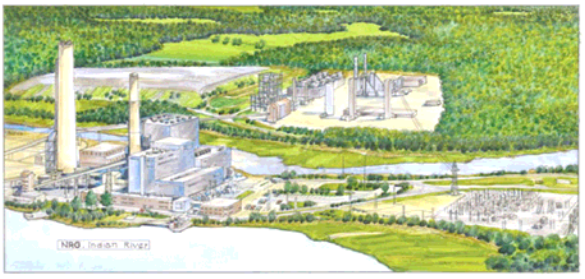
PSC STAFF REVIEW AND RECOMMENDATIONS
ON GENERATION BID PROPOSALS
DOCKET NO. 06-241

PREPARED FOR

THE DELAWARE PUBLIC SERVICE COMMISSION

BluewaterWind℠

Conectiv Energy Supply, Inc.



NRG Energy, Inc.

MAY 2, 2007

TABLE OF CONTENTS

Page

Executive Summary

In early 2006, as a result of Standard Offer Service[1] ("SOS") rate concerns, the Delaware Legislature proposed revisions to the Electricity Restructuring Act of 1999. House Bill No. 6 ("HB 6")[2] was introduced as a mechanism to slow the impact of these rate increases and to enable state agencies to explore alternative means to obtain SOS at a reasonably stable price. HB 6 also directed the state agencies to consider environmental and reliability effects as part of their review process on alternatives**.** The legislation specifically directed the Delaware Public Service Commission (the "Commission") and the Delaware Energy Office (the "Energy Office") to ensure that each RFP elicits and recognizes the value of proposals that (1) utilize new or innovative baseload technologies; (2) provide long-term environmental benefits to the state; (3) have existing fuel and transmission infrastructure; (4) promote fuel diversity; (5) support or improve reliability; and (6) utilize existing brownfield or industrial sites. 26 *Del. C.* § 1007(d)(1)a.-f. This report summarizes the Commission Staff's (the "Staff") review of only one of the EURCSA's requirements: the need to explore long-term energy contracts, including a Request for Proposals ("RFP") for the construction of new generation resources in Delaware. Staff provides its insights on the various proposals and presents its recommendations for the Commission's consideration. [3]

[1] Standard Offer Service refers to Delmarva customers who do not receive their energy supply from a third-party electric provider. *See* 26 *Del. C.* § 1001(18).

[2] HB 6 is codified in the Electric Utility Retail Customer Supply Act of 2006 (the "EURCSA"), 26 *Del. C.* §§ 1001-1019.

[3] At the outset of the RFP process, Staff recognized the need to integrate public input throughout the expedited process, and workshops and public comment sessions were held throughout the State. Much of this report reflects that input, and Staff appreciates the time and effort expended by the public and bidders on this process. In accordance with the provisions of HB 6, the Energy Office, Office of Management and Budget ("OMB") and the Comptroller General's Office(collectively the "State Agencies") participated in the process.

On August 1, 2006, in response to the EURCSA, Delmarva filed its application for approval of a "Proposed Request for Proposals." On September 18, 2006, the State Agencies' Independent Consultant (the "IC") filed its "Initial Report Regarding Delmarva Power & Light Company's Proposed RFP," which identified several issues and suggested substantial changes. On October 12, 2006, after considerable public input, the IC issued its final report.

On October 17, 2006, the Commission and the Energy Office adopted the IC's recommended changes. The Commission and the Energy Office, consistent with the EURCSA's guidance, divided the evaluation into price and non-price factors. The non-price factors, which included environmental impacts, fuel diversity, technology innovation, operational date certainty, technology reliability, site development, bidder experience and financeability, totaled 40 of the 100 possible points. Price and price stability considerations comprised the remaining 60 points. The Commission and Energy Office also reserved the right to view the submissions with respect to three "super categories:" Favorable Characteristics, Project Viability, and Economics. The Commission and Energy Office substantially increased the available points for environmental considerations, while reducing some of the available points for other considerations, retained jurisdiction over future disputes and declined to consider emission reductions from other generating units in their evaluation of non-price factors.

On November 1, 2006, Delmarva issued its RFP for the purchase of power under long-term contracts from new generation resources within the State of Delaware for the purpose of supplying SOS. Pursuant to an expedited schedule, three parties submitted bids for consideration on December 21 and 22, 2006. Conectiv Energy ("Conectiv") provided primary and alternate bids for a 180 MW Combined Cycle Gas Turbine ("CCGT") to be located at its

Hay Road site in Edgemoor, DE. Bluewater Wind LLC ("Bluewater") submitted bids for power sales from three potential off-shore wind projects (Atlantic North for 600 MW, Atlantic South for 600 MW and Delaware Bay for 546 MW). NRG Energy Inc. ("NRG") proposed to sell energy and unforced capacity credits from 400 MW of a 600 MW coal-fired Integrated Gasification Combined Cycle ("IGCC") facility proposed to be built at its Indian River site and offered the potential to retire Indian River Units 1 and 2.

Delmarva and its consultant, ICF Consulting ("ICF"), evaluated the bids with the IC's oversight. Both parties ranked the Conectiv CCGT first, followed by Bluewater and NRG. All three proposals had unacceptable contract terms (non-conforming bids) and were above the expected market price; however, the Conectiv CCGT was only 2-3% over the projected market price. Although there was minor variation in scoring between the two consultants, based on different input assumptions, the overall outcome was the same.

Instead of immediately recommending rejection of the bids or directing Delmarva to negotiate with any of the parties, Staff continued to gather additional information it deemed crucial to the decision process. Staff considered alternative supply options proposed in Delmarva's Integrated Resource Plan ("IRP") filing, the possibility of system failures (particularly if older units were retired), and the possibility that a regulated project could provide a better hedge against future energy prices. In the interim analysis of Delmarva's IRP, the IC concluded that the concepts proposed in the IRP would not significantly impact the bid evaluations. The IC recommended deferring a final decision on the proposals pending Staff's analysis of reliability and economics. The IC also suggested employing a market test to evaluate other regional options.

The Commission solicited PJM Interconnection LLC ("PJM") and retained PowerWorld, Inc. ("PowerWorld") to analyze system reliability. PowerWorld's analytical study concluded that retiring Indian River Units No. 1 and 2 would not result in any new load flow contingencies, but could increase the need for energy imports and exacerbate the risk of low voltage and limited reactive supply in southern Delaware, when combined with a possible outage at Indian River Unit No. 4 (a conclusion with which PJM verbally concurred). This undesirable scenario could result in rolling blackouts, outages and other adverse consequences. Moreover, PowerWorld observed the desirability of adding a base load plant or a combination of wind with backup gas turbine capacity in southern Delaware. From a regulated economic perspective, the market-based bids could be approximately $10-20 higher than similar regulated generation units; however, a regulated project with reasonable expectation of cost recovery could be attractive to project developers. Cost and capital recovery uncertainty is somewhat reduced in a regulated environment because of the explicit recognition of risk sharing between the regulated entity and the ratepayers.

From Staff's standpoint, relevant legal authority, scholarly opinion, real world experience in risk management such as financial diversification services and products, and industry comment affirm that the State Agencies should employ a portfolio approach to address Delaware's impending energy issues. The General Assembly contemplated such an approach through the EURCSA's mandatory IRP. Two separate Governor's Task Forces recommended pursuing energy supply action on multiple fronts – in effect, a portfolio approach. The portfolio approach provides the most viable mechanism to mitigate energy risk. Delmarva's current reliance on securing all or nearly all of its SOS electric supply requirements from the regional

wholesale market creates undue risk, especially in the energy constrained load pocket known as the Delmarva Peninsula. Such reliance will lead to greater price volatility, and will continue to hold Delaware hostage to pricing by generators with significant market power.

After an informed and deliberative review, consideration of sound public policy, the currently available opportunity to negotiate with interested bidders, and the concern regarding coordination of energy efforts among the State Agencies, Staff recommends that the Commission embrace an energy portfolio concept. Accordingly, Staff recommends exploration of building additional generation assets in southern Delaware, coupled with development of demand response programs, energy efficiency programs, renewable distributed generation, short- and long-term bilateral contracts, and market purchases. With respect to the bids, Staff recommends that the State Agencies direct Delmarva to negotiate with both Conectiv and Bluewater for a hybrid energy supply that combines a 200-300 MW offshore wind farm with a 150-200 MW synchronous condenser CCGT in Sussex County. This hybrid generation can potentially moderate Delaware's increasing capacity costs and maintain system reliability. Moreover, Staff's recommended course of action will address Delawareans' legitimate concerns regarding the economic, health, safety, and environmental implications of new generation resources. Staff concludes its report with a discussion of the benefits of additional generation resources located in Delaware from reliability, environmental and economic viewpoints.

I. BACKGROUND

Over the past several years electric supply in Delaware has shifted from a fully regulated, vertically integrated industry to a deregulated market-based product in compliance with state legislation and both FERC and PJM market rules. This transition began in 1998 and culminated with the "Electricity Restructuring Act of 1999." The Act deregulated energy supply, offered opportunity for customer choice, reduced residential customer rates by 7.5%, and set rate caps through September 30, 2002 and 2003 depending on the customer class. In 2001, Delmarva, operating as Conectiv Power Delivery ("Conectiv"), filed an application to merge with Pepco Holdings, Inc. ("Pepco"), an energy delivery company based in Washington, D.C. The Commission approved a settlement conditioning the merger on extending the rate caps through May 1, 2006, thereby delaying customers' exposure to market prices. Although customer choice was an option for residential and small commercial customers, no suppliers offered alternative supply pricing plans to them.

In late 2005/early 2006, the Commission authorized Delmarva, as the SOS provider, to conduct a competitive bid process to secure SOS supply. After conducting a closely monitored on-line bid process for generation supply, Delmarva secured the necessary supply at what appeared to be current market prices. Unfortunately, these prices were also at historical peaks. Delaware customers faced significant rate increases, ranging from 59% for residential customers to over 100% for some large commercial and industrial customers. In early 2006, due to these rate concerns, the Delaware Legislature adopted the EURCSA, which substantially amended the Electricity Restructuring Act of 1999. This report discusses Staff's review of one provision of the EURCSA: the need to explore long-term energy contracts, including an RFP for the

construction of new generation resources in Delaware. Staff provides its insights on the various proposals and presents its recommendations for the Commission's consideration.

a. House Bill No. 6

On April 6, 2006, Governor Ruth Ann Minner signed HB 6 into law mandating a deferred rate option and directing Delmarva to examine alternative supply options. HB 6 provided customers the option to spread the anticipated rate increase over three periods through a January 1, 2008 "true-up" period. The bill, referred to as the EURCSA, also instructed Delmarva to conduct IRP and file plans with the State Agencies by December 1, 2006 and every two years thereafter. As part of the IRP process, Delmarva was directed to explore in detail all reasonable short- and long-term procurement or demand-side management strategies, and was required to acquire at least 30% of its resource mix from regional wholesale markets via bid procurement or auction. On or before August 1, 2006, as part of its IRP, Delmarva was to file a proposal to obtain long-term contracts, including a proposed RFP for the construction of new generation resources within Delaware to serve its SOS customers and a proposed form of output contract. More specifically, the General Assembly required the proposed form of output contract to include capacity and energy, instructed that it could also include ancillary electric products and environmental attributes between Delmarva and the providers of the new generation, and specified the term of such contracts to run between 10-25 years. In addition, Delmarva was directed to set forth selection criteria "based on the cost-effectiveness of the project in producing energy price stability, reductions in environmental impact, benefits of adopting new and emerging technology, siting feasibility, and terms and conditions concerning the sale of energy output from such facilities." *Id.* at § 1007(d).

The EURCSA authorized the Commission and the Energy Office to modify any elements and approve the RFP for issuance. Specifically, the EURCSA required the Commission and the Energy Office to "ensure that each RFP elicits and recognizes the value of:

a. proposals that utilize new or innovative baseload technologies;
b. proposals that provide long-term environmental benefits to the state;
c. proposals that have existing fuel and transmission infrastructure;
d. proposals that promote fuel diversity;
e. proposals that support or improve reliability; and
f. proposals that utilize existing brownfield or industrial sites."

Id. at § 1007(d)(1)a.-f. The General Assembly directed Delmarva to issue its RFP on November 1, 2006, and set a December 22, 2006 deadline for receipt of bids. *Id.* at § 1007(d)(1).

The EURCSA further authorized Delmarva, subject to Commission approval, to engage in any of the following actions to meet its SOS requirements: (a) enter into short- and long-term contracts for the procurement of power necessary to serve its customers; (b) own and operate electric generation facilities; (c) build generation and transmission facilities (subject to any other requirements in the Delaware Code regarding siting, etc.); (d) invest in demand-side resources; and (e) any other Commission-approved action to diversify its retail load. *Id.* at § 1007(b)(1)-(5).

The EURCSA authorized the State Agencies to retain (at Delmarva's expense) the services of an independent third-party consultant with expertise in energy procurement to oversee the development of the RFP and to assist the State Agencies in their review of bids received. *Id.* at § 1007(d)(2). Staff ultimately retained New Energy Opportunities, Inc. ("NEO") of Sudbury, MA for this purpose.

