, have approved and are implementing regulations and multi-year programs to replace cast iron, wrought iron and bare steel natural gas infrastructure, which is prone to failure with age, with modern and safer pipe material. We expect this to take an extended period of time, which should provide attractive growth opportunities for this part of our business.

Over the past several years, we have expanded our service offerings into Canada and Australia, which have different market drivers and seasonality as compared to the United States. In addition, our previous acquisitions of companies that provide pipeline logistics services to the natural gas and oil industry in the United States and various specialty services further enhance the segment's service offerings, customer base and end markets.

The oil and gas industry is highly cyclical and subject to volatility as a result of fluctuations in natural gas, natural gas liquids and oil prices. In the past, sustained periods of low prices for these products negatively impacted the development of related natural resources and infrastructure. The challenging energy market environment over the past few years has adversely impacted demand for some of our services, primarily infrastructure services in Australia, Canada and the Gulf of Mexico. Exploration and production companies and midstream companies also significantly reduced capital spending in response to the decline in oil and natural gas prices. Even though prices have recovered to a limited degree since early 2016, another meaningful decline or increased uncertainty could result in additional reductions in capital spending on pipeline infrastructure, which would lessen demand for our services. In particular, the demand for infrastructure services in areas where the price of oil is influential, such as Australia, the Canadian Oil Sands, certain oil-driven shale formations in the United States and offshore oil resources in the Gulf of Mexico, has been materially and adversely impacted by low oil prices. These markets could remain challenged if oil prices remain at lower levels. We believe that, over the long term, the market should correct oversupply imbalances and prices could recover; however, the timing of any further recovery is uncertain.

Overall, we remain optimistic about this segment's operations going forward. From a near- and medium-term perspective, we continue to believe that larger pipeline opportunities can provide significant profitability, although these projects and the profits they generate are often subject to more cyclicality and execution risk than our other service offerings. We have also taken steps to diversify our operations in this segment through other services, such as pipeline integrity, pipeline logistics, and offshore specialty services.

Summary and Conclusion

Though not without risks and challenges, including those discussed and referenced in *"Uncertainty of Forward-Looking Statements and Information,"* we believe we are well-positioned to capitalize upon opportunities and trends in the industries we serve with our full-service operations, broad geographic reach, financial strength and technical expertise, and we continue to have a positive long-term outlook. We believe there are growth opportunities across the industries we serve and that our electric power infrastructure and oil and gas infrastructure segments are generally entering a renewed multiyear up-cycle.

As discussed herein, we are benefiting from increased spending by utilities to upgrade and expand electric power transmission infrastructure in order to improve system reliability and deliver renewable electricity from new generation sources to demand centers and from favorable industry legislation and regulations. We also expect utilities to outsource more of their work to companies like us, due in part to the challenges associated with their aging workforces. We believe we are the partner of choice for many utilities in need of broad infrastructure expertise, specialty equipment and workforce resources, particularly as capital budgets and infrastructure projects have become larger and more complex.

Increasing consumer and commercial demand for communication and data intensive, high-bandwidth wireline and wireless services and applications is driving significant investment in wireline and wireless infrastructure in North America and Latin American to meet these demands and the deployment of new technologies. As a result of these near and longer-term industry trends in the markets we serve, we believe there is meaningful demand for our communications engineering and construction services.

Though some of the markets and services in our Oil and Gas Infrastructure Services segment remain challenged, we believe long-term dynamics create growth opportunities. In particular, we experienced backlog growth in 2016 primarily driven by new larger natural gas pipeline project awards and believe there could be similar activity over the next several years. We also believe that our overall size and scope of service offerings allow us to leverage opportunities arising from the development of North American unconventional shale formations, the Canadian oil sands and coal seam gas and unconventional shale formations in Australia. Further, the anticipated increase in demand for our pipeline integrity, rehabilitation and replacement services, and other services in adjacent markets, could create attractive growth potential for us and help diversify our service offerings in both the near and long term.

