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July 11, 2014

Ms. Joan Conrad, Executive Secretary
Iowa Utilities Board
1375 East Court Avenue, Room 69
Des Moines, IA 50319-0069

INU-2014-0001
FILED WITH
Executive Secretary
July 11, 2014
IOWA UTILITIES BOARD

RE: Interstate Power and Light Company
Docket No. INU-2014-0001
Responses to Questions Raised During Technical Workshop
Application and Affidavit for Confidentiality

Dear Secretary Conrad:

Enclosed please find Interstate Power and Light Company's (IPL) Responses to Questions Raised During Technical Workshop in the above-referenced docket, as filed today on EFS.

Also attached is copy of IPL's Application for Confidential Treatment and Affidavit in Support of Request for Confidentiality.

Very truly yours,

/s/ Paula N. Johnson

Paula N. Johnson
Senior Attorney – Regulatory

PNJ/kjf
Enclosures

**STATE OF IOWA
DEPARTMENT OF COMMERCE
BEFORE THE IOWA UTILITIES BOARD**

IN RE:

AVOIDED COSTS

DOCKET NO. INU-2014-0001

RESPONSES TO QUESTIONS RAISED DURING TECHNICAL WORKSHOP

COMES NOW Interstate Power and Light Company (IPL) and, pursuant to the agreement of the parties at the conclusion of the Iowa Utilities Board's (Board) June 5, 2014, Technical Workshop in this matter, submits its response to certain questions submitted for further information by the Office of Consumer Advocate (OCA) and the Environmental Law and Policy Center (ELPC). Specifically, Attachment A and its Confidential Attachments A1, A2, and A3 respond to the questions posed by the OCA, while Attachment B responds to the questions posed by the ELPC.

Dated this 11th day of July, 2014.

Respectfully submitted,

Interstate Power and Light Company

By: /s/ Paula N. Johnson

Paula N. Johnson

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Attachment A
IPL Responses to Questions Posed by the OCA

AVOIDED COST WORKSHOP
FOLLOW UP QUESTIONS

1. Please provide information requested of IPL by other participants in workshop.

Response:

IPL is simultaneously submitting its response to inquiries of both the OCA and the ELPC to the parties through filing them publicly via the Board's EFS.

2. Both IPL and MidAmerican have indicated they will continue to use peaker method to calculate avoided generation capacity costs in future Energy Efficiency Proceedings. MidAmerican will rely on MISO's new locational Cost of New Entry (CONE) applicable to MidAmerican for Local Resource Zone 3 (LRZ3) for installation cost. What approach will IPL use to determine its overnight combustion turbine (CT) installation cost for peaker method? If different from MidAmerican's, please explain IPL's data source for CT installation cost and its advantages.

Response:

For Energy Efficiency purposes, IPL uses CT costs based on its Integrated Resource Plan (IRP) information. Black & Veatch provides IPL Power Station Characterization Studies as the basis for new unit information in the IRP. Directionally, this should be similar to the Midcontinent Independent System Operator, Inc.'s (MISO) CONE results.

IPL believes that the utilization of the MISO CONE or the CT information provided by Black and Veatch both provide reasonable results since, according to 199 IAC 35.9(6), the cost of the CT is used merely as a "proxy." Due to the similarity of the results, IPL does not believe one source is more appropriate than the other. In addition, the revenue requirement computation of the peaker will most likely continue to vary between utilities since its use in EEP proceedings is dependent upon each utility's after-tax discount rate.

3. Provide a detailed methodology for IPL's assumptions used in calculating the economic carrying charge for the peaker method, including but not limited to:
- What are the tax life (in years) and Book life (in years) used in calculating economic carrying charge in the peaker method? Explain why these particular years are chosen.
 - What ROE and capital structure will be used and what is the basis for these selections (e.g., what was approved in IPL's most recent general rate case?)

