

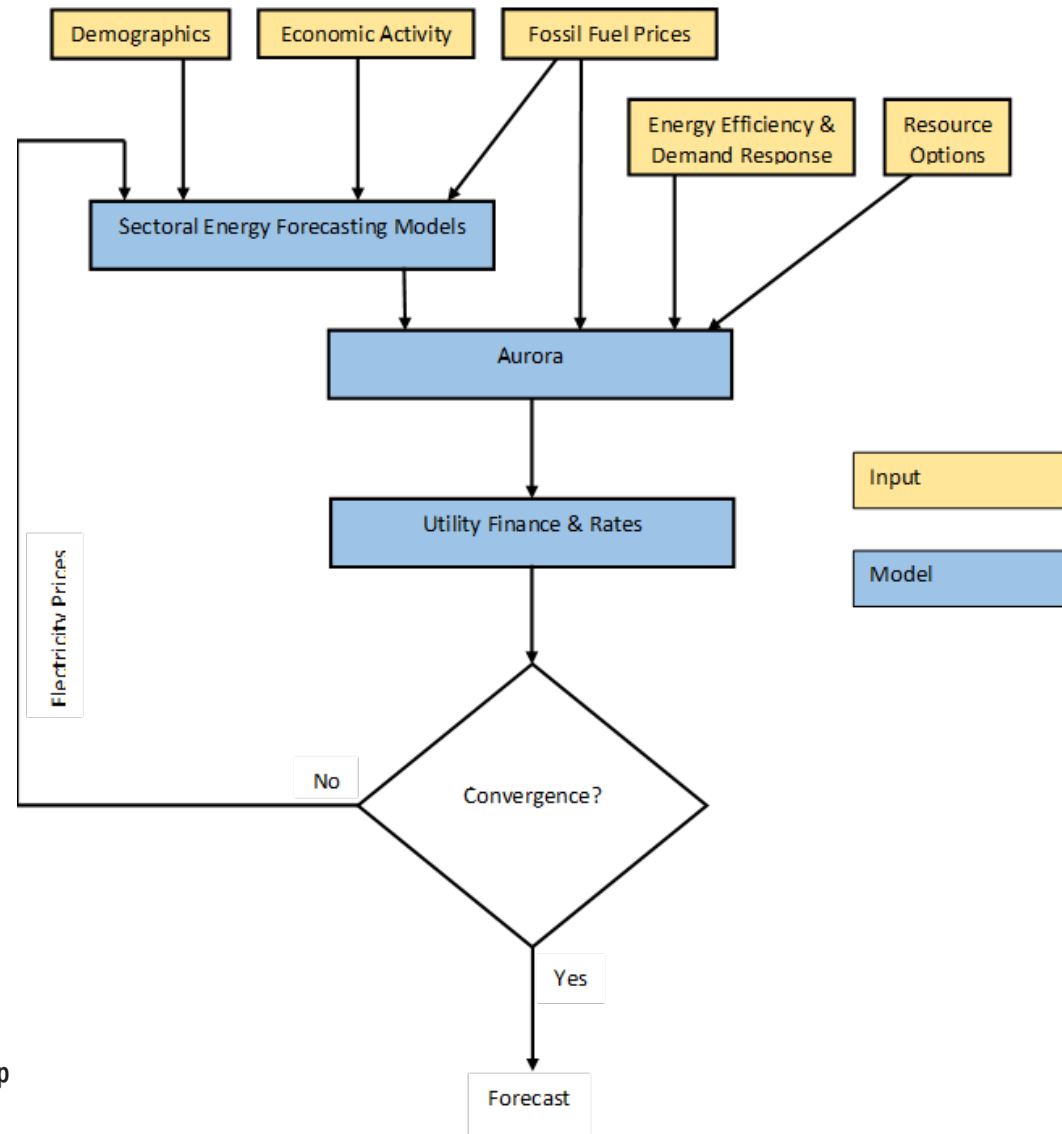
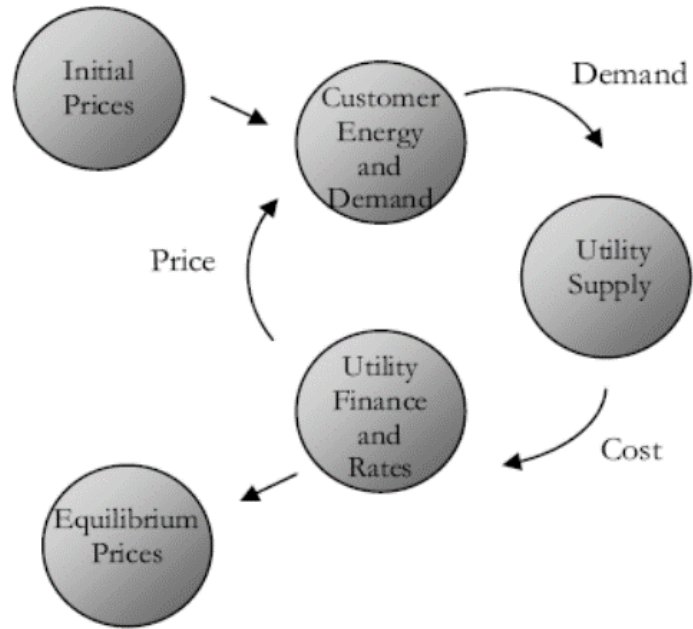
INDIANA ELECTRICITY PROJECTIONS: THE 2023 FORECAST

