Report on Indiana’s 2018 Draft Statewide Analysis of Future Resource Requirements for Electricity

Provided to Citizens Action Coalition of Indiana for Use in its Comments Submitted to the IURC on August 17, 2018

Publication Date: September 24, 2018

Authors:

Elizabeth A. Stanton, PhD, Applied Economics Clinic
Ricardo Lopez, PhD, Applied Economics Clinic
Bryndis Woods, Applied Economics Clinic
Tanya Stasio, Applied Economics Clinic
Anna Sommer, Sommer Energy, LLC

on behalf of Citizens Action Coalition of Indiana
Table of Contents

Overview .................................................................................................................................................. 3

Section I. Does the Draft Statewide Analysis fulfill its statutory mandate? .......... 4
  I.A. Failure to comprehensively address mandated scope ............................................................. 5
  I.B. Inconsistent and outdated data sources .................................................................................. 8
  I.C. Failure to synthesize and critically examine contradictory assumptions ......................... 9
  I.D. Inconsistent and unclear treatment of energy efficiency ...................................................... 14
  I.E. Incomplete discussion of renewable resources ................................................................... 19

Section II. Failure to address the IURC’s Director’s comments and suggestions. 23
  II.A. Failure to provide access to or clearly communicate what and how information was used in the Draft Statewide Analysis.................................................................................... 25
  II.B. Failure to seek input from stakeholders early in the draft report process ....................... 27
  II.C. Failure to provide documentation on inputs, methods and definitions ......................... 28
Overview

This report on Indiana’s 2018 Draft Statewide Analysis of Future Resource Requirements for Electricity (Draft Statewide Analysis) released by the Indiana Utility Regulatory Commission Staff (IURC or Commission) on June 20, 2018 was prepared by Elizabeth A. Stanton, PhD, Ricardo A. Lopez, PhD, Bryndis Woods, and Tanya Stasio of Applied Economics Clinic, together with Anna Sommer of Sommer Energy, LLC. This report was prepared for Citizens Action Coalition of Indiana (CAC) for use in its comments on the Draft Statewide Analysis created pursuant to the Indiana Code Title 8, Article 1, Chapter 8.5.1

Our review of the Statewide Analysis includes two areas of discussion:

- Section 1: Comparison to Statutory Mandate (Indiana Code Ch. 8-1-8.5)
- Section 2: Comparison to IURC Director’s Comments and Suggestions

Together, these two comparisons demonstrate key weaknesses and opportunities for improvement in the Draft Statewide Analysis.

Section 1: Comparison to Statutory Mandate (Indiana Code Ch. 8-1-8.5)

Section 1 is organized in response to Indiana Code Ch. 8-1-8.5, which requires the IURC to “develop, publicize, and keep current” a statewide “analysis of the long-range needs for expansion of facilities for the generation of electricity”.2 Our review raised the following main categories of concerns with the Draft Statewide Analysis:

- Failure to comprehensively address mandated scope: See Section I.A. below.
- Inconsistent and outdated data sources: See Section I.B. below.
- Failure to synthesize and critically examine contradictory assumptions: See Section I.C. below.
- Inconsistent and unclear treatment of energy efficiency: See Section I.D. below.
- Incomplete discussion of renewable resources: See Section I.E. below.

Overall, we find that the Draft Statewide Analysis does not comply with Indiana Code Ch. 8-1-8.5, which mandates that the Statewide Analysis scope must include five types of analysis, of which only two have been addressed in the June 20 Draft. Moreover, the mandates that were addressed were done so in a manner that uses outdated and inconsistent data, and does not include independent critique, analysis, or synthesis.

Section 2: Comparison to IURC Director’s Comments and Suggestions

Section 2 addresses comments and suggestions made by the Indiana Utility Regulatory Commission (IURC) Director of Research, Policy, and Planning Division in response to recent

---

2 Indiana Code Ch. 8-1-8.5.
Report on Statewide Analysis

Indiana utility Integrated Resource Plans (IRPs). The Draft Statewide Analysis is inconsistent with the Director’s input in several important ways:

- **Failure to provide access to or clearly communicate what and how information was used in the Draft Statewide:** See Section II.A. of our report below.
- **Failure to seek input from stakeholders early in the Draft Statewide Analysis process:** See Section II.B. of our report below.
- **Failure to provide documentation on inputs, methods and definitions:** See Section II.C. of our report below.

Overall, we find that the Draft Statewide Analysis fails to address and incorporate important recommendations presented in the IURC Director’s Reports on the utility IRPs, instead relying on information from the IRPs as originally written by the utilities and failing to address inputs from Indiana’s IRP stakeholder process that has been ongoing since 2013. The Draft Statewide Analysis does not address the Director’s instructions for the IRPs to better explain concepts and ideas to both technical and nontechnical audiences, describe if and how stakeholders’ inputs were used in the utilities’ planning processes, and present clear information and explanation on the differing inputs, methods and assumptions used in the various IRPs. Notably, the Draft Statewide Analysis fails to synthesize and reconcile the diverse methodologies and assumptions used in the IRPs.

**Section I. Does the Draft Statewide Analysis fulfill its statutory mandate?**

No. The full mandate for the Statewide Analysis is provided in Indiana Code Title 8, Article 1, Chapter 8.5. Overall, we found five main inconsistencies between the Indiana Code and the Draft Statewide Analysis:

- **Failure to comprehensively address mandated scope:** Indiana Code § 8-1-8.5-3 sets a clear agenda for the Statewide Analysis. The June 20 Draft falls short of meeting these directives.
- **Inconsistent and outdated data sources:** Forecasts presented in the Draft Statewide Analysis are based on data as old as 2014 and are inconsistent in their sources and their implications for Indiana’s electric sector.
- **Failure to synthesize and critically examine contradictory assumptions:** Indiana utilities’ IRPs and the State Utility Forecasting Group (SUFG), upon which the Draft Statewide Analysis primarily relies, use very different forecasts and key assumptions.

---

3 As the Draft Statewide Analysis explains at p. 5, the IURC has had two pending proposed rules to modify the IRP rule at 170 Indiana Administrative Code 4-7. Nonetheless, the utilities voluntarily agreed to follow the IRP stakeholder process, which includes a process for the Director to analyze the IRPs, starting with the 2013 IRP submissions.

The Draft Statewide Analysis does not reconcile these differences and fails to present a critical examination of the cause and effect of these differences.