Additionally, for both our electric power and oil and gas infrastructure customers, through our strategic partnership approach and capital partnership structure, we have the financial strength to selectively and strategically provide financing and other solutions that could help facilitate development of energy infrastructure projects and potentially create construction backlog for us. We believe changing regulations, industry trends and the increasing size of energy infrastructure projects and programs are creating and will continue to create such opportunities, and our ability to selectively partner with customers in this manner is a competitive advantage.

Despite our positive long-term outlook, competitive pricing environments, project delays and restrictive regulatory requirements have negatively impacted our margins in the past and could affect our margins in the future. Additionally, margins may be negatively impacted on a quarterly basis due to adverse weather conditions, as well as timing of project starts or completions and other factors as previously described in *Understanding Margins*. We continue to focus on the elements of the business that are largely within our control, including costs, the margins we accept on projects, collecting receivables, ensuring quality service, rightsizing initiatives as needed to match the markets we serve, and safely executing on the projects we are awarded.

We also continue to evaluate potential strategic acquisitions and investments to broaden our customer base, expand our geographic area of operation, grow our portfolio of services and increase opportunities across our operations. We believe that additional attractive acquisition candidates exist primarily as a result of the highly fragmented nature of the industry, the inability of many companies to expand and modernize due to capital constraints, and the desire of owners for liquidity. We also believe that our financial strength, entrepreneurial operating model and experienced management team are attractive to acquisition candidates.

Uncertainty of Forward-Looking Statements and Information

This Quarterly Report on Form 10-Q includes “forward-looking statements” reflecting assumptions, expectations, projections, intentions or beliefs about future events that are intended to qualify for the “safe harbor” from liability established by the Private Securities Litigation Reform Act of 1995. You can identify these statements by the fact that they do not relate strictly to historical or current facts. They use words such as “anticipate,” “estimate,” “project,” “forecast,” “may,” “will,” “should,” “could,” “expect,” “believe,” “plan,” “intend” and other words of similar meaning. In particular, these include, but are not limited to, statements relating to the following:

- Projected revenues, net income, earnings per share, margins, weighted average shares outstanding, capital expenditures, tax rates and other projections of operating or financial results;
- Expectations regarding our business or financial outlook, growth or opportunities in particular markets;

- The expected value of contracts or intended contracts with customers;
- Future capital allocation initiatives;
- The scope, services, term and results of any projects awarded or expected to be awarded for services to be provided by us;
- The development of larger electric transmission and oil and natural gas pipeline projects and the level of oil, natural gas and natural gas liquids prices and their impact on our business or demand for our services;
- The impact of existing or potential energy legislation;
- Potential opportunities that may be indicated by bidding activity or similar discussions with customers;
- The potential benefits from acquisitions or investments;
- The expected outcome of pending or threatened litigation;
- Beliefs and assumptions about the collectability of receivables;
- The business plans or financial condition of our customers;
- Our plans and strategies;
- Possible recovery on pending or contemplated change orders or other claims against customers or third parties; and
- The current economic and regulatory conditions and trends in the industries we serve.

These forward-looking statements are not guarantees of future performance and involve or rely on a number of risks, uncertainties, and assumptions that are difficult to predict or beyond our control. These forward-looking statements reflect our beliefs and assumptions based on information available to our management at the time the statements are made. We caution you that actual outcomes and results may differ materially from what is expressed, implied or forecasted by our forward-looking statements and that any or all of our forward-looking statements may turn out to be wrong. Those statements can be affected by inaccurate assumptions and by known or unknown risks and uncertainties, including the following:

