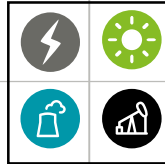


Energy sector trends

Renewable energy lagging global demand¹

According to the International Energy Agency, while growth in renewables is forecasted to continue, the pace is not expected to be fast enough to offset the effects of economic and population growth. Global oil output is expected to continue to rise over the next decade, but slow markedly after 2025. By 2030, oil demand growth is expected to flatten due to rising fuel efficiency and a transition to electric vehicles.



China showing renewed interest in coal³

At the United Nations Climate Summit from December 2nd to December 13th, 2019, world leaders shifted their attention to China, the world's top emitter of greenhouse gases. In light of its slowest economic growth level in 25 years (6 percent), policy makers are doubling down on support for coal and other heavy industries. Recent satellite images suggest that China is planning to complete a 148 gigawatt coal plant – nearly equal to the entire coal-power capacity of the European Union.

Solar and wind power growing rapidly in the US²

According to projections from the Institute for Energy Economic and Financial Analysis, in 2021 the US is expected to generate more power from renewable energy than from coal. In 2020, US power plants are expected to consume less coal than at any point since 1978, dropping coal's market share to below 22 percent. The shift comes as US power companies rapidly retire old coal plants and replace them with wind and solar energy farms.

Crude prices rise late in 2019⁴

Crude prices rose to above \$60 a barrel in December, rallying over 10 percent, primarily driven by a Saudi-led effort among OPEC, Russia, and other allies, known as OPEC+, to scale back output. The rally was also supported by the easing of the US - China trade war, which has weighed on the global economy and energy demand. The US crude benchmark began 2019 at just \$45 per barrel. Despite the rally, a sizable global oil supply has kept prices low compared to historical levels.

In the news

December 4th, 2019⁵ – The Public Utilities Commission of Nevada accepted the utility NV Energy's plan to add approximately 1.2 gigawatts of solar and 590 megawatts of batteries, highlighting a push by many Western utilities to deepen their renewables reach. The massive solar procurement includes Quinbrook and Arevia's newly approved Gemini project (690 megawatts), 8Minute's South Bighorn project (300 megawatts), and EDF's Arrow Canyon project (200 megawatts). All three projects will come with four hours of energy storage capacity to shift hundreds of megawatts of power from peak midday to later in the afternoon or the evening. NV Energy provides 81% of Nevada's electricity and is seeking to double its renewable energy capacity between 2018 and 2023.

November 21th, 2019⁶ – New Jersey's Governor, Phil Murphy, signed an executive order to increase the state's target for offshore wind generated energy from 3,500 megawatts by 2030 to 7,500 megawatts by 2035. 7,500 megawatts will provide enough electricity to power more than 3.2 million homes and meet fifty percent of New Jersey's electric power need. Other states, such as Maryland, are approving off-shore wind projects as well. Maryland plans to install a 120 megawatt offshore wind energy facility, which is planning to be commissioned in 2022.

In this update

- Energy trends
- Economic outlook
- Industry analysis
- Select M&A transactions
- Appendix

This update will focus on news and trends in the following areas:

- Coal energy production
- Renewable energy
- Power and utilities

Who we are

Deloitte Corporate Finance LLC is a leading global middle market M&A adviser. The firm's professionals have extensive knowledge within various sectors of the Energy space.

