

**The Results in Context:**

**A Peer Review of EEI's "Potential Impacts of Environmental Regulation on the U.S.  
Generation Fleet"**

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## Summary

In January of 2011, the Edison Electric Institute ("EEI") released a report entitled "Potential Impacts of Environmental Regulation on the U.S. Generation Fleet" ("Report") focusing on possible impacts of federal environmental laws and regulations on the electric power industry. Recently, the Report was cited in testimony before the United States House of Representatives Energy and Commerce Committee, and in a variety of other forums, to support the claim that new environmental regulations will trigger as much as 70-80 GWs of coal plant retirements by 2015<sup>1</sup>. This peer review analysis evaluates the Report's findings in light of the actual proposed Utility Air Toxics and cooling water intake regulations which the Environmental Protection Agency ("EPA") released in March 2011, two months after EEI issued the Report. **We conclude that the Report was based upon worst-case assumptions which have not materialized and upon climate change legislation never enacted into law.**

The Report does not adequately distinguish between the non-environmental drivers of changes in the electricity industry and the various EPA rulemakings. There is also inadequate discussion of the non-traditional alternatives available to meet system requirements, or of various initiatives underway to strengthen the resiliency and reliability of the electricity network. The Report's excessively conservative and often misleading assumptions affect EEI's modeling results.

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<sup>1</sup> See Subcommittee on Energy and Power, Committee on Energy and Commerce, United States House of Representatives Hearing, April 15, 2011, Thomas A. Fanning, Chairman, President, and Chief Executive Officer, The Southern Company, Transcript at line 2112, p. 104.

There is one reference case and 9 scenario runs in the Report<sup>2</sup>. We reproduce the Report's Table 1<sup>3</sup> and annotate it with information on these assumptions.

**Table 1 –  
Summary of Scenarios  
Modeled by EEI with Estimated Coal Plant Retirements:  
Reasonable V. Unreasonable Scenarios**

**National Coal Retirements (GW)**

GW of Retirements  
due to market  
fundamentals,  
not EPA regulations

GW of Retirements  
due to  
EPA regulations

Run	Scenario	Planned Coal Retirements		Unplanned Coal Retirements		Total Coal Retirements		Incremental Coal Retirements	
		2015	2020	2015	2020	2015	2020	2015	2020
1	Reference Case	6	16	19	22	25	0	0	
2	Scenario 1	6	50	50	56	56	30	31	
3	Scenario 1 + Alt Air	6	41	41	46	46	24	21	
4	Scenario 1 + Alt Water	6	49	50	55	55	33	30	
5	Scenario 2	6	73	90	79	95	57	71	
6	Scenario 2 + Alt CO2	6	66	73	71	79	50	54	
7	Scenario 2 + Alt Air	6	64	77	70	82	48	58	
8	Scenario 2 + Alt Ash	6	75	96	81	101	59	76	
9	Scenario 2 + \$1.50 Gas	6	47	56	52	61	31	37	
10	Scenario 2 + \$3.00 Gas	6	33	36	38	41	17	17	

**The shaded rows contain unrealistic assumptions, summarized below:**

1. That Waxman-Markey climate bill is enacted and goes into effect by 2016 with a \$26/ton carbon price (all Runs except #1, #2, #3, #4)
2. That EPA water regulations impose a "one-size-fits all" requirement that all coal plants over a certain size need a cooling tower (all Runs except #1 and #4)
3. That all coal plants would have to install a scrubber rather than use lower-cost control technologies (all Runs except #1 and #3)

Source of underlying table: Table 1 from the EEI Report, with annotations by authors Tierney & Cicchetti

Although not apparent from the labels used for the different scenarios, all of the facility retirement scenarios contain one or more of the following assumptions that were unreasonable at the time that EEI's consultants conducted their study: (1) that the Waxman-Markey climate change bill passed both houses of Congress, *despite the fact that the legislation failed over ten*

<sup>2</sup> The Report includes a reference case and 9 alternative scenarios that reflect different combinations of assumptions regarding EPA regulations and natural gas prices. The six scenarios that reflect a carbon price are the Report's Scenarios: "2"; "2+Alt CO2"; "2+Alt Air"; "2+Alt Ash"; "2+\$1.50 gas"; "2+\$3.00 gas."

<sup>3</sup> See EEI, ICF "Potential Impacts of Environmental Regulation on the U.S. Generation Fleet", January 2011, ("Report") Table 3.1, "National Coal Retirements (GW)", p.11.