- Market conditions;
- The effects of industry, economic or political conditions outside our control;
- Quarterly variations in our operating results;
- Adverse economic and financial conditions, including weakness in the capital markets;
- Trends and growth opportunities in relevant markets;
- Delays, reductions in scope or cancellations of anticipated, pending or existing projects, including as a result of weather, regulatory or environmental processes, project performance issues, claimed forced majeure events, or our customers' capital constraints;
- The successful negotiation, execution, performance and completion of anticipated, pending and existing contracts, including the ability to obtain awards of projects on which we bid or are otherwise discussing with customers;
- Our dependence on suppliers, subcontractors, equipment manufacturers and other third party contractors;
- Our ability to attract skilled labor and retain key personnel and qualified employees;
- The potential shortage of skilled employees;

- Our dependence on fixed price contracts and the potential to incur losses with respect to these contracts;
- Estimates relating to our use of percentage-of-completion accounting;
- Adverse impacts from weather;
- Our ability to generate internal growth;
- Competition in our business, including our ability to effectively compete for new projects and market share;
- The effect of natural gas, natural gas liquids and oil prices on our operations and growth opportunities and on our customers' capital programs and the resulting impact on demand for our services;
- The future development of natural resources;
- The failure of renewable energy initiatives or other existing or potential legislative actions to result in increased demand for our services;
- Liabilities associated with multiemployer pension plans, including underfunding of liabilities and termination or withdrawal liabilities, and the possibility of further increases in the liability associated with our withdrawal from a multiemployer pension plan;
- Liabilities for claims that are self-insured or not insured;
- Unexpected costs or liabilities that may arise from lawsuits or indemnity claims asserted against us;
- The outcome of pending or threatened litigation;
- Risks relating to the potential unavailability or cancellation of third party insurance, the exclusion of coverage for certain losses, and potential increases in premiums for coverage deemed beneficial to us;
- Cancellation provisions within our contracts and the risk that contracts expire and are not renewed or are replaced on less favorable terms;
- Loss of customers with whom we have long-standing or significant relationships;
- The potential that participation in joint ventures or similar structures exposes us to liability and/or harm to our reputation for acts or omissions by our partners;
- Our inability or failure to comply with the terms of our contracts, which may result in additional costs, unexcused delays, warranty claims, failure to meet performance guarantees, damages or contract terminations;
- The inability or refusal of our customers to pay for services, including failure to collect our outstanding receivables;
- The failure to recover on payment claims against project owners or third party contractors or to obtain adequate compensation for customer-requested change orders;
- The failure of our customers to comply with regulatory requirements applicable to their projects, which may result in project delays and cancellations;
- Budgetary or other constraints that may reduce or eliminate tax incentives or government funding for projects, which may result in project delays or cancellations;
- Estimates and assumptions in determining our financial results and backlog;
- Our ability to realize our backlog;

- Risks associated with operating in international markets, including instability of foreign governments, currency fluctuations, tax and investment strategies, as well as compliance with foreign legal systems and cultural practices, the U.S. Foreign Corrupt Practices Act and other applicable anti-bribery and anti-corruption laws;
- Our ability to successfully identify, complete, integrate and realize synergies from acquisitions;
- The potential adverse impact resulting from uncertainty surrounding acquisitions, including the ability to retain key personnel from an acquired business and the potential increase in risks already existing in our operations;
- The adverse impact of impairments of goodwill, receivables and other intangible assets or investments;
- Our growth outpacing our decentralized management and infrastructure;
- Requirements relating to governmental regulation and changes thereto;
- Inability to enforce our intellectual property rights or the obsolescence of such rights;
- Risks related to the implementation of an information technology solution;
- The impact of our unionized workforce on our operations, including labor stoppages or interruptions due to strikes or lockouts;
- Potential liabilities relating to occupational health and safety matters;
- The cost of borrowing, availability of cash and credit, fluctuations in the price and volume of our common stock, debt covenant compliance, interest rate fluctuations and other factors affecting our financing and investing activities;
- Fluctuations of prices of certain materials used in our business;
- The ability to access sufficient funding to finance desired growth and operations;
- Our ability to obtain performance bonds;
- Potential exposure to environmental liabilities;
- Our ability to meet the regulatory requirements applicable to us and our subsidiaries including the Sarbanes-Oxley Act of 2002;
- Rapid technological and structural changes that could reduce the demand for our services;
- The impact of new or changed tax laws, treaties or regulations;
- The impact of increased healthcare costs arising from healthcare reform legislation or other legislative action;
- The impact of regulatory changes on labor costs;
- The impact of significant fluctuations in foreign currency exchange rates; and
- The other risks and uncertainties described elsewhere herein and in Item 1A.*Risk Factors* of Part I of our Annual Report on Form 10-K for the year ended December 31, 2016 and as may be detailed from time to time in our other public filings with the SEC.