The General Assembly also ordered the State Agencies to evaluate the proposals received on or before February 27, 2007, authorizing them to "determine to approve one or more of such proposals that result in the greatest long-term system benefits … in the most cost-effective manner." *Id.* at § 1007(d)(3). Once the State Agencies identified such proposal(s) and approve the finalized contracts, Delmarva would be required to enter into contracts with the selected bidder(s). *Id.*

b. Agencies' Process

During preliminary discussions among the State Agencies regarding the EURCSA, the Agencies agreed that the Commission process offered the most comprehensive approach for executing the legislative mandates. However, the State Agencies stressed that Commission review and direction could not supplant the rights of any participants to pursue actions under any other administrative or legal procedures. Although each of the State Agencies would operate independently, they would convene at Commission meetings as necessary for critical decisions. Each agency would have an equal vote and all directives or actions would require unanimous agreement. Accordingly, a "no vote" from any one of the parties charged with decision making authority by the EURSCA could essentially block a proposed action. Each State Agency officially designated a representative to participate with the Commission and with voting rights for their agency.

Early in the process, the State Agencies determined that the EURCSA's impact on both Delmarva's SOS customers and Delaware citizens in general required public input. The legislatively-mandated schedule precluded the adoption of a full procedural process with

discovery, testimony and hearings -- in any event, a fully litigated proceeding of this type was not the preferred course to consider a complicated competitive bid process, where bidders did not contemplate a lengthy, fully litigated review. The Commission approved an alternative procedure to handle the relatively tight timeframes and the format of a competitive bid process. Although this process shortened review periods, it provided an opportunity for complete analysis of the issues surrounding the RFP and significant public comment before the bids became stale or expired.

The Commission invited the Energy Office, OMB and the Controller General's Office to participate in any and all Commission activities. The Commission recognized the need to move quickly on this task, to have flexibility in moving forward, and to provide for transparency throughout the complete process. The Commission sought to encourage "public" input in the review of the RFP while maintaining an efficient process capable of meeting short statutory deadlines for announcement, release, and evaluation of the official RFP. Staff was directed to conduct a more expedited proceeding, to coordinate with the IC (*i.e.* NEO) and to generally support the efforts of the State Agencies in the process.

Commission Order No. 7003[4] permitted Staff to hold public workshops to obtain input from interested parties on Delmarva's filing and provide an opportunity for Staff to seek additional information from Delmarva. On August 18, 2006, Hearing Examiner William O'Brien conducted a day-long public workshop at Legislative Hall with transcription of public comment. At the workshop, Delmarva presented an overview of the proposed RFP and Staff

[4] *See* Commission Order No. 7003 (August 8, 2006).

presented a proposed review schedule. Various attendees, including members of the public, posed questions, identified issues, and expressed their views on Delmarva's proposed RFP. There was significant public participation at the workshop and all comments were transcribed and posted on the Commission website. After the workshop, the following participants submitted written comments and/or reply comments: Acacia Consulting, Bluewater, Coalition for Climate Change Study and Action, the Energy Office, Delaware Energy Users Group, Delaware Nature Society, Department of Public Advocate, Green Delaware, NRG, SCS Energy, LLC ("SCS Energy"), Jeremy Firestone and Willett Kempton of the College of Earth and Marine Studies of the University of Delaware ("Firestone and Kempton"), the Natural Resources Defense Council and various members of the public. Also at that workshop, Staff released its proposed schedule:

- Public comment on RFP by August 31, 2006;
- IC's RFP report by September 15, 2006;
- Public comment on draft IC's report by September 29, 2006;
- Commission hearing/discussion on October 17, 2006;
- Issuance of the final RFP by November 1, 2006;
- RFP bidder response by December 22, 2006;
- Bid evaluations by February 9, 2007;
- Public comment through February 21, 2007; and
- State Agencies' decision on February 27, 2007.

The public participated extensively in the workshop, raising concerns and identifying key issues. While there was some schedule variation, Staff maintained the integrity of the mandated February 27, 2007 date while actively informing the parties and the public.

As part of the process, Staff elected to permit e-mail filings and comments and maximized the use of the Commission website by posting all comments, motions, orders and

reports thereon for ready public access. The website provided all interested participants, including the State Agencies, access to all pertinent documents associated with the RFP process, except that some business-sensitive information of the bidders was permitted to be redacted from the public record.

II. REQUEST FOR PROPOSALS

On August 1, 2006, pursuant to the EURCSA, Delmarva filed its application for approval of its proposed RFP. On August 8, 2006, the Commission opened Docket No. 06-241 to review the proposed RFP in compliance with the EURCSA. *See* Commission Order No. 7003 (August 8, 2006).

a. Delmarva's Filing

Delmarva's filing contained an RFP for Delaware-based generation and a draft Purchase Power Agreement ("PPA") as required under the EURCSA. Subsequent review and modification efforts focused on the Delaware generation RFP, while recognizing the opportunity for other long-term options for future consideration as part of the IRP process. Delmarva's filing imposed significant limitations on the size of the load for which it was willing to contract and reducing Delmarva's financial risk profile**.** Delmarva sought only 200 megawatts ("MWs") generation to meet 98% of its projected base load requirements with no consideration for meeting peak loads or managing delivered energy during low usage times. Customers' guaranteed use of the full 200 MW at all times eliminated the need for any energy management (and related buy/sell risks).

b. RFP Modifications and Issuance

On September 18, 2006 the IC filed its "Initial Report Regarding Delmarva Power & Light Company's Proposed RFP." The report identified the following issues and suggestions:

- Size, security, product and credit concerns. The IC suggested adoption of a large "funnel" approach to address these concerns.
- The level of company and consumer risk. The IC recommended a less conservative approach.
- Relationship between RFP and IRP. The IC felt that while there would probably be enough information for an RFP decision, the IRP process/results could impact the particulars of that decision.
- Firm energy or unit contingent. The IC indicated that the RFP should permit both types of bids.
- Size and location. The IC recommended larger scale volume for energy service with no minimum capacity and 400 MW maximum capacity.
- Delivery point as generator bus or zonal aggregate. The IC recommended permitting either option.
- Availability of a PPA. The ICC recommended availability within 10 days of term sheet approval.
- Regulatory-out clause. The IC recommended rejecting a regulatory-out clause following PPA approval.
- Stringency of threshold requirements. The IC recommended liberal threshold requirements.
- Level of default security. The IC recommended moderation of Delmarva's proposed level of default security.
- Negotiable vs. non-negotiable items. The IC recommended that most terms be negotiable.
- Evaluation scoring and view. The IC recommended modification to weighting and proposed utilization of super categories.

All participants were invited to comment on the report by October 3, 2006. On October 12, 2006, the IC forwarded its "Final Report Regarding Delmarva Power & Light Company's Proposed RFP" (the "Final Report"), which was posted on the Commission's website.

On October 17, 2006, the Commission and the Energy Office's designated representative convened to hear oral argument and deliberate in public session on the Final Report and the parties' positions. At that hearing, Delmarva argued that it should not have to buy any more energy than needed to serve its SOS customers, and any long-term contracts should not expose those customers to any unnecessary price risk, including the potential for bidder default. The Commission and the Energy Office acknowledged Delmarva's concerns, but concluded that the RFP should be broad enough in scope to encourage potential bidders to submit bids. The Commission and the Energy Office observed that the IC's Final Report had considered the parties' comments at the August 18, 2006 workshop, the written comments filed in August 2006 and the reply comments filed in October 2006. The Commission adopted the IC's recommendations, refused to consider emission reductions from other generating units in non-price factor evaluation, and retained jurisdiction over any future disputes. *See* Commission Order No. 7066 (October 31, 2006).

On November 21, 2006, the Commission modified Order No. 7066 with respect to three outstanding issues: (1) Variable Interest Entity status would be grounds for rejecting or terminating a bid contract; (2) Delmarva would be permitted to assess an incremental equity amount if a bid resulted in imputed debt by rating agencies and; (3) operational period security would remain capped at $200/kW and at $80/kW for intermittent renewable energy projects. *See* Commission Order No. 7081 (November 21, 2006).

On November 1, 2006 Delmarva issued a revised RFP for supplying SOS. Pursuant to Order Nos. 7066 and 7081, the RFP was substantially modified from the originally-proposed RFP. The modifications to the RFP provided more flexibility in the RFP requirements in order to encourage a greater number of bidders and proposed projects than might have been expected under the original RFP terms and conditions proposed by Delmarva.

c. Notices of Intent and Bids

After release of the RFP but prior to receipt of bids, Delmarva, its consultant and the IC assisted prospective bidders in several different ways. First, Delmarva created a new website with relevant documents and information related to the RFP process, as well as a link to the Commission website and information page where the public could submit questions, comments and concerns. Delmarva expanded its website to include additional public information, while securing potential bidders' submission of notices of intent and other documents related to the RFP process. On November 15, 2006, Delmarva hosted a pre-bid conference to present the procedure it intended to follow in evaluating bids and to allow interested parties to pose questions to clarify portions of the RFP. Delmarva's presentation was posted to the public portion of its website. Potential bidders were required to submit notices of intent to bid ("NOI") by November 22, 2006, along with the location of the planned generating units (to enable Delmarva to begin its transmission analysis). The final version of the Standard Form Power Purchase Agreement ("Standard Form PPA") was posted on both the Commission's and Delmarva's websites for review by prospective bidders. On November 1, 2006, Delmarva

posted the Bidder Response Forms specifying the information bidders would submit. Delmarva subsequently posted revisions and updates to these forms before the bid submission deadline.[5]

Four potential bidders notified Delmarva of their intent to bid on the proposal: Bluewater, Conectiv (a Delmarva affiliate), NRG, and SCS Energy. These notices were posted to the Commission website. On December 8, 2006, Bluewater submitted its draft bid in accordance with the RFP so that Delmarva could assess its responsiveness. Delmarva, with the approval of the IC and Staff, provided feedback regarding compliance with the 400 MW contract size limitation and identified portions of the draft proposal that appeared non-responsive.

On December 21, 2006 one day prior to the bid deadline, Conectiv submitted its proposal as required by the RFP for affiliate companies. Submissions were made to the ICF website with copies to the IC and the Commission. On December 22, 2006, NRG and Bluewater submitted their bids in similar fashion. All bidders designated portions of their bids as confidential.

Conectiv provided a primary and alternate bid for a 180 MW CCGT located at its Hay Road site in Edgemoor, DE. Conectiv submitted a "Base" unit-contingent power sale with dispatch rights and an "Alternate" unit capacity-based firm energy power sale, both for 10-year durations. Conectiv's bids provided for a one-time price adjustment associated with the Commission's time frame and based on changes in the price of coal. Its alternate proposal

[5] *See* Delmarva Power & Light Company's RFP Bid Evaluation Report (Feb 21, 2007).

provided for contract capacity, with the provision to provide energy from the most economical source (not necessarily the gas turbine).

Bluewater submitted bids for power sales from three potential offshore wind projects, one of which it subsequently withdrew. Consistent with the RFP, Bluewater submitted variations of its proposals, which included both 20- and 25-year terms and (1) a 600 MW capacity plant with a 400 MW energy limit or (2) a 400 MW capacity plant with a 400 MW energy limit.

NRG proposed to sell energy and unforced capacity credits from 400 MW of a 600 MW coal-fired IGCC facility proposed to be built at its Indian River site. In connection with this proposal, NRG proposed to retire Indian River Units 1 and 2 (collectively 183 MW) in the event of consummation of a power sales agreement with Delmarva. NRG submitted the following variations: (1) a 20-year power sale without carbon capture and sequestration ("CCS"); (2) a 25-year power sale without CCS; and (3) a 25-year power sale with CCS. NRG's proposal provided for a 280 MW baseload pricing option and 120MW priced for possible turndown for load following ability. NRG also proposed a 6-year "baseload bridge" power sale from existing Indian River capacity beginning in 2008.

SCS Energy, although submitting a NOI to bid, did not offer any projects for consideration.

d. Peripheral Issues

As the RFP bid and evaluation process moved forward, several peripheral issues arose for consideration by the State Agencies. The public comment period appeared as the first major issue. Dr. Firestone moved to extend the public comment period because the previously established public comment deadline provided commenters less than two days to review the IC's Redlined PPA.[6] While sympathetic to the request, the Commission denied Dr. Firestone's motion. The Commission reasoned that the Redlined PPA was a supplementary document to the RFP that was provided merely as a courtesy to the participants, and that it was constrained to follow the deadlines set forth in the EURCSA. Moreover, the Commission emphasized that the public would have ample opportunity to comment throughout the later stages of the RFP process because the draft PPA did not close the RFP process.

Second, Bluewater requested clarification on the maximum size capacity acceptable in a bid. In response, the Commission ruled that Bluewater's proposal to provide up to 400 MW per hour from a project larger than 400 MW did not conform to the intent of the RFP. Despite this non-conformity, the Commission ordered the reviewing parties to evaluate the Bluewater proposals. *See id.*

Third, as indicated, Staff was most impressed and appreciative of the public participation in this process -- a level of participation and interest never before seen in Commission proceedings. The additional information provided by the public, as well as the information

[6] Dr. Firestone also moved for access to confidential bid information and party status. The Commission resolved his motion by denying him party status and precluding his access to the confidential information redacted in the bid proposals. Access to confidential information was an ongoing issue in the bid process. Ultimately, the Commission decided to release significantly more information than the bidders had originally designated, which led to an unsuccessful challenge by one of the bidders in the Court of Chancery.

provided by other interested participants, has greatly assisted Staff in developing its position. Nevertheless, the State Agencies have the ultimate responsibility, as directed by the EURCSA, to sift through the bids, the wealth of public input, the filed documentation from all concerned and the IC's and Staff's input and to render a decision that they believe is in the public interest. In other words, the decision will not be a referendum on the bids, but what these agencies determine to be in Delaware's long-term energy interest under the parameters set by the EURCSA as supported by the information before them.

e. Evaluation Process

The RFP identified the evaluation process to be followed in reviewing the submitted bids. As directed by the Commission and the Energy Office and in accordance with the EURCSA, the evaluation was divided into price and non-price factors. Price factors, which included bid price, price stability, risk exposure and contract terms, totaled 60 of 100 possible points. The non-price factors, including environmental impacts, fuel diversity, technology innovation, operational date certainty, technology reliability, site development, bidder experience and financeability, comprised the remaining 40 points. The State Agencies also reserved the right to view the submissions with respect to three "super categories:" Favorable Characteristics, Project Viability, and Economics.