*months ago;*<sup>4</sup> (2) that EPA would impose a one-size-fits-all cooling tower requirement on U.S. power plants over the course of the next decade, *despite the fact that EPA Administrator Jackson confirmed in an December 16, 2010 letter to Congress that EPA rejected a one-size-fits-all approach (a position that now can be seen in the new regulations proposed in March 2011);*<sup>5</sup> or (3) that industry could not use less costly, alternative technologies and resource options to reduce air toxics emissions *despite the fact that many coal plants already do use these technologies and many utilities now use different options to meet customers' reliability requirements.*

Reliance on so many fundamentally unrealistic assumptions undermines the usefulness of the Report's overall results, since these unreasonable assumptions overstate the impact of environmental regulations. As such, the results could lead policymakers to an unreasonable and unsupported conclusion that Americans must chose between improving the nation's health and affordable, reliable electricity.

Moreover, contrary to some testimony before the House Energy and Commerce Committee, the Report does not support the proposition that new EPA regulations will drive 70-80 GWs of retirements by 2015. Only two scenarios – "Scenario 2" (Run 5 in Table 1) and "Scenario 2 + Alt Ash" (Run 8 in Table 1) – showed more than 70 GWs of incremental retirements by 2020, not by 2015. These scenarios contained all three of the erroneous assumptions described above.

We agree with EEI that competitive pressures from natural gas-fired plants fueled by

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<sup>4</sup> This assumption is in the Report's Scenarios: "2"; "2+Alt CO2"; "2+Alt Air"; "2+Alt Ash"; "2+\$1.50 gas"; "2+\$3.00 gas."

<sup>5</sup> Report Scenarios: "1"; "1+Alt Water"; "2"; "2+Alt CO2"; "2+Alt Ash"; "2+\$1.50 gas"; "2+\$3.00 gas".

relatively inexpensive shale gas are forcing some inefficient, older coal plants out of business.<sup>6</sup> This is shown in the Reference Case, estimating that 22 GW of coal plants will retire by 2015 based on current fuel price and other economic assumptions as well as all policies currently on the books (e.g., state mercury regulation, state-based renewable standards, the Clean Air Interstate Rule).

The most reasonable scenario of the 9 modeled in the Report is the "Scenario 1 + Alt Air" (Run No. 3), which predicts 24 GWs of incremental coal retirements beyond the Reference Case. Market forces alone will cause approximately one-half of the retirements (22 GW) under this scenario without any new EPA regulations. To put the incremental 24 GWs into perspective, the U.S. currently enjoys over 100 GWs of excess capacity and has a demonstrated track record of building new capacity<sup>7</sup> when needed. In just three years between, between 2001 and 2003, electric generators in the U.S. added 160 GWs of new gas-fired generation.<sup>8</sup> Likewise, the electric industry has a proven track record of timely installing mandated environmental controls. Well over half of the industry already is in compliance and control technology experts have reported that the remaining plants can install controls within the compliance timeline.

To conclude, the Report's scenario assumptions have turned out to be overly aggressive compared to EPA's actual proposed rules, and as a consequence, the Report overstates cost and retirement impacts related to the EPA rules. Nothing in the Report alters our conclusion that the industry is well positioned to comply with the actual regulations on the proposed schedule.

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<sup>6</sup> These retirements are shown in the Reference Case results.

<sup>7</sup> North American Electric Reliability Corporation ("NERC"), 2009 Long-Term Reliability Assessment: 2009-2018, October 2009.

<sup>8</sup> Energy Information Administration ("EIA") Annual Electric Generation Report: Form EIA-860, 2008.

## The Results in Context

### A. Key Assumptions in the Report Lead to Overstated Retirements and Compliance Costs

EEI prepared its Report before EPA had issued its proposed cooling water intake regulations and Utility Air Toxics Rule. The Report's authors made certain binding assumptions about the impending rules that we now can test against EPA's actual proposals. Although the Report's scenarios were intended to bracket the range of possible outcomes, all nine of EEI's scenarios depict far more aggressive environmental standards than the actual proposed regulations and laws. Indeed, in some cases, EEI's assumptions even conflict with facts known prior to the Report's preparation. For example:

- Six of the nine scenarios<sup>9</sup> modeled (Runs 5-10) contain an underlying assumption that the Waxman-Markey bill went into law, imposing a rising price on carbon dioxide ("CO<sub>2</sub>"), starting at \$26/ton beginning in 2016. It was well-known in January when the report was carried out, however, that Congress did not enact Waxman Markey and no federal legislation or regulation imposes a price on CO<sub>2</sub>.
- Eight of the nine scenarios<sup>10</sup> modeled (Runs 2, and 4-10) failed to consider less costly methods of controlling certain air emissions through dry sorbent injection, even though Midwest Generation,<sup>11</sup> one of the largest merchant coal generators in the nation, had announced that these less costly technologies could be deployed to control emissions and would not require plant retirements.

