

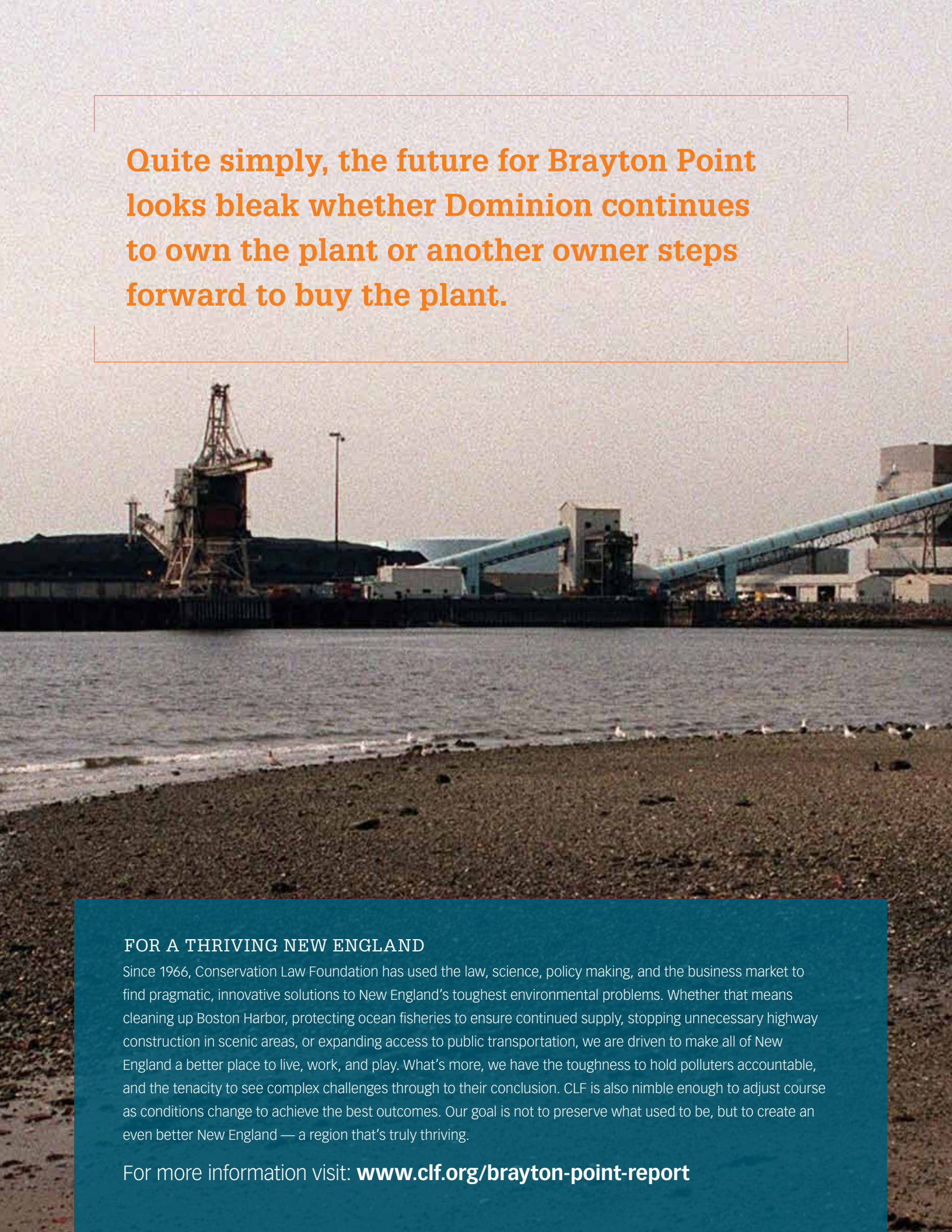
# Dark Days Ahead:

Financial Factors Cloud  
Future Profitability at  
Dominion's Brayton Point

## Authors:

David Schlissel  
Tom Sanzillo





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# Dark Days Ahead:

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## AUTHORS:

**David Schlissel** has been a regulatory attorney and a consultant on electric utility rate and resource planning issues since 1974. He has testified as an expert witness before regulatory commissions in more than 35 states and before the U.S. Federal Energy Regulatory Commission and Nuclear Regulatory Commission. He also has testified as an expert witness in state and federal court proceedings concerning electric utilities. His clients have included state regulatory commissions in Arkansas, Kansas, Arizona and California, publicly owned utilities, state governments and attorneys general, state consumer advocates, city governments, and national and local environmental organizations.

Mr. Schlissel has undergraduate and graduate engineering degrees from the Massachusetts Institute of Technology and Stanford University. He also has a Juris Doctor degree from Stanford University School of Law.

**Tom Sanzillo** has 30 years of experience in public and private finance. As first deputy comptroller of New York State, he was in charge of over \$150 billion in state and local municipal bond programs and was responsible for a \$156 billion global pension fund. Over the last six years Mr. Sanzillo has authored reports and testimony on public and private energy finance, coal, coal mining and exports in twenty states, including financial analyses of coal plants in Texas, Georgia, South Carolina, and Pennsylvania.

## PURPOSE

The purpose of this Report is to inform policymakers and other interested stakeholders regarding the future of the Brayton Point power plant in Southeastern Massachusetts.<sup>1</sup>

There are four generating units at Brayton Point: Units 1-3 are coal-fired although each unit has some potential to burn natural gas. Unit 4 is oil-fired. The units range between 38 and 50 years in age and can produce a total of approximately 1,580 megawatts ("MW") of power.

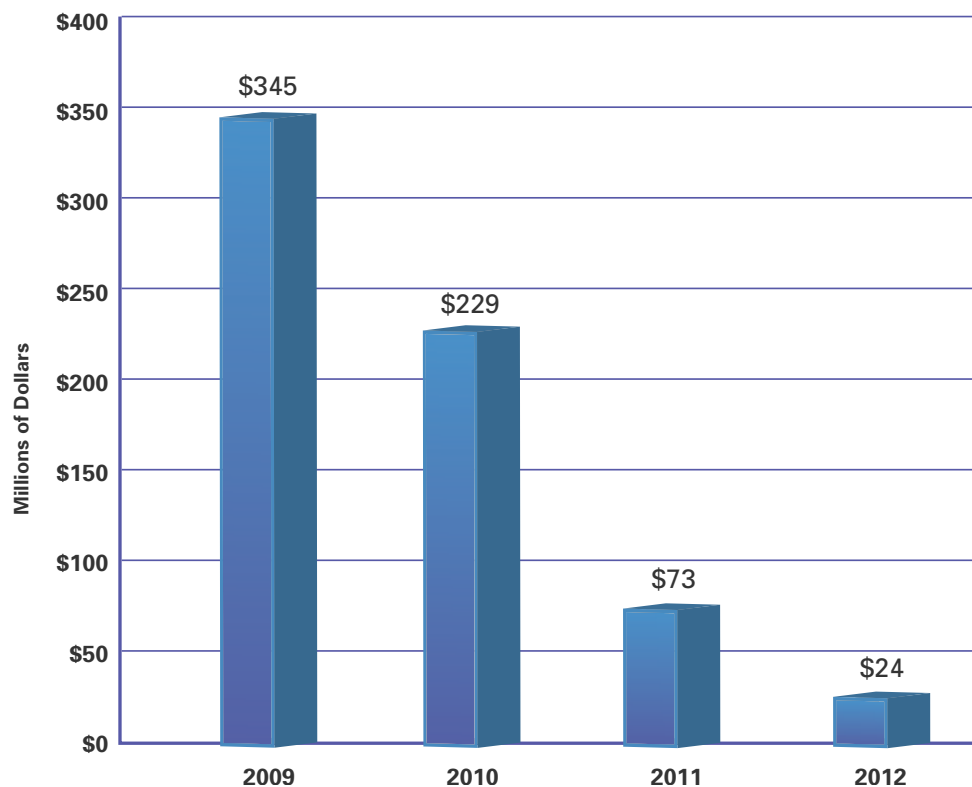
Brayton Point is currently owned by Dominion Resources ("Dominion"), although, having just completed a \$1 billion investment in a new scrubber and new cooling towers, Dominion has said that it is in the process of selling the plant along with two other fossil-fired plants in the Midwest.

Our analysis is based on Company and ISO-NE reports and documents. We also have relied upon financial analyses prepared by UBS Investment Research and information developed or reported by SNL Financial, L.L.C.

## CONCLUSION

Our ultimate conclusion is that, quite simply, the future for Brayton Point looks bleak whether Dominion continues to own the plant or another owner steps forward to buy the plant. Significantly changed circumstances created a Perfect Storm for Dominion Resources in the years 2010-2012 that led to an almost total elimination of Dominion's pre-tax earnings from

**Figure C-1: Brayton Point's EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization) 2009-2012**





**It appears almost certain that Dominion or any new owner, even if picking up Brayton Point at a bargain basement price, will likely not see gains that are sufficient to cover operating expenses, debt and an adequate return, for at least the rest of the decade.**

the coal-burning Brayton Point Units 1-3 in Southeastern Massachusetts. These changed circumstances included plummeting energy market prices, declining capacity prices, increasing coal prices, a flattening of energy consumption in New England, and a steep reduction in the power generated at Brayton Point.

This near elimination of Brayton Point's earnings occurred in the very years that Dominion was completing a \$1 billion upgrade at the once very profitable plant that included the addition of cooling towers and a scrubber system to reduce its SO<sub>2</sub> and mercury emissions. Indeed, Dominion has decided to sell Brayton Point even though that will mean a loss of perhaps \$700 million or more, of its recent \$1 billion investment.

Moreover, looking forward from today, it appears almost certain that many of the factors that created the recent Storm will continue for the foreseeable future as Dominion or any new owner, even if picking up Brayton Point at a bargain basement price, will likely not see gains that are sufficient to cover operating expenses, debt and an adequate return, for at least the rest of the decade. Perhaps this is the very reason that Dominion has decided to sell Brayton Point and take such a large loss on its recent investments.

In particular, we have concluded that, based on today's forward looking circumstances, it is reasonable to expect

that for the remainder of this decade, at least:

