
The Benefits of an All-Source RFP in Duke Energy Indiana's 2021 Integrated Resource Planning Process

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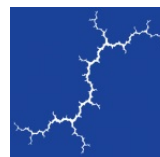
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1. INTRODUCTION

As Duke Energy Indiana (DEI) launches its 2021 Integrated Resource Plan (IRP)—the long-range planning process that models how the utility will supply electricity—it should ensure it has access to the most current cost data by conducting an all-source request for proposals (RFP) from all resources including renewables and storage. Resource cost assumptions are a key modeling input that can change the optimal mix of electricity generation resources in the utility’s portfolio. With the costs of renewable resources and battery storage decreasing rapidly, it is essential to use current prices and up-to-date projections for these resources to avoid biasing model results. Other electric utilities in Indiana and elsewhere which have conducted all-source RFPs have found that rapidly declining all-in costs for renewables and storage will allow them to reduce overall capital investment, save ratepayers millions or even billions of dollars, and retire carbon-intensive plants sooner. Conducting an all-source RFP prior to beginning its 2021 IRP modeling process will allow DEI to gather the best possible information on the availability and costs of various resource types and to ensure that renewable resources are being fairly incorporated into the IRP process.



2. SUMMARY AND BENEFITS OF AN ALL-SOURCE RFP

An all-source RFP process, sometimes called an “open” RFP, is an RFP process that is open to all resource types that meet a minimum threshold. The open and competitive process of a properly structured all-source RFP would allow DEI to understand how different resource types compare in price and fit together in a portfolio of resources. A successful RFP and IRP process results in a plan that can provide the services that the utility requires, such as generation capacity, energy, reserves, or ancillary services such as voltage control and frequency regulation, at the lowest cost.

2.1. How an all-source RFP fits into the IRP process

Utility procurement practices have historically focused on replacing retiring resources or adding similar resources to meet new load. If a coal steam plant were retired, a utility might look for another baseload fossil resource of similar size to add to its system, perhaps even on the same geographic site. The problem with this practice is that it assumes that the grid needs what was retired. In reality, there is now a much wider variety of available electric generation resources available with complementary attributes, emissions benefits, and reduced costs. The requirements of the grid are also much different today than when retiring resources were originally built. Technological improvements have increased the availability of real-time information on grid conditions and provided new ways to provide grid services. The grid will continue to rapidly evolve in the future. Instead of replacing what was retired with a similar incumbent technology, DEI should determine what services the grid needs and find the lowest cost way to provide those services.

In addition, all-source RFPs allow utilities to go one step further and learn about opportunities to lower costs by retiring existing units in favor of cleaner, less expensive, and more technologically advanced alternatives. An all-source RFP allows for the utility to understand resource costs and options at the beginning of its IRP process so that the company’s modeling can reflect more accurate cost and resource information. This is critical in evaluating retirement decisions for existing fossil resources relative to alternatives, particularly given how quickly the costs of renewable resources have been declining in recent years. According to Lazard, the levelized costs of wind and solar energy have declined by 71 and 90 percent, respectively.¹ The U.S. Energy Information Administration reported that the cost of battery storage declined by 70 percent in just the three years between 2015 and 2018.²

¹ Lazard. October 19, 2020. *Lazard’s Levelized cost of Energy Analysis—Version 14.0*. Available at: <https://www.lazard.com/media/451419/lazards-levelized-cost-of-energy-version-140.pdf>.

² U.S. Energy Information Administration. October 23, 2020. “Utility-scale battery storage costs decreased nearly 70% between 2015 and 2018.” Available at: <https://www.eia.gov/todayinenergy/detail.php?id=45596>.

2.2. Benefits of an all-source RFP process

There are many benefits of an all-source RFP process. Broadly, all-source RFPs can reduce costs, increase information availability (and therefore modeling and planning accuracy), and open and expand the field to provide more efficient and advanced technology solutions relative to traditional utility procurement processes. Xcel Colorado was surprised by the results of an all-source RFP that it held in 2017 through which the utility received median solar and wind bids of \$30/MWh and \$18/MWh, respectively.³

Specifically, benefits of all-sources RFPs include the following:

- **Optimizes across all available resource types:** Rather than simply relying on known, fossil-based legacy technologies, all-source RFPs expand the field of available options across resources types to find the lowest system cost.
- **Expands the field to leverage competition among resource types:** Rather than comparing the prices of the same type head-to-head, all-source RFP's expand the field and allow comparison across technology types to find not just the lowest cost resource but also the lowest cost portfolio solution.
- **Tracks current cost trends:** Addresses the key challenge of developing reasonable technology cost estimates and keeping up-to-date pricing information, given rapidly changing costs for renewable and battery storage resources.
- **Tracks new technologies and technology advancements:** The responses received through an all-source RFP helps the Company understand what new technologies and resources are available in the market and should be incorporated into future modeling.
- **Provides regionally specific cost data:** Technology costs and parameters vary by region. While some regions have a high penetration of specific technologies, and therefore a wealth of public information on likely regional costs, others have limited local information. An all-source RFP provides the Company with more accurate cost and operational information on a wide variety of resources and technologies than it would otherwise have.
- **Enables faster and more nimble planning and response:** The information provided by an all-source RFP increases the Company's baseline understanding of current resource availability and cost. This will allow the Company to more quickly and nimbly respond to future changes in load, fuel price, resource availability, and any number of other system changes.

³ Wilson, J., M. O'Boyle, R. Lehr, and M. Detsky. April 2020. *Making the Most of the Power Plant Market: Best Practices for All-Source Electric Generation Procurement*. Energy Innovation and Southern Alliance for Clean Energy.

2.3. Examples of recent all-source RFPs

Some states have required utilities to use all-source competitive solicitations for decades, while in other places, all-source RFPs are just coming into use. We have summarized two examples below of recent all-source RFPs.

Northern Indiana Public Service Company (NIPSCO) utilized an all-source RFP as part of its 2018 IRP process. The all-source RFP process was incorporated based on feedback from stakeholders on the utility's 2016 IRP process. NIPSCO structured its RFP such that it would procure a minimum need of 600 MW, which was identified in its earlier 2016 IRP. This commitment ensured that developers of new resources would bid realistic and competitive prices. In total, NIPSCO received 90 bids in response to the RFP from a variety of resource types. The company used the pricing data from the bids in its IRP modeling so that the modeling was informed by the most accurate, local, and current cost data. The modeling results were then used to inform the optimal retirement schedule and select winning bids for the RFP. With the low pricing for new renewable energy projects in hand, NIPSCO was able to select a more aggressive coal retirement schedule that will entirely remove coal from NIPSCO's generation portfolio by 2028. Using the data from its all-source RFP, NIPSCO's preferred plan was projected to save ratepayers more than \$4 billion relative to an alternative plan that maintained the utility's fleet of coal plants.⁴

Southwestern Public Service Company (SPS) plans to issue an all-source request for information (RFI) as part of its analysis of replacement resources for the Tolk Generating station. The company will use the information it obtains in the RFI process to inform its modeling of a replacement portfolio that can provide the energy, capacity, and other services needed when Tolk Retires. SPS notably shared the RFI at its first Tolk Analysis Technical Conference and solicited feedback on the content of the RFI. The RFI is open to all generation resource types, including energy storage, both existing and yet-to-be constructed. It is also open to all ownership structures. The RFI is not binding, which may be a barrier to SPS receiving a complete set of accurate bids, but it is a valuable tool for the company to increase its understanding of the cost and availability of replacement resources in the region. The information that SPS receives as part of the RFI will be used to model replacement resources for the Tolk Generating Station.

2.4. An opportunity for DEI to issue an all-source RFP as part of its 2021 IRP

DEI has an opportunity to use an all-source RFP for a small amount of capacity in parallel with its IRP process, and thereby gain the full benefits of price discovery for its IRP modeling. In its 2018 IRP preferred plan, DEI proposed acquiring 100 MW of nameplate solar generation capacity in 2023, as well as 150 MW of solar capacity and 100 MW of wind capacity in 2024.⁵ Given the low costs of renewable

⁴ Northern Indiana Public Service Company LLC. October 31, 2018. *2018 Integrated Resource Plan*. Available at: <https://www.nipsco.com/docs/librariesprovider11/rates-and-tariffs/irp/2018-nipsco-irp.pdf?sfvrsn=15>.

⁵ Duke Energy Indiana. July 1, 2019. *The Duke Energy Indiana 2018 Integrated Resource Plan*. Available at: https://www.duke-energy.com/_media/pdfs/for-your-home/indiana-irp/duke-energy-indiana-public-2018-irp.pdf?la=en.

generation resources, it is very likely that at least this much renewable capacity will be part of any low-cost resource plan, especially since these several hundred megawatts of solar and wind have already been proposed by DEI to enter service in the coming years. DEI should issue an all-source RFP for the capacity, energy, and other needs associated with these proposed resources in advance of its 2021 IRP. Taking advantage of this “no regrets” opportunity will provide DEI with high quality and current price data for resources available in the early- to mid-2020s, while leaving the bulk of its future resource portfolio to be determined through the IRP process.