- **Inconsistent and unclear treatment of energy efficiency**: The Draft Statewide Analysis fails to clearly present the way in which Indiana’s utilities treat energy efficiency in their IRPs and the way that energy efficiency has been treated by the SUFG in its forecasts. This leads to inconsistent growth forecasts with no presentation of how or why these inconsistencies arise and no attempt to reconcile them.

- **Incomplete discussion of renewable resources**: The Draft Statewide Analysis does not consider the “comparative costs of meeting future growth” from renewable energy sources as opposed to traditional generating resources. The only information about the future role of renewable energy sources included in the Draft Statewide Analysis comes in the form of proposed resource mixes taken directly from the utilities’ IRPs.

### I.A. Failure to comprehensively address mandated scope

According to the Draft Statewide Analysis:

> Indiana Code § 8-1-8.5-3(a) states that this analysis must include an estimate of the following:

1. *The probable future growth of the use of electricity;*

2. *The probable needed generating reserves;*

3. *The optimal extent, size, mix, and general location of generating plants;*

4. *The optimal arrangements for statewide or regional pooling of power and arrangements with other utilities and energy suppliers to achieve maximum efficiencies for the benefit of the people of Indiana; and*

5. *The comparative costs of meeting future growth by other means of providing reliable, efficient, and economic electric service, including purchase of power, joint ownership of facilities, refurbishment of existing facilities, conservation (including energy efficiency), load management, distributed generation, and cogeneration.*

The Draft Statewide Analysis fails to meet three out of the five requirements.

1. **Probable future growth of the use of electricity**: The Draft Statewide Analysis includes a compilation of electric demand forecasts from other sources but does not include an original analysis of the future growth of Indiana’s use of electricity. The

---

5 2018 Draft Statewide Analysis, p.3. What the Draft Statewide Analysis refers to as Indiana Code § 8-1-8.5-3(a) is actually Indiana Code § 8-1-8.5-3(b).
demand forecasts that it reports on include those of the Indiana utilities, the SUFG and the Midcontinent Independent System Operator (MISO).

2. **Probable needed generating reserves**: The Draft Statewide Analysis includes information about future generating reserves by copying and pasting information from the utilities’ preferred resource plans and from the SUFG forecast, though this information is not independently analyzed or synthesized in a way that would paint a consistent, Indiana-wide picture.

3. **The optimal extent, size, mix, and general location of generating plants**: The Draft Statewide Analysis fails to consider the optimal extent, size, or location of generating plants. Indeed, the Draft points out that, “in analyzing the possible future resources, it is important to note that the Commission does not have the capability to predict the location of potential future resources.” The optimal resource mix in the Draft Statewide Analysis is merely the utilities’ preferred resource plans from their IRPs copied and pasted into the Draft Statewide Analysis. There is also no indication that the Draft Statewide Analysis considers the utilities’ investments in Transmission, Distribution, and Storage System Improvements (TDSIC), which the Commission could consider and synthesize to present the state of completed, planned, or necessary improvements to the state’s transmission and distribution system. This is clearly relevant regarding where and how future generation should be planned so that the grid’s ability to move electrons to market participants is optimized.

4. **The optimal arrangements for statewide or regional pooling of power and arrangements with other utilities and energy suppliers to achieve maximum efficiencies for the benefit of the people of Indiana**: The Draft Statewide Analysis does not include consideration of “optimal arrangements for statewide or regional pooling of power” or “arrangements with other utilities and energy suppliers.” In fact, the only references to any of these issues in the entire document are when the mandated scope of the analysis is presented on page 3 of the Draft.

5. **The comparative costs of meeting future growth by other means of providing reliable, efficient, and economic electric service, including purchase of power, joint ownership of facilities, refurbishment of existing facilities, conservation (including energy efficiency), load management, distributed generation, and cogeneration**: The Draft Statewide Analysis contains only a very limited consideration of the “comparative costs of meeting future growth” by non-traditional means such as renewable energy sources, energy efficiency or demand-side management.

Indiana Code § 8-1-8.5-3 includes a more detailed mandate for the Statewide Analysis than the section quoted from the Draft Statewide Analysis on the page above. Additional requirements of the state Code include:

--------------------------

6 2018 Draft Statewide Analysis, p.29.
§ 8-1-8.5-3(a) The commission shall develop, publicize, and keep current an analysis of the long-range needs for expansion of facilities for the generation of electricity. The Draft Statewide Analysis does not “develop” or “keep current” “long-range needs for expansion of facilities for the generation of electricity addressed.” Instead, it reproduces this information from 2015-2017 utility IRPs.

§ 8-1-8.5-3(c) The commission shall consider the analysis in acting upon any petition by any utility for construction. Given that much of the data in the Draft Statewide Analysis originates directly from the utilities’ IRPs and fails to address criticisms from other stakeholders and the Director pursuant to the IRP stakeholder process, this creates a difficult situation when a petition arises as to whether the Statewide Analysis preapproves the utility’s preferred resource selection. Also, since the data in the Draft is inconsistent and outdated, it is difficult to see how it could be said to be a useful tool for the Commission to make decisions when “acting upon any petition by any utility for construction” that are in the best interests of ratepayers and stakeholders.

§ 8-1-8.5-3(d) In developing the analysis, the commission: (1) shall confer and consult with: (A) the public utilities in Indiana; (B) the utility commissions or comparable agencies of neighboring states; (C) the Federal Energy Regulatory Commission; and (D) other agencies having relevant information; and (2) may participate as it considers useful in any joint boards investigating generating plant sites or the probable needs for future generating facilities. The Draft Statewide Analysis states on page 6 that “Commission staff utilized information from Indiana utilities’ IRPs, the Midcontinent Independent System Operator (“MISO”), the PJM Interconnection, LLC (“PJM”), the Federal Energy Regulatory Commission (“FERC”), and the U.S. Energy Information Administration (“EIA”).” However, it is unclear how the Commission itself conferred and consulted with these other entities or how that information might have been included in the Draft, nor is there any indication that the Commission conferred or consulted with utility commissions in any neighboring states. The Draft Statewide Analysis does not address if, when, or how the Commission conferred with the listed entities, or participated “in any joint boards investigating generating plant sites or the probable needs for future generating facilities”.

