aes Indiana

2022 Integrated Resource Plan

(IRP)

Non-Technical Summary

Background

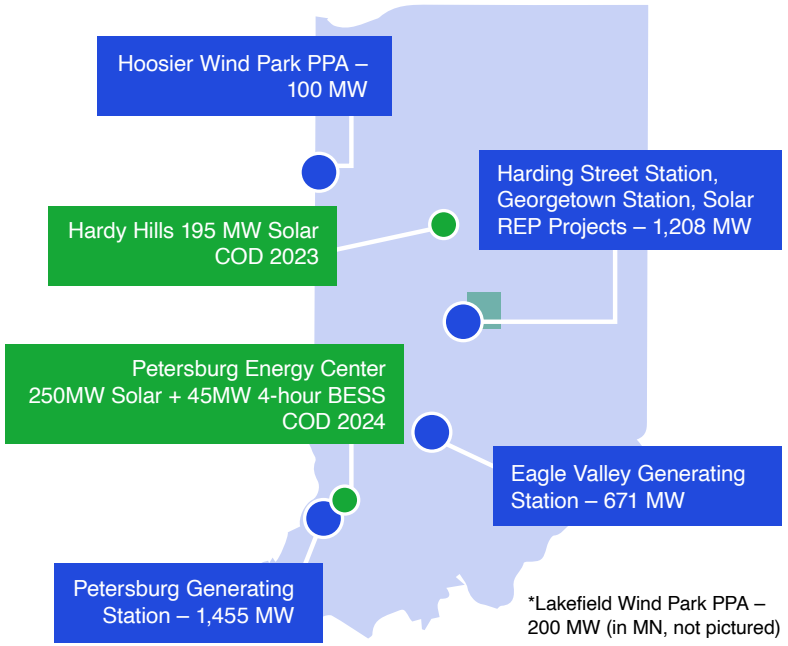
AES Indiana generates, transmits, distributes and sells electricity to approximately 517,000 retail customers in Indianapolis and neighboring areas, the most distant point being about 40 miles from Indianapolis. In total, AES Indiana's service area covers about 528 square miles.

AES Indiana is subject to the regulatory authority of the Indiana Utility Regulatory Commission ("IURC") and the Federal Energy Regulatory Commission ("FERC"). AES Indiana fully participates in the electricity markets managed by the Midcontinent Independent System Operating ("MISO"). AES Indiana is a transmission company member of Reliability First ("RF"). RF is one of eight Regional Reliability Councils under the North American Reliability Corporation ("NERC"), which has been designated as the Electric Reliability Organization under the EPAct.

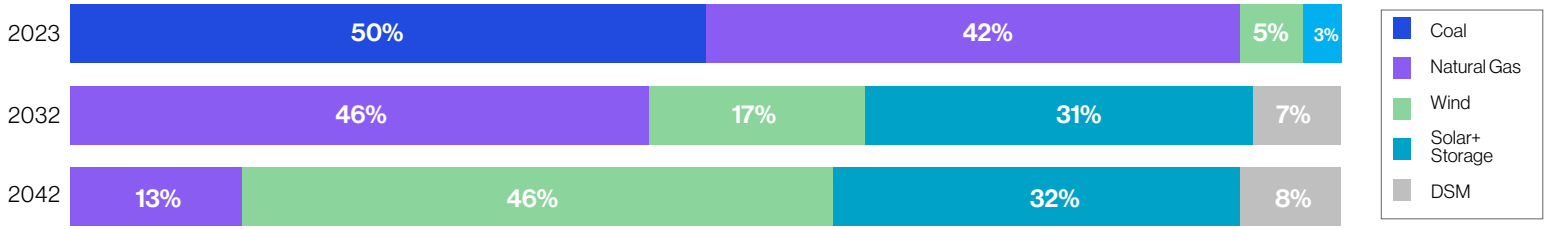
AES Indiana is part of the AES Corporation, a Fortune 500 global power company, with a mission to improve lives by accelerating the future of energy, together.

The Integrated Resource Plan ("IRP") is viewed as a guide for future resource decisions made at a snapshot in time. Resource decisions, particularly those beyond the five-year horizon, are subject to change based on future analyses and regulatory filings. Any new resource additions, including supply-side and demand-side resources, will be submitted for regulatory approval as necessary or appropriate.