Response:

In the most recent EEP proceeding (Docket No. EEP-2012-0001), IPL used an economic carrying charge based on the following formula:

$$(r - e) \times (1 + r)^n / ((1 + r)^n - (1 + e)^n),$$

Where –

- (1) r = After Tax Discount Rate,
- (2) e = Annual Inflation Rate and
- (3) n = economic life in years.

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IPL Responses to Questions Posed by the OCA

The After Tax Discount rate was based upon the capital structure, ROE, and the weighted average cost of capital from IPL's compliance filing in Docket No. RPU-2010-0001.

The economic life used was 27 years, which is the same as the book life of the asset. The asset was depreciated over 20 years.

This information was provided in Appendix E - Electric Avoided Costs - Calculations (Excel) of IPL's EEP Plan in Docket No. EEP-2012-0001 available via the following link: <https://efs.iowa.gov/cs/groups/external/documents/docket/mdaw/mtu0/~edisp/132476.xls>

- 4. The "IPL Tariff Application" explanation for capacity credits seems different from the capacity payments methodology described on slide 29. Regarding the last bullet point on slide 29, has IPL used "applicable capacity payments determined by recent MISO capacity auction results and Wood MacKenzie MISO capacity market projects" in previous PURPA or CSPP filings? Please explain.**

Response:

As IPL discussed during its avoided cost presentation at the INU work shop, MISO Zonal Resource Credits are only available for load resources that are assigned a CP node. MISO reflects smaller generators (less than 1 MW) as load reductions. Therefore, it is based upon IPL's internal planning criteria whether a small generator would reduce the capacity requirements in IPL's capacity planning. Accordingly, IPL's CSPP tariff requires a monthly 65% capacity factor for a generator to receive the capacity component provided through the tariff. The capacity credit is applied on a kWh basis.

- 5. Will IPL propose any material changes in avoided cost methodology or assumptions used for its upcoming 2014 PURPA avoided cost filing as compared to the 2012 filing? Please explain.**

Response:

IPL will maintain the methodology and include a Table 7 for 1 MW solar. Assumptions (such as load growth, fuel cost, generation portfolio parameters, retirements, etc.) will be updated from 2012 based on IRP's 2014 IRP.

- 6. Please provide docket references to the most recent avoided cost filings made by IPL in Minnesota. Is IPL's methodology for avoided cost filings in Minnesota consistent with what is used in Iowa? Please explain differences and whether such differences result from changes or assumptions ordered by the Minnesota Commission.**

Response:

IPL does not file avoided costs in Minnesota. Per tariff provisions upon written request by the customer (and after the customer signs a non-disclosure agreement), IPL shall provide the customer the current schedule of energy credits. These energy credits match what is filed in Iowa.

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IPL Responses to Questions Posed by the OCA

7. Please provide the Wood MacKenzie data for forecasted market prices, including:
- The forecasted energy prices report
 - An explanation of the pricing zone where the prices are located
 - The assumptions used in determining these prices

Response:

The Wood Mackenzie market price information IPL referred to in the 2014 IRP is provided in the attached spreadsheets:

- Confidential Attachment A1 - "Attachment A1_Wood Mackenzie_CONF.xls"
- Confidential Attachment A2 - "Attachment A2_Wood Mackenzie_CONF.xls" (market energy prices)

These spreadsheets include rows for MISO Zone 3 (Iowa) data.

Wood Mackenzie fuel and capacity prices are based on proprietary and confidential system analysis. Please see the attached presentation for a high level view of Wood Mackenzie's Long Term Outlook assumptions corresponding with the IPL 2014 IRP:

- Confidential Attachment A3 - "Attachment A3_Wood Mackenzie_CONF.pdf"

Additionally, IPL is willing to facilitate a question-answer session between Wood Mackenzie and the OCA if desired.

8. OCA recommended use the latest available MISO planning year loss of load expectation study report to determine reserve margin for generation and transmission in the last round of Energy Efficiency Proceedings. The reserve margin should be based on the installed generation capacity (IGEN), as MidAmerican calculated. Also, reserve margin should be applied to both generation and transmission, but not to distribution systems. Does IPL agree with this recommendation?

