Wabash Valley Power Association, Inc.

2017 Integrated Resource Plan

January 24, 2018

P.O. Box 24700, Indianapolis, IN 46224

722 North High School Road, Indianapolis, IN 46214

Phone 317.481.2800

Fax 317.243.6416

www.wvpa.com

Table of Contents

Section 1
OVERVIEW

Membership

Wabash Valley Power Association, Inc. (Wabash Valley or the Company) is a generation and transmission (G&T) cooperative based in Indianapolis, Indiana. Wabash Valley was incorporated December 12, 1963, pursuant to the Indiana Not-For-Profit Corporation Act. The Articles of Incorporation were amended in 1975 and approved by the Secretary of State on September 4, 1975. The Public Service Commission of Indiana (now the Indiana Utility Regulatory Commission (IURC)) granted the Company a Certificate of Convenience and Necessity on January 13, 1978, authorizing us to supply power to our member distribution cooperatives (Members).

Wabash Valley provides wholesale electricity to twenty-three Members: nineteen in the northern half of Indiana, three in Illinois and one in Missouri. In turn, our wholesale Members supply electricity to more than 313,000 retail members. Just over 75 percent of our retail customer base resides in Indiana, with approximately 16 percent in Illinois, and 9 percent in Missouri. Table 1-1 provides a list of Wabash Valley's Members and their office locations.

Table 1-1 Wabash Valley Members

Member	Location
Boone REMC	Lebanon, IN
Carroll White REMC	Monticello, IN
Citizens Electric Corporation	Perryville, MO
Corn Belt Energy Corporation	Bloomington, IL
EnerStar Electric Cooperative	Paris, IL
Fulton County REMC	Rochester, IN
Heartland REMC	Markle, IN
Hendricks Power Cooperative	Avon, IN
Jasper County REMC	Rensselaer, IN
Jay County REMC	Portland, IN
Kankakee Valley REMC	Wanatah, IN
Kosciusko REMC	Warsaw, IN
LaGrange County REMC	LaGrange, IN
M.J.M. Electric Cooperative	Carlinville, IL
Marshall County REMC	Plymouth, IN
Miami-Cass REMC	Peru, IN
Newton County REMC	Goodland, IN
NineStar Connect	Greenfield, IN
Noble REMC	Albion, IN
Parke County REMC	Rockville, IN
Steuben County REMC	Angola, IN
Tipmont REMC	Linden, IN
Warren County REMC	Williamsport, IN

Service Territory

Territorial assignments to electric cooperatives in Indiana have been made under the Rural Electric Membership Corporation Act of 1935 as amended. Much of the service territory assigned to our Members is used agriculturally for both crops and livestock. Many of our Members' customers are involved in agriculture, either directly or through related industries. Significant portions of our Members' customers commute to large nearby cities and to many smaller cities that contain a large number of commercial and industrial businesses. Indiana metropolitan areas within or near Member service areas include the cities of Anderson, Elkhart, Fort Wayne, Gary, Indianapolis, Kokomo, Lafayette, Muncie, and South Bend. Major Illinois cities near Member service areas include Chicago, Peoria, Springfield, and Bloomington. The major Missouri city near Member service territory is St. Louis. The major interstate highways serving the area are I-55, I-65, I-69, I-70 and I-74.

Figure1-2 illustrates Wabash Valley's composite service territory. The areas identified on this map are not exclusively served by our Members. Numerous municipal electric utilities, as well as investor-owned utilities, permeate this service area.

Figure 1-2 Wabash Valley Service Territory

Except as allowed by Wabash Valley's customer owned generation policy, the Company supplies all of our Members' power requirements from owned generating resources or through purchases from other electric utilities or energy marketing companies. We supply electric power into six sub-balancing areas through transmission facilities owned by Wabash Valley or by facilities scheduled through the Midcontinent Independent Transmission System Operator (MISO) or PJM Interconnection (PJM) regional transmission organizations (RTO). Table 1-3 illustrates the percentage of energy delivered into each of the six sub-balancing areas.

TABLE 1-3 Power Delivered by Balancing Area - As of 1/1/2018

Sub-Balancing Area	% Energy Delivered (kWh basis)	Balancing Area
Duke Energy Indiana (DUKE)	32%	MISO
American Electric Power (AEP)	20%	PJM
Northern Indiana Public Service Company (NIPSCO)	19%	MISO
Ameren Missouri (AMMO)	18%	MISO
Ameren Illinois (AMIL)	10%	MISO
Indianapolis Power and Light (IPL)	1%	MISO

In addition to supplying all of our Members' power requirements, Wabash Valley also supplies power to two non-member customers under separate wholesale firm requirements agreements. We serve one non-member Michigan customer under a six-year contract ending in 2017. We serve the other non-member Indiana customer under a contract that ends in 2028.