§ 8-1-8.5-3(f) Insofar as practicable, each utility, the utility consumer counselor, and any intervenor may attend or be represented at any formal conference conducted by the commission in developing an analysis for the future requirements of electricity for Indiana or this region. Ind. Code § 8-1-8.5-3(f) states that “insofar as practicable, each utility, the utility consumer counselor, and any intervenor may attend or be represented at any formal conference conducted by the commission in developing an analysis for the future requirements of electricity for Indiana or this region.” This statutory requirement is intended to ensure meaningful stakeholder participation. The use of the terms “intervenor” and “formal conference” in Section 3(f) indicate a more formal procedure is contemplated than what is envisioned by the General Administrative Order 2018-2 (GAO).7 Section 3(f) states that these proceedings are to

---

be “conducted by the commission,” rather than by its staff, as envisioned by the GAO. The Indiana General Assembly entrusted the Commission, with its unique expertise and resources, to create an independent Statewide Analysis that will be an important tool for the evaluation of Indiana’s energy decisions. Because the Statewide Analysis is intended to serve as a comprehensive yardstick against which the Commission measures requests to build expensive new generation capacity that is paid for by ratepayers, it is vitally important that the Commission follow a procedure that is deliberate, thorough, and transparent to all stakeholders.

§ 8-1-8.5-3(g) In the course of making the analysis required by subsection (a) and, if applicable, developing an analysis described in subsection (f), the commission shall conduct one (1) or more public hearings. Intervenors were not made aware of any public hearings that were held prior to the release of the Draft Statewide Analysis.

§ 8-1-8.5-3(h) Each year, the commission shall submit to the governor and to the appropriate committees of the general assembly a report of its analysis regarding the future requirements of electricity for Indiana or this region. Though the statute has been in place since 1983, 2018 is the first instance of a Draft Statewide Analysis being made available to the public. Nonetheless, the Commission should take the time to generate the very first Statewide Analysis with care so that the information is correct and useful, which will make the process of updating it next year less burdensome.

I.B. Inconsistent and outdated data sources

The Draft Statewide Analysis uses outdated data, not entirely relevant for the current period, or suitable to make accurate forecasts of energy demand and resources needed.

The Draft Statewide Analysis includes forecasts published as long ago as 2015 and is largely a compilation of information taken from pre-existing reports prepared by others, including:

- Data and information extracted from Indiana utilities’ IRPs filed from 2015 through 2017;
- The December 2017 report by the SUFG entitled, *Indiana Electricity Projections: The 2017 Forecast* (SUFG 2017 Forecast);
- Other sources such as the *2018 Annual Energy Outlook* published by the EIA in February 2018; and,
- Selected information from MISO and PJM.

As explained in the Draft Statewide Analysis, a typical IRP process takes more than one year to complete, and it relies on data from the previous year. This means that the Draft Statewide Analysis includes results and forecasts based on 2014 data.

Moreover, the use of data from different time periods in various utilities’ IRPs means that these results and forecasts are not strictly comparable. The Draft Statewide Analysis itself recognizes

---

8 2018 Draft Statewide Analysis, p.6, footnote 3.
this problem by saying that “it is difficult to compare on [sic] utilities experiences in 2015 with another utility’s resource consideration in 2017. Four years ago, for example, utilities were planning for the Clean Power Plan. Natural gas price projections due to fracking seemed to solidify more than expected by experts. Some utilities lost significant loads.”

While the Draft Statewide Analysis cautions readers about outdated assumptions regarding commodity prices and the regulatory environment, the referenced IRPs also include outdated assumptions regarding the cost and operating capabilities of renewable energy sources and battery storage. According to Indiana Code, “[t]he commission shall consider the [Statewide Analysis] in acting upon any petition by any utility for construction.” Therefore, it is critical that the most up-to-date information on costs and capabilities be used to facilitate electric-sector decision-making in Indiana; the Draft Statewide Analysis misses opportunities to do so.

The Draft Statewide Analysis provides additional information from the SUFG, but it is presented separately and not as a fully integrated part of the analysis. For example, the Draft Statewide Analysis provides a table with the projected growth rate of energy and peak demand for each utility over their planning periods. The utilities’ IRP forecasted energy demand compound annual growth rates vary from 0.1 percent (Indiana Michigan Power Co.) to 0.8 percent (Wabash Valley). The SUFG forecasted energy growth rate, however, is 1.12 percent. This is also higher than the estimated rate of growth of energy demand presented in the Draft Statewide Analysis for the entire nation—0.9 percent. Similar discrepancies exist with the peak demand; SUFG’s peak demand is 1.01 percent, while the utilities forecast between 0.2 percent (Indiana Michigan Power Co.) to 0.8 percent (Wabash Valley) (see Table 1 in Section I.D. below). The SUFG numbers are presented in a separate subsection, and no effort is made to reconcile IRP projections with SUFG projections. No explanation is given for why the SUFG’s projections are different than what the utilities expect.

I.C. Failure to synthesize and critically examine contradictory assumptions

Indiana utilities’ most recent IRPs are not based on a single consistent timeframe. The Indiana Code § 8-1-8.5-3(a) states that “[t]he commission shall develop, publicize, and keep current an analysis of the long-range needs for expansion of facilities for the generation of electricity.” The Draft Statewide Analysis fails to meet this requirement because it uses outdated data (in some cases, as old as 2014) and considers different timeframes across utilities.

In addition, the utilities use underlying data and projections in their IRPs that come from different sources, including Moody’s Analytics and other vendors, and federal agency and Indiana state agencies. On top of that, the SUFG uses economic data and projections made by Indiana University. These differing assumptions include large swings in assumed resource costs across

---

9 2018 Draft Statewide Analysis, p.7.
10 Indiana Code § 8-1-8.5-3(c).
11 2018 Draft Statewide Analysis, p. 20.
utilities. The Draft Statewide Analysis does not offer any explanation of why Indiana utilities would face significantly different costs for the same resource.\textsuperscript{12} Nothing about their geographies, customer mixes, or financial pictures would justify such differences.

Each utility also employs different methodologies, makes different assumptions and considers very different scenarios of uncertain future energy prices,\textsuperscript{13} energy use patterns, and expected environmental regulation. Differing methodologies include utilities’ and SUFG’s use of a wide set of different statistical techniques in forecasting electric demand, including econometric analysis based on time-series regression analysis (e.g., Duke, Vectren, IPL), variations of the Statistically Adjusted End-Use (SAE) model (e.g., I&M), and expert judgment of utility staff members or consultants (for example, Hoosier Energy when projecting commercial and industrial energy use and Vectren on a wide variety of assumptions).