State Utility Forecasting Group (SUFG)

SUFG Modeling System

- The SUFG modeling system consists of 3 major components
 - end-use and econometric models that forecast electricity usage
 - a model that finds the lowest cost means of meeting the future usage (Aurora)
 - models that use the cost of serving loads to project future prices

SUFG Forecasting Modeling System



Modeling System Changes

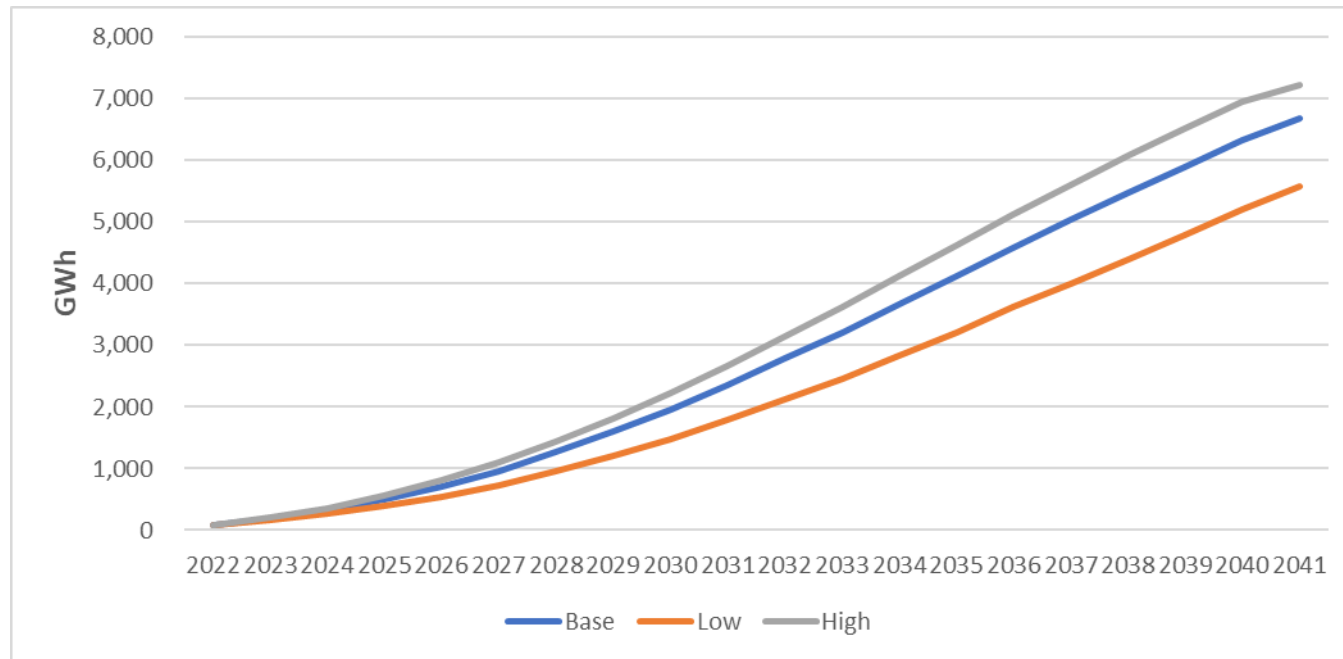
New in this forecast

- Seasonal reserve requirements
 - State seasonal requirements determined from utility requirements adjusted for historical load diversity

- Electric vehicle specifically modeled
 - Based on EIA projections, accounting for utility-level penetration levels relative to the nation

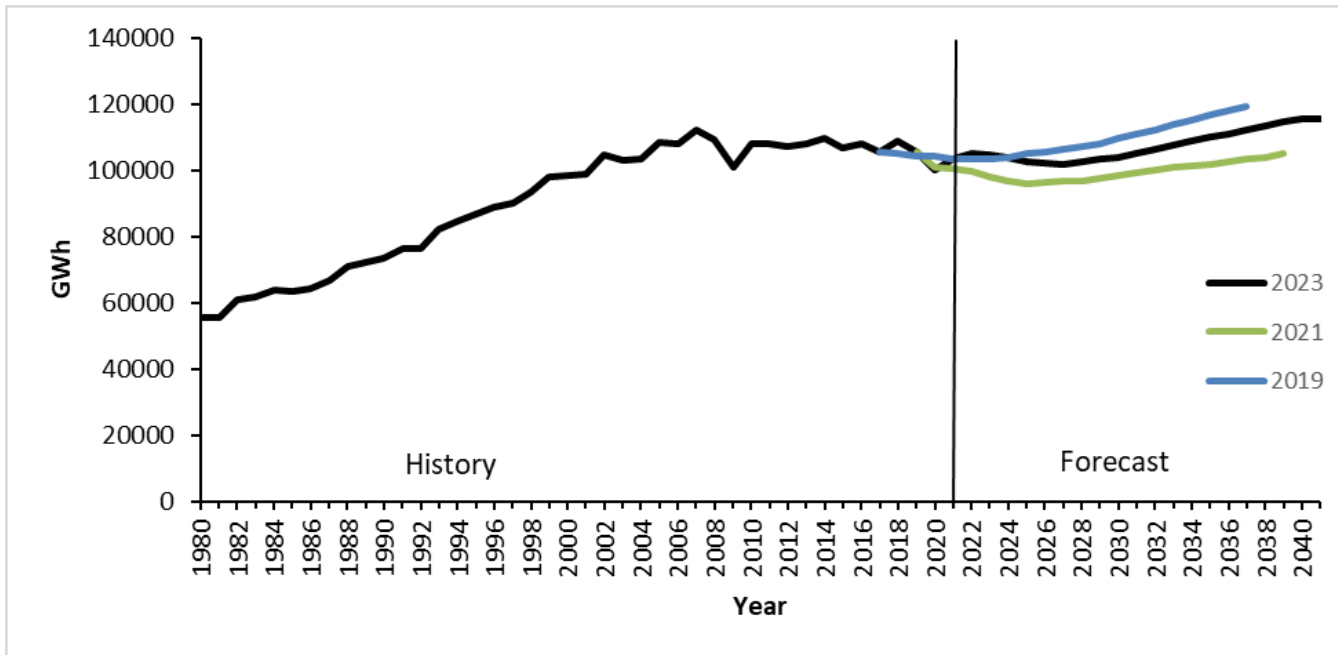
- Tax credits associated with the Inflation Reduction Act of 2022
 - Investment and production tax credits available through 2032
 - Eligible technologies expand to include energy storage and nuclear

