

**The Department of Energy and Environmental Protection - Development of the  
2012 Integrated Resource Plan: Stakeholder Input of NRG Energy, Inc.**

**December 22, 2011**

NRG Energy, Inc. (NRG) appreciates the opportunity to provide The Department of Energy and Environmental Protection (DEEP) with stakeholder input into the development of the 2012 Procurement Plan currently being developed by the DEEP Policy Group as called for in PA 11-80. NRG's comments are focused on the timing and magnitude of electric generation retirements, their impact on Connecticut's resource requirements over the next several years, and the need to take definitive and timely steps to replace those resources with new, efficient, lower emitting generating units.

The IRP as defined in legislation is a procurement plan, and NRG believes that the IRP is vitally important in identifying and procuring the appropriate new and repowered electric resources to replace aging resources. NRG has been an active participant in each of the past Connecticut Integrated Resource Planning processes and has advocated consistently for the modeling and consideration of fossil steam capacity retirements resulting from increasing environmental compliance costs, market forces, and general economic pressure<sup>1</sup>. The integrated planning and procurement process is an important tool for appropriately identifying critical energy infrastructure for Connecticut and securing resources in a measured and timely fashion.

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<sup>1</sup> NRG's January 7, 2010 Whitepaper which was submitted at the request of the CEAB, and ultimately incorporated as part of the 2010 Connecticut Integrated Resource Plan entitled: *Policy and Technology Options for Repowering Connecticut's Generation Fleet: Whitepaper prepared for the Connecticut Energy Advisory Board by NRG Energy, Inc.*, articulates the need for and the benefits of repowered generation for Connecticut consumers.

The IRP is a crucial tool that will enable Connecticut to succeed in achieving the laudable energy goals set by the Administration. Governor Malloy has been very clear in stating that Connecticut's energy policy should have three main objectives: 1) lower energy costs, 2) create jobs within Connecticut, and 3) help to build the Connecticut economy. Transitioning the state's aging generating fleet to modern units using either new, state of the art, natural gas combustion turbine technology or other low and zero emitting generating resources will provide Connecticut (and the surrounding region) with lower cost, environmentally responsible electricity in close proximity to important centers of electric demand and economic activity. As the region benefits from the anticipated continued low natural gas prices and advancements in renewable technologies, these new generation projects will create both construction and permanent jobs within Connecticut and will generate millions of dollars annually in goods and services for the communities around these plants and the Connecticut economy as a whole.

As discussed later in these comments, when selecting replacement resources, the IRP should evaluate all generation and transmission opportunities on an "all in" basis so that a true representation of the benefits and costs of these projects is understood. As an example, certain proposed transmission projects have been represented as the vehicle to import low-cost power from Canada; however, when all costs are teased out, it is likely that these proposed transmission projects will cost Connecticut citizens more and will return uncertain benefits when compared to locally-sited generation projects that will maintain and grow the state's manufacturing workforce and enhance the local economy

and local reliability of the grid without exporting well-paying, skilled jobs from Connecticut to Canada.

Connecticut is at a crossroads in determining whether it wants to become dependent on other states and countries to determine its energy future or whether it wants to seize the moment and chart the course for converting Governor Malloy's goals into achievable and affordable plans for meeting all of the stated objectives. As NRG has recently shared in the IRP stakeholder process:

- Changes in the wholesale forward capacity market are imminent and certain.
- Those changes will put downward pressure on prices, making economic survival more difficult for existing in-state generating units that rely predominately on capacity revenue to cover their fixed costs.
- In addition to the challenges created by a low capacity price environment, vintage plants face the potential for incremental investment in emissions and cooling water controls to comply with pending environmental regulations.
- Although the region is currently benefitting from surplus capacity, the combination of these pressures will no doubt force many of the older units into retirement, putting pressure on the region's resource adequacy.
- Announced delays in the in-service dates of the proposed New England East West Solution transmission projects combined with sudden retirements may quickly turn previously projected surpluses into capacity shortfalls, thereby increasing electricity prices for Connecticut.

- Although there are mechanisms in place intended to compensate generating units necessary for system reliability to remain operational if such units would have otherwise shut down for economic reasons, the compensation structure in these mechanisms will not be sufficient to justify continued plant operation for many of these units and owners may nonetheless shut down.
- The practical replacement of the state's fossil fired steam generating capacity must be, in large part, new combined cycle gas turbine (CCGT) technology.
- This technology will help to continue the trend toward lower energy prices, create construction and permanent jobs in Connecticut and inject millions of dollars annually into the Connecticut economy through goods and services procured for these plants.
- In keeping with state policy to maximize use of existing electric infrastructure/sites, replacement of older units (whether through repowering or the development of greenfield sites) should be facilitated through a 2012 competitive procurement process as provided for in the IRP Statute.

The 2012 IRP should recognize the realities outlined above. Contracts with existing, older generation units that are at risk for retirement can temporarily stabilize power costs and will allow for orderly planning and transition to either re-powered or new generation by establishing clear timelines, and the necessary financial support, to

transition older units on existing sites to new, state-of-the-art, environmentally-responsible generation. The New England wholesale markets are still evolving, and they are not yet structured in a way that will effectively induce long-term investment, so contracts are a necessary element for ensuring that new resources are developed, at least until the wholesale markets evolve and mature to a point that can sustain merchant investment. Such contracts should be sensitive to the prevailing wholesale market structure, and should seek to complement the markets, not undermine them.