To ensure fair and equitable treatment of all bidders, the IC proposed (and the Commission and Energy Office approved) that Delmarva conduct a test bid using several different types of proxy generation projects before the actual bids were received. The IC noted that this process would allow the evaluators to gain a perspective on the process and to verify the consistency, efficiency and reasonableness of the modeling methodologies and input

assumptions, and that it was important for the integrity of the process that input assumptions and methodologies be finalized prior to receipt of bids. Moreover, the IC stressed that assumptions and methodologies must not contain undue bias toward any resource.[7]

After the IRP was issued, Delmarva and ICF informed the IC that there was insufficient time to conduct a test bid. As a substitute, they proposed to provide the IC with all of the material input assumptions, explain them, provide outputs for the reference case, and otherwise cooperate with the IC so that the IC could become comfortable with the bid evaluation process, methodologies, and assumptions. Due to statutory time constraints, the IC agreed that a test bid was not feasible within the allotted time frame for the RFP. Thus, the IC reviewed the material assumptions, agreed on a method to scale the bids (*i.e.*, allocate points), negotiated modifications to the way Delmarva and ICF proposed to implement the price stability analysis, and prepared to conduct its own spreadsheet analysis of the bids as a means of cross-checking ICF's results. Delmarva and the IC worked together to develop more specificity for scoring within each category and subcategory, including developing a combination of more precise metrics where appropriate (such as emissions levels and pricing) and identifying qualitative factors (such as technology reliability and contract terms).[8]

According to Delmarva, the bid evaluation encompassed three types of assessments: threshold, responsiveness, and detailed evaluations. The RFP clearly specified threshold criteria, and the "responsiveness" review enabled the reviewing parties -- Delmarva, ICF, the IC and Staff -- to ensure that they had sufficient information with which to evaluate the bids. The

[7] IC Report at 4.
[8] *Id*. at 4.

reviewing parties conducted an initial screen of the proposals and provided detailed questions to each bidder on December 29, 2006. Questions focused on items that were ambiguous or incomplete, as well as areas that did not meet the threshold requirements. All bidders responded to these questions within three business days, as required. Upon receipt of the bidders' responses, the bids were submitted to experts in each area for a more thorough evaluation. On January 5, 2007, Delmarva also advised each of the bidders indicating that all three bids would proceed to the detailed evaluation stage even though none of the bids conformed precisely to the RFP.

Experts performed independent analyses of the structures within each of the non-price factors and deliberated on assessment of these structures to finalize each score. Several of the non-price factors were outlined concretely in advance, and accordingly required minimal discussion. For example, "greenhouse gas emissions" and "criteria pollutants" were evaluated based on mathematical formulas developed through the shared efforts of the reviewing parties. Other straightforward factors included fuel diversity and technological innovation, where the evaluation criteria clearly designated a point value for each set of circumstances. The only judgment required in these cases was whether the reviewing parties agreed with the information provided in the proposals (*e.g.*, whether they agreed that the proposed on-line date was achievable).

The remaining factors were more complex. Water, land, and wildlife impacts, for example, engendered substantial discussion among the experts. For these factors, Delmarva and ICF employed a National Environmental Protection Act expert, an air emissions expert, and an environmental expert. These experts completed independent evaluations and then coordinated

to finalize the scoring. The ability to secure financing for the proposals was another contentious factor. Experts analyzed financeability based on the bidders' ability to obtain adequate financing to build the proposed project and sufficient cash flow to sustain the project over the term of the PPA. Following expert scoring and evaluation of the majority of non-price factors, the reviewing parties met to discuss preliminary results and current standings.

Throughout the bid evaluation process, assessing points to each category continued to be a contentious issue with not only the bidders and participants but also the State Agencies. The final RFP approved by the Commission and the Energy Office modified Delmarva's proposed weightings by doubling the environmental impact weighting and adjusting others accordingly. While most participants recognized the importance of price and price stability, many disputed the proposed weighting of points throughout the evaluation. Due to health impacts and pollution cost concerns, some participants argued that a 14-point allocation for environmental impact was inadequate. These participants further contended that price stability was the most important factor and accordingly deserved more weight than the actual bid price.

f. Delmarva Report

As directed by the Commission and Energy Office, Delmarva and its consultant conducted the initial bid evaluation. The evaluation process included both quantitative (price) and qualitative (non-price) factors. The bids were evaluated on a 100-point scale. The point system allocated points to the price and non-price factors based on the approved methodology. The State Agencies determined that the bid receiving the most points would be the highest ranked proposal.

Delmarva concluded, based on its evaluation of the bid results, that none of the proposals achieved the EURCSA's goal of producing energy price stability in a cost-effective manner while providing environmental benefits and other advantages to the state. Delmarva's overall bid scoring can be found in Table 2.1.1.

Table 2.1.1
OVERALL BID EVALUATION SCORES

	Maximum Points	BWW -N 25 Yr	BWW - N 25 Partial	BWW - S 25 Yr	BWW - S 20 Year	NRG 25 Year	NRG 20 Year	Conectiv Base	Conectiv Alternative
Non-Price	40.0	24.7	24.7	24.7	24.7	20.0	20.0	27.0	27.0
Exposure	6.0	0.3	0.3	0.3	0.6	0.0	0.3	5.3	5.3
Contract	1.0	0.6	0.6	0.6	0.6	0.2	0.2	0.7	0.7
Price	33.0	4.8	4.0	1.8	0.0	0.0	0.0	28.8	33.0
Price Stability	20.0	20.0	14.2	NA	NA	0.0	0.0	NA	0.7
TOTAL	100.0	50.4	43.8	NA	NA	20.2	20.5	NA	66.7

Delmarva evaluated the bids for their impact on its total SOS costs, both through changes in market prices and the provision of energy and capacity. Further, the evaluation considered the expected cost and variation in the expected costs. As outlined in the RFP, Delmarva assigned 33 points for the lowest expected price and 20 points for the project(s) that provided the most stable prices.

The modeling considered the following components of SOS cost:

- PPA Capacity Price
- PPA Energy Price
- Residual SOS Cost Impact
- T&D Project Impact
- Transmission Losses
- Imputed Debt Offset
- Cost to comply with the Delaware Renewable Portfolio Standard

According to Delmarva, the price evaluation indicated that each proposal, other than Conectiv's firm bid, would significantly impact SOS customer costs. In addition, none of the bids provided a substantive means to stabilize these costs for SOS customers. Delmarva's Table 2.1.2 below reflects its bid price evaluation results with respect to the direct economic impact on SOS customers.

Table 2.1.2
Selected Features and Economic Impacts of the Bids

	Reference Case	BWW -N 25 Yr	BWW - N 25 Partial	BWW - S 25 Yr	BWW - S 20 Year	NRG 20 Yr Term	NRG 25 Yr Term	Conectiv Base	Conectiv Alternative
Levelized costs (in 2005 dollars)	$85.43	$99.45	$99.82	$100.80	$101.90	$106.87	$107.56	$88.54	$86.63
Additional cost in excess of forecasted market (notional) paid by all SOS customers over the PPA life		$2.0 bil.	$2.1 bil.	$2.2 bil.	$2.2 bil.	$3.9 bil.	$5.2 bil.	$0.2 bil.	$0.1 bil.
Average annual % above forecasted market		9.3%	10.0%	10.4%	10.4%	18.4%	24.7%	1.1%	0.2%
Price stability impact - % of market price variability remaining with SOS customers		64.0%	74.4%	NA	NA	104.8%	105.7%	NA	98.8%
Price and price stability - point allocation (53 Max.)		24.8	18.2	NA	NA	0.0	0.0	NA	33.7

The price evaluation modeled the cost to supply SOS customers with all of their energy and capacity needs from 2011 - 2038. The bid evaluation results reflect the wholesale cost to supply SOS customers where the energy and capacity are sourced from the new generation. The evaluation relied on the wholesale market when, at times, the bid's new generation is under or over supplying the SOS energy need. The bid results were then compared to a Reference Case that reflected the cost to supply SOS customers relying 100% on the wholesale market (excluding any bid).

- The levelized cost (in 2005 dollars) for the Reference Case was $85.43 MWh. All bid results were higher than the Reference Case.

- The additional cost (also referred to as "notional") to be borne by SOS customers due to the bid's generation being a significant energy source ranged from $0.1 billion for the Conectiv alternative bid to $5.2 billion for the NRG 25-year term bid.

Delmarva balanced each bid's cost impact on SOS customers with the bid's effect on stabilizing SOS customer costs and determined that:

- Conectiv's alternative bid did not result in any meaningful reduction in future price variability (98% of the variability remains with SOS customers).
- NRG's bid increased the variability to customers while the Bluewater bids only reduced variability by between 25% and 36%.

Delmarva and the IC used non-price factors as previously described to evaluate the development and operational benefits and risks of each proposed project. Delmarva's non-price scoring did not result in differing scores for an individual bidder's multiple bids (*i.e.*, NRG's 20-year bid score was identical to its 25-year bid in the non-price review). Therefore, the non-price results are presented by bidder irrespective of the specific bid by such bidder. Delmarva's Table 2.1.3 below shows the results of the non-price bid evaluations.

Table 2.1.3
Overall Non-Price Scores

Non-Price Factor	Maximum Points	Conectiv	Bluewater	NRG
Environmental Impact	14.0	9.9	11.3	5.7
Fuel Diversity	3.0	0.0	3.0	2.0
Technology Innovation	3.0	0.0	3.0	3.0
Operation Date and its Certainty	3.0	1.3	0.5	0.0
Reliability of Technology	2.0	2.0	1.5	1.0
Site Development	5.0	4.8	2.4	3.8
Bidder Experience	5.0	5.0	1.0	2.0
Project Financeability	5.0	4.0	2.0	2.5
Total	**40.0**	**27.0**	**24.7**	**20.0**

Delmarva and the IC ranked the bids as follows: (1) Conectiv; (2) Bluewater; and (3) NRG. Conectiv scored highest on price, price exposure, operation date, reliability of technology, site development, bidder experience, and project financeability. Conectiv also scored comparatively well on environmental impact because natural gas is a clean-burning fuel and its facility is planned to be located at an existing power plant complex.

Delmarva concluded that none of the bids achieved the EURCSA's objective. Other than Conectiv's bid results, Delmarva contended that the bids were extremely expensive and produced minimal price stability. Although Conectiv's bids were slightly above forecasted market prices, Delmarva determined that they provided no price stability. Hence, Delmarva urged the State Agencies to reject all three bids. As support, Delmarva asserted that Conectiv's proposed 180 MW facility is an overload of power from one source; in light of the limited needs of Delaware's SOS customers, the bid could not be reconciled with the IRP. Delmarva further alleged that Conectiv's bid would likely result in a power purchase that SOS customers did not

need. Delmarva expressed concern about having to resell that surplus power, which it asserted would be at a loss. Delmarva claimed that the EURCSA requires its customers to pay for that loss and that this problem will be compounded if the conservation and demand side management ("DSM") programs embedded within the IRP have the desired and expected effect of reducing energy consumption.[9]

g. IC Report

Bluewater Wind Evaluation

Favorable Characteristics Supercategory

Bluewater's proposals scored well in the Favorable Characteristics supercategory, obtaining 18.2 out of a possible 20 points. As would be expected for a wind project, the Bluewater proposals scored high on environmental impact, receiving 12.2 of the 14 points available. Since the Bluewater projects would have no greenhouse gas or criteria pollutant emissions, Bluewater received the maximum 4 points available for each of these two subcategories. Of the 6 points available for the water, land, wildlife and waste disposal subcategory, Bluewater received 4.2 points, consisting of the full 1.5 points available for water impacts and waste disposal; .4 points out of the 1.5 available for land impact; and .8 points out of the 1.5 available for wildlife impact. As renewable energy projects, the Bluewater proposals received the full 3 points available for this category. As offshore wind projects, the Bluewater proposals also received the full 3 points for technology innovation.

[9] Delmarva Power Request for Proposals, Bid Evaluation Report, February 21, 2007, at 3, "With similar programs, California has kept energy consumption stable, although its economy has grown dramatically."

Project Viability Supercategory

In terms of project viability, the IC's most serious concerns were uncertain site development rules with implications regarding timely project development, and particularly, the overall financeability of the project. Bluewater's score in this supercategory was 9.9 out of a possible 20 points.

Bluewater received one out of three available points for operational date certainty, and one out of two available points for technology reliability. The proposed turbine manufacturer for the project has been the world leader in turbine supply since the 1980s and has participated in the installation of a number of offshore sites in recent years. However, the history of large scale offshore wind energy generation is relatively short, and there are no operating projects in North America.

Bluewater scored 1.5 out of 3 available points for its siting plan and .9 out of 1 available point for its socio-economic impact, with no additional points for brownfield location. Bluewater scored 3.5 out of 5 available points for bidder experience. The lead developer, Acadia Wind, Inc., has experience with one large completed onshore wind project and has assembled a team with substantial offshore wind experience.

Bluewater scored 1.5 out of 5 available points for financeability, reflecting the IC's concerns about the financeability of the projects as proposed. Bluewater plans to use a project financing structure for its proposed capital intensive projects. In reviewing the project spreadsheets, the IC determined that the Bluewater expects to derive a material amount of project revenue from the sale of both RECs and greenhouse gas ("GHG") credits associated with the same MWh to be

produced by the project. Whether this project can receive GHG allowances separate from RECs is a major issue.