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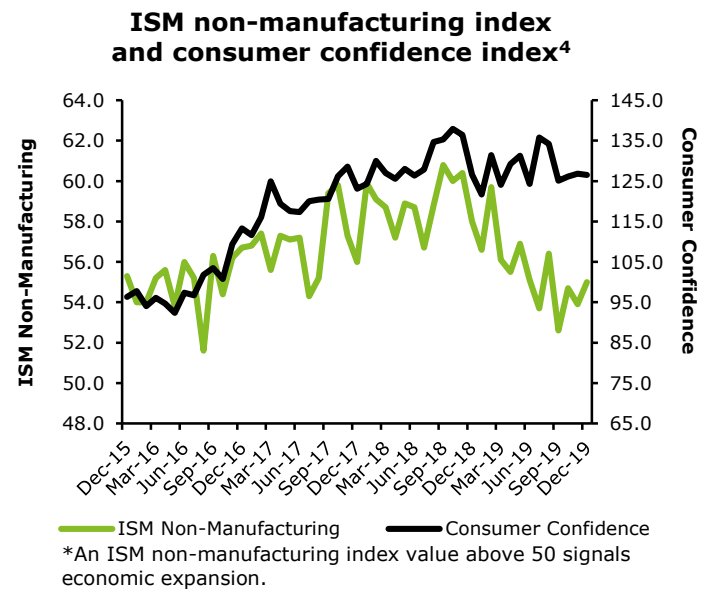
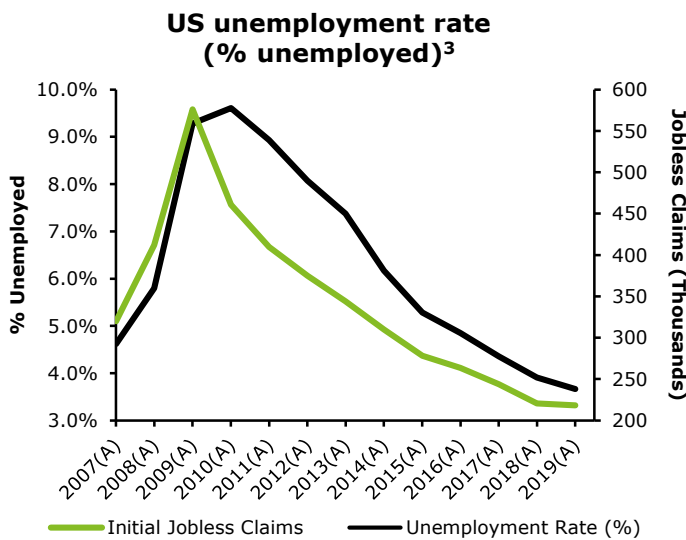
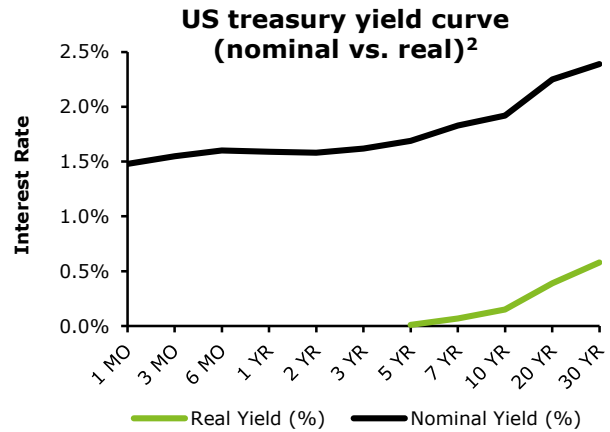
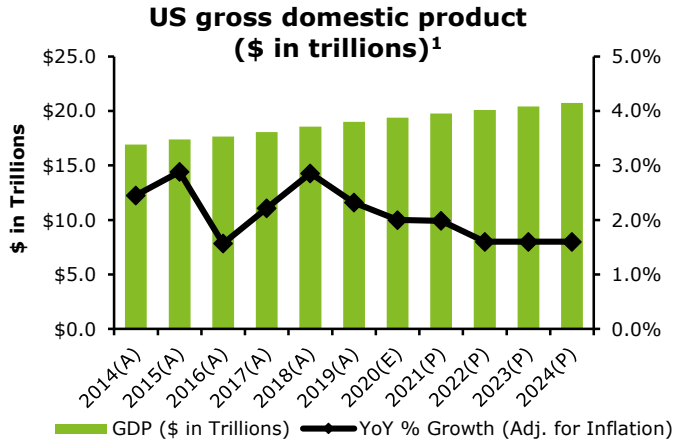
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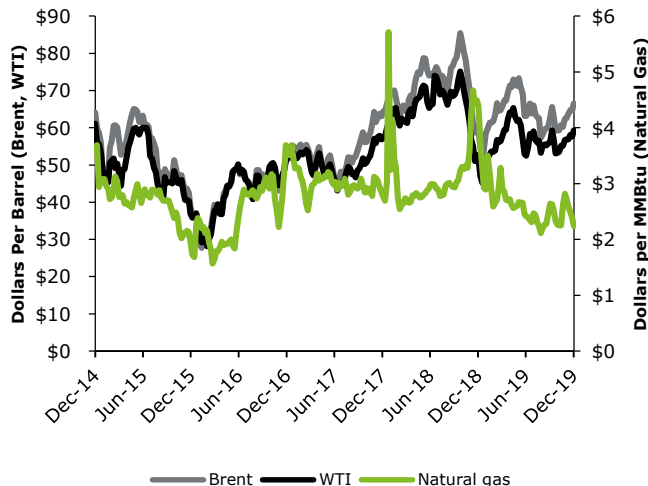
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Macroeconomic outlook