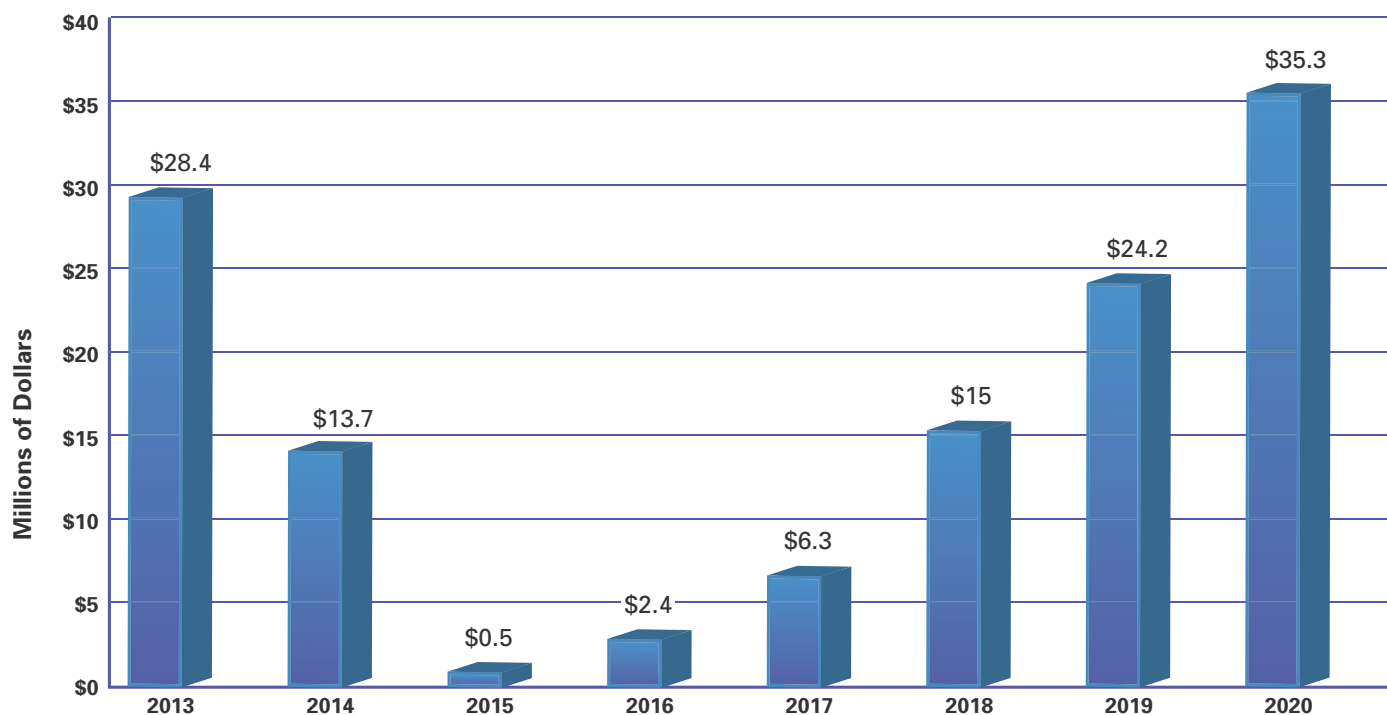
- Energy market prices in New England will remain low, reflecting continuing low natural gas prices.
- Energy consumption in New England will remain flat while consumption in Massachusetts may decline.
- Bituminous coal prices will not drop significantly.
- As a result, the generation at Brayton Point Units 1-3 is not likely to reach the high levels of performance achieved by the units through 2009.
- Future New England capacity prices are not likely to increase significantly.

As can be seen from Figures C-2 and C-3, we have examined two scenarios that differ in the levels of expected generation from Brayton Point Units 1-3. In what we have termed the "optimistic scenario," generation from the Units is expected to increase to 60 percent in the years 2018-2020. In the "less optimistic scenario," generation from Brayton Point Units 1-3 is projected to be capped at 40 percent through the years 2013-2020. We consider this to be a conservative assumption as it is quite possible that the generation from Brayton Point Units 1-3 will not increase as much as we assumed. Thus, in no way, did we examine a "worst-case" scenario in which the future operating performance of Units 1-3 would be at the same low 16 percent average capacity factor that the Units achieved in

2012. In other words, earnings from Brayton Point 1-3 could easily be even lower than we have projected. In neither of these scenarios, would Brayton Point Units 1-3 produce

earnings that would be adequate to cover depreciation and amortization, debt costs and an adequate return at any time through 2020.

**Figure C-2: Projected Brayton Point EBITDA, 2013-2020 – Optimistic Scenario**

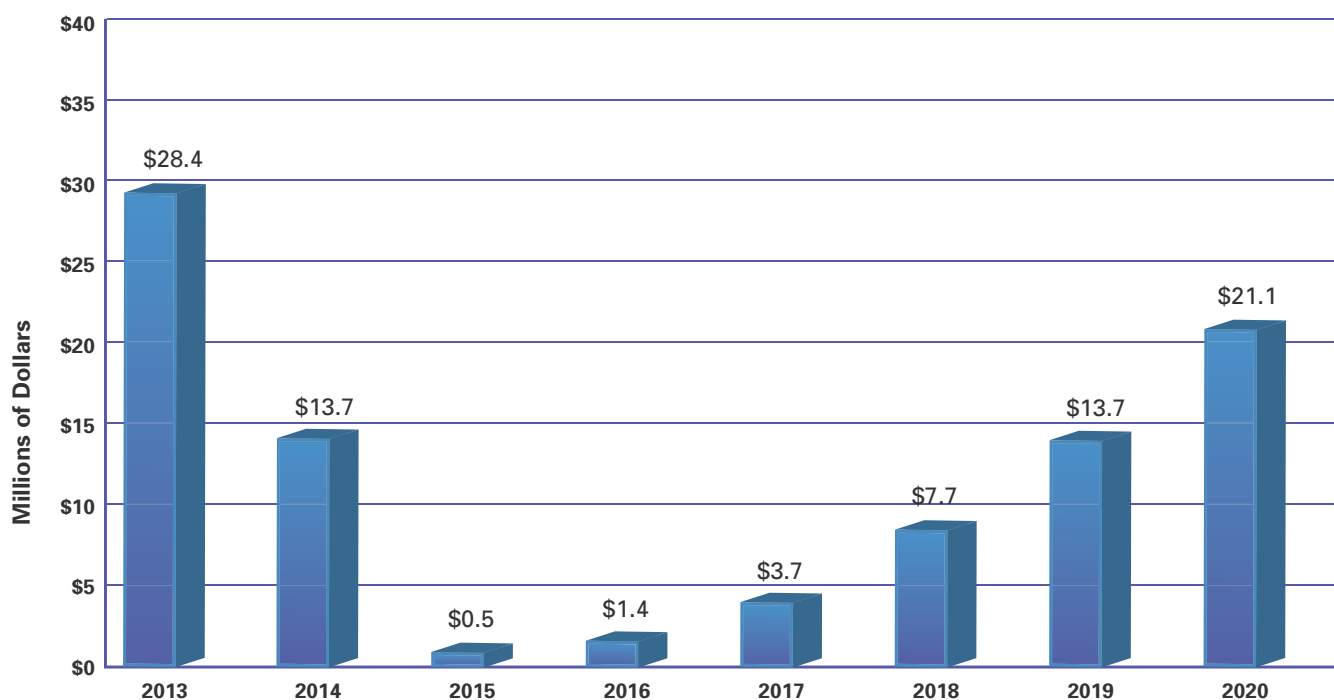


**Table C-1: Projected Brayton Point EBITDA, 2013-2020, Optimistic Scenario**

	2013	2014	2015	2016	2017	2018	2019	2020
Annual Capacity Factor (%)	30%	35%	40%	45%	50%	60%	60%	60%
Net Capacity	1100	1100	1100	1100	1100	1100	1100	1100
Annual Output (Thousands of MWh)	2,889	3,370	3,852	4,333	4,815	5,778	5,778	5,778
Energy Price (\$/MWh)	\$48.68	\$46.85	\$45.99	\$45.99	\$49.43	\$51.68	\$54.49	\$57.67
Energy Margin (\$Millions)	42	28	14	14	24	35	45	56
Capacity Revenue (Millions)	39	41	44	44	45	46	47	48
EBITDA (\$Millions)	28	14	1	2	6	15	24	35

This same conclusion applies to Brayton Unit 4, which burns oil, as its costs of production are significantly higher than projected New England energy market prices.

**Figure C-3: Projected Brayton Point EBITDA, 2013-2020 – Less Optimistic Scenario**



**Table C-2: Projected Brayton Point EBITDA, 2013-2020, Less Optimistic Scenario**

	2013	2014	2015	2016	2017	2018	2019	2020
Annual Capacity Factor (%)	30%	35%	40%	40%	40%	40%	40%	40%
Net Capacity	1100	1100	1100	1100	1100	1100	1100	1100
Annual Output (Thousands of MWh)	2,889	3,370	3,852	3,852	3,852	3,852	3,852	3,852
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Energy Margin (\$Millions)	42	28	14	16	19	23	30	38
Capacity Revenue (Millions)	39	41	44	44	45	46	47	48
EBITDA (\$Millions)	28	14	1	1	4	8	14	21

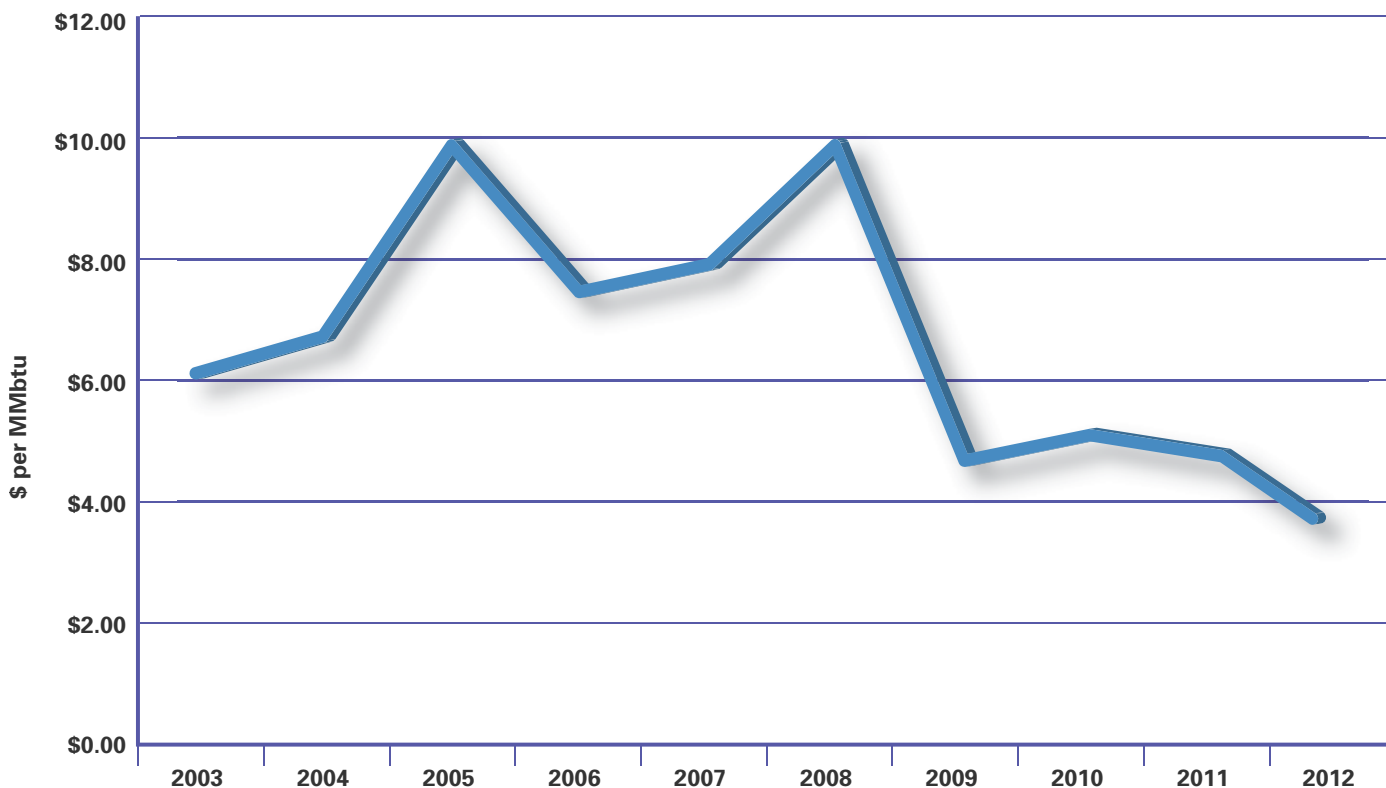
## CHANGED CIRCUMSTANCES THAT HAVE CAUSED BRAYTON POINT'S EARNINGS TO PLUMMET SINCE 2009

The first, and most significant, changed circumstance that has reduced Dominion's earnings from the sale of power generated by Brayton Point Units 1-3 has been the collapse of natural gas prices that started in late 2008/early 2009. This rapid price decline was the result of the nearly universal recognition that the United States has substantial

economically recoverable reserves that are accessible at production costs far below more traditional gas wells. Figure 1 shows the average natural gas prices in New England between 2003 and 2012 with a steep price drop between 2008 and 2009 and further erosion in prices through 2012.