Cooperative Structure

As indicated previously, Wabash Valley is incorporated as a G&T cooperative serving our twenty-three Members. As a cooperative, Wabash Valley adheres to the seven cooperative principles:

- Voluntary and Open Membership
- Democratic Member Control
- Members' Economic Participation
- Autonomy and Independence
- Education, Training, and Information
- Cooperation Among Cooperatives
- Concern for Community

The principle of Democratic Member Control shapes the Company's routine operations. Wabash Valley's business and affairs are governed by a Board of Directors consisting of one Director nominated by each Member (one Member, one vote). Wabash Valley's staff formulates and presents for Board action corporate goals and objectives, work plans, budgets, policies, and rate matters. The staff furnishes the Board with full and complete information on the overall operation of the organization at regularly scheduled board meetings in order that the Board may make informed decisions and be accountable to the Members and regulatory agencies.

In the electric utility industry as a whole and specifically at Wabash Valley, managing enterprise risk is a high priority. Wabash Valley's Board identifies the Company's risk management objectives and provides risk management oversight. Wabash Valley's risk structure consists of the Board, CEO, a Risk Oversight Committee, an Internal Risk Management Committee, a Risk Officer and ACES, a nationwide energy management company. This risk structure utilizes a Risk Matrix to identify and prioritize risks, such as commodity price risk, power and fuel delivery risk, financial risk, environmental and regulatory risk, etc., and then implement strategies to mitigate their effect on our association. The risk structure monitors the resource plan on a quarterly basis by reviewing a dashboard with key indicators and stress cases. This ongoing review process allows Wabash Valley to make adjustments to our power portfolio to better match the inherent risks of providing power to our Members.

Integrated Resource Plan (IRP) Process

Every electric utility in the State of Indiana that is publicly, municipally or cooperatively owned must prepare an IRP every two years, soon to be three years, to comply with the IURC's "Rule 7", technically 170 IAC 4-7. As a cooperatively owned electric utility, Wabash Valley is exempt from the public advisory process requirement in Section 8.170 IAC 4-7-2.6 of the IURC's Draft Proposed Rule amending 170 IAC 4-7 Guidelines for Integrated Resource Planning by an Electric Utility.

At Wabash Valley, the Budgets and Forecasting Department is responsible for coordinating the development of the IRP with input from other departments including: Engineering & Operations, Marketing & Communications, Risk & Resource Portfolio and Transmission & Regulatory Affairs.

The Company has developed the IRP using the following six major steps:

1. Power Requirements Forecasting
2. Energy Efficiency Evaluation
3. Demand Response Evaluation
4. Supply-Side Evaluation
5. Integration
6. Financial Review

The following describes the process for each step.

1. Power Requirements Forecasting

The Budgets and Forecasting Department is responsible for developing the power requirements forecast for Wabash Valley. The monthly peak demand and energy requirement of each individual Member and requirements customer is forecasted. These forecasts are then aggregated to arrive at a composite forecast for Wabash Valley. The Company surveys residential customers to determine the saturation levels of electric appliances and asks each individual Member to review their respective forecast. Demographic and economic data from various sources is considered in the projection of each Member's energy requirements. The forecasted energy requirements are normalized for weather. The forecast is re-estimated every two years or more often as changes and requirements dictate. Section 3 describes the forecasting model in more detail.

2. Demand-Side Management – Energy Efficiency Evaluation

Wabash Valley does not directly serve any retail customers. Those customers are served by the individual Members. Energy Efficiency (EE) programs are evaluated for their benefit to the Company, our Members and their customers by comparing program costs to the expected cost of a market-based resource or option purchase. Programs implemented during 2012 - 2017 have been and will continue to be evaluated by a third party consulting firm. Primary evaluation, measurement and verification (EM&V) activities are reviews of satisfaction, impact and cost-effectiveness.

The EE Committee recommended a series of residential programs and commercial and industrial EE programs for the Wabash Valley portfolio. Programs were selected based on each Member's mix of customers, electric energy end-uses and power supply requirements. Working with a program planning and design consultant, the Committee develops programs and measurement and verification protocols to evaluate the technical and economic viability of EE programs. Wabash Valley coordinates centralized marketing for each EE program.