All of our forward-looking statements, whether written or oral, are expressly qualified by these cautionary statements and any other cautionary statements that may accompany such forward-looking statements or that are otherwise included in this report. In addition, we do not undertake and expressly disclaim any obligation to update or revise any forward-looking statements to reflect events or circumstances after the date of this report or otherwise.

Item 3. ***Quantitative and Qualitative Disclosures about Market Risk.***

The information in this section should be read in connection with the information on financial market risk related to changes in interest rates and currency exchange rates in Item 7A. *Quantitative and Qualitative Disclosures About Market Risk* of Part II of our Annual Report on Form 10-K for the year ended December 31, 2016. Our primary exposure to market risk relates to unfavorable changes in concentration of credit risk, interest rates and currency exchange rates.

Credit Risk. We are subject to concentrations of credit risk related to our cash and cash equivalents and net receivable position with customers, which includes amounts related to billed and unbilled accounts receivable and costs and estimated earnings in excess of billings on uncompleted contracts net of advanced billings with the same customer. Substantially all of our cash and cash equivalents are managed by what we believe to be high credit quality financial institutions. In accordance with our investment policies, these institutions are authorized to invest cash and cash equivalents in a diversified portfolio of what we believe to be high-quality investments, which primarily include interest-bearing demand deposits, money market investments and money market mutual funds with original maturities of three months or less. Although we do not currently believe the principal amounts of these cash and cash equivalents are subject to any material risk of loss, changes in economic conditions could impact the interest income we receive from these investments. In addition, as we grant credit under normal payment terms, generally without collateral, we are subject to potential credit risk related to our customers' ability to pay for services provided. This risk may be heightened as a result of the depressed economic and financial market conditions that have existed in recent years. However, we believe the concentration of credit risk related to billed and unbilled receivables and costs and estimated earnings in excess of billings on uncompleted contracts is limited because of the diversity of our customers. We perform ongoing credit risk assessments of our customers and financial institutions and in some cases we obtain collateral or other security from our customers.

Interest Rate Risk. As of March 31, 2017, we had no derivative financial instruments to manage interest rate risk. As such, we were exposed to earnings and fair value risk due to changes in interest rates with respect to our long-term obligations. As of March 31, 2017, the fair value of our variable rate debt of $418.7 million approximated book value. Our weighted average interest rate on our variable rate debt for the three months ended March 31, 2017 was 2.61%. The annual effect on our pretax earnings of a hypothetical 50 basis point increase or decrease in variable interest rates would be approximately $2.1 million based on our March 31, 2017 balance of variable rate debt.

Foreign Currency Risk. The U.S. dollar is the functional currency for the majority of our operations, which are primarily located within the United States. The functional currency for our foreign operations, which are primarily located in Canada and Australia, is typically the currency of the country in which the foreign operating unit is located. Accordingly, our financial performance is subject to fluctuation due to changes in foreign currency exchange rates relative to the U.S. dollar. During the three months ended March 31, 2017, revenues from our foreign operations accounted for 30.1% of our consolidated revenues. Fluctuations in foreign exchange rates during the three months ended March 31, 2017 caused an approximate increase of $20 million in foreign revenues compared to the three months ended March 31, 2016.

