
Public Version

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On behalf of Citizens Action Coalition of Indiana (“CAC”) and Earthjustice
We appreciate the Director’s Draft Report published July 17, 2020, for Indiana Michigan Power Company’s (“I&M” or “Company”) 2018-2019 Integrated Resource Plan (“IRP”) as well as the opportunity to respond1 to such before the Director’s Final Report is issued. Overall, we felt the Director echoed a number of the key issues and conclusions identified in our comments on I&M’s IRP. 2 For example, we agree with the Director about the importance of developing avoided transmission and distribution (“T&D”) costs and concur with concerns about the use of an outdated Market Potential Study for the modeling of energy efficiency in this IRP. We also agree with the concerns the Director raised concerning portfolio optimization and risk, and the importance of I&M considering the impact of electric vehicle penetration on the load and peak demand forecasts. The Director’s comments about I&M’s stakeholder process are also important. CAC appreciates I&M providing read-only access to the Plexos model. This access allowed CAC to view the modeling input and output files along with the model manual.

These comments to the Director’s Draft Report are intended to provide more clarity about our previous comments on I&M’s IRP and to add more information to the conversation regarding the modeling of energy efficiency, updated load forecasting, and the operation of the Rockport Units that may come up in future IRPs. Among other things, we discuss relevant portions of a settlement that I&M and certain parties recently entered into and submitted for approval in the Michigan Public Service Commission proceeding regarding I&M’s same 2018-2019 multistate IRP at issue here.

1 See 170 IAC § 4-7-2.2(c).

1 Energy Efficiency

1.1 Degradation Factors

I&M developed and applied degradation factors to the load forecast and the modeling of new energy efficiency bundles. I&M has argued that the degradation factors are necessary to avoid double counting of energy efficiency within the load forecast. While CAC fully agrees that it is important to consider how existing energy efficiency is incorporated into load forecasts, I&M’s degradation factors are categorically not an appropriate way to account for this when future energy efficiency is modeled as a supply side resource. The so-called degradation factors are completely divorced from how energy efficiency savings manifest in reality. While we do not believe degradation factors are appropriate for use in the load forecast either, the overall impact on the load forecast is much smaller than the impact of degradation on I&M’s energy efficiency bundles.

In discussing the use of degradation factors for the load forecast, the Director states, “The use of degradation factors to lessen the potential for double counting, even if the factors are estimates, seems appropriate at a conceptual level.” CAC respectfully notes that the remaining electric investor owned utilities in Indiana, Duke Energy Indiana, Northern Indiana Public Service Company, Southern Indiana Gas & Electric Company dba Vectren Energy Delivery, and Indianapolis Power & Light Company (“IPL”), all utilize the Statistically Adjusted End-use Model developed by Itron, and none of them apply a degradation factor to the load forecast or energy efficiency bundles modeled for resource optimization. Indeed, I&M could not identify any other non-AEP utility that uses degradation factors.

CAC believes that I&M should explore the inclusion of a DSM variable to capture historical energy efficiency in the load forecast model, similar to what IPL did for its 2019 IRP. IPL describes its methodology for incorporating energy efficiency into the load forecast as follows:

*IPL-sponsored DSM was included as an endogenous variable in the sales models. As an input, the models assessed correlation between historic sales and historic DSM estimating a DSM coefficient. For example, if the model estimates a coefficient of 0.5, then the model is saying that 50% of the historic DSM is captured in the historic sales. IPL then adjusts out any planned DSM based on this approach.*

*As noted, future IPL DSM was not included in the base, high or low energy and peak forecasts that were used as inputs into the IRP. New DSM bundles were*

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3 Director’s Draft Report, p. 10.
4 IURC Cause No. 45285, I&M Response to CAC Data Request 6-1 (included as Attachment 1).
included as part of the process for developing candidate resource portfolios. See Section 8 for more detail on DSM selection for the IRP.\(^5\)

It is important to highlight that IPL implemented this method to adjust for historical energy efficiency and its impact on the load forecast. In doing so, it completely obviated the need for any concomitant adjustment to energy efficiency bundles modeled on the supply side.