Economics Supercategory

Bluewater scored few points in the Exposure and Contract Terms categories. Bluewater scored a total of .25 points in this category for its 25-year proposals and .58 points for its 20-year proposals. The components for scoring this category were contract size, the bidder's credit rating, the term of the contract, and a combination of expected capacity factor and project dispatchability. Bluewater scored .3 out of 1 available point for contract terms.

Conectiv Energy Evaluation

Favorable Characteristics Supercategory

While Conectiv scored relatively well in terms of the environmental impact of the proposed project, it received a low score for fuel diversity and no points for technological innovation, resulting in its receiving 10.8 out of a possible 20 points for favorable characteristics.

Conectiv's proposed combined-cycle plant received a total of 10.3 out of 14 available points for the environmental category. Scores for greenhouse gases (2.1 points) and criteria pollutants (2.9 points) were derived directly from the anticipated emissions rates as provided in Conectiv's proposal. Because there would be no increase in thermal discharge and no adverse change to the character of the water discharge, the IC awarded one of 1.5 available points for water impacts. The IC allocated 1.3 out of a possible 1.5 points for hazardous waste and 3 out of a possible 5 points for land and wildlife impact.

Although the plant would have dual fuel capability, natural gas and liquid fuel oil would be the available fuel options. The IC assigned Conectiv's proposal .5 out of 3 available points for fuel diversity. Because combined-cycle generation is a conventional technology, it did not receive any technology innovation points.

Project Viability Supercategory

Conectiv scored highly (18.15 out of a possible 20 points) in terms of project viability based on its use of a conventional technology, its financial capabilities and experience, and use of an existing site, including 2 out of an available 3 points for operational certainty and the full 2 points for technology reliability. Due to the project's location at an industrial site with existing generation units owned by Conectiv, the bidder already has site control, a transmission interconnection point, and a fuel supply infrastructure. Thus, Conectiv received the entire 5 points for site development. As for bidder experience, the Conectiv team has permitted, installed and commissioned a total of 1,650 MW of capacity employing the proposed technology in the past five years. Given the extent of Conectiv's experience with the technology and project management, the IC assigned the maximum 5 points for the category. Conectiv also received 4.5 out of 5 points for financeability, as Conectiv will likely obtain financing for the project if its bid is accepted. However, the IC identified the potential financial risk of rising natural gas fuel cost.

Economics Supercategory

Conectiv scored highly -- 5.5 out of a maximum 6 points -- in the Exposure category due to its relatively small contract size, its investment grade credit rating, the short contract term of 10 years, and Delmarva's operational flexibility. Conectiv did not score as highly on contract

terms, earning .4 of a potential one point, because its proposal and proposed exceptions raised non-conformance issues as later discussed (*see* Section h *infra*) and other key risk allocation issues.

NRG Energy Evaluation

Favorable Characteristics Category

NRG scored higher than Conectiv in the Favorable Characteristics supercategory -- 11.1 points for the base bid and 12.7 points for the CCS bid -- with higher points for fuel diversity and technological innovation but lower points for environmental impact. NRG scored 6.6 points and 8.2 points for CCS (out of 14 maximum available points) for environmental impact. Under fuel diversity, NRG scored 1.5 out of 3 available points due to the potential to provide syngas from a variety of fuels including biomass. For technology innovation, the IC awarded NRG the full 3 points because of its cutting edge technology.

Project Viability Supercategory

NRG outscored Bluewater for project viability but scored substantially below Conectiv, with 11.8 points for the base bid and 10.3 points for the CCS bid. The proposed on-line date for this project is mid-2013. Accordingly, the project received no points for operational date certainty. IGCC generation is a relatively new generation technology with only a handful of operating projects worldwide, and thus the IC scored technology reliability at 1 point for the non-CCS project base bid and .5 points for the CCS project (out of a maximum of 2 points).

For site development the IC awarded NRG 4.3 out of a possible 5 points. In assigning this score, the IC noted that NRG's project was located at a company-owned industrial site with

existing generation units owned by NRG, and it already had site control, a transmission interconnection point, and a fuel supply infrastructure. The plans for permitting entailed expansion of existing permits, which was not likely a major site development concern.

With respect to bidder experience, NRG scored 3 points without CCS and 2.5 points with CCS, out of a total of 5 points. The IRC noted that NRG had assembled a quality team with experience in various components of IGCC development (gasification and electric generation), but the company did not have experience in developing one or more IGCC projects. As such, it did not receive a bidder experience score near the maximum**.** NRG scored 3.5 out of an available 5 points for financeability. Based on information supplied by NRG and publicly available data, the IC concluded that NRG could likely obtain financing if its bid were selected. However, the IC identified risk associated with the potential range of capital costs of an IGCC that would need further review when engineering estimates were more complete.

Economics Supercategory

Like Bluewater, NRG scored few points in the Exposure and Contract Terms categories. NRG scored .5 points on its 25-year bid and .83 points on its 20-year bid out of a 6-point maximum on exposure. As previously discussed, the components for scoring this category were contract size, the bidder's credit rating, the term of the contract, and a combination of expected capacity factor and project dispatchability. Because NRG proposed a 400 MW contract and did not have an investment grade rating, the IC allocated zero points for contract size and credit rating. NRG received .5 points for providing "virtual dispatch" for 30% of the contract capacity and .33 points under its 20-year bid. With respect to contract terms, NRG scored a low .3 out of 1.0 available point for two reasons: (1) it proposed to pass through to Delmarva incremental

environmental compliance costs due to a change in law concerning CO_2 regulation or otherwise; and (2) it proposed termination rights if NRG could not finance the PPA.[10] The IC identified a variety of other contract changes presenting issues for negotiation, but determined that they were less fundamental than the pass-through and termination rights issues discussed above. A summary of the non-price points awarded by the IC is shown in the IC's Table 2.

Table 2: Summary of Non-Price Evaluation

Categories and Subcategories	Bluewater North/South	NRG without CCS	NRG with CCS	Conectiv
Favorable Characteristics Supercategory	**18.2**	**11.1**	**12.7**	**10.8**
i. Environmental Impacts	12.2	6.6	8.2	10.3
ii. Fuel Diversity	3.0	1.5	1.5	0.5
iii. Technology Innovation	3.0	3.0	3.0	0.0
Project Viability Supercategory	**9.9**	**11.8**	**10.3**	**18.5**
iv. Operational Date and Certainty	1.0	0.0	0.0	2.0
v. Reliability of Technology	1.5	1.0	0.5	2.0
vi. Site Development	2.4	4.3	4.3	5.0
vii. Bidder Experience	3.5	3.0	2.5	5.0
viii. Financeability	1.5	3.5	3.0	4.5
Total for Non-Price Evaluation	**28.1**	**22.9**	**23.0**	**29.3**
Economics (Partial)	**0.6**	**0.8**	**0.8**	**5.9**
xi. Exposure	0.25	0.5	0.5	5.5
xii. Contract Terms	0.3	0.3	0.3	0.4

Price and Price Stability Bid Results

Price

The IC's Table 3 below illustrates the forecasted ICF reference case market price for SOS customers (residential and small commercial), as modified by the IC's assumptions for coal prices, gas transportation prices and other matters. The bid prices are in 2005 real levelized

[10] NRG proposed a refund of its security deposit if the Consolidation Termination clause in the PPA prevented financing. Alternatively, NRG proposed a breakage fee amounting to 50% of its security deposit if the PPA prevented financing for any other reason.

dollars (2011-2038) for the various options (that is, the SOS price of the new generation that would be experienced if available in the year 2005). As shown below, based on the high/low method of allocating points, Conectiv received 33 points as the low bid and the NRG 20-year project received 0 points as the high bid. The intermediate bids were scaled, with Bluewater's 600 MW 25-year contract receiving 8.3 points, Bluewater's 400 MW contract receiving 5.6 points and NRG's 25-year proposal receiving 1.1 points.

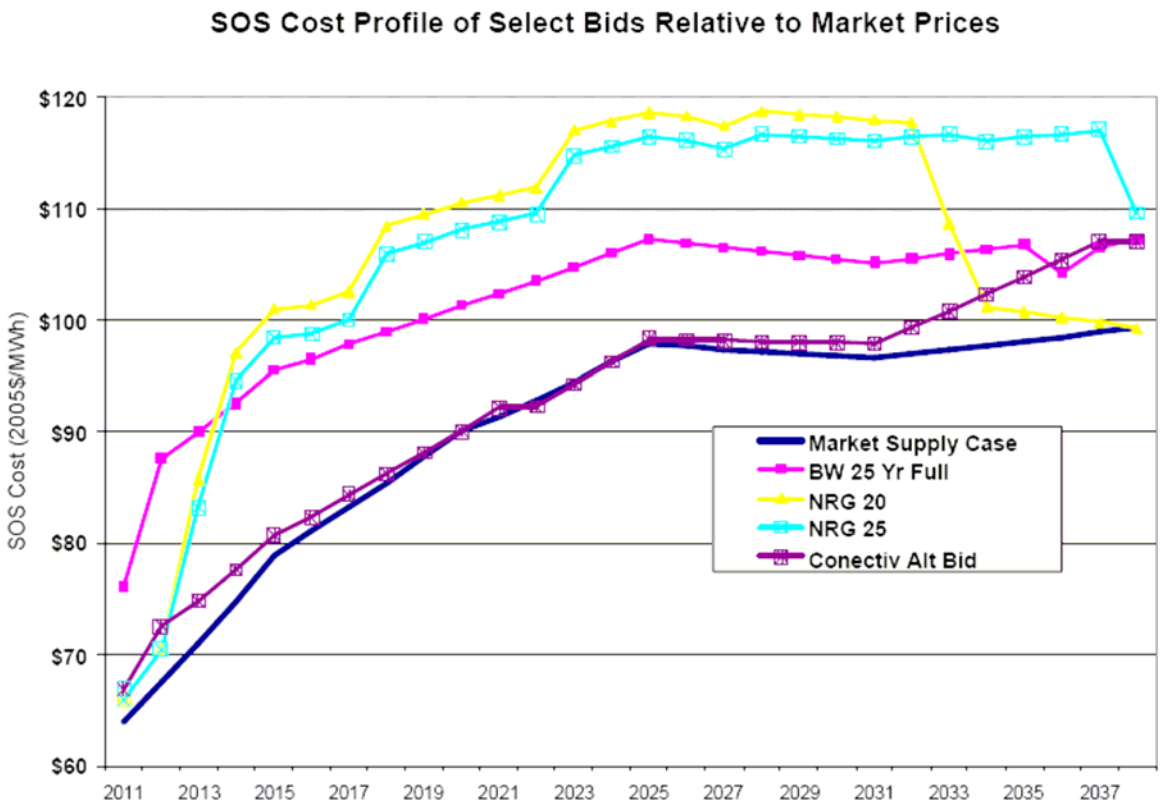
Table 3: IC Case Price Scoring

Summary	Market	BW 25 Full	BW 25 Partial	NRG 20	NRG 25	Conectiv Alt Bid
SOS Cost (2005$/MWh)	$86.20	$98.21	$99.42	$101.84	$101.37	$87.48
Points Scored		8.3	5.6	0.0	1.1	33.0

All of the bids were found to be above the SOS case. However, Conectiv's bid, the low bid, was only $1.28/MWh above the SOS price. The other bids submitted by the bidders were $12.01 and $15.17 MWh higher than base case SOS values. In evaluating and scoring the bids, the IC and Delmarva/ICF focused on the bids with the most attractive pricing.

The following graph (IC's Figure 3) illustrates the trajectory of projected SOS costs comparing the bids and market supply forecast over the entire period of analysis, 2011-38 (in 2005 dollars).

Figure 3: SOS Costs By Year -- 2011-38 (2005 $/MWh)



The first full years of project service, during 2012-2015, show SOS costs of approximately $67/MWh for Conectiv, $83-$86/MWh for NRG, and $77-$80/MWh for Bluewater. Moreover, the SOS cost of the Conectiv bid closely tracked the SOS market cost.[11] NRG SOS costs would soar above $115/MWh towards the latter half of the contract life due to increasing carbon dioxide costs and faster growth of the Consumer Price Index ("CPI") proposed by NRG relative to that of a Gross Domestic Product Implicit Price Deflator as used in the IC's analysis. The large capacity and energy size of the NRG contract and its long-term

[11] The IC noted that the SOS costs in the 2031-38 period, following expiration of Conectiv's contract, do not appear to be aligned with the market supply case. Due to time limitations, the IC did not confirm the cause of this discrepancy with ICF. However, this should not have a material impact on the pricing evaluation.

nature also contributed to high overall SOS costs. Finally, the SOS cost associated with Bluewater's bid would increase to over $105/MWh towards the latter half of its contract duration, despite the fixed real price of the bid, due to the increasing costs of market purchases to meet the remainder of SOS needs.

PRICE STABILITY

In testing price stability, the IC ran several scenarios and calculated the SOS cost to customers as a result of the scenarios for a market purchase option and the proposed bids. The scenarios tested in addition to the reference case, on which the price evaluation was based, are as follows:

- **Low CO2 / Low Gas:** reflects a Regional Greenhouse Gas Initiative ("RGGI") carbon regime with lower gas prices.
- **Low Gas:** reflects the reference case carbon regime with lower gas prices.
- **High Gas:** reflects the reference case carbon regime with higher gas prices.
- **Reduced Capital Costs:** reflects reduced capital cost of generic new market entry.
- **No Mid-Atlantic Pathway Project ("**MAPP**"):** reflects no transmission with MAPP authorized by PJM, the Regional Transmission Organization.
- **High CO2:** reflects a faster increase and higher cost of carbon (>$50/ton).
- **IC Case (Lower Coal/Higher Gas Basis)**: reflects the IC's view of relative flat growth in coal prices (real prices) and a higher basis differential for natural gas prices delivered to PJM.