Response:

IPL used a 15% reserve margin in Docket No. EEP-2012-0001 as a proxy for an installed capacity (ICAP) value. While not strictly analogous to the current MISO reserve margin, it is comparable to the same and is also consistent with past IPL practices in its EEP calculations.

The application of the 15% reserve margin specifically relates back to the Midcontinent Area Power Pool (MAPP) method of calculating reserve margin, which based generation capacity on ICAP; in other words, all available and operational generation was used to calculate the reserve margin as though it could be "forced" into the market if necessary. By contrast, unforced capacity (UCAP) is based on a percentage of ICAP available after a unit's forced outage rate is calculated; in other words, UCAP considers only the energy that actually would be likely to enter into the market rather than "forcing" all capacity into consideration. Under the current 2014-2015 MISO Planning year for Module E, IPL has a ICAP-equivalent 14.8% associated with a UCAP reserve margin of 7.3%.

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MISO recalculates a UCAP-based reserve margin annually pursuant to its Module E Business Practices Manual. Therefore, using the MISO UCAP reserve margin to forecast capacity over a five-year EEP is impractical. The utilization of the 15% is not only consistent with past practice of estimating reserve margin on an ICAP basis, but represents a consistent, more long-term reserve margin that is suitable for five-year energy efficiency planning.

The application of a reserve margin is only appropriate for generation capacity.

- 9. OCA has proposed to use forward-looking MISO Attachment O rate to determine transmission capacity avoided costs in the last round of Energy Efficiency Proceedings. IPL already developed its transmission capacity avoided costs based on this MISO Attachment O rate, but did not use the rate explicitly. The MISO Attachment O rates are determined after considering return on equity, income taxes, depreciation, operation and maintenance costs, and many other factors. The rates and data used to derive the rates are transparent to everyone. Even though the rates are effective only for one year ahead, the companies can make reasonable projections into the future years. The rate reflects costs that customers have to pay for transmission services. Explain if it is an acceptable approach for IPL to use MISO Attachment O rate explicitly as avoided transmission avoided capacity cost in future Energy Efficiency Proceedings?**

Response:

IPL's approach is to first calculate the MISO Attachment O revenue requirement for ITC-M and then apply an escalation rate to the revenue requirement. It is the revenue requirement, not the Attachment O rate, which explicitly takes into account return on equity, income taxes, depreciation, operation and maintenance costs, and many other factors. The rate is simply the revenue requirement divided by the projected load. Since under the forward looking attachment O process the transmission owner recovers its revenue requirement regardless of load, IPL believes that the revenue requirement, not the revenue recovery mechanism, is the critical element in projecting transmission costs.

- 10. Explain how demand loss factors for generation, transmission, and distribution are determined. Should generation and transmission components be modified by the sum of both transmission and distribution loss factors since transmission systems provide energy to distributed systems including distribution losses?**

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Response:

Distribution losses are based upon the voltage level upon which customers receive service. For both the EEP and the rate case average and excess calculations, IPL used the following demand loss factors by class:

<u>Customer Class</u>	<u>Demand Loss Factor</u>
Residential	7.41%
General Service	7.41%
Farm	7.41%
Large General Svc. (weighted average)	6.30%
Transmission	2.61%
Primary	5.70%
Secondary	7.41%
Bulk	2.61%

Customer-metered loads are grossed up for the different voltage level losses to reflect load at the generation level. The above losses were based upon a 2001 loss study conducted by IPL which provided the following results:

TRANSMISSION AND SUBTRANSMISSION		
<u>Category</u>	<u>"MW Demand"</u>	<u>"MW %"</u>
Peak Load	2871.157	1
Transmission 115 kV and Above	38.25	1.332%
69 kV Subtransmission	22.98	0.800%
34 kV Subtransmission	13.59	0.473%
TOTAL TRANS AND SUBTRANS LOSS	74.82	2.61%
DISTRIBUTION		
<u>Category</u>	<u>"MW Demand"</u>	<u>"MW%"</u>
Peak Load	2612.046	1
Distribution Substation Transformer	22.63	0.866%
Primary Distribution Line	58.165	2.227%
Distribution Transformer	26.494	1.014%
Secondary Distribution	18.289	0.700%
TOTAL DISTRIBUTION LOSS	125.578	4.81%

Attachment B
IPL Responses to Questions Posed by the ELPC

AVOIDED COST WORKSHOP
FOLLOW UP QUESTIONS

1. Please explain how Alliant's avoided cost methodology accounts for the factors that PURPA requires a utility take into account to determine avoided costs as enumerated in 18 CFR § 292.304(e). For reference 18 CFR § 292.304(e) and 18 CFR § 292.302(b), (c), and (d) are included below. Please quantify how each factor affects the rates for purchase to the extent possible.

18 CFR § 292.304(e)

Factors affecting rates for purchases. In determining avoided costs, the following factors shall, to the extent practicable, be taken into account:

(1) The data provided pursuant to § 292.302(b), (c), or (d), including State review of any such data;

Response:

Please see IPL's more detailed response regarding 18 CFR 292.302 below.

(2) The availability of capacity or energy from a qualifying facility during the system daily and seasonal peak periods, including:

Response:

Please refer to the information IPL presented at the June 5th Workshop in this docket (June 5th Workshop). IPL's EGEAS analysis captures avoided energy costs for the particular technology type considering IPL's projected loads and generation portfolio. The EGEAS modeling includes a projection of annual peak and energy information (load forecast), as well as an annual load shape to address "system daily and seasonal peak periods." Avoided Costs are calculated for individual qualified facilities (QFs) based on technology type and the particular annual energy profile of that technology (high capacity factor "block" resource, wind, solar) to address "availability of capacity or energy from a qualifying resource." IPL also negotiates capacity costs for PURPA facilities based on whether IPL is able to obtain Zonal Resource Credits (ZRCs) from the Midcontinent Independent System Operator, Inc. (MISO).

(i) The ability of the utility to dispatch the qualifying facility;

Response:

IPL's EGEAS analysis captures avoided energy costs for the particular technology type. Avoided Costs are calculated for individual QFs based on technology type and the particular annual energy profile of that technology (high capacity factor "block" resource, wind, solar). Although weather-dependent QFs, such as wind, are not dispatched in a manner similar to gas combined cycle (for example), IPL recognizes typical annual performance profiles.

(ii) The expected or demonstrated reliability of the qualifying facility;

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Response:

IPL's EGEAS analysis captures avoided energy costs for the particular technology type. Avoided Costs are calculated for individual QFs based on technology type and the particular annual energy profile of that technology (high capacity factor "block" resource, wind, solar). These annual energy profiles recognize expected or demonstrated reliability/availability impacts.

(iii) The terms of any contract or other legally enforceable obligation, including the duration of the obligation, termination notice requirement and sanctions for non-compliance;

Response:

Contract terms (durations) have an impact on the levelized power purchase agreement (PPA) prices IPL negotiates. Annual avoided energy cost values are shown in the filing. In addition, for the 2014 filing, IPL will indicate 5- and 10-year PPA levelized pricing values. Termination notice requirements and sanctions for non-compliance are identified in PPAs signed by the company and the developer.

(iv) The extent to which scheduled outages of the qualifying facility can be usefully coordinated with scheduled outages of the utility's facilities;

Response:

As the typical QF is comprised of only one to a few wind turbines, this particular issue is not a significant quantifiable driver in IPL's PPA negotiations.

(v) The usefulness of energy and capacity supplied from a qualifying facility during system emergencies, including its ability to separate its load from its generation;

Response:

As the typical QF is comprised of only one to a few wind turbines this particular issue is not a significant quantifiable driver in IPL's PPA negotiations.