Incremental Electric Vehicle Projections



- EV penetration based on EIA 2023 Annual Energy Outlook, adjusted for current state penetration
 - Low case assumes Indiana does not catch up to the national average
 - Base case assumes Indiana catches up to the national average in 2050
 - High case assumes Indiana catches up to the national average in 2040
- Load shapes developed using NREL EVPro tool

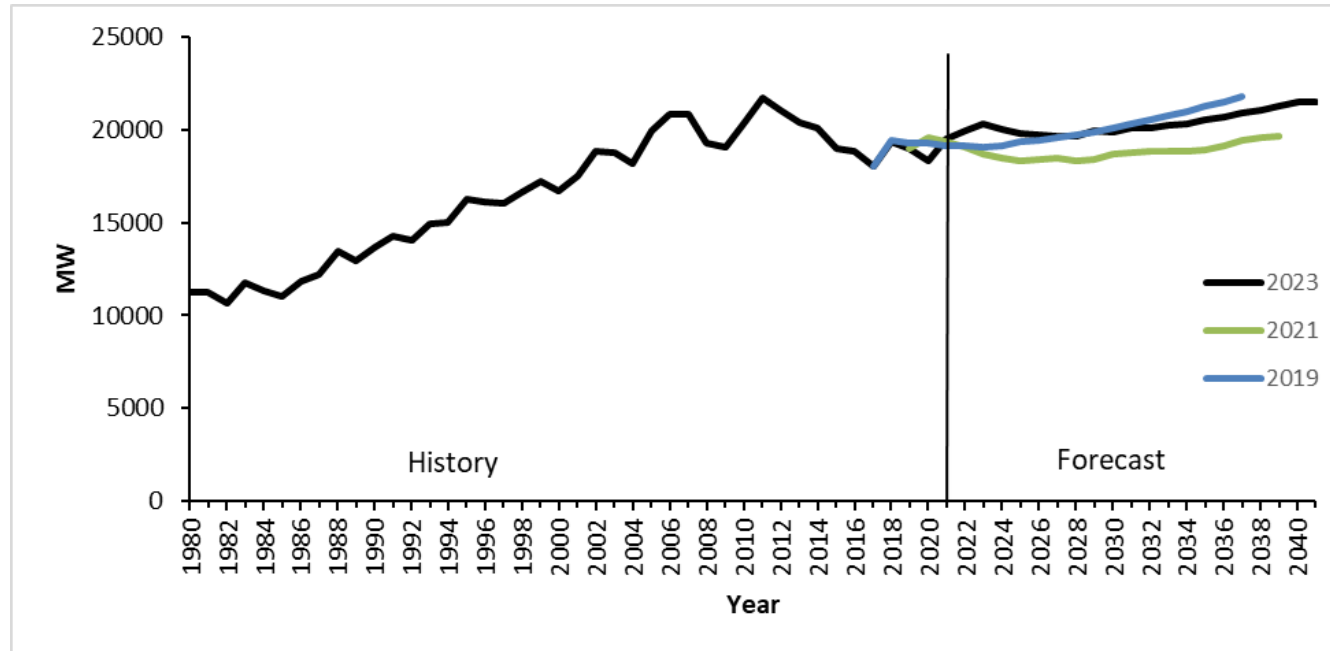
Indiana Electricity Requirements



- Retail sales by investor owned and not-for-profit utilities
- Includes estimated transmission and distribution losses
- Growth rates