The IC determined the degree of stability by calculating the standard deviation of the real levelized SOS cost across the above scenarios, including the reference case, for each bid. Bids with a standard deviation higher (less stable) than the market-based option received a score of 0. The IC scaled price stability as follows: (1) the most stable bid earned 20 points and (2)

the market option earned 0 points; and (3) bids in between these points were scaled according to the two reference points. The IC's result is summarized in the IC's Table 5 below.

Table 5: Price Stability Scoring ($/MWh 2005 dollars levelized)

Scenarios	Market Case Supply Costs	BW Atlantic North 25 year full bid	BW Atlantic North 25 year partial bid	NRG 20 Year Base Bid	NRG 25 Year Base Bid	Conectiv Firm Bid
Reference Case	$85.43	$99.45	$99.82	$106.87	$107.56	$86.63
Low CO2 / Low Gas	$75.11	$92.76	$92.12	$95.04	$95.98	$76.79
Low Gas	$78.39	$94.89	$94.57	$102.57	$104.15	$80.36
High Gas	$90.01	$103.05	$103.86	$109.68	$109.75	$91.70
Reduced Capital Costs	$80.97	$96.45	$96.70	$103.45	$104.36	$83.80
No MAPP	$86.20	$100.43	$100.88	$107.25	$107.85	$87.99
High CO2	$93.35	$104.01	$105.14	$116.37	$117.94	$95.16
IC Case (Lower Coal/Higher Gas Basis)	$86.21	$100.34	$100.76	$102.54	$102.17	$87.57
Standard Deviation	$6.02	$3.93	$4.48	$6.23	$6.36	$5.91
Price Stability Scores		**20.0**	**13.4**	**0.0**	**0.0**	**0.7**

Predictably, Bluewater's bid, a fixed rate bid with an annual escalation rate equal to Delmarva's assumed 2.5% annual inflation rate (based on the Gross Domestic Product Implicit Price Deflator), scored highest, receiving the full 20 points in this category. Conectiv's bid also varied minimally from the market -- that is, the minimal impact on overall SOS prices -- primarily because of its relatively small amount of capacity, energy, and shorter contract term (10 years). However, Conectiv only earned 0.7 points in the price stability category because the points on the earnings were scaled and the majority of points were awarded to Bluewater's proposal, NRG's bid received 0 points because its standard deviation among scenarios was greater, and thus less stable, than the market case. NRG's bid evaluation included a large

exposure to changes in carbon dioxide allowance prices on its total PPA cost, and NRG's bid was also sensitive to coal price assumptions because the energy component of its bid was indexed to coal prices.

h. Non-Conforming Bids

Each of the bids as submitted had certain non-conforming proposals. Bluewater exceeded capacity limits and its proposed financial security deposits were less than required. Conectiv limited financial security, suggested a permitting-out clause and proposed a one-time price adjustment during the construction period. It further sought full recovery of any change in law provisions or carbon taxes and offered to provide energy from other sources, independent of unit availability. NRG proposed allocating up to two-thirds (2/3) of any RGGI emission credits to minimize pass-through, a financing-out provision, a carbon sequestration pass-through, and indexing of full capacity costs to an inflation-based index.[12]

Each of these non-conforming proposals could significantly alter the various risks that Delmarva and its SOS customers face under long-term contractual arrangements. While the State Agencies may reject any of the bids for non-conformance, many factors are subject to final negotiations and a proposed final contract with any bidder must be the determining basis for approval or disapproval.

[12] *See* Report on Evaluations of Bids Submitted in Response to Delmarva Power & Light Company's RFP (Independent Consultant's Report, dated February 21, 2007).

i. Public Input

The State Agencies were well aware of the need for public input in the process. The Commission's opening order emphasized the importance of such input. *See* Order No. 7003 (August 8, 2006). Opportunity for public comment/input started with the August 18, 2006 workshop and continued with each significant step in the process. Public input was received and used in finalizing the RFP. Public input was accepted on Delmarva's and the IC's Bid Evaluation Reports. It was again accepted on the IC's review of Delmarva's IRP and the implications for the generation decision. Staff considered it in this report. Throughout the entire process public input has been a very important factor and Staff is well aware of the concerns raised by Delaware citizens. Not only does Staff view global warming and health concerns raised by the public as a key concern, but Staff also recognizes that because of its recent and extreme volatility, the price of energy is becoming much more difficult to afford, particularly for low income families. Delaware must resolve its energy needs with an emphasis on minimizing environmental impacts, costs to consumers and price volatility. Staff believes that public input has played an important role in identifying issues of interest to the public sector and that the input has been valuable in defining a path forward in this process.

III. INTEGRATED RESOURCE PLAN

Delmarva's RFP is part of the first IRP process required under the EURCSA and clarified in Commission Order No. 7131. *See* 26 *Del. C.* §§ 1007 (c), (d) and Commission Order No. 7131 (February 6, 2007). In recognizing this link, Staff requested an interim review of Delmarva's IRP to provide further insights for the State Agencies with respect to the generation bid evaluation process. The generation decision cannot be based strictly on the RFP evaluation.

Less complex alternatives to long-term purchase agreements are available and include generation outside of Delaware, demand response initiatives to reduce energy requirements, and market negotiations. It is important that the generation alternatives be reviewed in the context of other options.

a. IC's Report

In late February 2007, Staff requested the IC to review Delmarva's IRP and to report to the State Agencies on any issues that could influence the potential generation decision. On April 4, 2007, the IC provided the State Agencies with a report titled "Interim Report on Delmarva Power IRP in Relation to RFP," in which the IC identified the central question for the State Agencies as "whether they should direct Delmarva to negotiate a long-term power purchase contract with any of the bidders in the RFP process and if so, which proposal should they select."[13]

The IC's Interim Report addressed the risks and benefits of a decision whether or not to pursue one of the bids in the RFP process in the context of important assumptions, recommendations and alternatives that should be considered or are required to be considered in Delmarva's IRP.

The IC's review encompassed the following areas:

1. *Demand Side Management ("DSM")*. Is the level of DSM proposed by Delmarva reasonable? If not, what might be reasonable ranges of DSM that might be cost effective? What is the impact, if any, on the economic attractiveness of the bids if the proposed level of DSM is not implemented or is implemented at a higher level?

[13] Independent Consultant's "Interim Report on Delmarva Power IRP in Relation to RFP" (April 4, 2007).

2. *Sufficiency of Generation and Transmission Capacity in the Delmarva Zone to Prevent Upward Shift in Capacity and Energy Prices and Potential Reliability Issues*. Has Delmarva adequately considered the risk that there is insufficient generating capacity and/or transmission capacity (due to lack of new builds or retirements) to prevent shortage-induced upward price shifts or spikes? Has the Company developed a plan to manage these risks? Would selection of any of the bids be a cost-effective way to manage these risks? In this regard, does it appear reasonably likely that the MAPP will be built, and if so, within the timeframe proposed? If MAPP is not built, or not built within the timeframe proposed, what is the impact on the economic attractiveness of the bids?

3. *General Shift Upward in Energy Prices; Long-Term Power Purchases; Renewables*. Has Delmarva adequately considered the risk that natural gas prices could shift or spike upward, increasing regional energy prices substantially above projected levels? Has the Company developed a plan to manage these risks? Would selection of any of the bids be a cost-effective way to manage these risks? Are long-term power purchase contracts from regional sources of generation, especially onshore wind projects, a reasonable alternative to the bids submitted in the RFP process either alone or in connection with other actions? Are self-build generation projects a reasonable alternative? Has Delmarva systematically evaluated these alternatives? Is there a reasonable likelihood that onshore wind projects in Delaware will be built at some level over the next 10 years, as suggested in the IRP? If not, what is the impact on the evaluation of the bids in the RFP?

4. *Resource Management and Regulatory Issues Associated With Long-Term Power Purchases and/or Self-Build Generation.* Delmarva contends that long-term purchase contracts and self-build generation are incompatible with customer choice.[14] Is the Company's position valid? If Delmarva is to be directed to enter into a long-term power purchase agreement, how should it manage the contract and SOS requirements purchases and what should be the regulatory treatment?

IC Interim Report April 4, 2007 at 2-3**.**

Key issues intended to be addressed by the IRP and RFP processes are the long-term price and reliability risks associated with having sufficient generation capacity on the Delmarva Peninsula (and/or regionally) to mitigate spikes in locational capacity prices and congestion. These spikes increase locational energy prices and the overall level of energy prices affected by both natural gas prices and regional need for sufficient generating capacity. At the same time, environmental issues are critically important, in terms of mitigating climate change, improving

[14] See Delmarva IRP Compliance Filing at 11-13, 23-27.

air quality and other impacts, and their impact on electricity prices. Delmarva's position is that the market will take care of these risks with minimal, if any, intervention by the Company or the State Agencies. The IC interpreted the EURCSA as imposing a substantial degree of responsibility upon Delmarva to actively recognize and manage these risks, at least on behalf of its SOS customers.

The ultimate question is whether energy, capacity and congestion risks should be addressed by (a) selecting one of the bids, (b) not selecting one of the bids and not pursuing long-term generation alternatives, or (c) not selecting one of the bids at this time but expanding the alternative approaches or solutions to be considered, including the purchase of long-term capacity, energy and renewable energy credits from regional power supplies.

b. IC's RFP Implications

The IC reviewed Delmarva's IRP, including some of the key assumptions and recommendations, and some additional scenarios conducted by Delmarva's consultant at the IC's request. In addition, the IC conducted an informal telephone survey of developers of wind projects in the region and large wholesale energy marketers and generation owners. The major conclusions and recommendations of the IC's Interim Report were as follows:

Delmarva did not conduct a risk assessment of the potential retirement of Indian River Units 1 and 2 and its consequences if NRG's proposed coal IGCC plant is not built. This is a possibility in light of recent emissions control regulations promulgated by the Delaware Department of Natural Resources and Environmental Control ("DNREC") that would require substantial capital investment in these very old units. A decision on the bids pursuant to the RFP should await the results of a study made by PJM at the Commission staff's request that will address the impact on reliability if these units are retired. If substantial issues are raised, it should then be determined whether selecting one of the bids is a cost-effective means of addressing the associated risks.

As a general matter, Delmarva should be responsible for assessing the need for additional generating capacity on the Delmarva Peninsula from a reliability and economic standpoint and for conducting a risk assessment. Unless obviated by the selection of one of the bids, the Company should be directed to prepare a contingency plan to obtain required generation on the Delmarva Peninsula if circumstances warrant, either through a power purchase agreement or a self-build alternative, subject to Commission approval.

Delmarva did not evaluate any long-term power purchase opportunities from regional generation sources. Based on a telephone survey, the purchase of energy and RECs from developers of regional onshore wind generation projects appears to provide the potential for cost-effective hedging of systemic energy price risk and Renewable Portfolio Standards ("RPS") compliance cost risks, contributing to price stability.

DSM and the proposed MAPP, whether implemented or not, would not appear to have a material impact on evaluation of the bids.

Based on a risk assessment, analysis of additional scenarios, and evaluation of market information, the IC did not recommend a change in its ranking of bids or recommend that Delmarva be directed to sign a power purchase agreement with one of the bidders at this time in the absence of a market test.