(vi) The individual and aggregate value of energy and capacity from qualifying facilities on the electric utility's system; and

Response:

IPL recognizes individual facilities sizes in its filings. For example, avoided energy costs for wind is calculated at 1 MW, 10 MW, and 20 MW. As IPL's EGEAS modeling includes previous AEP facilities, the rolling aggregate QF participation is accounted for.

(vii) The smaller capacity increments and the shorter lead times available with additions of capacity from qualifying facilities; and

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Response:

In cases where IPL can obtain MISO ZRCs for capacity, IPL negotiates capacity prices based on projected market value of ZRCs. Such an approach recognizes small capacity and short lead times by paying for ZRCs expected, not just capacity only in cases when the QF impacts IPL's expansion plan.

(3) The relationship of the availability of energy or capacity from the qualifying facility as derived in paragraph (e)(2) of this section, to the ability of the electric utility to avoid costs, including the deferral of capacity additions and the reduction of fossil fuel use; and

Response:

Please refer to the information IPL presented at the June 5th Workshop. IPL's EGEAS analysis captures avoided energy costs for the particular technology type. The EGEAS modeling includes a projection of annual peak and energy information (load forecast) as well as an annual load shape. Avoided Costs are calculated for individual QFs based on technology type and the particular annual energy profile of that technology (high capacity factor "block" resource, wind, solar). IPL also negotiates capacity costs for PURPA facilities based on whether IPL is able to obtain MISO ZRCs.

In cases where IPL can obtain MISO ZRCs for capacity, IPL negotiates capacity prices based on projected market value of ZRCs. Such an approach recognizes capacity even if the QF is not large enough to impact IPL's expansion plan.

Reduction of fossil fuel use is recognized in the EGEAS economic dispatch modeling. As IPL explained at the June 5th Workshop, the bulk of IPL's avoided energy costs are contributable to natural gas combined cycle.

(4) The costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualifying facility, if the purchasing electric utility generated an equivalent amount of energy itself or purchased an equivalent amount of electric energy or capacity.

Response:

The load forecast that IPL uses in its EGEAS avoided energy cost calculations (and IRP) includes 2.78% transmission line losses and 3.47% distribution line losses. By including these energy losses in the forecast, the generation portfolio must dispatch to slightly higher levels. Due to unique siting situations of individual QFs, IPL does not attempt to assign a specific line loss adjustment. Instead, the system average line losses are generically included in the avoided cost calculations through the forecast.

18 CFR § 292.302(b), (c), and (d)

(b) **General rule.** To make available data from which avoided costs may be derived, not later than November 1, 1980, June 30, 1982, and not less often than every two years thereafter, each regulated electric utility described in paragraph (a) of this section shall

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IPL Responses to Questions Posed by the ELPC

provide to its State regulatory authority, and shall maintain for public inspection, and each nonregulated electric utility described in paragraph (a) of this section shall maintain for public inspection, the following data:

Response:

IPL has been submitting this information to the Board on a biennial basis pursuant to 18 CFR 292.302, as adopted by the Board in 199 IAC 15.3.

(1) The estimated avoided cost on the electric utility's system, solely with respect to the energy component, for various levels of purchases from qualifying facilities. Such levels of purchases shall be stated in blocks of not more than 100 megawatts for systems with peak demand of 1000 megawatts or more, and in blocks equivalent to not more than 10 percent of the system peak demand for systems of less than 1000 megawatts. The avoided costs shall be stated on a cents per kilowatt-hour basis, during daily and seasonal peak and off-peak periods, by year, for the current calendar year and each of the next 5 years;

Response:

This information is filed as Table 1 in IPL's avoided cost filing.

(2) The electric utility's plan for the addition of capacity by amount and type, for purchases of firm energy and capacity, and for capacity retirements for each year during the succeeding 10 years; and

Response:

IPL submits this information as part of its written response.