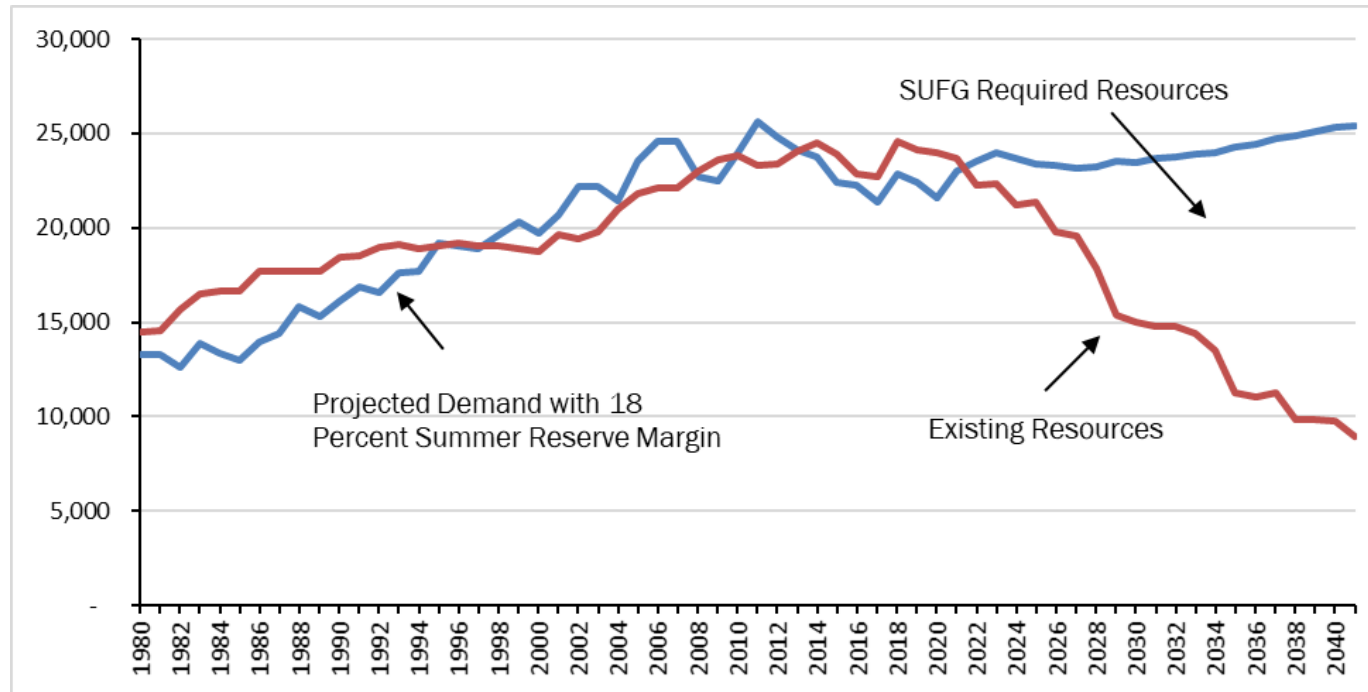
• 2023 forecast: 0.51% 2021 forecast: 0.21% 2019 forecast: 0.67%

Indiana Peak Demand Requirements



- Prior to 2017, peak demand projections were reduced by the amount of demand response
 - now, DR is treated as a resource
- Growth rates
 - 2023 forecast: 0.40%
 - 2021 forecast: 0.02%
 - 2019 forecast: 0.60%

Indiana Resource Requirements



- Resources may be provided by conservation measures, contractual purchases, purchases of existing assets, or new construction
- Existing resources are adjusted into the future for retirements, contract expirations, and IURC approved new resources

Indiana Resource Plan in MW (Summer Season)