3,634 Total MW of Generation



Energy mix values

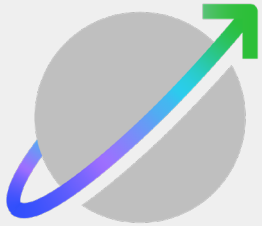


aes Indiana

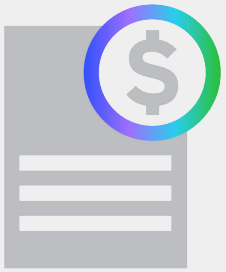
Meeting Our Customers' Needs Today and Tomorrow

AES Indiana is leading the inclusive, clean energy transition.

Reliability



Affordability



Sustainability

aes Indiana

Preferred Resource Portfolio and Short Term Action Plan

AES Indiana's 2022 Integrated Resource Plan was developed in an environment with unprecedented market changes that created new challenges for long-range planning. Specifically, the approval of MISO's Seasonal Resource Adequacy Construct, the passage of the Inflation Reduction Act, volatile commodity prices for power and fuels, inflated costs for replacements resources, and scarcity within the NOx allowance market have all influenced AES Indiana's strategy and process for this IRP.

Through a transparent planning and stakeholder engagement process that addressed the noted challenges and a comprehensive evaluation of seventeen (17) Scorecard metrics, AES Indiana selected a Preferred Resource Portfolio and Short Term Action Plan that provides affordable, reliable, and sustainable energy for its customers.

AES Indiana's Preferred Resource Portfolio and Short Term Action Plan will:

1) Add Renewables

Add up to 1,300 MW of wind, solar and storage by 2027

After refueling Petersburg Units 3 and 4 to natural gas, AES Indiana still has a 240 MW winter capacity need starting in 2025 due to MISO's new Seasonal Resource Adequacy Construct. Modeling results indicate that, after including the ITC benefits for standalone storage that were included in the Inflation Reduction Act provisions, battery energy storage is the most cost-effective capacity resource to fill this need. Additionally, the model indicated that an additional 500 to 1,065 MW of wind and solar resources are needed to cost effectively replace some of the energy value provided by Petersburg as a coal resource.

2) Convert

Convert Petersburg units 3 and 4 (1,052 MW) to natural gas in 2025 via existing pipeline on site

Based on extensive modeling, AES Indiana has determined that the conversion of the Company's remaining coal units from coal to natural gas provides customers with a strategy that can reliably meet capacity obligations in MISO Seasonal Resource Adequacy Construct. Additionally, converting these units provides customers economic savings.

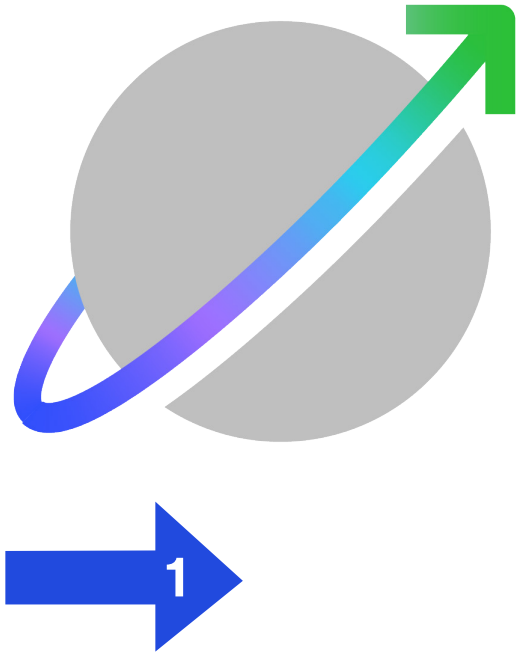
3) Monitor

Monitor emerging technologies for inclusion in future planning

Beyond the three to five-year Short Term Action Plan which includes the items mentioned above, AES Indiana intends to closely monitor new and emerging technologies that could serve as viable clean energy options for future IRP planning. More specifically, the Company is closely following progress made in new technologies like longer duration storage coupled with solar, clean hydrogen and small modular reactors that could serve as reliable capacity in future years. If these technologies are deemed cost effective and viable, the Company will include them as replacement options in future Integrated Resource Plans.

