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Pattern Energy Group Inc.  
Form 10-K  
March 01, 2019

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

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the Fiscal Year Ended December 31, 2018.

-OR-

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

Commission File Number 001-36087

PATTERN ENERGY GROUP INC.  
(Exact name of Registrant as specified in its charter)

Delaware 90-0893251  
(State or other jurisdiction of (I.R.S. Employer  
incorporation or organization) Identification No.)  
1088 Sansome Street, San Francisco, CA 94111  
(Address of principal executive offices) (Zip Code)  
Registrant's telephone number, including area code: (415) 283-4000

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

Title of Each Class	Name of Each Exchange on Which Registered
Class A Common Stock, par value \$0.01 per share	Nasdaq Global Select Market Toronto Stock Exchange

Securities registered pursuant to Section 12 (g) of the Act: None

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes  No

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 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  No

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or 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

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Non-accelerated filer  Smaller reporting company   
Emerging growth company

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

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

The aggregate market value of the voting stock and non-voting stock held by non-affiliates of the registrant based upon the last trading price of the registrant's Class A common stock as reported on the Nasdaq Global Select Market on June 30, 2018 was approximately \$1.5 billion. This excludes 16,829,692 shares of Class A common stock held by directors, officers, Pattern Renewables LP and certain of its affiliates, and Public Sector Pension Investment Board. Exclusion of shares does not reflect a determination that persons are affiliates for any other purpose.

The registrant's Class A common stock is listed on the Nasdaq Global Select Market and on the Toronto Stock Exchange under the symbol "PEGI".

On February 22, 2019, the registrant had 98,077,874 shares of Class A common stock, \$0.01 par value per share, outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's definitive proxy statement relating to its 2019 annual meeting of stockholders (the "2019 Proxy Statement") are incorporated by reference into Part III of this Form 10-K where indicated. The 2019 Proxy Statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

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## CAUTIONARY NOTICE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K ("Form 10-K") contains statements that may constitute forward-looking statements. You can identify these statements by forward-looking words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "plan," "potential," "should," "will," "would," or similar words. You should read statements that contain these words carefully because they discuss our current plans, strategies, prospects, and expectations concerning our business, operating results, financial condition, and other similar matters. While we believe that these forward-looking statements are reasonable as and when made, there may be events in the future that we are not able to predict accurately or control, and there can be no assurance that future developments affecting our business will be those that we anticipate. Our forward-looking statements involve significant risks and uncertainties (some of which are beyond our control) and assumptions that could cause actual results to differ materially from our historical experience and our present expectations or projections. Important factors that could cause our actual results to differ from those in the forward-looking statements, include but are not limited to, those summarized below and further described in Part I, Item 1A "Risk Factors:"

- our electricity generation, our projections thereof and factors affecting production, including wind, solar and other conditions, other weather conditions, availability and curtailment;
- our ability to manage exposure to project development risks;
- our ability to complete acquisitions and dispositions of power projects;
- our ability to complete construction of construction projects and transition them into financially successful operating projects;
- fluctuations in supply, demand, prices and other conditions for electricity, other commodities and renewable energy credits (RECs);
- changes in law, including applicable tax laws;
- public response to and changes in the local, state, provincial and federal regulatory framework affecting renewable energy projects, including those related to taxation, the U.S. federal production tax credit (PTC), investment tax credit (ITC) and potential reductions in Renewable Portfolio Standards (RPS) requirements;
- the ability of our counterparties to satisfy their financial commitments or business obligations;
- the availability of financing, including tax equity financing, for our power projects;
- an increase in interest rates and the discontinuation of LIBOR;
- our substantial short-term and long-term indebtedness, including additional debt in the future;
- competition from other power project developers;
- development constraints, including the availability of interconnection and transmission;
- potential environmental liabilities and the cost and conditions of compliance with applicable environmental laws and regulations;
- our ability to operate our business efficiently, manage capital expenditures and costs effectively and generate cash flow;
- our ability to retain and attract executive officers and key employees;
- our ability to keep pace with and take advantage of new technologies;
- the effects of litigation, including administrative and other proceedings or investigations, relating to power projects in development, under construction and those in operation;
- conditions in energy markets as well as financial markets generally, which will be affected by interest rates, foreign currency exchange rate fluctuations and general economic conditions;
- the effectiveness of our currency risk management program;
- the effective life and cost of maintenance of our wind turbines, solar panels and other equipment;
- the increased costs of, and tariffs on, spare parts;
- scarcity of necessary equipment;
- negative public or community response to power projects;
- the value of collateral in the event of liquidation; and
- other factors discussed under "Risk Factors."



Readers are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date hereof. We undertake no obligation to publicly update or revise any forward-looking statements after the date they are made, whether as a result of new information, future events or otherwise.

#### Statistical Data

The statistical data used throughout this Form 10-K, other than data relating specifically solely to us, are based upon independent industry publications, government publications, reports by market research firms or other published independent sources. We did not commission any of these publications or reports. These publications generally state that they have obtained information from sources believed to be reliable, but do not guarantee the accuracy or completeness of such information. While we believe that each of these studies and publications is reliable, we have not independently verified such data and make no representation as to the accuracy of such information.

#### Currency Information

In this Form 10-K, reference to "C\$" and "Canadian dollars" are to the lawful currency of Canada, references to "JPY" and "Japanese Yen" are to the lawful currency of Japan and references to "\$", "US\$" and "U.S. dollars" are to the lawful currency of the United States. All dollar amounts herein are in U.S. dollars, unless otherwise noted.

#### MEANING OF CERTAIN REFERENCES

Unless the context provides otherwise, references herein to "we," "our," "us," "our company" and "Pattern" refer to Pattern Energy Group Inc., a Delaware corporation, together with its consolidated subsidiaries. In addition, unless the context requires otherwise, any reference in this Form 10-K to:

- "Amazon Wind" refers to Fowler Ridge IV Wind Farm LLC, a wind project located in Benton County, Indiana;
- "Armow" refers to SP Armow Wind Ontario LP, a wind project located in Kincardine, Ontario, Canada;
- "Broadview" collectively refers to Broadview Finco Pledgor LLC (Broadview Project), consisting of Broadview Energy KW, LLC and Broadview Energy JN, LLC, a wind project located in Curry County, New Mexico, and Western Interconnect;
- "El Arrayán" refers to Parque Eólico El Arrayán SpA, a wind farm located in Ovalle, Chile (we disposed of our interests in El Arrayán on August 20, 2018);
- "ERCOT" refers to the Electric Reliability Council of Texas;
- "FERC" refers to the U.S. Federal Energy Regulatory Commission;
- "FIT" refers to feed-in-tariff regime;
- "FPA" refers to the Federal Power Act;
- "Futtsu" refers to GK Green Power Futtsu, a solar project located in Chiba Prefecture, Japan;
- "GPG" refers to Green Power Generation GK which consists primarily of 100% ownership in Ohorayama, Otsuki and Kanagi, and a consolidated controlling interest in Futtsu;
- "GPI" refers to Green Power Investment Corporation;
- "Grand" refers to Grand Renewable Wind LP, a wind project located in Haldimand County, Ontario, Canada;
- "Gulf Wind" refers to Pattern Gulf Wind LLC, a wind project located in Kenedy County, Texas;
- "Hatchet Ridge" refers to Hatchet Ridge Wind, LLC, a wind project located in Shasta County, California;
- "Identified ROFO Projects" refers to projects that we have identified as development projects, owned by either of the Pattern Development Companies and subject to our Project Purchase Rights. See Identified ROFO Projects list in Item 1. Business;
- "IPPs" refers to independent power producers;
- "ISOs" refers to independent system organizations, which are organizations that administer wholesale electricity markets;
- "ITCs" refers to investment tax credits;

- “K2” refers to K2 Wind Ontario Limited Partnership, a wind project located in Ashfield-Colborne-Wawanosh, Ontario, Canada (we disposed of our interests in K2 on December 31, 2018);
- “Kanagi” refers to GK Green Power Kanagi, a solar wind project located in Shimane Prefecture, Japan;
- “kWh” refers to kilowatt hour;
- “Logan's Gap” refers to Logan's Gap Wind LLC, a wind project located Comanche County, Texas;
- “Lost Creek” refers to Lost Creek Wind, LLC, a wind project located in DeKalb County, Missouri;
- “Meikle” refers to Meikle Wind Energy L.P., a wind project located in Peace Region, British Columbia, Canada;
- “MSM” refers to Mont Sainte-Marguerite Wind Farm Limited Partnership, a wind project located in Chaudière-Appalaches, Quebec, Canada;
- “Multilateral Management Services Agreement” (MSA) refers to the amended and restated multilateral services agreement between us and each of the Pattern Development Companies;
- “MW” refers to megawatts;
- “MWh” refers to megawatt hours;
- “Non-Competition Agreement” refers to the second amended and restated non-competition agreement between us and each of the Pattern Development Companies in which we and each of the Pattern Development Companies have agreed to various arrangements with respect to how we may and may not compete with each other;
- “Ocotillo” refers to Ocotillo Express LLC, a wind project located in Imperial County, California;
- “Ohorayama” refers to GK Green Power Otsuki, a wind project located in Kochi Prefecture, Japan;
- “Otsuki” refers to GK Otsuki Wind Power (formerly known as Otsuki Wind Power Corporation), a wind project located in Kochi Prefecture, Japan;
- “Panhandle 1” refers to Pattern Panhandle Wind LLC, a wind project located in Carson County, Texas;
- “Panhandle 2” refers to Pattern Panhandle Wind 2 LLC, a wind project located in Carson County, Texas;
- “Pattern Canada Operations Holdings ULC” consists primarily of 100% ownership of St. Joseph, a consolidated controlling interest in Meikle and MSM, and a noncontrolling interest in Armow, Grand, K2 (which we disposed of on December 31, 2018) and South Kent, each of which are accounted for as unconsolidated investments;
- “Pattern Development” refers to Pattern Energy Group 2 LP, a Delaware limited partnership, and, where the context so requires, its subsidiaries. We hold an approximate 29% ownership interest in Pattern Development;
- “Pattern Development Companies” refers collectively to Pattern Energy Group LP and Pattern Development and their respective subsidiaries;
- “Pattern Development Companies Purchase Rights” refer collectively to our right to acquire Pattern Energy Group LP or substantially all of its assets, as contemplated by the Amended and Restated Purchase Rights Agreement between us and Pattern Energy Group LP (Pattern Energy Group LP Purchase Right) and to our right to acquire Pattern Development or substantially all of its assets, as contemplated by the Amended and Restated Purchase Rights Agreement between us and Pattern Development (Pattern Development Purchase Right);
- “Pattern Energy Group LP” refers to Pattern Energy Group LP, a Delaware limited partnership, and, where the context so requires, its subsidiaries;
- “Pattern US Operations Holdings LLC” consists primarily of 100% ownership interest of Gulf Wind, Hatchet Ridge, Lost Creek, Ocotillo, Santa Isabel and Spring Valley, and a consolidated controlling interest in Amazon Wind, Broadview, Logan's Gap, Panhandle 1, Panhandle 2, Post Rock, Stillwater and Western Interconnect;
- “Post Rock” refers to Post Rock Wind Power Project, LLC, a wind project located in Ellsworth and Lincoln counties, Kansas;
- “PPAs” refer to power purchase agreements;

“Project Purchase Rights” refers collectively to our right of first offer with respect to power projects that Pattern Energy Group LP decides to sell, as contemplated by the Amended and Restated Purchase Rights Agreement between us and Pattern Energy Group LP, and our right of first offer with respect to power projects that Pattern Development decides to sell, as contemplated by the Amended and Restated Purchase Rights Agreement between us and Pattern Development (in each case including any Identified ROFO Projects);

- “PSAs” or “power sale agreements” refer to PPAs and/or hedging arrangements, as applicable;

• “PSP Investments” refers to the Public Sector Pension Investment Board;

• “Purchase Rights” refers collectively to the Project Purchase Rights, and the Pattern Development Companies Purchase Rights, as contemplated by the Amended and Restated Purchase Rights Agreement between us and Pattern Energy Group LP and the Amended and Restated Purchase Rights Agreement between us and Pattern Development;

• “RECs” refers to renewable energy credits;

• “Riverstone” refers to Riverstone Holdings LLC;

• “ROFO” refers to right of first offer;

• “RPS” refers to Renewable Portfolio Standards;

• “Santa Isabel” refers to Pattern Santa Isabel LLC, a wind project located in Santa Isabel, Puerto Rico;

• “Sarbanes-Oxley Act” refers to the Sarbanes-Oxley Act of 2002;

• “South Kent” refers to South Kent Wind LP, a wind project located in Chatham-Kent, Ontario, Canada;

• “Spring Valley” refers to Spring Valley Wind LLC, a wind project located in White Pine County, Nevada;

• “St. Joseph” refers to St. Joseph Windfarm Inc., a wind project located in Montcalm, Manitoba, Canada;

• “Stillwater” refers to Stillwater Wind, LLC, a wind project located in Stillwater County, Montana;

• “Tsugaru” refers to Green Power Tsugaru GK, a wind project located in Aomori Prefecture, Japan;

• “Tsugaru Holdings” refers to Green Power Tsugaru Holdings GK, which consists primarily of 100% ownership of Tsugaru; and

• “Western Interconnect” refers to Western Interconnect LLC, a transmission line located in Curry County, New Mexico.



## PART I

### Item 1. Business.

#### Overview

We are a vertically integrated renewable energy company with a mission to transform the world to renewable energy. Our business consists of (i) an operating business segment which is comprised of a portfolio of high-quality renewable energy power projects located in many attractive markets that produces long-term stable cash flows and (ii) ownership interests in an upstream development platform aligned with our operating business which provides us access to a pipeline of projects and potential for higher returns through project development.

Through our operating business segment, we hold ownership interests in 24 renewable energy projects with an operating capacity that totals approximately 4 gigawatts (GW) which are located in the United States, Canada and Japan. Our projects use proven, best-in-class technology and have contracted to sell all or a majority of their output pursuant to long-term, fixed-price PSAs. Approximately 92% of the electricity expected to be generated by our projects in which we have an owned interest will be sold under PSAs that have a weighted average remaining contract life of approximately 13 years as of December 31, 2018.

We own an approximate 29% interest in Pattern Development which engages in the development of projects around the world primarily in the United States, Canada, Mexico and Japan. Pattern Development seeks to promote environmental stewardship and works closely with communities to create renewable energy projects. Our arrangements with Pattern Development include rights of first offer, shared services, and overlap of executive officers. We have sought to align our interests to provide us access to a pipeline of development projects that we have an ability to acquire to grow our business, or (through our approximate 29% interest) to share in returns realized by Pattern Development when it sells projects to third parties. Pattern Development has more than a 10 GW pipeline of development projects.

We were incorporated in the state of Delaware in October 2012 and conducted an initial public offering in October 2013.

#### Our Core Values and Financial Objectives

We intend to maximize long-term value for our stockholders in an environmentally responsible manner and with respect for the communities in which we operate. Our business is built around three core values of creative energy and spirit, pride of ownership, and a team-first attitude, which guide us in:

- creating a safe and high-integrity work environment for our employees;
- applying rigorous analysis to all aspects of our business in a timely, disciplined and functionally integrated manner to understand patterns in wind and solar regimes, technology developments, market trends and regulatory, financial and legal constraints; and
- working proactively with our stakeholders to address environmental and community concerns, which we believe is a socially responsible approach that also benefits our business by reducing operating risks at our projects.

Our financial objectives, which we believe will maximize long-term value for our stockholders, are to:

- produce stable and sustainable cash available for distribution;
- selectively grow our project portfolio and our dividend per Class A share of common stock; and
- maintain a strong balance sheet and flexible capital structure.

We accomplish our core values and financial objectives through delivering top-tier operating fleet performance, maintaining growth through acquisitions and development from Pattern Development Companies, continuing improvements in business strategy, and maintaining a prudent capital structure and financial flexibility, as discussed further below in "-Our Business Strategy."

## Structure of Our Company

### Our Operating Business Segment

#### Overview

We hold interests in 24 renewable energy projects and operate, on behalf of ourselves and others, an aggregate renewable energy portfolio of approximately 4 GW in the United States, Canada and Japan. Each of such projects use best-in-class equipment from top-tier suppliers and has contracted to sell all or a majority of its output pursuant to long-term, fixed-price PSAs. As a portfolio, as of December 31, 2018, our assets are characterized by:

- an approximate 13 year weighted average remaining contract life under our PSAs;

- 92% of electricity to be generated by our projects will be sold under PSAs;

- an 'A-' weighted average off-taker credit rating; and

- 4.9-year average age of fleet, primarily using GE and Siemens turbines.

We seek to own high quality projects that have gone through a rigorous review prior to construction. As a result, and in order to meet our own investment targets and our lenders' financing criteria, our projects generally have the following characteristics:

- multiple years of on-site wind and solar data tied to one or more long-term wind and solar energy reference sources;

- long-term contractually secured real estate property and easement rights;

- right to firm interconnection to the electricity grid;

- all requisite construction and operating permits and regulatory approvals;

fixed-price turbine supply and construction contracts with guaranteed completion dates;  
an operations and maintenance service program based on on-site personnel and central operations management. See “-  
Management, Operations, Maintenance and Administration of Projects in which We Have an Owned Interest” below;  
and  
safety, environmental and community programs that support the project.

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The following table provides an overview of our renewable energy projects in which we have an owned interest:

Operating Project <sup>(1)</sup>	Location	Commencement of Commercial Operations	Rated Capacity in MW <sup>(2)</sup>	Our Owned Capacity <sup>(3)</sup>	Type	Contracted Volume <sup>(4)</sup>	Counterparty	Counterparty Credit Rating <sup>(5)</sup>	Contract Expiration
Pattern US Operations Holdings LLC									
Broadview	New Mexico	2017	324	272	PPA	100%	Southern California Edison	BBB/A3	2037
Gulf Wind <sup>(7)</sup>	Texas	2009	283	283	Hedge	58%	Morgan Stanley	BBB+/A3	2019
Ocotillo	California	2012	265	265	PPA	100%	San Diego Gas & Electric	BBB+/A2	2033
Panhandle 1	Texas	2014	218	172	Hedge	80%	Citigroup Energy Inc.	BBB+/Baa1	2027
Post Rock <sup>(7)</sup>	Kansas	2012	201	120	PPA	100%	Westar Energy, Inc.	Baa1/A-	2032
Logan's Gap <sup>(7)</sup>	Texas	2015	200	164	PPA	58%	Wal-Mart Stores, Inc.	AA/Aa2	2025
Logan's Gap <sup>(7)</sup>					Hedge	17%	Merrill Lynch Commodities, Inc.	A-/A3	2028
Panhandle 2	Texas	2014	182	75	Hedge	80%	Morgan Stanley	BBB+/A3	2027
Spring Valley	Nevada	2012	152	152	PPA	100%	NV Energy	A/Baa2	2032
Amazon Wind <sup>(7)</sup>	Indiana	2015	150	116	PPA	100%	Amazon.com, Inc.	AA-/A3	2028
Lost Creek <sup>(7)</sup>	Missouri	2010	150	150	PPA	100%	Associated Electric Cooperative, Inc.	AA/A1	2030
Tsugaru	Japan	2020	122	122	PPA	100%	Tohoku Electric Power Company	Unrated	2040
Hatchet Ridge	California	2010	101	101	PPA	100%	Pacific Gas & Electric	D/Caa3	2025
Santa Isabel	Puerto Rico	2012	101	101	PPA	100%	Puerto Rico Electric Power Authority	NR/Ca	2032
Stillwater	Montana	2018	80	35	PPA	100%	Northwestern Shikoku	BBB/A3	2043
Ohorayama	Japan	2018	33	33	PPA	100%	Electric Power Company	A-	2038
Futtsu Solar	Japan	2016	29	29	PPA	100%	TEPCO Energy Partner	BB+/Ba2	2036
Otsuki	Japan	2006	12	12	PPA	100%	Shikoku Electric Power Company	A-	2026
Kanagi Solar	Japan	2016	10	10	PPA	100%	Chugoku Electric Power Company	A3	2036

## Pattern Canada Operations Holdings ULC

South Kent	Ontario	2014	270	135	PPA	100%	Independent Electricity System Operator <sup>(6)</sup>	NA/Aa3	2034
Armow	Ontario	2015	180	90	PPA	100%	Independent Electricity System Operator <sup>(6)</sup>	NA/Aa3	2035
Meikle	British Columbia	2017	179	91	PPA	100%	BC Hydro	NA/Aaa	2042
Grand	Ontario	2014	149	67	PPA	100%	Independent Electricity System Operator <sup>(6)</sup>	NA/Aa3	2034
Mont Sainte-Marguerite	Quebec	2018	143	73	PPA	100%	Hydro-Quebec	NA/Aa2	2043
St. Joseph	Manitoba	2011	138	138	PPA	100%	Manitoba Hydro	A+/Aa2	2039
			3,672	2,806					

<sup>(1)</sup> Represent wind projects unless otherwise noted.

- (2) Rated capacity represents the maximum electricity generating capacity of a project in MW. As a result of weather and other conditions, a project will not operate at its rated capacity at all times and the amount of electricity generated may be less than its rated capacity. The amount of electricity generated may vary based on a variety of factors.
- (3) Owned capacity represents the maximum, or rated, electricity generating capacity of the project in MW multiplied by our percentage ownership interest in the distributable cash flow of the project.
- (4) Represents the approximate percentage of a project's total estimated average annual MWh of electricity generation contracted under power purchase agreements or hedge arrangements.
- (5) Reflects the counterparty's or counterparty guarantor's corporate credit ratings issued by either Standard and Poor's (S&P) or Moody's, or both S&P and Moody's, as of December 31, 2018.
- (6) Independent Electricity System Operator (IESO) acts as the settlement agent under the respective PPA.
- (7) Projects that are maintained through self-performance of maintenance and service activities.

#### Management, Operations, Maintenance and Administration of Operating Projects in which We Have an Owned Interest

For each of our projects in the United States and Canada, we provide management, operations and administrative services. This includes management from our 24/7 operations center located in Houston, Texas, and on-site personnel at all facility sites. For our projects in Japan, management, operations and administrative services are provided by an affiliate of GPI, an entity owned by Pattern Development.

Our projects are maintained through:

- service arrangements with reputable external third-parties;
- our self-performance of maintenance and service activities; or
- a combination of both of the above.

At certain projects, as noted above, where we self-perform maintenance and service activities, we maintain long-term turbine manufacturer service arrangements pursuant to which the turbine manufacturer continues to provide routine and corrective maintenance service, but we are responsible for a portion of the maintenance and repairs, including on major component parts. Over time, we expect to increase our operational responsibility, including self-performing maintenance and service work with our own technicians instead of utilizing service providers, which we believe will continue to help us reduce our costs. As service arrangements expire at the facilities where we utilize external third-parties, we intend to determine on a case-by-case basis the most appropriate approach of either entering into new service arrangements with the same or a different external third-party or transitioning to self-performance of maintenance and service activities.

#### Our Interest in Pattern Development

##### Overview

As of December 31, 2018, we own an approximate 29% interest in Pattern Development, a leading developer of renewable energy projects focusing on wind, solar, storage, and transmission with core markets in the U.S., Canada, Japan and Mexico. As discussed below, we have sought to align Pattern Development with our interests to provide us access to a pipeline of projects we have an opportunity to acquire and the benefits of potential higher returns in the upstream business of project development.

##### Pattern Development's Project Development Process

Pattern Development has a development pipeline of more than 10 GW of projects. Pattern Development's project development business involves the execution of a process which involves a combination of working with financing parties to obtain access to capital, managing capital obtained in a disciplined manner, and applying development experience and expertise to develop a renewable energy opportunity to create value. Pattern Development believes a focus on executing complex projects provides it a competitive advantage.

Pattern Development has established and seeks to maintain relationships with financial institutions to help provide sources of capital.

Key elements of Pattern Development's efforts to manage capital obtained in a disciplined manner include:

- Selecting good opportunities in which to invest;
- Minimizing the capital at risk during the early development stages;

De-risking projects through long-term offtake contracts and other arrangements so that, during the construction phase, projects have the potential to be sold (if needed) for good development returns; and

Minimizing the duration of the relatively higher capital outlays that are required once a project has achieved an advanced stage.

Pattern Development has experience and expertise in each of the following areas which it applies as part of its process: origination, negotiation, political and community engagement, permitting, scientific and strategic analysis capabilities, and risk management. Pattern Development also has established and seeks to maintain relationships with key contractors and offtake counterparties.

#### Alignment between Us and Pattern Development

We have sought to align Pattern Development's interests and our interests, including through each of the following arrangements:

**Our investment in Pattern Development.** We have the right, but not the obligation, to make capital commitments of up to \$300 million to Pattern Development as a part of an approximately \$1 billion of capital commitments which Pattern Development has secured from long-term focused investors. Through February 28, 2019, we have invested a total of \$183 million into Pattern Development, representing an approximate 29% ownership interest.

However, as a part of our arrangements with Pattern Development, while we have the right to participate in all future capital calls by Pattern Development, we are not obligated to participate, and while our interest in Pattern Development would be diluted on a proportional basis if we chose not to participate in a capital call, other negative consequences (such as application of a punitive discount to our investment) would not apply.

**Project Purchase Rights.** Pursuant to contractual arrangements we have with Pattern Development, we have (among other things) a right of first offer with respect to power projects that Pattern Development decides to sell. See also "Identified ROFO Projects" below.

In the event Pattern Development does not accept the proposal we make under our rights of first offer, Pattern Development is (with limited exceptions) not permitted to sell such project to a third-party unless the price is at least 110% of the offer price we made, and in the event Pattern Development is unable to enter into an agreement to sell such project to a third-party at such clearing price, Pattern Development is obligated to sell such project to us at 96% of our original offer price.

**Our Executive Officers Oversee the Business Operations of Pattern Development.** Under the shared service arrangements discussed further below, our executive officers provide executive management services to Pattern Development. Such executive officers, who are employed and compensated by us, devote such of their time that is prudent to carry out those executive responsibilities.

**Shared Services Arrangements.** Under the MSA, we have shared services arrangements with each of Pattern Development and Pattern Energy Group LP. Such arrangements are intended to allow each of us, Pattern Development, and Pattern Energy Group LP to make their respective personnel available to others in the group to provide certain shared services. Under these arrangements, Pattern Development makes available its personnel to assist us in managing, operating, maintaining, and administering our projects in Japan.

Most of the employees engaged in project development are currently employed by Pattern Energy Group LP; however, under the MSA, each of Pattern Development and us have the right to require such employees to become their or our employees, respectively, who could then continue to provide shared services. Furthermore, even if Pattern Development exercised such right to cause the employees of Pattern Energy Group LP to become its employees, under the MSA, we have the right to cause such employees at Pattern Development to become our employees.

We seek to manage conflicts of interest which arise through these arrangements. Material transactions between us and Pattern Development are subject to our corporate governance guidelines which require prior approval of any such material transaction by the conflicts committee, which is comprised solely of independent members of our board of directors. The conflicts committee retains independent advisors to assist it in consideration of such transactions which may include a financial advisor and outside counsel. Those of our executive officers who have economic interests in Pattern Development do not participate in the negotiation of such transactions.



## Identified ROFO Projects

Below is a summary of both the Identified ROFO Projects that we may acquire from Pattern Development in connection with our Project Purchase Rights, as well as projects we may acquire from Pattern Energy Group LP pursuant to similar rights we have with Pattern Energy Group LP. See also “- Other Key Relationships - Pattern Energy Group LP.”

Identified ROFO Projects	Status	Location	Construction Start <sup>(1)</sup>	Commercial Operations <sup>(2)</sup>	Contract Type	Capacity (MW)	
						Rated <sup>(3)</sup>	Pattern Development Companies Owned <sup>(4)</sup>
Pattern Energy Group LP							
Belle River	Operational	Ontario	2016	2017	PPA	100	43
North Kent	Operational	Ontario	2017	2018	PPA	100	35
Henvey Inlet	In construction	Ontario	2017	2019	PPA	300	150
Pattern Development							
Crazy Mountain	Late stage development	Montana	2019	2019	PPA	80	68
Grady	In construction	New Mexico	2018	2019	PPA	220	188
Sumita	Late stage development	Japan	2020	2022	PPA	100	55
Ishikari	Late stage development	Japan	2020	2022	PPA	112	112
Corona Wind Project(s)	Late stage development	New Mexico	2020	2021	PPA	400	340
						1,412	991

<sup>(1)</sup> Represents year of actual or anticipated commencement of construction.

<sup>(2)</sup> Represents year of actual or anticipated commencement of commercial operations.

<sup>(3)</sup> Rated capacity represents the maximum electricity generating capacity of a project in MW. As a result of weather and other conditions, a project will not operate at its rated capacity at all times and the amount of electricity generated may be less than its rated capacity. The amount of electricity generated may vary based on a variety of factors.

<sup>(4)</sup> Pattern Development Companies-Owned capacity represents the maximum, or rated, electricity generating capacity of the project in MW multiplied by Pattern Energy Group LP's or Pattern Development's percentage ownership interest in the distributable cash flow of the project.

The map below provides a depiction of our operating projects and Identified ROFO Projects geographically:

#### Our Business Strategy

To achieve our financial objectives while adhering to our core values, we intend to execute the following business strategies:

##### Deliver Top-Tier Operating Fleet Performance

We intend to efficiently and safely operate our projects to meet projected revenue and cash available for distribution. We expect to maximize the long-term value of our projects by focusing on value-oriented project availability (by ensuring our projects are operational when the wind is strong and PSA prices are at their highest) and by regularly scheduled and preventative maintenance. We believe that good operating performance begins with a long-term maintenance program for our equipment. We also seek to improve performance and lower operating costs by working closely with our equipment vendors and considering contracting with third parties for maintenance, when appropriate. We believe it is important to employ our own personnel in aspects of our business that we deem critical to the value of our projects. We have achieved a historical operating performance track record of more than 97% turbine availability.

##### Maintain Growth Through Acquisitions and Development

Our strategy for growth is focused on our core markets of the U.S., Canada and Japan. We intend to grow primarily through the acquisition of operational and construction-ready power projects from Pattern Development and three Identified ROFO Projects held by Pattern Energy Group LP. While we intend to prioritize high-quality assets developed by Pattern Development for acquisition, from time-to-time we will consider acquisitions from third parties if they meet our return thresholds and complement our existing portfolio. We believe, however, our ability to have insight into the fundamentals of projects developed by Pattern Development, together with our alignment due to our ownership interest in Pattern Development, would generally make their projects more attractive and less risky to pursue. We expect that projects we may acquire in the future will represent a logical extension of our existing business, and that incremental assumptions of risk in what we pursue will require commensurate expectations of higher returns. As a result, our near-term growth strategy will remain focused on largely contracted cash flows with creditworthy counterparties and operating or in-construction projects.

We expect that our ownership interest in, and aligned interests with, Pattern Development will provide us with the opportunity to acquire projects that Pattern Development develops. However, through our ownership interest in Pattern Development, we can also achieve growth from Pattern Development's sale of assets to third parties, particularly where our available liquidity is committed to other

acquisitions or investments or where projects are developed outside of our core markets. We believe our ownership interest in Pattern Development provides us greater flexibility to achieve returns while continuing to support Pattern Development in the execution of its business plan.

From time to time, we may also consider the disposal of a project, particularly if we believe we can utilize funds realized from such a disposal in a more productive manner or generate a higher return on investment.

#### Continuous Improvements

As part of our continuous business improvement strategy, we look to create an efficient and scalable corporate organization capable of growth.

**Efficiency.** We seek to improve our margins through the expansion of our self-perform maintenance initiative as service agreements expire at projects, applying technological advances which emerge to deliver incremental efficiencies for turbines or projects such as the retrofit of hardware onto turbines (for example, dinotails), and upgrading software to more efficiently manage high-speed flow through, each at a cost that delivers positive returns over the length of the project.

**Scale.** We also intend to improve our existing assets and business processes to reduce the marginal cost of overhead. We can achieve this through areas such as system enhancements and increased automation. We have implemented new systems as a result of this review which we expect will deliver incremental efficiencies and margin expansion from overhead savings and improved workflow. We intend to continue to manage overhead costs through additional back office optimization.

#### Maintain a Prudent Capital Structure and Financial Flexibility

We intend to maintain a conservative approach to our capital structure to protect our ability to meet our financial obligations, pay our regular dividends and to fund investments for future growth. Power projects by their nature require significant capital investment, and as a result, we seek to protect our business through careful management of our capital structure.

