



Dr. Brad Borum
Indiana Utility Regulatory Commission
101 West Washington Street, Suite 1500 East
Indianapolis, Indiana 46204-3419

November 13, 2020

Re: Vectren Company's 2019/2020 Integrated Resource Plan

Dear Dr. Borum,

Indiana Advanced Energy Economy ("Indiana AEE") respectfully submits this letter of comment regarding Vectren's 2019/2020 Integrated Resource Plan ("IRP") to the Indiana Utility Regulatory Commission ("Commission").

Advanced Energy Economy ("AEE") is a national business association representing leaders in the advanced energy industry. AEE supports a broad portfolio of technologies, products and services that enhances U.S. competitiveness and economic growth through an efficient, high-performing energy system that is clean, secure, and affordable. AEE has been operating in the Hoosier state as Indiana AEE since 2016. In Indiana, AEE aims to drive the development of advanced energy by identifying growth opportunities, removing policy barriers, encouraging market-based policies, establishing partnerships, and serving as the voice of innovative companies in the advanced energy sector.

Indiana AEE appreciates the stakeholder process that Vectren held with regard to this IRP. It is clear from the modeling inputs and results that Vectren took seriously both stakeholder feedback and the Commission's decision to deny the Certificate of Public Convenience and Necessity for Vectren's proposed 850 MW combined cycle gas turbine plant in 2019. The preferred portfolio and short-term action plan in this IRP are reflective of this effort and we commend Vectren for its judicious plan to retire increasingly uncompetitive coal generation and diversify its resource mix with renewables, battery storage, and demand side management including energy efficiency. Vectren's proposed shift to a portfolio that includes 15% wind, 16% solar plus storage, 31% solar, and 2% demand response by 2025, along with its use of all-source Request for Proposals for customer savings of more than \$320 million over 20 years, is noteworthy.

In response to Vectren’s preferred resource portfolio, Indiana AEE makes four main points:

1. Indiana AEE supports Vectren’s proposal to significantly increase its use of renewable energy and storage in the short term because it will offer affordable energy to ratepayers and satisfy growing commercial and industrial (“C&I”) demand for these resources;
2. Indiana AEE appreciates Vectren’s inclusion of energy efficiency programs, demand response, and electric vehicles into this IRP, but Vectren could deploy these resources more aggressively to benefit consumers, especially C&I demand response;
3. Vectren should delay procurement of new combustion turbines to avoid potential stranded assets. In its place, Vectren should rely more heavily on energy storage, demand response, and the MISO energy market to supply capacity and to meet peak demand; and
4. Vectren should seek to continuously improve its IRP modeling and implement a transparent, modern distribution system planning process.

1. Indiana AEE supports a portfolio that increases Vectren’s use of renewable energy and storage in both the short and long term because it will offer affordable energy to Indiana ratepayers and satisfy growing C&I demand for clean energy.

Indiana AEE supports investment approaches that more aggressively and expeditiously rely on advanced energy. IRPs across the country are increasingly demonstrating that a combination of renewables, storage, and demand-side resources are the most economic resource options and provide significant consumer savings to ratepayers.¹ Vectren’s preferred portfolio appropriately reflects this market shift.

We applaud Vectren’s plan to add 700-1,000 MW of solar and solar plus storage and 300 MW of wind in the very near term. This approach recognizes that delaying the deployment of advanced energy resources only delays the accrual of benefits to consumers, especially when Vectren can take advantage of the existing Investment Tax Credit (“ITC”) and Production Tax Credit (“PTC”) today. These resources meet Indiana’s changing energy needs while supporting forecasted load and peak demand growth, new electric vehicle-related demand, and a more reliable, resilient, and flexible grid. Additionally, Vectren’s plan forms the basis for satisfying the significant local C&I demand for clean and cost-effective energy, creates jobs in the community, and provides additional income for landowners in Vectren’s service territory.