Note: Additionally, the plan includes a three-year DSM action plan that targets an annual average of 130,000 to 134,000 MWh of energy efficiency (approximately 1.1% of 2021 sales) and three-year total of 53 MW summer peak impacts of demand response.

Short Term Action Plan Best Serves Our Customers' Objectives



Reliability

Highest composite reliability score

Affordability

Saves AES Indiana customers more than $200M

Sustainability

Provides 68% reduction in carbon intensity in 2030 compared to 2018

aes Indiana

aes Indiana

IRP Objective

The objective of AES Indiana's IRP is to identify a preferred resource portfolio that provides safe, reliable, sustainable, and reasonable least cost energy service to AES Indiana customers, giving due consideration to potential risks and stakeholder input. The study period for this IRP is 2023 through 2042.

IRP Process

Every three years, AES Indiana submits an Integrated Resource Plan to the IURC in accordance with Indiana Administrative Code (IAC 170 4-7). The IRP describes expected electrical load requirements, discusses potential risks, possible future scenarios and defines a preferred resource portfolio to meet those requirements over a forward-looking 20-year study period based upon analysis of all factors. This process includes extensive collaboration with stakeholders known as a "Public Advisory" process.

Public Advisory Process

AES Indiana hosted five (5) public advisory meetings and five (5) technical meetings to discuss the IRP process with interested parties and solicit feedback from stakeholders. The meeting agendas from each meeting are highlighted here.

For all meeting notes, presentations and other materials, see AES Indiana's IRP webpage at aesindiana.com/irp. AES Indiana incorporated feedback from stakeholders to shape the scenarios, develop metrics, and clarify the data presented.

Stakeholder and public input process

Public advisory meetings were held virtually via Microsoft Teams and attended by stakeholders, AES Indiana employees and members of the public.

Public Advisory Meeting #1
January 24, 2021

Topics covered: 2019 IRP recap, 2022 IRP planning and model overview, overview of existing resources, baseline energy and load forecast, electric vehicle and solar PV forecasts, introduction to demand-side management market potential study.

Public Advisory Meeting #2
April 12, 2021

Topics covered: load scenarios, market potential study results and demand-side management resources, replacement resource assumptions, scenario framework and portfolio matrix.

Public Advisory Meeting #3
June 27, 2021

Topics covered: stakeholder presentations, 2022 All-Source RFP and replacement resource cost update, commodity forecasts, RTO reliability planning, modeling reliability assumptions, reliability analysis, portfolio metrics and scorecard, distribution system planning.

Public Advisory Meeting #4
September 19, 2021

Topics covered: preliminary model results, risk analysis, preliminary scorecard results.

Public Advisory Meeting #5
October 31, 2021

Topics covered: Summary of 2022 short term action plan, analysis of preferred resource portfolio and alternatives.

2022 IRP Framework

AES Indiana utilized a portfolio matrix scenario framework that evaluated five predefined strategies and one optimization (allowed the planning model to economically select a portfolio without a strategy predefined).

The five predefined strategies included:

1. Operating the remaining Petersburg Generating Station (Petersburg) coal units 3 and 4 on coal through the remainder of its useful life
2. Converting Petersburg units 3 and 4 to natural gas in 2025
3. Retiring Petersburg Unit 3 in 2026 and leaving Petersburg Unit 4 on coal through the remainder of its useful life
4. Retiring both Petersburg Units 3 and 4 in 2026 and 2028
5. Retiring both Petersburg units 3 and 4 in 2026 and 2028 and replacing them with wind solar and storage

These five strategies and sixth optimization were optimized across four different scenarios that included a range of environmental policy assumptions:

1. No Environmental Action – included relaxed environmental regulation and no subsidies for renewables
2. Current Trends/Reference Case – included the most likely future environmental regulations including renewable subsidies contained in the Inflation Reduction Act
3. Aggressive Environmental – included a carbon tax starting in 2028 at $19.47/ton
4. Decarbonized Economy – included a Renewable Portfolio Standard that requires utilities to transition supplying most of the energy from clean energy sources by 2042

Portfolio matrix

Results from the scenario analysis show that converting Petersburg to natural gas in 2025 is the reasonable least cost strategy for customers – particularly in the Current Trends/Reference Case scenario which provides the most likely representation of the future.

