

Indiana Office of Utility Consumer Counselor Comments on
AES Indiana 2022 Integrated Resource Plan
March 31, 2023

INTRODUCTION:

The Indiana Office of Utility Consumer Counselor (OUCC) offers its comments and recommendations on the AES Indiana December 2022 Integrated Resource Plan (IRP) Submission. AES held a series of IRP stakeholder meetings in late 2022 and the OUCC appreciates the opportunity to participate in them. OUCC staff also participated in separate technical meetings. However, the ultimate modeling decisions and choice of preferred resource plan are AES's alone and not determined by stakeholders.

AES has continued to make some progress responding to questions and comments raised in the IURC Director's reports and OUCC submissions. The purpose of our comments is to hopefully improve AES' IRP Process and Preferred Portfolio development for the benefit of Indiana's consumers. The fact that the OUCC does not address or criticize specific items, assumptions, or portfolios does not suggest that we support those IRP processes and practices. Rather, constraints and the natural complexities of IRP Exercises have not permitted us the opportunity to address all issues and potential opportunities for improvement. With these thoughts in mind, the OUCC submits the following comments and recommendations:

Section 2.2.2 Resource Capacity Credit

The OUCC recognizes MISO's current concerns that Capacity Credit Constraints are developing as renewable energy resources are added to portfolios throughout the regional transmission authority's territory. Although the manner in which MISO intends to manage those constraints remains somewhat unclear, it appears constraints may move from capacity capability to meet load during coincident and seasonal peaks to generation reliability as intermittent renewable generation resources go offline.

AES began looking extensively at reliability characteristics in its 2022 IRP and the OUCC encourages it to continue to improve and refine this analysis. The OUCC also recommends the addition of stress testing to existing and potential portfolios during IRP modeling to evaluate consumer impacts from changes in capacity accreditation.

Capacity costs are one of the most significant impacts on consumers and therefore need to be continually tested and evaluated for emerging trends.

Section 2.3: Energy Adequacy

The OUCC recommends Energy Adequacy include the impact of reliability constraints in all future IRPs and in future filings with the IURC. As reliability may impact Capacity Credit, failures of the system will also impact Energy Adequacy.

Sections 3 and 4: Transmission and Distribution System Planning

AES addressed reliability with factors including Black Start, Volt-Ampere-Reactive (VAR) Deliverability, and Frequency Support. That analysis resulted in similar scores for four of the five strategies. The OUCC recommends reviewing the impact on portfolios when a constraint is introduced, or a capability is disabled. For example, define the impact on a portfolio if a black start-capable generator becomes disabled for an extended period. Also, AES should explain whether there is a significant portfolio risk if renewables cannot be located in proximity to load because of permitting trends.

The OUCC recommends including the avoided cost calculation for its demand-side management programs and its avoided transmission and distribution capacity costs similar to its 2019 IRP. AES should include the methodology and assumptions used (e.g., transmission and distribution components and capacity costs assumed, cost per mile, etc.) in an avoided cost calculation along with the justifications behind those assumptions.

The OUCC suggests AES either reduce its projected residential customer growth rate or provide more justification for its current estimate. IRP Table 3-1 of Volume 3 shows an annual population forecast of 0.5% annual growth in Marion County over 20 years.¹ However, the forecast of residential customer growth is 0.9% over the same 20-year period.² AES notes a correlation of more than 90% between the Marion County population and its number of residential customers.³ Since population and residential customers are closely correlated, AES should explain not only why residential customer growth outpaces population growth but also how it affects load.

Section 5.4: Electric Vehicles and Distributed Solar

Section 5.4.2 provides more information at the national level. The OUCC would like to see this information at a local/regional level for AES' service territory or, at a minimum, the State of Indiana.

The OUCC would like to understand how AES' Electric Vehicle Portfolio filing in Cause No. 45843 will impact AES's IRP over the near term. Specifically, whether the assumptions in this filing were included in AES' IRP load forecast, given AES' statement on p. 48, "The forecast does not include any additional market interventions by AES Indiana, such as customer incentives of exceptional energy rate structures."

On p. 48, AES states, "The number of residential customers is essentially the number of households served by AES Indiana; therefore, the number of residential customers can be multiplied by the number of vehicles per household to estimate the total number of vehicles within the AES Indiana service territory." This seemingly exaggerates the number of electric vehicles forecasted, as lower middle income and low-income customers will be unlikely to purchase an electric vehicle in the near-term, as the used EV market will, most likely, take time to materialize. These customers are not likely able to afford current EV prices, due to high upfront costs. According to FindMyElectric.com, electric vehicle prices average about 33% higher than the average non-electric vehicle.⁴

¹ AES IRP, Attachment 5-2, p. 29.