Independent market analysis continues to show that advanced energy resources are the most cost-effective investment. In its latest annual publication analyzing levelized cost of energy, Lazard, a financial advisory and asset management firm, shows the continuation of a multi-year trend of falling costs for advanced energy technologies, particularly with regard to large-scale

¹ See generally *The Northern Indiana Public Service Company LLC 2018 Integrated Resource Plan*. October 31, 2018; *The PacifiCorp 2019 Integrated Resource Plan*. October 18, 2019; *Xcel Colorado Energy Plan*, 2018.

solar. In certain scenarios, new renewable energy resources have decreased in cost to the point that wind and solar are now at or below the marginal cost of existing conventional generation. When government incentives are also taken into account (namely the ITC and PTC), the all-in, average levelized cost of new onshore wind (\$26/MWh) and large-scale solar (\$31/MWh) projects is competitive with the marginal cost of operating coal (\$41/MWh) and nuclear generators (\$29/MWh). Even without these tax incentives, these resources are competitive, averaging \$40/MWh for new onshore wind and \$34/MWh for new thin film large-scale solar. Unsubsidized costs have fallen at approximately 5% and 11% per year over the past five years, respectively.²

This new economic reality was evident in 2018 utility regulatory filings across the United States. Examples include but are not limited to: Rocky Mountain Power's approved proposal to retire 3,500 MW of coal in favor of new wind and solar in Idaho;³ Consumers Energy Co.'s proposal to retire four coal units in favor of solar and energy storage in Michigan;⁴ and Xcel's proposal to retire two coal plants in favor of wind, solar, storage, and natural gas assets in Colorado to save its customers approximately \$215 million.⁵

Indiana is no exception to these trends. Recent modeling found that over half of the coal plants in Indiana are already no longer cost competitive with nearby wind and solar, and that by 2025, all of Indiana's coal generation will be substantially at risk economically.⁶ This is consistent with the 2018 IRP from the Northern Indiana Public Service Company ("NIPSCO"), which concluded that the most cost-effective plan for its ratepayers was to replace existing coal generation with new solar and wind, in many cases paired with storage, while also investing in a mix of demand-side resources. NIPSCO's analysis determined it could save customers over \$4 billion over the next 30 years by eliminating coal entirely by 2028.⁷ Indiana AEE strongly supports NIPSCO's IRP proposal as a cost-effective approach for ratepayers and commends the Indiana utility for developing a robust portfolio that harnesses the value of advanced energy technologies. Subsequently, NIPSCO announced a request for proposals for 2,300 MW of solar and solar plus storage and 300 MW of wind. This capacity is in addition to the 800 MW of wind energy that NIPSCO solicited in 2019.

² *Levelized Cost of Energy and Levelized Cost of Storage - 2020*. Lazard. October 19, 2020. Accessed October 21, 2020. retrieved from: <https://www.lazard.com/perspective/lcoe2020>

³ See generally *In the Matter of PacifiCorp DBA Rocky Mountain Power's 2017 Integrated Resource Plan*. Case No. PAC-E-17-03.

⁴ See generally *In the Matter of the Application of Consumers Energy Company for Approval of its Integrated Resource Plan Pursuant to MCL 460.6t and for other relief*. Case No. U-20165.

⁵ See generally *2016 Electric Resource Plan*. June 6, 2018. CPUC Proceeding No. 16A-0396E.

⁶ *The Coal Cost Crossover: Economic Viability of Existing Coal Compared to New Local Wind and Solar Resources*. Gimon et al. March 2019. Energy Innovation and Vibrant Clean Energy. Page 10.

⁷ See generally *The Northern Indiana Public Service Company LLC 2018 Integrated Resource Plan*. October 31, 2018.

