QUANTA SERVICES INC
Form 10-Q
August 07, 2018

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-Q
(Mark
One)

þ	QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
	For the quarterly period ended June 30, 2018.
or	
o	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 x No o
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No o
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 x	Accelerated filer o
Non-accelerated filer o	Smaller reporting company o
	Emerging growth company o

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

As of August 3, 2018, the number of outstanding shares of Common Stock of the registrant was 148,807,552. As of the same date, 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 another Canadian subsidiary 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)

	June 30, 2018	December 31, 2017
ASSETS		
Current Assets:		
Cash and cash equivalents	$120,357	$138,285
Accounts receivable, net of allowances of $4,757 and $4,465	2,108,317	1,985,077
Contract assets	551,505	497,292
Inventories	85,859	80,890
Prepaid expenses and other current assets	208,798	168,363
Total current assets	3,074,836	2,869,907
Property and equipment, net of accumulated depreciation of $1,042,815 and $981,275	1,325,128	1,288,602
Other assets, net	230,934	189,866
Other intangible assets, net of accumulated amortization of $352,520 and $335,507	261,820	263,179
Goodwill	1,897,664	1,868,600
Total assets	$6,790,382	$6,480,154
LIABILITIES AND EQUITY		
Current Liabilities:		
Current maturities of long-term debt and short-term debt	$15,499	$1,220
Accounts payable and accrued expenses	1,178,983	1,057,460
Contract liabilities	496,083	433,387
Total current liabilities	1,690,565	1,492,067
Long-term debt and notes payable, net of current maturities	840,742	670,721
Deferred income taxes	196,521	179,381
Insurance and other non-current liabilities	369,089	342,356
Total liabilities	3,096,917	2,684,525
Commitments and Contingencies		
Equity:		
Common stock, $.00001 par value, 600,000,000 shares authorized, 156,934,020 and 155,219,154 shares issued, and 149,088,134 and 153,342,326 shares outstanding	2	2
Exchangeable shares, no par value, 486,112 shares issued and outstanding	—	—
Series G Preferred Stock, $.00001 par value, 1 share authorized, issued and outstanding	—	—
Additional paid-in capital	1,934,826	1,889,356
Retained earnings	2,301,281	2,191,059
Accumulated other comprehensive loss	(248,532)	(203,395)
Treasury stock, 7,845,886 and 1,876,828 common shares	(296,917)	(85,451)
Total stockholders’ equity	3,690,660	3,791,571
Non-controlling interests	2,805	4,058
Total equity	3,693,465	3,795,629

Total liabilities and equity	$6,790,382	$6,480,154

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 June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Revenues	$2,656,348	$2,200,374	$5,073,924	$4,378,544
Cost of services (including depreciation)	2,322,977	1,898,209	4,439,505	3,810,191
Gross profit	333,371	302,165	634,419	568,353
Selling, general and administrative expenses	206,104	185,880	421,526	370,432
Amortization of intangible assets	10,507	6,494	20,912	13,056
Change in fair value of contingent consideration liabilities	(6,279)	—	(6,279)	—
Operating income	123,039	109,791	198,260	184,865
Interest expense	(9,178)	(4,271)	(15,956)	(8,236)
Interest income	660	164	806	451
Other income (expense), net	(10,426)	(1,079)	(22,401)	(1,443)
Income before income taxes	104,095	104,605	160,709	175,637
Provision for income taxes	29,389	40,245	47,392	62,837
Net income	74,706	64,360	113,317	112,800
Less: Net income attributable to non-controlling interests	341	523	1,338	696
Net income attributable to common stock	$74,365	$63,837	$111,979	$112,104
Earnings per share attributable to common stock:				
Basic	$0.49	$0.41	$0.72	$0.72
Diluted	$0.48	$0.41	$0.72	$0.72
Shares used in computing earnings per share:				
Weighted average basic shares outstanding	153,325	155,090	154,906	154,859
Weighted average diluted shares outstanding	154,595	156,165	156,112	155,745