In the discussion of the degradation factors applied to the energy efficiency bundles modeled in the IRP, the Director states, “Even using information from I&M’s three-year DSM case (Cause No. 45285), the Director is not clear how EE bundles were developed or how the degradation factors were developed and applied beyond the use of professional judgement by I&M’s resident experts.”\(^6\) He also says, “[t]he approach selected by I&M is less than intuitive and puts a burden on I&M to be clearer in its presentation of this methodological choice and its application.”\(^7\) We concur with this assessment. Despite several technical phone calls with members of I&M’s load forecasting and IRP teams and multiple discovery requests, CAC’s experts have never seen the analytical basis for the degradation factors. Instead, we have just been told that the degradation factors are critical for the accuracy of the load forecast and therefore they have to be applied to the energy efficiency (‘EE’) bundles. Given how much the degradation factors distort the EE bundles from their actual pattern of savings, this alone should deeply concern the Commission and stakeholders.

The figures below highlight this significant difference for one particular commercial bundle named ‘I&M_C_AP_HVAC REFRIG 25’ that was available for the model to select between 2020 and 2024. Confidential Figure 1, below, shows the comparison between the undegraded and degraded savings for this bundle. The undegraded savings remove the degradation factor I&M applied and consider each bundle selected to have 1 GWH of savings throughout the measure life. This is akin to how all the other Indiana electric investor owned utilities model their EE bundles.

The undegraded savings also show the savings over the true measure life of the bundle. The actual measure life reported for this bundle is 17 years, but since I&M limited all bundles to either a 10-year or 15-year measure life, this bundle was assigned a 15-year measure life for the PLEXOS modeling. However, because of how I&M grouped its bundles in PLEXOS, any bundle picked in 2021 would actually have a 14-year measure life within the modeling, any bundle picked in 2022 would actually have a 13-year measure life within the modeling, and so on.

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\(^5\) IPL 2019 IRP, p. 35.
\(^7\) Director’s Draft Report, p. 15.
Confidential Figure 1 shows the annual undegraded and degraded savings available through this particular bundle. Between 2020 and 2040, the total undegraded savings from this energy efficiency bundle is [GWH] GWH, while the total degraded savings between 2020 and 2034 is [GWH] GWH, or 67% less than the undegraded savings.

Confidential Figure 1. Degraded and Undegraded Savings Comparison

8 Degraded savings information from Plexos output for energy efficiency bundle generation.
Confidential Figure 2, below, shows the annual difference between the degraded and undegraded savings. I&M contends, merely based on the claim that it is needed for the accuracy of its load forecast but without any analytical evidence, that its load forecast is where this difference is accounted for. The fact remains that two-thirds (2/3) of I&M’s modeled savings are not accounted for explicitly in the IRP purely because I&M has deigned to do so. CAC and I&M remain in disagreement about whether this also means that all EE savings are not fully reflected in the IRP modeling, a disagreement that can be made moot simply by I&M choosing to model its EE bundles in the same manner in which all the other Indiana investor owned electric utilities have done.

Confidential Figure 2. Annual Difference in Savings between Degraded and Undegraded Bundle
1.2 Avoided T&D Costs

We agree with the Director’s statement that avoided T&D costs are a significant driver of the level of energy efficiency selected in IRP modeling. In its IRP, I&M chose not to include T&D costs, arguing that the calculation relies on location specific information. As the Director states,

*I&M recognizes transmission and distribution costs can be avoided with DSM but argues it is too location specific for inclusion in the IRP’s analysis of DSM resources. As a result, I&M includes zero avoided costs for T&D. But location specific does not mean zero in the judgment of the Director. The question is what level of potential location specific avoided T&D costs should be included in the IRP and appropriately adjusted to reflect the systemwide nature of the IRP analysis. Surely if degradation factors can be developed using professional judgement then it must be possible to develop estimates of potential avoided T&D costs.*