The foundation of our capital structure is built on project finance arrangements intended to ensure risk segmentation across our large project portfolio, and our practice has been to structure our project finance arrangements comprised of a mix of debt, tax equity and equity to conform to investment grade-like credit standards. Specifically, we seek to structure our project finance arrangements to:

- match assets with liabilities based on a project's off-take tenor and currency denomination;
- fix or hedge project debt on a long-term basis;
- amortize our third-party project finance capital within the tenor of the off-take arrangement; and
- apply conservative debt service coverage or tax equity structuring standards.

Our project capital structure is supplemented with a corporate capital layer that primarily relies on equity capital. Our corporate indebtedness is modest, and intended to ensure broad capital access. In addition, our strategic partnership with PSP Investments is intended to expand capital access and improve flexibility in managing capital requirements. See “- Other Key Relationships - PSP Investments” below.

We seek to ensure financial flexibility and stability through our corporate revolving credit facility, maturity staging, minimization of interest rate exposure, and maintenance of our credit ratings. We intend to use our available liquidity strategically, with a priority placed on our available liquidity for committed project acquisitions or investment commitments. Our foreign currency denominated project dividends are further managed through a short-to-long term foreign exchange program. We believe this approach, together with a strategic consideration of project-level financial restructuring and recapitalization opportunities, will contribute to our ability to maintain and, over time, increase our cash available for distribution.

#### Work Closely with Our Stakeholders

We believe that close working relationships with our various stakeholders, including suppliers, PSA counterparties, regulators, the local communities where we are located, environmental organizations, as well as with each of the Pattern Development Companies and other developers, allow us to better support our existing projects and will help us access future renewable energy project opportunities.

## Industry

Wind and solar energy are the two fastest growing sources of electricity generation in North America and globally over the past decade, and projections by the International Energy Agency indicate renewable energy will continue to grow at a faster rate than fossil fuels over the next two decades. In 2017, global installed wind capacity grew by nearly 11%, bringing the global total to 540 GW. In 2018, approximately 107 GW of solar photovoltaic (PV) capacity was installed worldwide, a 7.5% increase compared to 2017.

The 12th annual report by Lazard on the levelized cost of energy for electricity generating technologies shows a continued decline in the cost of utility-scale wind and solar energy, with unsubsidized costs at or below the marginal costs of conventional generation under certain circumstances. Growth in the industry is largely attributable to the increasing cost competitiveness of renewable energy relative to other power generation technologies and public support for renewable energy driven by energy security and environmental concerns. Falling technology costs and strong public support for renewable energy contributes to the trend of increasing demand from corporate purchasers and state renewable energy programs. Given increased demand, falling costs, and the inherent stability of the cost of renewable energy sources, we believe that our markets present substantial growth opportunities. We require a relatively small share of a large market to meet our growth objectives, and we believe we can achieve growth through the acquisition of operational and construction-ready projects from the Pattern Development Companies and other third parties.

## Government Incentives and Tax Credits

Renewable energy sources in the United States have benefited from various federal and state governmental incentives, such as PTCs and ITCs. Under the Consolidated Appropriations Act, federal PTCs and ITCs for wind energy were extended with a five-year phase down for wind projects commencing construction after December 31, 2014 and before December 31, 2019. Notwithstanding the benefits of the tax incentives, the continued reduction in levelized cost of energy provides an environment in which renewables are expected to be highly competitive relative to conventional generation resources. We expect to become less impacted by and less dependent on these forms of government support.

## Our Markets

### The United States of America

The United States remains a strong growth market for renewable energy and is the second largest growth market for solar PV in the world, according to the International Energy Agency. The U.S. Energy Information Administration (EIA) reports generation from wind and solar power plants grew to 9% of total electricity generation in 2018, up from 8% in 2017. The EIA further reports electricity generation supplied by natural gas increased an estimated 3% in 2018, while coal-fired generation declined by 3%. In 2019, the EIA expects approximately 24 GW of new capacity additions and approximately 8 GW of capacity retirements in the electric power sector, with utility-scale capacity additions consisting primarily of wind (46%), natural gas (34%) and solar photovoltaics (18%), and the remaining primarily other renewables and battery storage capacity.

The falling costs of wind and solar technology have contributed to accelerating demand from corporate purchasers. Bloomberg New Energy Finance finds onshore wind to have the lowest levelized cost of electricity range in the U.S. with PV solar not far behind. In 2018, more than 75 corporate renewable energy deals secured more than 6 GW of capacity. Nearly half of Fortune 500 companies and 63% of Fortune 100 companies have at least one climate or clean energy target, and at least 22 Fortune 500 companies have committed to meet 100% of their electricity demand with renewable energy purchases. As part of a global initiative, 160 companies have made a commitment to go '100% renewable.'

State RPSs continue to drive demand for utility-scale renewable energy. Roughly a 50% increase in renewable energy generation is needed by 2030 to meet state RPS demand, averaging approximately 5 GW of additions per year. More than half of all RPS states have raised their overall RPS targets or carve-outs since initial RPS adoption. In 2018, California, Connecticut, Massachusetts, and New Jersey increased their RPS targets, while New York established an offshore wind procurement target and Massachusetts created a clean peak standard that can help incentivize energy storage deployments.

### Japan

The Japanese market is one of the world's largest electricity markets, with the country ranking fourth in the world for the most clean energy transactions in 2017 and fifth in the world for new renewable capacity installed the same year. Out of a total 254 GW capacity installed at the end of 2017, generating 1,077,421 GWh, onshore wind and utility PV solar accounted for 16% of installed capacity and only 7% of energy generation, representing a large opportunity for deployment of wind and solar. The Japanese government has placed a greater emphasis on the development of renewable resources following the nuclear meltdown at the Fukushima Daiichi plant in 2011.

The Japanese government set a target in 2015 to have 22% to 24% of its generation come from renewable energy by 2030. In 2018, the Japanese government released its Fifth Strategic Energy Plan that unites the 2030 energy targets and a 2050 energy scenario aimed at decarbonization. The plan designates renewable energy as a core foundation of the energy generation mix by 2050. The FIT program established in 2012 that offered fixed-term, fixed-price contracts for up to 20 years to renewable power projects remains in place. While the predetermined fixed-price for large solar projects has been replaced with a reverse auction system, the tariff price for onshore wind power remains predetermined at JPY20 per kWh for this FY2019 but will reduce annually by JPY1 per kWh until FY2020 (ending March 2021), after which it is expected to also be replaced with a reverse auction system.

In November 2018, the Japanese government passed a new law allowing offshore wind projects to be developed in the open sea outside of port areas. The precise rules and regulations are expected to be finalized by mid-2019. Like solar, the tariff price will be determined through a reverse auction mechanism. Previously awarded offshore projects in port areas will continue to be eligible for the fixed rate of JPY36 per kWh. As such, there remains a strong incentive for continued investment in the Japanese renewables market, particularly for onshore projects and now additionally with offshore projects due to the passage of the new open sea offshore wind law.

#### Canada and Other

Canadian clean energy policy arises mostly at the provincial level. Ontario remains Canada's leading market for wind energy with 5,076 MW of installed wind energy generating capacity as of December 2018, accounting for nearly 40% of the country's total installed capacity. We own 292 MW of installed wind capacity in Ontario and 594 MW in Canada. We are the largest operator of installed wind capacity in the country with 1,529 MW in operational contracts. Growth opportunities exist through provincial renewable energy targets, including Alberta's new Renewable Electricity Program that is expected to drive development of at least 4 GW of new wind energy capacity by 2030, and Saskatchewan aims to have wind energy meet 30% of its electricity generating capacity by 2030, adding approximately 2 GW of new wind capacity.

While we currently believe we are unlikely to seek to acquire projects in Mexico pursuant to our Project Purchase Rights, Pattern Development continues to develop renewable energy projects in Mexico. In the event of third-party sales, we may realize benefits due to our ownership interest in Pattern Development.

#### Environmental, Social and Governance

We are committed to protecting our workforce and the public, to respecting the communities and cultures where we develop and operate projects, and to minimizing our environmental impacts. We have three value statements to emphasize these commitments and each one has an underlying management system - the Safety Management System, the Community Management System, and the Environmental Management System - that provides a programmatic foundation to meeting these commitments. Our sustainability website is located at [www.patternenergy.com/invest/sustainability](http://www.patternenergy.com/invest/sustainability) and details more of our environmental, social and governance values and achievements.

#### Other Key Relationships

##### Pattern Energy Group LP

Pattern Energy Group LP is a legacy entity that was involved in the original formation of our company. It was also the sponsor entity at the time of our initial public offering and, until 2018, owned an equity interest in our company. We have Project Purchase Rights with Pattern Energy Group LP that are similar to our Project Purchase Rights with Pattern Development, and there are three Pattern Energy Group LP projects that are Identified ROFO Projects. See "- Identified ROFO Projects" above. In addition, together with us and Pattern Development, Pattern Energy Group LP is a party to the MSA. See "- Our Interest in Pattern Development - Alignment of Interest between Us and Pattern Development - Shared Services Arrangements" above. Pattern Energy Group LP has notified us of its intention to wind down operations in an orderly manner after their disposal of the Identified ROFO Projects. While at the beginning of 2018, Pattern Energy Group LP owned approximately 7.5% of our outstanding Class A common stock, Pattern Energy Group LP disposed of such interest in 2018.

#### PSP Investments

In June 2017, we entered into a strategic joint venture agreement with PSP Investments. The joint venture agreement provides that PSP Investments has the right to co-invest alongside us, up to an aggregate amount of approximately \$500 million, in energy projects we may acquire from the Pattern Development Companies, cooperate with us to complete third-party acquisitions (including possibly arranging for or providing bridge loans and construction financing), and we may add a person that has been designated by PSP Investments to our board of directors. This relationship provides us the ability to increase our portfolio with limited capital investment. In 2018, together with PSP Investments, we acquired each of Mont Sainte-Marguerite (MSM) and Stillwater from Pattern Energy Group LP and Pattern Development, respectively. PSP Investments is also an indirect investor in Pattern Development. PSP Investments does not hold voting rights in Pattern Development. Additionally, as of February 22, 2019, PSP Investments holds approximately 9.5% of our outstanding Class A common stock.

#### Competitive Strengths

We believe we compete with other industry participants by having a high quality portfolio of projects which are positioned to generate stable long-term cash flows with access to low-cost project-level debt and strong stakeholder relationships. Further, we believe our investment in Pattern Development provides us with a source of attractive investment returns, as well as access to a pipeline of acquisition opportunities that because of our Project Purchase Rights are generally not otherwise available to the broader market, unless the project is not attractive to us.

Our business benefits from high quality assets that are broadly diversified across markets, regulatory regimes and counterparties, making it less dependent on performance of single assets or areas. Our operating platform and associated management team provide us with a world class operations platform with experience in how to efficiently run and continuously optimize our operating business. This experience and knowledge in turn is used to facilitate enhanced pricing and improved costing on new assets that are being developed by Pattern Development, thereby creating a continuous cycle of knowledge transfer.

Our management team is highly experienced in renewables development with a good reputation in the industry that has helped to produce many successes in deal execution, financing and development and construction management. We compete with other wind and solar power, infrastructure funds and renewable energy companies, as well as conventional power companies, to acquire profitable construction-ready and operating projects. In addition, competitive conditions may be substantially affected by various forms of energy legislation and regulation considered from time to time by federal, state, provincial and local legislatures and administrative agencies.

#### Customers

We sell our electricity and RECs primarily to local utilities under long-term, fixed-price PPAs or, in limited instances, local liquid ISO markets. For the year ended December 31, 2018, San Diego Gas & Electric and Southern California Edison Company were our only significant customers representing 12% and 12%, respectively, of our total revenue.

#### Suppliers

There are a limited number of turbine equipment suppliers, including General Electric, Vestas and Siemens-Gamesa; however, we believe that current manufacturing quality and competitive dynamics are strong and that parts and supply capacity is adequate. Our equipment supply strategy is largely based on maintaining strong relationships with leading equipment suppliers to secure our supply needs.

Other important suppliers include global and regional engineering, procurement (EPC) and construction contractors with whom we contract to perform civil engineering, electrical work and other infrastructure construction for our projects.

While we do self-perform some turbine service and maintenance activities, a significant amount of our service work is currently performed by the original equipment manufacturers, primarily Siemens-Gamesa and General Electric, as well as other qualified independent service providers. All our service providers are generally well recognized in the renewable service business. While we expect over time to increase self-perform activities, we do expect to continue to utilize both original equipment manufacturers and qualified independent service companies for a substantial amount of our service and maintenance needs. See “- Our Operating Projects - Management, Operations, Maintenance and Administration of Our Operating Projects” above.





## Regulatory Matters

Our operations are subject to regulation by various federal and state government agencies, including, but not limited to, the following:

### U.S. Federal Energy Regulatory Commission (FERC)

Our current projects in operation in the United States are operating as Exempt Wholesale Generators (EWGs) as defined under the Public Utility Holding Company Act of 2005, as amended, (PUHCA) and therefore are exempt from certain regulation under PUHCA. Certain of our operating projects in the United States are, however, public utilities under the Federal Power Act subject to rate regulation by FERC. Future projects in the United States will also likely be subject to such rate regulation once they are placed into service. Our projects in the United States that are subject to FERC rate regulation are required to obtain acceptance of their rate schedules for wholesale sales of energy (i.e., not retail sales to consumers), capacity and ancillary services, including their ability to charge “market-based rates.”

### Independent System Operators (ISOs)

Most of our North American projects are located in regions in which the wholesale electric markets are administered by ISOs and Regional Transmission Organizations (RTOs).

### North American Electric Reliability Corporation

All of our current operating projects located in North America are also subject to the reliability standards of the North American Electric Reliability Corporation (NERC). If we fail to comply with the mandatory reliability standards, we could be subject to sanctions, including substantial monetary penalties.

### Regulatory Matters - Canada

All of our current operating projects in Canada are subject to exclusive provincial regulatory authority with respect to the generation and production of electricity, which varies across provincial jurisdictions. In Canada, activities related to owning and operating wind projects and participating in wholesale and retail energy markets are mostly regulated at the provincial level. In Ontario, for example, electricity generation facilities must be licensed by the Ontario Energy Board and may also be required to complete registrations and maintain market participant status with the IESO, in which case they must agree to be bound by and comply with the provisions of the market rules for the Ontario electricity market as well as the mandatory reliability standards of the NERC.

### Regulatory Matters - Japan

All of our current operating projects in Japan are governed by the Ministry of Economy, Trade and Industry (METI). METI has administrative jurisdiction and is the authority that grants licenses to transmission and distribution operators, administers the registration of retailers, and the filings of power generators. The Electricity and Gas Market Surveillance Commission was established by the METI to conduct monitoring of the electricity market and enforces strict regulations to ensure neutrality of the electricity market. The Agency for Natural Resources and Energy, a part of the METI, is responsible for Japan's policies regarding energy and natural resources.

### Environmental Regulation

Our operations are required to comply with various environmental regulations in each of the jurisdictions in which we operate. These existing and future laws and regulations may impact existing and new projects, require us to obtain and maintain permits and approvals, comply with all environmental laws and regulations applicable within each jurisdiction and implement environmental programs and procedures to monitor and control risks associated with the construction, operation and decommissioning of regulated or permitted energy assets, all of which involve a significant investment of time and resources. Existing initiatives and rules, some of which could potentially have a material effect (either positive or negative) on us, are as follows:

#### Avian/Bat Regulations and Wind Turbine Siting Guidelines

We are subject to numerous environmental regulations and guidelines related to threatened and endangered species and their habitats, as well as avian and bat species, for the ongoing operations of our facilities. Environmental laws in the U.S., including the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act as well as similar environmental laws in Canada (such as the federal Species at Risk Act and the Migratory Birds Convention Act and the Ontario Endangered Species Act, 2007), among others, provide for the protection of migratory birds, eagles and bats and endangered species of birds and bats and their habitats. In addition to regulations, voluntary wind turbine siting guidelines established by the U.S. Fish and Wildlife Service set forth siting, monitoring and coordination protocols that are designed to support wind development in the U.S. while also protecting both birds and bats and their habitats.

#### Regulation of Greenhouse Gas (GHG) Emissions

The U.S. Congress and certain states and regions, as well as the Government of Canada and its provinces, have taken and continue to take certain actions, such as finalizing regulation or setting targets and goals, regarding the reduction of GHG emissions and the increase of renewable energy generation.

#### Environmental Matters— Domestic

We are required to obtain a range of environmental permits and other approvals to build and operate our projects, including, but not limited to, those described below from U.S. federal, state and local governmental authorities. In addition to being subject to these regulatory requirements, we could experience and have experienced significant opposition from third parties when we initially apply for permits or when there is an appeal proceeding after permits are issued. The delay or denial of a permit or the imposition of conditions that are costly or difficult to comply with can impair or even prevent the development of a project or can increase the cost so substantially that the project is no longer attractive to us.

#### Federal Clean Water Act

Frequently, our U.S. projects are located near wetlands, and we are required to obtain permits under the Clean Water Act for the discharge of dredged or fill material into waters of the United States, including wetlands and streams. The Clean Water Act also requires that we mitigate any loss of wetland functions and values that accompanies our activities, obtain permits under the Clean Water Act for water discharges, such as storm water runoff associated with construction activities, and to follow a variety of best management practices to ensure that water quality is protected and impacts are minimized.

#### Federal Bureau of Land Management Permits

As some of our U.S. projects are located on lands administered by the Bureau of Land Management, we are required to obtain rights-of-way from the Bureau of Land Management. The Bureau of Land Management encourages the development of wind power within acceptable areas, consistent with Environmental Policy Act of 2005 and the Bureau of Land Management's energy and mineral policy.

#### National Environmental Policy Act

Our U.S. projects may also be subject to environmental review under the U.S. National Environmental Policy Act (NEPA) which requires federal agencies to evaluate the environmental impact of all "major federal actions" significantly affecting the quality of the human environment. The granting of a land lease, a federal permit or similar authorization for a major development project, or the interconnection of a significant private project into a federal project generally is considered a "major federal action" that requires review under NEPA. As part of the NEPA review, the federal agency considers a broad array of environmental impacts, including impacts on air quality, water quality, wildlife, historical and archaeological resources, geology, socioeconomics and aesthetics and alternatives to the project. A federal agency may decide to deny a permit based on its environmental review under NEPA, though in most cases a project would be redesigned to reduce impacts or agree to provide some form of mitigation to offset impacts before a denial is issued.

#### National Historic Preservation Act

U.S. federal agencies consider a project's impact on historical or archeological resources under the U.S. National Historic Preservation Act and may require us to conduct archeological surveys or take other measures to protect these resources. The National Historic Preservation Act requires federal agencies to evaluate the impact of all federally funded or permitted projects on historic properties (buildings, archaeological sites, etc.)



#### Other State and Local Programs

In addition to federal requirements, our U.S. projects, and any future U.S. projects we may acquire, are subject to a variety of state environmental review and permitting requirements. Many states where our projects are located, or may in the future be located, have laws that require state agencies to evaluate a broad array of environmental impacts before granting state permits. The state environmental review process often resembles the federal NEPA process and may be more stringent than the federal review. Our projects also often require state law based permits in addition to federal permits.

Our projects also are subject to local environmental and regulatory requirements, including county and municipal land use, zoning, building and transportation requirements. Local or state regulatory agencies may require modeling and measurement of permissible sound levels in connection with the permitting and approval of our projects. Local or state agencies also may require us to develop decommissioning plans for dismantling the project at the end of its functional life and establish financial assurances for carrying out the decommissioning plan.

#### Environmental Matters—Canada

We are required to obtain a range of environmental permits and other approvals to build and operate our Canadian projects, including, but not limited to, those described below from applicable Canadian federal, provincial, First Nations and municipal governmental authorities. In addition to being subject to these regulatory requirements, we could experience opposition from third parties, including, but not limited to, environmental non-governmental organizations, neighborhood groups, municipalities and First Nations when the permits were initially applied for or when there is an appeal proceeding after permits are issued. The delay or denial of a permit or the imposition of conditions that are costly or difficult to comply with can impair or even prevent the development of a project or can increase the cost so substantially that the project is no longer attractive to us.

#### Ontario Renewable Energy Approvals

Projects in Ontario are generally subject to Ontario's Environmental Protection Act, which requires proponents of significant renewable energy projects to obtain a Renewable Energy Approval (REA). The REA application requires a variety of studies on environmental, archeological and heritage issues. Significant public consultation, as well as consultation with indigenous communities, is also required. Before issuing a REA, the Ontario Ministry of the Environment, Conservation and Parks (MOECP) evaluates a broad range of potential impacts, including on wildlife, wetlands and water resources, communities, scenic areas, species and heritage resources, as well as impacts on people. This review can be time consuming and expensive, and an approval can be rejected or approved with conditions that are costly or difficult to comply with. REAs are also subject to appeal by third parties and can result and have resulted in lengthy appeal tribunal hearings. An exception to the requirement to obtain a REA permit as described above exists where the proposed project is being developed, constructed, and operated on federal reserve lands under the jurisdiction of a First Nation. In this circumstance, the First Nation may impose an environmental protection regime which would closely mirror the REA process, but it would be administered and monitored for compliance by the First Nation as opposed to MOECP.

#### Quebec Environmental Impact Assessment

Quebec's Environmental Impact Assessment (EIA) is a required permit for wind energy projects with a nameplate capacity above 10 MW. The EIA requires a variety of studies related to environmental, archeological and heritage issues. Significant public consultation, as well as consultation with indigenous communities, is also required. The culmination of this permitting process is the issuing of a project specific decree by the provincial council of ministers which may include conditions related to the construction and operation of a project that may be costly or difficult to comply with. Before issuing the decree, the Quebec Ministry of Environment evaluates a broad range of potential impacts, including on wildlife, wetlands and water resources, communities, scenic areas, species and heritage resources, as well as impacts on people.

#### Quebec Commission for the Protection of Agricultural Land

In addition to the EIA process, the other major permit in Quebec is granted by the Quebec Commission for the Protection of Agricultural Land. This permit is only required on land that is zoned agricultural. This permitting body may impose conditions on proponents to minimize footprints during both the construction phase and the operations phase.

#### Manitoba Environment Act

The Manitoba Environment Act requires proponents of significant projects to submit a proposal with the Manitoba Conservation Environmental Assessment & Licensing Branch, and to comply with Manitoba's environmental assessment process under the Environment

Act. This process will consider a similar range of impacts on the environment, the heritage and scenic values of an area and on people, communities and wildlife as the Ontario process, and brings with it similar risks.

#### British Columbia Environmental Assessment Act

When a major project is proposed in British Columbia, it must undergo an environmental assessment (EA) process. This process ensures that any potential environmental, economic, social, heritage and health effects that may occur during the lifetime of a major project are thoroughly assessed. The EA process is managed by the Environmental Assessment Office (EAO), a regulatory agency within the provincial government that works with and seeks input from environmental scientists, indigenous groups, proponents, the public, local governments, and federal and provincial agencies to ensure adverse effects are considered.

The EAO follows a defined process in the Environmental Assessment Act to conduct the assessment of a major project. The outcome of the process is the preparation of a detailed Assessment Report which is reviewed by the province for a determination as to whether the proposed project should proceed.

#### Endangered Species Legislation

Our Canadian renewable energy projects may be subject to endangered species legislation, either federally or provincially, which prohibits and imposes stringent penalties for harming endangered or threatened species and their habitats. Our projects may also be subject to the Migratory Birds Convention Act, which protects the habitat of migratory species, and which may also trigger federal "Species at Risk" requirements. Because the operation of wind turbines may result in injury or fatalities to birds and bats, avian and bat risk assessments are generally required both prior to permits being issued for projects and after commercial operations. Permits, authorizations or agreements may also be required under federal or provincial endangered species legislation if any species that are listed as endangered or threatened, or their habitats, are affected.

#### Other Approvals

Our Canadian projects, and any future projects we may acquire, are subject to a variety of other federal, provincial and municipal permitting and zoning requirements. Most provinces where our projects are located or may be located have laws that require provincial agencies to evaluate a broad array of environmental impacts before granting permits and approvals. These agencies evaluate similar issues as the permitting regimes above, including impact on wildlife, historic sites, aesthetics, wetlands and water resources, scenic areas, endangered and threatened species and communities. In addition, federal government approvals dealing with, among other things, aeronautics, fisheries, navigation or species protection may be required and could in some cases trigger additional environmental assessment requirements. Additional requirements related to the permitting of transmission lands may be applicable in some cases. Our projects are also subject to certain municipal requirements, including land use and zoning requirements, as well as requirements for building permits and other municipal approvals that can be difficult or costly to comply with and impair or prevent the development of a project.

#### Environmental Matters - Japan

We are required to obtain a range of environmental permits and other approvals from various governmental agencies in Japan, including at the prefectural and municipal level, to develop, construct and operate our projects, including, but not limited to, the items described below.

##### Ministry of the Environment

The Ministry of the Environment is a Cabinet-level ministry within the government of Japan that is responsible for domestic and global environmental conservation, pollution control and nature conservation.

##### Environmental Impact Assessment Law

The Environmental Impact Assessment Law is applied to wind power projects that may significantly impact the environment. Depending on the size of the project, an environmental impact assessment would be required by the project owner prior to development with the intent of incorporating environmental considerations into the project design.

### Management, Disposal and Remediation of Hazardous Substances

We own and lease real property and may be subject to requirements regarding the storage, use and disposal of petroleum products and hazardous substances, including spill prevention, control and counter-measure requirements. If our owned or leased properties are contaminated, whether during or prior to our ownership or operation, we could be responsible for the costs of investigation and cleanup and for any related liabilities, including claims for damage to property, persons or natural resources. That responsibility may arise even if we were not at fault and did not cause or were not aware of the contamination. In addition, waste we generate is at times sent to third-party disposal facilities. If those facilities become contaminated, we and any other persons who arranged for the disposal or treatment of hazardous substances at those sites may be jointly and severally responsible for the costs of investigation and remediation, as well as for any claims for damage to third parties, their property or natural resources.

### Employees

As of December 31, 2018, we had approximately 209 full-time employees. None of our employees are represented by a labor union or covered by any collective bargaining agreement.

### Available Information

We make our United States Securities and Exchange Commission (SEC) filings, including our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports, available free of charge on our website, [www.patternenergy.com](http://www.patternenergy.com), as soon as reasonably practicable after those documents are electronically filed with or furnished to the SEC. The information and materials available on our website are not incorporated by reference into this Form 10-K. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding registrants that file electronically with the SEC at [www.sec.gov](http://www.sec.gov).

### Item 1A. Risk Factors.

#### RISK FACTORS

You should carefully consider the following risks, together with other information provided to you in this Form 10-K. If any of the following risks were to occur, our business prospects, financial condition, results of operations and liquidity could be materially adversely affected. In that case, we might have to decrease, or may not be able to pay, dividends on our Class A shares, the trading price of our Class A shares could decline and you could lose all or part of your investment. The risks described below are not the only risks facing our company. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business prospects, financial condition and results of operations and liquidity.

#### Risks Related to the Business Segments in which We Operate

Electricity generated from wind and solar energy depends heavily on suitable wind and solar conditions, respectively. If such conditions are unfavorable or below our expectations, our projects' electricity generation and the revenue generated from our projects may be substantially below our expectations.

The revenue generated by our projects is principally dependent on the number of MWh generated in a given time period. The quantity of electricity generation from renewable energy projects depends heavily on environmental conditions, which are variable. Variability in wind and solar conditions can cause our project revenues to vary significantly from period to period. We base our decisions about which projects to acquire as well as our electricity generation estimates, in part, on the findings of long-term wind, solar and other meteorological studies conducted on the project site and its region. For wind projects, such studies, measure the wind's speed, prevailing direction and seasonal variations, and projections of wind resources also rely upon assumptions about turbine placement, wind turbine power curves, interference between turbines. Similarly for solar projects, such studies measure solar irradiation and seasonal variations, and projections of solar resources also rely upon assumptions about panel placement, power curves for solar panels and arrays, and shading. Effects of vegetation, land use and terrain, which involve uncertainty and require us to exercise considerable judgment, also may have significant effects on electricity generated by a project. We may make incorrect assumptions in conducting these wind, solar and other meteorological studies. Any of these factors could cause our projects to generate less electricity than we expect and reduce our revenue from electricity sales, which could have a material adverse effect on our business prospects, financial condition and results of operations.





Even if an operating project's historical wind and solar resources are consistent with our long-term estimates, the unpredictable nature of meteorological conditions can result in daily, monthly and yearly material deviations from the average amount of such renewable resource we may anticipate during a particular period. If such resources at a project are materially below the average levels we expect for a particular period, our revenue from electricity sales from the project could correspondingly be less than expected. A diversified portfolio of projects utilizing different renewable resources located in different geographical areas tends to reduce the magnitude of the deviation, but material deviations may still occur. Our cash available for distribution is most directly affected by the volume of electricity generated and sold by our projects. However, for a static portfolio of projects, our consolidated expenses, including operating expenses and interest payments on indebtedness, have less variability than the volume of electricity generated and sold. Accordingly, decreases in the volume of electricity generated and sold by our projects typically result in a proportionately greater decrease in our cash available for distribution. See Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operation-Factors that Significantly Affect our Business-Factors Affecting our Operational Results-Electricity Sales and Energy Derivative Settlements of Our Operating Projects." A reduction in electricity generation and sales, whether due to the inaccuracy of wind or solar energy assessments or otherwise, could lead to a number of material adverse consequences for our business, including:

our projects' failure to produce sufficient electricity to meet our commitments under our PPAs, hedge arrangements or contracts for sale of RECs, which could result in our having to purchase electricity or RECs on the open market to cover our obligations or result in the payment of damages or the termination of a PPA;

our projects not generating sufficient cash flow to make payments of principal and interest as they become due on project-related debt, distributing sufficient cash flow to pay dividends to holders of our Class A shares, or service our corporate debt. For example, certain of our projects have experienced lower than expected production and merchant power prices, as well as congestion on transmission systems upon which such projects rely upon, resulting in those projects failing to pass financial tests that measure cumulative cash distributions to the members. This has in the past, and may in the future, result in a temporary change of the cash percentage to be directed to the tax equity members until the shortfall is remedied. See "Risks Related to Ownership of our Class A Shares - Our cash available for distribution to holders of our Class A shares may be reduced as a result of restrictions on our subsidiaries' cash distributions to us under the terms of their indebtedness, or in the event certain specified events occurred under our tax equity arrangements that change the percentage of cash distributions to be made to the tax equity investors;" and our projects' hedging arrangements being ineffective or more costly.

We have invested in Pattern Development which exposes us directly to project development risks.

Since July 2017, we have funded an aggregate of \$183 million in capital contributions into Pattern Development in which we hold an approximate 29% ownership interest. We have the right, but not the obligation, to participate in subsequent capital calls for a total commitment of up to \$300 million, and if we do not participate in all future capital calls, our ownership interest in Pattern Development will decrease.

As a result of our investment in Pattern Development, we are exposed directly to project development risks, including permitting challenges, failure to secure PPAs, failure to procure the requisite financing, equipment or interconnection, or an inability to satisfy the conditions to effectiveness of project agreements such as PPAs. In the event we elected to participate in additional capital calls or otherwise decided to invest in other project development opportunities, we would further expose ourselves directly to such project development risks. Generally, project development may entail risks of making investments in projects that cannot profitably be built, and we are, and if we invested further could be further, exposed to significant investment activities that require significant capital prior to having certainty that a project can move forward. We may lose money invested without generating returns, particularly since a large portion of such investments go into overhead which cannot be recovered. No assurances can be given that we will be successful in project development activities we undertake, whether through the investment in Pattern Development or otherwise, which can diminish our capital available for investment in operating power projects and adversely impact our business prospects, financial condition and results of operations.

A prolonged environment of low prices for natural gas, other conventional fuel sources, or competing renewable resources could have a material adverse effect on our long-term business prospects, financial condition and results of operations.

Historically low prices for traditional fossil fuels, particularly natural gas, and competing renewable resources could cause demand for our wind and solar power to decrease and adversely affect the price of the electricity we generate for sale on a spot-market basis. Excessive building of competing renewable resources in a limited geographic area (particularly in portions of ERCOT) has, and may continue to, result in congestion and curtailment which in turn has, and could continue to, adversely affect pricing available on the spot-market. See Item 7A "Quantitative and Qualitative Disclosures about Market Risk-Commodity Price Risk." Low spot-market power prices, combined with other factors, could have a material adverse effect on our results of operations and cash available for distribution. Additionally, cheaper conventional fuel sources or competing renewable resources could also have a negative impact on the power prices we are able

to negotiate upon the expiration of our current power sale agreements or upon entering into a power sale agreement for a subsequently acquired power project. As a result, the price of our electricity or RECs subject to the open market could be materially and adversely affected, which could, in turn, have a material adverse effect on our results of operations and cash available for distribution.