In order to conduct a "market test," the IC recommended that Delmarva be directed to canvas in a broader way opportunities for adding one or more long-term power purchase agreements to provide long-term price stability for its residential and small commercial ("RSCI") SOS customers (alternatively, this could be pursued directly on behalf of the State Agencies). This could be accomplished through one of two approaches:

(1) Obtaining proposals through a "short form" all-source RFP for long-term power supplies that would not be limited to new generation within Delaware. The bidders in the current RFP process would be allowed to keep their bids in place or re-bid. This would allow the Company to assess the economic and other benefits of regional generators or power supplies and ultimately compare these other alternatives to the bid projects; or

(2) A renewables-only RFP for energy, capacity and RECs as a means to hedge energy and RPS compliance risk in the event that the State Agencies determine that one of Bluewater's bids is the most attractive of those submitted pursuant to the current RFP. Regional renewable generators would be entitled to participate. Bluewater would be allowed to keep its bids in place or re-bid.[15]

The IC's Interim Report was preliminary and focused on providing guidance to the State Agencies for purposes of their upcoming decision as to whether they should direct Delmarva to

[15] Interim Report to RFP (April 4, 2007) at 3-4.

negotiate a long-term power purchase agreement with one of the bidders. This report was not a final evaluation of the IRP. The IC recognized that Staff would separately explore both reliability issues and the economic potential of self-build generation.

c. Public Input

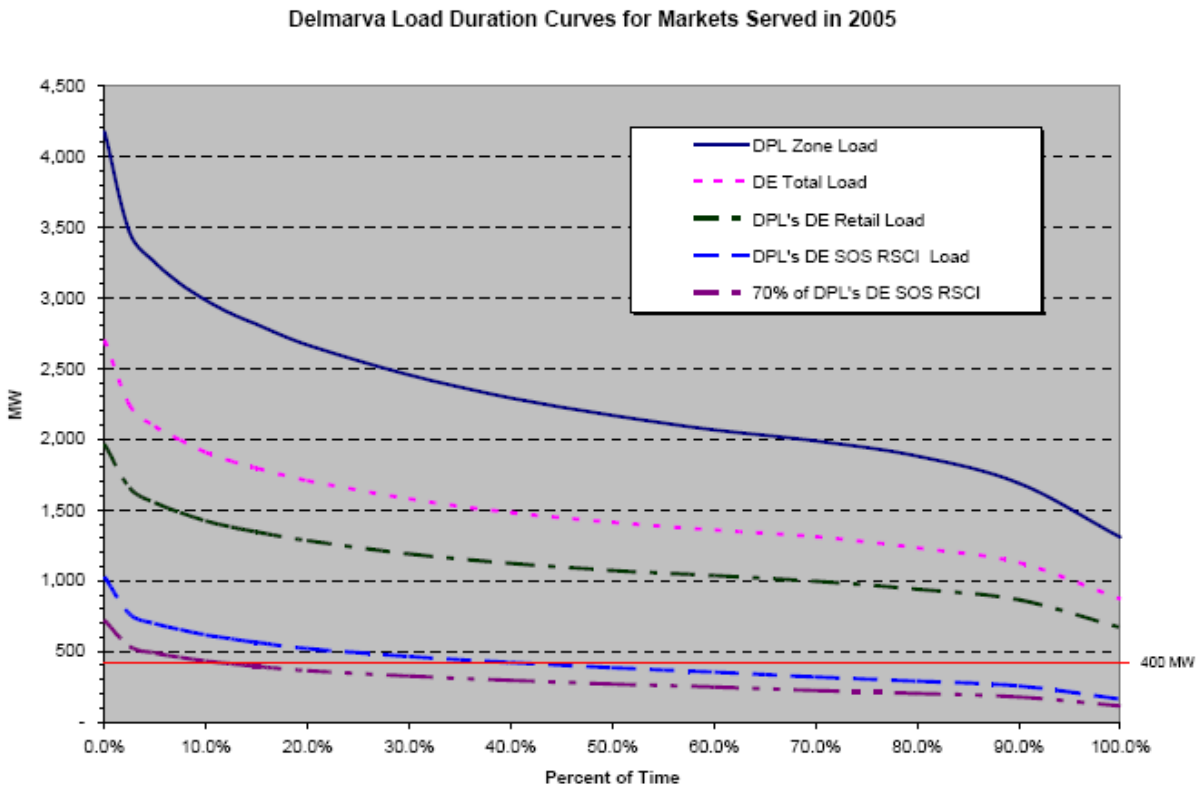
As of this time, the public input on the IC Interim IRP has been quite limited. However, the few comments submitted are generally positive and support the IC's report.

IV. FACTORS IN DECISION MAKING

a. SOS Load Requirements

Delmarva offers the following load chart for assessing the SOS load requirements. Delmarva's Load Duration Curve for 2005 (Figure 1.4.1) shows Delmarva's load requirements for each of the 8760 hours in a year. As Delmarva's Figure 1.4.1 illustrates, there are wide variations in Delmarva's load obligations for the different customer "groups" it serves.

Figure 1.4.1



(RSCI stands for residential and small commercial/industrial)

If one were to take the 50% load levels of 2005 (approximately 490 MW) and escalate that load at PJM average growth rates of 1.6% per year, by 2013 the RSCI load would be approximately 555 MW.[16] Reducing that by the 30% for the EURCSA-required market purchases, places the average energy requirements at 390 MW. Moreover, PJM forecasts Delmarva's average load growth at 1.9% which equates to a 2013 average load of 570 MW or 400 MW after market reduction. Staff is concerned that the PJM average growth rates are not indicative of growth in Delaware and that a 2.1% growth rate is more historically accurate, may be more realistic and should be considered.[17] Given a 2.1% growth rate, Delmarva's RSCI average load would be 575

[16] PJM Load Report, December 29, 2006, Executive Summary, page 1, paragraph 5, chart, page 2.
[17] See Delaware Task Force Report, "Bright Ideas for Delaware's Energy Future (September 30, 2003) at 40, ("rate of slightly over 2% annually for the next decade").

MW (or approximately 405 MW after 30% is purchased from the market). Thus, one reasonable estimate of energy needed from either additional market purchases, generation contracts, or other supply options discussed in Delmarva's IRP is in the neighborhood of 400 MWs.

Delmarva has many options to procure supply for its SOS load and generation does not have to be a part of it. However, with Delmarva's full dependence on conservation, energy efficiency, the existing market and the currently suspect hope of a timely, functioning MAPP project, Delaware will remain exposed to the same volatile energy prices that initiated this effort.

Ultimately, the questions are what these solutions do to energy prices in Delaware and what should be the cost to Delmarva's customers and the citizens of Delaware? Almost all agree that conservation and energy efficiency are part of the solution. Reductions in energy demand and energy efficiency benefit everyone. But there is a limit to how much consumers are willing to save, and how long it will take to reach meaningful levels, particularly considering the attitudes of vacationing tourists in our capacity-constrained beach areas who are spending thousands of dollars for a week at the ocean. Even typical SOS customers have limits when it comes to saving energy. In addition, should Delaware be substantially basing its energy future on theoretical high level (untested) reductions of energy usage in Delaware?

Should Delaware be satisfied with PJM priced energy from the market? Over the past several years PJM's locational marginal price has inched up along with fuel prices. With east-west congestion in PJM, not to mention occasional Delmarva zone congestion, Delaware continues to pay a $5-$10 per MW premium on energy. Most recently, PJM has initiated its Reliability Pricing Model ("RPM") to provide incentive for generation capacity to locate in certain areas. While

energy costs have dropped only moderately this past year (and now again appear to be on the rise), RPM capacity prices have been estimated to have risen approximately 1,227% in the same time period, resulting in total energy supply costs even higher than last year's 59% increase. The only way to soften the impact of these types of costs is to have firm contracts for Delaware generation for not only energy and capacity, but for ancillary services as well. Owning or contracting with generation is the only PJM pricing bypass available today and for the foreseeable future for Delaware that permits Delaware ratepayers to avoid regionally spawned price volatility. These arrangements appear to be keeping prices under more control in states that have not decided to pursue the deregulation route.

Should Delaware just import our energy from West Virginia or Virginia because of its lower cost if and when we have a suitable transmission line? Delmarva tells us to rely on the benefits of its proposed MAPP 500 kV transmission line. While the line might be moderately beneficial for Delaware because of its potential to access additional generation in PJM, it raises environmental issues, because much of that generation would come from dirtier coal plants that would become accessible if and when MAPP is in service. Unfortunately, some of Delaware's emissions problems already arise from these plants, because emissions generally flow from west to east. The MAPP could potentially reduce Delaware's energy costs (and also increase transmission costs) but certainly offers no mitigation for greenhouse gas, a mandate of the RGGI program. Reliance on the transmission grid also continues to hold Delaware hostage to market-based rates.

As the IC recommended, Delaware may want to consider a more simplified renewable energy RFP or perhaps contract with out of region wind farms. But, Delaware has an opportunity now to negotiate with two interested entities that could offer reliable energy with economic, socio-

economic and environmental benefits. Staff recommends the State Agencies take the opportunity to at least discuss the possibilities of Delaware controlling its own energy future.

While not a report on its IRP, Delmarva's bid evaluation report discusses its rationale in pursuing short-term contracts in lieu of long-term power contracts. Delmarva alleges that its IRP systematically evaluated renewable and traditional generation supply resources, transmission alternatives, conservation, and DSM programs on an integrated and consistent basis. Among its conclusions were the following:

- DSM and conservation offer cost-effective opportunities to reduce peak load in Delaware up to almost 200 MW and improve energy efficiency;
- The construction of new transmission lines will have a significant impact on Delmarva's SOS and non-SOS customers. In particular, the completion of the MAPP will result in considerable reduction of congestion on the Delmarva Peninsula and allow for low-cost generation resources to the south and west to be more easily imported into Delmarva; and
- PPAs have the potential to obligate customers to buy fixed amounts of energy and capacity at above market prices, thereby greatly increasing the likelihood that, over the duration of the PPA, customers will be subjected to non-bypassable wires charges to recover stranded costs.

Delmarva's IRP concludes that new fossil fueled generation and offshore wind resources are not necessary, particularly in the 200 – 600 MW range. These resources are not cost-effective when compared to conservation, DSM, onshore wind, and transmission recommended by the IRP. Imposition of a large new generating resource on the filed IRP would detract from the cost-effectiveness of the conservation, DSM, transmission and renewable resources that the IRP recommends. In other words, Delmarva contends that imposing a large generating resource

on the IRP will have a chilling effect on conservation, DSM, new transmission projects, and small renewable resource development.[18]

Staff disagrees with Delmarva's position. Generation in Delaware has never put a chilling effect on conservation, as evidenced by conservation programs that were instituted in the mid-1990s and continue until this day. Staff does agree that generation can displace transmission need, but even Delmarva has historically argued that no additional transmission is needed and Locational Marginal Pricing ("LMP") will provide incentive for generators to locate in Delaware. Staff has not seen any evidence that LMP has led to the intended generator interest contemplated thereby. It appears the arguments can go either way, depending on what is best for Delmarva. Even though LMP has not yielded the proper result, the RPM has been proposed to achieve the same effect with capacity pricing. To date, the result has been a meteoric rise in capacity costs. Staff concludes that new generation in Delaware is critical for Delaware's energy independence.

b. Delaware's Portfolio

The EURCSA establishes an IRP process designed to "explore in detail all reasonable short- and long-term procurement or demand-side management strategies, even if a particular strategy is ultimately not recommended by the company."[19] Staff is quite concerned that Delmarva failed in its IRP to "explore in detail" all its energy options for its SOS customers as required by the EURCSA. Delmarva does not recommend a generation contract, but rather suggests that Delaware should "focus its efforts on the original findings of the IRP:" implementation of aggressive demand side management, continued reliance on short term 3-

[18] Delmarva Power Request for Proposals, Bid Evaluation Report, February 21, 2007, at 13

year [load] following bids, a moderate amount of renewable energy, and the approval for the MAPP."[20] The IC concludes that "[t]hat analysis [Interim IRP Review], combined with this

[19] 26 *Del. C.* § 1007(c)(1)a.
[20] Delmarva Power Request for Proposals, Bid Evaluation Report, February 21, 2007 at 3.

report [Bid Evaluation Report] will provide the State Agencies with important information to help them determine how best to select from the competing factors involved in deciding among the resource options, including the option not to select any of the bids."[21] In a recent presentation to the National Association of Regulatory Utility Commissioners, Synapse Energy advocated a portfolio approach to energy supply.[22] In its October 2006 study entitled, "2006 Long Term Reliability Assessment," NERC found that "Long-term electricity supply adequacy requires a broad and balanced portfolio of generation and fuel types, transmission, demand response, renewable resources and distributed generation. All supply-side and demand-side options need to be available." Scott Hempling and Ken Costello of the National Regulatory Research Institute have identified Portfolio Analysis as an approach to generation planning. "In the context of generation mix, Portfolio Analysis allows an analysis of different generation technologies on a power system, and accounts for tradeoffs (*e.g.*, cost, timing, price risk, dependability) among multiple objectives to maximize the public interest."[23] Closer to home, the Cabinet Committee on Energy, in responding to Governor Minner's Executive Order No. 82, stated that "Executive Order #82 clearly calls for recommendations that do not simply respond to current and projected energy market conditions."[24] Indeed, the EURCSA requires investigation of a spectrum of energy issues including conservation, energy efficiency, innovative technologies and potential incentives designed to lessen Delaware's energy usage. A portfolio approach to energy needs is the most appropriate mechanism to mitigate energy risk.

[21] IC's Bid Summarization Report at 57.
[22] Biewald, Bruce. "Synapse Energy Economics, Inc. Portfolio Management: Tools and Policies for Regulators," (2006 NARUC Convention).
[23] Teleseminar: FERC's Order 890: Revisions to the Open Access Transmission Tariff, Tools for Comparing Generation Technologies, May 1, 2007, page INFRA-136.
[24] Davis, Jennifer. "Ensuring Delaware's Supply Future: A Response to Executive Order 82," (March 8, 2006 letter).

Active management of diverse energy supply options minimizes economic risk similar to a broad financial portfolio.

c. Energy Market

Although Delmarva acknowledges the value of a portfolio approach, it advocates significant reliance on existing PJM energy markets -- the same markets that produced record high energy prices last year and escalated capacity costs from 3% to over 10% of total supply costs. Capacity charges under PJM's RPM are estimated to have risen over the past 12 months by 1,227%, and recent auctions indicate that they will continue climbing. Only parties that build or contract for their own capacity can moderate these rising costs. While fuel prices and energy prices have been moderately down (but again appear to be rising), the combination of energy and capacity costs remains at an historically high level.

Transmission congestion also impacts energy markets. Although congestion on the Delmarva Peninsula is currently under control, compared to the huge congestion concerns from several years ago, PJM's east-west transmission ties are continually adding congestion costs to eastern load zones (which includes Delaware), increasing both energy and capacity prices.