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CAC echoes this statement made by the Director on I&M’s ability to develop potential avoided T&D costs, especially given the work they have devoted to the development of the degradation factors. Figure 3, below, highlights the avoided T&D value for nearly two dozen utilities that are included in Synapse’s avoided T&D database. Synapse found the average T&D value for the utilities analyzed to be $80.50/kW-year. The results from Synapse’s analysis indicate the importance of exploring the avoided T&D costs since this has implications for energy efficiency and demand response. Other Indiana electric utilities, including IPL, Duke, and Vectren, also use a non-zero avoided T&D value.

Figure 3. Synapse’s Avoided Transmission and Distribution Value Database

9 Director’s Draft Report, p. 15.
1.3 Hourly Shapes

We understand the Director’s belief that “improved EE (and other DERs) analysis will require sub-hourly load information to develop load shapes and EE bundles that better reflect the time and locational value of EE.” However, the manner in which more detailed shape data can be used to improve the valuation of EE is an open question since most optimization models utilize timestep simplification for resource optimization. The simplification could be modeling “typical” days per month, rather than all days of the month, or aggregating multiple hours into a single timestep, or both. I&M uses Plexos LT for capacity expansion modeling, which is not able to perform 8,760 chronological resource optimization. I&M uses load duration curves, which means that the chronology between one hour and the next is lost. When the chronology between hours is lost, the model will not be able to capture the full meaning of the shapes, and it may not result in any improvements for the modeling of energy efficiency. This does not mean that load shape data should not be improved or that many of the steps the Director outlined in his Draft Report are not valuable—we agree that they are. We would just like to hear explicitly and specifically how I&M would intend to improve its chronological representation of all resources including energy efficiency.

10 Director’s Draft Report, p. 15.

11 Meaning that hours 1 – 6 may constitute one timestep, hours 7 – 11 another, hours 12 – 16 another, etc.
2 Load Forecasting under a Pandemic

Indiana rules allow an electric utility to update its IRP between submissions when warranted.\textsuperscript{12} Several material circumstances have unexpectedly changed since the Company submitted its 2018-2019 IRP to the Commission in July of 2019, including the unprecedented COVID-19 pandemic, and I&M’s reconsideration of whether to extend the Rockport Unit 2 lease beyond its currently-contracted December 2022 expiration. Despite these fundamental changes, the Company has remained studiously silent in Indiana, choosing to cling instead to an IRP that no longer reflects current facts on the ground even while acknowledging in Michigan that such changes “call into question the efficacy of the current IRP.”\textsuperscript{13}

The Company filed the same multistate 2018-2019 IRP in Michigan in the summer of 2019 as the IRP it submitted to the Commission here in Indiana in the very same time period.\textsuperscript{14} Under Michigan law, the state regulatory commission must approve or deny each utility’s IRP in a litigated proceeding.\textsuperscript{15} As part of that approval docket in Michigan, I&M recently disclosed at a public prehearing conference\textsuperscript{16} two key facts about its resource planning that, upon information and belief, had not been previously disclosed in public. First, the Company informed the Administrative Law Judge that:

\begin{quote}
COVID-19 certainly has impacted load not only for I&M but for other utilities throughout the United States and those load changes, in general, call into question the efficacy of the current IRP. The current IRP was started in 2018 based on a load forecast at that time. The load forecast in 2018 doesn’t match up with current events at all.
\end{quote}