Thus, average natural gas prices in New England in 2012 were some 32 percent lower than in 2003 and nearly 20 percent lower than they had been just the year before in 2011.<sup>2</sup>

**Figure 1: Average Annual New England Natural Gas Prices 2003-2012**





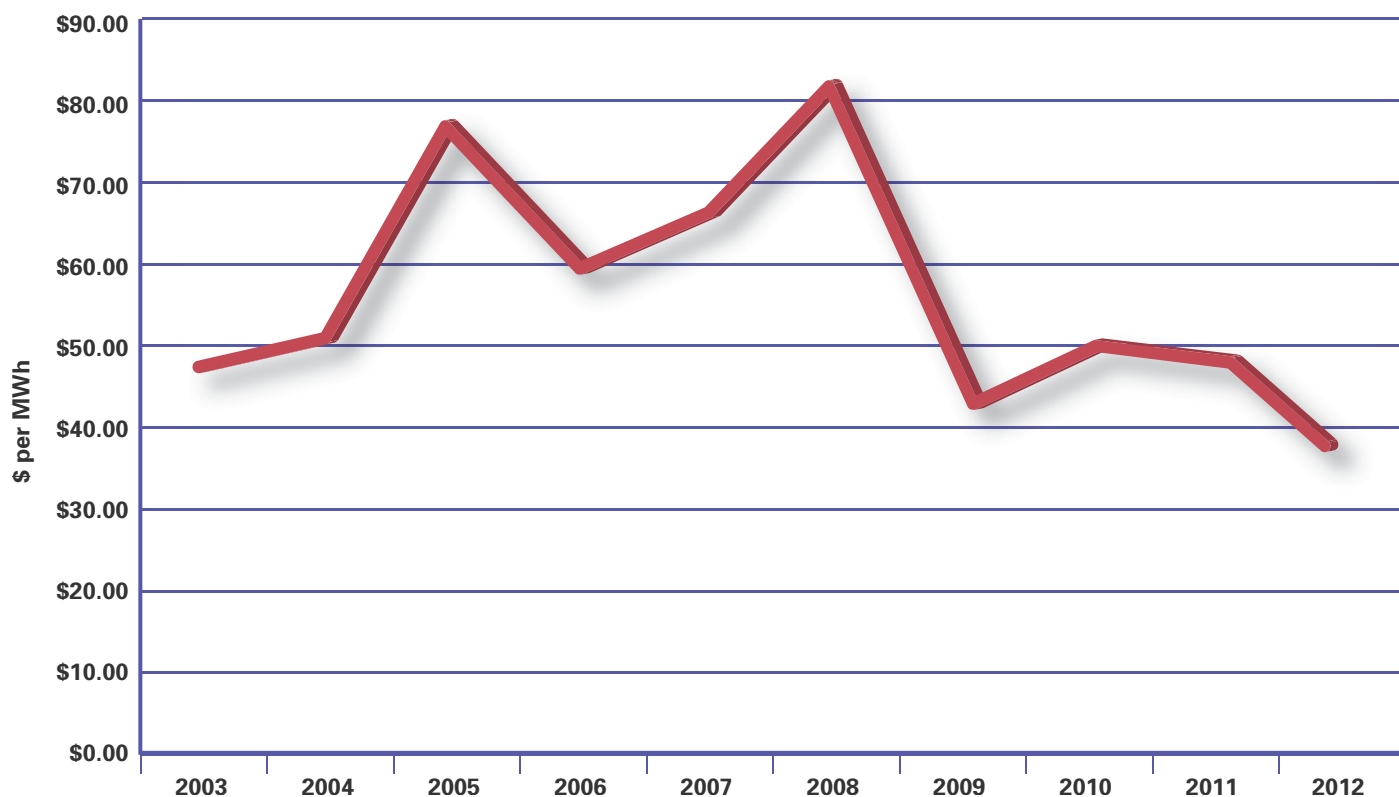
Natural gas has in recent years increasingly been the marginal fuel in ISO-NE, rising from being the marginal fuel in 68 percent of the pricing intervals in the twelve month period ending September 30, 2011 to 82 percent of the pricing intervals in the twelve month period ending September 30, 2012. Natural gas-fired units have thereby increasingly set energy market prices.

Thus, it is not a surprise that ISO-NE's wholesale electricity prices have decreased almost in tandem with dropping

natural gas prices. Figure 2, then shows a steep decline in average wholesale electricity prices in ISO-NE from 2003 through 2012 (energy prices only) that reflects the sharp drop in natural gas prices shown in Figure 1.

These lower energy market prices and reduced energy margins have meant both reduced revenues for coal plant owners, like Dominion Resources, and reduced generation at coal-fired power plants, like Brayton Point, as coal has been increasingly displaced by natural gas-fired generation.

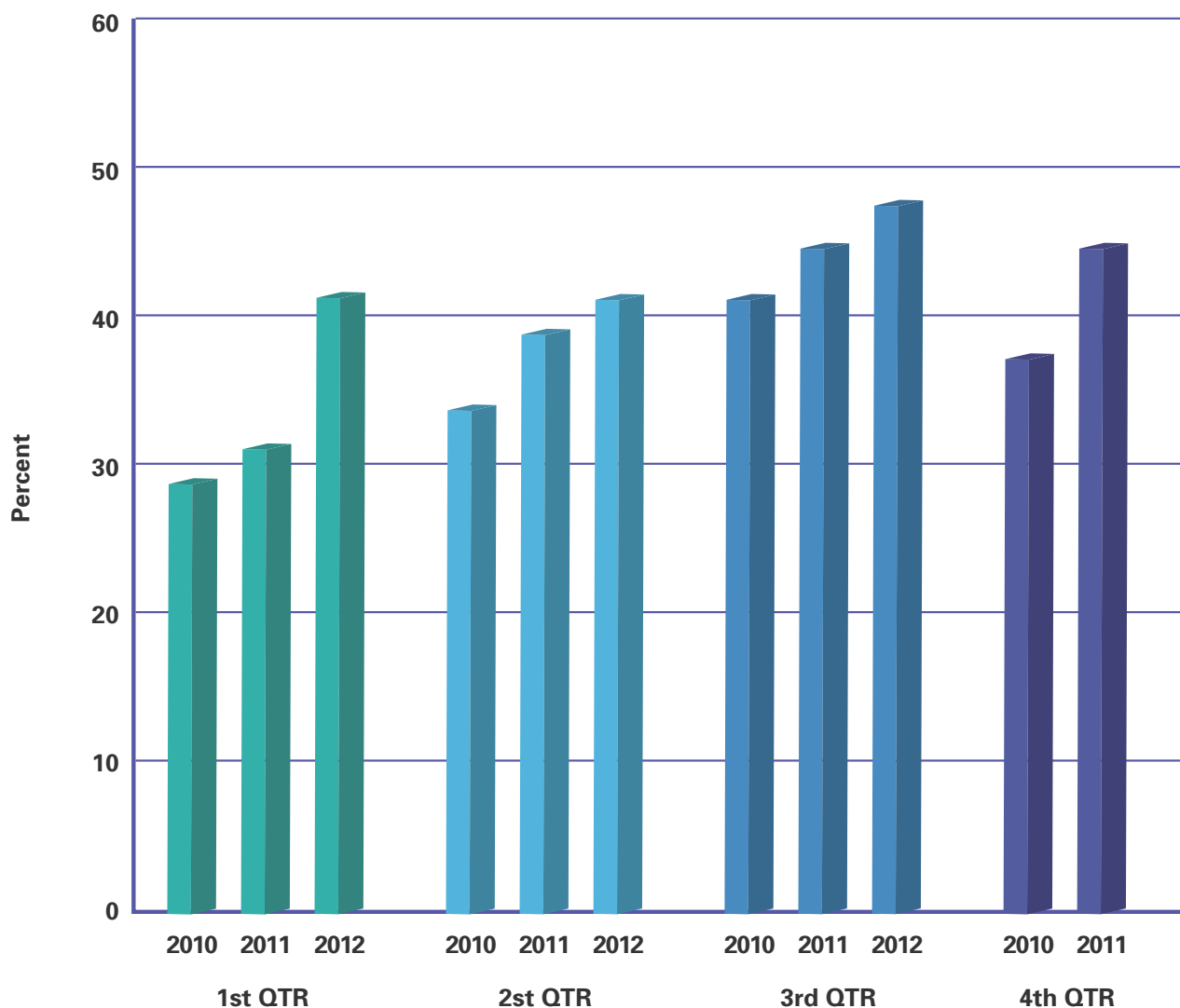
**Figure 2: Average New England Wholesale Electricity Prices 2003-2012 (Energy Market Only)**



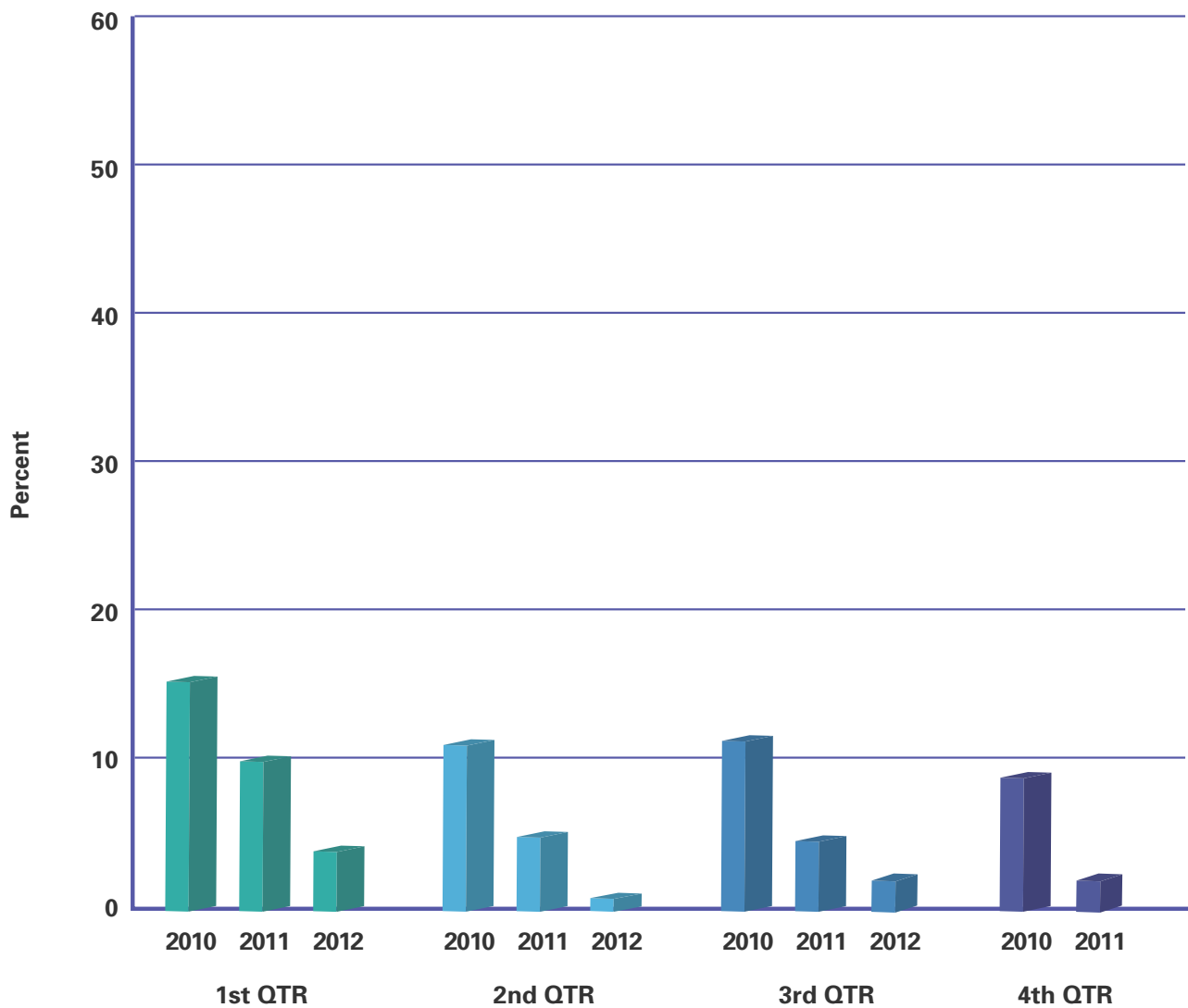
The recent displacement of coal by gas-fired generation in New England is shown clearly in Figures 3 and 4, which present the percentages of ISO-NE's generation from natural gas (Figure 3) and coal (Figure 4) each quarter from January 2010 through September 2012. As can be seen,

natural gas's contribution to ISO-NE's generation has been increasing in each quarter as compared to the same quarter in the previous year while coal's contribution has been declining steadily.