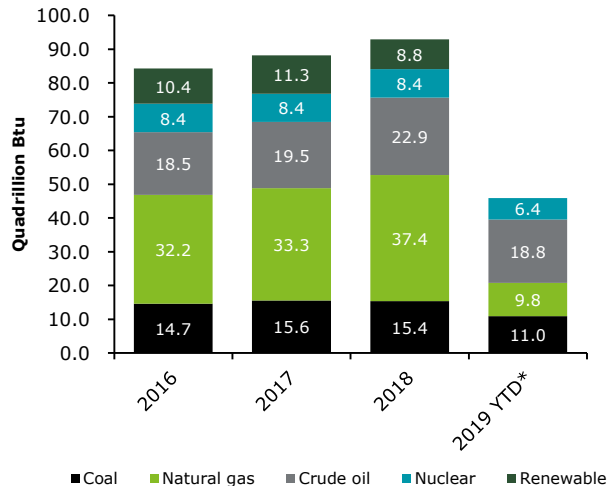


Energy sector outlook

Brent, WTI, and natural gas prices (2014 – 2019 YTD)⁵



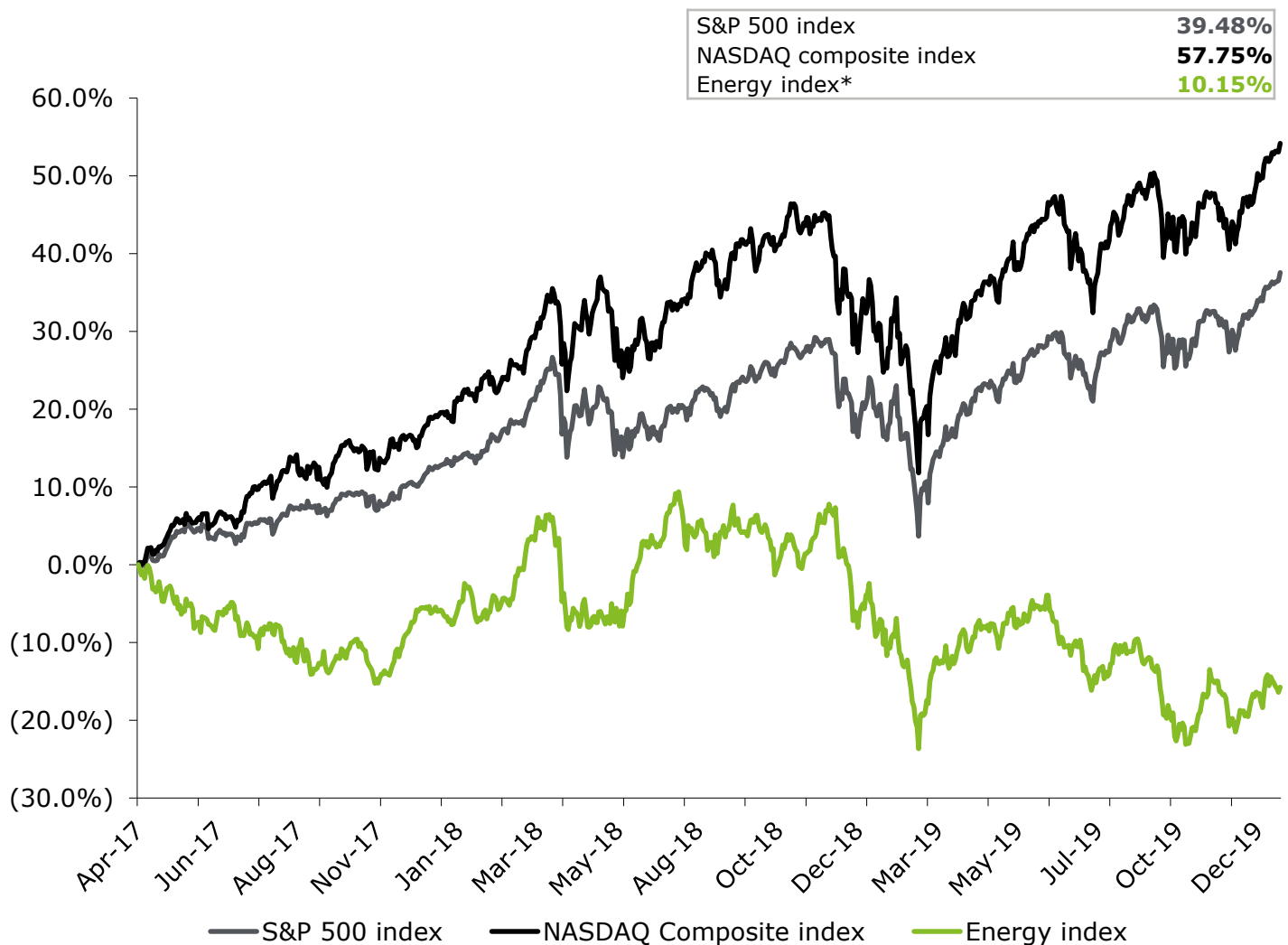
US energy production by source⁶



Energy sector breakdown and trading statistics¹

Sector	Number of companies	% of 52 week high	Median revenue CAGR (3 Yr)	Median LTM EBITDA	Median EBITDA Margin	Median enterprise value	Last twelve months		NTM	
							EV/Revenue	EV/EBITDA	EV/EBITDA	
(\$ in Millions)										
Oil and gas, general (13)	13	82.5%	12.4%	\$3,730.0	16.0%	\$30,736.9	1.4x	8.6x	6.6x	
Power & utilities (18)	18	95.6	4.0	3,490.7	31.6	43,262.1	4.6	13.6	11.9	
Renewable energy (13)	13	89.1	4.0	77.9	27.5	3,682.6	3.7	15.1	11.4	
Nuclear (3)	3	97.5	7.2	512.1	17.8	7,080.0	2.8	13.3	12.7	
Energy index	47	91.9%	5.3%	\$2,128.0	28.6%	\$25,797.5	3.7x	12.9x	11.1x	

