

**Office of Utility Consumer Counselor
Comments on Duke Energy Indiana's
2021 Integrated Resource Plan**

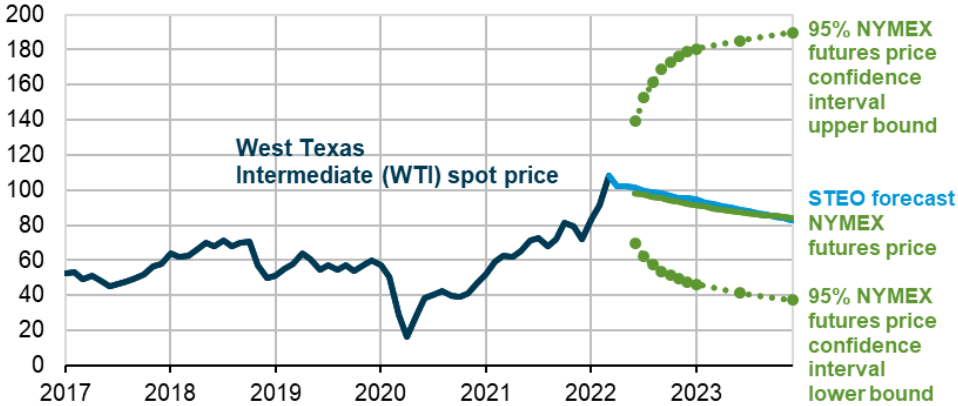
Demand Response (DR) Impact on Load

Refer to Table D-2, MW LOAD IMPACTS OF DR PROGRAMS, on p. 226 of Duke Energy Indiana's (DEI) 2021 Integrated Resource Plan (IRP). The amounts listed under the "Power Manager" column do not match the amounts in DEI's most recent Demand Side Management (DSM) Plan filing, Cause No. 43955 DSM-8. In that cause, DEI projected 86.75, 91.34, and 96.90 MW of DR for 2021, 2022, and 2023, respectively. These amounts include Power Manager for Residential and Business. It is unclear how DEI derived the amounts shown in Table D-2 (35 MW, 35 MW and 36 MW for years 2021-2023, respectively), and why the amounts are significantly lower than those shown in the most recently approved DSM Plan. This discrepancy could result in an understatement of DR potential in DEI's IRP modeling and lead to selecting more resources than necessary.

Crude Oil Price Forecast

Refer to SEC 5(B)(1-3), AN EVALUATION OF PLAUSIBLE RISK BOUNDARIES OR ALTERNATIVE FORECASTS OF PEAK DEMAND AND ENERGY USE, on p. 161 of DEI's 2021 IRP. The West Texas Intermediate (WTI) crude oil price used in DEI's baseline forecast, \$40 to \$60 per barrel through the end of the 2022, does not align with actual prices. Currently, crude oil prices are significantly higher than the amount DEI used in its modeling. During February 2022, the price per barrel hovered around \$90. This is more than double DEI's \$40 base amount. Although, it was most likely unknown how drastically the price would increase at the time the IRP inputs were decided, by mid-2021 the price per barrel was already above \$60 per barrel, and DEI should have adjusted accordingly. Costs of fuel may be significantly higher than DEI forecasted resulting in a potentially distorted forecast. WTI price continues to fluctuate from approximately \$90 per barrel in January 2022 to approximately \$110 per barrel in April 2022. The price fluctuation is significantly greater than the price range DEI identified. Commodity indices for non-ferrous metals wire and cable, steel, transformers, and regulators have increased by 30% since mid-2021. The graphs below depict fluctuations in oil and commodities.

West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals
dollars per barrel



Note: Confidence interval derived from options market information for the five trading days ending Apr 7, 2022. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, April 2022, CME Group, Bloomberg, L.P., and Refinitiv an LSEG Business



Retrieved: <https://www.eia.gov/outlooks/steo/report/prices.php> 4/28/2022

Data extracted on: April 27, 2022 (10:40:15 AM)

PPI Commodity Data

12-Month Percent Change

Series Id: WPU1026

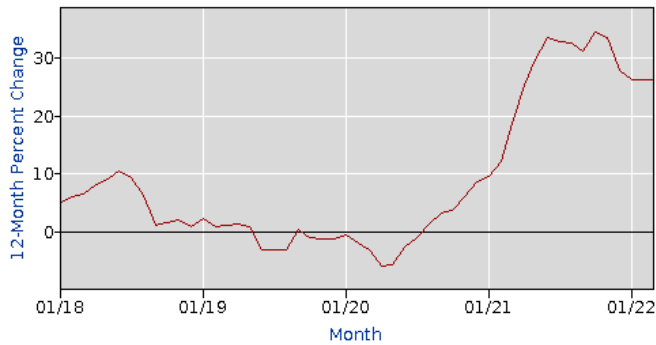
Not Seasonally Adjusted

Series Title: PPI Commodity data for Metals and metal products-Nonferrous wire and cable, not seasonally adjusted

Group: Metals and metal products

Item: Nonferrous wire and cable

Base Date: 198200



Retrieved: <https://data.bls.gov/pdq/SurveyOutputServlet>, 4/27/2022 search series ID WPU1026

Databases, Tables & Calculators by Subject

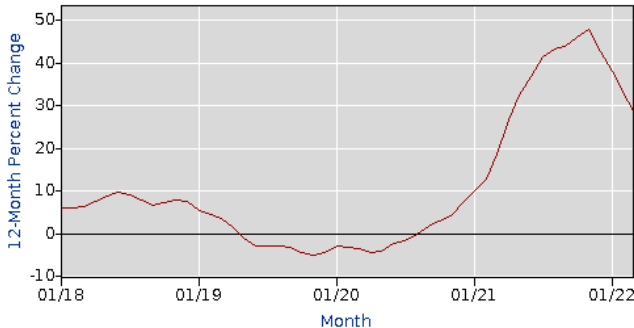
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 include graphs include annual averages [More Formatting Options](#) →