We are also subject to foreign currency risk with respect to sales, purchases and borrowings that are denominated in a currency other than the respective functional currencies of our operating units. To minimize the risk from changes in foreign currency exchange rates, we may enter into foreign currency derivative contracts to hedge our foreign currency risk on a cash flow basis. There were no outstanding foreign currency derivative contracts at March 31, 2017.

We also have foreign exchange risk related to cash and cash equivalents in foreign banks. Based on the balance of cash and cash equivalents in foreign banks of $89.0 million as of March 31, 2017, an assumed 5% adverse change to foreign exchange rates would result in a fair value decline of $4.5 million. Fluctuations in fair value are recorded in "Accumulated other comprehensive income (loss)," a separate component of stockholders' equity.

Item 4. ***Controls and Procedures.***

Attached as exhibits to this Quarterly Report are certifications of Quanta's Chief Executive Officer and Chief Financial Officer that are required in accordance with Rule 13a-14 of the Securities Exchange Act of 1934, as amended (the Exchange Act). This *Controls and Procedures* section includes information concerning the controls and controls evaluation referred to in the certifications, and it should be read in conjunction with the certifications for a more complete understanding of the topics presented.

Evaluation of Disclosure Controls and Procedures

Our management has established and maintains a system of disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act, such as this Quarterly Report, is recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms. The disclosure controls and procedures are also designed to provide reasonable assurance that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

As of the end of the period covered by this Quarterly Report, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures pursuant to Rule 13a-15(b) of the Exchange Act. This evaluation was carried out under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer. Based on this evaluation, these officers have concluded that, as of March 31, 2017, our disclosure controls and procedures were effective to provide reasonable assurance of achieving their objectives.

Internal Control over Financial Reporting

There has been no change in our internal control over financial reporting that occurred during the quarter ended March 31, 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Design and Operation of Control Systems

Our management, including the Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and breakdowns can occur because of simple errors or mistakes. Controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

PART II — OTHER INFORMATION

Item 1. ***Legal Proceedings.***

We are from time to time party to various lawsuits, claims and other legal proceedings that arise in the ordinary course of business. These actions typically seek, among other things, compensation for alleged personal injury, breach of contract and/or property damages, employment-related damages, punitive damages, civil penalties or other losses, or injunctive or declaratory relief. With respect to all such lawsuits, claims and proceedings, we record a reserve when it is probable that a loss has been incurred and the amount of loss can be reasonably estimated. In addition, we disclose matters for which management believes a material loss is at least reasonably possible. See *Legal Proceedings* and *Collective Bargaining Agreements* in Note 10 of the Notes to Condensed Consolidated Financial Statements in Item 1. *Financial Statements* of Part I of this Quarterly Report, which are incorporated by reference into this Item 1. *Legal Proceedings* of Part II of this Quarterly Report, for additional information regarding litigation, claims and other legal proceedings.

Item 1A. ***Risk Factors.***

As of the date of this filing, there have been no material changes from the risk factors previously disclosed in Item 1A *Risk Factors* of Part I of our Annual Report on Form 10-K for the year ended December 31, 2016 (2016 Annual Report). An investment in our common stock or other equity securities involves various risks. When considering an investment in our company, you should carefully consider all of the risk factors described herein and in our 2016 Annual Report. The matters specifically identified are not the only risks and uncertainties we face, and there may be additional matters that are not known to us or that we currently consider immaterial. All of these risks and uncertainties could adversely affect our business, financial condition or future results, and thus the value of an investment in our company.

Item 2. ***Unregistered Sales of Equity Securities and Use of Proceeds.***

Unregistered Sales of Equity Securities

During the three months ended March 31, 2017, we issued 2,529,341 shares of our common stock to former owners of acquired businesses in exchange, on a one-for-one basis, for exchangeable shares in Canadian subsidiaries of Quanta that were held by the former owners. The former owners originally received the exchangeable shares as partial consideration for the sales of the acquired businesses. The shares of common stock issued in this transaction were issued in reliance upon the exemption from registration provided by Section 4(a)(2) of the Securities Act of 1933, as amended, as the shares were issued to the owners of businesses acquired in privately negotiated transactions not involving any public offering or solicitation.