(3) The estimated capacity costs at completion of the planned capacity additions and planned capacity firm purchases, on the basis of dollars per kilowatt, and the associated energy costs of each unit, expressed in cents per kilowatt hour. These costs shall be expressed in terms of individual generating units and of individual planned firm purchases.

Response:

IPL files this information as part of its written response.

(c) *Special rule for small electric utilities.*

(1) Each electric utility (other than any electric utility to which paragraph (b) of this section applies) shall, upon request:

(i) Provide comparable data to that required under paragraph (b) of this section to enable qualifying facilities to estimate the electric utility's avoided costs for periods described in paragraph (b) of this section; or

(ii) With regard to an electric utility which is legally obligated to obtain all its requirements for electric energy and capacity from another electric utility, provide the data of its supplying utility and the rates at which it currently purchases such energy and capacity.

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(2) If any such electric utility fails to provide such information on request, the qualifying facility may apply to the State regulatory authority (which has ratemaking authority over the electric utility) or the Commission for an order requiring that the information be provided.

Response:

Section (c) is not applicable to IPL.

(d) Substitution of alternative method.

(1) After public notice in the area served by the electric utility, and after opportunity for public comment, any State regulatory authority may require (with respect to any electric utility over which it has ratemaking authority), or any non-regulated electric utility may provide, data different than those which are otherwise required by this section if it determines that avoided costs can be derived from such data.

(2) Any State regulatory authority (with respect to any electric utility over which it has ratemaking authority) or nonregulated utility which requires such different data shall notify the Commission within 30 days of making such determination.

Response:

While more of a clarification than a substitution, IPL's avoided cost filings have been informed by the Board through a complaint proceeding. Specifically, please see the following two Board orders in Docket No. 199 IAC 15.3 (PURPA Section 210): 1) Order Requiring Amendments to PURPA Report and Tariffs issued December 21, 2007; and 2) Order Addressing Request for Clarification issued April 10, 2008.

- 2. Please explain if the utility system load reduction benefits from 1,000 five-kilowatt solar PV systems would be comparable to that from one large five-megawatt solar system? If not, please explain the difference**

Response:

IPL assumes that the 1,000 five-kilowatt solar PV installations would utilize IPL's existing net metering tariff. Net metered installations distributed across IPL's system would appear as load reduction. One five-megawatt PV installation would appear as a power purchase instead of load reduction because such a larger facility would likely be separately metered and telemetered into IPL's Generation Dispatch Center (and potentially reported to MISO through a CP Node).

Generally, IPL would have the potential to receive MISO ZRCs for the large five-megawatt PV installation. IPL would not receive MISO ZRCs for the 1,000 five-kilowatt PV installations; however, those units would, from a MISO perspective, effectively reduce IPL's load (thus requiring IPL to obtain fewer ZRCs for resource adequacy obligation). Please note that under a PV net-metered situation, customers reduce their purchased energy under full tariff rate, which is well above avoided energy costs.

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3. **Please explain if the utility system load reduction benefits would be the same regardless of whether the qualifying facility received the zonal resource credits or not?**

Response:

This question is best answered by way of illustration. Suppose there are two 20 MW windfarms: Windfarm A funded necessary upgrades to the network transmission system to qualify for capacity delivery (Network Resource) while Windfarm B did not (Energy Resource). In both of these situations, the windfarms would be metered and telemetered into IPL's Generation Dispatch Center. This means that the wind farms would be treated as generation/supply resources, not load reduction. As the purchaser from both facilities, IPL would have the potential to receive MISO ZRCs from Windfarm A, but not Windfarm B.

4. **The "Avoided Costs" section in Chapter 10 of the EGEAS Capabilities Manual mentions options regarding subperiod avoided energy cost calculations. What selection did Alliant make and why?**

Response:

IPL's read of the Avoided Cost section in Chapter 10 of the EGEAS Capabilities Manual identifies subperiod options for Avoided Capacity Costs, rather than avoided energy costs. Avoided capacity, however, is discussed in more detail in the following responses.