Vectren's IRP also reflects these industry trends and capitalizes on them to provide a range of benefits to Vectren's customers and their communities. Indiana AEE supports Vectren's plan to retire 730 MW of its coal generation at Brown Units 1 & 2, Culley 2 and Warwick 4. Given the changes occurring in our energy system today, increasingly, coal can no longer meet Vectren's and the Midcontinent Independent System Operator ("MISO")'s operational needs, nor is it cost-competitive against new renewable energy market entrants. While Indiana AEE appreciates Vectren's willingness to reevaluate continued Culley Unit 3 operations in the future, we nevertheless urge Vectren to reconsider this decision today. Coal-fired generation is not necessary to ensure reliability, is harder to operate with the flexibility that the grid increasingly needs, and is generally more expensive than other zero-fuel resources.

Indiana AEE applauds Vectren's inclusion of battery storage, often paired with solar, as part of its preferred portfolio. Still, we encourage Vectren to continue to evaluate storage cost and performance trends on an ongoing basis over the next few years so that it can properly account for the expected rapid changes in technology cost and performance as Vectren makes future investment decisions. Utilities around the country are recognizing the value of battery storage as a cost-effective tool for integrating variable renewable energy resources and for meeting basic grid needs, including capacity and ancillary services. For example, pairing renewables with battery storage at key locations throughout a utility's territory can create significant benefits in added system reliability and transmission and distribution congestion relief. A 2018 Indiana AEE report found that adding 139 MW of well-sited battery storage could avoid \$103 million in costs over 10 years statewide. If 329 MW of cost-effective battery storage are added, benefits could reach \$311 million.⁸ Since 2018, battery storage costs have continued to fall as performance improves, and it is likely that deployment beyond the levels modeled in that study is now advantageous.

On top of the broad consumer benefits of advanced energy, Indiana consumers, particularly industrial and other large energy users concentrated in Vectren's service territory, are seeking to have their electricity come from locally-sourced renewable energy. It is not a new trend that the ability to control energy costs and sources is a critical business priority for large C&I customers. As renewable energy technologies continue to drop in price, they are increasingly an attractive option for companies seeking to lower costs by protecting against fluctuating fuel prices, while also meeting corporate sustainability goals. Already, 71% of Fortune 100 companies and 43% of Fortune 500 companies have set ambitious corporate sustainability goals.⁹ In order to respond to this increased consumer demand and stay competitive in attracting and retaining businesses, Vectren should introduce renewable energy tariffs and include these programs in its IRP. Indiana

⁸ *Potential for Peak Demand Reduction in Indiana*. Prepared for Indiana Advanced Energy Economy by Demand Side Analytics, LLC. February 2018.

⁹ *2016 Corporate Advanced Energy Commitments*, Advanced Energy Economy (December 2016), <https://info.aee.net/growth-in-corporate-advanced-energy-demand-market-benefits-report>

AEE strongly supports these types of utility offerings and has published a best-practices guide for meeting the economic and environmental requirements for utility-delivered renewable energy offerings.¹⁰

As the Commission is aware, nine companies with Indiana operations sent a letter in August 2019 to the 21st Century Energy Policy Development Task Force calling for more renewable energy access through utility programs. These companies included Berry Global, Best Buy, Cummins, Eli Lilly and Company, General Motors, Salesforce, Skjodt-Barrett Foods, Unilever, and Walmart.¹¹ In that letter, the companies noted that demand for renewable energy by large energy users has resulted in significant market activity; from 2013 until 2019, voluntary renewable energy procurement by businesses has driven over 15 gigawatts (GW) of new, large-scale renewable energy projects—enough to meet the annual electricity needs of approximately three million households. In a recently released report, Indiana AEE estimates that up to 3.6 GW of renewable energy demand from the C&I sector exists in the state through 2030. Meeting this demand could bring up to \$5.8 billion dollars in investment to Indiana and spur the creation of up to 25,000 jobs.¹²

With properly structured utility renewable energy offerings, Indiana has an opportunity to be a national leader in meeting C&I demand for renewable energy sources, while meeting other important policy goals for the state including providing low-cost energy options, enabling economic growth, and encouraging cleaner energy resources. As with all procurements, Indiana AEE encourages the Commission to take a neutral position on the ownership structure of resources to ensure that renewable power purchase agreements (“PPAs”) are considered. NIPSCO’s three all-source RFPs to satisfy its 2018 IRP preferred portfolio, which called for 2,300 MW of solar and solar plus storage and 300 MW of wind and wind plus storage, serve as a good model.¹³

2. Indiana AEE appreciates Vectren’s inclusion of energy efficiency programs, demand response, and electric vehicles into this IRP, but Vectren could deploy these resources more aggressively to benefit consumers, especially C&I demand response.