Issuer Purchases of Equity Securities During the First Quarter of 2017

The following table contains information about our purchases of equity securities during the three months ended March 31, 2017.

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares that may yet be Purchased Under the Plans or Programs
January 1-31, 2017	690	$ 35.70	—	
February 1-28, 2017	424,855	$ 37.89	—	
March 1-31, 2017	25,845	$ 35.98	—	
Total	451,390		—	$ —

(1) Includes shares purchased from employees to satisfy tax withholding obligations in connection with the vesting of restricted stock unit and performance unit awards or the settlement of previously vested but deferred restricted stock unit awards.

Item 3. ***Defaults Upon Senior Securities.***

None.

Item 4. ***Mine Safety Disclosures.***

None.

Item 5. ***Other Information.***

None.

Item 6. ***Exhibits.***

Exhibit No.	Description
3.1	Restated Certificate of Incorporation of Quanta Services, Inc. (previously filed as Exhibit 3.3 to the Company's Form 8-K filed May 25, 2011 and incorporated herein by reference)
3.2	Certificate of Designation of Series G Preferred Stock (previously filed as Exhibit 3.1 to the Company's Form 8-K filed January 17, 2014 and incorporated herein by reference)
3.3	Bylaws of Quanta Services, Inc., as amended and restated March 27, 2014 (previously filed as Exhibit 3.1 to the Company's Form 8-K filed March 31, 2014 and incorporated herein by reference)
31.1 *	Certification by Chief Executive Officer pursuant to Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
31.2 *	Certification by Chief Financial Officer pursuant to Rule 13a -14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
32.1 *	Certification by Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith)
101 INS *	XBRL Instance Document
101 SCH *	XBRL Taxonomy Extension Schema Document
101 CAL *	XBRL Taxonomy Extension Calculation Linkbase Document
101 LAB *	XBRL Taxonomy Extension Label Linkbase Document
101 PRE *	XBRL Taxonomy Extension Presentation Linkbase Document
101 DEF *	XBRL Taxonomy Extension Definition Linkbase Document

* Filed or furnished herewith

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant, Quanta Services, Inc., has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

QUANTA SERVICES, INC.

By: /s/ DERRICK A. JENSEN
Derrick A. Jensen
Chief Financial Officer
(Principal Financial Officer and
Principal Accounting Officer)

Dated: May 9, 2017

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101 DEF *	XBRL Taxonomy Extension Definition Linkbase Document

* Filed or furnished herewith

Exhibit 31.1

I, Earl C. Austin, Jr., certify that:

1. I have reviewed this quarterly report on Form 10-Q of Quanta Services, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange ActRules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange ActRules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: May 9, 2017

By: /s/ EARL C. AUSTIN, JR.
Earl C. Austin, Jr.
President, Chief Executive Officer and Chief Operating Officer
(Principal Executive Officer)

Exhibit 31.2

I, Derrick A. Jensen, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Quanta Services, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange ActRules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange ActRules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: May 9, 2017

By: /s/ DERRICK A. JENSEN
Derrick A. Jensen
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION

PURSUANT TO 18 U.S.C. SECTION 1350,

AS ADOPTED PURSUANT TO

SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Each of the undersigned officers of Quanta Services, Inc. (the "Company") hereby certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to such officer's knowledge that:

(1) the accompanying Form 10-Q report for the period ending March 31, 2017 as filed with the U.S. Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934, as amended; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

Dated: May 9, 2017

/s/ EARL C. AUSTIN, JR.
Earl C. Austin, Jr.
President, Chief Executive Officer and Chief Operating Officer

Dated: May 9, 2017

/s/ DERRICK A. JENSEN
Derrick A. Jensen
Chief Financial Officer