**Figure 3: Natural Gas as a Percentage of ISO-NE's Generation by Quarter in 2010-2012**



**Figure 4:** Coal as a Percentage of ISO-NE's Generation by Quarter in 2010-2012

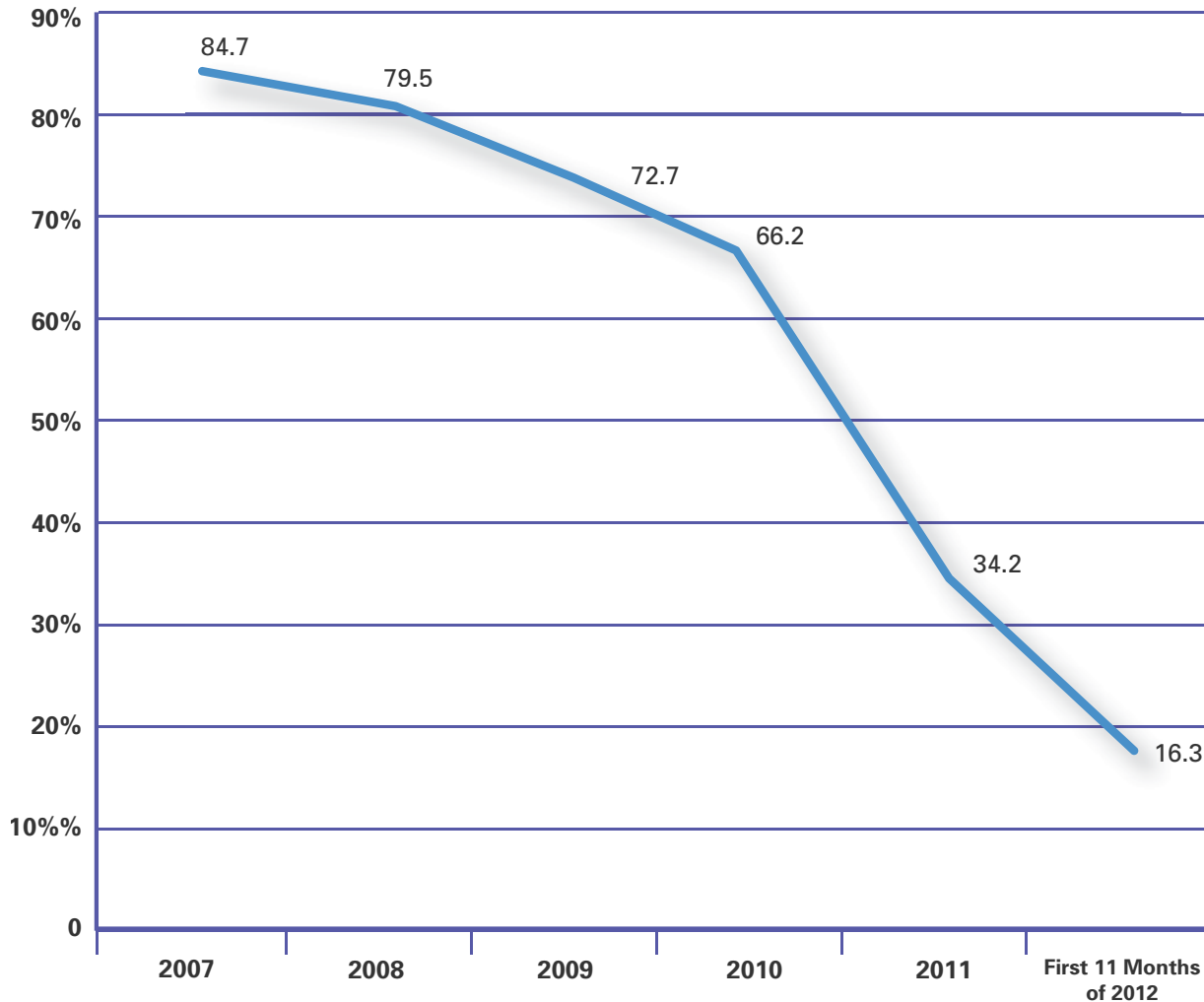




**These lower energy market prices and reduced energy margins have meant both reduced revenues for coal plant owners, like Dominion Resources, and reduced generation, like Brayton Point.**

Given coal's sharply declining share of ISO-NE generation, it is no surprise that Brayton Point's generation has declined significantly in recent years, as is shown in Figure 5.

**Figure 5: Annual Brayton Point Capacity Factors 2008-2012**



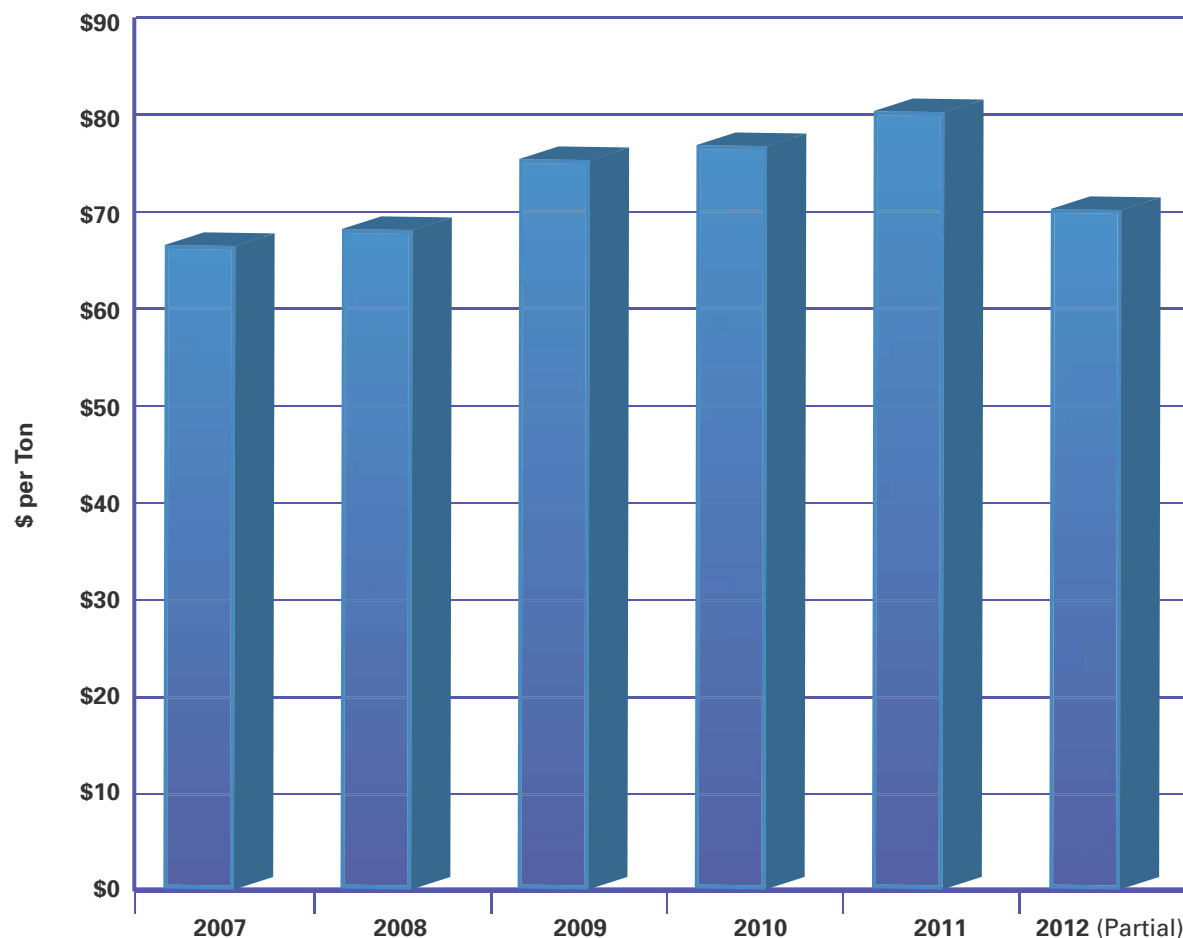
Moreover, at the same time that natural gas prices have declined significantly, there has not been a similar drop in the delivered prices of the Central Appalachian coal that is burned at Brayton Point, as is shown in Figure 6. In fact, the delivered coal prices increased significantly from 2008 through 2011 before decreasing between 2011 and 2012.

While ISO-NE's energy market prices were declining in recent years, its capacity prices also have been declining with a 35 percent decrease in the price obtained in the Forward Capacity Auction for capacity in 2012 as compared

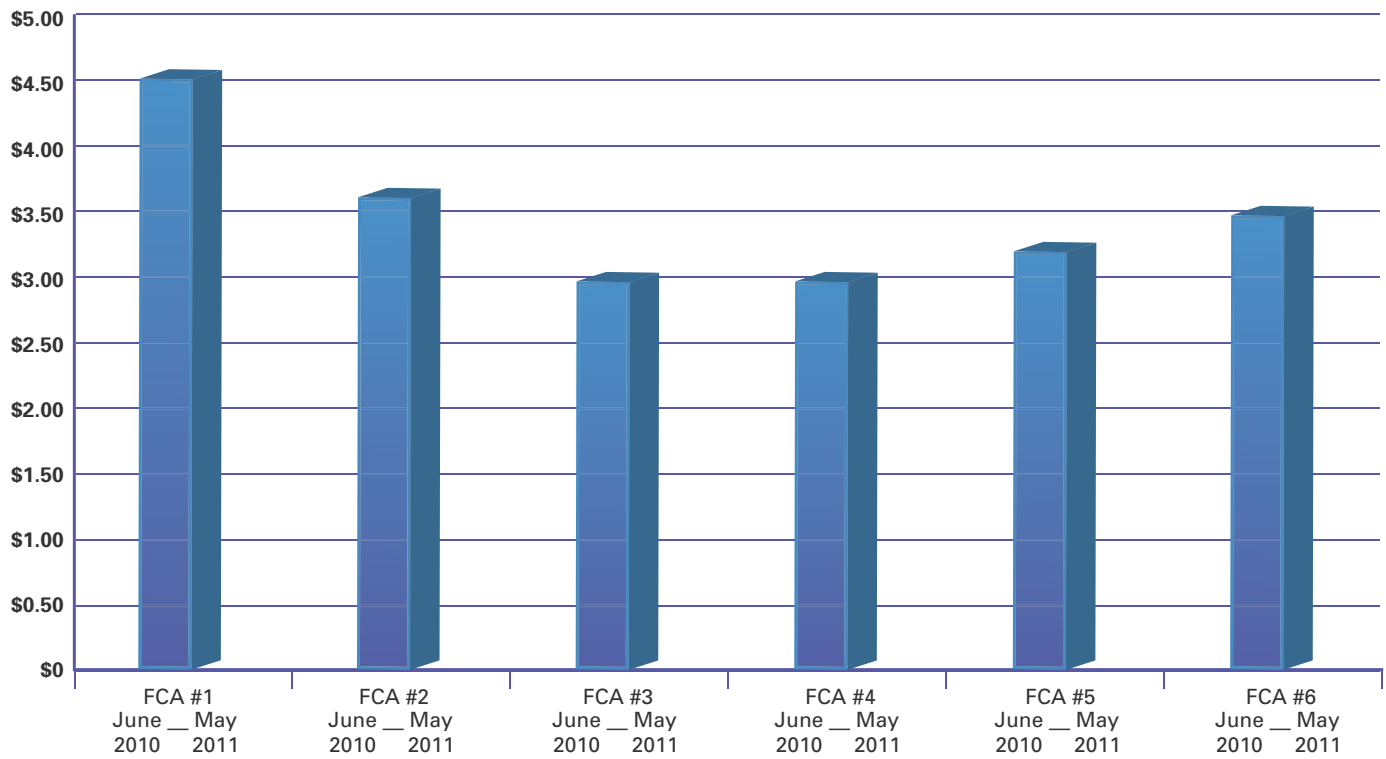
to the price for 2010. Figure 7 shows the results of ISO-NE's first six forward capacity auctions for the periods June 2010 through May 2016.

