AES Indiana | 2022 IRP: Portfolio Matrix

AES Indiana continues to evolve through technological advancements, fluctuations in consumption, changes in energy policy, uncertainty of fuel supply and prices, and a number of other factors.

To plan for the potential impacts of these factors, the 2022 IRP will model four future strategies for the generation portfolio across four scenario views of the future. Stochastics and sensitivities will also be used to assess risk around particular variables and to evaluate how portfolios perform in different futures..

This positions AES Indiana to best provide safe, reliable, sustainable, reasonable and least-cost service to its customers.

Retirement dates, capital expenditures and cost treatments are anticipated and defined for each strategy and included in the planning model.

STRATEGIES

Portfolio Strategy	Details	Rationale
No Changes to Existing Portfolio	> Status quo > Units remain in service through useful life of 2042	Provides portfolios with coal through 2042 for Scorecard metric comparison and evaluation
Petersburg Refuel in 2025	> Petersburg Units 3 & 4 refueled to natural gas in 2025 > Strategy serves as possible bridge to 100% renewable portfolio > Coal-free portfolio starting in 2025	Earliest possible refuel date that provides sufficient lead time to execute natural gas conversion
One Petersburg Unit Retires Early in 2026	> One unit retired early in 2026 > One unit remains in service through useful life of 2042 > Replacement capacity starting in 2026	Earliest possible retirement date that provides sufficient lead time to procure capacity
Both Petersburg Units Retire Early in 2026 & 2028	> One unit retired early in 2026 > One unit retired early in 2028 > Coal-free portfolio starting in 2028	Staggering specific retirement dates provides sufficient lead time to procure capacity

AES Indiana will perform capacity expansion analysis without specified dates that allows the Encompass model to fully optimize retirements and replacements however outcomes from this analysis may not be viable and/or reasonable.

*Visit **https://www.aesindiana.com/integrated-resource-plan** for more details.*

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SCENARIOS

In the planning model, each scenario has a unique set of input assumptions that correspond to the external influences the define it.

Scenario	Load	Electric Vehicle	Photovoltaic	Power	Gas	Coal	CO_2
NoEnv	Low	Low	Low	Base	Base	Base	None
Ref	Base	Base	Base	Base	Base	Base	Low
AggEnv	High	High	High	Base	Base	Base	High
Decarb	High	Very High	High	Base	Base	Base	None

No Environmental Action (NoEnv): This future is defined by relaxed environmental regulations, expanded fracking and low demand with low electrification. Inflation persists driving low GDP and customer growth.

Current Trends - Reference Case (Ref): In this future, congressional gridlock persists with stalled progress on passing sweeping environmental legislation. The Investment Tax Credit (ITC) and Renewable Electricity Production Tax Credit (PTC) are given single-year extensions for the next five years. This scenario assumes modest price for carbon starting in the late 2020s.

Aggressive Environmental (AggEnv): In this future, Congress passes sweeping environmental legislation that includes carbon tax. ITC and PTC extensions are consistent with Build Back Better. This scenario includes high demand scenario with high electric vehicle and solar forecasts.

Decarbonized Economy (Decarb): In this future, Congress passes aggressive decarbonization mandate on power sector with explicit renewable energy targets. High ITC/PTC runs through the planning horizon. Carbon targets are achieved through a Renewable Portfolio Standard that targets Net Zero; not a market mechanism like a carbon tax or cap and trade. This scenario assumes high load driven by electrification.

Evaluating the four strategies in four scenarios results is the framework for IRP evaluation, known as the Portfolio Matrix.

The sixteen portfolios in the matrix will be evaluated using a scorecard that includes metrics for cost, environmental, reliability and risk. AES Indiana's Preferred Resource Portfolio will be selected using this rigorous evaluation process to find the lowest cost across a range of futures.

Cost	Environmental	Risk
What is the impact on customer rates in the short and long term?	What is the impact air and water?	How much risk does the portfolio present to customers?

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