Climate change may have the long-term effect of changing meteorological patterns at our projects which could have a material adverse effect on our business prospects, financial condition, results of operations and ability to make cash distributions to our investors

Climate change may have the long-term effect of changing meteorological patterns, including wind and factors that affect solar irradiation (such as cloud cover), at our projects. Changing meteorological patterns could cause changes in expected electricity generation. These events could also degrade equipment or components and the interconnection and transmission facilities' lives or maintenance costs. We may face decreased revenues from a project and increased project expense which could have a material adverse effect on our business prospects, financial condition, results of operations and ability to make cash distributions to our investors.

Our projects rely on a limited number of key power purchasers.

There are a limited number of possible power purchasers for electricity and RECs produced in a given geographic location. Because our projects depend on sales of electricity and RECs to certain key power purchasers, our projects are highly dependent upon these power purchasers and such power purchasers fulfilling their contractual obligations under their respective PPAs. Upon a power purchase arrangement coming to the end of its term, no assurances can be given that we will be able to enter into new arrangements with the same or another power purchaser, if we did not enter into a new arrangement that merchant prices for power would be as favorable as the prices under the prior power purchase arrangements, or even if we are able to enter into a new arrangement that the terms of such arrangement would be upon terms as favorable to us as the prior power purchase arrangements.

In addition, our projects' power purchasers may not comply with their contractual payment obligations or may become subject to insolvency or liquidation proceedings during the term of the relevant contracts, and, in such event, we may not be able to find another purchaser on similar or favorable terms or at all. We are also exposed to the creditworthiness of our power purchasers and there is no guarantee that any power purchaser will maintain its credit rating, if any. For example, the power purchasers at our 101 MW Santa Isabel project in Puerto Rico and at our 101 MW Hatchet Ridge project in California have been experiencing difficulties as further described in the risk factors below. To the extent that any of our projects' power purchasers are, or are controlled by, governmental entities, our projects may also be subject to legislative or other political action that impairs their contractual performance.

We also note that our key power purchasers may seek to renegotiate or terminate PPAs prior to the end of their term that were contracted for at a time when the prices for power were higher than they may currently be in the relevant markets by asserting that we have not performed our obligations under our contractual commitments under a PPA. Each such situation individually or in the aggregate could have a material adverse effect on our business prospects, financial condition and results of operations.

The power purchasers at our Santa Isabel project in Puerto Rico and our Hatchet Ridge project in California have been experiencing difficulties that may affect these projects.

Our 101 MW Santa Isabel project located in Puerto Rico sells 100% of its electricity generation to Puerto Rico Electric Power Authority (PREPA) under a 20-year PPA. In July 2017, PREPA filed a voluntary petition for relief in the U.S. District Court for the District of Puerto Rico. Our 101 MW Hatchet Ridge project located in California sells 100% of its electricity generation to Pacific Gas & Electric Company (PG&E) under a 15-year PPA. On January 29, 2019, PG&E filed for reorganization under Chapter 11 of the U.S bankruptcy code. While each of PREPA and PG&E have through February 22, 2019, made payments of all amounts due under the respective PPAs for production, including both pre-petition receivables and post-petition receivables, no assurances can be given that either PREPA or PG&E will pay future receivables. Furthermore, under the Puerto Rico Oversight, Management, and Economic Stability Act (or PROMESA) applicable to PREPA, and the U.S bankruptcy code applicable to PG&E, each of PREPA and PG&E will eventually need to determine whether to assume or reject its respective PPA, subject to court approval. A rejection of a PPA would likely have a material adverse effect on our business prospects, financial condition and results of operations. The fact of PREPA's insolvency and its filing for bankruptcy each constituted an event of default under its financing agreement. However, in August 2017, the lender issued a letter withdrawing the

event of default associated with the PREPA insolvency. Pursuant to our agreement with the lender, the Santa Isabel project may not make distributions to us until such time as lender consents (which will not be unreasonably withheld if PREPA assumes the PPA). The fact of PG&E's insolvency and its filing under the U.S. bankruptcy code does not in and of itself constitute an event of default under the project's financing agreements. In both cases, a failure to make future payments under either PPA or rejection of a PPA would constitute events of default under each projects' financing agreements. No assurances can be given that PREPA or PG&E, as the case may be, will determine to assume the respective PPA, will not take actions that separately constitute an event of default under our financing agreements, or that Santa Isabel or Hatchet Ridge will be able to remain current with respect to its payments under the financing agreements. In any such event, an event of default under the financing agreements would occur and the lenders may decide in such c

ircumstance to accelerate and declare the entire amount of debt under the respective financing agreement immediately due and payable. Even though each of the Santa Isabel and Hatchet Ridge financing agreements are non-recourse to us, they are secured by each respective project and any exercise of remedies by the respective lenders could have a material adverse effect on our business prospects, financial condition and results of operations.

Operation and maintenance problems at our renewable energy projects including natural events may cause our electricity generation to fall below our expectations.

Our electricity generation levels depend upon our ability to maintain the working order of our wind turbines, solar arrays and balance of the plant. A natural disaster, severe weather, accident, failure of major equipment, shortage of or inability to acquire critical replacement or spare parts, failure in the operation of any future transmission facilities that we may acquire, including the failure of interconnection to available electricity transmission or distribution networks, could damage or require us to shut down our turbines, solar arrays or related equipment and facilities, impeding our ability to maintain and operate our facilities and decreasing electricity generation levels and our revenues. For example, Hurricane Maria in 2017 resulted in damage to PREPA's transmission and distribution assets that caused our Santa Isabel project in Puerto Rico to be shut-in until mid-February 2018. In addition, several of our projects had previously experienced blade failures, and no assurances can be given that potential equipment deficiencies will not in fact continue to occur, that we will always have warranty coverage for any such defects, that the warranty provider would fulfill its obligations under such warranty coverage (including any liquidated damages compensation provisions), or that any such effects will not have a material adverse effect on our business prospects, financial condition and results of operation.

We typically enter into warranty agreements with the turbine manufacturer for two to ten-year terms, however, such agreements are typically subject to an aggregate maximum liability cap. In addition, we have a 20-year performance ratio guarantee from the EPC contractor for our solar facilities in Japan, subject to an annual performance loss factor and adjustments for solar irradiation and temperature, which effectively provides a production guarantee for such solar facilities. However, there can be no assurance that such manufacturers or contractors, or other third-party service provider, will be able to fulfill its contractual obligations. In addition, such agreements can vary as to what equipment maintenance risks are fully assumed by the service provider and what equipment failure risks will be repaired at the owner's cost.

As warranty terms with the manufacturer expire, we have entered and intend to continue entering into revised long-term turbine manufacturer service arrangements at certain of our projects pursuant to which the turbine manufacturer continues to provide routine and corrective maintenance service, but we are responsible for a portion of the maintenance and repairs, including on major component parts. While the revised service arrangements reduce fixed contract costs, in the event of unexpectedly high turbine component failures for which we as owner have assumed responsibility, we may face decreased revenues of a project and increased project expense which could have a material adverse effect on our business prospects, financial condition, results of operations and ability to make cash distributions to our investors. We expect over time in the future to continue taking on additional risks as an owner, including increased self-performance of maintenance and service work with our own technicians instead of utilizing service providers, which will have expected cost benefits, but will similarly come with additional increased risks and reduced third party warranty and guarantee protections.

Replacement and spare parts for wind turbines and key pieces of electrical equipment at both our wind and solar projects may be difficult or costly to acquire or may be unavailable. Sources for some significant spare parts and other equipment are often located outside of the jurisdictions in which our power projects operate. Additionally, our operating projects generally do not hold spare substation main transformers. These transformers are designed specifically for each power project, and order lead times can be lengthy. If one of our projects had to replace any of its substation main transformers, it would be unable to sell all of its power until a replacement is installed. To the extent we experience a prolonged interruption at one of our operating projects due to natural events or operational problems and such events are not fully covered by insurance, our electricity generation levels and revenues could materially decrease, which could have a material adverse effect on our business prospects, financial condition and results of operation.

Our operations are subject to numerous environmental, health and safety laws and regulations.

Our projects are subject to numerous environmental, health and safety laws and regulations in each of the jurisdictions in which our projects operate or will operate. These laws and regulations, and associated best management practices, require that our projects obtain and maintain permits and approvals and engage in review processes and implement environmental, health and safety programs and procedures to control risks associated with the siting, construction, operation and decommissioning of power projects. To obtain permits and other approvals, some projects are, in certain cases, required to undergo environmental impact assessments and undertake programs to protect and maintain local endangered or threatened species. For example, in connection with a permit we obtained at our Spring Valley wind facility, we had to adopt a mitigation plan with respect to injuries and fatalities to golden eagles, and were required to establish a

process in the event of incidents, including reporting to the U.S. Fish and Wildlife Service. In addition, in connection with certain of our projects in Canada, plans to mitigate bat incidents were required to be adopted during the permitting process, and aspects of such plans have from time to time been implemented when bat incidents exceeded certain predetermined thresholds (such as raising cut in speeds for turbines during certain hours when bats are active). If such programs are not successful, our projects could be subject to increased levels of mitigation, operational curtailment, penalties or revocation of our permits.

Violations of environmental and other laws, regulations and permit requirements, including certain violations of laws protecting wetlands, migratory birds, bald and golden eagles and threatened or endangered species, may also result in criminal sanctions or injunctions. In addition, if our projects do not comply with applicable laws, regulations or permit requirements, or if there are endangered or threatened species fatalities at our projects, we may be required to pay penalties or fines or curtail or cease operations of the affected projects.

Certain environmental laws impose liability on current and previous owners and operators of real property for the cost of removal or remediation of hazardous substances, even if the owner or operator did not know of, or was not responsible for, the release of such hazardous substances. In addition to actions brought by governmental agencies, private plaintiffs may also bring claims arising from the presence of hazardous substances on a property or exposure to such substances. Our projects' liabilities at properties we own or operate arising from past releases of, or exposure to, hazardous substances could have a material adverse effect on our business prospects, financial condition and results of operations.

Environmental, health and safety laws, regulations and permit requirements (or other similar requirements, such as requirements related to noise) may change and become more stringent. Any such changes could require our projects to incur additional material costs or cause our projects to suffer adverse consequences. For example, the Ministry of Environment in Ontario has established regulatory requirements governing noise restrictions for wind farms which are an integral part of the permitting framework for our projects in certain jurisdictions. In the event of changes in either the regulatory requirements or permitting framework prior to confirmation that the projects have met the requirements through acoustic testing, there is risk that our projects that were designed for compliance within the existing framework and requirements for noise could be exposed to more stringent requirements. These risks are enhanced because testing for compliance with noise requirements is technically complex, carries some degree of uncertainty, and does not have significant precedent in that market. In the event of a determination of noncompliance, there is risk that the necessary mitigation, which would likely need to occur during periods of higher wind speeds, could require curtailment of energy production at the facility, with a resulting reduction in revenues.

Our projects' costs of complying with current and future environmental, health and safety laws, regulations and permit requirements (or other similar requirements), and any liabilities, fines or other sanctions resulting from violations of them, could have a material adverse effect on our business prospects, financial condition and results of operations. Construction projects may not be completed on time, and construction costs could increase to levels that make a project too expensive to complete or make the return on investment in that project less than expected.

There may be delays or unexpected developments in completing construction projects. Whether such delays or unexpected developments occur at construction projects we own or (because we own an approximate 29% interest in Pattern Development) construction projects at Pattern Development, construction costs at projects which exceed expectations could reduce or eliminate the returns expected from such projects. Construction projects are typically designed and constructed under fixed-price and schedule engineering, procurement, and construction contracts with reputable construction and equipment suppliers, and would typically have liquidated damages provisions for non-performance by the contractors subject to specified limitations on the amount of damages that can recover from the contractor. Significant construction delays or construction cost increases may occur as a result of underperformance of these contractors and equipment suppliers, as well as other suppliers, to the projects. No assurances can be given that disputes with project construction providers will not arise in the future. While we and Pattern Development will attempt to reach a settlement if disputes do arise, no assurances can be given that we or Pattern Development would actually reach a settlement or that any such settlement amount would be covered by the remaining budgeted project contingencies. If an equitable settlement cannot be reached, arbitration or legal action could be commenced, and any final judgment or decision could result in increased costs which could make the return on investment in the project less than expected.

Additionally, various other factors could contribute to construction-cost overruns and construction delays, including:

- inclement weather conditions;
- failure to receive generating equipment or other critical components and equipment necessary to maintain the operating capacity of our projects, in a timely manner or at all;
- failure to complete interconnection to transmission networks, which relies on several third parties, including interconnection facilities provided by local utilities;
- failure to maintain all necessary rights to land access and use;



failure to receive quality and timely performance of third-party services;  
failure to maintain environmental and other permits or approvals;  
failure to meet domestic content requirements;  
appeals of environmental and other permits or approvals that are held;  
lawful or unlawful protests by or work stoppages resulting from local community objections to a project;  
shortage of skilled labor or key construction equipment on the part of contractors;  
geopolitical risks including risk of tax and tariff law changes;  
adverse environmental and geological conditions; and  
force majeure or other events out of our control.

Any of these factors could give rise to construction delays and construction costs in excess of expectations. These circumstances could prevent construction projects from commencing operations or from meeting original expectations about how much electricity they will generate or the returns they will achieve. In addition, substantial delays could cause defaults under financing agreements or under PPAs that require completion of project construction by a certain date at specified performance levels or could result in the loss or reduction of expected tax benefits. An inability to transition construction projects into financially successful operating projects by either us or Pattern Development would have a material adverse effect on our business prospects, financial condition and results of operations and our ability to pay dividends.

The expansion of our international operations into Japan subjects us to a number of risks, and if we are unable to effectively manage these risks, and similar risks if we expand into other markets outside of the United States and Canada, our business prospects, financial condition and results of operations and liquidity could be materially and adversely affected.

In March 2018, we entered into the Japanese renewables market, and our 206 MW portfolio of projects in Japan consists of two operating solar projects (Futtsu and Kanagi), two operating wind projects (Ohorayama and Otsuki), and one in-construction wind project (Tsugaru). We expect our portfolio and operations in Japan to continue to grow. The expansion of our operations into markets outside of the United States and Canada exposes us to risks relating to political, regulatory, labor, and tax conditions in these foreign countries. In addition, we are exposed to risks including:

- difficulty with staffing and managing overseas operations, which may be exacerbated as a result of distance, time zone, language, and cultural differences;
- difficulties and costs relating to compliance with different commercial, legal and regulatory requirements;
- failure to develop appropriate risk management and internal control structures tailored to overseas operations;
- challenges in coordinating and integrating systems, policies, and procedures, such as operational, financial and accounting, and information technology;
- the need to devote a significant amount of our management's time and effort to integrate and coordinate the international operations with our other operations; and
- fluctuations in currency exchange rates.

If we are unable to effectively manage these risks, they could materially and adversely affect our business prospects, financial condition, and results of operations and liquidity.

Our projects rely on interconnections to transmission lines and other transmission facilities that are owned and operated by third parties which exposes us to risks. Our projects are also exposed to interconnection and transmission facility development and curtailment risks, which may delay the completion of any construction projects or reduce the return to us on those investments.

Our projects depend upon interconnection to electric transmission lines owned and operated by regulated utilities to deliver the electricity we generate. A failure or delay in the operation or development of these interconnection or transmission facilities could result in our losing revenues because such a failure or delay could limit the amount of power our operating projects deliver or delay the completion of any construction projects. For example, we have experienced situations where the substation to which a project was required to deliver power under its PPA had been shut down for maintenance and we needed to then take steps to mitigate the transmission outage at the delivery substation, including making alternative transmission arrangements to deliver power at an alternative substation through alternative short term transmission and revenue arrangements and selling environmental attributes to a third

party. If similar circumstances occurred in the future, there could be no assurances that we would be able to make alternative transmission arrangements or the revenues

produced from any alternative arrangements would be equivalent to the revenues that would have been generated had such transmission outage not occurred. Furthermore, individual alternative arrangements made to mitigate the transmission outage may present their own risks, such as possible curtailment risks on the alternative transmission arrangements or pricing risks in the merchant power market, which could adversely affect the overall efficacy of any mitigation efforts. If we were unable to mitigate potential losses, other future sustained transmission outages at a delivery substation could have a material adverse effect on our business prospects, financial condition and results of operations.

In addition, certain of our operating projects' generation of electricity may be curtailed without compensation (or, in some cases, choose to continue operating but accept negative power prices) due to transmission limitations or limitations on the electricity grid's ability to accommodate intermittent electricity generating sources, reducing our revenues and impairing our ability to capitalize fully on a particular project's potential. Such a failure or curtailment at levels above our expectations could have a material adverse effect on our business prospects, financial condition and results of operations. For example, in certain geographic areas of the ERCOT market in Texas, construction of renewable energy projects has exceeded the available capacity of the existing transmission infrastructure resulting in localized congestion on transmission facilities utilized by certain of our projects. While these projects have financial hedges that partially protect revenues against movement in broader power markets, these instruments generally do not provide protection against localized congestion impacts, which are borne by the projects. In addition, planned or forced outages of transmission circuits in such strained areas of the grid can, and has, compounded the adverse impact on our operations. While efforts to construct additional transmission facilities are underway, there is no assurance that such additional facilities will be sufficient to relieve congestion, or that construction of new generation facilities will not continue to exceed the capacity of any added transmission in the future.

In addition to the risks described above regarding the broader electric grid, many of our projects also own private transmission lines to deliver our power to available electricity transmission or distribution networks. In some cases, these facilities may span significant distances. A failure in our operation of these facilities that causes the facilities to be temporarily out of service, or subject to reduced service, could result in lost revenues because it could limit the amount of electricity our operating projects are able to deliver. In addition, in many of the markets in which we operate or are looking to expand operations, should there be any excess capacity available in those generator lead facilities, and should a third party request access to such capacity, the relevant regulatory authority in such jurisdiction, such as FERC in the United States, or other authorities might, require our projects to provide service over such facilities for that excess capacity to the requesting third party at regulated rates. Should this occur in markets with such regulations, the projects could be subject to additional regulatory risks and costly compliance burdens associated with being considered the owner and operator of a transmission facility.

New projects being developed that we may acquire may need governmental approvals and permits, including environmental approvals and permits, for construction and operation. Any failure to obtain or maintain in effect necessary permits could adversely affect the amount of our growth.

The design, construction and operation of wind, solar and transmission projects are highly regulated, require various governmental approvals and permits, including environmental approvals and permits, and may be subject to the imposition of related conditions that vary by jurisdiction. In some cases, these approvals and permits require periodic renewal and a subsequently issued permit may not be consistent with the permit initially issued. In other cases, these permits may require compliance with terms that can change over time. We cannot predict whether all permits required for a given project will be granted or whether the conditions associated with the permits, as such conditions may change over time, will be achievable. The denial or loss of a permit essential to a project, or the imposition of impractical or burdensome conditions upon renewal or over time, could impair our ability to construct and operate a project. In addition, we cannot predict whether seeking the permits will attract significant opposition or whether the permitting process will be lengthened due to complexities, legal claims or appeals. Delay in the review and permitting process for a project can impair or delay the ability to develop, construct, or acquire a project or increase the cost such that the project is no longer attractive to us.

In developing certain of our projects, Pattern Energy Group LP experienced delays in obtaining non-appealable permits and we, Pattern Energy Group LP, and/or Pattern Development may experience delays in the future. For example, when we acquired our Ocotillo project, it was then the subject of four active lawsuits brought by a variety of

project opponents, all of which challenged the prior issuance of Ocotillo's primary environmental analysis and right-of-way entitlement. We had commenced commercial operations at the Ocotillo project in anticipation of securing favorable rulings on these lawsuits. In Ontario, in prior years anti-wind advocacy groups have opposed the Renewable Energy Approval environmental permit granted to our South Kent, Grand, and Armow wind projects by commencing proceedings before the Ontario Environmental Review Tribunal. Each of these appeals ultimately was unsuccessful and dismissed by the Tribunal.

We are subject to the risk of being unable to complete construction of projects, or continue operation of our projects, if any of the key permits are revoked or permit conditions are violated. If this were to occur at any current or future project, we would likely lose a significant

portion of our investment in the project and could incur a loss as a result, which would have a material adverse effect on our business prospects, financial condition and results of operations.

The loss of one or more of our or Pattern Development's executive officers or key employees may adversely affect the ability to effectively complete the development of projects, implement our growth strategy, complete construction projects on schedule, or manage our operating projects.

We depend on our experienced management team and (because we own an approximate 29% interest in Pattern Development) Pattern Development's officers and key employees. The loss of one or more of our or Pattern Development's executives or key employees could have a negative impact on us, our business, or ability to grow. We also depend on the ability of ourselves and Pattern Development to retain and motivate key employees and attract qualified new employees. Because the renewable power industry is relatively new, there is a scarcity of experienced employees in the industry. We and Pattern Development may not be able to replace departing members of their management teams or key employees. Integrating new executives into management teams and training new employees with no prior experience in the power industry could prove disruptive to projects, require a disproportionate amount of resources and management attention and ultimately prove unsuccessful. An inability to attract and retain sufficient technical and managerial personnel could limit the ability of us or Pattern Development to effectively manage, complete the development of projects, implement our growth strategy, complete any construction projects on schedule and within budget, or manage our operating projects, which could have a material adverse effect on our business prospects, financial condition and results of operations.

The employee transfer may adversely affect our costs.

Under the Amended and Restated Multilateral Management Services Agreement ("A&R Multilateral Services Agreement") we entered into with both Pattern Energy Group LP and Pattern Development, we continue to have the option to cause the employees of Pattern Energy Group LP to become our employees. We refer to this event as the Pattern Energy Group LP employee transfer, and we may effect such employee transfer after the earliest to occur of (1) notice from Pattern Energy Group LP that it will be completing a wind-down, (2) June 16, 2020, and (3) the failure of Pattern Energy Group LP to provide the resources and services called for under the A&R Multilateral Services Agreement after notice and opportunities to cure. In addition, while Pattern Development currently only has employees through its ownership of interests in GPI in Japan, the A&R Multilateral Services Agreement provides for certain circumstances pursuant to which we can require Pattern Development to cause its employees (if any) to become our employees. We refer to this event as the Pattern Development employee transfer. Following the occurrence of either a Pattern Energy Group LP employee transfer event to us or (in the event Pattern Development has employees) a Pattern Development employee transfer event to us, we would incur increased costs associated with employing a larger number of employees, and there is no assurance that the utilization of services from Pattern Energy Group LP and Pattern Development will be sufficient to cover the costs of the employees which could then have a material adverse effect on our business prospects, financial condition and results of operation.

Our use and enjoyment of real property rights for our projects may be adversely affected by the rights of lienholders and leaseholders that are superior to those of the grantors of those real property rights to our projects.

Our projects generally are, and any of our future projects are likely to be, located on land occupied pursuant to long-term easements, leases and rights-of-way. The ownership interests in the land subject to these easements, leases and rights-of-way may be subject to mortgages securing loans or other liens (such as tax liens) and other easements, lease rights and rights-of-way of third parties (such as leases of oil or mineral rights) that were created prior to our projects' easements, leases and rights-of-way. As a result, certain of our projects' rights under these easements, lease rights or rights-of-way may be subject, and subordinate, to the rights of those third parties. We perform title searches, obtain title insurance and enter into non-disturbance agreements to protect ourselves against these risks. Such efforts may, however, be inadequate to protect our operating projects against all risk of loss of our rights to use the land on which our projects are located, which could have a material adverse effect on our business prospects, financial condition and results of operations. In addition, certain lands, such as lands under the jurisdiction of the United States Department of Interior's Bureau of Land Management (BLM), are subject to contractual rights that permit the BLM to periodically adjust rent due on properties and other obligations, such as the amount of required reclamation security, to market terms. Any such loss or curtailment of our rights to use the land on which our projects are located, any increase in rent due, or any increase in other obligations with respect to such lands could have a material adverse

effect on our business prospects, financial condition and results of operations.

Our operating projects are, and other future projects may be, subject to various governmental regulations, approvals, and compliance requirements that regulate the sale of electricity, which could have a material adverse effect on our business prospects, financial condition and results of operations.

Our current projects in operation in the United States are operating as EWGs as defined under PUHCA and therefore are exempt from certain regulation under PUHCA. Other than Gulf Wind, Panhandle 1, Panhandle 2, and Logan's Gap, our operating projects in the United

States are, however, public utilities under the Federal Power Act subject to rate regulation by FERC. Our future projects in the United States will also likely be subject to such rate regulation once they are placed into service. Our projects in the United States that are subject to FERC rate regulation are required to obtain acceptance of their rate schedules for wholesale sales of energy (i.e., not retail sales to consumers), capacity and ancillary services, including their ability to charge “market-based rates.” FERC may revoke or revise an entity’s authorization to make wholesale sales at market-based rates if FERC subsequently determines that such entity and its affiliates can exercise horizontal or vertical market power, create barriers to entry or engage in abusive affiliate transactions or market manipulation. In addition, public utilities in the United States are subject to FERC reporting requirements that impose administrative burdens and that, if violated, can expose the company to criminal and civil penalties or other risks.

Most of our North American projects are located in regions in which the wholesale electric markets are administered by ISOs and RTOs. Several of our current operating projects are subject to CAISO which is the ISO that prescribes rules for the terms of participation in the California energy market; the ERCOT, which is the ISO that prescribes the rules for and terms of participation in the Texas energy market; and IESO, which is the ISO that administers the wholesale electricity market in Ontario. The Southwest Power Pool is the RTO and regional market administrator for our Post Rock project. Lost Creek is in the Associated Electric Cooperative, Inc. a subregion of the SERC Reliability Corporation. Amazon Wind is in the PJM RTO. Many of these entities can impose rules, restrictions and terms of service that are quasi-regulatory in nature and can have a material adverse impact on our business. For example, ISOs and RTOs have developed bid-based locational pricing rules for the energy markets that they administer. In addition, most ISOs and RTOs have also developed bidding, scheduling and market behavior rules, both to curb the potential exercise of market power by electricity generating companies and to ensure certain market functions and system reliability. These actions could materially adversely affect our ability to sell, and the price we receive for, our energy, capacity and ancillary services.

All of our current operating projects located in North America are also subject to the reliability standards of the NERC. If we fail to comply with the mandatory reliability standards, we could be subject to sanctions, including substantial monetary penalties. Although our U.S. projects are not subject to state utility regulation because our projects sell power exclusively on a wholesale basis, we are subject to certain state regulations that may affect the sale of electricity from our projects, the operations of our projects, as well as the potential for state electricity taxes. All of our current operating projects in Canada are subject to exclusive provincial regulatory authority with respect to the generation and production of electricity, which varies across provincial jurisdictions. Changes in regulatory treatment at the state and provincial level are difficult to predict and could have a significant impact on our ability to operate and on our financial condition and results of operations.

Our industry could be subject to increased regulatory oversight or changes in government policies that could have adverse effects.

Our industry could be subject to increased regulatory oversight. Changing regulatory policies and other actions by governments and third parties with respect to curtailment of electricity generation, electricity grid management restrictions, interconnection rules, wholesale electricity market design and transmission may all have the effect of limiting the revenues from, and increasing the operating costs of, our projects which could have a material adverse effect on our business, financial condition and results of operations.

Due to regulatory restructuring initiatives at the federal, provincial and state levels, the electricity industry has undergone changes over the past several years. Future government initiatives will further change the electricity industry. Some of these initiatives may delay or reverse the movement towards competitive markets. We cannot predict the future design of wholesale power markets or the ultimate effect that on-going regulatory changes will have on our business prospects, financial condition and results of operations.

In addition, renewable energy policies may also change dramatically as a result of changes in government or political climate. For example, the current administration in Ontario made pledges during the 2018 election process to wind down certain contracts for renewable power projects that are in the pre-construction phase. We currently have no information to suggest that power contracts for operating projects in Ontario will be affected by these changes or by future policy changes. However, no assurances can be given that the current administration will not seek to amend renewable power contracts for operating projects, which could include contracts for our projects in Ontario, and which could have a material adverse effect on our business prospects, financial condition and results of operations, if it were

to occur.

Our projects are not able to insure against all potential risks and may become subject to higher insurance premiums. Our projects are exposed to the risks inherent in the construction and operation of wind, solar and transmission power projects, such as breakdowns, manufacturing defects, natural disasters, terrorist attacks and sabotage. We are also exposed to environmental risks. We have insurance policies covering certain risks associated with our business. Our insurance policies do not, however, cover losses as a result of certain force majeure events or terrorism. In addition, our insurance policies for our projects may cover losses as a result of certain types of natural disasters or sabotage, among other things, but such coverage is not always available in the insurance market on commercially reasonable terms and is often capped at predetermined limits that may not be adequate. Our insurance policies are subject to annual review by our insurers and may not be renewed on similar or favorable terms or at all. A serious uninsured loss or a loss

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significantly exceeding the limits of our insurance policies could have a material adverse effect on our business prospects, financial condition and results of operations.

Currency exchange rate fluctuations may have an impact on our financial results and condition.

We have exposures to currency exchange rate fluctuations, primarily the Canadian dollar and Japanese yen, related to owning and operating part of our business outside of the United States. A portion of our revenue for the years ended December 31, 2018, 2017 and 2016 was denominated in currencies other than the U.S. dollar, and we expect net revenue from non-U.S. dollar markets to continue to represent a portion of our net revenue. We manage our currency exposure through a variety of methods, including efforts to match our asset and liabilities in the same currencies, mainly by raising local currency debt. In addition, we may use foreign currency forward contracts to, in part, manage short and medium term fluctuations in our dividends from our facilities located outside the United States. However, any measures that we have implemented or may implement in the future to reduce the effect of currency exchange rate fluctuations and other risks of our global operations may not be effective or may be expensive. We cannot provide assurance that currency exchange rate fluctuations will not otherwise have a material adverse effect on our financial condition or results of operations or cause significant fluctuations in quarterly and annual results of operations.

Foreign currency translation risk arises upon the translation of balance sheet and statement of operations items of our non-U.S. dollar denominated subsidiaries whose functional currency is a currency other than the U.S. dollar into the functional currency and reporting currency of us (which is the U.S. dollar) for purposes of preparing the consolidated financial statements included elsewhere in this Form 10-K presented in U.S. dollars. The assets and liabilities of our non-U.S. dollar denominated subsidiaries are translated at the closing rate at the date of reporting and statement of operations items are translated at the average rate for the period. All resulting exchange differences are recognized in a separate component of equity, "Foreign currency translation, net of tax," and are recorded in "Other comprehensive income (loss), net of tax." These foreign currency translation differences may have significant negative or positive impacts. Our foreign currency translation risk mainly relates to our operations in Canada and Japan.

In addition, foreign currency transaction risk arises when we or our subsidiaries enter into transactions where the settlement occurs in a currency other than the functional currency of us or our subsidiary. Exchange differences (gains and losses) arising on the settlement of monetary items or on translation of monetary items at rates different from those at which they were translated on initial recognition during the period or in previous financial statements are recognized the consolidated statement of operations in the period in which they arise. In order to reduce significant foreign currency transaction risk from our operating and investing activity, we may use foreign currency forward and foreign currency option contracts to hedge forecasted cash inflows and outflows. Furthermore, most non-U.S. dollar denominated debts are held by non-U.S. dollar denominated subsidiaries in the same functional currency of those subsidiary operations.

Impairment in the carrying value of long-lived assets and goodwill could negatively affect our operating results and reduce our earnings.

We have a significant amount of long-lived assets and goodwill on our consolidated balance sheets. Under generally accepted accounting principles, we periodically evaluate long-lived assets for potential impairment whenever events or changes in circumstances have occurred that indicate that impairment may exist, or the carrying amount of the long-lived asset may not be recoverable. An impairment loss is recognized if the carrying amount of a long-lived asset is not recoverable based on its estimated future discounted cash flows. Goodwill must be evaluated for impairment annually or more frequently if events indicate it is warranted. If the carrying value of an asset exceeds current fair value, the goodwill may be considered impaired and may be required to be reduced to fair value by a non-cash charge to earnings. Events and conditions that could result in impairment in the value of our long-lived assets and goodwill include cash flow or operating losses at a project, other negative events or long-term outlook for a project, a more-likely-than-not expectation of selling or disposing of a project, cost factors that have negative effect on earnings and cash flows at a project, changes in business conditions or strategy, as well as (particularly for goodwill) significantly deteriorating industry, market, and general economic conditions. Impairment in the carrying value of long-lived assets and goodwill could negatively affect our operating results and reduce our earnings. For example, during 2018, upon entering an agreement to sell the El Arrayán project in Chile, we classified the related assets and liabilities as held for sale and recorded an impairment loss of \$7 million.

Our cross-border operations require us to comply with anti-corruption laws and regulations of the U.S. government and various non-U.S. jurisdictions.