Dominion mitigated the effects of the declining energy market prices and capacity prices, and protected its earnings, by hedging its sales through selling energy and capacity at forwards prices. For example, Dominion's 4th Quarter 2010 Earnings Report noted that 100 percent of the output from the Company's New England Baseload plants (i.e., Millstone, Brayton Point and Salem Harbor) during

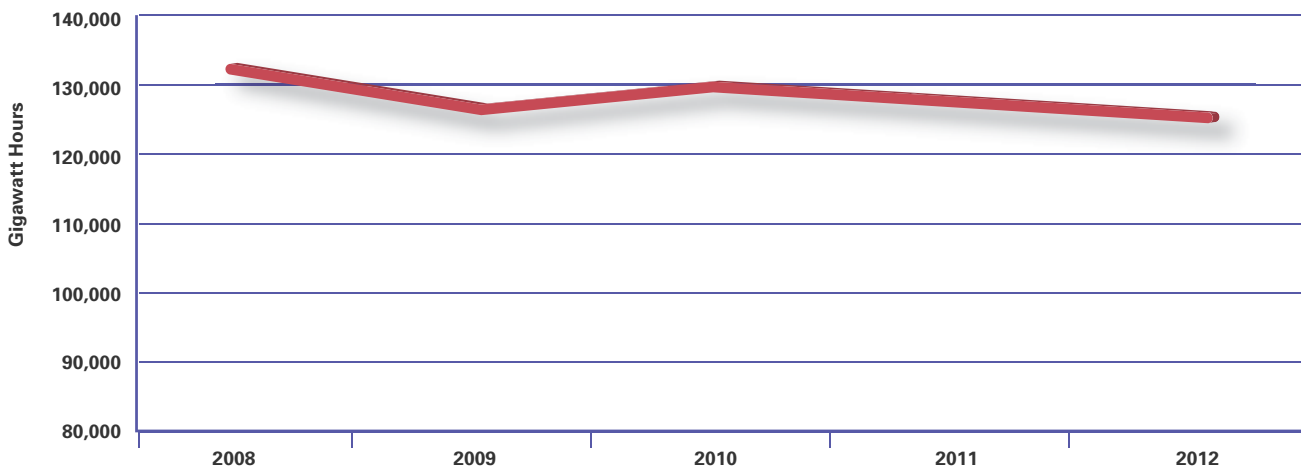
**Figure 6: Brayton Point Average Delivered Coal Prices 2008-2012**



**Figure 7: ISO-NE Forward Capacity Market Results (kW-Month)**



**Figure 8: Weather Adjusted ISO-NE Energy Usage from 2008 to 2012.**





that quarter was hedged at an average price of \$69.90 per MWh as compared to an average Massachusetts Hub/ New England price of \$48.49 per MWh. However, as time went on, the benefits of hedging with forwards prices have diminished, if not entirely disappeared.

Moreover, at the same time that energy market prices and capacity prices were declining, energy usage in ISO-NE decreased by 2-3 percent between 2008 and 2012 as a result of the economic downturn and increasing energy efficiency efforts. This decline is shown in Figure 8.

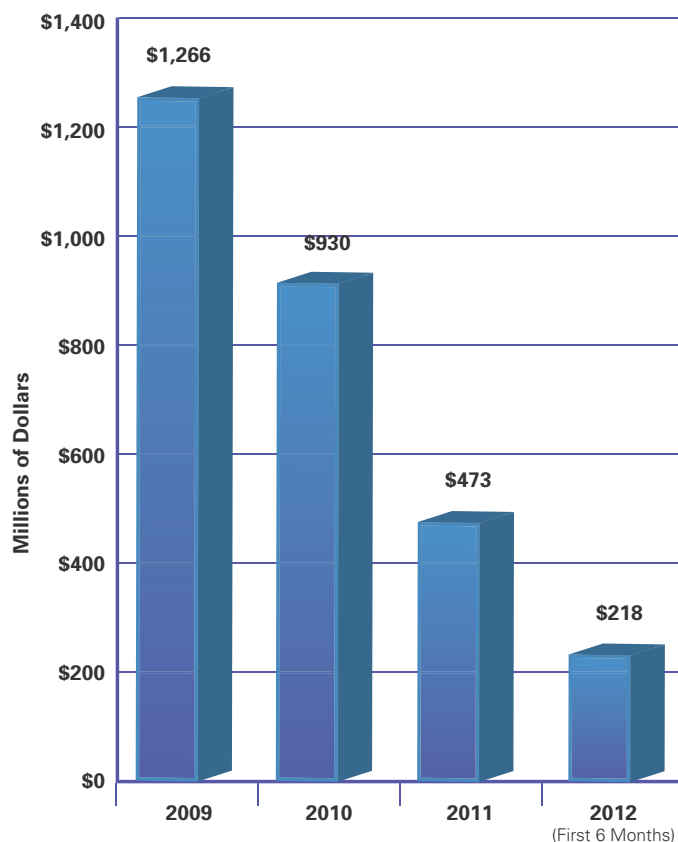
ISO-NE's annual peak loads also decreased slightly during these same years.

As a result of these significantly changed circumstances, the earnings (as measured by EBITDA) from the sale of power generated at Dominion's New England Merchant Fleet, in general, fell significantly and disappeared almost entirely for Brayton Point Units 1-3, specifically, during the years 2009-2012, as shown in Figures 9 and 10.

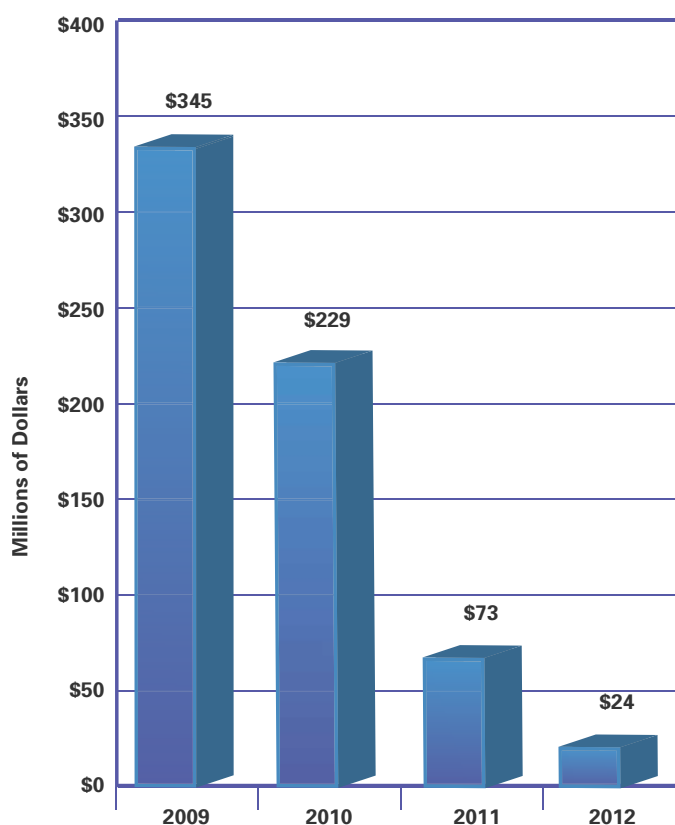
New England Merchant Fleet declined, the Company's EBITDA from Brayton Point Units 1-3 cratered, dropping from a very healthy \$345 million in 2009 to a very anemic \$24 million in 2012.

The New England Fleet declined the sources of the data used in the analyses shown in Figures 9 and 10 were Company documents (particularly, Quarterly Earnings Reports), data from SNL Financial and ISO-NE documents.

**Figure 9: Dominion New England Merchant Fleet EBITDA 2009-First Six Months of 2012** <sup>3 4</sup>



**Figure 10: Brayton Point EBITDA, 2009-2012**



## THE FUTURE PROFITABILITY OF POWER FROM BRAYTON POINT UNITS 1-3

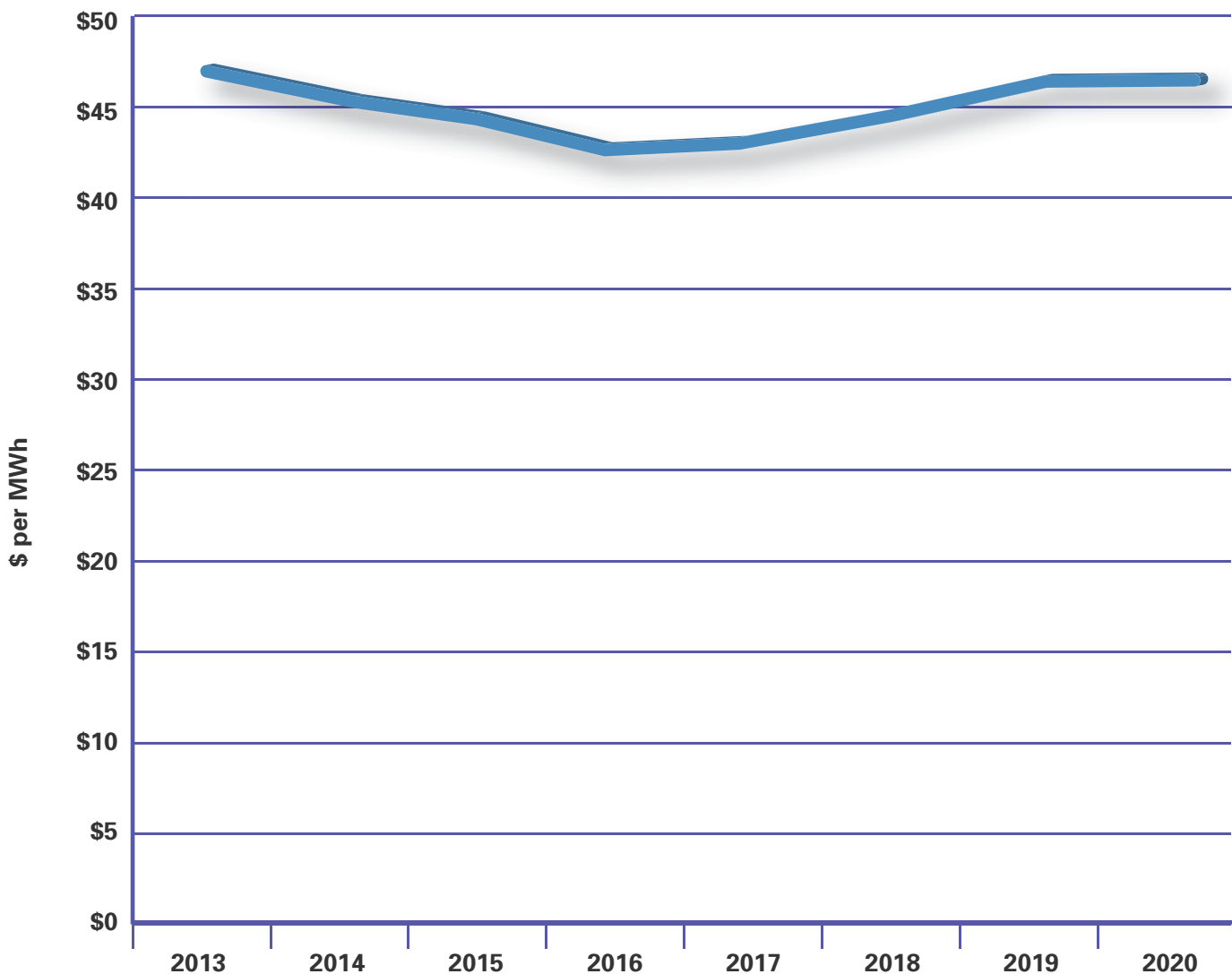
In order to significantly improve the earnings from owning and operating Brayton Point, and to be able to pay the interest and profits on invested funds, the plant's owner will need some combination of higher revenues from increased energy market prices, capacity prices and plant generation and lower costs—which would be hoped for from lower coal prices although some savings in non-fuel O&M expenses are theoretically possible. However, from today's perspective, it is unlikely that future energy market prices, ISO-NE capacity

market prices, plant generation and coal prices will lead to earnings high enough to provide both adequate recovery of Brayton Point's likely purchase price (through depreciation) and a good return on that investment.