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		Six Months Ended	
	June 30,		June 30,	
	2018	2017	2018	2017
Net income	$74,706	$64,360	$113,317	$112,800
Other comprehensive income (loss), net of tax provision:				
Foreign currency translation adjustment, net of tax of $0, $0, $0 and $0	(20,123)	26,685	(45,137)	40,506
Other comprehensive income (loss)	(20,123)	26,685	(45,137)	40,506
Comprehensive income	54,583	91,045	68,180	153,306
Less: Comprehensive income attributable to non-controlling interests	341	523	1,338	696
Total comprehensive income attributable to Quanta stockholders	$54,242	$90,522	$66,842	$152,610

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 June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Cash Flows from Operating Activities:				
Net income	$74,706	$64,360	$113,317	$112,800
Adjustments to reconcile net income to net cash provided by (used in) operating activities—				
Depreciation	50,034	44,650	98,753	87,343
Amortization of intangible assets	10,507	6,494	20,912	13,056
Change in fair value of contingent consideration liabilities	(6,279)	—	(6,279)	—
Equity in losses of unconsolidated affiliates	11,798	2,148	25,141	2,751
Amortization of debt issuance costs	288	338	576	678
(Gain) loss on sale of property and equipment	982	(2,007)	1,945	(166)
Foreign currency (gain) loss	582	641	(69)	862
Provision for doubtful accounts	139	61	984	926
Deferred income tax (benefit) provision	(2,872)	3,666	13,505	3,630
Non-cash stock-based compensation	13,485	11,557	28,172	23,423
Changes in operating assets and liabilities, net of non-cash transactions	3,150	(127,074)	(114,444)	(244,174)
Net cash provided by operating activities	156,520	4,834	182,513	1,129
Cash Flows from Investing Activities:				
Capital expenditures	(81,784)	(58,257)	(148,591)	(105,281)
Proceeds from sale of property and equipment	7,224	7,543	12,993	12,344
Proceeds from insurance settlements related to property and equipment	365	—	365	597
Cash paid for acquisitions, net of cash, cash equivalents and restricted cash acquired	(15,506)	(6,108)	(46,234)	(7,635)
(Investments in) and return of equity from unconsolidated affiliates	(731)	(9,229)	(1,569)	(12,954)
Cash received from (paid for) other investments, net	78	615	784	(1,086)
Cash paid for intangible assets	(3,000)	—	(3,000)	—
Net cash used in investing activities	(93,354)	(65,436)	(185,252)	(114,015)
Cash Flows from Financing Activities:				
Borrowings under credit facility	1,062,445	550,883	2,037,393	1,248,094
Payments under credit facility	(1,101,561)	(491,943)	(1,861,930)	(1,123,384)
Payments on other long-term debt	(385)	(1,354)	(731)	(2,883)
Borrowings of short-term debt	12,942	—	12,942	—
Payments on short-term debt	—	—	—	(2,783)
Distributions to non-controlling interests	(687)	(383)	(1,667)	(1,363)
Payments related to tax withholding for share-based compensation	(1,583)	(1,613)	(14,204)	(17,805)
Exercise of stock options	—	—	—	25
Repurchase of common stock	(15,993)	—	(189,906)	—
Net cash provided by (used in) financing activities	(44,822)	55,590	(18,103)	99,901
	1,113	88	1,804	1,183

Effect of foreign exchange rate changes on cash, cash equivalents and restricted cash				
Net increase (decrease) in cash, cash equivalents and restricted cash	19,457	(4,924)	(19,038)	(11,802)
Cash, cash equivalents and restricted cash, beginning of period	105,280	107,532	143,775	114,410
Cash, cash equivalents and restricted cash, end of period	$124,737	$102,608	$124,737	$102,608

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

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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 communication industries in the United States, Canada, Australia, Latin America 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; 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. This segment also includes Quanta’s postsecondary educational institution that provides pre-apprenticeship training and programs for experienced linemen.

Oil and Gas Infrastructure Services Segment

The Oil and Gas Infrastructure Services segment provides comprehensive network solutions to customers involved in the development, transportation, storage and processing 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, shallow water pipeline installation, fabrication and marine asset repair. Additionally, Quanta provides high-pressure and critical-path turnaround services to the downstream and midstream energy markets and instrumentation and electrical services, piping, fabrication and storage tank services. To a lesser extent, this segment designs, installs and maintains fueling systems, as well as water and sewer infrastructure.