Doing business in multiple countries requires us and our subsidiaries to comply with the laws and regulations of the U.S. government and various non-U.S. jurisdictions. Our failure to comply with these rules and regulations may expose us to liabilities. These laws and regulations may apply to our companies, individual directors, officers, employees and agents and may restrict our operations, trade practices, investment decisions and partnering activities. In particular, our non-U.S. operations are subject to U.S. and foreign anti-corruption laws and regulations, such as the Foreign Corrupt Practices Act of 1977 (FCPA). The FCPA prohibits U.S. companies and

their officers, directors, employees and agents acting on their behalf from corruptly offering, promising, authorizing or providing anything of value to foreign officials for the purposes of influencing official decisions or obtaining or retaining business or otherwise obtaining favorable treatment. The FCPA also requires companies to make and keep books, records and accounts that accurately and fairly reflect transactions and dispositions of assets and to maintain a system of adequate internal accounting controls. As part of our business, we deal with state-owned business enterprises, the employees and representatives of which may be considered foreign officials for purposes of the FCPA. As a result, business dealings between our employees or our agents and any such foreign official could expose our company to the risk of violating anti-corruption laws even if such business practices may be customary or are not otherwise prohibited between our company and a private third-party. Violations of these legal requirements are punishable by criminal fines and imprisonment, civil penalties, disgorgement of profits, injunctions, debarment from government contracts as well as other remedial measures. We have established policies and procedures designed to assist us and our personnel in complying with applicable U.S. and non-U.S. laws and regulations; however, we cannot assure stockholders that these policies and procedures will completely eliminate the risk of a violation of these legal requirements, and any such violation (inadvertent or otherwise) could have a material adverse effect on our business prospects, financial condition and results of operations.

We own, and in the future may acquire, certain projects in joint ventures, and our joint venture partners' interests may conflict with our and our stockholders' interests.

We own certain projects in joint ventures (including South Kent, Armow and Grand, in which we have a 50%, 50% and 45% interest, respectively), and, in the future, we may acquire or invest in additional projects with a joint venture partner. In addition, our strategic joint partnership arrangements with PSP Investments include arrangements in which PSP Investments may co-invest in ROFO projects based on a process that is controlled by us, and we can elect the percentage interest to offer to PSP Investments in each project, which is expected to range from 30% to 49.9%. Under such arrangements, PSP Investments has to date co-invested (and we have joint venture arrangements with them) in each of Meikle and Mont Sainte-Marguerite in which we have a 51% limited partner interest and PSP Investments holds the remaining limited partner interests, as well as in each of Panhandle 2 and Stillwater in which we have 51% of the Class B interests and PSP Investments holds the remaining Class B interests. Joint ventures inherently involve a lesser degree of control over business operations, which could result in an increase in the financial, legal, operational or compliance risks associated with a project, including, but not limited to, variances in accounting and internal control requirements. To the extent we do not have a controlling interest in a project, or to the extent we have granted our joint venture partner veto rights, our joint venture partners could take actions that decrease the value of our investment and lower our overall return. In addition, conflicts of interest may arise in the future between our company and our stockholders, on the one hand, and our joint venture partners, on the other hand, where our joint venture partners' business interests are inconsistent with our and our stockholders' interests. Further, disagreements or disputes between us and our joint venture partners may arise which could result in litigation, increase our expenses and potentially limit the time and effort our officers and directors are able to devote to our business, all of which could have a material adverse effect on our business prospects, financial condition and results of operations.

An inability of Pattern Development to obtain the requisite financing to develop and construct projects could have a material adverse effect on our ability to grow our business.

Power project development is a capital intensive, high-risk business that relies heavily on and, therefore, is subject to the availability of debt and equity financing sources to fund projected construction and other projected capital expenditures. As a result, in order to successfully develop a power project, Pattern Development (in which we hold an approximate 29% interest) from which we may seek to acquire power projects, must obtain at-risk funds sufficient to complete the development phase of their projects. Any significant disruption in the credit and capital markets, or a significant increase in interest rates, could make it difficult for Pattern Development to successfully develop attractive projects. If Pattern Development, or other development companies from which we seek to acquire projects, are unable to raise funds when needed, the ability to grow our project portfolio may be limited, which could have a material adverse effect on our ability to implement our growth strategy and, ultimately, our business prospects, financial condition and results of operations.

Steps we take in response to developments in the market, such as the potential inclusion of energy storage and battery systems in our projects, expose us to risks.

Steps we may need to take in response to developments in the market expose us to risks. For example, in order to remain competitive as an IPP in the market, we may need to leverage utilization of energy storage and batteries in our projects. The applications for energy storage and battery systems include the provision of backup power, grid independence, peak demand reduction, demand response, reducing intermittency of renewable generation and wholesale electric market services. However, project scale battery systems and technologies are at a nascent stage, and any system deployed may not deliver the performance expected and our returns, as a result, may be below our expectations. In addition, energy storage products and batteries are rapidly advancing technologies, and future advances in these products may render any such systems and technologies we may install or retrofit into our projects inefficient or obsolete. In addition, energy storage and battery systems are complex, and defects or a failure of such systems to perform as expected may pose risks related to health,

safety, and the environment. Any of such risks, or other risks that may be posed by the need to respond to developments in the market to remain competitive, could materially and adversely affect our business prospects, financial condition, and results of operations and liquidity.

Security breaches, including cybersecurity breaches, and other disruptions could compromise our business operations and critical and proprietary information and expose us to liability, which could adversely affect our business prospects, financial condition and reputation.

In the ordinary course of our business, we store sensitive data and proprietary information regarding our business, employees, shareholders, offtakers, service providers, business partners and other individuals in our data center and on our network. Additionally, we use and are dependent upon information technology systems that utilize sophisticated operational systems and network infrastructure to run our projects. Through our 24/7 operations control center, we can for our projects in the U.S. and Canada, among other things, monitor and control each wind turbine, monitor regional and local climate, track real time market prices and, for some of our projects, monitor certain environmental activities. The confidentiality, integrity and availability of information technology systems is critical to our operations. Despite security measures we have employed, including certain measures implemented pursuant to mandatory NERC Critical Infrastructure Protection standards, our infrastructure may be increasingly subject to attacks by hackers or terrorists as a result of the rise in the sophistication and volume of cyberattacks. Also, our information and information technology systems may be breached due to commodity malware, human error, malfeasance or other malfunctions and disruptions. Any such attack or breach could: (i) compromise our turbines, wind farms and solar facilities thereby adversely affecting generation and transmission to the grid; (ii) adversely affect our operations; (iii) corrupt data; or (iv) result in unauthorized access to the information stored on our networks, including, company proprietary information and employee data causing the information to be publicly disclosed, lost or stolen or result in incidents that could result in harmful effects on the environment and human health, including loss of life. Any such attack, breach, access, disclosure or other loss of information could result in lost revenue, the inability to conduct critical business functions, legal claims or proceedings, fines and regulatory penalties, increased regulation, increased protection costs for enhanced cybersecurity systems or personnel, damage to our reputation and/or the rendering of our disclosure controls and procedures ineffective, all of which could adversely affect our business prospects, financial condition and reputation.

#### Risks Related to Future Growth and Acquisitions

The growth of our business depends in part on locating and acquiring interests in additional attractive independent power and transmission projects.

Our business strategy includes acquiring power projects that are either operational, construction-ready, or (in limited circumstances outside of activities conducted by Pattern Development) under development. We intend to pursue opportunities to acquire projects from third-party owners where we may submit bids from time to time, and from each of the Pattern Development Companies pursuant to our respective Purchase Rights.

Various factors could affect the availability of attractive projects to grow our business, including:

- competing bids for a project, including a project subject to our respective Purchase Rights, from other owners, including companies that may have substantially greater capital and other resources than we do;
- fewer acquisition opportunities than we expect from both third-parties and the Pattern Development Companies, which could result from, among other things, available projects having less desirable economic returns or higher risk profiles than we believe suitable for our business plan and investment strategy. After, in part, consideration of such factors, in 2018 we had waived our Purchase Rights with respect to various projects at each of the Pattern Development Companies;
- failure by Pattern Development to complete the development of (i) an Identified ROFO Project, which could result from, among other things, permitting challenges, failure to procure the requisite financing, equipment or interconnection, local opposition to the project which may entail litigation, or an inability to satisfy the conditions to effectiveness of project agreements such as PPAs and (ii) any of the other projects in its respective development pipeline, in a timely manner, or at all, in either case, which could limit our acquisition opportunities under our respective Purchase Rights and/or the value of our investment in Pattern Development; and
- our failure to exercise our respective Purchase Rights or acquire assets from Pattern Energy Group LP or Pattern Development.

Any of these factors could prevent us from executing our growth strategy or otherwise have a material adverse effect on our business prospects, financial condition and results of operations. See also “- We have invested in Pattern Development which exposes us directly to project development risks.”

Additionally, even if we consummate acquisitions that we believe will be accretive to cash available for distribution per share, those acquisitions may in fact result in a decrease in cash available for distribution per Class A share as a result of incorrect assumptions in our evaluation of such acquisitions, unforeseen consequences or other external events beyond our control. Furthermore, if we consummate any future acquisitions, our capitalization and results of operations may change significantly, and stockholders will not generally have the opportunity to evaluate the economic, financial and other relevant information that we consider in determining the application of capital and other resources.

Capital market conditions can have an effect on both our timing and ability to consummate future acquisitions. We must also potentially anticipate obtaining funds from equity or debt financings to complete construction or pay capital costs of an acquired project which exposes us to financing risks.

Financing acquisitions of projects requires capital which has in the past been raised partially or wholly through the issuance of additional Class A shares, notes or other equity linked or debt instruments. However, no assurances can be given that we will be able to access the capital markets on commercially reasonable terms when acquisition opportunities arise. Our ability to access the equity and debt capital markets is dependent on, among other factors, the overall state of the capital markets and investor appetite for investment in clean energy projects in general and our Class A shares and our debt securities in particular. Volatility in the market price of our Class A shares or our credit rating may prevent or limit our ability to utilize our equity or debt securities as a source of capital to help fund acquisition opportunities.

During 2018, the prices for our Class A shares traded on the Nasdaq Global Select Market ranged from a high of \$26.56 to a low of \$18.83. On February 22, 2019, the last reported sale price of our Class A shares on such market was \$21.13 and we have a BB-/Ba3 credit rating from Standard & Poor's and Moody's, respectively. In addition, we evaluate the loan market and private investment market as potential sources of capital to finance acquisitions. Similar to the capital markets, no assurances can be given that we will be able to access such markets on commercially reasonable terms when acquisition opportunities arise to obtain financing, or at all. An inability to obtain financing on commercially reasonable terms could significantly limit our timing and ability to consummate future acquisitions, and to effectuate our growth strategy. In addition, the issuance of additional Class A shares in connection with acquisitions, particularly if consummated at depressed price levels or consummated at price levels that declined significantly between the signing and closing of an acquisition, could cause significant shareholder dilution, expose us to risks of being unable to consummate an acquisition we had agreed to, and reduce the cash distribution per share if the acquisitions are not sufficiently accretive.

We must also potentially anticipate obtaining funds from equity or debt financings, including tax equity transactions, or from other sources in order to fund any required construction and other capital costs of the acquired projects. The availability of tax equity financing may be affected by external events which we do not control, such as changes in tax law.

In the event we determine it is not economical to utilize, or we are unable to utilize our equity or debt securities as a source of capital to fund acquisition opportunities, or as a source of capital to complete any construction outstanding or pay capital costs of acquired projects, we may need to consider utilizing other sources of capital, such as cash on hand, borrowings under our existing credit facilities, or arranging additional credit facilities, none of which may be available or may not be available at attractive terms. Our inability to effectively consummate future acquisitions, or to finance construction or other capital costs cost-effectively, could have a material adverse effect on our ability to grow our business.

Acquisition and disposal of power projects involves numerous risks.

Our strategy includes acquiring power projects. The acquisition of power projects involves numerous risks, many of which may not be able to be discovered through our due diligence process, including exposure to previously existing liabilities and unanticipated costs associated with the pre-acquisition period; difficulty in integrating the acquired projects into our existing business; operational deficiencies or problematic wind or solar characteristics; and, if the projects are in new markets, the risks of entering markets where we have limited experience. A failure to achieve the financial returns we expect when we acquire power projects could have a material adverse effect on our ability to implement our growth strategy and, ultimately, our business prospects, financial condition and results of operations.

Furthermore, from time to time, we may believe it in the best interests of ourselves and our stockholders to dispose of power projects, and during 2018 we disposed of interests in each of the El Arrayán and K2 project. Reasons for a disposal may include limited opportunities in a market, changes in business environment or law which reduces the attractiveness of a market, excessive competition in the market, changes in business strategy, or a belief we can utilize funds realized from such a disposal in a more productive manner or generate a higher return on investment. The disposal of power projects involves numerous risks, many of which are outside of our control, including the ability to locate an attractive buyer of a power project, the management attention required to devote to the disposal, the ability to obtain a favorable price for a power project, the length of time required to complete the disposal process, and the potential difficulty of re-entering a market in the future after exiting a market. In addition, in connection with the disposal of projects we may agree to indemnities



or other provisions which expose us to potential ongoing liability after the disposal which exposes us to risks. No assurances can be given that we would be successful in consummating any disposal in a timely manner (or at all), that we would achieve an attractive (or positive) financial return from the disposal, or that we would be successful in re-deploying funds generated from any disposal in a manner that would generate higher returns.

Our ability to grow our cash available for distribution is substantially dependent on our ability to make acquisitions on economically favorable terms.

Our goal of growing our cash available for distribution and increasing dividends to our Class A stockholders is substantially dependent on our ability to make and finance acquisitions on terms that result in an increase in cash available for distribution per Class A share. To grow our cash available for distribution per Class A share through acquisitions, we must be able to acquire new generation assets, such as the Identified ROFO Projects, on economically favorable terms. If we are unable to make accretive acquisitions from the Pattern Development Companies or third parties because we are unable to identify attractive acquisition opportunities, negotiate acceptable purchase contracts, obtain financing on economically acceptable terms or are outbid by competitors, we may not be able to realize our targeted growth in cash available for distribution per Class A share.

The energy industry in the markets in which we operate, as well as the markets we are looking to expand into, benefit from governmental support that is subject to change. Regulatory uncertainty in the clean energy sector, including with respect to environmental and tax policies, may have adverse impacts on the renewable energy industry and our business.

The energy industry (including both fossil fuel and renewable energy sources) in the markets in which we operate and are looking to expand into benefits in general from various forms of governmental support. Renewable energy sources in Canada benefit from federal and provincial incentives, such as RPS programs, accelerated cost recovery deductions, the availability of off-take contracts through RFP and standard offer programs including the Hydro-Quebec call for tenders, the Ontario feed-in tariff and large renewable procurement programs (which operated until late 2018), and other commercially oriented incentives. Renewable energy sources in the United States have benefited from various federal and state governmental incentives, such as PTCs, ITCs, ITC cash grants, loan guarantees, RPS programs and accelerated tax depreciation. PTCs and ITCs for wind and solar energy on the federal level were extended in December 2015, subject to phase down for wind projects that begin construction by 2019 and solar projects that begin construction by 2021. In 2012, Japan introduced a feed-in-tariff program that offered fixed term, fixed price contracts of up to 20 years to renewable power projects. The Mexican congress has established a mandate that at least 35% of its energy consumption be supplied by clean sources by 2024.

While such developments extending various forms of governmental support provide general benefits to the wind and solar power industries in which we operate, to the extent that these governmental incentive programs may be amended or changed in the future, particularly if amendments or changes are unexpected or unfavorable and after we have developed long-term business plans and strategies based upon them, it could adversely affect the price of electricity sold to power purchasers generated by developed or planned renewable energy projects, decrease demand for renewable energy, or reduce the number of projects available to us for acquisition, any of which could have a material adverse effect on our ability to implement our growth strategy and, ultimately, our business prospects, financial condition and results of operations. For example, the U.S. Environmental Protection Agency (EPA) under the current U.S. administration has taken measures to repeal the Clean Power Plan, a regulation issued by the EPA under the prior U.S. administration aimed at reducing use of existing coal fired electricity generation facilities and increasing renewable generation in order to reduce greenhouse gas emissions. The current U.S. administration has also proposed and taken actions to implement other policies that have created regulatory uncertainty in the renewable energy sector, including the sectors in which we operate, and may lead to a reduction or removal of various renewable energy programs and initiatives designed to curtail climate change. Such a reduction or removal of incentives may diminish the markets in which we operate. As a part of comprehensive income tax reform in 2017, the corporate tax rate was reduced, and while such reductions have certain positive impacts on our financial results as applied to our own corporate taxes, a reduction in the corporate tax rate could also have adverse consequences, such as diminishing the capacity of potential investors in our projects to benefit from incentives and reduce the value of accelerated depreciation deductions. In addition, as a part of comprehensive tax reform in 2017, there were proposed amendments in Congress that would have adversely affected the value and ability to preserve benefits of PTCs and ITCs for wind

and solar energy on the federal level. While these amendments were in large part not adopted, no assurances can be given that there will not be future efforts to make amendments that could adversely affect the value and benefits of the PTC. The current U.S. administration has also made public statements and taken actions regarding overturning or modifying policies of or regulations enacted by the prior administration that placed limitations on coal and gas electric generation, mining and/or exploration. Efforts to overturn federal and state laws, regulations or policies that are supportive of renewable energy generation or that remove costs or other limitations on other types of generation that compete with renewable energy projects could materially and adversely affect our business prospects, financial condition or results of operations.

Wind power procurement in Canada is a provincial matter, with relatively irregular, infrequent and competitive procurement windows.

Each province in Canada has its own regulatory framework and renewable energy policy, with few material federal policies to drive the growth of renewable energy. Renewable energy developers must anticipate the future policy direction in each of the provinces, and secure viable projects before they can bid to procure a PPA through highly competitive PPA auctions. Most markets are relatively small. Renewable energy procurement may change dramatically as a result of changes in the provincial government or political climate. For example, the current administration in Ontario has made pledges to revamp the province's energy policies (such as the cap-and-trade program) and taken steps to cancel and wind down certain contracts for renewable power projects that are in the pre-construction phase. Further, the Ontario government enacted legislation in late 2018 to repeal the Green Energy Act which was a significant part of the framework for renewables development in the province since its enactment in 2009. These measures were taken in connection with specific pledges made by the incoming government during the election process.

We face competition primarily from infrastructure funds and IPPs focused on renewable energy generation.

We believe our primary competitors are infrastructure funds and some IPPs, including other wind companies, focused on renewable energy generation. We compete with these companies to acquire well-developed projects with projected stable cash flows that can be built in a cost-effective manner. We also compete with other renewable energy developers and operators for the limited pool of personnel with requisite industry knowledge and experience. Furthermore, in past years, there have been times of increased demand for wind turbines, solar panels and their related components, causing such suppliers to have difficulty meeting the demand. If these conditions return in the future, such suppliers may give priority to other market participants, including our competitors, who may have resources greater than ours.

We compete with other renewable energy companies (and power companies in general) for the lowest cost financing, which provides the highest returns for our projects. Once we have acquired a construction project and put it into operation, we may compete on price if we sell electricity into power markets at wholesale market prices. Depending on the regulatory framework and market dynamics of a region, we may also compete with other wind power companies and other renewable energy generators, when our projects bid on or negotiate for long-term power sale agreements or sell electricity or RECs into the spot-market.

We have no control over where our competitors may erect wind power projects. Our competitors may erect wind power projects adjacent to our wind projects that may cause upwind array losses to occur at our wind projects. Upwind array losses reflect the diminished wind resource available at a project resulting from interference with available wind caused by adjacent wind turbines. An adjacent wind power project that causes upwind array losses could have a material adverse effect on our revenues and results of operations.

Any change in power consumption levels could have a material adverse effect on our business prospects, financial condition and results of operations.

The amount of wind and solar power consumed by the electric utility industry is affected primarily by the overall demand for electricity, environmental and other governmental regulations and the price and availability of fuels such as nuclear, coal, natural gas and oil as well as other sources of renewable energy. Slow growth in overall demand for electricity or a long-term reduction in the demand for renewable energy could have a material adverse effect on our plan to grow our business and could, in turn, have a material adverse effect on our business prospects, financial condition and results of operations. A decline in prices for fossil fuels could cause demand for wind and/or solar power to decrease and adversely affect the demand for our products. For example, low natural gas prices have led, in some instances, to increased natural gas consumption by electricity-generating utilities in lieu of other power sources. To the extent renewable energy becomes less cost-competitive on an overall basis as a result of a lack of governmental incentives, cheaper alternatives or otherwise, demand for wind and solar power could decrease.

Some states and provinces with renewable energy targets have met their targets, or will meet them in the near future, which could cause demand for new wind and solar power capacity to decrease.

State RPS programs in the United States represent roughly half of all growth in non-hydro renewable electricity generation since 2000. Enactment of new RPS policies has waned but states have continued to hone existing policies. More than half of all RPS states have raised their overall RPS targets or carve-outs since initial RPS adoption. In

2018, California, Connecticut, Massachusetts, and New Jersey increased their RPS targets, while New York established an offshore wind procurement target. It has been estimated that eight states will reach their final RPS target year within the next few years, seven states in 2025 to 2026, and ten states have targets extending to 2030 or beyond. Many interim targets for states or utilities are well ahead of schedule. Many bills have also been proposed to repeal, reduce, or freeze RPS programs, though only two have been enacted.

While some Canadian provinces have increased their renewable energy targets - Saskatchewan 50% by 2030 and Alberta 30% by 2030 - others have reduced their demand for renewables, including Ontario, which has halted its Large Renewable Procurement Process. Additionally, in Canada, hydro power dominates when it comes to meeting renewable energy targets.

As a result of achieving targets, and if such U.S. states and Canadian provinces do not increase non-hydro renewable energy targets in the future, demand for additional wind and solar power generating capacity could decrease, which could have a material adverse effect on our business prospects, financial condition, and results of operations.

Since initially announcing Japan's 2030 Energy Targets in June 2015, Japan has made significant progress towards meeting the renewable energy target of 22% to 24%. While the target for nuclear power remains unmet, and the ability to ever reach it is questionable, solar power has already exceeded its goal, and if Japan were to limit future renewable energy growth to the current numbers, the push for continued growth could be limited which could have an adverse effect on our business prospects.

In spite of our Pattern Energy Group LP Purchase Rights and Pattern Development Purchase Rights, it is possible that Pattern Energy Group LP and/or Pattern Development, respectively, might be sold to third parties. In addition, each of our respective Project Purchase Rights, Pattern Energy Group LP Purchase Rights and Pattern Development Purchase Rights may expire, and the Second Amended and Restated Non-Competition Agreement with Pattern Energy Group LP and Pattern Development might terminate.

To the extent we do not exercise our Pattern Energy Group LP Purchase Rights and/or Pattern Development Purchase Rights (or upon their expiration), Pattern Energy Group LP and/or Pattern Development, respectively, or substantially all of its respective assets may be sold to third parties, including our competitors. Even if we are interested in exercising the Pattern Energy Group LP Purchase Rights and/or Pattern Development Purchase Rights, Pattern Energy Group LP and/or Pattern Development may seek a purchaser at an inopportune time for us, or we may not be able to reach an agreement on pricing or other terms. If we are unable to reach an agreement with Pattern Energy Group LP, Pattern Development, or its respective equity owners or if we decline to make an offer, Pattern Energy Group LP, Pattern Development, or its respective equity owners may seek alternative buyers, which could have a material adverse effect on our ability to implement our growth strategy and, ultimately, our business prospects, financial condition and results of operations.

In addition, our Project Purchase Right with Pattern Energy Group LP and our Pattern Energy Group LP Purchase Rights terminate upon the third occasion on which we decline to exercise our respective Project Purchase Right with respect to an operational or construction-ready project for which we did not make a final offer for such projects. Our Project Purchase Right with Pattern Development and our Pattern Development Purchase Rights terminate upon winding-up of Pattern Development. Following termination of our respective Project Purchase Right, and our Pattern Energy Group LP Purchase Rights and Pattern Development Purchase Rights, Pattern Energy Group LP or Pattern Development, as the case may be, will be under no obligation to offer any of its projects to us, which could have a material adverse effect on our ability to implement our growth strategy and ultimately on our business prospects, financial condition and results of operations.

Once our respective Purchase Rights with Pattern Energy Group LP and/or Pattern Development terminate, the Second Amended and Restated Non-Competition Agreement with respect to Pattern Energy Group LP or Pattern Development, as the case may be, will also terminate. In addition, we also have the right to terminate the Second Amended and Restated Non-Competition Agreement upon the earlier of wind-up of Pattern Development or the valid rejection by Pattern Development of three or more first rights project offers representing a cumulative net capacity of at least 600 MWs. Under the Second Amended and Restated Non-Competition Agreement, (among other things) Pattern Development is granted an exclusive right, with certain exceptions, to pursue all power generation, storage or transmission development projects in the U.S., Canada and Mexico that have not completed construction, but this does not restrict us from acquiring any company or business that is principally engaged in the business of owning and operating renewable energy facilities. In addition, at any time that Tokyo, Japan-based GPI is majority owned by either us, Pattern Energy Group LP or Pattern Development, such majority owner (which is currently Pattern Development) is granted exclusive development rights, with certain exceptions, over power generation, storage or transmission projects in Japan.

We may decide to further expand our acquisitions of non-wind power projects which may present unforeseen challenges.

With the consummation of the acquisition of the 35-mile 345 kV Western Interconnect transmission line as a part of the acquisition of the Broadview projects in April 2017, and the consummation of the acquisitions of the Kanagi Solar and Futtsu Solar projects (representing in aggregate 39 MW of owned-capacity in solar) in March 2018, we have expanded our operations into other types of projects besides wind power. In the future, we may further expand our acquisitions of non-wind power projects, including additional acquisitions of transmission, solar, or other types of power projects. There can be no assurance that we will be able to identify other attractive non-wind acquisition opportunities or acquire such projects at a price and on terms that are attractive or that, once acquired, such projects will operate profitably. Additionally, these acquisitions could expose us further to increased operating costs, unforeseen liabilities or risks, and regulatory and environmental concerns associated with expanding further into new sectors of the power industry, including requiring

a disproportionate amount of our management's attention and resources, which could have an adverse impact on our business. A failure to successfully integrate such acquisitions into our existing project portfolio as a result of unforeseen operational difficulties or otherwise, could have a material adverse effect on our business prospects, financial condition and results of operations.

We are subject to risks associated with litigation or administrative proceedings that could materially impact our operations, including proceedings in the future related to power projects we subsequently acquire.

We are subject to risks and costs, including potential negative publicity, associated with lawsuits, in particular, with respect to environmental claims, claims contesting the construction or operation of our projects, or shareholder suits. See Item 3 "Legal Proceedings." The result of, and costs associated with, defending any such lawsuit, regardless of the merits and eventual outcome, may be material and could have a material adverse effect on our operations. In the future, we may be involved in legal proceedings, disputes, administrative proceedings, claims and other litigation that arise in the ordinary course of business related to a power project that we subsequently acquire. For example, individuals and interest groups may sue to challenge the issuance of a permit for a power project or seek to enjoin construction or operation of a power project. We may also become subject to claims from individuals who live in the proximity of our power projects based on alleged negative health effects, such as acoustics caused by wind turbines or alleged contamination of groundwater, or claims of nuisance caused by a power project as a result of alleged unsightliness or potential decrease in property values. In addition, we have been and may subsequently become subject to legal proceedings or claims contesting the construction or operation of our power projects. In addition, indigenous communities in the United States and Canada, including Native Americans and First Nations, are becoming more involved in the development of wind power projects and have certain treaty rights that can negatively affect the viability of power projects.

Legal proceedings or disputes could delay our ability to complete construction of a power project in a timely manner, or at all, or materially increase the costs associated with commencing or continuing commercial operations at a power project. Settlement of claims and unfavorable outcomes or developments relating to these proceedings or disputes, such as judgments for monetary damages, injunctions or denial or revocation of permits, could have a material adverse effect on our ability to implement our growth strategy and, ultimately, our business prospects, financial condition and results of operations.

#### Risks Related to Our Financial Activities

Our substantial amount of indebtedness may adversely affect our ability to operate our business and impair our ability to pay dividends.

Our consolidated indebtedness not including financing costs as of December 31, 2018 was approximately \$2.3 billion. Despite our current consolidated debt levels, we or our subsidiaries may still incur substantially more debt or take other actions which would intensify the risks discussed below.

Our substantial indebtedness could have important consequences, including, for example:

failure to comply with the covenants in the agreements governing these obligations could result in an event of default under those agreements, or, under certain circumstances, cross-default to other debt instruments, which could be difficult to cure, or result in our bankruptcy;

in the event a project is unable to meet its debt service obligations through its own project cash flows, excess cash flow from other projects may be required to help service such obligations, thereby reducing funds available to pay dividends;

in the event a project is unable to meet its debt service obligations, it may result in a foreclosure on the project collateral and loss of the project;

our limited financial flexibility could reduce our ability to plan for and react to unexpected opportunities;

our substantial debt service obligations make us vulnerable to adverse changes in general economic, credit and capital markets, industry and competitive conditions and adverse changes in government regulation, and place us at a disadvantage compared with competitors with less debt; and

the need to repay or otherwise refinance maturing indebtedness which we may not be able to do on favorable terms or at all. For example, we have issued \$225 million of 4.0% convertible senior notes which mature on July 15, 2020 and we have issued \$350 million of 5.875% unsecured senior notes which mature on February 1, 2024.

Any of these consequences could have a material adverse effect on our business prospects, financial condition and results of operations. If we do not comply with our obligations under our debt instruments, we may be required to refinance all or part of our existing debt, borrow additional amounts or sell securities, which we may not be able to do on favorable terms or at all. In addition, increases in interest rates and changes in debt covenants may reduce the amounts that we can borrow, reduce our cash flows and increase the equity investment we may be required to make to complete any construction of our projects. These increases could cause some of our projects to become



economically unattractive. If we are unable to raise additional capital or generate sufficient operating cash flow to repay our indebtedness, we could be in default under our lending agreements and could be required to delay construction of our projects, forgo acquisition opportunities for additional projects, reduce overhead costs, reduce the scope of our projects or abandon or sell some or all of our projects, all of which could have a material adverse effect on our business prospects, financial condition and results of operations.

Our indebtedness may limit the amount of cash flow available to invest in the ongoing needs of our business which could have a material adverse effect on business prospects, financial condition and results of operations.

Subject to the limits contained in our revolving credit facility, we may incur substantial additional debt from time to time to finance working capital, capital expenditures, investments or acquisitions, or for other purposes. If we do so, the risks related to our level of indebtedness could intensify. Specifically, a high level of indebtedness could have important consequences due to the adverse ways in which it affects us, including the following:

- requiring us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund working capital, capital expenditures, dividend payments, development activity, acquisitions and other general corporate purposes;
- increasing our vulnerability to adverse general economic or industry conditions;
- limiting our flexibility in planning for, or reacting to, changes in our business or the industries in which we operate;
- making us more vulnerable to increases in interest rates, as borrowings under our revolving credit facility are at variable rates;
- limiting our ability to obtain additional financing in the future for working capital or other purposes; and
- placing us at a competitive disadvantage compared to our competitors that have less indebtedness.

Our ability to comply with restrictions and covenants under the terms of our indebtedness may be affected by events beyond our control, including prevailing economic, financial and industry conditions. As a result, there can be no assurance that we will be able to comply with these restrictions and covenants, and any such default under our debt agreements could have a material adverse effect on our business by, among other things, limiting our ability to take advantage of financing, merger and acquisition or other corporate opportunities.

Despite our current consolidated debt levels, we and our subsidiaries may be able to incur substantial additional debt in the future, subject to the restrictions contained in our revolving credit facility and our future debt instruments, some of which may be secured debt. Although our revolving credit facility contains restrictions on the incurrence of additional indebtedness, these restrictions are subject to a number of qualifications and exceptions and could be amended or waived, and the indebtedness incurred in compliance with these restrictions could be substantial and may also be secured. Accordingly, we may, in compliance with these restrictions, incur additional debt, secure existing or future debt, recapitalize our debt or take a number of other actions that are not limited by the terms of our existing indebtedness and that could have the effect of intensifying the risks discussed above.

We may not have the ability to raise the funds necessary to make payments in cash which may be required under the terms of the notes we have issued upon conversion settlement, repayment at maturity, or upon exercise of a repurchase obligation, and our debt agreements may limit our ability to pay cash upon conversion, repurchase or redemption of these notes.