### Future Energy Market Prices

Recent energy market futures prices for ISO-NE actually show further declines in the next few years without any significant increases over 2012 prices through the rest of the decade. This is consistent with natural gas prices forwards which also show no significant increases for the next 5-7 years.

**Figure 11: Energy Futures Prices for ISO-NE**



In fact, concerns about natural gas supply security have led FERC and ISO-NE to begin to discuss possible proposals that could lead to expansion of pipeline capacity into New England. As explained by UBS Investment Research, a notable secondary effect of further pipeline capacity expansions would be additional depression of natural gas prices in New England which would further erode regional market power prices.<sup>5</sup> This would certainly further disadvantage Brayton Point's economic viability.

### **Future Capacity Prices**

As shown in Figure 7 (p. 14), the results of ISO-NE's recent Forward Capacity Auctions do not show much recovery through 2016 from the substantial price decreases experienced between the auctions for 2010/2011 and 2012/2013. Moreover, FERC's mandate that the price floor be removed from future Capacity Auctions has led UBS Investment Research to expect a bust in future capacity markets and for a "sharp downtick in capacity [price] to drive economic retirements" of legacy oil-fired units in New England and much of the remaining coal capacity.<sup>6</sup> UBS also expects that new market designs under consideration by ISO-NE (targeted for implementation in the 2018/2019 auction) would put a preference on payments for flexible units (such as new combined cycle plants) at the expense of less flexible units. Such a preference, if/when implemented, would further disadvantage legacy steam units like those at Brayton Point, which are rather inflexible in comparison to the predominant newer natural gas-fired units in New England.

### **Future ISO-NE Loads and Energy Consumption**

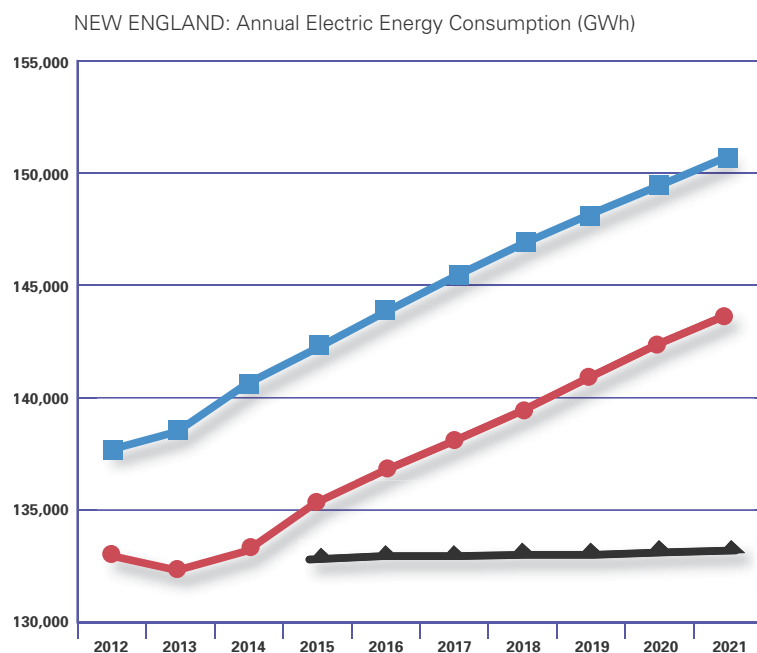
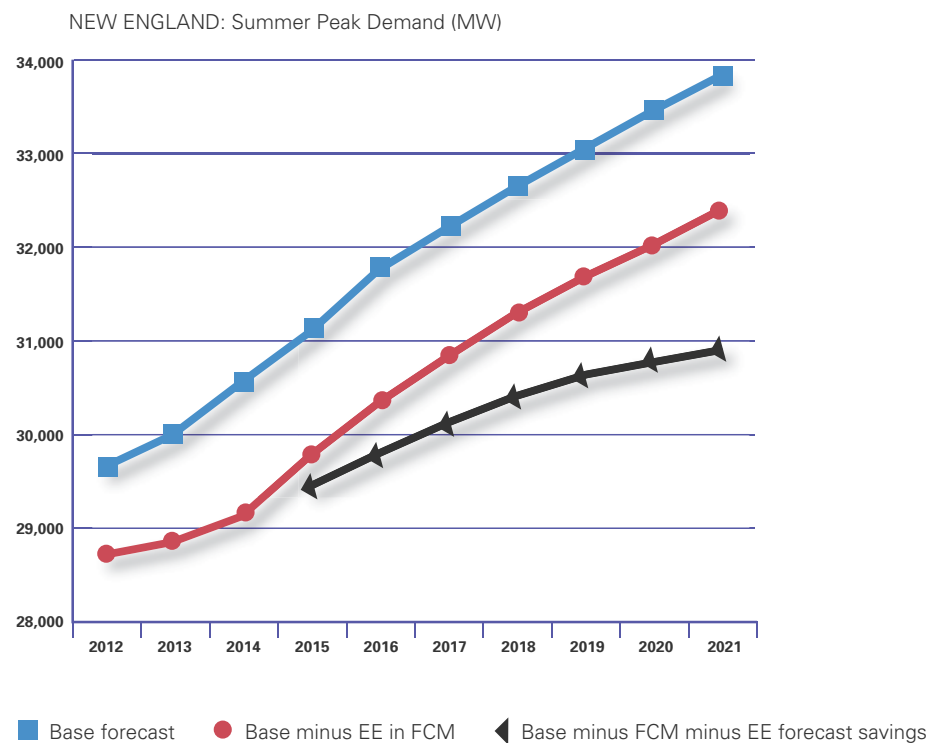
Any owner of Brayton Point cannot rely on future growth in regional energy usage as the basis for any significant increases in plant generation and revenue. ISO-NE recently released new forecasts that show relatively flat energy consumption in New England through 2021 with a modest decrease in energy consumption in Massachusetts. Instead, Brayton Point will have to compete with low cost natural gas-fired units and new renewable resources.

**Any owner of Brayton Point cannot rely on future growth in regional energy usage as the basis for any significant increases in plant generation and revenue... Instead, Brayton Point will have to compete with low cost natural gas-fired units and new renewable resources.**



**Figure 12: ISO-NE Energy Efficiency Forecast for New England, December 2012**

## New England Results: Lower Peak Demand Growth, Level Energy Demand

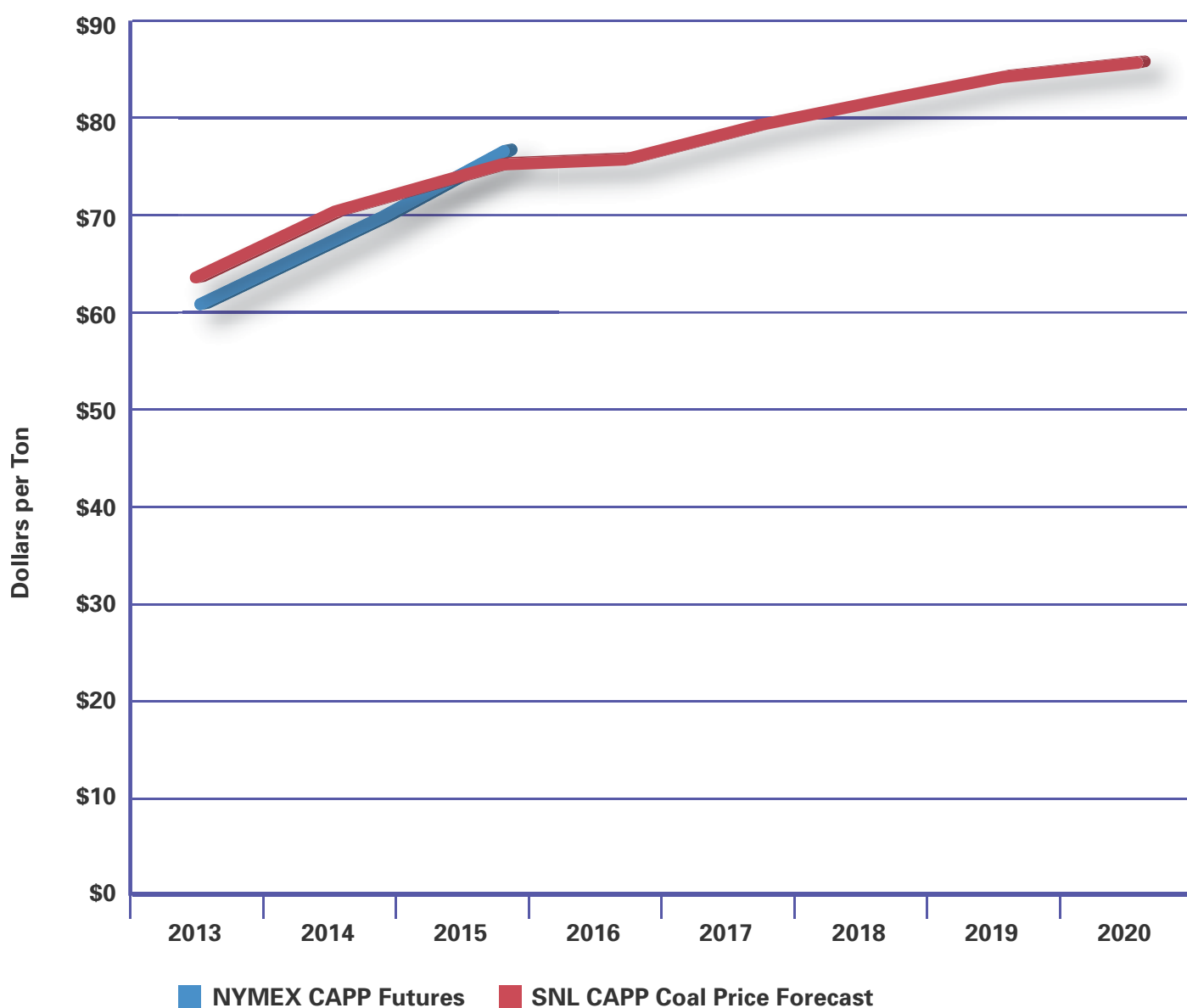


## Coal Prices

Brayton Point has recently burned bituminous coal from Central Appalachia ("CAPP") mixed with limited amounts of coal imported from mines in Columbia, South America. The currently low market prices that now exist at this time of declining demand for CAPP coal are unsustainable. Elevated production costs in the region, historically high

transportation costs to the Northeast corridor as well as the supply and price dynamics of international markets place upward pressure on the amount a coal producer from the region must charge utility buyers. It is unlikely that the owner of Brayton Point will achieve delivered coal prices over the project period that are below, let alone significantly below, recent projections of future CAPP coal prices.