Energy Efficiency and Demand Response

While Indiana AEE strongly supports more investment in wind, solar, and energy storage, it is important to note that demand side resources, including energy efficiency, are still the most cost-

¹⁰ *Renewable Energy Offerings that Work for Companies*. Advanced Energy Buyers Group. April 2019. retrieved from: <https://info.aee.net/hubfs/Renewable%20Energy%20Offerings%20that%20Work%20-%20FINAL%204-16-19.pdf>

¹¹ *See letter re: Hoosier business request that the 21st Century Energy Policy Development Task Force support renewable energy access*. August 20, 2019.

¹² *See Commercial and Industrial Renewable Energy Demand: Geographic Focus on Indiana*. Aaron Barr. January 2020. Advanced Energy Economy and Wood Mackenzie.

¹³ *NIPSCO’s 2019 Request for Proposal Results*. Prepared by Charles River Associates. February 18, 2020.

effective energy options for Indiana ratepayers. Especially given Vectren’s recent investment in advanced metering infrastructure (“AMI”) across its territory, it has the opportunity to capitalize on the enhanced functionality of AMI, including the collection and use of granular customer meter data to create innovative programs that help shape load, reduce peak demand, improve integration of distributed energy resources (“DERs”), and enhance opportunities for greater energy efficiency achievement.

Improved management and integration of demand side resources can help Vectren make better use of existing generation resources, improve reliability, and avoid the need for investments in new generation resources. As Vectren forecasts slow increases in annual energy demand, demand side management can significantly reduce the need for new generation that directly substitutes its retiring capacity. Right now, energy efficiency is one of the most cost-effective ways to meet energy demand with an average levelized cost of saved electricity for program administrators of just \$0.016/kWh in Indiana.¹⁴ Indiana AEE commends Vectren for its 2017 energy efficiency plan to spend approximately \$9.5 million per year to achieve 111 million kWh of energy savings and 26 MW of demand reduction. We appreciate its increased goal of targeting near-term energy savings of 1.25% of eligible sales per year, though we believe that the target could be even more ambitious while still providing net benefits to ratepayers. Utilities across the country are routinely exceeding 1.25% of sales. Eversource Massachusetts and National Grid Massachusetts have both achieved savings of over 3% of sales for an extended period of time, and San Diego Gas & Electric, Commonwealth Edison, and Salt River Project have all exceeded 2%. Baltimore Gas & Electric, Xcel Minnesota, Los Angeles Department of Water and Power, Pacific Gas & Electric, Southern California Edison, Consumers Energy, Eversource Connecticut, and DTE have all met or exceeded 1.5%.¹⁵

Meter-based pay-for-performance program designs, particularly when enabled by AMI, can enhance the value of energy efficiency and other DERs by increasing the ability of utilities to rely on them to meet grid needs.¹⁶ However, recent studies from Lawrence Berkeley National Laboratory have found that even passive peak load reductions from energy efficiency programs can be substantial. Even without programs designed to target savings at particular times of day, one study estimates that the savings-weighted Program Administrator Cost of Saving Peak Demand (PA CSPD) averages \$1,483/kilowatt (kW).¹⁷

¹⁴ *The Cost of Saving Electricity Through Energy Efficiency Programs Funding by Utility Customers: 2009-2015*. Hoffman, Ian, Charles A. Goldman, Sean Murphy, Natalie Mims, Greg Leventis and Lisa Schwartz. Lawrence Berkeley National Laboratory. June 2018. Retrieved from: <https://www.swenergy.org/Data/Sites/1/media/lbnl-cse-report-june-2018.pdf>

¹⁵ *2020 Utility Energy Efficiency Scorecard*. Relf, Grace, Emma Cooper, Rachel Gold, Akanksha Goyal, and Corri Waters. February 2020.