There are deficiencies in the Draft Statewide Analysis resulting from this dependence on pre-existing reports: there are significant differences in each of the sources and assumptions relied upon in the Draft Statewide Analysis and the draft fails to reconcile these differences or synthesize the information presented from separate documents. Therefore, the Draft Statewide Analysis does not present a coherent state picture. Rather than providing an analysis of “the future requirements of electricity for Indiana,”\textsuperscript{14} the Draft Statewide Analysis is more of a collection of graphs and tables copied and pasted from the individual utilities’ IRPs. It does not include a synthesizing discussion comparing, contrasting or reconciling these disparate forecasts. The graphs and tables reproduced in the Draft Statewide Analysis have different formats, units, cover different periods, and compare non-comparable scenarios across utilities. The Draft Statewide Analysis fails to provide any substantial analysis of the results that it compiles. Instead of reconciling the utilities’ and SUFG’s important differences, the Draft Statewide Analysis simply sets aside these contradictions.

The utilities’ IRP forecasted energy demand compound annual growth rates vary from 0.1 percent (I&M) to 0.8 percent (Wabash Valley).\textsuperscript{15} The SUFG’s forecasted energy demand growth rate, however, is 1.12 percent (see Table 1 below).\textsuperscript{16} This is also higher than the estimated rate of growth of energy demand presented in the Draft Statewide Analysis for the entire nation—0.9 percent.\textsuperscript{17} While the Draft Statewide Analysis acknowledges that “the SUFG projects a slightly higher growth in electricity usage across Indiana than the individual utilities do in their IRPs,” the draft does not offer any reason as to why this might be so. The SUFG also projects a higher

\footnotesize{\textsuperscript{12} See for example the confidential comments filed by CAC et al on the 2015 IRPs of Duke Energy Indiana and Indiana Michigan Power Company at Table 3-1 and pp. 32 – 33 of CAC et. al’s comments on Vectren’s 2016 IRP.\textsuperscript{13} See for example CAC et al.’s confidential Summary Report regarding the 2016 IRPs of Vectren, Northern Indiana Public Service Company, and Indianapolis Power & Light.\textsuperscript{14} Indiana Code § 8-1-8.5-3(h).\textsuperscript{15} 2018 Draft Statewide Analysis, p.9.\textsuperscript{16} 2018 Draft Statewide Analysis, p.17.\textsuperscript{17} 2018 Draft Statewide Analysis, p. 20.}
Indiana peak demand requirements average compound growth rate than the Indiana electric utilities.\textsuperscript{18}

**Table 1. Indiana estimated energy and peak demand, by utility and statewide**

<table>
<thead>
<tr>
<th>Utility</th>
<th>Peak Demand</th>
<th>Annual Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana Michigan Power Co. (2016-2035)</td>
<td>0.20%</td>
<td>0.10%</td>
</tr>
<tr>
<td>IPL (2016-2037)</td>
<td>0.40%</td>
<td>0.50%</td>
</tr>
<tr>
<td>NIPSCO (2017-2037)</td>
<td>0.40%</td>
<td>0.30%</td>
</tr>
<tr>
<td>SIGEO South (SIGECO) (2016-2036)</td>
<td>0.50%</td>
<td>0.50%</td>
</tr>
<tr>
<td>IMPA (2018-2037)</td>
<td>0.50%</td>
<td>0.50%</td>
</tr>
<tr>
<td>Hoosier Energy (2018-2037)</td>
<td>0.70%</td>
<td>0.70%</td>
</tr>
<tr>
<td>Duke Energy (2016-2035)</td>
<td>0.80%</td>
<td>0.70%</td>
</tr>
<tr>
<td>Wabash Valley (2018-2036)</td>
<td>0.80%</td>
<td>0.80%</td>
</tr>
<tr>
<td>SUFG (2017-2037)</td>
<td>1.01%</td>
<td>1.12%</td>
</tr>
</tbody>
</table>

*Source: 2018 Draft Statewide Analysis, pp. 9 and 17.*

Figure 1 and Figure 2 show the SUFG’s forecast of Indiana energy demand starting at a lower level in 2018 and then rising more rapidly that the IRP forecasts. The Draft Statewide Analysis suggests that the SUFG treats energy efficiency and other demand-side management (DSM) measures differently than the utilities do: “the [SUFG] projections in this forecast are lower than those in the 2015 forecast, primarily due to increases in energy efficiency and less optimistic economic projections”\textsuperscript{19} but also points out that “due to time and data limitations, demand-side resources were modeled as fixed quantities based on utility-provided information rather than allowing the model to select the amounts.”\textsuperscript{20} Personal communications with representatives from SUFG have indicated that the “load forecast is adjusted for the utility DSM as planned at the time the forecast was produced,” but that “due to time and data limitations,” energy efficiency was not modeled dynamically as one resource option of many.\textsuperscript{21} It may be the case that utilities provided different energy efficiency data to SUFG than they use in their IRPs. If so, the Draft Statewide Analysis neither mentions nor reconciles these differences.

\textsuperscript{18} 2018 Draft Statewide Analysis, p. 18.
\textsuperscript{19} 2018 Draft Statewide Analysis, p.17.
\textsuperscript{20} 2018 Draft Statewide Analysis, p.21.
\textsuperscript{21} Personal communication between Jennifer Washburn of CAC and SUFG representative, Dr. Gotham, on Aug. 14, 2018.
Report on Statewide Analysis

Figure 1. Indiana estimated annual energy demand, statewide

![Graph showing Indiana estimated annual energy demand, statewide](image1)


Figure 2. Indiana estimated annual energy demand, by utility

![Graph showing Indiana estimated annual energy demand, by utility](image2)

Sources: IN Utility IRPs

Figure 3 and Figure 4 present Indiana peak demand forecasts summed across all IRPs and by utility, respectively.

**Figure 3. Indiana estimated peak demand, statewide**

![Graph showing Indiana peak demand forecasts from 2018 to 2035.](https://www.purdue.edu/discoverypark/sufg/docs/publications/2017%20SUFG%20forecast%20final.pdf)

Despite differing assumptions, forecasts, and methodologies, the Draft Statewide Analysis takes at face value the results of each utility's modeling. Each utility's IRP is based on widely divergent methods and assumptions. With respect to defining important concepts, the Draft Statewide Analysis provides a list of definitions and acronyms in Appendix 8, but the list does not include information on inputs, methods, and assumptions. These differences are not discussed, or even mentioned, in the Draft Statewide Analysis. Without a critical examination of the assumptions used by the utilities, it is not possible for stakeholders to evaluate the plausibility of the different scenarios used by each, to compare these results, and—above all—to aggregate these results with the purpose of assessing the energy needs of the state.