**Figure 13: Recent NYMEX Futures as of 2-1-2013 and SNL Forecast of CAPP Coal Prices**

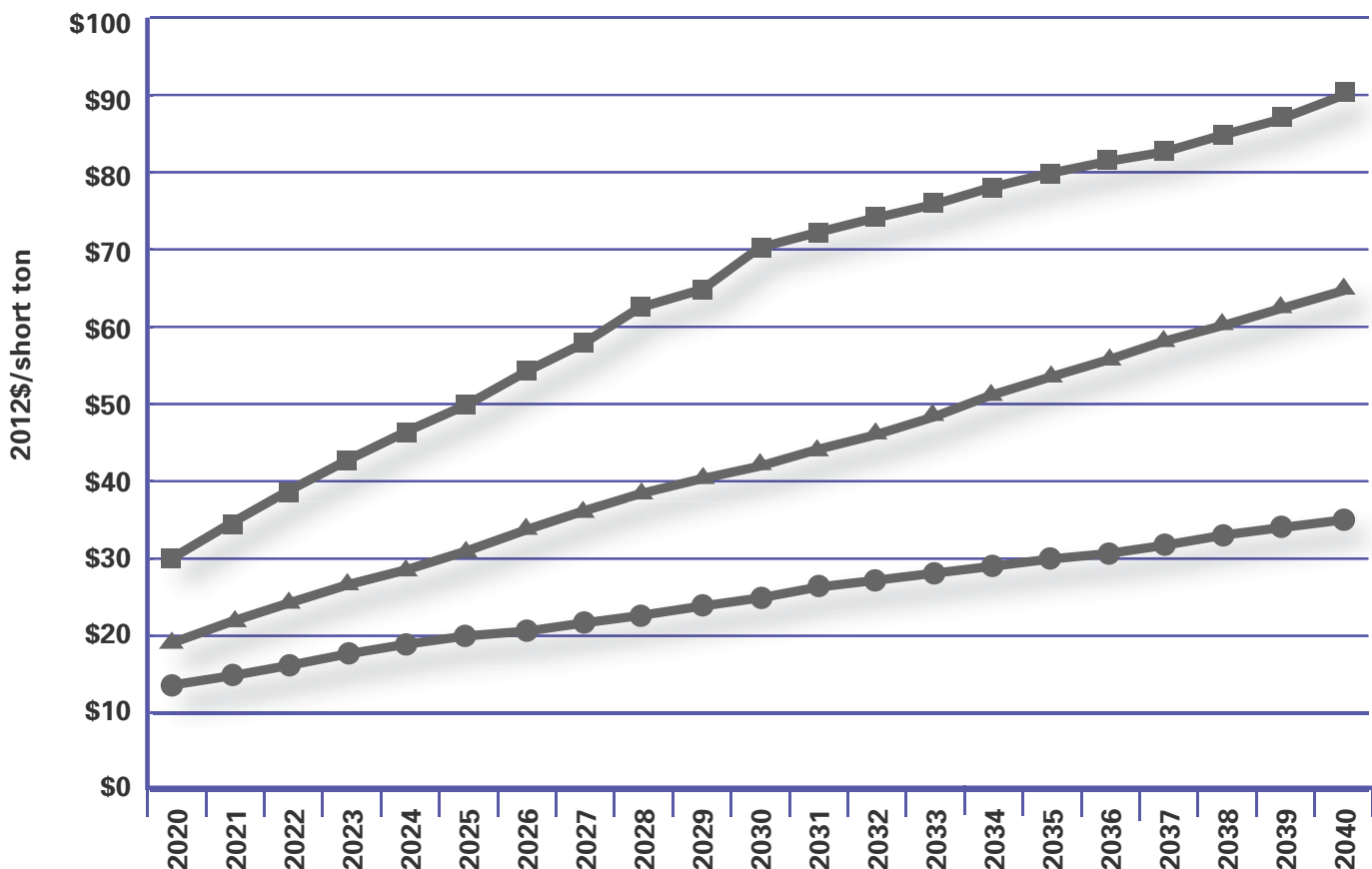


## Carbon (CO<sub>2</sub>) Prices

Under the Regional Greenhouse Gas Initiative ("RGGI") generators in New England already must pay for carbon dioxide allowances, at a current rate of \$1.93 per ton. However, there are several measures that have the potential to adversely impact the future economics of selling the power from Brayton Point Units 1-3. These measures include:

- The ongoing redesign of the RGGI program with a reduced emissions target of 91 million tons of CO<sub>2</sub> will increase costs of fossil-fired generators. As explained by UBS Investment Research, this redesign, which is tentatively being considered for implementation by 2014, could translate to a \$3-4 per ton cost for CO<sub>2</sub> emissions which would mean a \$3-4 per MWh cost for coal generation and a \$1-\$2 per MWh cost for gas generators.<sup>7</sup>
- The U.S. Environmental Protection Agency is working on a New Source Performance Standard for existing sources, such as coal-fired power plants like Brayton Point. Although the design of this existing source standard is still under consideration, it is possible that it would be efficiency-based like the NSPS for new sources. It is anticipated that the proposed NSPS for existing sources could be issued for comment in late 2013 or 2014 with widespread implementation in 2019 or 2020.<sup>8</sup>
- Given the increasing public recognition and concern over climate change, it is reasonable to expect that there will be a legislative program at some point in the not-too-distant future that will place a significant price on greenhouse gas emissions from fossil-fuel-fired power plants. Although the timing, design and stringency of such a comprehensive federal regulatory regime are unknown, we believe that the following CO<sub>2</sub>

**Figure 14: Synapse Energy Economics 2012 Carbon Dioxide Price Forecast<sup>9</sup>**



price forecasts from Synapse Energy Economics offer a reasonable set of prices that should be considered in resource planning and related economic evaluations. This is especially true where, as here, the power plant burns coal, the most carbon intensive fuel.

The three CO<sub>2</sub> price trajectories shown in the Synapse price forecast reflects the great uncertainty in the timing, design and stringency or any comprehensive federal greenhouse gas regulatory regime.

### **Age-Related Risks**

Brayton Point Units 1, 2 and 3 are 50, 49 and 44 years old in 2013, respectively. Given these ages, despite Dominion Resources recent investment of nearly \$1 billion in a new scrubber and cooling towers, there is significant uncertainty about their future operating performance and costs. In fact, no coal unit of 100 MW or larger has operated for more than 65 years and only a few smaller units have operated longer.

Therefore, there is great uncertainty about (a) what the units' operating lives will be, (b) what additional capital investments will be required as they age, (c) what their operating performance will be as they age (in terms of generation, planned and forced outage rates, availability and equivalent forced outage rates), and (d) what their operating costs will be as they age.

Indeed, the more than two hundred coal units that had been retired through the end of 2012 had an average age at retirement of 51 years, with a median age of 53 years when they were retired. The 105 other coal units with announced retirement dates of 2013 or later, will have an average age at retirement of 57 years, with a median age of 60 years.

### **CONCLUSION CONCERNING FUTURE EARNINGS FROM BRAYTON POINT UNITS 1-3**

Given all of the factors discussed above, it is unlikely that Dominion or any new owner can expect to obtain

earnings sufficient to cover operating expenses, debt and an adequate return from Brayton Point Units 1-3 at least until after 2020, at which time the plant might be subject to significant CO<sub>2</sub> emissions costs.

As can be seen from Figures 15 and 16, we have examined two scenarios that differ in the levels of expected generation from Brayton Point Units 1-3. In what we have termed the "optimistic scenario," generation from the Units is expected to increase to 60 percent in the years 2018-2020. In the "less optimistic scenario," generation from Brayton Point Units 1-3 is projected to be capped at 40 percent through the years 2013-2020. We consider this to be a conservative assumption as it is quite possible that the generation from Brayton Point Units 1-3 will not increase as much as we assumed. Thus, in no way, did we examine a "worst-case" scenario in which the future operating performance of Units 1-3 would be at the same low 16 percent average capacity factor that the Units achieved in 2012. In other words, earnings from Brayton Point 1-3 could easily be even lower than we have projected in Figures 15 and 16. In neither of these scenarios, would Brayton Point Units 1-3 produce earnings that would be adequate to cover depreciation and amortization, debt costs and an adequate return at any time through 2020.

These annual EBITDA will be inadequate to cover the amortization of the purchase price for Brayton Point if it is sold, let alone provide the funds to pay for annual interest costs and any return for equity investors.

The analysis presented in Figures 15 and 16 and Tables 1 and 2 is based on information from SNL Financial, NYMEX futures prices, and data from the ISO-NE website. It reflects only energy and capacity revenues, assuming that any other auxiliary revenues that Brayton Point receives from the ISO-NE markets are offset (and perhaps more than offset) by the costs of purchasing emissions allowances.



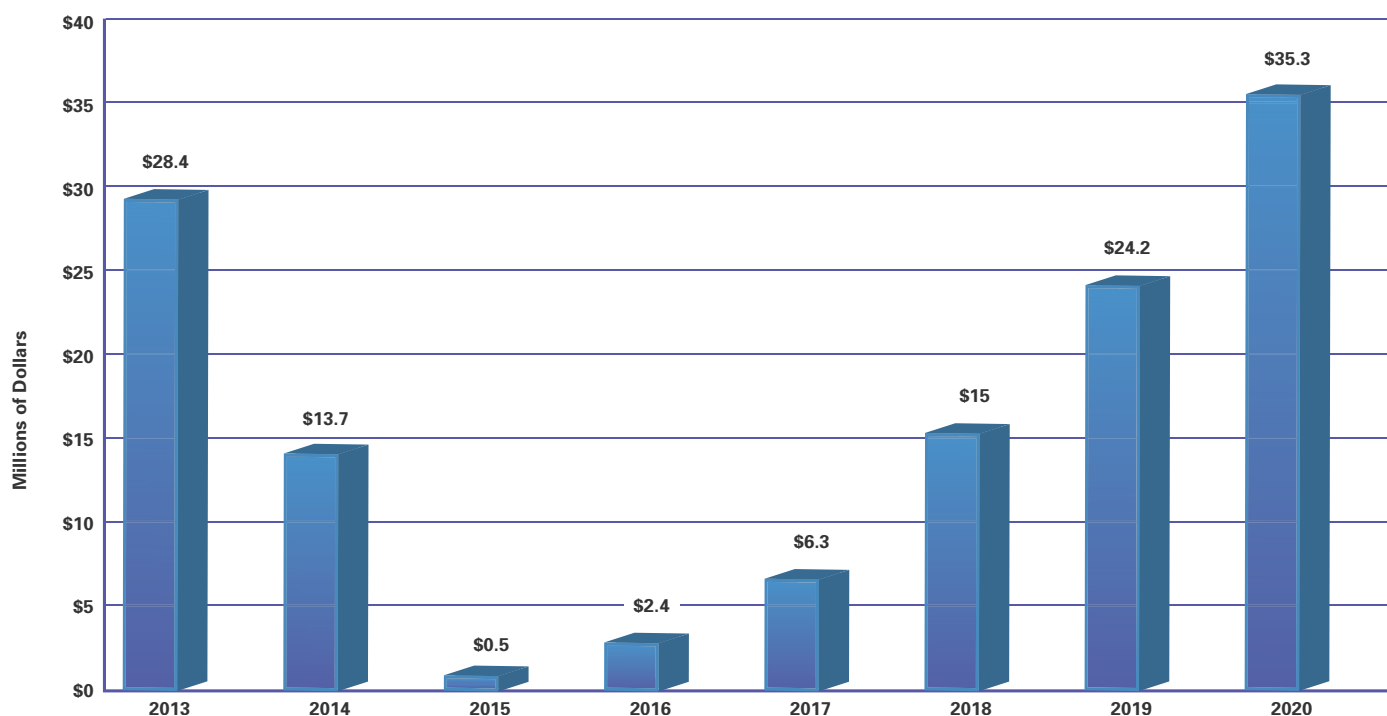
The analysis also reflects the following other conservative assumptions:

- A rapid recovery in Brayton Point's generation from the 16 percent capacity average factor the Units achieved in 2012 to a 30 percent capacity factor in 2013 with higher

capacity factors in subsequent years.