Data extracted on: April 27, 2022 (10:41:50 AM)

PPI Commodity Data

12-Month Percent Change

Series Id: WPU10
Not Seasonally Adjusted
Series Title: PPI Commodity data for Metals and metal products, not seasonally adjusted
Group: Metals and metal products
Item: Metals and metal products
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Databases, Tables & Calculators by Subject

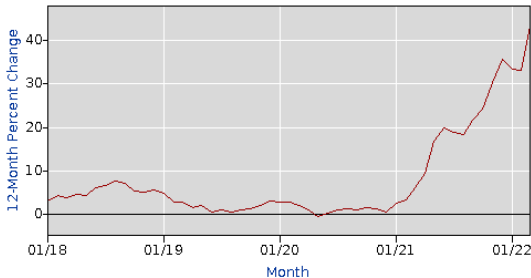
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Data extracted on: April 27, 2022 (10:45:33 AM)

PPI Commodity Data

12-Month Percent Change

Series Id: WPU117409
Not Seasonally Adjusted
Series Title: PPI Commodity data for Machinery and equipment-Power and distribution transformers, except parts, not seasonally adjusted
Group: Machinery and equipment
Item: Power and distribution transformers, except parts
Base Date: 199912



Retrieved: <https://data.bls.gov/pdq/SurveyOutputServlet>, 4/27/2022, search series ID WPU117409

Current WTI crude oil and commodity prices coupled with inflation could indicate changed preferred portfolio outcomes in DEI's IRP.

U.S. Department of Commerce Investigation Regarding Solar Cells & Panels

The U.S. Department of Commerce announced it is investigating whether imported solar panels assembled in Cambodia, Malaysia, Thailand, and Vietnam are avoiding duties designed to limit solar cells and panels imported from China (in violation of anti-dumping rules). This announcement has already had impacts on current and future solar developments. Although the DOC indicated there would be no additional duties imposed at this time, it will consider tariffs on the solar industry based on the results of its investigation. In addition to potential cost increases, the investigation probe brings uncertainty and delays to solar panel installations – the McGuireWoods Group states it “has seen the uncertainty surrounding this investigation have novel impacts on supply acquisition, offtake and other contracts.”¹ Although the repercussions of this trade probe are currently unknown, the impact on current and planned solar projects could be significant. Northern Indiana Public Service Company has already announced, because of the DOC investigation “...it will delay retirement of its largest coal-fired power plant by two years.” NIPSCO further stated “...delays will affect solar and solar storage projects this year and next.”²

Environmental

DEI retired most of its coal generating assets in the past decade, including Gallagher Units 2 and 4 in 2021. For the remaining coal-fired generating units in operation, DEI states it has included assumptions for compliance with the Coal Combustion Residuals (CCR) Rule, revisions to the Steam Electric Utility Effluent Guidelines (ELGs), and the Clean Water Act 316 (b) Rule (Cooling Water Intake Structures rule). DEI provides the compliance assumptions it modeled for each rule, including the technologies and timelines for compliance.³ However, it did not provide the numerical cost information associated with the capital and operations and maintenance (O&M) costs assumed for these environmental regulations in its IRP. It would be helpful to reveal this information within the IRP’s body to allow stakeholders to identify and confirm these cost inputs when reviewing the modeling data. The OUCC recommends DEI provide the quantitative cost inputs for environmental compliance in Volume 1 or associated Appendices in future IRP filings. The OUCC understands DEI may consider this information confidential and would not want this information to be provided publicly; however, the company can seek confidential protection of this information from the Commission through Cause No. 45654 or future Causes seeking protective orders for subsequent IRPs. The OUCC does not find the assumptions DEI described in Appendix F to be unreasonable on their face, but it is necessary to know the quantitative cost details to ensure the costs associated with each technology or O&M cost is reasonable.

DEI models one scenario with carbon prices (the Reference Case with Carbon Regulation), which uses the same forecasts as the reference case (the Reference Case without Carbon

¹ <https://www.mcguirewoods.com/client-resources/Alerts/2022/4/us-department-commerce-investigation-solar-panel-puts-solar-projects-risk?p=1>

² <https://www.eenews.net/articles/solar-market-turmoil-delays-ind-coal-shutdown/>

³ DEI’s 2021 Integrated Resource Plan, Volume 1, Appendix F, pp. 262-263.

Regulation) for load, generation costs, and fuel. The scenario adds a carbon price beginning at \$5/ton in 2025 and increases by \$5/ton each year thereafter, reaching a carbon price of \$85/ton by the end of the planning period. The first four years of the carbon price forecast would be consistent with historical prices observed in the Regional Greenhouse Gas Initiative (RGGI) and California Carbon allowance markets. The steady but sharp annual increase in carbon prices appears designed to result in a significant, but not complete, reduction of DEI's carbon emissions by 2041. Many DEI-modeled stakeholder portfolios revolved around carbon reductions of 90% to 100% by 2035. Given the contentious nature of carbon regulation at the federal level, a 2025 carbon implementation date may be unlikely. However, many of DEI's other scenarios, including its Reference Case without Carbon Regulation, assume no carbon prices, so the Reference Case with Carbon Regulation provides insight into potential carbon regulations' impact on the various portfolios.