	Scenarios			
Strategies	No Environmental Action	Current Trends (Reference Case)	Aggressive Environmental	Decarbonized Economy
1: No Early Retirement	$7,111	$9,572	$11,349	$9,917
2: Petersburg Conversion (est. 2025)	$6,621	$9,330	$11,181	$9,546
3: One Petersburg Unit Retires (2026)	$7,462	$9,773	$11,470	$9,955
4: Both Petersburg Units Retire (2026 & 2028)	$7,425	$9,618	$11,145	$9,923
5: Clean Energy Strategy	$9,211	$9,711	$11,184	$9,690
6: Encompass Optimization	$6,610	$9,262	$10,994	$9,572

LEAST COST

HIGHEST COST

20-Year PVRR (2023$MM, 2023-2042)

Note: Candidate Portfolios evaluated on the IRP Scorecard

aes Indiana

Scorecard Evaluation & Results Summary

AES Indiana conducted a robust Scorecard Evaluation of the Current Trends/Reference Case strategies (Candidate Portfolios) to select the Preferred Resource Portfolio and Short Term Action Plan.

In the Scorecard Evaluation, the Company evaluated the Candidate Portfolios using five categories that address critical utility planning considerations. These include the Five Pillars of Electric Service as defined by the 21st Century Energy Policy Development Task Force of Affordability, Sustainability, Reliability, Resiliency and Stability. Additionally, the Company included metric categories for Risks & Opportunities and Economic Impacts.

Strategies	Affordability	Environmental Sustainability						Reliability, Stability & Resiliency	Risk & Opportunity							Economic Impact	
	20-yr PVRR	CO2 Emissions	SO2 Emissions	NOX Emissions	Water Use	Coal Combustion Products (CCP)	Clean Energy Progress	Reliability Score	Environmental Policy Opportunity	Environmental Policy Risk	General Cost: Opportunity **Stochastic Analysis**	General Cost: Risk **Stochastic Analysis**	Market Exposure	Renewable Capital Cost Opportunity (Low Cost)	Renewable Capital Cost Risk (High Cost)	Employees (+/-)	Property Taxes
	Present Value of Revenue Requirements ($000,000)	Total portfolio CO2 Emissions (mmtons)	Total portfolio SO2 Emissions (tons)	Total portfolio NOx Emissions (tons)	Water Use (mmgal)	CCP (tons)	% Renewable Energy in 2032	Composite score from Reliability Analysis	Lowest PVRR across policy scenarios ($000,000)	Highest PVRR across policy scenarios ($000,000)	P5 [Mean - P5]	P95 [P95 - Mean]	20-year avg sales + purchases (GWh)	Portfolio PVRR w/ low renewable cost ($000,000)	Portfolio PVRR w/ high renewable cost ($000,000)	Total FTEs associated with generation	Total amount of property tax paid from AES IN assets ($000,000)
1	$9,572	101.9	64,991	45,605	36.7	6,611	45%	7.95	$8,860	$11,259	$9,271 [-$264]	$9,840 [$305]	5,291	$9,080	$10,157	222	$154
2	$9,330	72.5	13,513	22,146	7.9	1,417	55%	7.95	$8,564	$11,329	$9,030 [-$334]	$9,746 [$382]	5,222	$8,763	$9,999	99	$193
3	$9,773	88.1	45,544	42,042	26.7	4,813	52%	7.86	$9,288	$11,462	$9,608 [-$294]	$10,237 [$336]	5,737	$9,244	$10,406	195	$204
4	$9,618	79.5	25,649	24,932	15.0	2,700	48%	7.90	$9,135	$11,392	$9,295 [-$287]	$9,903 [$321]	5,512	$9,104	$10,249	74	$242
5	$9,711	69.8	25,383	24,881	14.8	2,676	64%	7.57	$9,590	$11,275	$9,447 [-$280]	$10,039 [$312]	6,088	$9,017	$10,442	55	$256
6	$9,262	76.1	18,622	25,645	10.9	1,970	54%	7.95	$8,517	$11,226	$8,952 [-$280]	$9,629 [$352]	5,136	$8,730	$9,909	88	$185