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<sup>9</sup> The Report includes a reference case and 9 alternative scenarios that reflect different combinations of assumptions regarding EPA regulations and natural gas prices. The six scenarios that reflect a carbon price are the Report's Scenarios: "2"; "2+Alt CO<sub>2</sub>"; "2+Alt Air"; "2+Alt Ash"; "2+\$1.50 gas"; "2+\$3.00 gas."

<sup>10</sup> Report Scenarios: "1"; "1+Alt Water"; "2"; "2+Alt CO<sub>2</sub>"; "2+Alt Ash"; "2+\$1.50 gas"; "2+\$3.00 gas".

<sup>11</sup> In its third quarter 10-Q filed on October 29, 2010, Midwest Generation stated: "Testing of [dry scrubbing with sodium-based sorbents] demonstrated significant reductions in SO<sub>2</sub> emissions and...is expected to require substantially less capital and installation time....", 10-Q at p.55.

- Eight of the nine scenarios<sup>12</sup> modeled (Runs 2, 3 and 5-10) assumed EPA would require cooling towers as a "one-size-fits-all" mandate on every U.S. fossil and nuclear power plant over the next decade. Yet, in a December 16, 2010 letter to Congressman Fred Upton, EPA Administrator Lisa Jackson advised Congress that: "I do not favor a one-size-fits-all federal mandate."

Finally, the report ignores an important fact for policymakers to consider: a significant portion of the industry has already installed the types of control equipment anticipated in the new air regulations. Over 150 GWs of the total 320 GWs of coal units in the U.S. have such controls and another 55 GWs are installing the equipment now.<sup>13</sup> In sum, over two thirds of the nation's coal plants are either complying or soon will comply with the regulations and remain in business.

## **B. Low Natural Gas Prices Drive About 50 Percent of Predicted Retirements**

Since 2008, natural gas prices have fallen over 60 percent<sup>14</sup> as a result of the opening up of abundant, new domestic natural gas from shale formations.<sup>15</sup> In turn, low gas prices have been a primary driver of wholesale electricity prices being down over 30 percent.<sup>16</sup> In many

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<sup>12</sup> Report Scenarios: "1"; "1+Alt Air"; "2"; "2+Alt CO2"; "2+Alt Air"; "2+Alt Ash"; "2+\$1.50 gas"; "2+\$3.00 gas."

<sup>13</sup> M. J. Bradley & Associates/Analysis Group, "Ensuring a Clean Modern Electric Generation Fleet while Maintaining Electric System Reliability," August 2010, p. 18.

<sup>14</sup> On July 1, 2008, gas peaked at \$13.60 per MMBtu its current price is \$4.38, or about 68 percent lower.

<sup>15</sup> With new technologies to access the gas, shale gas production has increased 14 fold in 10 years, and the estimated size of the resource base itself has grown more than 20-fold. Compare, for example, the following estimates that indicate the effect of new drilling technologies that increased the estimated size of the accessible U.S. shale gas resource base: 34.7 trillion cubic feet ("TCF:"), estimated by the National Petroleum Council in 2003; 125 TCF/320 GWs of capacity,<sup>15</sup> TCF, estimated by ICF International ("ICF") in 2008; 631 TCF, estimated by ICF in 2009; and 827 TCF, estimated by EIA in 2011. Sources: NPC, "Balancing Natural Gas Policy: Fueling the Demands of a Growing Economy, Supply," September 2003, Table S2-21; EIA, Annual Energy Outlook, Early Release Overview, page 1; ICF study for the Interstate Natural Gas Association of American, "Availability, Economics, and Production Potential of North American Unconventional Natural Gas Supplies, 2008, Table 7.

<sup>16</sup> The load-weighted energy prices in PJM were \$71.13 in 2008 as compared to \$48.35 in 2010. See Monitoring Analytics, *2009 State of the Market Report for PJM*, Volume 1, March 11, 2010; Monitoring Analytics, *2010 State of the Market Report for PJM*, Volume 1, March 10, 2011.

regions of the U.S., efficient natural gas-fired plants are cheaper to operate and are displacing some output from older, less efficient coal plants.