**I.D. Inconsistent and unclear treatment of energy efficiency**

Indiana Code § 8-1-8.5(b)(5) states that the Statewide Analysis needs to consider costs of meeting future growth in electric demand through energy efficiency, among other resources: “The comparative costs of meeting future growth by other means of providing reliable, efficient, and economic electric service, including purchase of power, joint ownership of facilities, refurbishment of existing facilities, conservation (including energy efficiency), load management, distributed generation, and cogeneration.”

---

23 Ibid.
Report on Statewide Analysis

The Draft Statewide Analysis notes that it “utilizes the most recent utility IRPs to determine the possible future load growth and generation needs for Indiana” and that “the IRPs describe the process used to determine the best mix of generation and energy efficiency resources to meet their customers’ needs for reliable, low-cost, environmentally acceptable power over the next 20 years.” However, energy efficiency is treated differently by different utilities in their IRPs—a fact that the Draft Statewide Analysis fails to address.

The Draft Director’s Report for the 2017 Integrated Resource Plans by Hoosier Energy, Indiana Municipal Power Agency, and Wabash Valley Power Association points out this same issue with reference to utility IRPs:

Hoosier Energy, IMPA, and Wabash Valley, to different degrees, included discussions of how DSM was modeled and projected but it was unclear how energy efficiency was included in the load forecast and it is not clear whether DSM was included as a selectable resource, if at all, in the optimization modeling. None of the utilities articulated the changes that they may be considering to enhance their future load forecasts, including the potential long-term effects of distributed energy resources and new technologies, the databases, the consideration of DSM on a par with other resources, improvements to the construction of scenarios and sensitivities, the integration of probabilistic analysis into the IRPs, and providing IRPs that are consistent with the proposed IRP rule revisions.

The Draft Statewide Analysis’ consideration of Indiana’s future resource mix and location (Section III.C) states that energy efficiency and demand response measures “add important resource diversity and reliability” but it does not address how these resources could or should develop in the future, save one sentence that reads: “according to the SUFG, demand respond is expected to increase from about 1,000 megawatts (MW) to almost 1,200 MW over the 20-year forecast horizon.”

Important differences between the IRP electric demand (and, implicitly energy efficiency) assumptions and those of the SUFG were made apparent in our review of the Draft Statewide Analysis, which states “since, the 1980s, forecasts for electricity demand by Indiana utilities…have shown very low projected growth rates…around one percent (or even negative for some utilities) have been common” which are “attributed to increasing energy efficiency…economic swings and demographic changes.”

Figure 5 below highlights the actual first-year cost ($/kWh) of energy savings across the utilities between 2014 and 2017. With the exception of 2014, Vectren had the highest first-year cost of savings across all utilities, while I&M had the lower first-year cost between 2014 and 2017.

---

27 2018 Draft Statewide Analysis, p.49.
Report on Statewide Analysis

Figure 5. First-year energy efficiency cost ($/kWh) by utility for 2014-2017

![Graph showing first-year energy efficiency cost ($/kWh) by utility for 2014-2017](image)

Source: Scorecards for all utilities with the exception of Vectren (EMV reports for 2015-2017)

Figure 6 below highlights the differences between the actual first-year energy efficiency costs ($/kWh) and first-year costs from IRPs (Duke and IPL) and potential studies (Vectren, NIPSCO, I&M). Figure 6 shows that in most cases, the actual first-year costs incurred by the utilities have been lower than the first-year costs from the IRP or potential studies for the utilities.
Figure 6. First-Year Cost ($/kWh) Comparison

Source: Sommer Energy, LLC comparison of first-year actual cost across utilities using IRPs and Potential Studies

Since the repeal of Indiana’s energy efficiency resource standard (EERS) in 2014 and the option for customers larger than 1 MW to opt out of paying for and participating in electric energy efficiency programs (via the Senate Enrolled Act 340, or SEA 340), Indiana’s utilities have not achieved energy efficiency savings at the level previously mandated under the EERS (see Figure 7 and Figure 8 below). Prior to the passage of SEA 340, average energy efficiency savings totaled 148 gigawatt-hours (GWh) across Indiana’s five largest utilities: Duke Energy, NIPSCO, IPL, I&M and Vectren. After SEA 340, average savings fell to 127 GWh. As a percent of sales, prior to the EERS repeal, savings averaged 0.93 percent of sales across all five utilities. After the repeal, this number fell to 0.77 percent. Given that the energy efficiency performance of Indiana’s utilities has fallen since the repeal of the state’s EERS, it is all the more important that the utilities’ consideration of energy efficiency is made clear in their IRPs and in the Statewide Analysis.

Figure 7. Incremental energy efficiency savings as a percent of sales


Figure 8. Cumulative energy efficiency savings as a percent of sales

I.E. Incomplete discussion of renewable resources

Indiana Code § 8-1-8.5(b)(5) calls for “[t]he comparative costs of meeting future growth by other means of providing reliable, efficient, and economic electric service, including purchase of power, joint ownership of facilities, refurbishment of existing facilities, conservation (including energy efficiency), load management, distributed generation, and cogeneration.” The Draft Statewide Analysis’ discussion of renewable resources is very limited; the Draft does suggest (as discussed below), however, that too much reliance on new natural gas resources could present problems for Indiana’s overall resource mix.

Figure 9 shows Indiana’s total statewide generating capacity additions, per the Draft Statewide Analysis. Over the 20 years reported, 49 percent of MW added are renewable resources while 42 percent are natural gas generation. Over the same period, 68 percent of Indiana capacity retirements are coal (see Figure 10).

**Figure 9. Indiana statewide cumulative resource additions**

The Draft Statewide Analysis does emphasize the decreasing role that coal has to play in Indiana’s future resource mix. The energy market has changed in recent years in response to the increased affordability, and decreased price volatility, of natural gas and renewable resources. Natural gas has become more affordable and stable in recent years due to hydraulic fracturing (fracking) and federal environmental regulations making other sources costlier, thereby rendering existing coal and nuclear power plants subject to retirement. Low-price forecasts, coupled with costly environmental controls and high construction and maintenance costs, are making coal-fired power plants less economical. Over the last 20 years, “environmental and safety regulations have imposed significant costs on the coal and nuclear-power generating fleets in particular.”30 These costs, while significant, are dwarfed by the cost of building, operating and maintaining coal and nuclear power plants. Because of all these factors, the Indiana resource mix is changing.