Acquisitions

In January 2018, Quanta acquired an electrical infrastructure services business specializing in substation construction and relay services and a postsecondary educational institution that provides pre-apprenticeship training and programs for experienced linemen, both of which are located in the United States. The results of the acquired businesses have generally been included in Quanta’s Electric Power Infrastructure Services segment and consolidated financial statements beginning on the acquisition dates.

On July 20, 2017, Quanta acquired Stronghold, Ltd. and Stronghold Specialty, Ltd. (collectively Stronghold), a specialized services business located in the United States that provides high-pressure and critical-path solutions to the downstream and midstream energy markets. The results of the acquired business are generally included in Quanta’s Oil and Gas Infrastructure Services segment and have been included in Quanta’s consolidated financial statements beginning on the acquisition date.

During the year ended December 31, 2017, Quanta also acquired a communications infrastructure services contractor and an electrical and communications contractor, both of which are located in the United States. The results of these acquired businesses are generally included in Quanta's Electric Power Infrastructure Services segment and have been included in Quanta's consolidated financial statements beginning on the respective acquisition dates.

QUANTA SERVICES, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(Unaudited)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

Principles of Consolidation

The condensed 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 condensed 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 U.S. Securities and Exchange Commission (SEC). Certain information and footnote disclosures, normally included in annual financial statements prepared in accordance with U.S. Generally Accepted Accounting Principles (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 consolidated subsidiaries included in Quanta's Annual Report on Form 10-K for the year ended December 31, 2017, which was filed with the SEC on February 28, 2018.

Reclassifications

Quanta reclassified certain prior period amounts related to restricted cash and proceeds from the settlement of insurance claims related to property and equipment in the accompanying condensed consolidated statements of cash flows to conform to the current period presentation under recently adopted accounting updates. See Note 3 for further details regarding these updates. Certain reclassifications have also been made to Quanta's condensed consolidated statements of operations for 2017 to conform to classifications for 2018. Additionally, the amounts previously reported as "Costs and estimated earnings in excess of billings on uncompleted contracts" and "Billings in excess of costs and estimated earnings on uncompleted contracts" on Quanta's condensed consolidated balance sheets have been included in the newly titled "Contract assets" and "Contract liabilities" in accordance with the newly adopted revenue recognition guidance discussed below and in Note 3.

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, acquisition-related contingent consideration liabilities, liabilities for insurance and other claims and guarantees, multiemployer pension plan withdrawal liabilities, contingent 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.

QUANTA SERVICES, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(Unaudited)

Cash and Cash Equivalents

Quanta had cash and cash equivalents of $120.4 million and $138.3 million as of June 30, 2018 and December 31, 2017. 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 June 30, 2018 and December 31, 2017, cash equivalents were $55.1 million and $7.1 million, and consisted primarily of money market investments and money market mutual funds and are discussed further in Fair Value Measurements below. As of June 30, 2018 and December 31, 2017, cash and cash equivalents held in domestic bank accounts were $79.6 million and $83.1 million, and cash and cash equivalents held in foreign bank accounts were $40.8 million and $55.2 million. As of June 30, 2018 and December 31, 2017, cash and cash equivalents held by joint ventures, which are either consolidated or proportionately consolidated, were $11.6 million and $16.7 million, of which $11.2 million and $10.0 million related to domestic joint ventures. Cash and cash equivalents held by the joint ventures are available to support joint venture operations, but Quanta cannot utilize those assets to support its other operations. 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. 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 customers' business or cash flows, which may be impacted by negative economic and market conditions, could affect Quanta's ability to collect amounts due. As of June 30, 2018 and December 31, 2017, Quanta had allowances for doubtful accounts on current receivables of $4.8 million and $4.5 million. Long-term accounts receivable are included within "Other assets, net" in the accompanying condensed consolidated balance sheets.

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.