The Delmarva Peninsula remains a hostage to high levels of market power in the region. With limited generation resources, this area of Delaware continues to experience high levels of market power, in which generators and other marketers have the ability to significantly

influence market prices.[25] It was not too long ago that traders at Enron were able to manipulate market rules in the California wholesale market to greatly influence pricing and even create serious reliability problems by having generators turn off needed facilities to obtain the distorted higher pricing they desired. While PJM continues to announce that energy and capacity markets are competitive, its own independent market monitor acknowledged changes to his market monitoring reports to support competitive conclusions.[26]

When rate caps were lifted in 2005, the Commission initiated research to determine where current energy price levels would stand without deregulation. Staff found that absent deregulation, energy prices would have increased by 35-40% rather than the 59-100% increase experienced by many Delmarva customers.

d. <u>Public Policy</u>

As demonstrated by the outpouring of public comment, the RFP is not solely a Delmarva SOS concern. Even though the EURSCA specifically addresses the SOS issue, generation is not a one-company issue, particularly when it will be located in Delaware. Energy supplies, no matter what type or part of the portfolio, have broad regional impacts. A generation plant in Delaware can reduce capacity costs for customers in Maryland, Virginia, Pennsylvania, and New Jersey. A slight reduction in Delaware business or residential customer peak load reduces energy prices for all regional customers. Transmission lines providing higher level energy flows import inexpensive power from western generators and can reduce in-state generation

[25] This is typically measured by the HHI indices (Herfindahl-Hirschman Index), a measure of regional market power. The Delmarva Peninsula has consistently scored over 1000 when these measures have been taken by PJM's Market Monitor. FERC states that a moderately concentrated market occurs when the HHI is between 1000 and 1800 and a highly concentrated market exists when the HHI is greater than 1800.

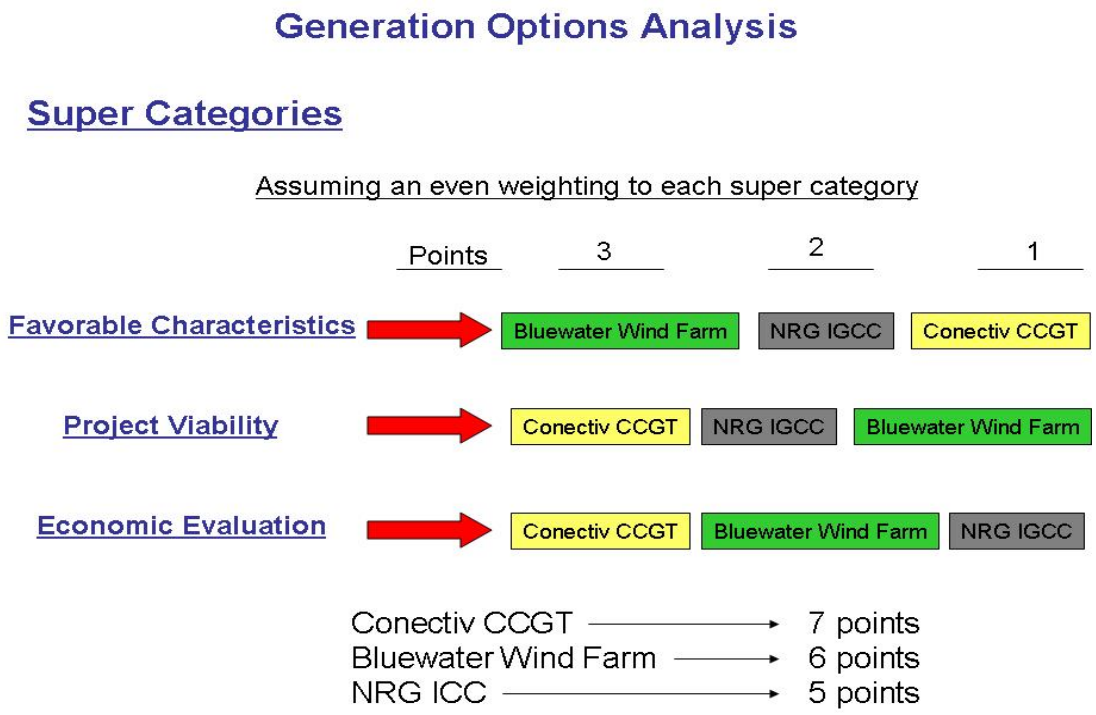
[26] Statement of Joseph R. Bowring, FERC Technical Conference, Dkt. AD-07-8-00 (April 5, 2007).

prices. Related environmental emissions could be transferred from local areas to areas west of the Delmarva Peninsula. In short, reductions in Delmarva's SOS costs directly affect the energy bills of all regional businesses and citizens.

Delaware's response to the EURCSA requires more than unilateral action by Delmarva. Staff believes it is critical at this juncture for Delaware to take charge of its energy future in a manner that manages energy risk and obtains the benefits of an energy portfolio. Senator McDowell's Sustainable Energy Utility concept and similar efficiency programs are essential to Delaware's energy future. It is one leg of the stool, but is not a panacea for all existing issues. Public policy demands a solution that will provide the best long-term outcome to promote the health, safety, and prosperity of Delawareans. As a matter of public policy, Staff believes the solution to future energy independence for Delaware is a portfolio of generation, adequate transmission, demand response, energy efficiency, distributed resources and development of renewable supplies where possible.

e. Bid Evaluation

Staff recommends that the State Agencies consider the bid proposals within the context of the supercategories: favorable characteristics, project viability and economics. The following chart compares points earned in the supercategories by the three bidders when each category is weighted equally *i.e.* 33.3%.



With respect to the supercategories Conectiv is ranked highest, followed by Bluewater and finally NRG. Despite concerns over evaluation point assignment and price scaling, Staff finds that minor adjustments to point allocation would result in the same ranking of the bids. The central question that the State Agencies should consider is not point allocation in the evaluation process, but rather, whether any of the bids are an appropriate match for Delaware's energy needs.

f. Financial Risk

As the RFP process unfolded, risk emerged as a significant issue. Participants expressed concern about various risks, including rate increases, migration to cheaper energy, escalation of contract prices from construction delays that in turn result in rate increases, increased capacity costs despite performance deficiency, and global warming. *See also* Delmarva Bid Evaluation Report at 66-83.

Risk is an inherent characteristic of life in general. Certainly, one wants to minimize risk when it comes to major 25-year commitments that will impact not only current Delmarva customers and Delaware citizens, but also future generations. Staff recommends the State Agencies acknowledge and manage risks by balancing the financial, environmental, and health concerns raised by the participants with the benefits produced by each bid. When it was a regulated electric supply company, Delmarva faced many risks associated with cost recovery, operational risk that the generation units would not perform and thus result in rolling blackouts; however, these risks did not dissuade the formerly supply-regulated Delmarva from constructing and owning generation. Accordingly, Staff recommends that the State Agencies develop a full understanding of the risk appropriate management tools available in a deregulated arena.

Staff also notes that the EURCSA makes it clear that the rules of electric restructuring under the Electric Restructuring Act of 1999 have been dramatically altered to once again authorize that Delmarva be directed to share and manage the risk.

g. System Reliability

Other critical elements have received less attention in the early stages of the process, but have now come to the forefront as part of Staff's review. Although the EURCSA requires the State Agencies to elicit the value of proposals that support or improve reliability, up to this point the review in this regard has focused primarily on only the reliability of the technology, not total system reliability. Staff now provides its view on system reliability.

Over the past month, Staff solicited both PJM and PowerWorld to analyze four generation contingency scenarios and how each would impact overall PJM system reliability. Those scenarios are as follows:

- Retirement of Indian River Units 1 and 2 with no MAPP Transmission and with construction of a 177 MW CCGT, energy injection at Hay Road.
- Retirement of Indian River Units 1 and 2 with no MAPP Transmission and with construction of a 600 MW baseload IGCC at Indian River.
- Retirement of Indian River Units 1 and 2 with no MAPP Transmission and with construction of a 600 MW offshore wind farm with injection at Bethany Substation.
- Retirement of Indian River Unit 1 and 2 with no MAPP Transmission and with construction of a 600 MW offshore wind farm and a 177 MW CCGT in southern Delaware.

PowerWorld's report examined energy flows as they would occur in 2011 without any of the proposed generation projects. The flows were based on a NERC 2013 load flow study. In each case**,** PowerWorld analyzed the impact of the proposed generation project in comparison to the 2011 base case. PowerWorld concluded that the retirement of Indian River Units 1 and 2, while not desirable from a reliability point of view, does not create any immediate insurmountable reliability issues in Delaware. It does, however, increase the probability of overloads and voltage issues with other outage contingencies, such as Indian River No. 4 being out of service. Appropriate planning will substantially minimize the risk to Delaware of this contingency. As expected, adding the NRG IGCC, the Conectiv CCGT or the Bluewater wind farm each solves certain contingency violations but introduces new contingency violations, in many cases on the lower voltage systems in the beach areas. However, Bluewater had proposed and was evaluated to include beach area upgrades and related costs. The proposed base load plant at Indian River with injection on the 230 kV system would maintain peninsula reliability

with both voltage and reactive support. Conectiv's 177 MW injection at Red Lion (as proposed) is not a significant injection and has minimal impact because it is located too far north to truly help for reliability purposes. Bluewater's power injection at Bethany Substation offers some advantages, but also highlights 69 and 138 kV system weaknesses in the beach area. In light of these findings, PowerWorld concluded that Delmarva must address each contingency operationally, regardless of which generation option is in place.[27] PJM reported similar results in Staff's discussions with it. The overriding concern is that Delaware need not be placed at any risk of significant reliability impacts with appropriate planning.

V. COMMISSION'S OPTIONS

The Commission has several options available for consideration. Although there are obviously combinations or hybrids of methods mentioned, Staff has identified five distinct approaches that it believes should be considered.

- **First**, the Commission may reject all bids as non-conforming, over market price, and not beneficial for Delmarva's SOS customers.
- **Second**, the Commission could select one or more of the bids and direct Delmarva to negotiate a PPA that addresses the non-conforming issues and any other concerns that have been raised through this process. Bid submissions are not final until negotiations are complete to the satisfaction of all parties and submitted for approval.
- **Third**, the Commission may defer any decision until completion of the IRP review in Commission Docket No. 07-20 to better understand the need for generation and explore other regional bilateral contract options.
- **Fourth**, the Commission may suggest alternative legislation that addresses some of the risk concerns related to migration, pricing, generator locations, lengths of contracts, and other issues.

[27] Power World Report, "Generator Interconnection Study: Delaware Public Service Commission Study of Generation Alternatives in Delmarva Power & Light," (April 27, 2007) at 38.

- **Fifth,** the Commission may move toward new regulated generation and direct Delmarva Power to build the appropriate generation as determined in the IRP review.

a. Pros and Cons

Rejecting all bids or electing to do nothing places the responsibility for Delaware's energy future back in the hands of the Legislature, or in the worst case scenario the PJM market, without sufficiently addressing reliability concerns. This option is appropriate if none of the submitted bids satisfy Delaware's future energy needs, negotiation will not result in a better fit with any of the bidders, or viable alternatives exist to accomplish the same result. However, this option would disappoint not only the generators that have submitted proposals, but the public, as evidenced by many of the participants' statements. Rejection of all three bids might have a chilling effect on any future generation bidding requests. Electing to do nothing can be viewed as a punt to the Legislature. Given the need for additional generation as part of the portfolio approach and the reliability concerns expressed, Staff does not recommend this option.

Directing Delmarva to negotiate a PPA with one or more of the bidders recognizes Delaware's interest in generation as part of its energy future, and Delaware's desire to secure in-state generation that balances customer risk with socio-economic-environmental benefits. Despite the parade of risks identified by Delmarva in its evaluation report, negotiation with one or more bidders presents Delmarva with the opportunity to seek a project that balances those risks to the benefit of all parties. The decision to direct Delmarva to enter negotiations, whether successful or not, is an acceptance of the Commission's responsibility as defined by the EURCSA. To the extent that such negotiations are successful and lead to increased generation capacity in Delaware, capacity costs could moderate and provide more stable energy pricing.

Deferring a decision pending the completion of the IRP review places the current bid projects at risk of being withdrawn or invalidated by the passage of time. The bidders guaranteed the validity of their bids for a generous period of time and delay could result in a lost opportunity. The IC's Interim Report found minimal impact on the bid evaluations from IRP considerations unless generation is eliminated as an element of the Delaware energy portfolio. A delay of the decision, while providing more insight into potential need, would defer any actual generation permitting and construction and will not likely reduce prices. As the uncertain future approaches and both fuel and steel prices continue to climb, Staff does not recommend any delay in the decision.

The IC recommended that Delaware consider purchasing renewable resources from nearby states when such generation is available at more reasonable prices. The IC's recommendation precludes any major socio-economic impact in Delaware but offers the opportunity for more reasonably priced contract alternatives. The IC's recommendation is desirable if the main concern of the RFP is price. If the Commission contemplates benefits across a wide segment of the population, they could propose that the General Assembly consider legislation establishing a benefit charge payable by all Delaware energy consumers for environmental and reliability benefits. Although actual consumers would pay for the energy, the capacity and ancillary services of this option would provide a degree of socio-economic, environmental, reliability and technological benefit to all Delaware consumers.

Legislation may also be appropriate if the Commission recommends a return to full public utility regulation of Delmarva's supply business. However, the Commission does not control the proposal or passage of legislation, and the General Assembly may modify the

legislation at a later date. Staff recommends that the Commission consider the possibility of regulated generation projects specifically permitted by the EURCSA. Research indicates that regulated generation maintains consistently lower costs than deregulated generation. In a Market Review Report conducted for the Virginia State Corporation Commission, market-based rates were on average $.05 per kilowatt-hour higher than rates in non-restructured, regulated states.[28] However, capital investment in rate base can also create rate shock as new supply rates, including capital recovery, are approved. Voluntary self-build generation shifts the risk of rate recovery squarely to the owning utility, while agency direction for self-build generation transfers the cost risk to consumers. Prior to deregulation, the utility assumed the risk of cost recovery; it had the obligation to provide reliable supply service, but it had to manage that obligation by not building unnecessary generation facilities. In light of deregulation, new procedures may provide cost recovery risk sharing between the supplier, Delmarva and the consumer or completely transfer that risk to the consumer. The Commission could direct Delmarva to build certain generation or to negotiate with other parties to build generation as required to meet SOS customer needs.

b. Delaware's Electricity Future

The OMB recently commissioned consultant Nancy Brockway to review the potential for re-regulation in Delaware. Staff is awaiting the release of that report. Hopefully, it will outline similar approaches to managing Delaware's energy supply. But regardless of its recommendations, a new generation plant in Delaware is an essential part of any supply arrangement.