3. BEST PRACTICES FOR ALL-SOURCE RFPs

An all-source RFP should be, as per its name, open to all resources. It should not include language that places unnecessary and unjustified limits on resources and services. An RFP process should produce both low cost resource options for a utility, and a valuable collection of information on current resource availability, and costs.

Specifically, an all-source RFP issued by DEI should have the following characteristics:

- **Technology agnostic:** RFP should be open to all resource and technology types on both the supply side and the demand side. This includes, but is not limited to, generation resources, energy storage, transmission and distribution infrastructure, micro-grids, community-scale and customer-sited distributed generation, and other distributed energy resources (DER). The RFP should avoid any limitations that unnecessarily limit, or *de facto* preclude specific resources. This includes unjustified firm resource requirements or locational requirements. Any necessary limitations should be robustly justified.
- **Ownership-structure agnostic:** RFP should be open to resources and technologies that are offered across ownership structures, including utility-owned (meaning a developer bids to build a resource that will be owned by the utility), power purchase agreement, community-owned, and customer-owned.
- **Open to resources of all sizes and all grid connection points:** RFP should be open to resources of all sizes, and at all grid connection points, including the customer, distribution grid, and transmission system.
- **Inclusive of resources / technologies that can provide a single service, or else meet part of the company's need:** The RFP should provide no limits (either minimum or maximum) on the number of services that a single resource or technology can provide. This allows the company to assemble a portfolio of resources that can meet all needs at potentially lower cost.
- **Inclusive of aggregated resources:** As the cost and performance of DERs continue to improve, along with the technology to remotely monitor and control DERs, it is increasingly important that aggregated DERs be allowed to bid in response to the RFP. These resources may be able to offer unique attributes and grid services due to their location on the customer side of the grid.
- **Conducted by an Independent Evaluator (IE) that runs and reviews the results of the RFP:** To ensure the RFP process is conducted fairly and independently, DEI should select, with input from the Commission and stakeholders, an IE to review and run the RFP.
- **Coordinated with the IRP process:** DEI should design the RFP process to be coordinated with the IRP process. The IRP process will benefit from information on the prices bid in response to the RFP. The IRP, in turn, can identify and clarify the nature and magnitude of the resource need, given projected changes in load and retirement decisions for existing resources. Ideally, the two processes can be run in parallel such that the RFP

bids are directly incorporated into IRP modeling and the IRP modeling informs the selection of winning RFP bids.

- ***Reviewed by stakeholders prior to issuing:*** The RFP should be reviewed and approved by stakeholders prior to issuance to ensure all terms are consistent with the goals of the RFP process and that the RFP is set up to successfully attract competitive bids from a wide range of resources.
- ***Evaluated using clear and transparent criteria:*** DEI should provide a clear and transparent framework for evaluating bids and should release and make public all non-proprietary information from the bidders and from its review of each bid to inform future all-source RFP processes.

An all-source RFP issued by DEI should also have the following key elements:

- ***Breakdown of all the services that the utility requires:*** RFP should include a clear breakdown of the services DEI needs and a justification for each service.
- ***Minimum eligibility requirements:*** Minimum eligibility requirements should be clearly explained and justified. These requirements should not bias the procurement toward any technology type, and particularly toward incumbent technologies with which the utility is more familiar.
- ***Requirement that all bidders clearly outline which services their bids can meet and how:*** Each bidder should be required to provide a clear description of what services its bid is intended to meet, and how it meets the requirements. Where relevant, bidders should clearly indicate how their resources or technologies fit into a larger portfolio of resources.
- ***Requirement that all bidders provide necessary cost and operational information to accurately model their resources:*** All bidders should be required to provide all necessary information for DEI to accurately model and evaluate each option as part of a portfolio of resources. This includes, but is not limited to, pricing, date available, technical, and operational characteristics.
- ***Minimum buy commitment by the utility:*** DEI should commit to purchasing a minimum quantity of resources during the procurement process to incent developers to participate in the RFP process and provide the most accurate and up-to-date cost information.
- ***Retention and use of all bid information to inform future analysis:*** DEI should be required to keep a record of, and utilize, all information on all bids to inform future modeling and analysis processes.

4. CONCLUSION

DEI's 2018 IRP produced a planned portfolio in which renewables join the resource mix slowly while significant fossil fuel capacity—including *additions* of natural gas resources—remains in place for years to come. In the meantime, the costs of renewable and storage resources have clearly continued to fall. If DEI takes a business-as-usual approach to the 2021 IRP and does not avail itself to the best cost factors through an all-source RFP, it cannot hope to achieve a convincing plan. If, on the other hand, it ensures renewables and storage and other potential combinations of resources are fairly incorporated into the IRP process, Duke and its Indiana ratepayers may be able to realize lower costs, a cleaner environment, and a modern, full-service energy sector sooner.