The following is an excerpt from the December 20, 2010 report developed by then Governor Elect Malloy's Energy Policy Working Group, which developed energy recommendations for Governor Malloy's Transition Team:

*... much of Connecticut's traditional electric generating infrastructure is aging, and Connecticut does not have a solid policy as to how it will replace that aging infrastructure. Approximately 53% (3,000 MW) of Connecticut's fossil-fueled generation is over 35 years old, and approximately 30% of Connecticut's fossil fueled generation is over 40 years old (1,700 MW). Unsurprisingly, it is anticipated that Connecticut has over 2,000 MW of aging generation capacity that is nearing the end of its useful life and is slated to be retired. To date, the debate about aging infrastructure has largely focused on system reliability, i.e., does Connecticut have enough assets in place for its electricity needs? The reality of this aging generation fleet is that Connecticut may now also have an opportunity to replace aging existing units with newer, more efficient units. This also creates an opportunity to position Connecticut to benefit from structural changes in the natural gas market resulting from Northeast shale gas reserves that are expected to provide lower gas prices well into the future.*

The Energy Policy Working Group goes on to recommend that there "should be a broad examination of assets, including, but not limited to consideration of repowering, retrofitting, development of new assets and retirement of other assets."

Additionally, the Final 2010 IRP mirrors this sentiment by arguing that environmental regulations and economic circumstances are forcing many of

Connecticut's generation units toward the end of their natural lives. The 2010 IRP goes on to recommend that repowering of these units with natural gas combined cycle technology "would be beneficial to Connecticut, reducing costs and emissions."

Moreover the 2010 IRP states that:

*Significant uncertainties and risks could change the outlook. The potential for accelerated retirements of older fossil-fired generation, delays in the development of renewable resources, federal action on carbon regulation, changes in ISO-NE market rules, economic recovery, and others are significant signposts to monitor.*

Recognizing that external factors could accelerate unit retirements and that there are long lead times to permit and construct repowered facilities, the 2010 IRP recommends that these issues, including repowerings, be revisited in the 2012 IRP, and include an evaluation of financing alternatives – including long term financial support from ratepayers.

While the Governor's Working Group recommendations and the 2010 IRP conclusions clearly support pursuing the phase-out and replacement of older power plants, these recommendations and conclusions stop short of calling for a comprehensive review of the "all in" costs and benefits of the various energy infrastructure projects. In order to achieve the goals set by Governor Malloy and the Administration it is critical that the IRP evaluate and compare the true cost of the various transmission and generation projects so that the state enters into potential long-term contracts with an eyes-wide-open context of likely results.

Over the past 11 years, NRG has permitted and developed several power projects in Connecticut. The Cos Cob peaking units were expanded by 40 MW. The GenConn projects (a joint venture between NRG and United Illuminating) included two 200 MW quick start peaking plants on NRG property in Milford and Middletown. Additionally, NRG is prepared to respond to RFPs for repowered and new generation with the following additional projects:

- Meriden Gas Turbines – 530 MW natural gas combined cycle plant in Meriden. This project has been permitted by the Siting Council and DEP.
- Montville Biomass – 40 MW clean wood biomass repowering of an existing boiler at the NRG plant in Montville. This project is currently the lowest cost renewable project proposed in CT.
- Solar – NRG has identified several sites for small to large scale solar development in Connecticut, including land located at NRG’s Norwalk Harbor facility.

All of these proposed projects would provide substantial benefits to Connecticut and help to achieve the goals for energy policy set by Governor Malloy. Natural Gas Combined Cycle projects like the one proposed in Meriden are the most efficient and economical projects at this time. In addition to helping lower energy costs, this project will create substantial construction jobs and on-going economic activity to support the plant over its lifespan. Montville Biomass is currently the lowest cost renewable project in the state. This project can be completed within 18 months of signing an off-take contract.

NRG Energy, Inc. appreciates the opportunity to participate more fully as a stakeholder in the DEEP development of the 2012 Procurement Plan currently under development, in order to help ensure effective modeling of generation retirements. In summary:

- In addition to the challenges created by a low capacity price environment, vintage plants face the often uneconomic burden of incremental investment to comply with a series of environmental regulations that are currently in various stages of issuance, creating pressure on older units to exit the market.
- Although ISO NE reports that the New England region presently has a surplus of capacity, impending retirements of incumbent generation, and long permitting and construction lead times make it critical that Connecticut move forward with a development plan now. A generation procurement process held in 2012 will ensure that new resources are brought on line in the 2015-2016 time frame – at a time when ISO-NE has noted a significant risk of capacity shortfalls.
- Current and anticipated market prices are increasing the certainty that older, less efficient units will depart the market, at least temporarily and likely permanently unless a repower option is realized. In fact, newer resources with high cost structures will also face significant challenges when the FCM floor price is eliminated.

Although the exact timing of when these pressures will force existing resources to exit the market and exactly how many resources will exit is unknown, a substantial number of units are presumably at risk. The number and impact will become more readily apparent after capacity auctions that will take place in 2012, 2013 and 2014. The anticipated substantial market exit will not only create reliability problems, but also the

potential for significant increased costs associated with mitigating these concerns in haste. Connecticut has the opportunity in the 2012 IRP procurement plan to proactively and decisively address these impending concerns thoughtfully to put the state on a smooth path to a more efficient, lower-emitting and lower-cost future for its residents, and NRG urges the DEEP to seize the opportunity for the good of the people of Connecticut.

Thank you again for this opportunity to provide input in the 2012 IRP process.