¹⁶ *Time-Sensitive Value of Efficiency: Use Cases in Electricity Sector Planning and Programs*. Frick, Natalie Mims, and Lisa C Schwartz. 2019.

¹⁷ *Peak Demand Impacts from Electricity Efficiency Programs*. Frick et al. 2019.

Programs that shave peak loads or shift demand to off-peak hours, including through time-varying rates, have proven to be a low-cost strategy to save electric ratepayers money. Indeed, Indiana AEE's February 2018 report showed that pursuing cost-effective peak demand reduction strategies along with energy storage would produce net benefits for Indiana electric ratepayers (total savings minus costs) ranging from \$448 million to \$2.3 billion over 10 years.¹⁸

Vectren currently has three customers participating in its C&I interruptible load program, for a total of 35 MW¹⁹ (representing 3.2% of 2018 peak demand²⁰). Vectren's plan is to maintain this level of demand response throughout the IRP horizon but it did not include the option of additional interruptible demand response in its IRP modeling. We believe that this is a mistake—the above-referenced AEE report demonstrated that the remaining non-residential demand response potential in Indiana is largely concentrated in Vectren and Indianapolis Power and Light service territories.²¹ Neighboring Indiana utilities and MISO participants have also demonstrated potential for much higher demand response penetration, as demand response and behind the meter generation comprised over 8% of cleared capacity in the latest MISO auction, and has reached as high as 17% in Indiana.²² These demand response programs are a cost-effective alternative to maintaining existing generation or building new generation, lowering costs for all customers. If Vectren's C&I customers are not given the same opportunities to participate in demand response as C&I customers of other MISO utilities, and to reduce their energy bills through such participation, they are placed at a competitive disadvantage. Therefore, we recommend that Vectren develop new demand response programs that entice greater participation from its C&I customer base. AEE notes recent examples of success in Ameren Missouri²³ and Consumers Energy in Michigan.²⁴

In the residential sector, Indiana AEE supports the variety of Vectren's programs, which include residential lighting, home energy assessments and weatherization, residential behavior savings, smart thermostat demand response, LED light bulb distribution, Conservation Voltage Reduction - residential, a Bring Your Own Thermostat program, and the Summer Cycler Direct Load Control program. The potential savings from these programs, if their use is maximized, is significant. Vectren's residential demand response potential lies within the ability of a utility to scale down air conditioning and water heater use when energy demand is especially high—

¹⁸ *Id.*

¹⁹ 2019/2021 Integrated Resource Plan. p. 169. Vectren: A CenterPoint Energy Company. June, 2020.

²⁰ *Potential for Peak Demand Reduction in Indiana*. Prepared for Indiana Advanced Energy Economy by Demand Side Analytics, LLC. February 2018.

²¹ *Id.*

²² 2020/2021 Planning Resource Auction (PRA) results. MISO Resource Adequacy Sub-Committee. May 6, 2020.

²³ *Enel X inks exclusive deal with Ameren, will provide 100 MW demand response*. Robert Walton. Utility Dive, April 10, 2019.

²⁴ *In the matter of the application of Consumers Energy Company for authority to increase its rates for the generation and distribution of electricity*. Michigan Public Services Commission Case No. U-20134.

existing load reduction capabilities reach 19 MW.²⁵ In 2018, AEE estimated that over 10 years, the net benefits of reducing peak load through connected thermostats based on a state-wide enrollment of 214,000 was \$73 million in a medium avoided cost scenario and \$344 million in a high avoided cost scenario.²⁶ Indiana AEE believes that Vectren can and should strive to attract as many customers as possible into its residential demand response programs to achieve maximum benefits in its service territory.