The Report correctly recognizes the impact of these low gas prices on coal plant retirements.<sup>17</sup> Notably, approximately half of the predicted coal plant retirements in "Scenario 1 + Alt Air" is expected to occur due to market fundamentals, even if EPA somehow avoided its legal obligation to promulgate these new rules.

EEI analysis and our own work confirms that we are entering a new era where important natural gas resources that are now economically accessible are triggering a transition in America's power sector from coal to gas *while simultaneously reducing power prices in many parts of the U.S.* Although unwelcomed by some, this transition reflects the use of a domestic fossil fuel (not unlike coal). Nonetheless, this replacement will result in lower emissions and new jobs as old and inefficient power plants are replaced with newer units that are more efficient and that have a lower overall emissions footprint relative to coal. Nearly, 60 percent of the existing coal fleet is over 40 years old – the design life for most units.<sup>18</sup> The oldest and most inefficient of these are generally also the dirtiest, since they have not installed controls in the two decades since President Bush signed the Clean Air Act Amendments of 1990.

These plants – and in some cases, the consumers of their power – have had the economic advantage of operating for decades without modern pollution controls. While understandably attractive to consumers' wallets, these plants emit unhealthful levels of air pollutants, well

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<sup>17</sup> According to the Report, 22 GWs of retirements in 2015 and 25 GWs in 2020 "are mostly due...to a generally low natural gas price forecast that makes it uneconomic to continue to operate these typically smaller and older units. These retirements are forecast to occur absent any new air, ash and water regulations". Report, p. 11.

<sup>18</sup> M.J. Bradley, *supra*, Table 5, p. 20. Almost 60% of the coal fleet is older than 40 years old with nearly 36% of the fleet older than 50 years old. These older power plants tend to be smaller and less efficient (more costly to operate) than coal plants built in the 1970s or later. These older power plants also disproportionately represent the category of plants without pollution controls and that could be forced to retire as a result of low gas prices and environmental costs.

beyond the compliance runway originally envisioned when Congress passed the 1990 amendments to the Clean Air Act.

Overall, claims of compliance challenges in meeting EPA's deadlines sound reasonable, but do not square with history. A company that begins planning for the Utility Air Toxics rule today (May 2011) will have at least 43 months and as much as 55 months to comply with the final rule.<sup>19</sup> Past experience demonstrates that this time period is ample. For example, in a June 17, 2005 filing with the Georgia Public Service Commission, Georgia Power notified the Commission of its intent to file for permits to install scrubbers at several of its plants and that Georgia Power "expects a three year construction cycle for each scrubber" and needed the scrubbers to comply with federal and state clean air rules "some of which were recently finalized and others of which are still under development."<sup>20</sup> Similarly, Southern Company reported that it installed its Plant Wansley retrofit in about 30 months,<sup>21</sup> and its Plant Crist project in 31 months.<sup>22</sup> Southern expects that its Plant Daniel scrubber project should start this year and be operational by late 2014, to comply with EPA's air regulations.<sup>23</sup>

Such time frames are consistent with industry data from construction firms that manage and oversee pollution control installations. According to the Institute of Clean Air Companies

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<sup>19</sup> EPA is subject to a court-imposed deadline to finalize its Utility Air Toxics Rule by November 2011. The Clean Air Act allows three years for existing sources to comply, with the possibility of a unit-specific, one-year extension to complete pollution control installations, for a total of up to 55 months from May.

<sup>20</sup> Letter to Mr. Reece McAlister, Executive Secretary, Georgia Public Service Commission from Oscar C. Harper, Manager, Regulatory Affairs, Georgia Power, June 17, 2005.

<sup>21</sup> See, *Georgia Power cutting emissions at Plant Wansley by 95 percent with new scrubbers*, available at [http://times-georgian.com/view/full\\_story/3283571/article-Georgia-Power-cutting-emissions-at-Plant-Wansley-by-95-percent-with-new-scrubbers](http://times-georgian.com/view/full_story/3283571/article-Georgia-Power-cutting-emissions-at-Plant-Wansley-by-95-percent-with-new-scrubbers)

<sup>22</sup> This is based on a launch date of May 2007 and a completion date of December 2009. See relevant Southern Company Press Releases available at: [http://www.southerncompany.com/news/iframe\\_pressroom.aspx](http://www.southerncompany.com/news/iframe_pressroom.aspx) and [http://www.southerncompany.com/news/iframe\\_pressroom.aspx](http://www.southerncompany.com/news/iframe_pressroom.aspx).