Public comparables three-year stock market performance²

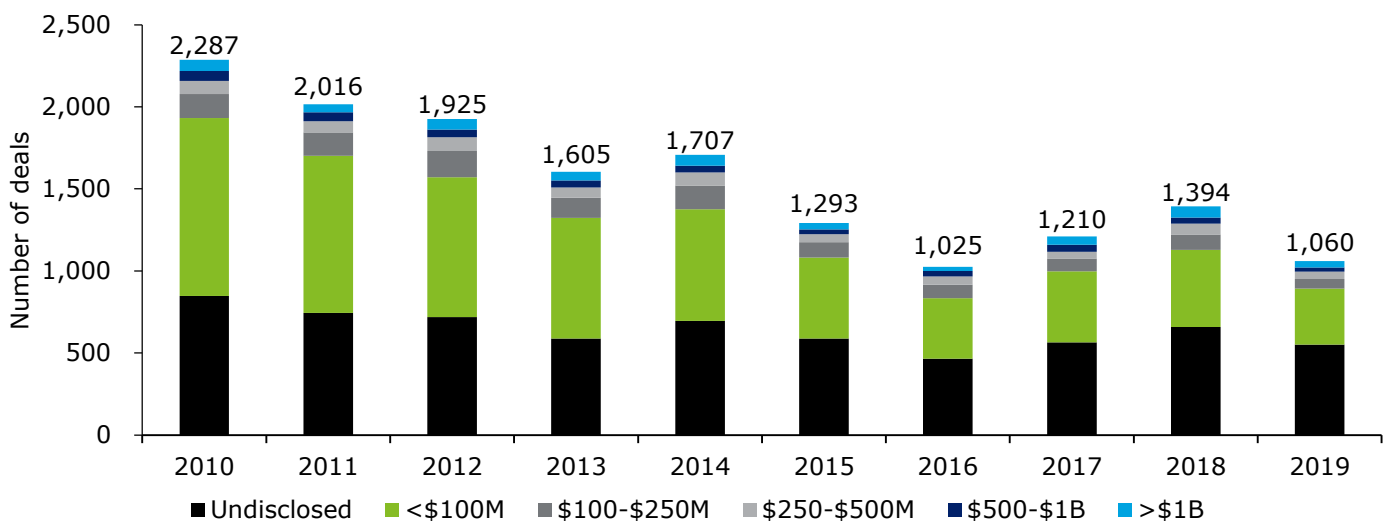


*Energy index companies listed on page 5 in the Appendix.

Recent energy M&A transactions¹

Close Date	Target/Acquirer	Target Business Description	Enterprise Value (EV)	EV/ EBITDA
Pending	Tong Petrotech Corp. GTJA Innovation Investment Co., Ltd.; Guojun Juntong Xian High-Tech Private Equity Investment Fund	Tong Petrotech Corp., together with its subsidiaries, researches, develops, manufactures, sells, and services perforation technology services to oilfield customers.	2,666.4	8.8 x
Pending	Shanxi Meijin Energy Co.,Ltd. Fuzhou Economic and Technological Development Zone Shenggan Chuangying Equity Investment Partnership	Manufactures and sells coking coal.	33,282.8	10.4
Pending	Caltex Australia Limited Alimentation Couche-Tard Inc.	Engages in purchasing, refining, distributing, selling, and suppling petroleum products in Australia, New Zealand, and Singapore.	10,791.6	13.6
Pending	DOF Subsea AS DOF ASA	DOF Subsea AS, together with its subsidiaries, provides subsea services to the oil and gas industry.	9,654.0	8.8
Pending	Amerisur Resources plc GeoPark Colombia S.A.	Engages in the exploration and production of oil and gas assets.	219.7	8.0
Pending	Kuzbasskaya Toplivnaya Company Kilton Overseas Limited	Kuzbasskaya Toplivnaya Company, together with its subsidiaries, engages in the extraction and production of thermal coal.	26,221.4	6.2
Pending	Huadian Coal Industry Group Co.,Ltd. China Huadian Corporation Ltd.	Mines, processes, and transports coal.	49,830.5	6.9
12/18/2019	SLOVNAFT, a.s. MOL Magyar Olaj- es Gazipari Nyilvanosan Mukodo Reszvenytarsasag	SLOVNAFT, a.s., together with its subsidiaries, processes crude oil.	1,744.7	7.0
11/13/2019	Universal Coal Plc TerraCom Limited	Universal Coal Plc, a coal mining company, engages in acquisition, exploration, development, and commercialization of coal projects in the Republic of South Africa.	213.0	2.3