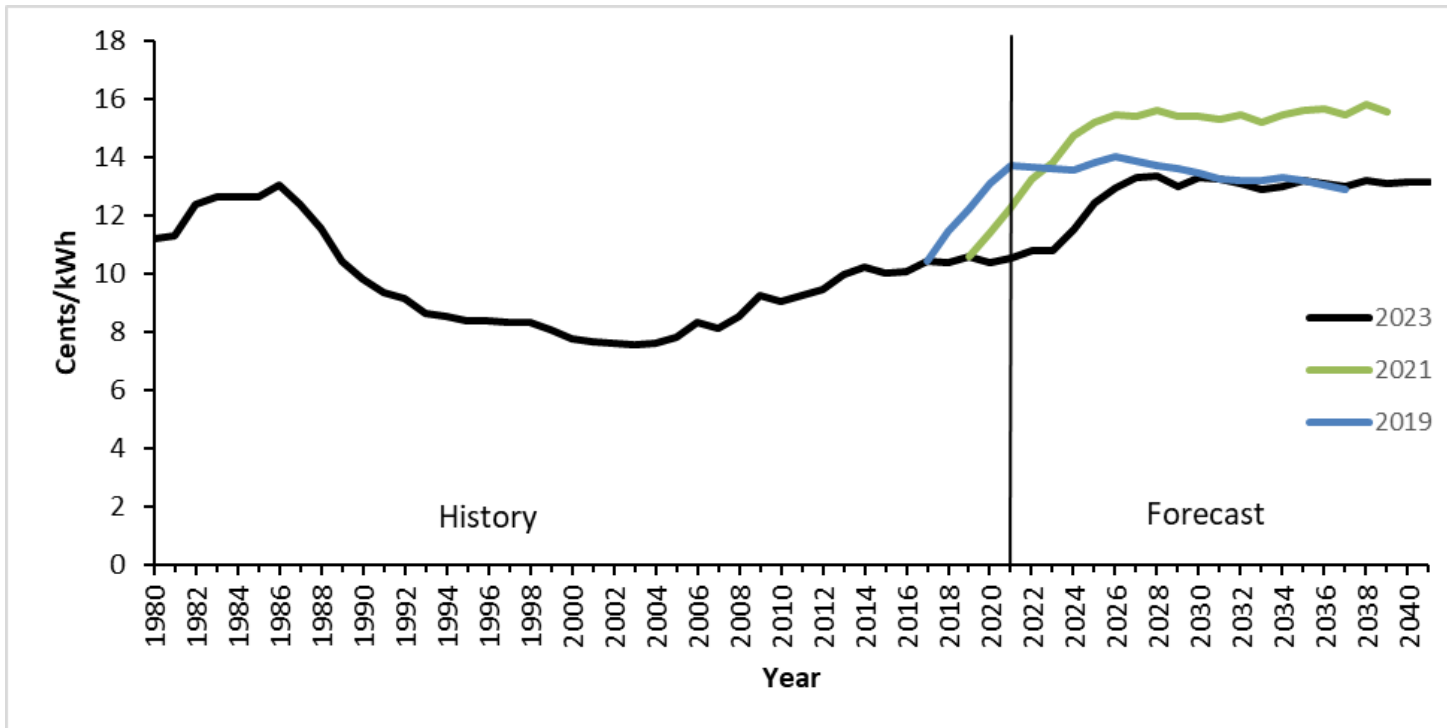
Year	Peak Demand ¹	Existing/ Approved Resources ²	Incremental Change in Resources ³	Required Additional Resources ⁴	Additional Selected Resources ⁵						Footnotes
					CT	CC	Wind	Solar	Battery	Total	
2022	19,955	22,284		1,261	0	1,415	0	0	0	1,415	1 Peak demand reflects utility-sponsored energy efficiency programs but is not adjusted for demand response loads 2 Existing/approved resources include installed capacity plus approved new capacity plus demand response plus firm purchases minus firm sales. 3 Incremental change in resources is the change in existing/approved resources from the previous year. The change is due to new, approved capacity becoming operational, retirements of existing capacity, changes in available demand response loads, and changes in firm purchases and sales. 4 Required additional resources represent the amount of additional resources that are needed to meet the target statewide reserve margin. 5 Additional selected resources are the cumulative amount of additional resources chosen by the optimization model to meet future demand at least cost.
2023	20,317	22,302	19	1,670	0	2,345	0	0	0	2,345	
2024	20,051	21,198	-1,104	2,458	0	2,345	3,547	0	0	5,893	
2025	19,847	21,374	176	2,038	0	2,345	6,076	0	353	8,774	
2026	19,742	19,766	-1,608	3,522	0	2,345	6,693	0	824	9,862	
2027	19,649	19,559	-207	3,619	0	3,363	6,819	0	824	11,006	
2028	19,679	17,876	-1,683	5,336	0	4,811	8,072	0	824	13,707	
2029	19,933	15,354	-2,523	8,159	0	5,541	8,928	304	1,397	16,171	
2030	19,889	15,034	-320	8,427	0	5,541	8,928	9,805	1,604	25,879	
2031	20,086	14,817	-217	8,877	0	5,541	8,942	10,343	1,604	26,430	
2032	20,112	14,804	-13	8,920	0	5,952	8,942	10,773	1,630	27,297	
2033	20,293	14,389	-416	9,549	0	6,461	8,942	10,773	1,632	27,808	
2034	20,356	13,503	-886	10,509	0	7,284	8,942	10,773	1,652	28,651	
2035	20,574	11,294	-2,209	12,974	0	9,939	8,942	11,033	1,652	31,566	
2036	20,722	11,042	-252	13,401	0	10,255	8,942	11,095	1,652	31,944	
2037	20,955	11,299	258	13,419	0	10,490	8,942	11,180	1,652	32,264	
2038	21,091	9,845	-1,454	15,033	0	12,220	8,942	11,315	1,652	34,129	
2039	21,312	9,838	-7	15,301	0	12,471	8,942	11,455	1,652	34,520	
2040	21,489	9,810	-29	15,538	0	12,608	8,942	11,724	1,652	34,926	
2041	21,532	8,965	-844	16,434	0	13,356	12,000	11,735	1,864	38,955	

Resources Selected by the Aurora Model

Mix of natural gas, wind, solar and battery storage

- Additional resources in the first half of the forecast driven primarily by the need to replace retiring resources
- In the second half, additional resources are driven by both retirements of existing resources and growth in demand
- In most years, the model adds more resources than are strictly needed to meet reserve requirements
 - model adds wind and solar while tax credits are available
- The existing/approved resources were finalized during the summer for modeling purposes and does not reflect changes since then
 - Recent approvals of certificates of need and purchases (over 1000 MW of wind and solar to be added from 2024 to 2026)
 - Delay of the retirement of the Gibson 5 coal unit from 2025 to 2028/2029
 - These would reduce or defer some of the resource needs and additions

Indiana Real Price Projections (2021 \$)