[28] 2006 Performance Review of Electric Power Markets, August 27, 2006, Conducted by Ken Rose and Karl Meeusen for the Virginia State Corporation Commission, Executive Summary at 3.

Delmarva has been given guidance in acquiring its SOS requirements by the EURCSA and four State Agencies have been asked to guide Delaware's energy future. As the legislation is currently fashioned, Delaware continues to have retail choice while it looks for alternative supply options. This is a future that can have reliable service, more stable rates, economic development and certainly more environmentally beneficial outcomes. The challenge for Delaware's energy future has been handed to the State Agencies. Delaware is on the leading edge of a new approach to energy supply planning and Staff recommends that the State Agencies approve a balanced portfolio approach that includes a base level of generation in Delaware.

c. Governor's Cabinet Committee on Energy[29]

In light of mounting energy costs, Governor Minner solicited agency research regarding specific options designed to minimize the rate impact and generate long-term solutions. *See* Executive Order No. 82 (February 6, 2006). On March 8, 2006, the Cabinet Committee on Energy responded with a report identifying specific actions for addressing energy issues in Delaware. The Cabinet Committee recommended immediate legislation authorizing the State to require Delmarva to sign long-term contracts, own and operate generation facilities, and diversify its fuel sources in order to meet its retail load, with Commission review to ensure stabilization and improvement of the long-term outlook for electricity prices. The report also recommended that various administrative agencies reduce Delaware's dependence on traditional energy sources through conservation, energy efficiency and innovation. The Cabinet

[29] "Ensuring Delaware's Energy Future:" "A Response to Executive Order Number 82," Cabinet Committee on Energy, (March 8, 2006).

Committee noted that Executive Order No. 82 recognized the need to derive solutions to current electricity markets from a combination of strategies.

d. Governor's Energy Task Force

In April 2002, Governor Minner established the Delaware Energy Task Force to address Delaware's long- and short-term energy challenges. In September 2003, the Task Force responded with several recommendations. The report highlighted the rapid population growth and corresponding rising energy demand in Sussex County and recommended developing a prudent plan addressing both short- and long-term energy issues. The report further recommended: (1) end-use efficiency and conservation; (2) encouragement of clean, renewable energy generation; (3) reduction of the economic impacts of transmission congestion; and (4) promotion of economic development through advanced energy technology development. In short, the Task Force recommended a multi-strategy effort to plan for Delaware's energy future, similar to the supply portfolio approach Staff recommends in this report.

VI. PSC STAFF RECOMMENDATIONS

In order to integrate the complex components of the RFP process and develop a workable solution, the Commission must consider the possibilities from the State of Delaware's perspective. It is important to have dependable energy sources, a reliable energy system, reasonable prices and price stability. The General Assembly seeks to ensure that innovative baseload technologies, environmental benefit, existing fuel and transmission facilities, fuel diversity and use of existing brownfield sites are valued in any generation solicitation. Staff recommends a course of action that gives back to Delaware more control of its energy future through a supply portfolio that satisfies the EURSCA's underlying intent. Accordingly, Staff

recommends that the State craft a comprehensive package of energy options that will allow utilities, their customers, and Delawareans to reap maximum benefits over time.

The critical nature of efficient management of future energy supply options drives Staff's recommendation. Delmarva should have the first option to manage future SOS requirements, with the caveat that such management would require a commitment to minimizing and stabilizing overall SOS energy costs. Staff believes that by requiring Delmarva to conduct an IRP, the EURCSA intended Delmarva to be responsible for managing the resources. Certainly, it is in the best position to do so. Nevertheless, Staff further recommends that should Delmarva decline its responsibility, the State should issue an RFP for energy management services, at Delmarva's cost, to manage the supply options sought in Delaware's portfolio.

Staff believes that each of the parties that submitted bids in this RFP are serious about bringing new generation to Delaware, and thus recommends granting Bluewater and Conectiv the first opportunity to negotiate within the construct of the RFP. Thus, Staff recommends that Delmarva be directed to negotiate with Bluewater for an offshore wind farm in the 200-300 MW range and with Conectiv Energy for a 150-200 MW CCGT with synchronous condenser capabilities, to be located in southern Delaware at a site to be determined. Although neither Bluewater's nor Conectiv's current proposal is a complete solution to Delaware's energy concerns, they each provide value to the long-term energy supply portfolio in Delaware. Wind power coupled with the availability of a gas fired turbine provides a secure energy source with minimal environmental impact. Although Staff's recommendation is not the least expensive solution, it is a complementary energy arrangement that will help to mitigate global warming

and reduce dependence on fossil fuels. Taken together, these projects, when appropriately managed, should have a positive impact on price stability.

Staff recognizes that this is not a perfect solution and that the bidders may be unwilling to support such a concept. Moreover, this option creates an additional layer of complexity, because additional natural gas capacity would be necessary to locate a natural gas turbine in southern Delaware. However, given the attendant benefits, Staff believes that this option should be pursued.

If Bluewater and/or Conectiv do not support Staff's recommendation, Staff agrees with the IC that a renewable-only RFP is appropriate. Depending on the form of renewable resource bids submitted, Staff may recommend that Delmarva self-build a CCGT.

a. Essential Energy Portfolio

Staff's recommendation to negotiate long-term contracts with Bluewater and Conectiv is not a final solution to Delaware's energy needs. Staff recommends a portfolio approach, but the above recommendation relates solely to SOS customer needs. Staff recommends that the Commission endorse the portfolio planning approach for SOS supply and ensure that Sustainable Energy Utility concepts (to the extent they fit) are woven into Delmarva's IRP.

b. The Hybrid Need/Benefit

Staff refers to the wind farm/gas turbine as the Delaware Hybrid. It is a combination that creates a synergistic benefit beyond that of either project standing alone. The wind farm may lack reliability on days when peak load is needed, whereas the gas turbine, while not the

worst environmental offender by far, lacks the cleanliness and low fuel costs of a wind farm. The gas turbine provides peak supply, and the wind farm provides clean energy. In addition to environmental benefits, wind farms can provide voltage support, depending on the types of turbines incorporated in the plan. Because both projects would be located in southern Delaware, system reliability, particularly voltage and reactive support, for the entire Delmarva Peninsula will be enhanced. This coupling of innovative wind technology with veteran gas turbine technology can provide the equivalent of a smaller base load generation plant.

c. Risk Assessment

Several risks accompany Staff's recommended proposal. First, offshore wind farms are more expensive and federal permitting practice is unclear. The exclusive utilization of a gas turbine for peaking and Voltage Amps Reactive (VAR) support is also expensive. Building smaller scale plants miss the economies of scale associated with larger generating units. Second, a long-term contractual arrangement could be overpriced. However, the financial risk of Staff's recommendation is arguably outweighed by innovation, positive environmental impact, capitalization on existing fuel and transmission infrastructure, promotion of fuel diversity, and enhanced reliability. The addition of generation in southern Delaware can help meet Delaware's needs and avoid the need for a $1.2 billion transmission line. In addition, the Delaware Hybrid will still be smaller in capacity than the projects offered by several of the larger sized bids and provide less energy than those projects, thereby reducing the overall risk associated with them. Staff concludes that the financial risks associated with its recommendation are manageable and limited and that its recommendation satisfies the intent of the EURCSA.

VII. PATH FORWARD

a. Delmarva Direction

Staff recommends that Delmarva be directed to negotiate in good faith with both Bluewater and Conectiv in an attempt to finalize a PPA for the energy needs defined above. Staff further recommends that Delmarva provide at least weekly updates on the progress of negotiations. Staff also recommends that Delmarva consider the options for regulated generation, to the extent that it may enrich the negotiated outcomes.

b. PPA Negotiations

Staff recommends independent oversight of PPA negotiations, either through an existing contracting organization or with a firm specializing in PPA negotiations.

c. Critical Concerns

There are several critical concerns that should be addressed in this proceeding. First, the potential for a non-bypassable surcharge, the need to curtail customer choice and the potential to re-regulate generation all must be considered. Because customer choice remains a distinct possibility, Delmarva is concerned with potential customer migration should SOS energy prices surpass energy market prices. In the event of migration, Staff recommends rolling generation capacity and ancillary service charges related to the PPAs into a non-bypassable surcharge payable by all Delmarva customers. Staff declines to address the issue of curtailing energy supply choice at this time. If management of the SOS energy portfolio is successful, customer choice will not likely be an issue. However, customer choice should remain an option for those customers desiring supply service from other parties. Accordingly, Staff recommends deferring any potential action intended to eliminate customer choice.

Finally, Staff addresses the suggestion to return to regulation of public utilities in Delaware. The EURCSA confers permissive authority to Delmarva to build regulated generation. Staff concludes that re-regulation should remain an option pending the conclusion of the RFP proceeding. The State Agencies may exercise the self-build regulated option if none of the bidders are willing to provide the requested generation.

VIII. CONCLUSIONS

The review and analysis mandated by the EURCSA was initiated in August 2006 and has continued over the last nine months. The process has provided a critical learning experience for the participants. More importantly, it has afforded all participants in this process a tremendous opportunity to be educated and have a better understanding through public input of the issues surrounding the building of new generation resources in Delaware.

Staff's conclusions with respect to the process at this time are as follows:

1. Delaware needs additional generation in Delaware. Maintenance of the status quo presents enormous risks and uncertainties associated with the potential for older unit shutdowns within and outside the State, the possibility (indeed, probability, as evidenced in recent SOS auction results) of being held hostage to PJM's new capacity "Reliability Pricing Model" and rapidly rising capacity prices, coupled with an unquenched growth in demand for energy on the Delmarva Peninsula. Although a meritorious argument exists that no single risk is imminent, the uncertain future indicates that it would be in Delaware's best interest to take control now of its future generation needs before an emergency arises. With the potential for impending unit shutdowns in southern Delaware, and the consequences of aging

generation resources, future reliability issues and more transmission congestion on the Peninsula are likely. It is critical that we plan now for the anticipated growth in population as people migrate to Delaware for better business opportunities and retirement advantages. It should be noted that only eight years ago, Delmarva was forced to implement rolling blackouts in southern Delaware in order to prevent a cascading event that would have potentially caused widespread outages on the Peninsula. The lack of sufficient transmission capacity and native generation located in southern Delaware contributed to the severity of the outage by limiting the amount of reactive power available to maintain the system. Without proper planning, future population growth will only exacerbate this problem as older generation units are retired.

2. In light of the need for both reliable electric service and clean renewable energy in today's environment, negotiation with two companies that desire to build additional generation resources in Delaware sends the message that Delaware is serious about managing its own energy future. Staff recommends that Delmarva be directed to negotiate in good faith with both Conectiv and Bluewater for a hybrid energy supply that combines a 200-300 MW offshore wind farm with a 150-200 MW synchronous condenser CCGT in Sussex County to determine these bidders' interest in meeting Delaware's needs.
3. Staff also recommends the development of an energy portfolio policy that includes demand response, energy efficiency, distributed renewable energy, new Delaware generation, market contracts and spot market purchases with adequate transmission to support delivery of regional supplies as the optimal arrangement for Delaware.
4. Under this portfolio approach, Delaware generation needs to be the right size, in the right place, available at the right time, and developed with the right pricing structure to meet Delaware's needs -- not the needs of project developers. Moreover, Delaware's energy

portfolio should not be at the mercy of the regional energy market that, in the past, has not been kind to Delaware or its neighbors.

5. Delaware has the option to provide regulated solutions for securing SOS energy supply. Such an option could be pursued either through negotiations with bidding companies, through Delmarva's delivery business or through other utility companies desiring to provide services in Delaware. If negotiations fail, regulated solutions should be considered to structure suitable deals through negotiations.
6. The economics of the current bid process provide the bidders with returns that are only marginally above a typical regulated project. This distinction is caused by the reasonable assurance of revenues to cover changing conditions in the longer term. Staff recommends that the risk of some level of future cost change may be assumed by the buyer in negotiations, but only to the extent it results in real initial bid price savings.
7. The current Delaware environment appears to disaggregate energy supply responsibility. While all the portfolio components can be complementary, the legislative mandate of 30% market purchases, set levels of demand resources managed by the Energy Office's Sustainable Energy utility, new generation resources managed by the Commission, and the potential for market contracts negotiated by Delmarva might not be the most effective set of conditions. Staff recommends investigation of a unified authority (private, public or joint) to direct Delaware's energy affairs (perhaps in cooperation with the State Agencies overseeing this RFP).
8. With respect to actively managing the energy portfolio, Staff has serious reservations about Delmarva's willingness to voluntarily assume that role (and, to be fair, its attendant risks). Staff recommends that Delmarva be given the first option to serve as resource manager, with performance expectations set and understood. Staff further recommends that should

Delmarva refuse the option, the State should contract with a separate party for such resource management, at Delmarva's cost.

9. As reported in the IC's Interim IRP Report, there is little or no impact on the relative bid evaluations with respect to Delmarva's suggested IRP solutions. Staff's additional review revealed no significant change in the relative rankings even with modified ranking weights. Staff recommends acceptance of the bid evaluation as completed by the IC.

180120.1