Holders of the convertible notes we issued in July 2015 have the right to require us to repurchase all or a portion of their convertible notes upon the occurrence of a fundamental change at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest, if any. In addition, upon conversion of the convertible notes, unless we elect to deliver solely our Class A shares to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the convertible notes being converted. In addition, holders of the senior notes we issued in January 2017 may have the right to require us to repurchase all or a portion of their notes upon a change of control triggering event at a repurchase price equal to 101% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest, if any. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of notes surrendered therefor, pay cash at their maturity, or (with respect to convertible notes) pay cash upon conversion settlement. In addition, our ability to repurchase the notes or to pay cash upon conversions of the convertible notes may be limited by law, regulatory authority or agreements governing our indebtedness. Our failure to repurchase notes at a time when the repurchase is required by the indenture or (with respect to the convertible

notes) to pay any cash payable on future conversions of the convertible notes pursuant to the indenture would constitute a default under the indenture governing the issuance of the respective notes. A fundamental change, change of control triggering event, or a default under the indenture could also lead to a default under agreements governing our or our subsidiaries'

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indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the notes or make cash payments upon redemptions thereof.

The conditional conversion feature of the convertible notes we have issued, if triggered, may adversely affect our financial condition and operating results.

The convertible notes we issued in July 2015 have a conditional conversion feature. In the event the conditional conversion feature of the convertible notes is triggered, holders of convertible notes will be entitled to convert such notes at any time during specified periods at their option. If one or more holders elect to convert their convertible notes, unless we elect to satisfy our conversion obligation by delivering solely our Class A shares (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their convertible notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the convertible notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

Provisions in the indentures governing our outstanding notes may deter or prevent a business combination that may be favorable to investors.

If a fundamental change occurs prior to the maturity date of the convertible notes we issued in July 2015 or a change of control triggering event occurs prior to the maturity date of the senior notes we issued in January 2017, holders of such notes may have the right, at their option, to require us to repurchase all or a portion of their respective notes. In addition, if a make-whole fundamental change occurs prior to the maturity date of the convertible notes, we will in some cases be required to increase the conversion rate for a holder that elects to convert its convertible notes in connection with such make-whole fundamental change. Furthermore, our indentures prohibit us from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes our obligations thereunder. These and other provisions in our indentures could deter or prevent a third party from acquiring us even when the acquisition may be favorable to investors.

If our subsidiaries default on their obligations under their project-level debt, we may decide to make payments to lenders to prevent foreclosure on the collateral securing the project-level debt, which would, without such payments, cause us to lose certain of our projects.

Our subsidiaries incur various types of debt. Non-recourse debt is repayable solely from the applicable project's revenues and is secured by the project's physical assets, major contracts, cash accounts and, in many cases, our ownership interest in the project subsidiary. Limited recourse debt is debt where we have provided a limited guarantee, and recourse debt is debt where we have provided a full guarantee, which means if our subsidiaries default on these obligations, we will be liable directly to those lenders, although in the case of limited recourse debt only to the extent of our limited recourse obligations. To satisfy these obligations, we may be required to use amounts distributed by our other subsidiaries as well as other sources of available cash, reducing our cash available to execute our business plan and pay dividends to holders of our Class A shares. In addition, if our subsidiaries default on their obligations under non-recourse financing agreements, we may decide to make payments to prevent the lenders of these subsidiaries from foreclosing on the relevant collateral. Such a foreclosure would result in our losing our ownership interest in the subsidiary or in some or all of its assets. The loss of our ownership interest in one or more of our subsidiaries or some or all of their assets could have a material adverse effect on our business prospects, financial condition and results of operations and, in turn, on our cash available for distribution.

We are subject to indemnity and guarantee obligations.

We provide a variety of indemnities in the ordinary course of business to contractual counterparties and to our lenders and other financial partners. For example, the Hatchet Ridge indemnity indemnifies MetLife Capital, Limited Partnership, the owner participant, under the Hatchet Ridge Wind Lease Financing against certain tax losses. In addition, we have entered into tax equity partnership agreements in connection with seven of our projects which also provide for specific allocations in certain circumstances.

Our failure to pay any of these indemnities would enable the applicable project lenders to foreclose on the project collateral. The payments we may be obligated to make pursuant to these indemnities could have a material adverse effect on our business prospects, financial condition and results of operations and, in turn, on our cash available for

distribution.

Our variable rate indebtedness subjects us to interest rate risk, which could cause our debt service obligations to increase significantly.

Certain borrowings under our revolving credit facility and certain of our project level indebtedness are subject to variable rates of interest, primarily based on the International Continental Exchange London Interbank Offered Rate (LIBOR) or Canadian Dollar Offered Rate

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(CDOR). In addition, certain of our Japanese entities have entered into a credit facility with variable rates of interest based upon the Tokyo Interbank Offered Rate (TIBOR). Borrowings with variable rates of interest, expose us to interest rate risk. Such rates tend to fluctuate based on general economic conditions, general interest rates, Federal Reserve rates and the supply of and demand for credit in the relevant interbanking market. Increases in the interest rate generally, and particularly when coupled with any significant variable rate indebtedness, could materially adversely impact our interest expenses. If interest rates were to increase, our debt service obligations on the variable rate indebtedness would increase even though the amount borrowed remained the same, and our net income and cash flows, including cash available for servicing our indebtedness, will correspondingly decrease. A hypothetical increase or decrease in interest rates by 1% would have a \$2 million impact on interest expense for the year ended 2018. As of December 31, 2018, \$223 million was outstanding under our revolving credit facility and the Japan credit facility. To the extent we borrow under such facilities, we are not required to enter into interest rate swaps to hedge such indebtedness. If we decide not to enter into hedges on such indebtedness, our interest expense on such indebtedness will fluctuate based on LIBOR, CDOR, TIBOR or other variable interest rates. Consequently, we may have difficulties servicing such unhedged indebtedness and funding our other fixed costs, and our available cash flow for general corporate requirements may be materially adversely affected. In the future, we may enter into interest rate swaps that involve the exchange of floating for fixed rate interest payments in order to reduce interest rate volatility. However, we may not maintain interest rate swaps with respect to all of our variable rate indebtedness, and any swaps we enter into may not fully mitigate our interest rate risk.

In addition, in July 2017, the head of the United Kingdom Financial Conduct Authority announced the desire to phase out the use of LIBOR by the end of 2021. If LIBOR ceases to exist, we may need to renegotiate our revolving credit facility and certain of our project level indebtedness that bear interest based on LIBOR or to endeavor, in the case of our revolving credit facility, with the applicable agents thereunder, to amend such facilities to substitute LIBOR with an alternative rate of interest that gives due consideration to the then-prevailing market convention for syndicated loans in the U.S., subject to notice to all lenders and the absence of objection by the “required lenders.” Any change in accordance with the aforementioned procedures, or the conversion of loans to base rate or prime rate loans, could have an adverse impact on our cost of capital. Currently, there is no definitive information regarding the future utilization of LIBOR or of any particular replacement rate. As such, the potential effect of any such event on our business, financial condition, cash flows and results of operations cannot yet be determined.

Our hedging activities may not adequately manage our exposure to commodity and financial risk, which could result in significant losses or require us to use cash collateral to meet margin requirements, each of which could have a material adverse effect on our business prospects, financial condition, results of operations and liquidity, which could impair our ability to execute favorable financial hedges in the future.

Certain of the electricity we generate is sold on the open market at spot-market prices. In order to stabilize all or a portion of the revenue from such sales, we have entered, and may in the future enter, into financial swaps, day-ahead sales transaction or other hedging arrangements. We may acquire additional assets in the future with similar hedging agreements. In an effort to stabilize our revenue from electricity sales from these projects, we evaluate the electricity sale options for each of our projects, including the appropriateness of entering into a PPA, a physical sale, a financial swap, or combination of these arrangements. If we sell our electricity into an ISO market without a PPA, we may enter into a physical sale or financial swap to stabilize all or a portion of our estimated revenue stream. Under the term of our existing physical sales, we are obligated to physically deliver electricity to a common delivery point. Under these arrangements, we sell the electricity produced at our facility to the ISO at the project node and buy electricity at the common delivery point to meet the delivery obligations under the physical sale. The delivery obligations under the physical sale are for specified volumes in each hour for an overall quantity that we estimate we are highly likely to produce. Under the terms of our existing financial swaps, we are not obligated to physically deliver or purchase electricity. Instead, we receive payments for specified quantities of electricity based on a fixed price and are obligated to pay our counterparty the real time market price for the same quantities of electricity. These financial swaps cover quantities of electricity that we estimate we are highly likely to produce. Gains or losses under the physical sales and financial swaps are designed to be offset by decreases or increases in our revenues from real time market sales of electricity in liquid ISO markets. However, the actual amount of electricity we generate from operations may be materially different from our estimates for a variety of reasons, including variable wind conditions and wind turbine

availability. If a project does not generate the volume of electricity covered by the associated physical sale or financial swap contract, we could incur significant losses if electricity prices in the market rise substantially above the fixed price provided for in the physical sale or financial swap. If a project generates more electricity than is contracted in the physical sale or financial swap, the excess production will not be hedged and the related revenues will be exposed to market price fluctuations.

We would also incur financial losses as a result of adverse changes in the mark-to-market values of the financial swaps or if the counterparties to our hedging contracts fail to make payments when due. We could also experience a reduction in cash flow if we are required to post margin in the form of cash collateral to secure our delivery or payment obligations under these hedging agreements. We are not currently required to post cash collateral or issue letters of credit to backstop our obligations under our hedging arrangements after commercial operation has been achieved, but we may be required to do so in the future. If we were required to do so, our available cash or available borrowing capacity under the credit facilities under which these letters of credit are issued would be correspondingly reduced.

We enter into PPAs when we sell our electricity into markets other than deregulated ISO markets or where we believe it is otherwise advisable. Under a PPA, we contract to sell all or a fixed proportion of the electricity generated by one of our projects, sometimes bundled with RECs and capacity or other environmental attributes, to a power purchaser which is often a utility or large commercial entity. We do this to stabilize our revenues from that project. We are exposed to the risk that the power purchaser will fail to perform under a PPA, with the result that we will have to sell our electricity at the market price sometime in the future, which could be substantially lower than the price provided in the applicable PPA. In most instances, we also commit to sell minimum levels of generation on an annual basis to the power purchaser. If the project generates less than the committed minimum volumes, we may be required to buy the shortfall of electricity (or RECs and other environmental attributes) on the open market or make payments of liquidated damages or be in default under a PPA, which could result in its termination.

We sometimes seek to sell forward a portion of our RECs or other environmental attributes to fix the revenues from those attributes and hedge against future declines in prices of RECs or other environmental attributes. If our projects do not generate the amount of electricity required to earn the RECs or other environmental attributes sold forward or if for any reason the electricity we generate does not produce RECs or other environmental attributes for a particular state, we may be required to make up the shortfall of RECs or other environmental attributes through purchases on the open market or make payments of liquidated damages. Further, current market conditions may limit our ability to hedge sufficient volumes of our anticipated RECs or other environmental attributes, leaving us exposed to the risk of falling prices for RECs or other environmental attributes. Future prices for RECs or other environmental attributes are also subject to the risk that regulatory changes will adversely affect prices.

#### Risks Related to Ownership of our Class A Shares

We are a holding company with no operations of our own, and we depend on our power projects for cash to fund all of our operations and expenses, including to make dividend payments.

Our operations are conducted almost entirely through our power projects and our ability to generate cash to meet our debt service obligations or to pay dividends is dependent on the earnings and the receipt of funds from our project subsidiaries through distributions or intercompany loans. Our power projects' ability to generate adequate cash depends on a number of factors, including wind conditions, timely completion of any construction projects, the price of electricity, payments by key power purchasers, increased competition, foreign currency exchange rates, compliance with all applicable laws and regulations and other factors. See Item 1A "Risk Factors-Risks Related to the Business Segments in which We Operate." Our ability to declare and pay regular quarterly cash dividends is subject to our obtaining sufficient cash distributions from our project subsidiaries after the payment of operating costs, debt service and other expenses. See Item 5 "Market for Registrant's Common Equity and Related Stockholder Matters-Cash Dividend to Investors." We may lack sufficient available cash to pay dividends to holders of our Class A shares due to shortfalls attributable to a number of operational, commercial or other factors, including insufficient cash flow generation by our projects, as well as unknown liabilities, the cost associated with governmental regulation, increases in our operating or general and administrative expenses, principal and interest payments on our and our subsidiaries' outstanding debt, tax expenses, working capital requirements and anticipated cash needs.

Our cash available for distribution to holders of our Class A shares may be reduced as a result of restrictions on our subsidiaries' cash distributions to us under the terms of their indebtedness, or in the event certain specified events occurred under our tax equity arrangements that change the percentage of cash distributions to be made to the tax equity investors.

We intend to declare and pay regular quarterly cash dividends on all of our outstanding Class A shares. However, in any period, our ability to pay dividends to holders of our Class A shares depends on the performance of our subsidiaries and their ability to distribute cash to us, as well as all of the other factors discussed under Item 5 "Market for Registrant's Common Equity and Related Stockholder Matters-Cash Dividend to Investors." The ability of our subsidiaries to make distributions to us may be restricted by, among other things, the provisions of existing and future indebtedness and the provisions existing and future tax equity arrangements.

Restrictions on distributions to us by our subsidiaries under our revolving credit facility and the agreements governing their respective project-level debt could limit our ability to pay anticipated dividends to holders of our Class A shares. These agreements contain financial tests and covenants that our subsidiaries must satisfy prior to making distributions. We may agree to similar restrictions on distributions under future debt instruments we may enter into in connection

with future note or bond offerings. If any of our subsidiaries is unable to satisfy these restrictions or is otherwise in default under such agreements, it would be prohibited from making distributions to us that could, in turn, limit our ability to pay dividends to holders of our Class A shares. For example, factors such as low wind conditions and curtailment contributed to certain of our projects not satisfying financial tests required to permit distributions to us during certain quarters of 2018. The terms of our project indebtedness typically require commencement of commercial operations prior to our ability to receive cash distributions from a project. The terms of any such indebtedness also typically include cash management or similar provisions, pursuant to which revenues generated by projects subject to such indebtedness are immediately, or upon the occurrence of certain events, swept into an account for the benefit of the lenders under such debt agreements. As a result, project revenues typically only become



available to us after the funding of reserve accounts for, among other things, operations and maintenance expenses, debt service, taxes and insurance at the project level. In some instances, projects may be required to sweep cash to reserve funds intended to mitigate the results of pending litigation or other potentially adverse events.

In addition, the terms of operating agreements for our wind facilities with tax equity investors, which include Panhandle 1, Panhandle 2, Post Rock, Logan's Gap, Amazon Wind, Broadview and Stillwater, generally provide for specified allocations of distributions between the tax equity investors and ourselves which change at a specified point when the tax equity investor has realized a target after tax internal rate of return. In the event this change has not occurred by a targeted date, the tax equity investor begins to receive a greater allocation of distributions until the targeted rate of return has been achieved. In addition, the operating agreements also provide for earlier increases in the percentage of distributable cash to be allocated to the tax equity investors if the project fails to achieve certain defined minimum performance levels that are likely to cause the tax equity investors to not achieve the targeted after tax return by the targeted date and for increases under certain circumstances to match allocations of taxable income that are made to mitigate a negative capital account balance for such tax equity investors. As a result, in the event our share of distributable cash from these projects is changed as a result of one of these events, our distributions from such wind facilities may be less than expected that could, in turn, limit our ability to pay dividends to holders of our Class A shares.

Some of our wind facilities with tax equity investors have experienced lower than expected production and merchant power prices resulting in each of those projects failing to pass financial tests that measure cumulative cash distributions to the members. This resulted in 2018, and could additionally result in 2019, in a change of the cash percentage allocated to the tax equity members which will continue until the shortfall is remedied.

If our projects do not generate sufficient cash available for distribution, we may be required to reduce or eliminate our dividend, or fund dividends from working capital or other sources of liquidity, which may not be available, any of which could have a material adverse effect on the price of our Class A shares and on our ability to pay dividends at anticipated levels or at all.

Our ability to pay regular dividends on our Class A shares is subject to the discretion of our Board of Directors, and our cash dividend policy is subject to change.

Holders of our Class A shares have no contractual or other legal right to receive cash dividends from us on a quarterly or other basis and, while we currently intend to at least maintain our current dividend, our cash dividend policy is subject to all the risks inherent in our business and may be changed at any time.

The payment of future dividends on our Class A shares is at the discretion of our Board of Directors and depends on, among other things, our earnings, financial condition, capital requirements, level of indebtedness, statutory and contractual restrictions applying to the payment of dividends, consideration of factors such as our payout ratio, and other considerations that our Board of Directors deems relevant. During 2018, 2017 and 2016, our payout ratios which is a percentage of dividends paid (on an accrual basis) compared to our cash available for distribution for such periods were 99%, 100% and 90%, respectively. Our Board of Directors has the authority to establish cash reserves for the prudent conduct of our business, and the establishment of or increase in those reserves could result in a reduction in cash available for distribution to pay dividends on our Class A shares at anticipated levels. Accordingly, we may not be able to make, or may have to reduce or eliminate, the payment of dividends on our Class A shares, which could adversely affect the market price of our Class A shares.

If we fail to maintain proper and effective internal controls, our ability to produce accurate and timely financial statements could be impaired and investors' views of us could be harmed.

U.S. securities laws require, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. We must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act.

If we identify deficiencies in our internal control over financial reporting that are deemed to be a material weakness or results in multiple material weaknesses (even if such material weakness or material weaknesses do not result in a misstatement of our financial statements), it could adversely affect investor perceptions of our company.

Furthermore, if there was a failure in the effectiveness of our internal controls over financial reporting which results in misstatements in our financial statements, it could cause us to fail to meet our reporting obligations, could cause the

market price of our shares to decline, and we could be subject to sanctions or investigations by the stock exchanges on which we list, the SEC, the Canadian Securities Administrators or other regulatory authorities, and could adversely affect our ability to access the capital markets.

We are an SEC foreign issuer under Canadian securities laws and, therefore, are exempt from certain requirements of Canadian securities laws applicable to other Canadian reporting issuers.

Although we are a reporting issuer in Canada, we are an SEC foreign issuer under Canadian securities laws and are exempt from certain Canadian securities laws relating to continuous disclosure obligations and proxy solicitation if we comply with certain reporting requirements applicable in the United States, provided that the relevant documents filed with the SEC are filed in Canada and sent to our Class A stockholders in Canada to the extent and in the manner and within the time required by applicable U.S. requirements. In some cases, the disclosure obligations applicable in the United States are different or less onerous than the comparable disclosure requirements applicable in Canada for a Canadian reporting issuer that is not exempt from Canadian disclosure obligations. Therefore, there may be less or different publicly available information about us than would be available if we were a Canadian reporting issuer that is not exempt from such Canadian disclosure obligations.

Pattern Energy Group LP's and Pattern Development's general partners and their officers and directors have fiduciary or other obligations to act in the best interests of the owners of such entities, which could result in a conflict of interest with us and our stockholders.

We are party to the Multilateral Management Services Agreement, pursuant to which each of our executive officers (including our Chief Executive Officer) is a shared executive and devotes time to each of our company, Pattern Energy Group LP, and Pattern Development as needed to conduct the respective businesses. As a result, in some instances these shared executives have fiduciary and other duties to these Pattern Development Companies. Conflicts of interest may arise in the future between our company (including our stockholders), and Pattern Energy Group LP and Pattern Development (and their respective owners and affiliates). Our directors and executive officers owe fiduciary duties to the holders of our shares. However, Pattern Energy Group LP's and Pattern Development's general partners and their officers and directors also have a fiduciary duty to act in the best interest of Pattern Energy Group LP's and Pattern Development's limited partners, respectively, which interest may differ from or conflict with that of our company and our other stockholders.

The share ownership of PSP Investments may limit other stockholders' ability to influence corporate matters, and the interests of such stockholder may differ from or conflict with the interests of other stockholders.

PSP Investments holds approximately 9.5% of the voting power of our shares. As a result, PSP Investments has significant influence over all matters that require approval by our stockholders, including the election of directors, and their voting power may limit other stockholders' ability to influence this and other corporate matters. We also have joint venture arrangements with PSP Investments pursuant to which PSP Investments has acquired interests in four of our projects (which number may increase in the future). In addition, under such joint venture arrangements, we may add a person that has been designated by PSP Investments to our Board of Directors. PSP Investments is also an indirect investor in Pattern Development. Because of these various arrangements, the interests of PSP Investments may differ from or conflict with the interests of our other stockholders.

Certain of our executive officers will continue to have an economic interest in, and all of our executive officers will continue to provide services to, Pattern Energy Group LP and Pattern Development, which could result in conflicts of interest.

All of our executive officers provide services to Pattern Energy Group LP and Pattern Development pursuant to the terms of the Multilateral Management Services Agreement between our company, Pattern Energy Group LP, and Pattern Development, and, as a result, in some instances, have fiduciary or other obligations to such Pattern Development Companies. However, neither our Chief Financial Officer, nor our Chief Investment Officer receive compensation from, or have an economic interest in, either Pattern Energy Group LP or Pattern Development. Additionally, while none of our Chief Executive Officer, Executive Vice President, Business Development, and Executive Vice President, Chief Legal Officer, receive compensation from either Pattern Energy Group LP or Pattern Development, such officers have economic interests in such Pattern Development Companies and, accordingly, the benefit to such Pattern Development Companies from a transaction between such Pattern Development Company and our company will proportionately inure to their benefit as holders of economic interests in such Pattern Development Company. Each of Pattern Energy Group LP and Pattern Development are related parties under the applicable securities laws governing related party transactions and, as a result, any material transaction between our company and Pattern Energy Group LP or Pattern Development is subject to our corporate governance guidelines, which require

prior approval of any such material transaction by the conflicts committee, which is comprised solely of independent members of our Board of Directors. Those of our executive officers who have economic interests in Pattern Energy Group LP or Pattern Development may be conflicted when advising the conflicts committee or otherwise participating in the negotiation or approval of such transactions. These executive officers have significant project- and industry-specific expertise that could prove beneficial to the conflicts committee's decision-making process and the absence of such strategic guidance could have a material adverse effect on our company's ability to evaluate any such transaction and, in turn, on our business prospects, financial condition and results of operations.

Riverstone is under no obligation to offer us an opportunity to participate in any business opportunities that it may consider from time to time, including those in the energy industry, and, as a result, Riverstone's existing and future portfolio companies may compete with us for investment or business opportunities.

Conflicts of interest could arise in the future between us, on the one hand, and Riverstone, including its portfolio companies, on the other hand, concerning among other things, potential competitive business activities or business opportunities. Riverstone is a private equity firm in the business of making investments in entities primarily in the energy industry. As a result, Riverstone's existing and future portfolio companies (other than Pattern Energy Group LP and Pattern Development, which are subject to the Second Amended and Restated Non-Competition Agreement) may compete with us for investment or business opportunities. These conflicts of interest may not be resolved in our favor. Subject to the terms of the Second Amended and Restated Non-Competition Agreement with, and our respective Purchase Rights granted to us by, each of Pattern Energy Group LP and Pattern Development, we have expressly renounced any interest or expectancy in, or in being offered an opportunity to participate in, any business opportunity that may be from time to time presented to Riverstone or any of its officers, directors, agents, stockholders, members or partners or business opportunities that such parties participate in or desire to participate in, even if the opportunity is one that we might reasonably have pursued or had the ability or desire to pursue if granted the opportunity to do so, and no such person shall be liable to us for breach of any fiduciary or other duty, as a director or officer or controlling stockholder or otherwise, by reason of the fact that such person pursues or acquires any such business opportunity, directs any such business opportunity to another person or fails to present any such business opportunity, or information regarding any such business opportunity, to us unless, in the case of any such person who is our director or officer, any such business opportunity is expressly offered to such director or officer solely in his or her capacity as our director or officer. In view of Riverstone's policies and practices with respect to the apportionment of business opportunities presented to the investment funds managed or advised by it and their respective portfolio companies, a business opportunity presented to such fund or portfolio company may generally be pursued by such fund (or other Riverstone funds, as applicable) or directed to any such portfolio company.

As a result, Riverstone may become aware, from time to time, of certain business opportunities, such as acquisition opportunities, and may direct such opportunities to other businesses in which it has invested, in which case we may not become aware of or otherwise have the ability to pursue such opportunities. Further, such businesses may choose to compete with us for these opportunities. As a result, our renouncing our interest and expectancy in any business opportunity that may be from time to time presented to Riverstone could adversely impact our business or prospects if attractive business opportunities are procured by such parties for their own benefit rather than for ours.

Our actual or perceived failure to deal appropriately with conflicts of interest with the Pattern Development Companies could damage our reputation, increase our exposure to potential litigation and have a material adverse effect on our business prospects, financial condition and results of operations.

Our conflicts committee is required to review, and make recommendations to the full Board of Directors regarding, any transactions involving the acquisition of an asset or investment in an opportunity offered to us by Pattern Energy Group LP or Pattern Development to determine whether the offer is fair and reasonable (including any acquisitions by us of assets of Pattern Energy Group LP or Pattern Development pursuant to our respective Purchase Rights). In addition, we have established certain governance procedures between ourselves and Pattern Development to manage conflicts issues which may arise between ourselves and Pattern Development, which include having the chair of the conflicts committee, or his designee, attend regularly scheduled meetings of the Pattern Development board at which the development pipeline will be reviewed and anticipated funding needs will be discussed, and regular reporting of reasonably expected potential conflicts between us and Pattern Development to the conflicts committee.

However, our establishment of a conflicts committee and governance procedures for our Pattern Development investment may not prevent holders of our shares from filing derivative claims against us related to these conflicts of interest and related party transactions. Regardless of the merits of their claims, we may be required to expend significant management time and financial resources on the defense of such claims. Additionally, to the extent we fail to appropriately deal with any such conflicts, it could negatively impact our reputation and ability to raise additional funds and the willingness of counterparties to do business with us, all of which could have a material adverse effect on our business prospects, financial condition and results of operations.

Market interest and foreign exchange rates may have an effect on the value of our Class A shares.

One of the factors that influences the price of our Class A shares will be the effective dividend yield of our Class A shares (i.e., the yield as a percentage of the then market price of our Class A shares) relative to market interest rates. Further increases in market interest rates, which currently remain relatively low compared to historical rates, may lead prospective purchasers of our Class A shares to expect a higher dividend yield and, our inability to increase our dividend as a result of an increase in borrowing costs, insufficient cash available

for distribution or otherwise, could result in selling pressure on, and a decrease in the market price of, our Class A shares as investors seek alternative investments with higher yield. Additionally, we intend to pay a regular quarterly dividend in U.S. dollars and, as a result, to the extent the value of the U.S. dollar dividend decreases relative to Canadian dollars, the market price of our Class A shares in Canada could decrease.

The price of our Class A shares may fluctuate significantly, and stockholders could lose all or part of their investment. Volatility in the market price of our shares may prevent stockholders from being able to sell their Class A shares at or above the price stockholders paid for their shares. The market price of our Class A shares could fluctuate significantly for various reasons, including, in addition to the realization of any risks described under this "Risk Factors" section: the public's reaction to our press releases, our other public announcements and our filings with the Canadian securities regulators and the SEC;

- changes in, or failure to meet, earnings estimates or recommendations by research analysts who track our Class A shares or the stock of other companies in our industry;
- the failure of research analysts to cover our Class A shares;
- changes in accounting standards, policies, guidance, interpretations or principles;
- sales of Class A shares by us or members of our management team;
- the granting or exercise of employee stock options; and
- volume of trading in our Class A shares.

Volatility in the stock markets has had a significant impact on the market price of securities issued by many companies, including companies in our industry. The changes frequently appear to occur without regard to the operating performance of the affected companies. Hence, the price of our Class A shares could fluctuate based upon factors that have little or nothing to do with our company, and these fluctuations could materially reduce the share price of our Class A shares and cause stockholders to lose all or part of their investment. Further, in the past, market fluctuations and price declines in a company's stock have led to securities class action litigation. If such a suit were to arise, it could have a substantial cost and divert our resources regardless of the outcome.

We incur increased costs and demands upon management as a result of complying with the laws and regulations affecting public companies, which could harm our operating results.

As a public company, we incur significant legal, accounting, investor relations and other expenses, including costs associated with public company reporting requirements. We also have incurred and will incur costs associated with current corporate governance requirements, Section 404 and other provisions of the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as well as rules implemented by the SEC, the Canadian Securities Administrators and the stock exchanges on which our Class A shares are traded.

The expenses incurred by public companies for reporting and corporate governance purposes have increased dramatically over time. Greater expenditures may be necessary in the future with the advent of new laws and regulations pertaining to public companies. If we are not able to comply with these requirements in a timely manner, the market price of our Class A shares could decline and we could be subject to sanctions or investigations by the SEC, the Canadian Securities Administrators, the applicable stock exchanges or other regulatory authorities, which would require additional financial and management resources.

As a result of the FPA and FERC's regulations in respect of transfers of control, absent prior authorization by FERC, neither we cannot convey, and an investor in our company will generally not be permitted to obtain, a direct and/or indirect voting interest in 10% or more of our issued and outstanding voting securities, and a violation of this limitation could result in civil or criminal penalties under the FPA and possible further sanctions imposed by FERC under the FPA.

We are a holding company with U.S. operating subsidiaries that are "public utilities" (as defined in the FPA) and, therefore, subject to FERC's jurisdiction under the FPA. As a result, the FPA requires us to (i) obtain prior authorization from FERC to transfer an amount of our voting securities sufficient to convey direct or indirect control over any of our public utility subsidiaries or (ii) qualify for a blanket authorization granted under or an exemption from FERC's regulations in respect of transfers of control. Similar restrictions apply to purchasers of our voting securities who are a "holding company" under the PUHCA, in a holding company system that includes a transmitting utility or an electric utility, or an "electric holding company," regardless of whether our voting securities were purchased in our initial public offering, subsequent offerings by us, in open market transactions or otherwise. A purchaser of our

voting securities would be a “holding company” under the PUHCA and an electric holding company if the purchaser acquired direct or indirect control

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over 10% or more of our voting securities or if FERC otherwise determined that the purchaser could directly or indirectly exercise control over our management or policies (e.g., as a result of contractual board or approval rights). Under the PUHCA, a “public-utility company” is defined to include an “electric utility company,” which is any company that owns or operates facilities used for the generation, transmission or distribution of electric energy for sale, and which includes EWGs such as our U.S. operating subsidiaries. Accordingly, absent prior authorization by FERC or an increase to the applicable percentage ownership under a blanket authorization, for the purposes of sell-side transactions by us and buy-side transactions involving purchasers of our securities that are electric holding companies, no purchaser can acquire 10% or more of our issued and outstanding voting securities. A violation of these regulations by us, as seller, or an investor, as a purchaser of our securities, could subject the party in violation to civil or criminal penalties under the FPA, including civil penalties of up to approximately \$1.25 million per day per violation (which amount is adjusted annually to account for inflation) and other possible sanctions imposed by FERC under the FPA. As a result of the FPA and FERC’s regulations in respect of transfers of control, and consistent with the requirements for blanket authorizations granted thereunder or exemptions therefrom, absent prior authorization by FERC, no purchaser of our Class A common stock in the open market, or in subsequent offerings of our voting securities, will be permitted to purchase an amount of our securities that would cause such purchaser and its affiliate and associate companies to collectively hold 10% or more of our voting securities outstanding. Additionally, investors should manage their investment in us in a manner consistent with FERC’s regulations in respect of obtaining direct or indirect “control” of our company. Accordingly, absent prior authorization by FERC, investors in our Class A common stock are advised not to acquire a direct and/or indirect voting interest in 10% or more of our issued and outstanding voting securities, whether in connection with an offering by us in open market purchases or otherwise.

Provisions of our organizational documents and Delaware law might discourage, delay or prevent a change of control of our company or changes in our management and, as a result, depress the trading price of our Class A shares.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could discourage, delay or prevent a change in control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions:

- authorize the issuance of blank check preferred stock that our Board of Directors could issue to increase the number of outstanding shares and to discourage a takeover attempt;
- prohibit our stockholders from calling a special meeting of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- provide that the Board of Directors is expressly authorized to adopt, or to alter or repeal our bylaws; and
- establish advance notice requirements for nominations for election to our Board of Directors or for proposing matters that can be acted upon by stockholders at stockholder meetings.

These anti-takeover defenses could discourage, delay or prevent a transaction involving a change in control of our company. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors of their choosing and cause us to take corporate actions other than those desired.

Future sales of our shares in the public market could lower our Class A share price, and any additional capital raised by us through the sale of equity or convertible debt securities may dilute stockholders’ ownership in us and may adversely affect the market price of our Class A shares.