3. Demand-Side Management – Demand Response Evaluation

The Demand Response Committee, which is comprised of Wabash Valley staff and personnel from the Member systems, is responsible for evaluating potential demand response (DR) programs that affect peak demand and capacity requirements. Wabash Valley does not directly serve any retail customers. Those customers are served by the individual Members. DR programs are evaluated for their benefit to the Company, our Members and their retail customers by comparing program costs to the expected cost of a market-based resource or option purchase.

The Demand Response Committee develops programs to evaluate the technical and economic viability of DR alternatives. Pilot program results are then used, along with forecasts of power supplies and wholesale market power prices, to determine whether a full-scale program should be initiated.

Analysis of DR programs is ongoing. If a program is considered beneficial, Wabash Valley provides price signals and works with the Members to encourage adoption of the DR program.

4. Supply-Side Evaluation

The Budgets and Forecasting Department is responsible for estimating costs associated with power generation and purchases. The Company surveys the market on a regular basis and routinely makes inquiries to other utilities, power marketers and generating facility construction consultants. Responses to these inquiries have included offers for construction of new generation as well as for power supply contracts. Wabash Valley determines which resources are most likely to be available at the time new capacity is needed and uses estimated costs for these expected units in its cost projection studies.

5. Integration

The integrated production cost is developed with the recommended DR resource programs and the most economic supply-side resources. The PLEXOS® model, developed by Energy Exemplar, is used to evaluate the production costs for the integrated plan. The Risk & Resource Portfolio Department reevaluates the resource plan regularly.

6. Financial Review

The Budgets and Forecasting Department incorporates the production costing results with other corporate costs to develop budget, short-term (3-6 years) and long-term (20 years) financial forecasts. These forecasts are reviewed to ensure that the conditions of the corporate financial policy are met and financing requirements are reasonable. The Budgets and Forecasting Department uses a financial forecasting model to input company capitalization, balance sheet, and similar financial information to develop a comprehensive forecast of cash flows, income statement, and rates. Financial forecasts are updated quarterly or as necessary.

Section 2
RESOURCE ASSESSMENT

Planning Areas

Wabash Valley plans for its power requirements in all balancing areas jointly, in order to provide power to Members at the lowest reasonable cost.

ACES' power dispatch center is manned 24 hours a day and is responsible for scheduling power resources into the MISO and PJM systems on behalf of the Company. ACES' dispatchers manage the contracted Wabash Valley resources as well as purchase and sell power in the short-term wholesale power market. In their energy management role, ACES' staff is responsible for the dispatch of the Company's demand response (DR) programs. Wabash Valley DR representatives inform ACES' staff members of current program objectives, program parameters and information management functions. ACES utilizes the DR programs to manage costs, including high wholesale market prices, and respond to capacity shortages.

Planning Criteria

Planning criteria for Wabash Valley is developed by MISO and PJM. These transmission organizations evaluate the reliability within their respective regions and establish rules to determine how the Company and other load serving entities provide capacity to meet the requirements.

The 2017 capacity requirement is 15.8% reserves for the MISO region. This reserve requirement represents installed capacity at the MISO region peak that will limit the loss of load expectation to 0.1 day in a year. MISO adjusts the reserve requirement for load diversity and unit availability. The MISO pool-wide coincident peak Installed Capacity (ICAP) requirement is 15.8% for 2017. Wabash Valley must meet the 15.8% reserve requirements by identifying specific generation units, adjusted for forced outages. The Company can also purchase capacity credits in the annual auction. Starting in 2018, Wabash Valley forecasts approximately 88% of its load in MISO.

PJM has a similar process to determine the reserve requirements; however, PJM does not require each company to provide the capacity. PJM purchases all the capacity necessary in an auction process. PJM then allocates the cost to purchase that capacity based on each load serving entity's contribution to the regional peak. PJM's current capacity allocation is 16.6% installed (ICAP). While the Company is not obligated to supply the capacity to the PJM market, Wabash Valley plans to provide capacity in the long term to meet its capacity allocation in order to hedge the price of the PJM allocated costs.

For the IRP, these reserve requirements of 15.8% in MISO and 16.6% in PJM are used for planning Wabash Valley's resource requirements needed in the future.

Wabash Valley currently owns about 56% of its capacity requirements. The rest of the Company's current resources are provided under various contractual arrangements. Many of the contractual resources are firm supplies that include capacity. Wabash

Valley currently plans for an annual reserve margin of 16% based on the MISO and PJM 2017 requirements.