The Company’s representative went on to cite its next Michigan IRP filing date in late 2021\textsuperscript{17} as a forum for new modeling in light of these “current events.”\textsuperscript{18} Moreover, “trying to process this

\begin{itemize}
  \item \textsuperscript{12} 170 IAC § 4-7-10 (a) (“The utility may provide the director an update regarding substantial, unexpected changes that occur between IRP submissions. Copies of an update shall be provided to the OUCC and other interested parties”).
  \item \textsuperscript{15} MCL § 460.6t.
  \item \textsuperscript{17} Under Indiana law, 170 IAC § 4-7-2(a)(2), the Company is obliged to submit its next IRP by November 1, 2021. Under Michigan law, MCL § 460.6t(20), the Company is obliged to file an application for “review” of its IRP at the Michigan commission by no later than five years after the effective date of the most recent approval order. Presumably, the Company’s reference in the Michigan prehearing conference to a late 2021-filed Plan was made in deference to the Indiana requirement.
\end{itemize}
current IRP may be an exercise that doesn’t leave much value in the conclusion in the end, given
the current state of affairs,” according to the Company. As a result, I&M, Michigan PSC Staff,
and the intervenors in that proceeding have recently proposed to the Michigan PSC a settlement
pursuant to which I&M agreed to withdraw its IRP in Michigan and made a series of
commitments regarding the analyses and contents to be reflected in its next IRP filing in
Michigan.

The load forecast shown for both Indiana and Michigan service territories in the Michigan-filed
plan is exactly the same as in the Indiana-submitted plan. Thus, the Company’s public statement
before the Michigan regulatory commission is directly translatable to its IRP submitted to this
Commission. The Director’s Final Report should note that the Company has openly
acknowledged that because of the COVID-19 pandemic, the load forecast in its 2018-2019 IRP
“doesn’t match up with current events at all” which in turn calls into question the efficacy of the
IRP and the resource portfolio proposed therein. Presumably, reduced economic activity in at
least the near term due to the COVID-19 crisis would necessitate fewer resources needed to
serve the Company’s load. Despite the effects of COVID, I&M has made no effort to
commensurately update the load forecast aspects of its IRP before the Commission, or at least to
inform the Commission of the same “efficacy” concerns that it expressed in its Michigan IRP
proceeding. The Director’s Final Report should express healthy skepticism as to whether the
Company has satisfied Sections 4 and 5 of the IRP Guidelines covering load forecasts.

19 Id. at 26:6-9.
psc.force.com/sfc/servlet.shepherd/version/download/068t000000DcZqJAAV.
21 170 IAC § 4-7-4(2) (“requiring an “analysis of historical and forecasted levels of peak demand and energy
usage”); 170 IAC § 4-7-5(c) (“in determining the peak demand and energy usage forecast that is deemed by the
utility, with stakeholder input, to be most probable, the utility shall consider alternative assumptions such as …
[e]conomic activity; … [b]ehavioral factors affecting customer consumption”).
3 Rockport Units

3.1 Rockport Scenarios

CAC appreciates the Director’s comments on how I&M modeled the Rockport scenarios for this IRP. As shown in Table 2, below, I&M modeled Rockport Unit 1 under three different retirement dates of 2028, 2044, and 2025.22 For Rockport Unit 2, I&M modeled a lease expiration in 2022 and an extension with a retirement date of 2048. In his Report, the Director mentions the lack of a scenario that combines the retirement of Rockport Unit 1 prior to 2028 with a lease expiration at the end of 2022 for Rockport Unit 2. CAC concurs with the Director in that additional Rockport scenarios should have been modeled to assess the impact of both Rockport units coming offline before 2028.23

Table 2. Rockport Scenarios Modeled by I&M24

<table>
<thead>
<tr>
<th>Optimized Portfolio</th>
<th>Rockport Unit 1</th>
<th>Rockport Unit 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1, Scenarios 1 - 4; Group 2, Scenarios 5 &amp; 5A</td>
<td>Retires 12/2028</td>
<td>Lease expires 12/2022</td>
</tr>
<tr>
<td>Group 2, Scenario 6 &amp; 6A</td>
<td>Retires 12/2044</td>
<td>Lease expires 12/2022</td>
</tr>
<tr>
<td>Group 2, Scenario 8</td>
<td>Retires 1/2025</td>
<td>Lease extended, retires 12/2048</td>
</tr>
</tbody>
</table>