The Draft Statewide Analysis’ main takeaway regarding the changing economics of operating coal-fired plants is that these shifting dynamics have “provide[d] the primary impetus for retirement of some coal-fired power plants and the resulting significant changes in the composition of the generating fleets for Indiana, the region, and the nation.”31

---

30 2018 Draft Statewide Analysis, p.33.
31 2018 Draft Statewide Analysis, p.33.
Explicit in the Draft Statewide Analysis’ assessment is the concern that increasing reliance on natural gas will leave the power system less resilient to price fluctuation and high-consequence disruptions: “A concern has been expressed that, as a nation, we may be placing too much reliance on natural gas and, thereby, not giving appropriate consideration to resiliency of the power system.”

At present (as of 2016), natural gas represents 27 percent of Indiana’s in-state generating capacity and coal represents 62 percent (see Figure 11). If, however, all of Indiana’s coal generation—upon retirement—were converted to natural gas, Indiana would rely on this single resource for 88 percent of its capacity. From 1990 to 2017, the share of capacity from coal sources has dropped 31 percent, while the share from natural gas and renewable sources have risen 23 percent and 8 percent, respectively.

**Figure 11. Indiana generating capacity by source, 1990-2017**

In 2017, coal comprised the largest share of the generating capacity for all Indiana’s electric distributors except for IMPA and Wabash Valley (see Figure 12, note that IMPA and Wabash Valley are not included because their generating capacity is small enough to not be visible in the Figure). Natural gas accounted for the next largest share of utilities’ generating capacity (again, except for IMPA and Wabash Valley, for which natural gas accounts for the largest share).

---

32 2018 Draft Statewide Analysis, p.33.
According to EIA data, the vast majority of Indiana’s renewable resources are owned by merchant generators, and not by the utilities themselves.

**Figure 12. Generating capacity by source and utility, 2017**

Indiana utility IRPs expect the generation capacity mix to shift towards natural gas and renewable sources with coal remaining as a large share of generating capacity across utilities well into the 2030s:

- Duke Energy Indiana projects the share of generating capacity from coal to drop from 56 percent in 2015 to 38-46 percent in 2035, while the share of generating capacity from natural gas is projected to increase from 24 percent to 31-32 percent. The share of generating capacity from renewables, energy efficiency and demand response is projected to increase from 13 percent to 16-24 percent over this same period.\(^{33}\)

- Indiana Michigan Power projects the share of generating capacity from coal to drop from 40 percent in 2016 to 33 percent in 2035, while the share of generating capacity from natural gas is projected to increase from 0 to 15 percent and renewables to increase from 6 percent to 13 percent.\(^{34}\)

---


Southern Indiana Gas & Electric d/b/a Vectren projects the share of generating capacity from coal to drop from 68 percent in 2015 to 16 percent in 2036, while the share of generating capacity from natural gas and renewables is projected to increase from 23 percent to 71 percent.\(^{35}\)

While the issues surrounding likely coal retirements and a potential over-reliance on natural gas resources are discussed relatively extensively in the Draft Statewide Analysis, the potential role that renewable resources have to play was not. The "Renewable Resources in Resource Mix" section in the Draft Statewide Analysis addresses the current state of renewables in Indiana, but fails to address the role that renewable resources will play in the future. This is a gap worth filling, particularly because elsewhere in the Draft Statewide Analysis, it is acknowledged that "the lower costs of renewable resources, such as solar and wind, [will] further change Indiana's generation portfolio"\(^{36}\) and that large capacity additions within the forecast horizon will "generally consist of gas-fired combined cycle facilities and significant additions of renewable resources."\(^{37}\)

### Section II. Failure to address the IURC’s Director’s comments and suggestions

The Draft Statewide Analysis fails to incorporate the IRP stakeholder process, most notably the Draft and Final Reports on the IRPs written by the Commission's Director of Research, Policy, and Planning Division. As the Draft Statewide Analysis explains, the Commission has had two pending proposed rules to modify 170 IAC 4-7, with the most-recent draft proposed IRP rule expected to be fully promulgated before the end of 2018.\(^{38}\) Nonetheless, the utilities voluntarily agreed to follow the IRP stakeholder process starting with the 2013 IRP submissions.\(^{39}\) This involves a process by which (1) customers or interested parties may participate in meetings prior to the submission of the IRP;\(^{40}\) (2) customers or interested parties may comment on the IRPs submitted to the Commission;\(^{41}\) (3) the Director shall issue a draft report on the IRPs;\(^{42}\) (4) customers or interested parties may file supplemental or response comments after the Director issues the draft report on the IRPs;\(^{43}\) and (5) the Director shall issue a final report on the

---


\(^{36}\) 2018 Draft Statewide Analysis, p.2

\(^{37}\) 2018 Draft Statewide Analysis, p.28.

\(^{38}\) 2018 Draft Statewide Analysis, p 5.

\(^{39}\) 2018 Draft Statewide Analysis, p 5.

\(^{40}\) See IURC RM #15-06; LSA #18-127 at 170 IAC 4-7-2.6(c).

\(^{41}\) See IURC RM #15-06; LSA #18-127 at 170 IAC 4-7-2.2(a).

\(^{42}\) See IURC RM #15-06; LSA #18-127 at 170 IAC 4-7-2.2(b).

\(^{43}\) See IURC RM #15-06; LSA #18-127 at 170 IAC 4-7-2.2(c).
Report on Statewide Analysis

IRPs. The Director’s IRP Reports are a critical analysis of the strengths and weaknesses of the various IRPs and addressed the points raised in comments from various stakeholders, rather than simply restating the IRPs’ contents as the Draft Statewide Analysis does. No such critical analysis is contained in the Draft Statewide Analysis.

The Draft Statewide Analysis is not consistent with the IURC’s Director’s comments and suggestions made about utilities recent IRPs. Major areas of inconsistency include:

- **Failure to clearly communicate what and how information was used in the Draft Statewide Analysis:** The Draft Statewide Analysis fails to communicate basic ideas and concepts from utilities’ IRPs that were used in the Draft Statewide Analysis.