² AES IRP Volume 1, p. 41, Figure 5-7.

³ *Id.*, p. 39.

⁴ FindMyElectric.com/blog/electric-car-prices

Section 6: Resource Options

To better understand how AES plans to meet MISO seasonal requirements when Solar production is reduced, capacity ratings for winter need to be included. Solar resources, in particular, differ substantially in their capacity accreditation between Winter and Summer. For example, when presenting resource options, as in Section 6 of the IRP's Volume 1, AES needs to include accredited capacity for the winter months, or preferably include MISO's four seasons accreditation and Planning Reserve Margin Requirements (PRMR). Also, Figure 2-4 shows MISO's required PRMR by Season, with Summer requiring 26.27% and Winter 21.35%. But Figure 6-5 includes only accredited capacity for summer.

Section 6.4: Demand Side Resource Options

AES should reevaluate its energy sales growth. Figure 3 of the IRP's Volume 3 shows declining energy sales since 2011. Between 2011 and 2021, energy requirements declined, on average, 1.0% annually.⁵ Excluding disruptions due to COVID-19, energy requirements averaged a 0.9% annual decline. Despite this historical drop in energy sales, Table 1-1 expects a 0.5% annual increase within the planning period.⁶ AES needs to use lower estimates for energy sales growth, to avoid raising consumer costs resulting from constructing or purchasing unnecessary generation. Otherwise, AES needs to justify why energy sales are expected to grow.

On p. 108, AES states "GDS also examined the full potential in the C&I sector if these customers were no longer able to opt-out of utility-funded electric energy efficiency programs." The OUCC would like clarity regarding what is meant by "full" potential (versus technical, economic, or achievable potential).

Section 7: Environmental

Refer to 7.2.3 Non-Hazardous Waste, page 129.

AES indicates its groundwater monitoring systems at Petersburg, Harding Street, and Eagle Valley have detected possible contamination from its coal ash impoundments in exceedance of groundwater protection standards not only on AES property, but also on adjacent properties.

Groundwater contamination from coal ash disposal in groundwater that exceed groundwater protection standards is a violation of the Indiana Groundwater Quality Standards (327 IAC 2-11) and the federal CCR Rule (CFR 257.90). The Federally Mandated Requirements statute does not allow recovery of costs that include "fines or penalties assessed against or imposed on an energy utility for violating laws, regulations, or consent decrees related to a federally mandated requirement" (IC 8-1-8.4-4). AES should be responsible for costs associated with remediation of coal ash groundwater contamination at these sites, not its ratepayers.

⁵ AES IRP, Attachment 5-2, p. 5.

⁶ *Id.*, p. 7.

Refer to 7.3.5 Selenium Water Quality Criteria, page 131.

AES mentions it may need to update its National Production Discharge Elimination System (NPDES) permits regarding selenium because of water quality criteria IDEM adopted to implement the EPA's national chronic aquatic life criterion. The cost of compliance with the changes to the permits, primarily through outfall relocation, is estimated at \$12 to \$16 Million.

AES should have significantly reduced selenium discharges resulting from closing its ash pond facilities and moving to a closed loop ash handling at AES' remaining Petersburg coal unit. AES needs to clarify the source of remaining selenium discharges, and why selenium discharges are not eliminated by the preferred portfolio and its conversion of remaining generators using coal to natural gas.

Section 8: Resource Portfolio Modeling

Scorecard metrics such as Reliability/Resiliency, Environmental, and Affordability (Net Present Value of Revenue Requirements), did not have significant differences among the five strategies evaluated. The differences were typically less than 3%. The OUCC recommends weighting the metrics or stress testing them to identify meaningful differences between the scenarios.

The stochastic analysis of energy price, fuels, and load also had low variability among the Strategies metrics, typically -3% to +3.5%. The OUCC recommends stress testing these variables by introducing the impact of a significant event on the portfolio. For example, a stress test could include a significant generator outage or weather event driving a spike in energy or fuel costs.

Modeling for prolonged weather changes should also be stress tested. For example, if heating degree days were down 20% in a given winter or an extended period with (or without) wind or sunshine, AES 4 would need to look for insight using similar portfolio tests.

The OUCC recommends discussing the risk analysis from a customer rate affordability perspective. An example might be defining whether a \$25 Million Present Value of Revenue Requirements difference is significant for a typical residential customer using 1,000 kWh per month. AES needs to discuss how forecast accuracy can affect the consumer and the proposed portfolio.

A discussion of renewable energy resources' Capital Cost risk shows high renewable generation scenarios to be the most expensive evaluated strategy. AES also should discuss whether thermal generation capital costs are at risk, especially if declining demand causes one or more capital equipment manufacturers to exit the market.