1: No Early Retirement	2: Pete Refuel to 100% Gas (est. 2025)	3: One Pete Unit Retires (2026)	4: Both Pete Units Retire (2026 & 2028)	5: Clean Energy Strategy	6: Encompass Optimization

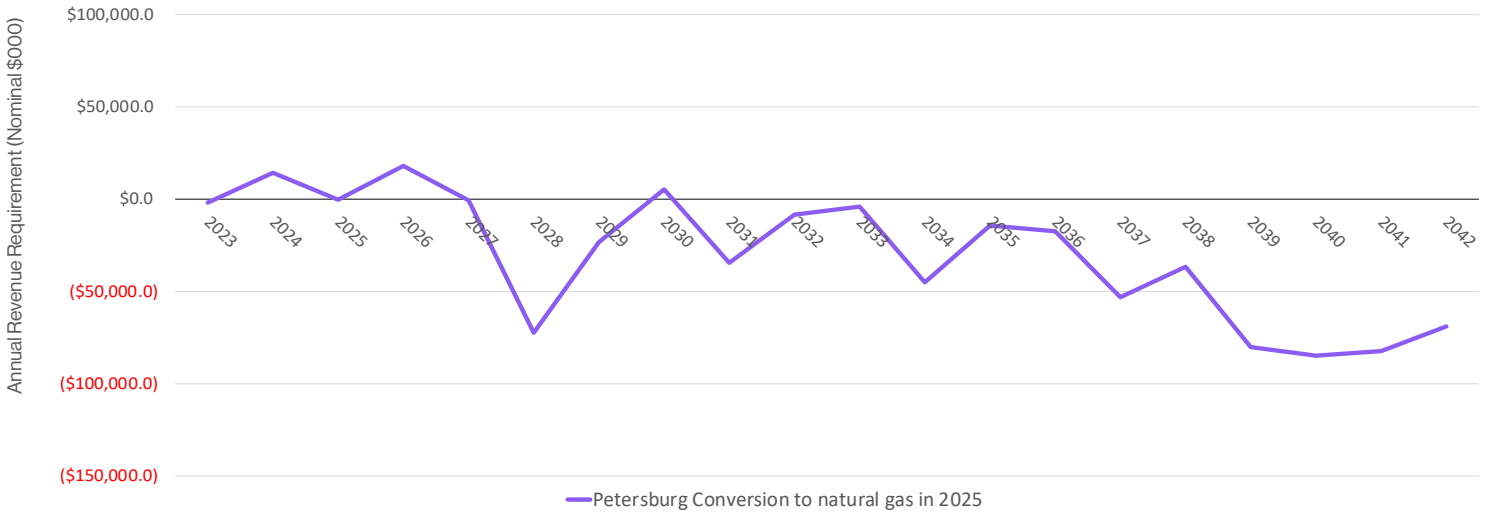
HIGHEST COST — LEAST COST

aes Indiana

Affordability

The Scorecard Evaluation demonstrated that the Petersburg conversion provides the most affordable strategy for AES Indiana customers by exhibiting the lowest 20-year Present Value of Revenue Requirements (PVRR) and lowest annual revenue requirement volatility over the 20-year planning period.