3.2 Retention of Rockport Unit 2

The second key fact recently disclosed by the Company in the Michigan case but not here in Indiana concerns its Rockport Unit 2 generating unit. The Company’s multistate IRP includes in its Preferred Plan the December 31, 2022, expiration of its lease on Rockport Unit 2, as currently scheduled under its agreement with the unit’s lessor.25 However, at the same April prehearing conference in Michigan, the Company told the Administrative Law Judge that, while “this [IRP] case, as filed, [] has the assumption that the Rockport [Unit 2] lease would not be renewed” – in fact, “that is still a pending issue for I&M.”26 Moreover, in recent months, “I&M has had discussions with the lessors largely centered on the fair value appraisal that is required under the terms of this agreement to extend the Rockport Unit 2 lease.”27 The Company acknowledged

22 Please note that Group 2, Scenario 8, is the only case where I&M modeled the 2025 retirement date for Rockport Unit 1.

23 Note that testimony in the Michigan PSC proceeding found that retiring Rockport Unit 1 in 2025 and letting the Rockport Unit 2 lease expire in 2022 is a lower cost option than what I&M proposed. See Direct Testimony of Tyler Comings on behalf of Sierra Club in Michigan PSC Case No. U-20591 dated Jan. 21, 2020 (available at: https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t0000009SLfUAAW) at 16-19.

24 I&M 2018-2019 IRP, Table 17, p. 117.


27 Id. at 23:19-22.
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that “[w]e wouldn’t be renewing the lease until after we have state, both Indiana and Michigan, Commission reviews and approval.”28 In the recent settlement entered by the parties in the Michigan PSC proceeding on I&M’s IRP, the Company “commit[ted] to not extend the Lease of Rockport Unit 2 prior to receiving pre-approval from the [Michigan] Commission at the outcome of its next IRP filing” or through an earlier Certificate of Necessity proceeding.29 I&M further agreed to provide with any proposed Rockport Unit 2 lease extension “an analysis based on optimization modeling with Plexos that compares the costs of renewing the Lease on Rockport Unit 2 with the costs of other alternatives, including market purchases and asset acquisitions.”30

While the Company has not definitively committed to renewing the lease at Rockport Unit 2, it has expressed strong interest in the possibility, which runs directly counter to a key tenet of its multistate IRP’s preferred portfolio. It is unclear what modeling or input assumptions in the Company’s submitted 2018-2019 IRP are now considered so invalid as to lead the Company to reconsider leaving the Rockport Unit 2 lease at the end of 2022. With the economic terms of a hypothetical lease renewal yet unknown, the Commission and stakeholders have no basis to judge the prudence of renewal (though it should be noted that only two of the Company’s twenty-four modeling scenarios considered the renewal of Rockport Unit 2).31 As noted above in section 3.1, footnote 23, testimony in the recent Michigan PSC case using data provided by the Company found that retiring the Rockport Unit 1 in 2025 and letting the Rockport Unit 2 lease expire in 2022 is the least-cost solution. At a minimum, it appears that the Company’s departure from the modeling contained in its submitted IRP now means that its documented analysis is no longer its actual approach – thus failing to satisfy Indiana requirements for the contents of its IRP.32 The Director’s Final Report must note this disappointing failing. In addition, it is important to note that the IURC has previously ordered that “any extension of the Rockport Unit 2 lease entered into by I&M for the purposes of serving its Indiana retail customers shall be subject to future consideration before the Commission in a formally docketed proceeding.”33 This should help ensure that Indiana customers receive the same protections as I&M’s Michigan customers, before any commitment to extending the lease to Rockport Unit 2 beyond its current December 2022 termination date.

