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April 2, 2015

Dr. Bradley K. Borum  
Electricity Director  
Indiana Utility Regulatory Commission  
101 West Washington Street, Suite 1500 East  
Indianapolis, IN 46204

Dear Dr. Borum:

Hoosier Energy appreciates the opportunity to review and respond to your comments regarding its 2014 Integrated Resource Plan. Attached are our responses to the comments and questions included in your draft report. We look forward to working with you in the future to further develop and enhance our Integrated Resource Plans.

Regards,

*Michael Mooney/rq*  
Michael Mooney  
Manager, Corporate Planning

APRIL 2, 2015

**RESPONSES OF HOOSIER ENERGY TO THE  
DRAFT REPORT OF  
THE INDIANA UTILITY REGULATORY COMMISSION  
ELECTRICITY DIVISION DIRECTOR  
DR. BRADLEY K. BORUM  
REGARDING 2014 INTEGRATED RESOURCE PLANS**

The following are the responses and comments of Hoosier Energy Rural Electric Cooperative, Inc. (Hoosier Energy) to the Draft Report (Report) of the Indiana Utility Regulatory Commission (Commission) Electricity Division Director Dr. Bradley K. Borum Regarding 2014 Integrated Resource Plans.

**Risk Analysis**

1. On Page 48 of its Report, the Commission quoted three separate passages from Hoosier Energy's IRP regarding the risks associated with environmental compliance and stated that "the Commission staff believes Hoosier Energy did not engage in a robust analysis of risk or conducted a planning analysis that would have been able to credibly assess the various risks Hoosier identified on page 74."

**RESPONSE:** The reliability and cost risks associated with environmental regulations were addressed by the Federal Environmental Legislation scenario that was included in the Strategist modeling of the IRP. This scenario significantly increased power, gas and CO2 prices in response to expected Federal greenhouse gas legislation and allowed the Strategist model to select from a number of supply-side resource options, including wind and solar resources, to determine the most economic portfolio. On a NPV basis, the Federal Environmental Legislation scenario was the highest-cost scenario examined by Hoosier Energy.

2. While there were distinct differences among the resource plans, there were considerable commonalities but none resulted in retirement of most of the coal-fleet by 2034 as might be expected if there was a Scenario that stressed the system.

**RESPONSE:** Hoosier Energy conducted a number of sensitivities that, in its estimation, sufficiently stressed the system. The system was stressed for load, natural gas prices and CO2 prices, all of which stressed market power prices. Hoosier Energy views the IRP as a planning document to guide its decisions and strategies in future years and, in its opinion, has conducted an analysis that will allow it to plan for future system operations. In future IRPs, Hoosier Energy will balance cost and expected benefit in expanding the scenarios.

APRIL 2, 2015

INDIANA UTILITY  
REGULATORY COMMISSION

Long Term Capacity Expansion Planning Models

1. The Commission staff appreciates Hoosier Energy's role as a Generation and Transmission utility that has a limited role in its Member's retail programs, but we are concerned that a predetermined level of DSM was baked-into the IRP and was not, therefore, treated on a comparable basis to supply-side resources that would have allowed the generation expansion planning model to solve for the least cost resources.

**RESPONSE:** DSM does compete on a level playing field with traditional supply-side resources, however, this simply is done outside of the Strategist resource planning model. Hoosier Energy develops estimated costs for a number of DSM resources and compares those to the most likely supply-side resources – natural gas-fired simple and combined cycle generation. The identification, development and selection of the DSM programs is performed jointly with the Hoosier Energy member systems. This process allows those closest to the customer – the member systems – to provide essential feedback regarding expected customer acceptance, required customer incentives and the necessary resources required to implement. This process allows for more than just economics, which is the limit of the model, to be considered. The expected DSM impacts are then incorporated into the load forecast.

2. The retirement decisions for Ratts units were hardwired in the modeling process as well.

**RESPONSE:** The idling of the Ratts units was hardwired in the IRP modeling process because the decision to idle had already been made by Hoosier Energy's Board of Directors. Hoosier Energy addressed the Ratts assessment process at length in its 2011 IRP, including options for repowering with natural gas and biomass, new gas generation and retrofitting with emission controls.

Load Forecasting

1. In the residential customers model, one of the drivers listed is "Other variables that may affect customers". What are some examples of these variables and why not specify them?

**RESPONSE:** The econometric model and variables as illustrated in the equation layout on Page 18 of the IRP is simply a general representation of the structural econometric model used within the residential class across our 18 member systems. These models are dynamic in that every two years the models are freshly developed with the possibility of variables being added or removed. Hence the term "Other variables that may affect the number of customers" can represent a large range of variables, based upon the variables found to provide the best representative model for the specific system under review. Examples of "Other variables that may affect the number of customers" may include miles of distribution lines; a consumer density factor; a time series variable; various series of shift variables involving consumers, population and miles of line. Hoosier Energy has 18 member

APRIL 2, 2015

INDIANA UTILITY  
REGULATORY COMMISSION

distribution systems, each with its own specific model. The variables within the models vary among members and the members consider the models to be confidential.