While we did not conduct a follow-on offering of our Class A shares in 2018, we had conducted such offerings in each of the years from 2014 to 2017. We also have an “at-the-market” equity distribution program pursuant to which approximately \$144 million in aggregate offering price of our Class A shares remains available to be sold thereunder. In addition, previously in July 2015, we issued \$225 million aggregate principal amount of 4.00% Convertible Senior Notes due 2020. If we sell, or if other significant stockholders sell, additional large numbers of our Class A shares, or if we issue a large number of shares of our Class A common stock in connection with future acquisitions, financings, or other circumstances, the market price of our Class A shares could decline significantly. Moreover, the perception in the public market that we or another significant stockholder might sell Class A shares could depress the market price of those shares.

We cannot predict the size of future issuances of our Class A shares, sales of our Class A shares, or sales of securities convertible into our Class A shares, or the effect, if any, that any such future issuances or sales will have on the

market price of our shares. Sales of substantial amounts of our shares (including sales pursuant to PSP Investments' registration rights and shares issued in connection with an acquisition) or securities convertible into our shares, or the perception that such sales could occur, may adversely affect prevailing market prices for our Class A shares.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Leased Facilities

Our corporate headquarters and executive offices are located in San Francisco, California and we additionally lease office space in Houston, Texas.

Our Projects

We hold interests in 24 wind and solar power projects. Our projects are located in the United States, Canada and Japan. We have a total operating portfolio of approximately 4 GW and owned capacity of approximately 3 GW. We typically finance our wind and solar projects through project entity specific debt secured by each project's assets with no recourse to us. For details on our operating wind and solar power projects, please see Item 1 "Business - Our Operating Business Segment" in this Form 10-K.

Item 3. Legal Proceedings.

We are subject, from time to time, to various routine legal proceedings and claims arising out of the normal course of business. These proceedings primarily involve claims from landowners related to calculation of land royalties and warranty claims we initiate against

equipment suppliers. The outcome of these legal proceedings and claims cannot be predicted with certainty. Nevertheless, we believe the outcome of any of such currently existing proceedings, even if determined adversely, would not have a material adverse effect on our financial condition or results of operations.

Item 4. Mine Safety Disclosures.

Not applicable.

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## PART II

### Item 5. Market for Registrant's Common Equity and Related Stockholder Matters.

Our Class A common stock is traded on the National Association of Securities Dealers Automated Quotations (Nasdaq) Global Select Market and on the Toronto Stock Exchange (TSX) under the trading symbol "PEGI." On February 22, 2019, the last reported sale price of our Class A common stock on the Nasdaq Global Select Market was \$21.13 per share and on the TSX was C\$27.77 per share.

On May 9, 2016, we entered into an Equity Distribution Agreement. Pursuant to the terms of the Equity Distribution Agreement, we may offer and sell shares of our Class A common stock, par value \$0.01 per share, from time to time through the Agents, as our sales agents for the offer and sale of the shares, up to an aggregate sales price of \$200 million. For the year ended December 31, 2018, we did not sell shares under the Equity Distribution Agreement.

#### Holders of Record

Because many of our shares of Class A common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders. As of February 22, 2019, there were approximately 14 stockholders of record of our Class A common stock.

#### Stock performance chart

This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the "Exchange Act," or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of Pattern Energy Group Inc. under the Securities Act of 1933, as amended, or the "Securities Act."

The following graph shows a comparison from December 31, 2013 through December 31, 2018 of the cumulative total stockholder return for our Class A common stock, the Nasdaq Composite Index (Nasdaq Composite) and the Philadelphia Utility Sector Index. The graph assumes that \$100 was invested at the market close on December 31, 2013 in the Class A common stock of Pattern Energy Group Inc., the Nasdaq Composite and the Philadelphia Utility Sector Index and also assumes reinvestments of dividends. The stock price performance of the following graph is not necessarily indicative of future stock price performance.

## Cash Dividend to Investors

We intend to pay regular quarterly dividends in U.S. dollars to holders of our Class A stock. The following table sets forth the dividends declared on shares of Class A common stock for the periods indicated. On February 22, 2019, we maintained our dividend at \$0.4220 per share of Class A common stock, or \$1.688 per share of Class A common stock on an annualized basis, commencing with respect to dividends paid on April 30, 2019 to holders of record on March 29, 2019.

Dividends Declared	
2019	
First Quarter	\$ 0.4220
2018	
Fourth Quarter	\$ 0.4220
Third Quarter	\$ 0.4220
Second Quarter	\$ 0.4220
First Quarter	\$ 0.4220
2017	
Fourth Quarter	\$ 0.4220
Third Quarter	\$ 0.4200
Second Quarter	\$ 0.4180
First Quarter	\$ 0.4138

We have established our quarterly dividend level based on a targeted cash available for distribution payout ratio, after considering the annual cash available for distribution that we expect our projects will be able to generate and with due regard to retaining a portion of the cash available for distribution to grow our business. We intend to grow our business primarily through the acquisition of operational and construction ready power projects, which, we believe, will facilitate the growth of our cash available for distribution and enable us to increase our dividend per share of Class A common stock over time. We may in the future raise capital and make investments in new power projects upon or near the commencement of construction of such projects and therefore prior to the expected commencement of operations of the new projects, which could result in a passage of time of twelve or more months before we begin to receive any cash flow contributions from such projects to our cash available for distribution. In connection with these investments, we may increase our dividends prior to the receipt of such cash flow contributions, which would likely cause our payout ratio to temporarily exceed our targeted run-rate payout ratio. However, the determination of the amount of cash dividends to be paid to holders of our Class A common stock will be made by our Board of Directors and will depend upon our financial condition, results of operations, cash flow, long-term prospects and any other matters that our Board of Directors deem relevant. See Item 1A “Risk Factors—Risks Related to Ownership of our Class A Shares—Our ability to pay regular dividends on our Class A shares is subject to the discretion of our Board of Directors, and our cash dividend policy is subject to change.”

We expect to pay a quarterly dividend on or about the 30th day following each fiscal quarter to holders of record of our Class A common stock on the last day of such quarter.

## Repurchase of Equity Securities

The table below provides information with respect to repurchases of our Class A common stock during the fourth quarter ended December 31, 2018. All shares were tendered to us in satisfaction of director or employee tax withholding obligations upon the vesting of restricted stock grants under our 2013 Equity Incentive Award Plan. We currently do not have a stock repurchase plan in place.

Period	Total Number of Shares Purchased	Average Price Paid Per Share
10/1/18-10/31/18	—	\$ —
11/1/18-11/30/18	—	\$ —
12/1/18-12/31/18	44,255	\$ 20.89
	44,255	\$ 20.89

For information on the equity compensation plans, see Item 12 "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters."



## Item 6. Selected Financial Data.

Set forth below is our summary historical consolidated financial data. This information may not be indicative of our future results of operations, financial position and cash flows and should be read in conjunction with the consolidated financial statements and notes thereto and Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” presented elsewhere in this Form 10-K. We believe that the assumptions underlying the preparation of our historical consolidated financial statements are reasonable.

	Year Ended December 31,				
	2018	2017	2016	2015	2014
	(in millions, except per share data)				
Statement of operations data:					
Total revenue	\$483	\$411	\$354	\$330	\$265
Operating income	2	10	5	37	58
Net income (loss)	(69 )	(82 )	(52 )	(56 )	(40 )
Net loss attributable to noncontrolling interests	(211 )	(64 )	(35 )	(23 )	(9 )
Net income (loss) attributable to Pattern Energy	\$142	\$(18 )	\$(17 )	\$(33 )	\$(31 )
Earnings (loss) per share data:					
Class A common stock: basic earnings (loss) per share	\$1.45	\$(0.20 )	\$(0.22 )	\$(0.46 )	\$(0.56 )
Class A common stock: diluted earnings (loss) per share	\$1.45	\$(0.20 )	\$(0.22 )	\$(0.46 )	\$(0.56 )
Class B common stock: basic and diluted loss per share	N/A	N/A	N/A	N/A	(0.49 )
Dividends:					
Dividends declared per Class A common share	\$1.69	\$1.67	\$1.58	\$1.43	\$1.30
Deemed dividends per Class B common share	N/A	N/A	N/A	N/A	\$1.41
Balance sheet data:					
Total assets	\$5,294	\$4,742	\$3,753	\$3,830	\$2,795
Corporate revolving credit facility	\$198	\$—	\$180	\$355	\$50
Long-term debt including current portion, net of financing costs	\$2,085	\$1,931	\$1,384	\$1,416	\$1,414
Total liabilities	\$3,135	\$2,394	\$1,874	\$2,054	\$1,631



## Item 7. 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 financial statements and related notes included elsewhere in this Form 10-K. The following discussion contains "forward-looking statements" that reflect our future plans, estimates, beliefs and expected performance. Our actual results may differ materially from those currently anticipated and expressed in such forward-looking statements as a result of a number of factors, including those we discuss under Item 1A "Risk Factors" elsewhere in this Form 10-K. We caution that assumptions, expectations, projections, intentions or beliefs about future events may, and often do, vary from actual results and the differences can be material. See "Cautionary Notice Regarding Forward-Looking Statements."

### Overview

We are a vertically integrated renewable energy company with a mission to transform the world to renewable energy. Our business consists of both (i) an operating business segment, which is comprised of a portfolio of renewable energy power projects and (ii) a development investment segment, which principally consists of our 29% ownership interest in Pattern Development, an upstream development platform. Prior to 2018, we had one reportable segment. The development investment segment was acquired in July 2017 and had insignificant operations. As such, comparative periods are not material or meaningful.

Through our operating business segment, we hold ownership interests in 24 renewable energy projects with a total operating portfolio capacity of approximately 4 GW in the United States, Canada and Japan. Projects in which we have an owned interest use proven, best-in-class technology and have contracted to sell all or a majority of their output pursuant to long-term, fixed-price PSAs. Approximately 92% of the electricity to be generated by our projects will be sold under our PSAs which have a weighted average remaining contract life of approximately 13 years as of December 31, 2018.

Our development investment segment engages in the upstream development of renewable power projects around the world currently spanning the United States, Canada, Mexico and Japan. Our current relationship with Pattern Development, which includes our Identified ROFO Projects, shared services and overlap of executive officers, provides alignment with our operating business segment and provides us access to a pipeline of development projects we have an ability to acquire to grow our business, or through our ownership interest, share in returns in the event a development project is sold to third parties. Pattern Development has more than a 10 GW pipeline of development projects.

We intend to maximize long-term value for our stockholders in an environmentally responsible manner and with respect for the communities in which we operate. Our business is built around three core values of creative energy and spirit, pride of ownership and a team-first attitude, which guide us in creating a safe, high-integrity work environment, applying rigorous analysis to all aspects of our business and proactively working with our stakeholders to address environmental and community concerns. Our financial objectives, which we believe will maximize long-term value for our stockholders, are to produce stable and sustainable cash available for distribution, selectively grow our project portfolio and our dividend per Class A share and maintain a strong balance sheet and flexible capital structure.

The discussion and analysis below has been organized as follows:

### 2018 Significant Activity

#### Factors that Significantly Affect our Business

#### Trends Affecting our Industry

#### Factors Affecting our Operational Results

#### Key Performance Metrics

#### Results of Operations

#### Liquidity and Capital Resources

#### Sources of Liquidity

#### Uses of Liquidity

#### Covenants, Distribution Conditions and Events of Default

#### Critical Accounting Policies and Estimates



### 2018 Significant Activity

In December 2018, we sold our 33.3% owned interest in the 270 MW K2 project in Ontario, Canada, for cash proceeds of \$158 million.

In November 2018, we acquired 35 MW of owned capacity as a Class B member in Stillwater, an 80 MW project in Stillwater County, Montana, for cash proceeds of \$24 million.

In September 2018, we committed to a plan to repower the 283 MW Gulf Wind project starting in 2019. We entered into a turbine purchase agreement for a maximum purchase price of \$151 million, depending upon the number of turbines purchased.

In August 2018, we sold our 74% owned interest in the 115 MW El Arrayán project in Chile, for a sale price of \$70 million.

In August 2018, we acquired a 51% owned interest in the 143 MW Mont Sainte-Marguerite project in Québec, for cash proceeds of \$39 million.

In 2018, we funded approximately \$115 million into Pattern Development which increased our ownership interest to 29%.

In March 2018, we acquired 206 MW of owned capacity in five Japanese projects which represents our entry into Japan, for approximately \$177 million of cash and post-closing contingent payments. The fair value of such contingent payments is approximately \$106 million.

### Factors that Significantly Affect our Business

Our results of operations in the near-term, as well as our ability to grow our business and revenue from electricity sales over time, could be impacted by a number of factors, including trends affecting our industry and factors affecting our operating results as discussed below:

#### Trends Affecting our Industry

The growth in the industry is largely attributable to renewable energy's increasing cost competitiveness with other power generation technologies, the advantages of wind and solar power over other renewable energy sources and growing public support for renewable energy driven by energy security and environmental concerns.

We believe that the key drivers for the long-term growth of renewable power include:

- consistent multi-year trend of total global investment in new renewable electricity generation sources being twice that of investment in conventional fossil generation;
- efficiency and capital cost improvements in wind, solar and other renewable energy technologies, enabling wind, solar and other forms of renewable energy to compete successfully in more markets;
- improvements in wind, solar and other renewable energy technologies which, when paired with cheap natural gas, continues to drive down power prices;
- significant ongoing demand created by corporate and industrial buyers directly procuring renewable electricity on a large scale;
- increasing deployment of storage technologies resulting in enhanced reliability and provision of grid services by utility scale wind and solar providers;
- increased demand for renewable energy resulting from regulatory or policy initiatives. Notable initiatives include country, state or provincial RPS programs;
- governmental incentives for renewable energy including feed-in-tariff regimes, carbon credits and the U.S. federal based PTCs or ITCs, which are subject to phase down for wind projects that begin construction by 2019 and solar projects that begin construction by 2021, that improve the cost competitiveness of renewable energy compared to traditional sources;
- environmental and social factors supporting increasing levels of wind, solar and other renewable technologies in the generation mix;
- regulatory barriers, market pressure and public acceptance challenges increasing the time, cost and difficulty of permitting new fossil fuel-fired facilities, notably coal, and nuclear facilities;
- decommissioning of aging coal-fired and nuclear facilities is expected to leave a gap in electricity supply to be filled by cost-effective renewable and natural gas generation;
- policy initiatives at both the state and federal levels to include externalities, such as the cost of carbon pollution, methane leakage and water usage in conventional fossil fuel-fired electricity generation, over time will increase costs

of conventional generation; and

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ongoing shift within the portfolios of U.S based investor-owned utilities toward lower carbon emitting sources of power.

In general, we continue to believe that there will be additional acquisition and asset recycling opportunities in the short-term and that the longer-term growth trend will continue.

#### Our Outlook

Our near-term growth strategy will continue to focus on wind and solar power projects. We expect that most of our short-term growth will come from opportunities to acquire or invest in the Identified ROFO Projects, but we will evaluate unaffiliated third-party asset acquisition opportunities as well. In addition, we will continue to evaluate further investment in Pattern Development as discussed below.

#### Factors Affecting our Operational Results

The primary factors that will affect our financial results are (i) electricity sales of our operating projects, (ii) impact of derivative instruments, (iii) acquisitions, divestitures and investments, (iv) project operations (v) debt financing, (vi) congestion in the Texas market, and (vii) general and administrative costs.

#### Electricity Sales of our Operating Projects

Our projects are generally unaffected by short-term trends given that 92% of the electricity to be generated by our projects is to be sold under our fixed-price PPAs. Our PPA portfolio provides long-term revenue security with an average remaining contract life of 13 years as of December 31, 2018. Revenue from project sites is determined by the contracted price of electricity and any environmental attributes we sell under our PPAs multiplied by the amount of metered electricity that we produce. Actual energy production will vary based on the prevailing environmental conditions and technical constraints that exist at each facility.

We base our estimates of each project's capacity to generate electricity on the findings of our internal and external experts' long-term meteorological studies, which include data collected from measurement equipment on the property and relevant reference wind and solar data from other sources, as well as expected performance of our equipment over time. The result of our meteorological analysis is a probabilistic assessment of a project's likely annual output. A P50 level of annual production indicates we believe a 50% probability exists that the electricity generated from a project will exceed a specified aggregate amount of electricity generation during a given year. The P50 production level provides the foundation for our base case expectation; however, in reality, there can be significant variability between annual production and the P50. In addition to annual P50 variability, we also expect seasonal variability to occur. Variability increases as the period of review shortens, so it is likely that we will experience more variability in daily, monthly, or quarterly production than we do for annual production. Therefore, our periodic cash flow and payout ratios will also reflect more variability during periods shorter than a year. As a result, we use our available liquidity as well as certain project level cash reserves to help manage short-term production and cash flow variability.

Our electricity generation is also dependent on the equipment that we use. We have selected high-quality equipment with a goal of having a concentration of equipment from top-tier manufacturers. With a combination of scale and developing in-house operating capability, we have structured our projects such that we may expect high availability and long-term production from the equipment. Given our manufacturers' global fleet sizes and strong balance sheets, the warranties that we secure for our turbines and our operating approach, we are confident in our expectations for reliable long-term turbine operation.

#### Impact of Derivative Instruments

Where possible, we employ a variety of derivative instruments to manage our exposure to fluctuations in electricity prices, interest rates and foreign currency exchange rates. We have experienced in the past, and expect to record in the future, substantial volatility in the components of our net income that relate to the mark-to-market adjustments on our undesignated cash flow hedges.

We believe that mark-to-market adjustments that we make to the fair value of our derivative assets and liabilities are generally mirrored by changes in the economic value of the related operating or financial assets, such as our wind projects and our project loans, for which the application of accounting principles generally accepted in the United States (U.S. GAAP) does not permit us to record such economic gains and losses. For this reason, and because one of our principal financial objectives is to produce stable and sustainable cash available for distribution, we believe that the economic value to our shareholders reflected in these derivative instruments, outweighs the risk of volatility in net income that we expect to report. Accordingly, we believe it is useful to investors to consider supplemental

performance metrics that we report, such as adjusted earnings before interest, taxes, depreciation, amortization and accretion (Adjusted EBITDA) and cash available for distribution, where we have subtracted and added back, as applicable, the unrealized gains and losses arising from mark-to-market adjustments on our derivative instruments.

## Acquisitions, Divestitures and Investments

Our ability to grow our cash available for distribution is substantially dependent on our ability to make acquisitions. During 2018, our acquisitions of entities in Japan, MSM and Stillwater increased our operating capacity 314 MW, or 12%, including 39 MW of solar renewable energy projects. From time to time, we may also consider the disposal of a project, particularly if we believe we can utilize funds realized from such a disposal in a more productive manner or generate a higher return on investment. During 2018, our disposals of El Arrayán and our minority interest in K2 decreased our operating capacity 171 MW, or 6%.

As of December 31, 2018, we have funded approximately \$183 million in aggregate and hold an approximate 29% ownership interest in Pattern Development. Our additional investments during 2018 in Pattern Development facilitates additional long-term capital for Pattern Development to support the growth in the development pipeline thereby providing us with additional potential acquisition opportunities in the future, or the potential to share in returns for sales to third parties, through our 29% ownership interest in Pattern Development. Strategic benefits include a strengthened link to Pattern Development's development pipeline and increased return on investment expectations commensurate with increased development risk. To the extent we invest in Pattern Development, we will be initially exposed to capital requirements and development risk prior to having certainty that a project can move forward. As projects are successfully completed, we anticipate that our return on our capital investment will increase. However, there are risks in project development including, but not limited to, permitting challenges, failure to secure PPAs, failure to procure the requisite financing, equipment or interconnection, or an inability to satisfy the conditions to effectiveness of project agreements such as PPAs. For the year ended December 31, 2018, our loss in Pattern Development is as follows (in millions):

	For the Year Ended December 31, 2018
Earnings (Loss) in Pattern Development	
Pattern Development net loss	\$ (121 )
Our ownership portion of the net loss	(35 )
Intra-entity gain elimination	(5 )
Loss in earnings of Pattern Development	\$ (40 )

Our aggregate owned capacity is approximately 3 GW. We expect that the acquisition of operational power projects from the Pattern Development Companies and other third parties will continue to contribute to our operational results. In 2019, we added 400MW of new wind projects as Identified ROFO Projects, consisting of three projects in New Mexico with contracted sales to purchasers in the California market. Below is a summary of the Identified ROFO Projects that we may acquire from Pattern Energy Group LP and Pattern Development in connection with our Project Purchase Rights:

Identified ROFO Projects	Status	Location	Construction Start <sup>(1)</sup>	Commercial Operations <sup>(2)</sup>	Contract Type	Capacity (MW)	
						Rated <sup>(3)</sup>	Pattern Development Companies Owned <sup>(4)</sup>
Pattern Energy Group LP							
Belle River	Operational	Ontario	2016	2017	PPA	100	43
North Kent	Operational	Ontario	2017	2018	PPA	100	35
Henvey Inlet	In construction	Ontario	2017	2019	PPA	300	150
Pattern Development							
Crazy Mountain	Late stage development	Montana	2019	2019	PPA	80	68
Grady	In construction	New Mexico	2018	2019	PPA	220	188
Sumita		Japan	2020	2022	PPA	100	55

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	Late stage development							
Ishikari	Late stage development	Japan	2020	2022	PPA	112	112	
Corona Wind Project(s)	Late stage development	New Mexico	2020	2021	PPA	400	340	
						1,412	991	

(1) Represents year of actual or anticipated commencement of construction.

(2) Represents year of actual or anticipated commencement of commercial operations.

(3) Rated capacity represents the maximum electricity generating capacity of a project in MW. As a result of weather and other conditions, a project will not operate at its rated capacity at all times and the amount of electricity generated may be less than its rated capacity. The amount of electricity generated may vary based on a variety of factors.



Pattern Development Companies-Owned capacity represents the maximum, or rated, electricity generating capacity<sup>(4)</sup> of the project in MW multiplied by Pattern Energy Group LP's or Pattern Development's percentage ownership interest in the distributable cash flow of the project.

#### Project Operations

##### Turbine Availability

Our ability to generate electricity in an efficient and cost-effective manner is impacted by our ability to maintain the operating capacity of our projects. We use reliable and proven wind turbines, solar panels and other equipment for each of our projects. For the years ended December 31, 2018 and 2017, our turbine availability across our projects was approximately 97% and 97%, respectively, which is in line with industry standards and our original investment projections that were reviewed by independent engineering firms.

##### Operations and maintenance - self-perform

At certain projects where we self-perform maintenance and service activities, we maintain long-term turbine manufacturer service arrangements pursuant to which the turbine manufacturer continues to provide routine and corrective maintenance service, but we are responsible for a portion of the maintenance and repairs, including on major component parts. Over time, we expect to increase our operational responsibility, including self-performing maintenance and service work with our own technicians instead of utilizing service providers, which we believe will continue to help us reduce our costs. As service arrangements expire at the facilities where we utilize external third-parties, we intend to determine on a case-by-case basis the most appropriate approach of either entering into new service arrangements with the same or a different external third-party, or transitioning to self-performance of maintenance and service activities. As of December 31, 2018, we had a total of five projects that had completed the transition to self-perform. In 2018, we realized savings of approximately \$5 million under the self-perform model when compared to the contracted period in 2017.

##### Debt Financing

We intend to use a portion of our revenue from electricity sales to cover our interest expense and principal payments on borrowings under financing facilities. Our interest expense primarily reflects (i) periodic interest on the term loan financing arrangements, including the effects of interest rate swaps, at our other operating projects, (ii) interest on our convertible senior notes issued in 2015 and the unsecured senior notes issued in 2017, (iii) interest on short-term loan facilities, including any borrowings under our revolving credit facilities and (iv) imputed interest on the lease financing of our Hatchet Ridge project.

We believe that our projects have been financed on average with stronger coverage ratios than is typical in our industry. A debt service coverage ratio is generally defined as a project's operating cash flows divided by scheduled payments of principal and interest for a period. While we believe that the commercial bank market generally seeks a minimum average annual debt service coverage ratio for wind power projects, based on P50 output levels, of between 1.4 and 1.5 to 1.0, our projects, on a portfolio basis, have an expected average annual debt service coverage ratio over the remaining scheduled loan amortization periods of approximately 1.9 to 1.0.

##### Congestion in the Texas market

In addition to the risks we face in broad commodity markets, many of our projects, especially in ERCOT, also face project-specific risks related to transmission system limitations which can result in local or nodal prices that are lower than the broader market prices (congestion). In the case of adverse congestion, our revenues are negatively impacted, and our financial hedges do not protect us from these impacts, since under those contracts, this risk is fully allocated to our projects and not to the counterparty (e.g. we sell our power at the lower local price, but still have to buy power for the counterparty at the higher broad market or hub price). In the past, these impacts have been material to our economic results, and we expect that congestion will continue to be a material risk, in the future.

##### General and Administrative Cost

In addition to reducing our project expense through restructuring service agreements and a transition to self-perform, we are also focused on measures to reduce our general and administrative expenses, including our net related party charges to and from Pattern Development Companies. We are investing in a number of efficiency initiatives (principally automation and other process improvements) in accounting, procurement, human resources, loan administration, and asset management, among others, that we believe will also result in a lower administrative cost structure.

Key performance metrics

We regularly review a number of financial measurements and operating metrics to evaluate our operating performance, engage in financial planning, measure our growth and make strategic acquisition and investment decisions. In addition to traditional U.S. GAAP performance

measures, such as total revenue, cost of revenue, and net loss, our management uses supplemental performance operating metrics such as MWh sold, average realized electricity price, and non-GAAP measures, including Adjusted EBITDA and cash available for distribution.

#### Adjusted EBITDA

We define Adjusted EBITDA as net income (loss) before net interest expense, income taxes, and depreciation, amortization and accretion, including our proportionate share of net income (loss) before interest expense, income taxes, and depreciation, amortization and accretion of unconsolidated investments. Adjusted EBITDA also excludes the effect of certain mark-to-market adjustments, gain or loss related to acquisitions, divestitures, or refinancing transactions, adjustments from unconsolidated investments, and infrequent items not related to normal or ongoing operations. In calculating Adjusted EBITDA, we exclude mark-to-market adjustments to the value of our derivatives because we believe that it is useful for investors to understand, as a supplement to net income (loss) and other traditional measures of operating results, the results of our operations without regard to periodic, and sometimes material, fluctuations in the market value of such assets or liabilities.

Management believes Adjusted EBITDA assists investors and analysts in comparing our operating performance across reporting periods on a consistent basis by excluding items that our management believes are not indicative of our core operating performance and to compare our business to that of our peers. Using Adjusted EBITDA, which is a non-U.S. GAAP measure, enables our management to evaluate our operating performance, our ability to meet debt service and other capital obligations and to measure the effectiveness of our overall capital structure. The most directly comparable U.S. GAAP measure to Adjusted EBITDA is net income (loss).

However, Adjusted EBITDA has limitations as an analytical tool. Some of these limitations include:

#### Adjusted EBITDA

- does not reflect our cash expenditures or future requirements for capital expenditures or contractual commitments;
- does not reflect changes in, or cash requirements for, our working capital needs;
- does not reflect the significant interest expense, or the cash requirements necessary to service interest or principal payments, on our debt, or our proportional interest in the interest expense of our unconsolidated investments or the cash requirements necessary to service interest or principal payments on the debt borne by our unconsolidated investments;
- does not reflect our income taxes or the cash requirement to pay our taxes; or our proportional interest in income taxes of our unconsolidated investments or the cash requirements necessary to pay the taxes of our unconsolidated investments;
- does not reflect depreciation, amortization and accretion which are non-cash charges; or our proportional interest in depreciation, amortization and accretion of our unconsolidated investments. The assets being depreciated, amortized and accreted will often have to be replaced in the future, and Adjusted EBITDA does not reflect any cash requirements for such replacements; and
- does not reflect the effect of certain mark-to-market adjustments and non-recurring items or our proportional interest in the mark-to-market adjustments at our unconsolidated investments.

We do not have control, nor have any legal claim to the portion of the unconsolidated investees' revenues and expenses allocable to our joint venture partners. As we do not control, but do exercise significant influence, we account for the unconsolidated investments in accordance with the equity method of accounting. Net earnings from these investments are reflected within our consolidated statements of operations in "Earnings in unconsolidated investments, net." Adjustments related to our proportionate share from unconsolidated investments include only our proportionate amounts of interest expense, income taxes, depreciation, amortization and accretion, and mark-to-market adjustments included in "Earnings in unconsolidated investments, net;" and

• Other companies in our industry may calculate Adjusted EBITDA differently than we do, limiting its usefulness as a comparative measure.

Because of these limitations, Adjusted EBITDA should not be considered in isolation or as a substitute for performance measures calculated in accordance with U.S. GAAP. You should not consider Adjusted EBITDA as an alternative to net income (loss), as determined in accordance with U.S. GAAP.

#### Cash Available for Distribution

We define cash available for distribution as Adjusted EBITDA further adjusted to (i) subtract unconsolidated investment earnings, (ii) subtract interest expense, less non-cash items, (iii) subtract distributions to noncontrolling interests, (iv) subtract principal payments

paid from operating cash flows, (v) subtract income taxes, (vi) subtract non-expansionary capital expenditures, (vii) add distributions from unconsolidated investments, (viii) add net release of restricted cash, (ix) add stock-based compensation, (x) add pay-go contributions, and (xi) add or subtract other items as necessary to present the cash flows we deem representative of our core business operations.

Management believes that cash available for distribution is indicative of our core operating performance. As a result, as of December 31, 2018, we have changed our key metric, cash available for distribution, from a liquidity metric to a performance metric. For the periods presented, we reconcile Adjusted EBITDA and cash available for distribution to net income (loss), the most directly comparable GAAP financial measure. The change to a performance metric did not change the amount of cash available for distribution previously reported. Cash available for distribution is a supplemental performance measure used by management and external users of our financial statements to measure our performance across reporting periods on a consistent basis by excluding items that our management believes are not indicative of our core operating performance and to compare our business to that of our peers. Cash available for distribution serves as an important measure of our performance and enables our management to evaluate our ability to meet dividend expectations, the amount of internal capital available for new investment opportunities that can enhance our ability to grow our dividends over time, and the suitability of our corporate debt levels.

However, cash available for distribution has limitations as an analytical tool. Some of the limitations are:

• Cash available for distribution:

excludes depreciation, amortization and accretion;

does not capture the level of capital expenditures necessary to maintain the operating performance of our projects or complete the construction of acquired projects;

is not reduced for principal payments on our project indebtedness except to the extent they are paid from operating cash flows during a period; and

excludes the effect of certain other cash flow items, all of which could have a material effect on our financial condition and results from operations.

• Other companies in our industry may calculate cash available for distribution differently than we do, limiting its usefulness as a comparative measure.

Because of these limitations, cash available for distribution should not be considered in isolation or as a substitute for performance measures calculated in accordance with U.S. GAAP. You should not consider cash available for distribution as an alternative to net income (loss), determined in accordance with U.S. GAAP, nor does it represent funds actually available to fund our current dividend commitments.

The following tables present a reconciliation of Adjusted EBITDA and cash available for distribution to net income (loss), the most directly comparable GAAP financial measure, for the periods indicated (unaudited and in millions):

	Year ended December 31,		
	2018	2017	2016
Net loss	\$(69 )	\$(82 )	\$(52 )
Plus:			
Interest expense, net of interest income	107	101	76
Income tax provision	32	12	9
Depreciation, amortization and accretion	280	215	184
EBITDA	\$350	\$246	\$217
Unrealized (gain) loss on derivatives	5	18	23
Early extinguishment of debt	6	9	—
Impairment expense	7	—	—
(Gain) loss on asset sales	(71 )	—	—
Other	2	6	3
Plus, proportionate share from unconsolidated investments:			
Interest expense, net of interest income	38	39	32
Income tax provision (benefit)	1	—	—
Depreciation, amortization and accretion	35	35	28
(Gain) loss on derivatives	(1 )	(9 )	1
Adjusted EBITDA	\$372	\$344	\$304
Plus:			
Distributions from unconsolidated investments	58	67	57
Network upgrade reimbursement	1	9	5
Release of restricted cash	4	7	1
Stock-based compensation	5	5	5
Pay-go contribution	4	—	—
Other	1	(5 )	(8 )
Less:			
Unconsolidated investment earnings and proportionate shares for EBITDA	(85 )	(118 )	(98 )
Interest expense, less non-cash items and interest income	(99 )	(91 )	(66 )
Income taxes	(4 )	—	—
Non-expansory capital expenditures	—	(1 )	(1 )
Distributions to noncontrolling interests	(38 )	(20 )	(18 )
Principal payments paid from operating cash flows	(52 )	(51 )	(48 )
Cash available for distribution	\$167	\$146	\$133

Adjusted EBITDA for the year ended December 31, 2018 was \$372 million compared to \$344 million in the prior year, an increase of \$28 million, or approximately 8%. The increase in Adjusted EBITDA during 2018 as compared to 2017 was primarily due to an \$83 million increase in revenue (excluding unrealized loss on energy derivative and amortization of PPAs) primarily attributable to increases in electricity sales as a result of our 2018 and 2017 acquisitions and an insurance settlement for Santa Isabel partially offset by a volume decrease due to the disposition of El Arrayán.