<sup>23</sup> See relevant Mississippi Power Press Release available at: [http://www.mississippipower.com/environment/cleaner\\_air.asp](http://www.mississippipower.com/environment/cleaner_air.asp)

("ICAC")<sup>24</sup> and AFL-CIO Buildings and Construction Trades Department,<sup>25</sup> labor availability or equipment system availability should not constrain timely implementation of new EPA air regulations. In fact, these groups report that they welcome the substantial employment and economic benefits created by the new infrastructure investment required to modernize the electric generation fleet. Given current low interest rates, surplus equipment, high unemployment in related skill trades, and otherwise favorable conditions produced by low natural gas prices, this happens to be a highly favorable time to invest in a cleaner, more modern generation fleet. These investments will produce economic benefits and increase health benefits.

### **C. EEI's "Scenario 1+Alt Air Case" is the Most Plausible Scenario, But Still Overstates Retirements**

We noted previously our concerns about EEI's modeling assumption that the Waxman-Markey bill passed in Congress and became the law of the land. This did not happen, yet two thirds of EEI's modeling scenarios assumed that it has been enacted into law and will go into effect within a few years.

EEI modeled three scenarios that did not include a price on carbon: Scenario 1, "Scenario 1 + Alt-Air" and "Scenario 1 + Alt Water," which respectively produced 56, 46 and 55 GWs of retirements. Taking into account the substantial retirements that relatively low natural gas prices will induce, the factors unrelated to new EPA regulations drive almost half, or in one case even more than half, of the estimated coal retirements:

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<sup>24</sup> See, e.g., the ICAC letter to Senator Thomas Carper, November 3, 2010; [http://www.icac.com/files/public/ICAC\\_Carper\\_Response\\_110310.pdf](http://www.icac.com/files/public/ICAC_Carper_Response_110310.pdf); pp. 1, 3,

<sup>25</sup> See, the AFL-CIO Building and Construction Trades Department letter to Senator Thomas Carper, November 5, 2010.

**Table 2**  
**Estimated Coal Plant Retirements Under EEI Alternative Scenarios**

Run	Scenario	Total Coal Retirements (GW)		Coal Plant Retirements due to Market Factors (GW)		Coal Plant Retirements (%) due to Market Factors		Incremental Coal Retirements from EPA Regulations (GW)	
		2015	2020	2015	2020	2015	2020	2015	2020
1	Reference Case	22	25	22	25	100	100	0	0
2	Scenario 1 (assuming strict hazardous air pollutant, coal ash, and water regulations)	56	56	22	25	40	45	34	31
3	Scenario 1 + Alt Air (less strict hazardous air pollutant, and otherwise Scenario 1)	46	46	22	25	48	54	24	21
4	Scenario 1 + Alt Water (Fossil and nuclear units of certain size and with once-through cooling that withdraws water from sensitive water bodies must install cooling towers.)	55	55	22	25	40	45	33	30

Furthermore, “Scenario 1” and “Scenario 1 + Alt Water” both contain the unrealistic assumption that every coal plant must install a scrubber to achieve air compliance and cannot use less costly technologies (such as TRONA or dry sorbent injection (“DSI”). Many coal fleet owners already have rejected this premise. Others can reasonably be expected to do so. DSI technology has been used successfully for acid gas control for more than twenty years. The Air Toxics Rule allows this less costly compliance option, which can be applied to SO<sub>2</sub>, SO<sub>3</sub>, sulfuric acid and other acid gases such as hydrochloric acid. This option has been endorsed by major

technology vendors,<sup>26</sup> and may reduce compliance costs relative to wet scrubbers, especially for units burning low carbon/low sulfur coals.

One scenario ("Scenario 1 + Alt Air") acknowledges these less costly technologies and provides the most reasonable estimate of retirements under the proposed EPA regulations. Even this scenario overstates retirements in light of its assumption that all plants must and eventually will install cooling towers – which is not what EPA has proposed. Thus "Scenario 1 + Alt Air" should be rejected as unreasonable, or at most viewed as the upper end of the bracket, not the lowest end as represented in the Report.