5. **Since the EGEAS program can easily calculate the avoided capacity costs, why does Alliant not use these avoided capacity costs for its avoided cost filing? Has Alliant calculated these costs with EGEAS? If so, please share the results of this analysis.**

Response:

IPL does not use EGEAS expansion plan changes to calculate avoided capacity payments in its biennial filing for several reasons:

- Unique attributes of QFs result in unique capacity contributions that cannot necessarily be generalized. For example, due to generation profile differences, a 10 MW fixed tilt PV installation would potentially receive a different capacity contribution than a 10 MW tracking system PV installation.
- Transmission limitations could dictate that IPL does not receive Zonal Resource Credits (ZRCs) from MISO for the QF. For example, a 20 MW wind farm could be qualified in MISO as an Energy Resource as opposed to Network Resource. Qualifying for Network Resource status may require the developer to fund upgrades to the transmission system.
- EGEAS calculated capacity costs do not recognize the potential value of additional capacity when a utility is long (i.e., selling capacity into the MISO market even if not needed for resource adequacy capacity requirements). In other words, EGEAS calculates avoided capacity costs only when there is a change to the expansion plan.

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- Small additions to the generation portfolio can result in a “straw that broke the camel’s back” scenario. For example, a 1 MW wind addition could theoretically result in a minor 0.14 ZRC capacity addition that has some impact to the expansion plan, but that does not necessarily mean that the next 1 MW will.

IPL has not calculated capacity costs with EGEAS, so there is no further EGEAS analysis to provide.

At this time, IPL’s insight to future MISO capacity prices is based on the Wood Mackenzie projections included in its 2014 IRP. MidAmerican’s presentation at the workshop provided a different approach, which provides directionally similar pricing. MidAmerican’s approach addresses confidentiality concerns with the Wood Mackenzie data, and IPL will consider adopting that methodology in future filings.

6. Related to line losses, does Alliant’s model account for specific project locations? Does Alliant’s model account for proximity to load growth of a QF?

Response:

IPL’s model does not account for specific project locations as EGEAS is not geographically/ locational specific, nor is EGEAS specific to a system interconnection level.

7. FERC allows environmental costs to be included in avoided costs as long as those costs are real costs that would be incurred by utilities. How do Alliant’s avoided cost models incorporate environmental costs into the methodology? Please provide examples for how incremental environmental costs were incorporated into avoided cost filings in 2006, 2008, 2010, and 2012. Please quantify the role of the environmental costs for each of these years.

Response:

For 2006 and 2008, IPL assumed SO₂ prices at approximately \$705/ton and \$464/ton, respectively. SO₂ prices are escalated at approximately 2%/year, and were modeled with dispatch modifiers in EGEAS.

Since the 2010 IRP, IPL’s EGEAS modeling includes emission allowance price projections based on Wood Mackenzie projected market values. Such allowances prices for NO_x and SO₂ are included in dispatch prices, and therefore avoided energy costs. In other words, EGEAS monetizes the emissions costs with dispatches prices.

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2010:

Year	NO _x (\$/short ton)	SO ₂ (\$/short ton)
2010	\$44	\$950
2011	\$82	\$1,114
2012	\$145	\$943
2013	\$389	\$1,189
2014	\$431	\$1,325
2015	\$610	\$1,822
2016	\$757	\$1,868
2017	\$1,193	\$881
2018	\$1,067	\$902
2019	\$1,485	\$924
2020	\$1,642	\$964
2021	\$1,772	\$1,217
2022	\$1,885	\$1,949
2023	\$1,976	\$1,867
2024	\$1,638	\$1,076
2025	\$1,695	\$1,115

2012:

Year	NO _x (\$/short ton)	SO ₂ (\$/short ton)
2012	\$1,467	\$129
2013	\$827	\$98
2014	\$1,213	\$823
2015	\$1,578	\$134
2016+ *	\$0	\$0

*Per Wood Mackenzie projection, \$0 prices in later years are a result of upcoming emission rules, such as MATS, forcing retrofits and retirements of units, which generates an oversupply of allowances.