Annual energy M&A transaction volume²



Appendix

Public comparables analysis¹

Company (Ticker)	% of 52 week high	LTM Revenue	Revenue CAGR (3 Yr)	LTM EBITDA	EBITDA Margin	Enterprise Value ("EV") ⁽¹⁾	Last twelve months	
							EV/Revenue	EV/EBITDA
<i>(\$ in Millions)</i>								
Oil and gas, general (13)								
Chevron Corporation (NYSE:CVX)	90.9	145,629.0	12.9	31,133.0	21.4	246,801.1	1.7	7.9
ConocoPhillips Company (NYSE:COP)	91.1	35,483.0	15.5	14,315.0	40.3	77,231.1	2.2	5.4
Devon Energy Corporation (NYSE:DVN)	73.3	9,506.0	(2.3)	3,730.0	39.2	12,923.8	1.4	3.5
Diamond Offshore Drilling, Inc. (NYSE:DO)	52.5	902.3	(18.8)	82.0	9.1	2,827.0	3.1	34.5
DCP Midstream, LP (NYSE:DCP)	71.6	8,179.0	15.5	799.0	9.8	11,900.0	1.5	14.9
Exxon Mobil Corporation (NYSE:XOM)	82.5	260,812.0	9.6	32,862.0	12.6	350,061.2	1.3	10.7
Halliburton Company (NYSE:HAL)	72.0	23,153.0	11.0	3,714.0	16.0	30,736.9	1.3	8.3
Hess Corporation (NYSE:HES)	93.2	6,287.0	9.9	2,717.0	43.2	27,935.9	4.4	10.3
Marathon Petroleum Corporation (NYSE:MPC)	85.3	125,366.0	32.1	9,641.0	7.7	78,460.6	0.6	8.1
Phillips 66 (NYSE:PSX)	88.2	107,266.0	15.8	6,204.0	5.8	59,970.9	0.6	9.7
Southwestern Energy Company (NYSE:SWN)	41.6	3,468.0	12.4	1,285.0	37.1	3,506.8	1.0	2.7
Transocean Ltd. (NYSE:RIG)	63.4	3,044.0	(12.9)	964.0	31.7	11,922.0	3.9	12.4
Valero Energy Corporation (NYSE:VLO)	93.2	103,682.0	15.1	5,648.0	5.4	48,744.3	0.5	8.6
Median	82.5 %	\$23,153.0	12.4 %	\$3,730.0	16.0 %	\$30,736.9	1.4 x	8.6 x
Mean	76.8 %	\$64,059.8	8.9 %	\$8,699.5	21.5 %	\$74,078.6	1.8 x	10.5 x
Power & utilities (18)								
Ameren Corporation (NYSE:AEE)	95.6 %	\$5,744.0	(0.4) %	\$2,332.0	40.6 %	\$28,790.3	5.0 x	12.3 x
ALLETE, Inc. (NYSE:ALE)	91.2	1,384.2	0.1	399.8	28.9	5,755.0	4.2	14.4
American Electric Power Company, Inc. (NYSE:AEP)	98.3	15,746.5	(1.0)	5,249.4	33.3	76,280.6	4.8	14.5
Avangrid, Inc. (NYSE:AGR)	95.6	6,394.0	4.0	1,829.2	28.6	23,659.1	3.7	12.9
Black Hills Corporation (NYSE:BKH)	95.6	1,758.4	7.2	600.1	34.1	8,276.2	4.7	13.8
CenterPoint Energy, Inc. (NYSE:CNP)	84.8	12,107.0	18.7	2,531.0	20.9	28,832.9	2.4	11.4
Consolidated Edison, Inc. (NYSE:ED)	92.1	12,572.0	1.4	4,161.0	33.1	50,912.1	4.0	12.2
Dominion Energy, Inc. (NYSE:D)	97.0	15,458.0	11.3	6,682.0	43.2	111,602.8	7.2	16.7
DTE Energy Company (NYSE:DTE)	96.5	13,271.0	9.0	2,578.0	19.4	40,909.9	3.1	15.9
Duke Energy Corporation (NYSE:DUK)	93.4	24,686.0	5.5	10,767.0	43.6	131,118.0	5.3	12.2
Entergy Corporation (NYSE:ETR)	99.0	10,928.8	0.7	3,322.4	30.4	43,170.8	4.0	13.0