2. Hoosier Energy's forecast weather bands are based on the maximum and minimum annual degree days in historical period. Why use the extremes?

**RESPONSE:** The methodology used by Hoosier Energy for weather sensitivity of energy is consistent with the IURC Staff's suggestion to select conditions that would "book-end" the analysis. This action accomplishes the same analytical capability as would the +-10% variations suggested by the IURC.

3. Hoosier Energy correctly notes that Commercial, Industrial, and other loads are very diverse. However, the Commission staff notes that, on page 10 *"The consumer mix on the Indiana portion of the Hoosier Energy system changed slightly over the 2001 – 2011 period...The Commercial and Other sector remained constant...Hoosier Energy experienced significant growth in sales to the Industrial classification between 2001 and 2011."* Given the relative stability in the Residential, Commercial and Other, and the significant increases in the importance of Industrial, the Commission staff would like to know if Hoosier Energy's members have considered grouping Commercial and Industrial customers into more homogenous sub-groupings by North American Industry Classification System (NAICS) or Standard Industrial Classification Codes (SIC Code) for forecasting purposes? Has Hoosier considered other groupings such as by usage levels within the current classes?

**RESPONSE:** The IURC Staff may be misinterpreting the referenced text from page 10 of Hoosier Energy's IRP. The consumer mix statement refers to consumer count, which has not changed significantly.

Regarding the Commercial and Industrial customers, each member system is unique and there's considerable diversity in their commercial and industrial classes. Generally, commercial and industrial customers are classified consistent with RUS definitions, which are based upon transformation size rather than load types (or SIC Code). The members systems, along with Hoosier Energy's Key Accounts personnel, maintain relationships with all of the larger customers and that knowledge is factored into the development of the load forecast. This information is likely superior to using national classification codes as the basis for a commercial and industrial load forecast.

4. There was no mention of what efforts Hoosier Energy anticipates making to its load forecasting program to improve the credibility of the forecasts. Given the risks that Hoosier Energy acknowledges throughout the IRP, there is little evidence that Hoosier is making an effort to reduce a major area of uncertainty – the load forecasts. The Commission staff appreciates

APRIL 2, 2015

INDIANA UTILITY  
REGULATORY COMMISSION

Hoosier Energy's rationale for use of econometric forecasts and agrees with the concerns for other forecasting methods mentioned on page 27, however, that should not dissuade Hoosier Energy from continual reassessment of different methods. A properly specified end-use forecast with the requisite data has the intuitive appeal of providing a more credible narrative (e.g., perhaps better capturing of energy efficiency for appliances / end-uses).

**RESPONSE: Hoosier Energy performs an assessment of different methodologies to forecast both energy and demand. This is described on page 28 of the IRP.**

5. As discussed on page 38 (the Residential End-Use Survey) and because of the Member systems closeness to their consumers, Hoosier Energy has an opportunity to obtain demographic and end-use data that Investor-Owned Utilities would find more challenging. To supplement the results from the email and phone surveys has Hoosier Energy and its Member cooperatives considered conducting a representative and random in-person surveys – perhaps with personnel that can accurately assess the load, age, and condition of major appliances / end uses, house structure, and the household demographics? Have Hoosier and its Members considered in-person surveys with commercial and industrial customers to obtain more detailed and accurate information to enhance the load forecasts, customer rates and programs, and the IRP? With regard to the RUS Residential End-Use Survey, has Hoosier Energy done any correlations with EIA or other data source?

**RESPONSE: Supplementing the existing end-use survey with a face-to-face visit as recommended by the IURC would be very costly and time consuming and the value added benefits are questionable. The current survey methodology is performed biennially as part of the PRS and the results are statistically valid and representative of each system's consumer base.**

Concerning the commercial and industrial classification, Hoosier Energy has a Key Accounts staff of three people that work jointly with member systems to monitor all large C & I customers. The Key Accounts staff stay abreast of major developments and/or changes these consumers are expecting over the near-term and possibly long-term basis.

### Regional Consideration

1. Other than considerable reliance on the MISO, it is not clear how Hoosier Energy's IRP addresses the risks associated the reliability and cost risks associated with the environmental regulations.

**RESPONSE: One method of addressing the reliability and cost risks associated with environmental regulations is with the additional renewable resources that Hoosier Energy will**

APRIL 2, 2015

be acquiring in response to its revised Board Policy, which was discussed in the IRP. Under the revised Board Policy, Hoosier Energy will target 10% of member energy requirements from renewable resources by 2025.