Some contracts allow customers to withhold a small percentage of billings pursuant to retainage provisions, and such amounts 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 June 30, 2018 and December 31, 2017 were $254.8 million and $300.5 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 June 30, 2018 and December 31, 2017 were $90.7 million and $41.9 million.

Quanta recognizes unbilled receivables within "Accounts receivable" in certain 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 revenue recognized for work performed under fixed-price contracts, as these amounts are recorded as "Contract assets." At June 30, 2018 and December 31, 2017, the balances of unbilled receivables included in "Accounts receivable" were $433.5 million and $303.9 million.

Goodwill

Quanta has recorded goodwill in connection with its historical acquisitions of businesses. Upon acquisition, these businesses were either combined into one of Quanta's existing operating units or managed on a stand-alone basis as an individual operating unit. An annual assessment for impairment is performed for each operating unit that carries a balance of goodwill. Quanta's operating units are 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 an 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

QUANTA SERVICES, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(Unaudited)

assessing goodwill impairments.

An annual, or interim, goodwill impairment test is performed by comparing the fair value of a reporting unit with its carrying amount and recognizing an impairment charge for the amount by which the carrying amount exceeds the fair value. The income tax effect associated with an impairment of tax deductible goodwill is also considered in the measurement of the goodwill impairment.

Quanta has the option to first assess qualitative factors to determine whether it is necessary to perform the quantitative 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. 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 the quantitative 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 annual goodwill impairment assessment is performed in the fourth quarter of its fiscal year, 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 a reporting unit. The quantitative impairment test involves comparing the fair value of each of Quanta's reporting units with its carrying amount, including goodwill. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss is recorded as a reduction to goodwill with a corresponding charge to "Asset impairment charges" in the consolidated statements of operations. Any goodwill impairment is limited to the total amount of goodwill allocated to that reporting unit.

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 because management believes this method results in the most accurate calculation of fair value. Determining the fair value of a reporting unit requires judgment and the use of significant estimates and assumptions, including 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 quantitative impairment test may indicate a fair value that is substantially similar to the reporting unit's carrying amount. 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 2017, a quantitative fair-value based goodwill impairment analysis indicated that the fair value of each of Quanta’s reporting units, with the exception of two reporting units in its Oil and Gas Infrastructure Services Division, was in excess of its carrying amount. Quanta recorded a $57.0 million non-cash charge in the fourth quarter of 2017 for the impairment of goodwill associated with a reporting unit that provides material handling services, which achieved lower operating

QUANTA SERVICES, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(Unaudited)

margins than anticipated during 2017 and is expected to continue to face a highly competitive environment in its select markets, and a reporting unit that provides marine and offshore services, which has experienced prolonged periods of reduced revenues and operating margins and is expected to continue to experience lower levels of activity in the U.S. Gulf of Mexico and other offshore markets. Assuming a 10% decrease in the fair value of each of Quanta's reporting units, one additional reporting unit within Quanta's Oil and Gas Infrastructure Services Division would have had a fair value below its carrying amount. Circumstances such as market declines, unfavorable economic conditions, loss of a major customer or other factors could increase the risk of impairment of goodwill for this reporting unit in future periods.

If an operating unit experiences prolonged periods of declining revenues, operating margins or both, it may be at risk of failing the quantitative 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, including the reporting units referenced above, have continued to be negatively impacted by these factors. Goodwill and intangible assets associated with these operating units were $48.9 million and $13.1 million at June 30, 2018. Quanta monitors these conditions and others to determine if it is necessary to perform the quantitative 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 six months ended June 30, 2018. Although Quanta is not aware of circumstances that would lead to additional goodwill impairments at this time, 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.

Other Intangible Assets

Quanta's intangible assets include customer relationships, backlog, trade names, non-compete agreements, patented rights and developed technology and curriculum, all of which are 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 multi-period excess earnings method. This analysis discounts 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 following table presents the significant estimates used by management in determining the fair values of customer relationships associated with acquisitions in the six months ended June 30, 2018 and year ended December 31, 2017:

	2018	2017
Discount rates	25%	17% to 25%
Customer attrition rates		