Electric Vehicles

Indiana AEE appreciates Vectren's work to date forecasting electric vehicle ("EV") load growth and analyzing its potential impacts on the system. Vectren recognizes that greater charging station usage will require it to adjust to changing load shapes as well as consider generation reserves, transmission and distribution planning, and incentives for smart charging behavior. Vectren states that it plans to monitor vehicle charging patterns in the upcoming years. We recommend that Vectren develop robust modeling of EVs sooner rather than later, including deployment scenarios and assumptions about charging patterns. Given the recent rapid scaling of the EV market and the potential for EVs achieving purchase price parity within a few years, EV adoption in Vectren's service territory may exceed the company's forecasts over the next two decades. For example, the U.S. light-duty EV market grew at a 44% CAGR between 2011 and 2019 as lithium ion battery prices dropped 87% between 2010 and 2019.²⁷

In modeling future trends, Vectren should include realistic assumptions about EV growth and charging impacts on the system. This work can then inform the creation of managed charging programs and EV rates that maximize EV benefits to the grid, which will feed back into Vectren's IRP modeling.

There are many examples of innovative work by utilities around the country in response to rising EV adoption from which to draw when designing EV programs, and studies have demonstrated that EV adoption can lead to substantial ratepayer benefits that make the utility's time and investments worthwhile.²⁸ Those benefits are maximized when common sense steps are taken to encourage vehicle charging patterns that benefit the grid (e.g., off-peak charging). Good rate design can help early adopters of EVs form good charging habits and would allow Vectren to begin looking at the most critical places on the distribution system that will need upgrades to support vehicle charging. Early programs lay a foundation upon which Vectren can more easily scale up its EV-related grid management efforts as vehicle penetration increases.

²⁵ *Potential for Peak Demand Reduction in Indiana*. Prepared for Indiana Advanced Energy Economy by Demand Side Analytics, LLC. February 2018.

²⁶ *Id.*

²⁷ *Battery prices fall nearly 50% in 3 years, spurring more electrification: BNEF*. Matthew Bandyk. Utility Dive, December 3, 2019.

²⁸ *Electric Vehicles Are Driving Electric Rates Down*. Synapse Energy Economics, Inc. Jason Frost, Melissa Whited, and Avi Allison. June 2019 Update.

Indiana AEE would like to see Vectren adopt EV best practices throughout its functions and encourages the company to work with the Commission to develop robust EV programs.²⁹ Taking an active role in supporting the deployment of EV charging infrastructure allows a utility to use the intimate knowledge of its own system to best plan for and manage new demand. Vectren should also work closely with charging equipment providers to make sure that deployment maximizes the benefits that EVs can provide to the grid and to ensure successful integration of new load. While not all of this will happen within Vectren’s IRP process, there are strong linkages between planning for EV load growth and overall resource planning.

3. Vectren should delay procurement of new combustion turbines to avoid potential stranded assets. In its place, Vectren should rely more heavily on energy storage, demand response, and the MISO energy market to supply capacity and to meet peak demand.

Indiana AEE recognizes and appreciates the ambition and scale of Vectren’s proposed transition away from existing coal-fired generation to a system that relies more on renewable energy, storage, and demand side resources. However, in this rapidly changing energy landscape, it would be prudent for Vectren to avoid locking itself into expensive new gas-fired peaking plants. Other utilities are finding storage to be a suitable alternative—in early 2019, Arizona Public Service announced that it would procure 850 MW of battery storage to meet peak demand and replace natural gas peaking capacity.³⁰ Vectren may find that a similar resource decision is cost-effective in Indiana. Its storage cost assumptions in this IRP appear conservative³¹ and likely do not fully reflect expected cost declines of existing storage technologies or the broader range of storage technologies that are expected to be coming to market within the next several years.