In addition, the reliability and cost risks associated with environmental regulations were also addressed by the Federal Environmental Legislation scenario that was included in the IRP. This scenario increased power, gas and CO2 prices in response to expected Federal greenhouse gas legislation and allowed the Strategist model to select from a number of supply-side resource options, including wind and solar resources, to determine the most economic portfolio. In this scenario, as well as the other sensitivities, Hoosier Energy limited allowed market purchases or sales to 20% of annual energy requirements in order to limit its reliance on the MISO market. It should be noted that market purchases do not exceed 10% of annual member load requirements in any of the preferred portfolios.

2. On page 54, Hoosier Energy states “Summer and winter gas service to the Worthington, Lawrence County and Holland stations is secured on a short-term basis. In 2011, Hoosier made an economic decision to serve the Lawrence County and Worthington facilities with interruptible pipeline capacity, rather than firm capacity Hoosier continues to utilize the natural gas providers’ firm pipeline capacity to serve the Holland natural gas facility. Hoosier Energy assumes adequate pipeline capacity is available to serve the requirements of all current and potential gas fired generating facilities.” (page 55). Against the backdrop of the Polar Vortex during Hoosier Energy’s preparation of the 2014 IRP and the cold weather in late February 2015 and just as Hoosier Energy has asked the MISO, to assess the risks of natural gas availability and deliverability, the Commission staff would like to have Hoosier Energy provide a narrative of their risk analysis that concluded the efficacy of non-firm gas was appropriate for some units.

**RESPONSE:** Hoosier Energy expects that, as a combined-cycle unit, the Holland facility will generate more energy than will the Worthington or Lawrence County facilities, which are peaking units. Therefore, it has historically made economic sense to secure firm capacity for Holland and interruptible pipeline capacity for Worthington and Lawrence County.

For the Winter of 2015, Hoosier Energy undertook a thorough evaluation of its Winter 2014 experiences and implemented a strategy to minimize its potential exposure to natural gas supply interruptions and provide additional power supply options in the event of a return of the 2014 Polar Vortex conditions. Included in this strategy was the purchase of firm gas transportation options at Worthington and Lawrence County, as well as financial power hedges and market risk products. Hoosier Energy will analyze the strategy’s effectiveness.

APRIL 2, 2015

INDIANA UTILITY  
REGULATORY COMMISSION

Energy Efficiency and DSM

1. Only the Total Resource Cost Test (TRC) is used to determine the cost effectiveness of the DSM program or measure in the GDS study. There are, however, other tests that are appropriate to use in order to analyze other important factors of these programs. Did Hoosier Energy and its member cooperatives consider the use of other tests like Utility Cost Test (UCT), Rate Impact Measure test (RIM), Participant Cost Test (PCT), etc.?

**RESPONSE:** In the design of the Hoosier Energy DSM program, GDS and Associates prepared a comprehensive analysis for program design that continues to be based on the 2009 Market Penetration study. The 2009 Market Penetration Study was (perhaps still is) the most extensive study of its kind performed in the State of Indiana. Hoosier Energy conducted detailed on-site surveys of 375 residential customers and 68 commercial and industrial customers. The surveys included an on-site assessment of lighting, HVAC, water heating, appliance and equipment saturations and allowed collection of information on customers' energy efficiency decision making practices.

The DSM program analysis includes program evaluation using the following cost-benefit tests: Total Resources Cost test, Utility Cost Test, Rate Impact Measure test and Participant Cost Test, balanced with member system input on expected customer acceptance.

2. In the GDS report, the estimation of potential savings is based on a targeted savings and budget level. There is little mention about the targeted savings used to determine the appropriate DSM measures. Are these total targeted savings (a percentage of sales) or per measure savings?

**RESPONSE:** The Hoosier Energy total targeted savings is represented at the per measure level.

3. What is the number of participants considered per measure? No mention was provided on the numbers of residential customers that benefited from the programs.

**RESPONSE:** Hoosier Energy uses the total number of residential end-use consumer members as its potential participant number.

4. In the commercial/industrial sector, was the forecast used to project "building stock decay and new construction" (GDS 2009 study, p. 60) included in the 2009 DSM study updated for the 2013 study? How would the recent economic or policy changes affect those projections?

**RESPONSE:** Yes, the Hoosier Energy model developed by GDS Associates in 2009 accounts for building stock decay and new construction.

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APRIL 2, 2015

INDIANA UTILITY  
REGULATORY COMMISSION

5. There is no mention on how this plan will account for the potential reduction in savings due to SEA 340 that allows customers to opt-out of utility sponsored DSM programs.

**RESPONSE:** Senate Enrolled Act 340 (SEA 340) provides that industrial customers of an electricity supplier may opt out of participating in an energy efficiency program implemented by the electricity supplier in response to an Order from the Indiana Utility Regulatory Commission concerning Demand Side Management (DSM) programs, to which Hoosier Energy is exempt.