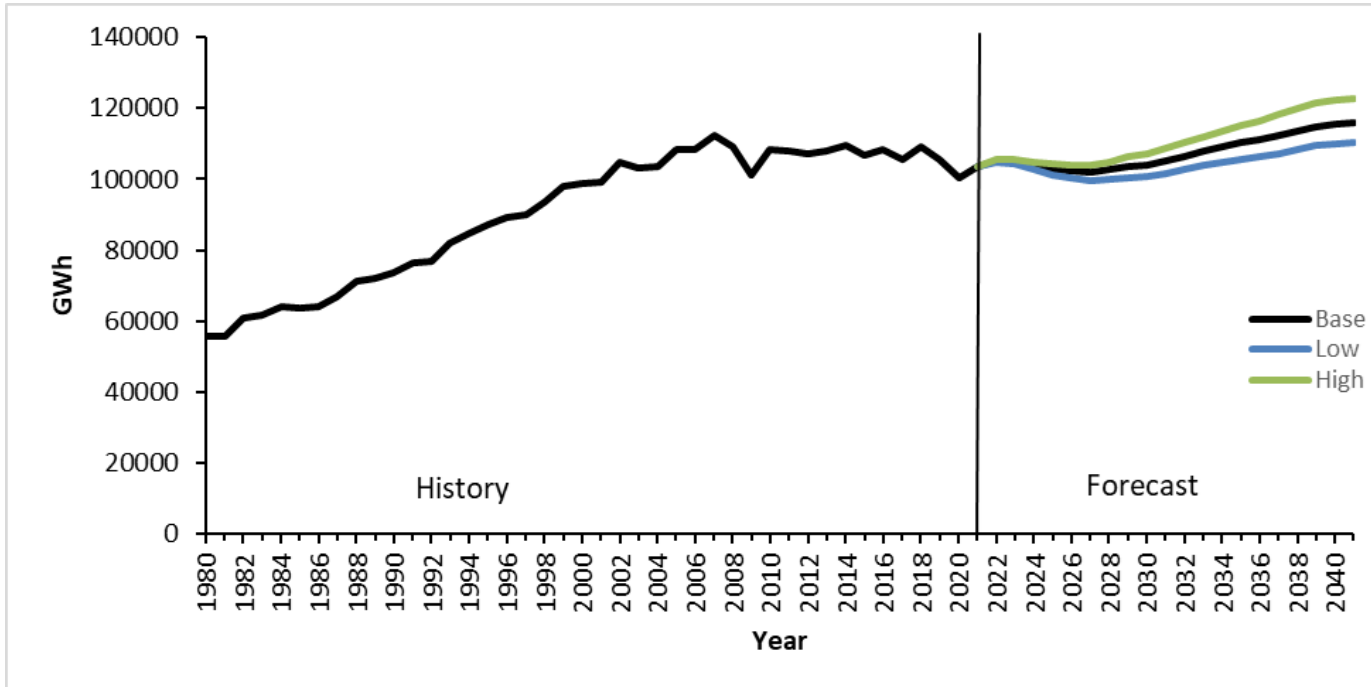
- Effect of inflation removed
- Includes the cost of new resources
- Includes the cost of T&D upgrades

Price Projections

While price increases are less than those in last forecast, they are still significant

- Real prices are projected to increase by 27% from 2021 to 2027 before leveling off
 - 2021 forecast had a 46% increase from 2019 to 2026
- Short-term increase is driven by capital investment in transmission, distribution, and new generation
- Prices affect sales and vice versa
 - Increases in prices cause sales to decrease, which can cause prices to increase further
 - The sales forecast is higher than the previous one while the price forecast is lower

Alternative Scenarios



- Any forecast contains uncertainty
- CEMR provides alternative low and high growth econometric forecasts
- Low and high growth scenarios are intended to give a plausible bound to uncertainty

Residential Sector Selected Statistics

Dwelling Type	Current Share of Total Households (%)	Current Share of Electricity Sales (%)	Forecast Growth in Number of Households (%)	Forecast Growth in Electricity Intensity (%)	Forecast Growth in Electricity Sales (%)
Single Family	78	84	1.18	-0.29	0.89
Multi -Family	18	11	1.21	-0.22	0.99
Mobile Home	4	5	1.15	-0.54	0.61
Total	100	100	1.19	-0.30	0.89

Numbers are for IOUs before DSM adjustments

Residential Growth Rates (Percent)

Forecast	No. of Customers	Without DSM		With DSM	
		Utilization	Sales Growth	Utilization	Sales Growth
2023 SUFG Base (2022-2041)	1.19	0.43	1.62	0.09	1.28
2021 SUFG Base (2020-2039)	1.14	-0.22	0.92	-0.53	0.61
2019 SUFG Base (2018&2037)	1.09	-0.41	0.68	-0.64	0.45