28 Id. at 28:21-23.
30 Id.
32 170 IAC §§ 4-7-4(1) (“An IRP must include the following: (5) A description of the utility's process for selecting possible alternative future resources for meeting future demand for electric service, including a cost-benefit analysis, if performed; … (9) A description of the utility's preferred resource portfolio”); 4-7-8(c) (“Considering the analyses of the candidate resource portfolios, a utility shall select a preferred resource portfolio and include in the IRP the following: … (8) A description of how the preferred resource portfolio balances cost effectiveness, reliability, and portfolio risk and uncertainty”).
33 IURC Cause No. 44871 Final Order at 33 (March 26, 2018).
3.3 Environmental Controls at Rockport Units 1 and 2

Following the Company’s submission of its IRP on July 1st of last year, the U.S. District Court for the Southern District of Ohio entered, just over two weeks later, a Fifth Joint Modification to Consent Decree in an environmental enforcement matter among American Electric Power (I&M’s parent company), several state attorneys general, the United States Government, and environmental advocacy groups. While the initial 2007 agreement in that proceeding covered many coal units owned by AEP, the modifications entered on July 17, 2019, were specific to the Rockport units and provided as follows:

- Rockport Unit 2 will no longer be required to utilize Flue Gas Desulfurization ("FGD");
- Rockport Unit 1 would install enhanced dry sorbent injection ("DSI") by December 31, 2020, and retire by no later than December 31, 2028;
- Rockport Unit 2 would install enhanced DSI by June 1, 2020; and
- Both Rockport units must maintain a sulfur dioxide ("SO₂") emission rate of 0.15 lb/MMBtu on a 30-day rolling average basis starting in 2021 and meet an annual SO₂ tonnage cap of 10,000 tons from 2021-2028 with a 5,000 ton cap for every year thereafter.

The Company’s IRP, finalized presumably in the spring of 2019 prior to the July 1, 2019, submission date to this Commission, expressly acknowledged the ongoing negotiation of that Fifth Joint Modification but did not include any of its terms in IRP modeling because the Fifth Joint Modification had not yet been finalized. With these environmental compliance measures now legally enforceable obligations, the Company’s IRP modeling should capture the related significant changes in capital and operating costs for the Rockport units. However, the Company submitted no IRP update to this Commission with respect to these new requirements. The Director’s Final Report should note this significant omission in light of the Company’s obligation to accurately include, inter alia, environmental regulations in its resource portfolio modeling.

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36 Direct Testimony of Tyler Comings on behalf of Sierra Club in Michigan PSC Case No. U-20591 (supra note 23) found (see pp. 9-10) that the Fifth Joint Modification’s new requirement of Enhanced DSI at the Rockport units would increase costs for both units starting in 2020. The specific cost findings were confidential and redacted in the public testimony. In Indiana, CAC issued Informal Data Request 5.1 to I&M on August 18, 2020, asking about these issues.

37 170 IAC §§ 4-7-4(23), 4-7-8(4).
4 Conclusion

We reiterate our appreciation for the Director’s Draft Report on I&M’s 2018-2019 IRP. It is attentive to both issues raised by stakeholders and those identified by the Director. Our primary ask of the Director is to strengthen the Report’s language around the concerns related to I&M’s use of degradation factors on energy efficiency bundles. We also urge the Director to note I&M’s statements to the Michigan Public Service Commission about the relevance of this IRP given the current pandemic and developments related to Rockport. The Director should also consider adding to his Final Report the fact that I&M’s modeling does not reflect the increased costs of continuing to operate the Rockport units. We welcome continued dialogue on this and other issues of importance to IRPs in Indiana.
Attachment 1
DATA REQUEST NO CAC 6-01

REQUEST

Please refer to Mr. Burnett’s rebuttal testimony at page 10, lines 10 – 16. Is Mr. Burnett aware of any other non-AEP utility that uses exactly I&M’s degradation approach in load forecasting as described on slide 18 of the April 11, 2018 stakeholder workshop presentation (Attachment CMB-1R)? If so, please explain and provide the documents that support this assertion.

RESPONSE

I&M objects to the request on the grounds and to the extent the request seeks an analysis, calculation, compilation, or study that I&M has not performed and to which I&M objects to performing. Subject to and without waiver of the foregoing objection, I&M provides the following response.

Mr. Burnett is not aware of any other non-AEP utility that uses the exact same degradation approach to load forecasting as I&M.