- **Failure to seek input from stakeholders early in the draft report process:** The Draft Statewide Analysis fails to explain if (and how) a public advisory process, or stakeholder process, has taken place in the development of the Draft Statewide Analysis.

- **Failure to provide documentation on inputs, methods and definitions:** The Draft Statewide Analysis fails to provide comparable information across utilities on inputs, methods and definitions used in the IRPs and by the SUFG.

Table 2 lays out these concerns in the same organizing structure presented in the Draft Statewide Analysis. Overall, the comments and suggestions from the Directors’ Reports on the IRPs have not been taken into account in the Draft Statewide Analysis.

---

44 See IURC RM #15-06; LSA #18-127 at 170 IAC 4-7-2.2(f).
45 Hoosier Energy, IMPA, and Wabash Valley are not required to undertake a public advisory process during the IRP development, perhaps placing even more importance on the Director’s Reports and this Statewide Energy Analysis. See IURC RM #15-06; LSA #18-127 at 170 IAC 4-7-2.6.
II.A. Failure to provide access to or clearly communicate what and how information was used in the Draft Statewide Analysis

The Draft Statewide Analysis does not clearly communicate what and how information was used in the Report, making it difficult for both technical and nontechnical audiences to have a clear and organized understanding of what was done.

The Draft Statewide Analysis does not compile and summarize basic information from the utilities’ IRPs in a way that can be readily used and easily understood. The Final Director’s Report for the 2016 Integrated Resource Plans emphasizes the need for communicating results clearly in such an analysis: “[t]he non-utility stakeholders would benefit from expanded use of
Report on Statewide Analysis

graphics and simple tables. Well-developed graphics would aid a wide variety of audiences. It also expresses frustration regarding how difficult it is to find information in the IRPs: "The Director tried to compile the same set of basic information for each utility’s IRP and found the task surprisingly difficult." The Director’s Report continues "(t)he problem is the IRPs and the associated appendices each provide a considerable amount of information but much is also not available, not well presented or must be laboriously sought and compiled, or is not comparable across utilities. These limitations reduce the usefulness of the IRPs to non-utility stakeholders and can be increasingly problematic over time for utilities, stakeholders, and policymakers." The Draft Statewide Analysis makes no improvement on this failing in recent Indiana IRPs.

The Draft Statewide Analysis also fails to explain to nontechnical audiences how demand forecasts are made and how they are used to calculate the energy resources needed during the planning period. The Draft Statewide Analysis explains that "[b]ecause of the significant costs and risks associated with either over or under-forecasting electricity requirements, increasingly sophisticated mathematical models and databases are employed to improve the accuracy and credibility of load forecasting." The Draft Statewide Analysis, however, does not mention the specific mathematical and statistical models used, or the databases employed to make the load forecasts.

The Draft Statewide Analysis also omits mention of “out-of-model adjustments” made by the utilities to the predictions produced by the statistical models. These adjustments are made based on the judgment of the utilities’ professional staff. Duke Energy, for example, uses professional judgment to resolve differences between forecasting models. While adjustments based on judgment are occasionally introduced to incorporate a very short-run development not captured by the forecasting models, they should not be used for long-term projections as explained in the Draft Director’s Report for the 2015-2016 Integrated Resource Plans: "Especially for long-term (probably anything more than one or two years), this kind of ‘informed opinion’ forecasting is not ideal."

The Draft Statewide Analysis fails to discuss the plausibility of the scenarios and forecasts made by the utilities in their IRPs. While it is impossible to expect perfect foresight in predictions of, for example, future fuel prices, it is important that stakeholders have enough information to be able to understand the different forecasts’ approaches and assumptions and assess their likelihood. As the Final Director’s Report for the 2016 Integrated Resource Plans explains, “the emphasis should be placed on the plausibility and credibility of different narratives and assumptions that, considered with other factors, provide a broad range of possible outcomes.”

In addition, the Draft Statewide Analysis does not explain whether the forecasted energy use includes energy efficiency or not. While it appears that utilities do include demand side management measures, including energy efficiency and demand response, when reporting their future energy use, the SUFG seems to include energy efficiency in their demand projections, while demand response is treated as a supply-side resource.

Certain data used in the SUFG 2017 Forecast was provided by the utilities pursuant to non-disclosure agreements with the SUFG, making dependence on that report in the Statewide Analysis not fully “open and transparent,” a priority identified by the Commission in its GAO. Relying on prior reports that were created with different levels of confidential protection among disparate parties has the effect of denying interested stakeholders meaningful access to data. For example, the stark differences between the SUFG and IRPs’ estimated energy and peak demands may be that the utilities provided different energy efficiency data to the SUFG than they use in their IRPs, but the Draft Statewide Analysis neither mentions nor reconciles these differences and stakeholders are not able to access this data to review.

Further, while the Draft Statewide Analysis recognizes in Section II that the SUFG has new state-of-the-art modeling software and more recent electricity forecast data than what is contained in the IRPs referenced in the Draft, it is unclear to what extent the SUFG’s work was taken into account. It does not appear that any “reality check” on the utilities' IRPs on a statewide basis was performed.

II.B. Failure to seek input from stakeholders early in the draft report process

The Draft Statewide Analysis fails to explain how and when stakeholders provided inputs on data, assumptions, scenarios, sensitivities, and modeling capabilities in the utilities planning process. Stakeholder input is important to minimize the number of contentious issues and reduce controversy. It also adds transparency to the planning process and helps the Commission to make informed decisions.

The Final Director’s Report for the 2016 Integrated Resource Plans explains that:

One of the primary goals of a well-reasoned, transparent, and comprehensive IRP is to narrow the contested issues and reduce the controversy to expedite Indiana Utility Regulatory Commission (IURC or Commission) proceedings for the benefit of

---

52 “As in the past, energy efficiency (EE) programs are treated as a reduction in demand. The current projection includes the energy and demand impacts of existing or planned utility-sponsored EE programs.” (SUFG, Indiana Electricity Projections: The 2017 Forecast, p. 3-1).

53 “DR programs are now treated as a resource within the modeling system; previously an adjustment of peak demand was done to account for them outside the utility simulation model. Thus, the peak demand numbers reported in this report have not been adjusted for DR, while the existing resource numbers now include them.” (SUFG, Indiana Electricity Projections: The 2017 Forecast, p. 3-1).