The increase was further offset by:

- \$33 million decrease in our proportionate share of Adjusted EBITDA from unconsolidated investments;
- \$13 million increase in project expenses; and
- \$7 million increase in transmission costs.

Adjusted EBITDA for the year ended December 31, 2017 was \$344 million compared to \$304 million in the prior year, an increase of \$40 million, or approximately 13%. The increase in Adjusted EBITDA during 2017 as compared to 2016 was primarily due to:

- a \$49 million increase in revenues (excluding unrealized loss on energy derivative and amortization of PPAs) primarily attributable to projects which were acquired or commenced commercial operations in 2017; and
- a \$21 million increase in our proportionate share of Adjusted EBITDA from unconsolidated investments.

These increases were partially offset by:

- a \$21 million increase in project expense and transmission cost;
- a \$7 million increase in operating expenses; and
- a \$1 million increase in transaction cost.

Cash available for distribution was approximately \$167 million for the year ended December 31, 2018 as compared to approximately \$146 million in the prior year. This approximate \$21 million increase in cash available for distribution was primarily due to an \$83 million increase in revenues (excluding unrealized loss on energy derivative and amortization of PPAs) driven by projects acquired during 2018 and 2017 and \$4 million from pay-go contributions.

These increases were partially offset by:

- an \$18 million increase in distributions to noncontrolling interests;
- a \$13 million increase in project expenses;
- a \$9 million decrease in total distributions from unconsolidated investments;
- a \$9 million increase in interest expense (excluding amortization of financing costs and debt discount/premium) primarily due to additional debt associated with our acquisitions;
- an \$8 million decrease in network upgrade reimbursement;
- a \$7 million increase in transmission costs; and
- a \$3 million decrease in release of restricted cash.

Cash available for distribution was approximately \$146 million for the year ended December 31, 2017 as compared to approximately \$133 million in the prior year. This approximate \$13 million increase in cash available for distribution was due to:

- a \$49 million increase in revenues (excluding unrealized loss on energy derivative and amortization of PPAs) driven by projects acquired during 2017;
- a \$11 million increase in total distribution from unconsolidated investments;
- a \$7 million increase in release of restricted cash to fund project costs; and
- a \$5 million increase in network upgrade reimbursement primarily related to Broadview.

These increases were partially offset by:

- a \$23 million increase in interest expense (excluding amortization of financing costs and debt discount/premium) primarily due to the issuance of the unsecured senior notes in January 2017 and debt associated with our acquisitions;
- a \$21 million increase in transmission cost and project expense;
- a \$7 million increase in operating expenses;
- a \$4 million increase in principal payments of project-level debt; and
- a \$2 million increase in distributions to noncontrolling interests.

#### MWh Sold and Average Realized Electricity Price

The number of consolidated MWh, unconsolidated investments proportional MWh and proportional MWh sold, as well as consolidated average realized price per MWh and the proportional average realized price per MWh sold, are the operating metrics that help explain trends in our revenue, earnings from our unconsolidated investments and net income (loss) attributable to us.

Consolidated MWh sold for any period presented, represents 100% of MWh sold by wholly-owned and partially-owned subsidiaries in which we have a controlling interest and are consolidated in our consolidated financial statements;

Noncontrolling interest MWh represents that portion of partially-owned subsidiaries not attributable to us;

Controlling interest in consolidated MWh is the difference between the consolidated MWh sold and the noncontrolling interest MWh;

Unconsolidated investments proportional MWh is our proportion in MWh sold from our equity method investments;

Proportional MWh sold for any period presented, represents the sum of the controlling interest and our percentage interest in our unconsolidated investments; and

Average realized electricity price for each of consolidated MWh sold, unconsolidated investments proportional MWh sold, and proportional MWh sold represents (i) total revenue from electricity sales for each of the respective MWh sold, discussed above, excluding unrealized gains and losses on our energy derivative and the amortization of long-lived intangible assets and liabilities, divided by (ii) the respective MWh sold.

The following table presents selected operating performance metrics for the periods presented (unaudited):

MWh sold	Year ended				
	December 31,		Change	% Change	
	2018	2017			
Consolidated MWh sold	8,479,247	7,700,853	778,394	10	%
Less: noncontrolling MWh	(1,696,711)	(1,474,409)	(549,307)	48	%
Controlling interest in consolidated MWh	6,782,536	6,226,444	229,087	3	%
Unconsolidated investments proportional MWh	1,205,662	1,240,681	(35,020)	(3)	%
Proportional MWh sold	7,988,192	7,794,125	194,067	2	%
Average realized electricity price per MWh					
Consolidated average realized electricity price per MWh	\$58	\$ 54	\$ 4	7	%
Unconsolidated investments proportional average realized electricity price per MWh	\$ 117	\$ 117	\$ —	—	%
Proportional average realized electricity price per MWh	\$71	\$ 66	\$ 5	8	%

Our consolidated MWh sold for the year ended December 31, 2018 was 8,479,247 MWh, as compared to 7,700,853 MWh for the year ended December 31, 2017, an increase of 778,394 MWh, or 10%. The change in consolidated MWh sold was primarily attributable to an increase in volume of approximately 815,649 MWh as a result of acquisitions in 2018 and 2017. This increase was partially offset by a decrease in volume of 109,895 MWh as a result of the sale of El Arrayán.

Our proportional MWh sold for the year ended December 31, 2018 was 7,988,192 MWh, as compared to 7,794,125 MWh for the year ended December 31, 2017, an increase of 194,067 MWh, or 2%. The change in proportional MWh sold was primarily attributable to an increase in volume of 656,055 MWh as a result of acquisitions in 2018 and 2017. This increase was partially offset by:

a decrease in volume of 392,361 MWh due to a reduction in our proportional ownership interest at Panhandle 2 at the end of 2017 and the sale of El Arrayán in 2018;

a decrease in volume of 34,607 MWh in controlling interest in consolidated MWh primarily due to unfavorable wind; and

a decrease in volume of 35,020 MWh from unconsolidated investments primarily due to curtailment.

Our consolidated average realized electricity price was \$58 per MWh for the year ended December 31, 2018 as compared to \$54 per MWh for the year ended December 31, 2017. The increase of \$4 per MWh was primarily due to higher PPA prices associated with our 2018 acquisitions.

Proportional average realized electricity price was \$71 per MWh for the year ended December 31, 2018 as compared to \$66 per MWh for the year ended December 31, 2017. The increase of \$5 per MWh in the proportional average realized electricity price was primarily due to higher PPA prices associated with our 2018 acquisitions and due to a reduction in our proportional ownership interest at Panhandle 2 at the end of 2017.





The following table presents selected operating performance metrics for the periods presented (unaudited):

	Year ended			
	December 31,		Change	% Change
	2017	2016		
MWh sold				
Consolidated MWh sold	7,700,863	6,745,525	955,328	14 %
Less: noncontrolling MWh	(1,147,499)	(990,358)	(207,051)	22 %
Controlling interest in consolidated MWh	6,553,443	5,805,167	748,277	13 %
Unconsolidated investments proportional MWh	1,240,688	1,001,105	239,576	24 %
Proportional MWh sold	7,794,163	6,806,272	987,853	15 %
Average realized electricity price per MWh				
Consolidated average realized electricity price per MWh	\$54	\$55	\$ (1 )	(2 )%
Unconsolidated investments proportional average realized electricity price per MWh	\$117	\$112	\$ 5	4 %
Proportional average realized electricity price per MWh	\$66	\$66	\$ —	— %

Our consolidated MWh sold for the year ended December 31, 2017 was 7,700,853 MWh, as compared to 6,745,525 MWh for the year ended December 31, 2016, an increase of 955,328 MWh, or 14%. The change in consolidated MWh sold was primarily attributable to:

- an increase in volume of 917,166 MWh as a result of acquisitions in 2017; and
- a 254,443 MWh increase in volume from projects that existed in 2016 primarily due to favorable wind conditions. This increase was partially offset by a decrease in volume of 216,146 MWh from projects that existed in 2016 primarily due to lower availability and curtailment.

Our proportional MWh sold in the year ended December 31, 2017 was 7,794,125 MWh, as compared to 6,806,272 MWh for the year ended December 31, 2016, representing an increase of 987,853 MWh, or 15%. This change in proportional MWh sold was primarily attributable to:

- an increase in volume of 748,277 MWh from controlling interest in consolidated MWh primarily due to acquisitions in 2017 and favorable wind conditions partially offset by lower availability; and
- an increase in volume of 239,576 MWh from unconsolidated investments due to the acquisition of Armow in the fourth quarter of 2016 and favorable wind conditions, partially offset by lower availability.

Our consolidated average realized electricity price was \$54 per MWh for the year ended December 31, 2017 as compared to \$55 per MWh for the year ended December 31, 2016. The decrease of \$1 per MWh was primarily due to an increase in volume of lower priced PPAs coupled with lower spot market pricing as a result of congestion in the Texas market.

Proportional average realized electricity price was \$66 per MWh for the year ended December 31, 2017 which remained unchanged from the year ended December 31, 2016.

## Consolidated Results of Operations

The following table provides selected financial information for the periods presented (in millions, except percentages):

	Year ended December 31, 2018 vs. 2017				2017 vs. 2016			
	2018	2017	2016	\$ Change	% Change	\$ Change	% Change	
Total revenue	\$ 483	\$ 411	\$ 354	\$72	18 %	\$57	16 %	
Total cost of revenue	419	348	304	71	20	44	14	
Total operating expenses	62	53	45	9	17	8	18	
Operating income	2	10	5	(8 )	(80 )	5	100	
Total other expense	39	80	48	(41 )	(51 )	32	67	
Net loss before income tax	(37 )	(70 )	(43 )	33	(47 )	(27 )	63	
Income tax provision	32	12	9	20	167	3	33	
Net loss	(69 )	(82 )	(52 )	13	(16 )	(30 )	58	
Net loss attributable to noncontrolling interests	(211 )	(64 )	(35 )	(147 )	230	(29 )	83	
Net income (loss) attributable to Pattern Energy	\$ 142	\$ (18 )	\$ (17 )	\$160	(889 )%	\$(1 )	6 %	

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017 and

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

## Total Revenue

Total revenue for the year ended December 31, 2018 was \$483 million compared to \$411 million for the year ended December 31, 2017, an increase of \$72 million, or approximately 18%. The increase in total revenue for the year ended December 31, 2018 as compared to the prior year was primarily attributable to:

an increase in electricity sales due to a \$82 million increase in volume as a result of acquisitions in 2018 and 2017, partially offset by a \$12 million decrease in electricity sales attributable to the sale of El Arrayán, and a \$6 million increase in unrealized losses on our energy derivative; and

a \$6 million increase in other revenue, primarily due to a settlement for business interruption insurance for Santa Isabel.

Total revenue for the year ended December 31, 2017 was \$411 million compared to \$354 million for the year ended December 31, 2016, an increase of \$57 million, or approximately 16%. The change in total revenue for the year ended December 31, 2017 as compared to the prior year was primarily attributable to:

a \$54 million increase in electricity sales driven by projects acquired in 2017;

an \$18 million increase in electricity sales due to favorable wind availability and an increase in PPA contractual volumes for Amazon Wind; and

a \$9 million decrease in unrealized loss on our energy derivative primarily due to lower forward natural gas price curves when compared to the prior period.

The increase in total revenues was partially offset by:

a \$5 million decrease related to an interruption caused principally by a hurricane in Puerto Rico; and

a \$16 million decrease driven by the presence of ERCOT market congestion.

#### Cost of revenue

Cost of revenue for the year ended December 31, 2018 was \$419 million compared to \$348 million for the year ended December 31, 2017, an increase of \$71 million, or approximately 20%. The increase in cost of revenue during 2018 as compared to 2017 was primarily attributable to:

- a \$7 million and a \$13 million increase in transmission costs and project expense, respectively, for costs associated with projects acquired in 2017 and 2018; and
- a \$51 million increase in depreciation, which is primarily attributable to \$26 million of accelerated depreciation related to our repowering project and \$23 million related to acquisitions completed in 2017 and 2018.

Cost of revenue for the year ended December 31, 2017 was \$348 million compared to \$304 million for the year ended December 31, 2016, an increase of \$44 million, or approximately 14%. The increase in cost of revenue during 2017 as compared to 2016 was primarily attributable to:

- a \$19 million and a \$12 million increase in transmission costs and project expense, respectively, for costs associated with projects acquired in 2017; and
- a \$24 million increase in depreciation, primarily due to projects acquired in 2017.

The increase in cost of revenue was partially offset by a \$10 million decrease primarily due to a decrease in turbine maintenance expense.

#### Operating expenses

Operating expenses for the year ended December 31, 2018 were \$62 million compared to \$53 million for the year ended December 31, 2017, an increase of \$9 million, or approximately 17%. The increase in operating expenses during 2018 as compared to 2017 was primarily attributable to a \$7 million impairment expense related to the sale of El Arrayán.

Operating expenses for the year ended December 31, 2017 were \$53 million compared to \$45 million for the year ended December 31, 2016, an increase of \$8 million, or approximately 18%. The increase in operating expenses during 2017 as compared to 2016 was primarily attributable to:

- a \$5 million increase in employee related costs primarily to support growth in employee headcount;
- a \$5 million net increase in professional fees and other general administration expense; and
- a \$4 million increase in related party general and administrative expense.

The increase in operating expense was partially offset by a \$7 million increase in related party reimbursement.

#### Other expense

Other expense for the year ended December 31, 2018 was \$39 million compared to \$80 million for the year ended December 31, 2017, a decrease of \$41 million, or approximately 51%. The decrease was primarily attributable to:

- a \$70 million increase in net gain on transactions primarily as a result of the gain on sale of our minority interest in K2;

- a \$26 million increase in gain on derivatives primarily due to a \$23 million favorable impact from foreign currency exchange rates and a \$3 million favorable impact due to interest rate swaps; and
- a \$2 million decrease in the extinguishment of debt.

The decrease in other expense was partially offset by:

- a \$41 million decrease in equity in earnings of unconsolidated investments, net, which is primarily attributable to equity losses associated with our investment in Pattern Development;
- a \$11 million increase in other expense, net primarily related to a \$9 million increase in contingent liability accretion associated with acquisitions and a \$3 million sublease loss related to our former San Francisco office; and
- a \$7 million increase in interest expense primarily due to debt acquired in conjunction with acquisitions in 2017 and 2018.

Other expense for the year ended December 31, 2017 was \$80 million compared to \$48 million for the year ended December 31, 2016, an increase of \$32 million, or approximately 67%. The change in other expense during 2017 as compared to 2016 was primarily attributable to:

- a \$24 million increase in interest expense primarily due to the issuance of unsecured senior notes in January 2017 and debt associated with our acquisitions in 2017;



- a \$9 million increase in early extinguishment loss associated with Ocotillo debt;
- a \$7 million increase in loss on derivatives primarily as a result of an unfavorable impact from foreign currency exchange rates and a realized loss due to the termination of the interest rate swaps; and
- a \$3 million increase in net losses on transactions and accretion expense primarily related to the acquisition of the Broadview Project.

The increase in other expense was partially offset by an \$11 million increase in equity in earnings in unconsolidated investments, net.

#### Income tax provision

We were subject to taxation in the United States, Chile, Canada and Japan.

The income tax provision was \$32 million for the year ended December 31, 2018 compared to \$12 million for the year ended December 31, 2017. The increase in the tax provision of \$20 million was primarily due to \$12 million in tax expense attributable to the gain recognized on the sale of K2 and earnings from our Canadian and Japanese operations.

The income tax provision was \$12 million for the year ended December 31, 2017 compared to \$9 million for the the year ended December 31, 2016. The expense of \$12 million was principally related to our Canadian operations partially offset by a tax benefit earned from the intraperiod allocation rules that are applied when there is a pre-tax loss from continuing operations and pre-tax income from other categories in the year such as other comprehensive income (loss) and tax benefits earned in our Chilean operations.

#### Effective tax rate

Our effective tax rate was (87)% in 2018 compared to (17)% in 2017. Our effective tax rate differs from the statutory tax rate primarily due to adjustments for income in non-taxable entities allocable to noncontrolling interests, and foreign tax rate differential on pre-tax book income.

#### Net loss

Net loss was \$69 million for the year ended December 31, 2018, compared to \$82 million for the prior year, a decrease in net loss of \$13 million, or 16%. The decrease in net loss was primarily attributed to:

- a \$72 million increase in total revenue, as discussed above; and
- a \$41 million decrease in other expense primarily consisting of the gain on sale of our noncontrolling interest in K2, favorable foreign currency exchange rates, partially offset by increased contingent liability accretion, a decrease in equity in earnings of unconsolidated investments and an increase in interest expense.

The decrease in net loss was partially offset by:

- a \$71 million increase in cost of revenues primarily related to increased depreciation as a result of acquisitions and accelerated depreciation at our repowering project;
- a \$20 million increase in the tax provision; and
- a \$9 million increase in operating expenses primarily related to impairment expense at El Arrayán.

Net loss was \$82 million for the year ended December 31, 2017, compared to \$52 million for the prior year, an increase in loss of \$30 million, or 58%. The increase in net loss was primarily attributed to:

- a \$44 million increase in cost of revenues due primarily to acquisitions in 2017;
- a \$32 million increase in other expense primarily related to increases in interest expense, early extinguishment loss, losses on derivatives due to unfavorable impacts from foreign currency exchange rates and the termination of the interest rate swaps;
- a \$8 million increase in operating expense, as discussed above; and
- a \$3 million increase in the tax provision.

The increase in net loss was partially offset by a \$57 million increase in total revenue, as discussed above.

#### Noncontrolling interests

The net loss attributable to noncontrolling interests was \$211 million for the year ended December 31, 2018 compared to a \$64 million net loss attributable to noncontrolling interests for the year ended December 31, 2017. The increased loss of \$147 million, or approximately 230%, was primarily attributable to the Tax Cuts and Jobs Act (“the Tax Act”) effective January 1, 2018 which resulted in significantly lower portions of the hypothetical liquidation proceeds to compensate certain noncontrolling interest investors for tax gains on the hypothetical sale calculated at the lowered corporate income tax rate of 21% compared to the rate of 35% previously utilized as a result of the Tax Act. As a result, for the year ended December 31, 2018, a \$150 million one-time adjustment is included in net loss attributable to noncontrolling interests as a result of the decrease in the federal corporate income tax rate.

The net loss attributable to noncontrolling interests was \$64 million for the year ended December 31, 2017 compared to a \$35 million net loss attributable to noncontrolling interests for the year ended December 31, 2016. The increased loss of \$29 million, or approximately 83%, was primarily attributable to allocations of losses for tax equity projects, including allocations related to projects acquired in 2017.

#### Liquidity and Capital Resources

Our business requires substantial liquidity to fund (i) equity investments in our construction projects, (ii) current operational costs, (iii) debt service payments, (iv) dividends to our stockholders, (v) potential investments in new acquisitions, (vi) modifications to our projects, (vii) unforeseen events and (viii) other business expenses. As a part of our liquidity strategy, we plan to retain a portion of our cash flows in above-average renewable resource years in order to have additional liquidity in below-average renewable resource years.

We intend to maintain a conservative approach to our capital structure to protect our ability to meet our financial obligations, pay our regular dividends and to fund investments for future growth. Power projects by their nature require significant capital investment, and as a result, we seek to protect our business through careful management of our capital structure.

The foundation of our capital structure is built on project finance arrangements intended to ensure risk segmentation across our large project portfolio, and our practice has been to structure our project finance arrangements comprised of a mix of debt, tax equity and equity to conform to investment grade-like credit standards. Specifically, we seek to structure our project finance arrangements to:

- match assets with liabilities based on a project’s off-take tenor and currency denomination;
- fix or hedge project debt on a long-term basis;
- amortize our third-party project finance capital within the tenor of the off-take arrangement; and
- apply conservative debt service coverage or tax equity structuring standards.

Our project capital structure is supplemented with a corporate capital layer that primarily relies on equity capital. Our corporate indebtedness is modest, and intended to ensure broad capital access. We seek to ensure financial flexibility and stability through our corporate revolving credit facility, maturity staging, minimization of interest rate exposure, and maintenance of our credit ratings. We intend to use our available liquidity strategically, with a priority placed on our available liquidity for committed project acquisitions or investment commitments. We believe this approach, together with a strategic consideration of project-level financial restructuring and recapitalization opportunities, will contribute to our ability to maintain and, over time, increase our cash available for distribution.

The following graph presents the components of our overall capital structure for the periods presented below (in millions):

#### Sources of Liquidity

Our sources of liquidity include cash generated by our operations, cash reserves, borrowings under our corporate and project-level credit agreements and further issuances of equity and debt securities.

The principal indicators of our liquidity are our unrestricted and restricted cash balances and availability under our revolving credit facilities and project level facilities. Our available liquidity is as follows (in millions):

	December 31, 2018
Unrestricted cash	\$ 101
Restricted cash	22
Revolving credit facilities availability <sup>(1)</sup>	205
Project level facilities:	
Post construction use	175
Construction use	270
Total available liquidity	\$ 773

<sup>(1)</sup> As of February 22, 2019, the amount available on the revolving credit facilities was \$152 million.

We believe that throughout 2019, we will have sufficient liquid assets, cash flows from operations, and borrowings available under our revolving credit facilities and construction facilities to meet our financial commitments, debt service obligations, and contingencies. However, to fund capital expenditures, including construction at Tsugaru, Gulf Wind repowering, project acquisitions and capital calls for Pattern Development over the next 24 months, we will likely be required to issue raise additional capital, including project level construction debt, corporate equity, debt or hybrid securities, or sell interests in our projects. Furthermore, our convertible notes will mature in July 2020 and will require a significant amount of capital and, as such, we have begun pursuing alternative financing arrangements to replace the maturing debt. However, we are subject to business and operational risks that could adversely affect our cash flow. A material decrease in our cash flows would likely produce a corresponding adverse effect on our borrowing capacity.

In connection with our future capital expenditures and other investments, including any project acquisitions that we may make, or capital calls from Pattern Development we elect to participate in, we may, from time to time, issue debt or equity securities. Our ability to access the debt and equity markets is dependent on, among other factors, the overall state of the debt and equity markets and investor appetite for investment in clean energy projects in general and our Class A shares in particular. Volatility in the market price of our Class A shares may prevent or limit our ability to utilize our equity securities as a source of capital to help fund acquisitions. An inability to obtain debt or equity financing on commercially reasonable terms could significantly limit our timing and ability to consummate future acquisitions, and to effectuate our growth strategy.

We have an equity distribution agreement (Equity Distribution Agreement). Pursuant to the terms of the Equity Distribution Agreement, we may offer and sell shares of our Class A common stock from time to time, up to an aggregate sales price of \$200 million. We intend to use the net proceeds from the sale of the shares for general corporate purposes, which may include the repayment of indebtedness and the funding of acquisitions and investments. For the year ended December 31, 2018, we did not sell any shares under the Equity Distribution Agreement. As of December 31, 2018, approximately \$144 million in aggregate offering price remained available to be sold under the agreement.

#### Cash Flows

We use traditional measures of cash flow, including net cash provided by operating activities, net cash used in investing activities and net cash provided by financing activities to evaluate our periodic cash flow results. Below is a summary of our cash flows for each period (in millions):

	Year ended December 31,		
	2018	2017	2016
Net cash provided by operating activities	\$279	\$218	\$164
Net cash used in investing activities	(373 )	(320 )	(124 )
Net cash provided by (used in) financing activities	83	125	(77 )
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4 )	6	—
Net change in cash, cash equivalents and restricted cash	\$(15 )	\$29	\$(37 )





Net cash provided by operating activities

Net cash provided by operating activities was \$279 million for the year ended December 31, 2018 as compared to \$218 million in the prior year, an increase of \$61 million, or approximately 28%. The increase in cash provided by operating activities was primarily due to higher revenues of \$83 million (excluding unrealized loss on energy derivative and amortization of PPAs) primarily from projects which were acquired in 2018 and 2017 and \$34 million in advanced lease revenue. The increase to net cash provided by operating activities was partially offset by increases of \$13 million in project expenses primarily related to projects acquired in 2018, \$11 million in interest payments, \$15 million in payments for accounts payable and other accrued liabilities due primarily to the timing of payments, \$7 million in transmission costs primarily due to an acquisition in 2017 and a \$6 million decrease in distributions from unconsolidated investments.

Net cash provided by operating activities was \$218 million for the year ended December 31, 2017 as compared to \$164 million in the prior year, an increase of \$54 million, or approximately 33%. The increase in cash provided by operating activities was primarily due to higher revenues of \$49 million (excluding unrealized loss on energy derivative and amortization of PPAs) primarily from projects which were acquired in 2017 and increase of \$39 million in distributions from unconsolidated investments. These increases were partially offset by an increase of \$21 million in transmission and project expense, an increase of \$16 million in interest payments, an increase of \$7 million in operating expense and other changes in working capital as a result of the timing of receipts of payments and disbursements.

Net cash used in investing activities

Net cash used in investing activities was \$373 million for the year ended December 31, 2018, which consisted primarily of \$300 million in cash paid, net of cash and restricted cash acquired for acquisitions completed in 2018, \$181 million primarily for construction costs related to projects acquired in Japan, and an additional investment of \$115 million in Pattern Development, offset by \$214 million in proceeds from the sale of El Arrayán and sale of our interests in K2, net of cash sold and \$10 million in distributions received from our unconsolidated investments.

Net cash used in investing activities was \$320 million for the year ended December 31, 2017, which consisted primarily of \$228 million in cash paid, net of cash and restricted cash acquired for acquisitions completed in 2017, \$69 million in cash invested in Pattern Development, \$44 million for capital expenditures, which primarily relates to payments for construction liabilities assumed with our acquisitions completed in 2017, partially offset by \$13 million in distributions from unconsolidated investments and \$8 million in reimbursement of interconnection costs.

Net cash used in investing activities was \$124 million for the year ended December 31, 2016, which consisted primarily of \$136 million for the acquisition of a 50% interest in Armow, net of cash and restricted cash acquired, \$33 million for capital expenditures primarily related to payments made in 2016 for projects that became commercially operable in 2015 and capital expenditures incurred in 2015 and leasehold improvements and furniture and fixtures, partially offset by \$42 million in distributions from unconsolidated investments.

Net cash provided by (used in) financing activities

Net cash provided by financing activities for the year ended December 31, 2018 was \$83 million. Net cash provided by financing activities consisted primarily of the following:

\$788 million in proceeds from debt and revolving credit facilities; and

\$98 million in contributions from noncontrolling interest.

Net cash provided by financing activities was partially offset by:

\$588 million in repayments of debt and revolving credit facilities;

\$165 million of dividend payments;

\$38 million in distributions to noncontrolling interests; and

\$9 million in payments for deferred financing costs primarily associated with the issuance of debt associated with Tsugaru Holdings.

Net cash provided by financing activities for the year ended December 31, 2017 was \$125 million. Net cash provided by financing activities consisted primarily of the following:

\$694 million in net proceeds from the issuance of long-term debt;

\$237 million in net proceeds from equity issuances, net of expenses;



\$333 million in draws on the corporate revolving credit facility; and  
\$58 million in proceeds from the partial sale of Panhandle 2.

Net cash provided by financing activities were partially offset by:

\$513 million in repayments of the corporate revolving credit facility;

\$483 million in repayment of long-term debt;

\$145 million in dividend payments;

\$20 million in distributions to noncontrolling interests;

\$16 million in financing fee payments; and

\$14 million in termination of designated derivatives payment.

Net cash used in financing activities for the year ended December 31, 2016 was \$77 million. Net cash used in financing activities consisted primarily of the following:

\$350 million in repayments of the corporate revolving credit facility;

\$120 million in dividend payments;

\$48 million in repayment of long-term debt; and

\$18 million in distributions to noncontrolling interests.

Net cash used in financing activities were partially offset by:

\$286 million in net proceeds from equity issuances, net of expenses; and

\$175 million in draws on the corporate revolving credit facility.

Uses of Liquidity

Cash Dividends to Investors

We intend to pay regular quarterly dividends in U.S. dollars to holders of our Class A common stock. On February 22, 2019, we maintained our dividend at \$0.4220 per Class A share, or \$1.688 per Class A share on an annualized basis, commencing with respect to dividends to be paid on April 30, 2019 to holders of record on March 29, 2019. Cash paid for dividends for the year ended December 31, 2018 was \$165 million.

We expect to pay a quarterly dividend on or about the 30th day following each fiscal quarter to holders of record of our Class A common stock on the last day of such quarter.

Capital Expenditures and Investments

In 2018, total cash used for capital expenditures was \$181 million. We do not include capital expenditures at our projects held at our unconsolidated equity investments. Cash paid for acquisitions and capital to Pattern Development was \$415 million.

We expect to make investments in additional projects in 2019 and provide further capital to Pattern Development. Additionally, we expect to incur approximately \$280 million in 2019 related to the construction of Tsugaru and repowering at our Gulf Wind project; however, depending on construction milestones, the timing of these expenditures may change. We estimate as of December 31, 2018 remaining budgeted construction cost for Tsugaru and the repowering at Gulf Wind are approximately \$471 million, of which approximately \$339 million is included in the "Contractual Obligations" table below. In addition, for the year ending December 31, 2019, we have budgeted an additional \$20 million for other expansion capital expenditures.

We also evaluate, from time to time, third-party acquisition opportunities. We believe that we will have sufficient cash and capacity from revolving credit facilities and construction loans to complete the funding of future commitments, but this may be affected by any other acquisitions or investments that we make. To the extent that we make any such investments or acquisitions, we will evaluate capital markets and other corporate financing sources available to us at the time. In addition, we will make investments, from time to time, at our operating projects. Operational capital expenditures are those capital expenditures required to maintain our long-term operating capacity. Capital expenditures for the projects are generally made at the project level using project cash flows and project reserves,

although funding for major capital expenditures may be provided by additional project debt or equity. Therefore, the distributions that we receive from the projects may be made net of certain capital expenditures needed at the projects.

#### Contractual Obligations

We have a variety of contractual obligations and other commercial commitments that represent prospective cash requirements. See also Note 10, Debt, and Note 19, Commitments and Contingencies, in the notes to consolidated financial statements for additional discussion of contractual obligations.

The following table summarizes estimates of future commitments related to the various agreements that we have entered into as of December 31, 2018 (in millions):

Contractual Obligations	Less		More	Total	
	Than	1-3	3-5		Than
	1	Years	Years	5	
	Year			Years	
Corporate revolving credit facility	\$ 198	\$ —	\$ —	\$ —	\$ 198
Corporate-level debt principal payments	—	225	—	350	575
Corporate-level interest payments on debt instruments	30	52	43	12	137
Project-level debt principal payments	58	136	227	1,121	1,542
Project-level interest payments on debt instruments	55	106	96	257	514
Transmission service agreements	24	48	48	495	615
Operating leases	22	43	43	352	460
Service and maintenance agreements	32	60	53	68	213
Construction and other commitments	192	159	6	34	391
Asset retirement obligations	24	—	—	185	209
Total	\$ 635	\$ 829	\$ 516	\$ 2,874	\$ 4,854

#### Credit Agreements for Equity Method Investments

Below is a summary of our proportion of debt in unconsolidated investments, as of December 31, 2018 (in millions):

	Total	Percentage of	Our Portion of
	Entity	Ownership	Unconsolidated
	Debt		Entity Debt
South Kent	\$432	50 %	\$ 216
Grand	247	45 %	111
Armow	359	50 %	180
Pattern Development	216	29 %	63
Unconsolidated investments - debt	\$1,254		\$ 570

#### Off-Balance Sheet Arrangements

As of December 31, 2018, we did not have any significant off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K.

#### Covenants, Distribution Conditions and Events of Default

##### Corporate-Level Debt

##### Corporate Revolving Credit Facility

Our corporate revolving credit facility has customary covenants, prepayment provisions and events of default. The most restrictive of such provisions is the maintenance coverage ratio that requires the subsidiary borrowers to maintain a leverage ratio (the ratio of borrower debt to borrower cash flow) that does not exceed 5.50:1.00 and an interest coverage ratio (the ratio of borrower cash flow to borrower interest expense) that is not less than 1.75:1.00. In addition, certain of our subsidiaries are subject to usual and customary affirmative and negative covenants under our corporate revolving credit facility. Specifically, with limited exceptions, such subsidiaries are prohibited from distributing funds to us unless

the following conditions are met: (i) no event of default under the corporate credit facility has occurred and is continuing or would be caused by such distribution and (ii) the corporate credit facility borrowers are in compliance with the leverage ratio test and the interest coverage ratio test, both before and after giving effect to such distribution. As of December 31, 2018, we were in compliance with all covenants contained in our corporate revolving credit facility.