#### **D. Putting 24 GWs of Retirements into Perspective**

The 24 GWs of incremental capacity in Scenario 1 + Alt Air that is estimated to retire as a result of the EPA regulations represents less than 8 percent of the nation's coal fleet (which totals approximately 320 GWs of capacity<sup>27</sup>). Coal plants generate approximately 45 percent of the total power in the U.S.<sup>28</sup> Notably, between just 2001 and 2003 the U.S. electric industry constructed 160 GW of new combined cycle generation, over six times the amount of retirements predicted under EEI's most plausible scenario.<sup>29</sup>

The Report's scenarios do not consider current electricity demand forecasts. For example, EIA's most recent long-term forecast (2011) lowers the demand forecast for the years

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<sup>26</sup> [http://www.epa.gov/airmarkets/progsregs/epa-ipm/docs/append5\\_4.pdf](http://www.epa.gov/airmarkets/progsregs/epa-ipm/docs/append5_4.pdf),  
<http://www.unitedconveyor.com/CatalogItem.aspx?id=396>,  
<http://www.netl.doe.gov/technologies/coalpower/cctc/ccpi/pubs/SOx-NOx%20Reduction%20at%20PIPP%20-%20Topical%20Report%20Final.pdf>

<sup>27</sup> M.J. Bradley, *supra*, p. 18.

<sup>28</sup> US EIA Energy Outlook-2011, April 26, 2011.

<sup>29</sup> EIA, Annual Electric Generator Report: Form EIA-860, 2008.

2015-2020 by 2.5 percent relative to the 2010 forecast used in the Report.<sup>30</sup> Similarly, PJM, the grid operator in parts of the Mid Atlantic/Midwest regions, recently released new forecasts showing that because of economic factors including cost-effective energy efficiency and demand response programs, demand for electricity will be substantially lower than previously forecast.<sup>31</sup> PJM now predicts that some parts of its region will not reach the demand previously forecasted for 2014 until at least 2020.

Furthermore, the Report does not consider that compliance can be achieved not only by building new power plants or retrofitting existing ones, but also through cost-effective demand response, energy efficiency, transmission additions or reconfigurations, or various combinations of strategies. The Report assumes both a static transmission grid (rather than one incorporating the smart grid technologies proposed or already implemented in various parts of the country) and lack of expanded energy efficiency and demand-reduction measures. Advanced smart metering and demand side technologies reduce the need to add capacity for resource adequacy purposes, allow for system operation with greater efficiency and flexibility, and provide customers with more visible price signals to incentivize switching electricity use to less expensive, off peak times.

As many studies have confirmed,<sup>32</sup> demand levels, transmission utilization and demand side technologies are critical factors in determining resource adequacy. The Report's failure to consider these relevant factors further reduces the reasonableness of its results.

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<sup>30</sup> This is based on evaluating the EIA 2011 AEO's estimates for electricity use in 2015 and 2020 (shown in document ref2011.d120810c), compared to the EIA 2010 AEO's estimates for the same years.

<sup>31</sup> "2011 PJM Load Forecast Report," PJM Resource Adequacy Planning Department, January 2011.

<sup>32</sup> See, for example, the "Scenario Analyses" performed by the ISO-New England at the request of the New England state regulators, to ensure that that grid operator evaluated the implications of various resource options on reliability requirements and system production costs. [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/sas/mtrls/elec\\_report/scenario\\_analysis\\_final.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/sas/mtrls/elec_report/scenario_analysis_final.pdf).

## **Conclusion**

Because of various inappropriate and unrealistic assumptions, the Report's scenarios overstate cost and retirement impacts. The scenarios assumed, for example, a one-size-fits-all cooling tower mandate and most scenarios were based on climate change legislation never enacted into law. Neither of these is grounded in real world realities today.

In stark contrast to others that conclude that EPA regulations could lead to 70-80 GW of coal retirements by 2015, we conclude that the most plausible scenario ("Scenario 1 + Alt Air") estimates that there will be no more than 24 GW of incremental retirements from EPA regulations. Even this 24 GW scenario overstates retirements since it assumes that all plants must install cooling towers – which is a more conservative assumption than what EPA has recently proposed.

Moreover, the Report acknowledges that approximately one half of the total retirements predicted under the most plausible scenario result from market fundamentals – primarily low gas prices - and will occur absent any new EPA regulations. To put the incremental 24 GW of retirement into context, there is currently over 100 GW of excess capacity in the US and a proven history of building new capacity when needed. Accordingly, nothing in the Report changes our conclusion that the industry is well-positioned to comply with the actual regulations on the proposed schedule and yield significant benefits to the Nation.