Eversource Energy (NYSE:ES)	98.9	8,511.0	4.1	2,690.8	31.6	43,353.5	5.1	16.1
Exelon Corporation (NasdaqGS:EXC)	89.3	34,911.0	5.0	9,507.0	27.2	84,857.7	2.4	8.9
PG&E Corporation (NYSE:PCG)	47.9	16,474.0	(1.3)	4,306.0	26.1	29,538.6	1.8	6.9
Sempra Energy (NYSE:SRE)	97.6	12,297.0	7.1	4,344.0	35.3	73,605.2	6.0	16.9
The Southern Company (NYSE:SO)	99.5	21,842.0	6.1	8,733.0	40.0	117,106.3	5.4	13.4
WEC Energy Group, Inc. (NYSE:WEC)	95.3	7,652.4	1.3	2,399.6	31.4	41,982.3	5.5	17.5
Xcel Energy Inc. (NasdaqGS:XEL)	95.8	11,611.0	1.9	3,659.0	31.5	52,859.5	4.6	14.4
Median	95.6 %	\$12,202.0	4.0 %	\$3,490.7	31.6 %	\$43,262.1	4.6 x	13.6 x
Mean	92.4 %	\$12,963.8	4.5 %	\$4,227.3	32.2 %	\$55,145.0	4.4 x	13.5 x
Renewable energy (13)								
Ballard Power Systems Inc. (TSX:BLDP)	90.5 %	\$92.9	7.6 %	(\$21.4)	NM %	\$2,144.7	23.1 x	NM x
Brookfield Renewable Partners L.P. (TSX:BEP.UN)	93.3	3,034.0	10.1	1,924.0	63.4	34,282.3	11.3	17.8
Canadian Solar Inc. (NasdaqGS:CSIQ)	90.4	3,181.9	(1.3)	433.2	13.6	2,764.9	0.9	6.4
Enphase Energy, Inc. (NasdaqGM:ENPH)	84.2	506.6	19.4	77.9	15.4	3,682.6	7.3	47.3
First Solar, Inc. (NasdaqGS:FSLR)	84.3	2,355.0	(12.5)	158.6	6.7	5,157.0	2.2	32.5
Avangrid, Inc. (NYSE:AGR)	95.6	6,394.0	4.0	1,829.2	28.6	23,659.1	3.7	12.9
Macquarie Infrastructure Corporation (NYSE:MIC)	99.1	1,740.5	2.5	534.6	30.7	6,482.0	3.7	12.1
Ormat Technologies, Inc. (NYSE:ORA)	96.6	744.1	3.7	344.0	46.2	5,191.8	7.0	15.1
ReneSola Ltd (NYSE:SOL)	65.2	98.2	(53.8)	27.0	27.5	240.4	2.4	8.9
Renewable Energy Group, Inc. (NasdaqGS:REGI)	89.1	2,143.0	4.7	(5.0)	NM	1,180.3	0.6	NM
SunPower Corporation (NasdaqGS:SPWR)	53.7	1,717.3	(3.5)	(155.2)	NM	2,232.8	1.3	NM
Sunrun Inc. (NasdaqGS:RUN)	71.7	854.8	25.4	4.4	0.5	4,585.5	5.4	1030.7
Vivint Solar, Inc. (NYSE:VSLR)	83.6	327.4	44.1	(86.9)	NM	2,461.3	7.5	NM
Median	89.1 %	\$1,717.3	4.0 %	\$77.9	27.5 %	\$3,682.6	3.7 x	15.1 x
Mean	84.4 %	\$1,783.8	3.9 %	\$389.6	25.9 %	\$7,235.8	5.9 x	131.5 x
Nuclear (3)								
BWX Technologies, Inc. (NYSE:BWXT)	97.5 %	\$1,871.7	7.4 %	\$333.4	17.8 %	\$7,080.0	3.8 x	21.2 x
Curtiss-Wright Corporation (NYSE:CW)	98.6	2,480.8	5.2	512.1	20.6	6,825.0	2.8	13.3
Huntington Ingalls Industries, Inc. (NYSE:HII)	96.7	8,686.0	7.2	976.0	11.2	12,965.2	1.5	13.3
Median	97.5 %	\$2,480.8	7.2 %	\$512.1	17.8 %	\$7,080.0	2.8 x	13.3 x
Mean	97.6 %	\$4,346.2	6.6 %	\$607.1	16.6 %	\$8,956.7	2.7 x	15.9 x

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