Report on Statewide Analysis

customers, the utility, and the utility’s investors. A key element in achieving this goal, as required by law and rule, is a public advisory process, otherwise known as a stakeholder process.55

Given the complexity of IRPs, it is important that the Commission seeks stakeholders’ input early in the planning process. This appears to be missing from the IRP stakeholder process in the development of the 2015 and 2016 IRPs.

The Final Director’s Report for the 2016 Integrated Resource Plans also emphasizes that:

Given that future IRPs are going to be increasingly consequential in their ramifications, we urge all utilities to continue their efforts to improve the clarity and explanatory value of their narratives. With the new three-year cycle for IRPs, we recommend the additional time could be used to good effect to solicit input from stakeholders earlier in the process on the data, assumptions, and the development of scenarios and sensitivities. It is expected that stakeholders will also be active participants in this collaboration. The utilities, with input from their stakeholders, should objectively reassess their modeling capabilities and the databases necessary to make full use of state-of-the-art long-term resource modeling.56

Similar to how early, detailed stakeholder comments and stakeholder dialogue is lacking in the 2015 and 2016 IRP stakeholder process, the Commission would enhance the usefulness and accuracy of the Statewide Analysis from engaging stakeholder feedback earlier and postponing the finalization of the Statewide Analysis until this is completed. Currently, the Commission’s GAO calls on this initial Statewide Analysis to be completed on a very short five-month timeframe (i.e., between when the GAO was issued in April and the October 1 deadline the Commission self-imposed to finalize the Statewide Analysis). Because of the vast array of potential uses of the Statewide Analysis, there is a need for reconciliation of sometimes contradictory information and other flaws in the Draft Statewide Analysis, as well as robust and transparent discussions before the Statewide Analysis is finalized.

II.C. Failure to provide documentation on inputs, methods and definitions

Indiana utilities use different inputs, methods and definitions when forecasting their energy demand and preferred resource choices during the planning process. The Draft Statewide Analysis does not document these differences clearly or, in some cases, at all.

One critical assumption on which Indiana utilities differ is the future prices of fuels. The Draft Statewide Analysis fails to make explicit differences in fuel price projections across utilities’ IRPs, which include forecasts from 2014 through 2017 due to the timing of the utilities’

submissions of IRPs. The *Final Director’s Report for the 2016 Integrated Resource Plans* urges utilities to use more than one projection for fuel prices, where “at least one of these forecasts should be a credible forecast in the public domain such as from the U.S. Energy Information Administration (EIA),”^57 and points out that, in the case of NIPSCO, “(t)he use of a single vendor forecast made the lack of a narrative to articulate the rationale for the forecast more problematic. The fuel forecast narrative is that the price of natural gas and coal is merely a function of demand. This seems to be an over-simplistic explanation to price forecasts for coal and natural gas.”^58

A clear justification of the reasoning behind each projection and the motivations for why it was considered are critical to a full understanding of IRP results. The *Final Director’s Report for the 2016 Integrated Resource Plans* explains that “(j)ust as well-reasoned narratives are essential in the construction of scenarios, it is also imperative that well-reasoned narratives support fuel price projections. Even extreme fuel price forecasts should be supported by a credible narrative story.”^59

Yet, the Draft Statewide Analysis does not explain either how utilities develop their alternate fuel price assumptions or how they are used in the planning process. The *Final Director’s Report for the 2016 Integrated Resource Plans* recommends that utilities “(i)ncude tables showing how inputs or assumptions compare across scenarios.”^60 This level of comparison is also necessary for the Statewide Energy Analysis, in addition to a critical analysis of how and why these IRP inputs and assumptions are or are not included in the Statewide Energy Analysis.

The Draft Statewide Analysis also explains that “IRP’s typically will analyze multiple scenarios, or possible states of the world, to bracket differences between forecasts.”^61 While the Draft Statewide Analysis presents the utilities’ resource needs as produced under the scenarios selected by the utilities, the Draft Statewide Analysis does not discuss the number of scenarios considered or the plausibility of those scenarios. This context for the development of IRP assumptions is particularly important for low-probability scenarios that may have significant impact on the forecasted resource needs. The *Final Director’s Report for the 2016 Integrated Resource Plans* explains that “(d)eveloping low probability, but highly consequential scenarios, as well as more likely scenarios, is consistent with good industry practice.”^62

Some utilities’ IRPs provide very little information on how they estimate their key inputs such as energy demand and peak load, and how resource needs are calculated. The *Draft Director’s Report for the 2017 Integrated Resource Plans* by Hoosier Energy, Indiana Municipal Power Agency, and Wabash Valley Power Association explains that:

---

^60 Final Director’s Report for the 2016 Integrated Resource Plans, p.11.
None of the utilities articulated the changes that they may be considering to enhance their future load forecasts, including the potential long-term effects of distributed energy resources and new technologies, the databases, the consideration of DSM on a par with other resources, improvements to the construction of scenarios and sensitivities, the integration of probabilistic analysis into the IRPs, and providing IRPs that are consistent with the proposed IRP rule revisions.63

The Draft Statewide Analysis fails to recognize this problem and does not identify areas of improvement or provide independent analysis of statewide energy needs.

With respect to defining important concepts, the Draft Statewide Analysis provides a list of definitions and acronyms in Appendix 8, but the list does not include information on inputs, methods, and assumptions used from the IRPs or SUFG or other data sources in the Draft Statewide Analysis. For example, in terms of the resource mix, the Draft Statewide Analysis does not provide enough information to understand proposed retirements and additions. The Final Director’s Report for the 2016 Integrated Resource Plans understood the need for clearly communicating such information and suggests that utilities “(m)ake much greater use of tables and figures comparing resource retirements, additions, and other inputs across both the preferred and candidate portfolios.”64 The Final Director’s Report for the 2016 Integrated Resource Plans also suggests that:

The first year any resource is available for selection in a portfolio should be presented and the reason why some resources might be available later than others should also be noted. More specifically,

- The first year a resource can be added to a portfolio;
- The last year a resource can be added to a portfolio;
- Limitations on the size of the resource that can be added;
- The minimum and maximum number of units of a particular resource that can be added; and
- Performance characteristics of generation facilities including forced outage rates, heat rate profiles, emission rates, and typical maintenance outages.65

Including information on inputs, methods and assumptions from the various data sources in a clear, tabular format would provide greater transparency and result in a Statewide Analysis that is more useful and more participatory.

64 Final Director’s Report for the 2016 Integrated Resource Plans, p.11.