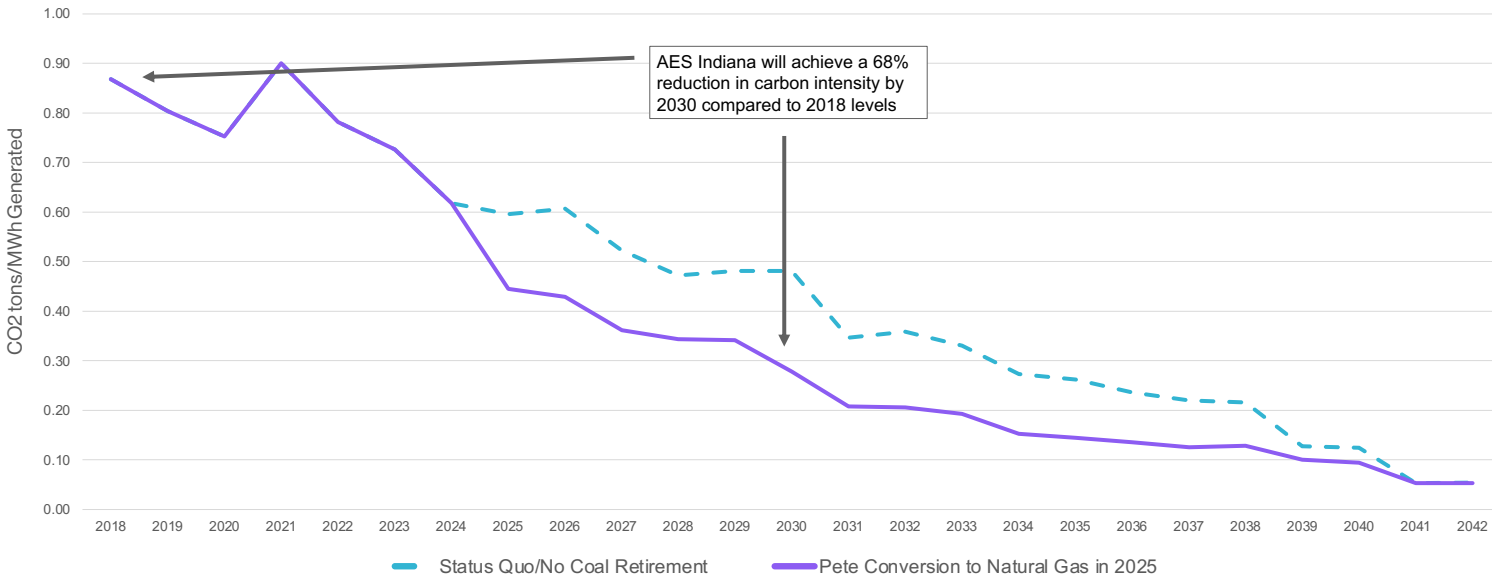
Annual revenue requirement of the Petersburg Conversion compared to the operation of Petersburg on coal from 2023-2042



Sustainability

Additionally, the Scorecard Evaluation demonstrated that the Petersburg conversion provides the lowest SO2, NOX, water use and coal production product emissions and the second lowest CO2 emissions over the 20-year planning period making it the best performing strategy in the Sustainability category. The chart at right shows that the Petersburg conversion will provide a 69% reduction in CO2 emission by 2030 compared to 2018 levels.

Carbon Intensity of the Petersburg Conversion strategy over the Planning Period (CO2/MWh)



Reliability, Resiliency and Stability

To measure Reliability in the Scorecard Evaluation, AES Indiana consulted with Quanta Technology to perform a reliability analysis of the Candidate Portfolios.

Quanta evaluated nine different reliability categories including Energy Adequacy, Operational Flexibility and Frequency Support, Short Circuit Strength Requirement, Power Quality (Flicker), Blackstart, Dynamic VAR Support, Dispatchability and Automatic Generation Control, Predictability and Firmness of Supply, and Geographic Location Relative to Load (resilience). Quanta created a Composite reliability score from these nine categories to evaluate the Candidate Portfolios.

Their analysis demonstrated that the Petersburg conversion performed the best among the Candidate Portfolios by maintaining Petersburg as a dispatchable resource.

Risk & Opportunities

The Scorecard also evaluated the Candidate Portfolios for the Risk & Opportunity associated with changing environmental policies, volatile commodities, market interaction & exposure, and fluctuating renewable resource costs. This evaluation included a stochastic analysis that ran 100 simulations of power prices, gas prices, coal prices, load, and renewable generation.

The Petersburg conversion performed the best overall across the Risk & Opportunity metrics that were considered.

Economic Impacts

Finally, the Scorecard considered the Economic Impacts from the Candidate Portfolios.

The evaluation determined that the Petersburg conversion will continue to contribute economically to the Petersburg community by leveraging existing infrastructure and maintaining operation of the Petersburg Generating Station as a gas resource and hub for renewable resources.

Scorecard Evaluation & Results Summary

aes Indiana

2022 Integrated Resource Plan (IRP): Non-Technical Summary

AES Indiana
One Monument Circle, Indianapolis, Indiana 46204

aesindiana.com