8. **Are planning numbers for costs associated with regulation of greenhouse gas emissions included?**

Response:

No. As explained at the June 5th Workshop, IPL utilizes a No Carbon Scenario in the avoided cost calculations. IPL is not currently assessed a cost for greenhouse gas emissions. As indicated in section 8 of IPL's 2014 IRP, modeling indicates declining CO₂ emissions and rates.

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9. How are risks associated with rising fuel costs and fuel price volatility reflected in the model?

Response:

IPL's fuel costs rise as indicated in IPL's 2014 IRP Trade Secret/Confidential Attachment 6B. The IRP tests sensitivities of higher and lower fuel prices, but fuel price volatility is not monetized in the Avoided Cost filing. Please note that fuel price volatility runs the risk of increasing, or decreasing fuel costs.

10. Is any benefit for hedging of fuel costs accounted for in QF avoided costs? If so, how? If not, why not?

Response:

IPL's fuel costs rise as indicated in IPL's 2014 IRP Trade Secret/Confidential Attachment 6B. The IRP tests sensitivities of higher and lower fuel prices, but fuel price volatility is not monetized in the Avoided Cost filing. Please note that fuel price volatility runs the risk of increasing or decreasing fuel costs. IPL does not assign a hedging benefit because fuel prices are already shown to increase with time, and it is uncertain whether actual year-to-year prices will be higher or lower than projections.

11. Even though Iowa does not require an Integrated Resource Plan (IRP) filing, please describe your approach to medium- and long-term system capacity and resource planning.

Response:

IPL submits IRPs, as required by Minnesota approximately every two years. When it does this filing, IPL provides courtesy copies to the Board. This IRP addresses IPL in total.

12. How are distributed generation and demand-side management (EE and DR) incorporated into your IRP?

Response:

Energy Efficiency acts as embedded load reduction in IPL's IRP. Demand Response, such as Direct Load Control and Interruptible Load, has historically been treated as load reduction. However, going forward, the latest MISO Resource Adequacy rules treat such programs as a supply-side resource with gross-ups for losses and planning reserve margin (the change is neutral relative to the past).

13. How are T&D system capacity issues and opportunities incorporated into your IRP?

Response:

IPL's IRP generally does not address specific locational T&D system capacity issues and opportunities. However, costs for new resources include interconnection costs as part of

**Attachment B
IPL Responses to Questions Posed by the ELPC**

Owner's Costs, which are rolled into capital investments. Also, when IPL performed its site screening process for the 2017 combined cycle facility (ultimately MGS), system capabilities such as electric and gas infrastructure were evaluated.

14. How do the results of your IRP process impact your avoided cost calculations?

Response:

Please see the material IPL presented at the June 5th Workshop. The IRP assumptions, such as load levels and growth, fuel costs, existing and future generation portfolio, etc., impact avoided cost calculations.

15. In recent years Alliant has proposed and received retail rate increases while it has also proposed lower PURPA avoided cost rates. What costs does IPL incur that require an increase in retail rates that are not avoided by QFs or energy efficiency?

Response:

Rates increase for a wide variety of reasons, but few, if any, of the cost increases recently experienced are directed related to avoided costs. In fact, the vast majority of the recent rate activity is based on capital deployed to strengthen the system or improve IPL's environmental footprint and are completely unrelated to DG. Such capital investments (or fixed O&M for environmental controls) would require an increase in retail rates, but are not avoided by QFs or energy efficiency.

Many of rate increase drivers, therefore, are not directly related to avoided (energy) costs.

Further, as described previously, IPL's lower avoided costs are driven by the well-documented reduction in the cost of natural gas in recent years. These cost factors are unrelated to PL's recent rate case activity.