As such, we urge careful consideration of Vectren’s proposal to build two combustion turbines (for a total of 460 MW) in the near-term just as energy storage options are becoming so cost-effective. If Vectren delays its decision to add these peaker plants by a few years, it will likely have attractive new options to consider in their place. This will provide Vectren with more optionality and flexibility and avoid a significant near-term investment that could quickly prove

²⁹ *EV 101: A Regulatory Plan for America's Electric Transportation Future* provides utility regulators with a guide to making regulatory choices, which include establishing appropriate roles and responsibilities to optimizing rate design and improving planning. It can be accessed here: [https://info.aee.net/hubfs/EV%20Issue%20Brief%20Final%20\(9.10.18\)-2.pdf](https://info.aee.net/hubfs/EV%20Issue%20Brief%20Final%20(9.10.18)-2.pdf)

³⁰ *APS to install 850 MW of storage, 100 MW of solar in major clean energy buy*. Gavin Bade. Utility Dive, February 2019.

³¹ For example, while Vectren assumes that a lithium ion battery of 10 MW/40 MWh would cost approximately \$1,972/kW today and fall to about \$1,400/kW by 2029, Guidehouse finds that a 20 MW/80 MWh lithium ion battery with the same power to storage ratio is only \$1,600/kW today and is expected to fall to \$1,000/kW by 2029. See *Guidehouse: Lithium battery cell prices to almost halve by 2029*. Andy Colthorpe. Energy Storage News. June 9, 2020. Retrieved from <https://www.energy-storage.news/news/guidehouse-lithium-battery-cell-prices-to-almost-halve-by-2029>

uneconomic. In the interim, Vectren could scale its energy efficiency and demand response programs, and pursue short-term market contracts to meet capacity needs.

4. Vectren should seek to continuously improve its IRP modeling and implement a transparent, modern distribution system planning process.

As the technologies and needs of the grid change, utility modeling tools are becoming more and more sophisticated. For its next IRP, and all future IRPs, Vectren should seek to improve its resource planning methodologies by using enhanced analytical tools that capture the full diversity of supply-side and demand-side resources with sufficient granularity. To the extent possible, assumptions and timelines should be synced between generation, distribution, and transmission planning. This will allow Vectren to find the most cost-effective solutions, whether that be a generation facility, distribution network upgrade, transmission asset, or a non-wires alternative.

Implementing a modern distribution system planning process that allows for stakeholder input and enhanced coordination and consistency with the IRP planning process is also an important step towards planning optimization. It will help Vectren account for the proliferation of demand side resources and EVs within the next few years, give the utility insight into its future system needs, and help avoid unnecessary overinvestments in traditional resources and infrastructure. Said another way, DERs do not just interconnect to the grid but can more fully *integrate* with the grid and be used to meet system needs, and planning processes should account for this. Utilities across the country are recognizing the benefits of integrated planning and developing processes to unlock those benefits. Examples that the Commission and Vectren can draw from include the Michigan MI Power Grid process, Minnesota's integrated distribution planning, and Nevada's upcoming distributed resource planning.

Conclusion:

Indiana AEE believes that on the whole, Vectren's new preferred portfolio of advanced energy resources offers a flexible, well-considered pathway forward, in addition to being cost-effective and reliable. By recognizing the potential of these technologies in the short-term, Vectren is doing well by its ratepayers, creating new jobs, and promoting economic development within southwest Indiana.

Nevertheless, over the past three years, conditions have changed dramatically and have resulted an IRP in 2020 that looks considerably different from IRPs in the past. Three years from now, the results will likely look different again as advanced energy technologies continue to evolve and state and federal laws and regulations change. Vectren will also have new customer interests to satisfy. Above all, Vectren and the Commission must remain flexible while being mindful of

potential investment decisions that would lock the utility into expensive infrastructure that could soon become obsolete.

Respectfully submitted,

Caryl A. Auslander
Program Director
Indiana Advanced Energy Economy