#### Convertible Notes

The indenture for the convertible notes contains customary terms and covenants, including that upon certain events of default occurring and continuing, either the trustee or the holders of not less than 25% in aggregate principal amount of the convertible notes then outstanding may declare the unpaid principal of the convertible notes and accrued and unpaid interest, if any, thereon immediately due and payable. In the case of certain events of bankruptcy, insolvency or reorganization relating to us, the principal amount of the convertible notes together with accrued and unpaid interest, if any, thereon will automatically become and be immediately due and payable.

#### Unsecured Senior Notes

Under the unsecured senior notes issued in January 2017, we have agreed to certain restrictions on our or the subsidiary guarantor's ability to incur secured debt and our ability to consolidate, merge or sell all or substantially all of our assets. These covenants are subject to a number of important limitations and exceptions.

#### Consolidated Project-Level Debt and Unconsolidated Investments Project-Level Debt

Under the respective credit agreements for each of Hatchet Ridge, St. Joseph, Santa Isabel, Ocotillo, Western Interconnect and Meikle, MSM, Tsugaru, Futtsu, and Ohorayama, our projects are subject to certain covenants, events of default and distribution conditions. In addition, the respective credit agreements for each of our unconsolidated investments South Kent, Grand, and Armow contain certain covenants, events of default and distribution conditions. While terms may vary between the individual credit agreements, the most significant and restrictive include restrictions on the project's ability to incur debt, grant liens, sell or lease assets, transfer equity interests, dissolve, pay distributions and change its business.

In general, the distribution conditions included in the credit agreements are as follows:

- to the extent the project has letter of credit facilities under the project debt, there are no letter of credit loans outstanding;
- to the extent the project has reserve requirements, accounts are fully funded;
- any mandatory prepayment required has been made;
- no default has occurred and such distribution will not result in an event of default; and
- the applicable project has met its debt service coverage ratio.

#### Revolving Japan Credit Facility Equity Back-Leverage Facility

GPG is party to a revolving credit facility that has customary covenants, prepayment provisions and events of default. The most restrictive of such provisions is to maintain a leverage ratio (the ratio of borrower debt to borrower cash flow) that does not exceed 5.00:1.00 and an interest coverage ratio (the ratio of borrower cash flow to borrower interest expense) that is not less than 3.00:1.00.

Tsugaru Holdings is party to a back-leverage credit facility that has customary covenants, prepayment provisions and events of default. The most restrictive of such provisions is a restriction on distributions outside of the company until the loan has been fully repaid.

#### Distributions from Unconsolidated Investments

In general, distributions result from excess cash flows from our unconsolidated investments, which represent revenues received from the sale of electricity, as reduced by operating expenses, interest and principal payments on project level debt provided that specified distribution requirements are met under the project loan agreement. Project financing arrangements typically limit the timing of such distributions from the project entity to the same frequency as the scheduled principal and interest payments made by such project entity, which is usually on a quarterly basis although some financing arrangements instead call for monthly or semiannual payments. Distributions from our unconsolidated investments may be affected by the underlying performance of each project entity, and significant underperformance of the project could result in distributions not being made for some period of time. Overall, however, we expect that we will receive distributions throughout the term of the project's PPA.



### Tax Equity Partnership

Generally, tax equity partnerships have specific commercial terms that dictate distributions of cash and allocation of tax items among the partners, who are divided into one of two categories: tax equity and cash investor. A disproportionate share of income and cash is given to tax equity in order for them to achieve a target after-tax yield or “flip” near year 10 of project operations. The target yield and flip term vary by agreement and are dependent on project performance. Prior to the flip, tax items (income, PTCs) are commonly allocated 99% to the tax equity. On the other hand, distributable cash is divided among the partners in percentages that do not match the tax items. Cash distribution percentages can be temporarily increased for tax equity in the event that certain cumulative distribution thresholds are not achieved. This has occurred for certain projects 2018 and may occur for additional projects in 2019. Once tax equity reaches their target yield, the allocations and distributions “flip” to different amounts. After the flip, income and cash are typically allocated 5% to the tax equity and 95% to the cash investor. REC sales are often specially addressed in each agreement with most of the cash and income directed to the cash investor both pre and post-flip.

Tax equity partnership imposes a range of affirmative and negative covenants that are similar to what a term lender would require, such as, financial reporting, insurance maintenance and prudent operator standards. Most of these restrictions end once the flip point occurs and any deficit restoration obligation of the tax equity has been eliminated. There are also covenants that specifically seek to preserve the tax attributes of the project that are not customary for project term lenders.

If tax equity suffers any losses or damages as the result of a breach of representation, covenant, or other obligation by the cash investor in its capacity as managing member, tax equity may provide notice to the cash investor and require that any distributions otherwise required to be paid to the cash investor shall, instead, be paid to tax equity to cover any damages.

### Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based on our consolidated historical financial statements that are included elsewhere in this Form 10-K, which have been prepared in accordance with U.S. GAAP. In applying the critical accounting policies set forth below, our management uses its judgment to determine the appropriate assumptions to be used in making certain estimates. These estimates are based on management’s experience, the terms of existing contracts, management’s observance of trends in the renewable energy industry, information provided by our power purchasers and information available to management from other outside sources, as appropriate. These estimates are subject to an inherent degree of uncertainty.

We use estimates, assumptions and judgments for certain items, including the calculation of our acquisitions, noncontrolling interest balances, and derivatives. These estimates, assumptions and judgments are derived and continually evaluated based on available information, experience and various assumptions we believe to be reasonable under the circumstances. To the extent these estimates are materially incorrect and need to be revised, our operating results may be materially adversely affected.

### Acquisitions

Accounting Standards Update (ASU) 2017-01, Clarifying the Definition of a Business (ASU 2017-01) provides a screen to determine when a set of assets and activities should not be considered a business. Under ASU 2017-01, we perform an initial screening test that, if met, results in the conclusion that the set is not a business. If the initial screening test is not met, we evaluate whether the set is a business based on whether there are inputs and a substantive process in place. The definition of a business impacts whether we consolidate an acquisition under business combination guidance or asset acquisition guidance. When the acquisition is recognized as an equity method investment, the definition of a business impacts whether equity method goodwill can be recognized.

### Business Combinations, Asset Acquisitions, and Equity Method Investments

When we acquire a controlling interest in an entity deemed to be a business, the purchase is accounted for using the acquisition method, and the fair value of the purchase consideration is allocated to the tangible and intangible assets acquired and the liabilities assumed based on their estimated fair values. Contingent consideration, if any exists, is also recognized and measured at fair value as of the acquisition date. The excess, if any, of the fair value of the purchase consideration over the fair values of the identifiable net assets is recorded as goodwill. Conversely, the excess, if any, of the net fair value of the identifiable net assets over the fair value of the purchase consideration is recorded as a gain. Transaction costs associated with business combinations are expensed as incurred.



When we acquire assets and liabilities that do not constitute a business or a variable interest entity (VIE) of which we are the primary beneficiary, the fair value of the purchase consideration, including transaction costs of the asset acquisition, is assumed to be equal to the fair value of the net assets acquired. The purchase consideration, including the transaction costs, is allocated to the individual assets and

liabilities assumed based on their relative fair values. Contingent consideration associated with the acquisition is generally recognized only when the contingency is resolved. No goodwill is recognized in an asset acquisition. When we acquire assets and liabilities that do not constitute a business but meet the definition of a VIE of which we are the primary beneficiary, the purchase is accounted for using the acquisition method described above for business combination, except that no goodwill is recognized. To the extent that there is difference between the purchase consideration and the VIE's identifiable assets and liabilities recorded and measured at fair value, the difference is recognized as a gain or loss.

When we acquire a noncontrolling interest in an entity where we are not the primary beneficiary, do not control any of the ongoing activities of the entity, and do not meet consolidation requirements of Accounting Standards Codification (ASC) 810, Consolidation, and ASU 2015-02, Consolidation (Topic 810): Amendments to the Consolidation Analysis, the investment is initially recognized as an equity method investment at cost. Any difference between the cost of an investment and the amount of underlying equity in net assets of an investee are considered basis differences. Basis difference related to the property, plant and equipment are amortized over the estimated economic useful life of the underlying long-lived assets, while basis difference related to the PPA are amortized over the remaining term of the PPA. Transaction costs associated with equity method investments are included in the investment.

Additionally, if the projects in which we hold these investments recognize an impairment under the provisions of ASC 360, Property, Plant and Equipment, we would record our impairment loss and would evaluate our investment for an other than temporary decline in value under ASC 323, Investments—Equity Method and Joint Ventures.

Significant judgment is required in determining the acquisition date fair value of the assets acquired and liabilities assumed using either an income, market, or cost-based valuation method. The valuations require management to make significant estimates and assumptions. These estimates and assumptions are inherently uncertain, and as a result, actual results may differ from estimates. Significant estimates include, but are not limited to, revenue and operating expense growth, future expected cash flows, and discount rates.

For business combinations, during the measurement period, which is one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings.

The allocation of the purchase price directly affects the following items in our consolidated financial statements:

- The amount of purchase price allocated to the various tangible and intangible assets, liabilities and noncontrolling interests on our consolidated balance sheets;

- The amounts of purchase price allocated to the value of above-market and below-market power purchase agreement, which is subsequently amortized to electricity sales over the remaining terms of each respective arrangement; and

- The period of time over which tangible and intangible assets are depreciated or amortized varies, and thus, changes in the amounts allocated to these assets will have a direct impact on our results of operations.

#### Noncontrolling Interests

Noncontrolling interests represent the portion of our net income (loss), net assets and comprehensive income (loss) that is not allocable to us and is calculated based on our ownership percentage, for certain projects.

For those projects where economic benefits are not allocated based on pro rata ownership percentage, we have determined that the appropriate methodology for calculating the noncontrolling interest balances that reflects the substantive economic arrangements in the operating agreements is a balance sheet approach using the hypothetical liquidation at book value (HLBV) method.

Under the HLBV method, the amounts reported as noncontrolling interests in the consolidated balance sheets represent the amounts third-party investors would hypothetically receive at each balance sheet reporting date under the liquidation provisions of the operating partnership agreements, assuming the net assets of our projects were liquidated at amounts determined in accordance with U.S. GAAP and distributed to the investors. Therefore, the noncontrolling interest balances in these projects are reported as a component of equity in the consolidated balance sheets.

The third-party interests in the results of operations for those projects using HLBV is determined as the difference in noncontrolling interests in the consolidated balance sheets at the start and end of each reporting period, after taking into account any capital transactions between our projects and the third-party investors.



Factors used in the HLBV calculation include U.S. GAAP income, taxable income, capital contributions, production tax credits, and distributions, and the stipulated targeted equity investor return specified in the projects' operating agreements.

Changes in these factors could have a significant impact on the amounts that investors would receive upon a hypothetical liquidation. The use of the HLBV methodology to allocate income to the noncontrolling interest holders may create volatility in our consolidated statements of operations as the application of HLBV can drive changes in net income or loss attributable to noncontrolling interests from quarter to quarter.

#### Derivatives

We enter into derivative transactions primarily for the purpose of reducing exposure to fluctuations in interest rates, foreign currency exchange rates and electricity prices. We have entered into interest rate swap agreements and have designated certain of these derivatives as cash flow hedges of expected interest payments on variable rate debt. We also enter into foreign exchange currency transactions to hedge the distributions in Canadian dollars and Japanese yen from our operational Canadian and Japanese project entities. These foreign exchange currency derivatives currently do not qualify for hedge accounting. We may also enter into interest rate caps. Currently, we do not hold interest rate cap arrangements. Furthermore, we have energy derivative agreements that do not qualify for hedge accounting.

We recognize our derivative instruments at fair value in the consolidated balance sheets, unless the derivative instruments qualify for the normal purchase normal sale (NPNS) scope exception to derivative accounting.

Accounting for changes in the fair value of a derivative instrument depends on whether the derivative instrument has been designated as part of a hedging relationship and on the type of hedging relationship.

For derivative instruments that are designated as cash flow hedges, the change in unrealized losses on cash flow hedges, net of tax is reported as a component of other comprehensive income (loss). Changes in the fair value of these derivatives are subsequently reclassified into earnings in the period that the hedged transaction affects earnings. The ineffective portion of change, if any, in fair value is recorded as a component of net income (loss) on the consolidated statements of operations. The change in fair value for undesignated derivative instruments is reported as a component of net income (loss) on the consolidated statements of operations. Certain of our energy derivative agreements qualify for the NPNS scope exception and therefore are not accounted for as derivatives.

Energy prices are subject to wide swings as supply and demand are impacted by, among many other unpredictable items, weather, market liquidity, generating facility availability, customer usage, storage, and transmission and transportation constraints. Interest rate risk exists primarily on variable-rate debt for which the cash flows vary based upon fluctuations in interest rates. Also, foreign currency exchange rates are subject to fluctuations in market movements and can be impacted by, among other factors, economic conditions, inflation rate, political stability and public debt. We do not hedge all of our commodity price, foreign currency exchange rate and interest rate risks, thereby exposing the unhedged portion to changes in market prices.

Market price quotations for certain electricity and natural gas trading hubs related to energy derivative agreements are not as readily obtainable due to the lengths of the contracts. Given that limited market data exists for these contracts, as well as for those contracts that are not actively traded, we use forward price curves derived from third-party models based on perceived pricing relationships to major trading hubs that are based on unobservable inputs. The estimated fair value of energy derivative agreements is a function of underlying forward energy prices, related volatility, counterparty creditworthiness, and duration of the contracts. The assumptions used in the valuation models are critical and any changes in assumptions could have a significant impact on the estimated fair value of the contract.

#### Income Taxes

We are subject to income taxes in the U.S. (federal and state) and numerous foreign jurisdictions. Tax laws, regulations, and administrative practices in various jurisdictions may be subject to significant change, with or without notice, due to economic, political, and other conditions, and significant judgment is required in evaluating and estimating our provision and accruals for these taxes. There are transactions that occur during the ordinary course of business for which the ultimate tax determination is uncertain. Our effective tax rates could be affected by numerous factors, such as intercompany transactions, the relative amount of our foreign earnings, the applicability of special tax regimes, losses incurred in jurisdictions for which we may not be able to realize the related tax benefit, changes in foreign currency exchange rates, acquisitions (including integrations) and investments and how they are financed, changes in our deferred tax assets and liabilities and their valuation, and changes in laws, regulations, administrative

practices and interpretations related to tax and accounting.

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Item 7A. Quantitative and Qualitative Disclosures about Market Risk.

We have significant exposure to commodity prices, interest rates and foreign currency exchange rates, as described below. To mitigate these market risks, we have entered into multiple derivatives. We have not applied hedge accounting treatment to all of our derivatives, therefore we are required to mark some of our derivatives to market through earnings on a periodic basis, which will result in non-cash adjustments to our earnings and may result in volatility in our earnings, in addition to potential cash settlements for any losses.

Commodity Price Risk

We manage our commodity price risk for electricity sales primarily through the use of fixed price long-term power purchase agreements with creditworthy counterparties. Our financial results reflect approximately 524,827 MWh of electricity sales in the year ended December 31, 2018 that were subject to spot market pricing. A hypothetical increase or decrease of 10% or \$2.39 per MWh in the merchant market prices would have increased or decreased revenue by \$1 million for the year ended December 31, 2018.

In addition to the risks we face in broad commodity markets, many of our projects, especially in ERCOT, also face project-specific risks related to transmission system limitations which can result in local prices that are lower than the broader market prices (congestion). In the case of adverse congestion, our revenues are negatively impacted, and our financial hedges do not protect us from these impacts, since under those contracts, this risk is fully allocated to our projects and not to the counterparty (e.g. we sell our power at the lower local price, but still have to buy power for the counterparty at the higher broad market or hub price). In the past, these impacts have been material to our economic results, and we expect that congestion will continue to be a material risk in the future.

Interest Rate Risk

As of December 31, 2018, our long-term debt includes both fixed and variable rate debt. As long-term debt is not carried at fair value on the consolidated balance sheets, changes in fair value would impact earnings and cash flows only if we were to reacquire all or a portion of these instruments prior to their maturity. The fair market value of our outstanding convertible senior notes, or "debentures," is subject to interest rate risk, market price risk and other factors due to the convertible feature of the debentures. The fair market value of the debentures will generally increase as interest rates fall and decrease as interest rates rise. In addition, the fair market value of the debentures will generally increase as the market price of our Class A common stock increases and decrease as the market price of our Class A common stock falls. The interest and market value changes affect the fair market value of the debentures, but do not impact our financial position, cash flows or results of operations due to the fixed nature of the debt obligations, except to the extent that changes in the fair value of the debentures or value of Class A common stock permit the holders of the debentures to convert into shares. As of December 31, 2018, the estimated fair value of our debt was \$2.2 billion and the carrying value of our debt was \$2.3 billion. The fair value of variable interest rate long-term debt is approximated by its carrying cost. A hypothetical increase or decrease in market interest rates by 1% would have resulted in a \$46 million decrease or \$50 million increase in the fair value of our fixed rate debt.

We are exposed to fluctuations in interest rate risk as a result of our variable rate debt and outstanding amounts due under our revolving credit facilities. As of December 31, 2018, \$223 million was outstanding under our revolving credit facilities. A hypothetical increase or decrease in interest rates by 1% would have a \$2 million impact on interest expense for the year ended 2018.

We may use a variety of derivative instruments, with respect to our variable rate debt, to manage our exposure to fluctuations in interest rates, including interest rate swaps and interest rate caps. As a result, our interest rate risk is limited to the unhedged portion of the variable rate debt. As of December 31, 2018, the unhedged portion of our variable rate debt was \$250 million. A hypothetical increase or decrease in interest rates by 1% would have a \$3 million impact to interest expense for the year ended December 31, 2018.

Foreign Currency Exchange Rate Risk

Our wind power projects are located in the United States, Canada and Japan. As a result, our financial results could be significantly affected by factors such as changes in foreign currency exchange rates or weak economic conditions in the foreign markets in which we operate. When the U.S. dollar strengthens against foreign currencies, the relative value in revenue earned in the respective foreign currency decreases. When the U.S. dollar weakens against foreign currencies, the relative value in revenue earned in the respective foreign currency increases. A majority of our power sale agreements and operating expenditures are transacted in U.S. dollars, with a growing portion transacted in

currencies other than the U.S. dollar, primarily the Canadian dollar. For the year ended December 31, 2018, our financial results included C\$130 million and ¥234 million of net income, from our Canadian and Japanese operations, respectively. A hypothetical increase or decrease of 10% in exchange rates between the Canadian and U.S. dollar would have increased or decreased net earnings of our Canadian and Japanese operations by \$10 million and \$6 million for the years ended December 31, 2018 and 2017, respectively.

We have established a currency risk management program. The objective of the program is to mitigate the foreign exchange rate risk arising from transactions or cash flows that have a direct or underlying exposure in non-U.S. dollar denominated currencies in order to reduce volatility in our cash flow, which may have an adverse impact to our short-term liquidity or financial condition. For the year ended December 31, 2018, we recognized a gain on foreign currency forward contracts of \$17 million in gain (loss) on derivatives in the consolidated statements of operations due to the strengthening of the U.S. dollar.

As of December 31, 2018, a 10% devaluation in the Canadian dollar and Japanese yen to the United States dollar would result in our consolidated balance sheets being negatively impacted by a \$39 million cumulative translation adjustment in accumulated other comprehensive loss.

#### Item 8. Financial Statements and Supplementary Data.

The financial statements and schedules are listed in Part IV, Item 15 of this Form 10-K, beginning at page F-1, Index to Consolidated Financial Statements, and are incorporated by reference herein.

#### Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

#### Item 9A. Controls and Procedures.

##### Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, has evaluated the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (Exchange Act), as of the end of the period covered by this Form 10-K. Based on this evaluation, our chief executive officer and chief financial officer concluded that, as of December 31, 2018, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms, and 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.

##### Inherent Limitations Over Disclosure Controls and Procedures

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

##### Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) under the Exchange Act. Management conducted an assessment of the effectiveness of our internal control over financial reporting based on the criteria set forth in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework).

Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2018. Our independent registered public accounting firm, PricewaterhouseCoopers LLP, has issued an audit report on our internal control over financial reporting, which appears herein.

##### Changes in Internal Control Over Financial Reporting

Management continuously reviews internal control over financial reporting, and accordingly may, from time to time, make changes aimed at enhancing their effectiveness to ensure that its systems evolve with its business. There were no changes in our internal control over



financial reporting during the quarter ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect our internal control over financial reporting.

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Item 9B. Other Information.  
See Item 10 and Item 11.

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### PART III

Certain information required by Part III is omitted from this Form 10-K because the registrant will file with the U.S. Securities and Exchange Commission a definitive proxy statement pursuant to Regulation 14A in connection with the solicitation of proxies for the Company's Annual Meeting of Stockholders, or the 2019 Proxy Statement, within 120 days after the end of the fiscal year covered by this Form 10-K, and certain information included therein is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance.

Effective April 1, 2019, the following officer transitions will occur:

- (1) Mr. Michael J. Lyon who currently serves as the chief financial officer will transition to the role of president of the Company;
- Mr. Esben W. Pedersen who currently serves as the chief investment officer (and is a named executive officer) will
- (2) transition to the role of chief financial officer of the Company where, in such role, he would also continue to perform his current responsibilities as chief investment officer; and
- (3) Mr. Michael M. Garland who currently serves as both the chief executive officer and president will continue to serve in the role of chief executive officer of the Company.

In connection with the transition for Mr. Lyon discussed above, under the executive compensation plan for fiscal 2019, the 2019 total direct compensation target (which consists of base salary and incentive compensation in the form of cash incentive and equity incentives) for Mr. Lyon was increased by \$100,000 to \$1,238,000, with all of such increase to be paid (if at all) in the form of incentive compensation. In addition, the allocation of incentive compensation between cash incentive and equity incentive for Mr. Lyon under the executive compensation plan for fiscal 2019 was changed from 50-70% to 60-80% as equity incentive. Mr. Garland's allocation of incentive compensation between cash incentive and equity incentive under the executive compensation plan for fiscal 2019 was also changed from 60-80% to 70-90% as equity incentive.

Background information with respect to each of Mr. Garland, Mr. Lyon, and Mr. Pedersen called for by Items 401(b), (d), (e) and Item 404(a) of Regulation S-K has previously been provided in our 2018 Proxy Statement filed with the Securities and Exchange Commission and is incorporated by reference herein.

In addition, as a result of additional responsibilities undertaken by Mr. Hunter H. Armistead, executive vice president, business development and a named executive officer, with respect to project development, under the executive compensation plan for fiscal 2019, the 2019 total direct compensation target (which consists of base salary and incentive compensation in the form of cash incentive and equity incentives) for Mr. Armistead was increased by \$100,000 to \$1,521,000, with all of such increase to be paid (if at all) in the form of incentive compensation. In addition, the allocation of incentive compensation between cash incentive and equity incentive for Mr. Armistead under the executive compensation plan for fiscal 2019 was changed from 50-70% to 60-80% as equity incentive. Other than as set forth above, or has been previously disclosed there are no material plans, contracts or arrangements, or material amendments to such plans, contracts, arrangements in connection with the officer transitions discussed above or to other named executive officers.

The other information required under this Item 10 is incorporated by reference to our 2019 Proxy Statement.

Item 11. Executive Compensation.

See above discussion under Item 10 "Directors, Executive Officers, and Corporate Governance." The other information required under this Item 11 is incorporated by reference to our 2019 Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required under this Item 12 is incorporated by reference to our 2019 Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required under this Item 13 is incorporated by reference to our 2019 Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required under this Item 14 is incorporated by reference to our 2019 Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedule.

(a) Documents filed as part of this report

(1 ) Consolidated financial statements—Pattern Energy Group Inc.

<u>Report of Independent Registered Public Accounting Firm</u>	F-2
<u>Consolidated Balance Sheets as of December 31, 2018 and December 31, 2017</u>	F-4
<u>Consolidated Statements of Operations for the years ended December 31, 2018, 2017 and 2016</u>	F-5
<u>Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2018, 2017 and 2016</u>	F-6
<u>Consolidated Statement of Stockholders' Equity for the years ended December 31, 2018, 2017 and 2016</u>	F-7
<u>Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016</u>	F-8
<u>Notes to Consolidated Financial Statements</u>	F-10

Financial statements—Equity Method Investments

a) <u>South Kent Wind LP Financial Statements as of December 31, 2018 (unaudited) and December 31, 2017, and for the years ended December 31, 2018 (unaudited), 2017 and 2016</u>	S-1
b) <u>Grand Renewable Wind LP Financial Statements as of December 31, 2018 (unaudited) and December 31, 2017, and for the years ended December 31, 2018 (unaudited), 2017 and 2016</u>	S-20
c) <u>SP Armow Wind Ontario LP Financial Statements as of December 31, 2018 (unaudited) and December 31, 2017, and for the years ended December 31, 2018 (unaudited), 2017 and 2016</u>	S-40
d) <u>K2 Wind Ontario LP Financial Statements as of December 31, 2017, and for the period January 1, 2018 to December 30, 2018 (unaudited) and for the years ended December 31, 2017 and 2016</u>	S-59
e) <u>Pattern Energy Group 2 LP Financial Statements as of December 31, 2018 (unaudited) and December 31, 2017, and for the year ended December 31, 2018 (unaudited) and for the period from July 27, 2017 to December 31, 2017 <sup>(1)</sup></u>	

(2 ) Financial statements Schedule—Pattern Energy Group Inc. Parent

<u>Schedule I - Condensed Parent Company Financial Statements as of December 31, 2018 and December 31, 2017, and for the years ended December 31, 2018, 2017, 2016</u>	S-77
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(3 ) Exhibits

<sup>(1)</sup> To be filed by amendment to this Annual Report on Form 10-K by March 31, 2019 as permitted by Item 3-09(b)(1) of Regulation S-K.

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The following documents are filed or furnished as part of this Form 10-K. The Company will furnish a copy of any exhibit listed to requesting stockholders upon payment of the Company's reasonable expenses in furnishing those materials.

Exhibit No. Description Of Exhibits

- 3.1 Amended and Restated Certificate of Incorporation of Pattern Energy Group Inc. (Incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-1/A dated September 20, 2013 (Registration No. 333-190538)).
- 3.2 Amended and Restated Bylaws of Pattern Energy Group Inc. (Incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-1/A dated September 3, 2013 (Registration No. 333-190538)).
- 4.1 Form of Class A Stock Certificate (Incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-1/A dated September 3, 2013 (Registration No. 333-190538)).
- 4.2 Form of Senior Indenture (Incorporated by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-3 dated August 14, 2017 (Registration No. 333-219970)).
- 4.3 Form of Subordinated Indenture (Incorporated by reference to Exhibit 4.5 to the Company's Registration Statement on Form S-3 dated August 14, 2017 (Registration No. 333-219970)).
- 4.4 Indenture, dated July 28, 2015, among Pattern Energy Group Inc., as issuer, Pattern US Finance Company LLC, as subsidiary guarantor, and Deutsche Bank Trust Company Americas, as trustee, related to 4.00% Convertible Senior Notes due 2020 (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated July 28, 2015).
- 4.5 Indenture, dated as of January 25, 2017, among Pattern Energy Group Inc., Pattern US Finance Company LLC, as guarantor, and Deutsche Bank Trust Company Americas, as trustee, related to 5.875% Senior Notes due 2024 (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated January 20, 2017).
- 10.1 Second Amended and Restated Credit and Guaranty Agreement, among Pattern US Finance Company LLC, Pattern Canada Finance Company ULC, as borrowers, certain subsidiaries of the borrowers, the lenders party thereto from time to time, Royal Bank of Canada, as Swingline Lender, Administrative Agent and Collateral Agent, Bank of Montreal, as Syndication Agent, Royal Bank of Canada, Bank of Montreal, Morgan Stanley Bank, N.A., Citibank N.A. and Bank of America, N.A. each as LC Issuing Bank, and Citibank, N.A. as Documentation Agent, dated as of November 21, 2017 (the "Amended and Restated Credit and Guaranty Agreement") (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated November 22, 2017).
- 10.2 Pattern Energy Group Inc. Amended and Restated 2013 Equity Incentive Award Plan (Incorporated by reference to Exhibit B to the Company's Definitive Proxy Statement on Schedule 14A dated April 14, 2017).
- 10.3 Form of Pattern Energy Group Inc. 2013 Incentive Bonus Plan. (Incorporated by reference to Exhibit 10.3 to the Company's Registration Statement on Form S-1/A dated September 3, 2013 (Registration No. 333-190538)).
- 10.4

- Form of Stock Option Agreement under 2013 Equity Incentive Award Plan (Incorporated by reference to Exhibit 10.4 to the Company's Registration Statement on Form S-1/A dated September 3, 2013 (Registration No. 333-190538)).
- 10.5 Form of Restricted Stock Agreement under 2013 Equity Incentive Award Plan. (Incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2018).
- 10.6 Form of Restricted Stock Unit Agreement under 2013 Equity Incentive Award Plan. (Incorporated by reference to Exhibit 10.6 to the Company's Registration Statement on Form S-1/A dated September 3, 2013 (Registration No. 333-190538)).
- 10.7 Form of Deferred Restricted Stock Unit Agreement under 2013 Equity Incentive Award Plan. (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated November 22, 2017).
- 10.8 Form of TSR Performance Restricted Stock Agreement under 2013 Equity Incentive Award Plan (Incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2018).
- 10.9 Form of Indemnification Agreement between the Registrant and each of its Executive Officers and Directors. (Incorporated by reference to Exhibit 10.7 to the Company's Registration Statement on Form S-1/A dated September 3, 2013 (Registration No. 333-190538)).
- 10.10 Registration Rights Agreement between the Company and Pattern Energy Group LP, dated as of October 2, 2013. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated September 26, 2013).
- 10.11 Management, Operation and Maintenance Agreement, dated as of December 20, 2013, by and between Pattern Panhandle Wind 2 LLC and Pattern Operators LP (PH2 MOMA) (Incorporated by reference to Exhibit 14 to the Company's Current Report on Form 8-K dated December 20, 2013).
- 10.12 Project Administration Agreement, dated as of December 20, 2013, by and between Pattern Panhandle Wind 2 LLC and Pattern Operators LP (PH2 PAA) (Incorporated by reference to Exhibit 15 to the Company's Current Report on Form 8-K dated December 20, 2013).
- 10.13 Employment Agreement between Pattern Energy Group Inc. and Michael M. Garland dated October 2, 2013 (Incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013).

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Exhibit No. Description Of Exhibits

- 10.14 Employment Agreement between Pattern Energy Group Inc. and Hunter H. Armistead dated October 2, 2013 (Incorporated by reference to Exhibit 10.20 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013).
- 10.15 Employment Agreement between Pattern Energy Group Inc. and Daniel M. Elkort dated October 2, 2013 (Incorporated by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013).
- 10.16 Employment Agreement between Pattern Energy Group Inc. and Esben Pedersen dated October 2, 2013 (Incorporated by reference to Exhibit 10.16 to the Company's Registration Statement on Form S-1 dated April 25, 2014 (Registration No. 333-195488)).
- 10.17 Employment Agreement between Pattern Energy Group Inc. and Michael J. Lyon dated October 2, 2013 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q dated May 7, 2015).
- 10.18 Assignment and Assumption of Lease and Consent of Landlord Agreement, effective as of January 1, 2016, by and between Pattern Energy Group LP, Pattern Energy Group Inc., and AMB Pier One, LLC (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 25, 2016).
- 10.19 Purchase Rights Agreement among Pattern Energy Group Inc., Pattern Energy Group 2 LP, and (solely with respect to Article III thereto) Pattern Energy Group Holdings 2 LP and Pattern Energy Group Holdings 2 GP LLC, dated as of December 8, 2016 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated December 8, 2016).
- 10.20 Service Mark License Agreement between Pattern Energy Group Inc. and Pattern Energy Group 2 LP, dated as of December 8, 2016 (Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K dated December 8, 2016).
- 10.21 Amended and Restated Purchase Rights Agreement by and among Pattern Energy Group LP, Pattern Energy Group Inc., Pattern Energy Group Holdings LP (solely with respect to Article IV therein) and Pattern Energy GP LLC, dated as of June 16, 2017 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed June 19, 2017).
- 10.22 Amended and Restated Purchase Rights Agreement by and among Pattern Energy Group 2 LP, Pattern Energy Group Inc., Pattern Energy Group Holdings 2 LP (solely with respect to Article III therein) and Pattern Energy Group Holdings 2 GP LLC, dated as of June 16, 2017 (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed June 19, 2017).
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