- Current futures for ISO-NE energy market prices through 2015 with market prices escalated after 2015 at the same escalation rate as Henry Hub natural gas futures.

**Figure 15: Projected Brayton Point EBITDA, 2013-2020 – Optimistic Scenario**

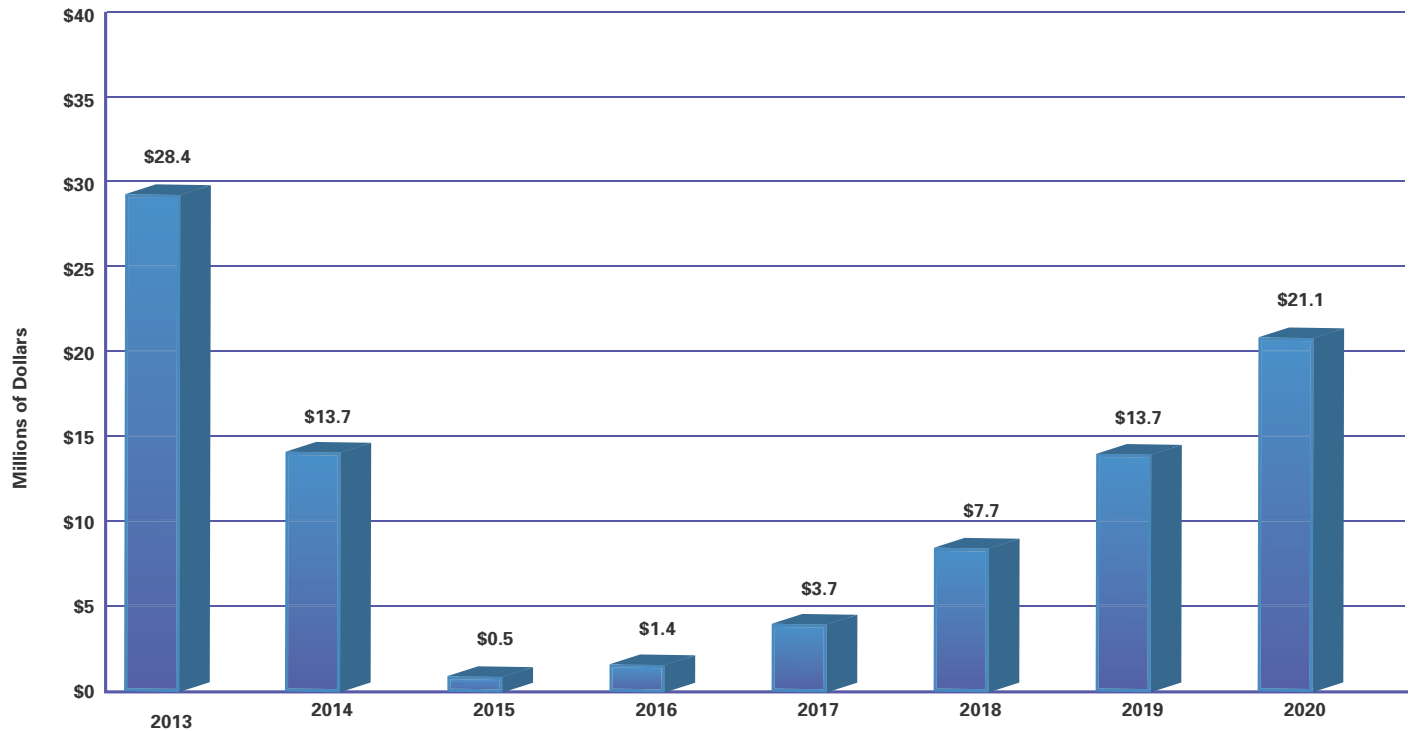


**Table 1: Projected Brayton Point EBITDA, 2013-2020, Optimistic Scenario**

	2013	2014	2015	2016	2017	2018	2019	2020
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Capacity Revenue (Millions)	39	41	44	44	45	46	47	48
EBITDA (\$Millions)	28	14	1	2	6	15	24	35

- The results of ISO-NE's forward capacity auctions through May 2016 with the prices escalated in subsequent years at a 2.5 percent annual overall rate of inflation.
- A modest decrease in the Units' net MW output and plant efficiency and increase in non-fuel O&M to reflect the addition of the new cooling towers and SO2 scrubber.

**Figure 16: Projected Brayton Point EBITDA, 2013-2020 – Less Optimistic Scenario**



**Table 2: Projected Brayton Point EBITDA, 2013-2020, Less Optimistic Scenario**

	2013	2014	2015	2016	2017	2018	2019	2020
Annual Capacity Factor (%)	30%	35%	40%	40%	40%	40%	40%	40%
Net Capacity	1100	1100	1100	1100	1100	1100	1100	1100
Annual Output (Thousands of MWh)	2,889	3,370	3,852	3,852	3,852	3,852	3,852	3,852
Energy Price (\$/MWh)	\$48.68	\$46.85	\$45.99	\$47.66	\$49.43	\$51.68	\$54.49	\$57.67
Energy Margin (\$Millions)	42	28	14	16	19	23	30	38
Capacity Revenue (Millions)	39	41	44	44	45	46	47	48
EBITDA (\$Millions)	28	14	1	1	4	8	14	21

- Overall non-fuel O&M costs increase at the 2.5 percent annual overall rate of inflation.
- A recovery of coal prices in 2013 to 2011 levels with escalation from 2013 to 2015 at the same rate as NYMEX CAPP futures and at 2.5 percent per year after 2015, a very conservative assumption.

## BRAYTON POINT UNIT 4

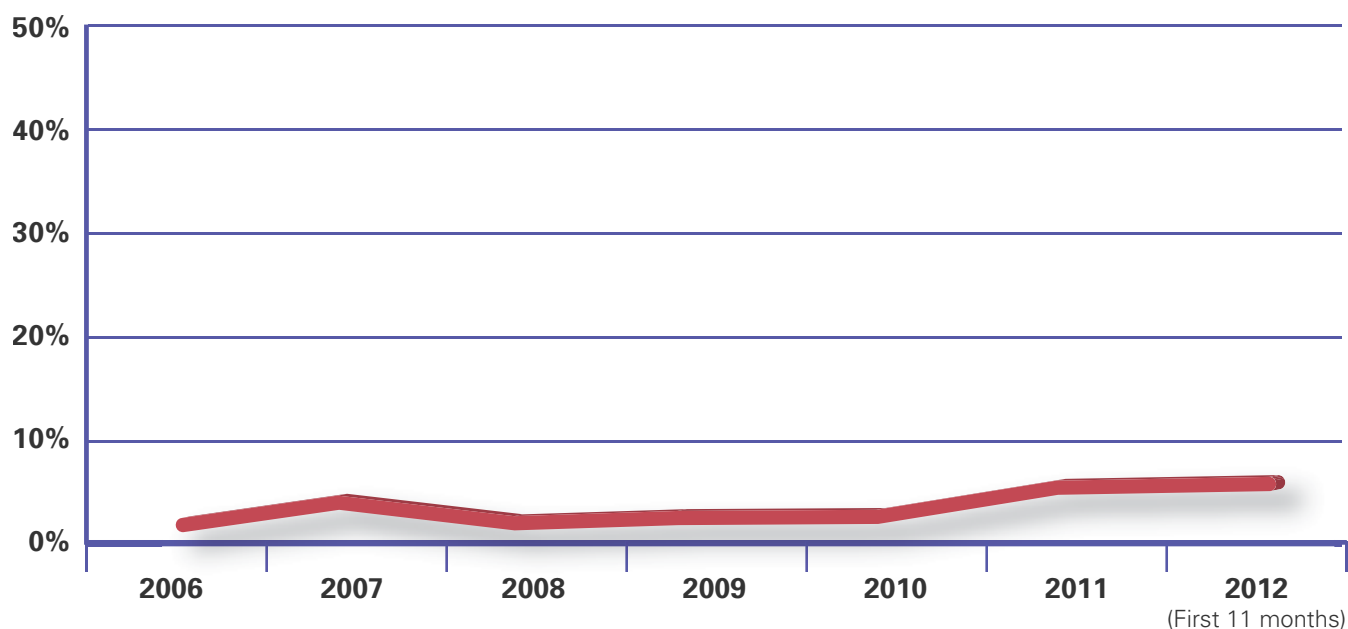
Brayton Point Unit 4 is a 435 MW (net) oil-fired generating unit. It has generated very little power in recent years, with average annual capacity factors of between 1 percent and 6 percent, as shown in Figure 18.

Looking more closely at the Unit's hourly and monthly generation, it appears that it has been operated mostly as a peaking facility. Because of this relatively low generation and Unit 4's relatively high fuel costs, it has not produced a healthy energy margin in recent years. For example, even if Unit 4 had generated power for sale only in the peak hours

in each month of 2011, its energy revenues would have totaled only about \$11.3 million for the entire year. This would have been less than the Unit's estimated fuel costs for the year that, according to SNL Financial, were nearly \$12.9 million. Consequently, the Unit had a negative energy margin for the year.

Given the future energy market prices we have discussed, above, the prospects for flat energy consumption in ISO-NE, as a whole, and Massachusetts, in particular, and the low possibility that Unit 4's fuel costs will decrease significantly at any time in the foreseeable future, the plant is likely to continue to run negative energy margins in the future. Its primary benefit, therefore, for its owner would be as the source of capacity revenues. Unit 4 also is a potential target for a repowering to a new combined cycle natural-gas fired facility except that such a repowering would be more likely to create additional downward pressure on the energy revenues from Brayton Point Units 1-3.

**Figure 17: Brayton Point Unit 4 Annual Capacity Factors 2006-2012**



## ENDNOTES

<sup>1</sup> For example, in 2012, the Massachusetts legislature established a task force to “identify and develop a plan for [] coal-fired generation facilities in the commonwealth that may face closure prior to December 31, 2017 that ensures the deconstruction, remediation and redevelopment or repowering of such sites.” St. 2012, c. 209, An Act Relative to Competitively Priced Electricity in the Commonwealth, § 42.

<sup>2</sup> ISO-NE Release 2012 Wholesale Electricity Prices in New England Fell to Lowest Level Since 2003, dated January 23, 2013.

<sup>3</sup> Figure 9 only includes the first six months of 2012 because Dominion Resource’s Quarterly Earnings Reports stopped presenting data on the New England Merchant Fleet EBITDA in the second quarter of 2012.

<sup>4</sup> Dominion’s New England Merchant Fleet included the nuclear units at Millstone, the coal and the oil units at Brayton Point and Salem and the Manchester generating station.

<sup>5</sup> *New England: The Next Bust and Boom*, UBS Investment Research, November 6, 2012.

<sup>6</sup> Id.

<sup>7</sup> *Carbon Coming...but a Long Way Out*, UBS Investment Research, February 1, 2013.

<sup>8</sup> Id.

<sup>9</sup> The full Synapse 2012 CO2 price forecast is available at [www.Synapse-Energy.com](http://www.Synapse-Energy.com).

<sup>10</sup> Connecticut Department of Energy and Environmental Protection, Draft Comprehensive Energy Plan (Oct. 22, 2012)



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