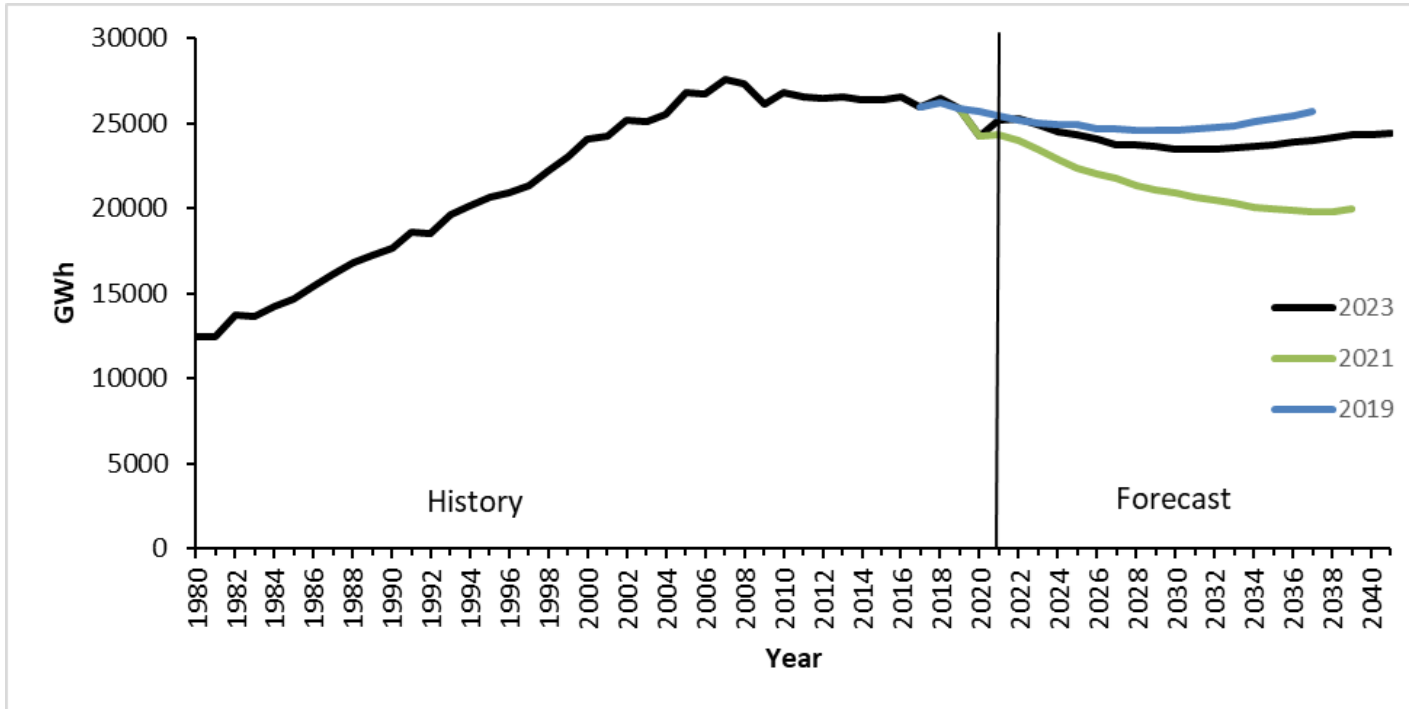
Commercial Sector Selected Statistics

Building Type	Current Share of Square Footage (%)	Current Share of Electricity Sales (%)	Forecast Growth in Square Footage (%)	Forecast Growth in Electricity Intensity (%)	Forecast Growth in Electricity Sales (%)
Office	15	16	0.87	-0.49	0.37
Retail	19	22	-0.38	-0.84	-1.22
Grocery	1	4	-0.39	-1.31	-1.69
Warehouse	18	7	-0.47	-0.73	-1.20
Assembly & Religious	13	9	0.49	-0.53	-0.05
Educational	10	7	1.74	-0.53	1.20
Restaurant	3	9	0.72	-0.88	-0.17
Hospital & Nursing Home	5	10	1.60	-0.97	0.61
Hotel	3	3	0.72	-0.44	0.28
College	3	3	0.27	-0.48	-0.21
Government	9	8	0.73	-0.52	0.20
Miscellaneous	1	2	0.05	-0.51	-0.45
Total	100	100	0.45	-0.61	-0.17

Commercial Growth Rates (Percent)

Forecast	Electric Energy-weighted Floor Space	Without DSM		With DSM	
		Utilization	Sales Growth	Utilization	Sales Growth
2023 SUFG Base (2022-2041)	0.53	-0.20	0.33	-0.72	-0.19
2021 SUFG Base (2020-2039)	0.90	-0.75	0.15	-1.92	-1.02
2019 SUFG Base (2018-2037)	0.78	-0.44	0.34	-0.88	-0.10

Commercial Electricity Sales



- Estimated from:

- floor space inventory end use intensity employment energy prices

- Growth rates

- 2023 forecast: -0.19% 2021 forecast: -1.02% 2019 forecast: -0.10%

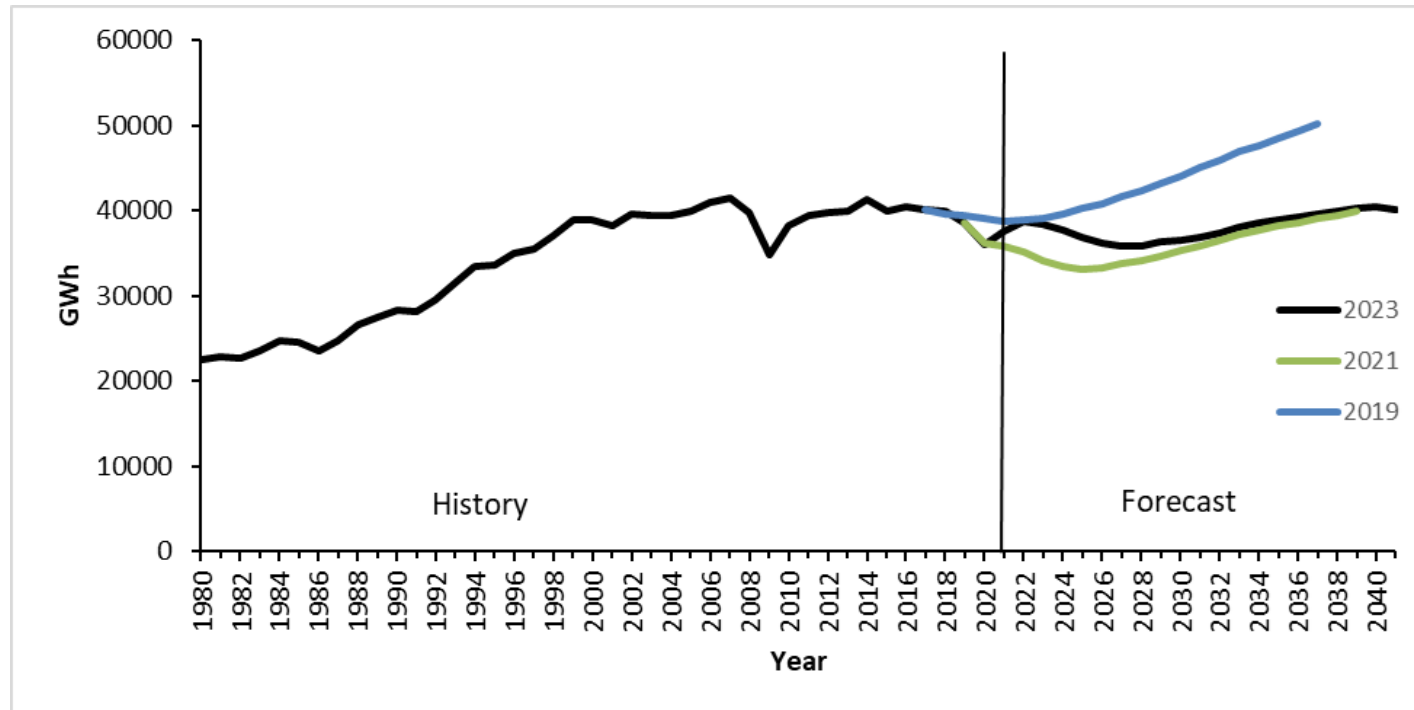
Industrial Sector Selected Statistics

SIC	Name	Current Share of GSP (%)	Current Share of Electricity Sales (%)	Current Intensity	Forecast Growth in GSP Originating by Sector (%)	Forecast Growth in Electricity Intensity by Sector (%)	Forecast Growth in Electricity Sales by Sector (%)
20	Food & Kindred Products	2.97	6.47	0.69	0.84	-0.99	-0.15
24	Lumber & Wood Products	1.65	0.81	0.15	0.84	-0.82	0.03
25	Furniture & Fixtures	3.06	0.52	0.05	1.06	-1.19	-0.13
26	Paper & Allied Products	1.14	3.54	0.97	0.84	-0.86	-0.01
27	Printing & Publishing	2.16	0.96	0.14	0.84	-1.25	-0.41
28	Chemicals & Allied Products	10.29	19.59	0.60	0.84	-1.17	-0.33
30	Rubber & Misc. Plastic Products	2.85	6.15	0.68	1.93	-1.05	0.88
32	Stone, Clay, & Glass Products	3.10	5.27	0.53	1.06	-0.96	0.11
33	Primary Metal Products	10.39	29.45	0.89	-2.20	1.55	-0.65
34	Fabricated Metal Products	5.17	4.45	0.27	0.77	-1.14	-0.37
35	Industrial Machinery & Equipment	7.33	4.39	0.19	1.32	-0.64	0.68
36	Electronic & Electric Equipment	4.39	1.81	0.13	-0.16	-0.57	-0.73
37	Transportation Equipment	35.63	7.97	0.07	2.26	-1.89	0.38
38	Instruments & Related Products	4.16	1.29	0.10	1.06	-1.44	-0.38
39	Miscellaneous Manufacturing	2.25	1.15	0.16	1.06	-1.81	-0.75
	Total Manufacturing	100.00	100.00	0.31	1.24	-0.99	0.25

Industrial Growth Rates (Percent)

Forecast	Output	Mix Effects	Electric Energy-weighted Output	Without DSM		With DSM	
				Intensity	Sales Growth	Intensity	Sales Growth
2023 SUFG Base (2022-2041)	1.24	-0.59	0.65	-0.40	0.25	-0.45	0.20
2021 SUFG Base (2020-2039)	1.31	-0.70	0.61	-0.08	0.53	-0.08	0.53
2019 SUFG Base (2018-2037)	1.35	-0.71	0.64	0.62	1.26	0.62	1.26

Industrial Electricity Sales



- Estimated from:
 - GSP by industry
 - energy prices
- Growth rates
 - 2023 forecast: 0.20%
 - 2021 forecast: 0.53%
 - 2019 forecast: 1.26%