Loads and Load Characteristics

Each Wabash Valley Member serves a variety of residential, commercial and industrial loads. The majority of the load is residential in nature. As the following tables illustrate, the Company's winter peak usually occurs at 8:00 p.m. and the summer peak generally occurs in the evening around 7:00 p.m. These peak times reflect the highly residential nature of Wabash Valley's load. Wabash Valley has two large customers whose demand may be interrupted. The peak demand reported in Table 2-1, Graph 2-2, Table 2-3 and Graph 2-4 excludes the interruptible portion of this load.

TABLE 2-1 Wabash Valley Coincident Peak Demands - Winter

Winter						
	Coincident Demand *	Peak			Day of Peak Temp. Range **	
Years	(MW)	Month	Day	Time EPT	Low F	High F
2006-2007	1,439.1	Feb	Mon	8 p.m.	-7	3
2007-2008	1,435.3	Jan	Fri	8 a.m.	-5	25
2008-2009	1,588.3	Jan	Thu	8 p.m.	-10	5
2009-2010	1,502.1	Dec	Thu	8 p.m.	9	17
2010-2011	1,490.6	Feb	Thu	8 a.m.	-12	9
2011-2012^	1,317.2	Jan	Thu	8 p.m.	17	40
2012-2013	1,391.5	Jan	Mon	8 p.m.	6	19
2013-2014	1,593.3	Jan	Mon	7 p.m.	-14	20
2014-2015^^	1,527.1	Jan	Wed	8 p.m.	-4	10
2015-2016^^	1,312.1	Jan	Mon	8 p.m.	0	10
2016-2017	1,320.4	Dec	Mon	8 a.m.	-8	11

* Coincident demand includes pass-through load but excludes interruptible load
** Fort Wayne (AP) Weather Station
^ One Cooperative terminated Membership effective Jan. 2012
^^ One Cooperative terminated Membership effective Jan. 2015 and one cooperative terminated Membership effective July 2015

GRAPH 2-2 Daily Load Shape – Winter Peak

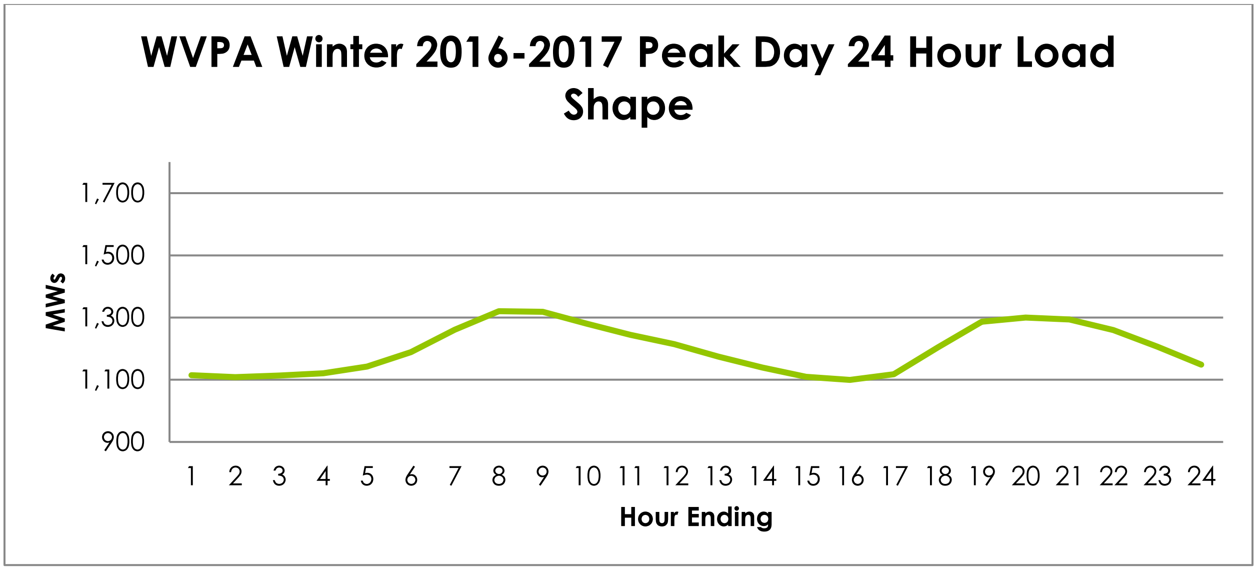
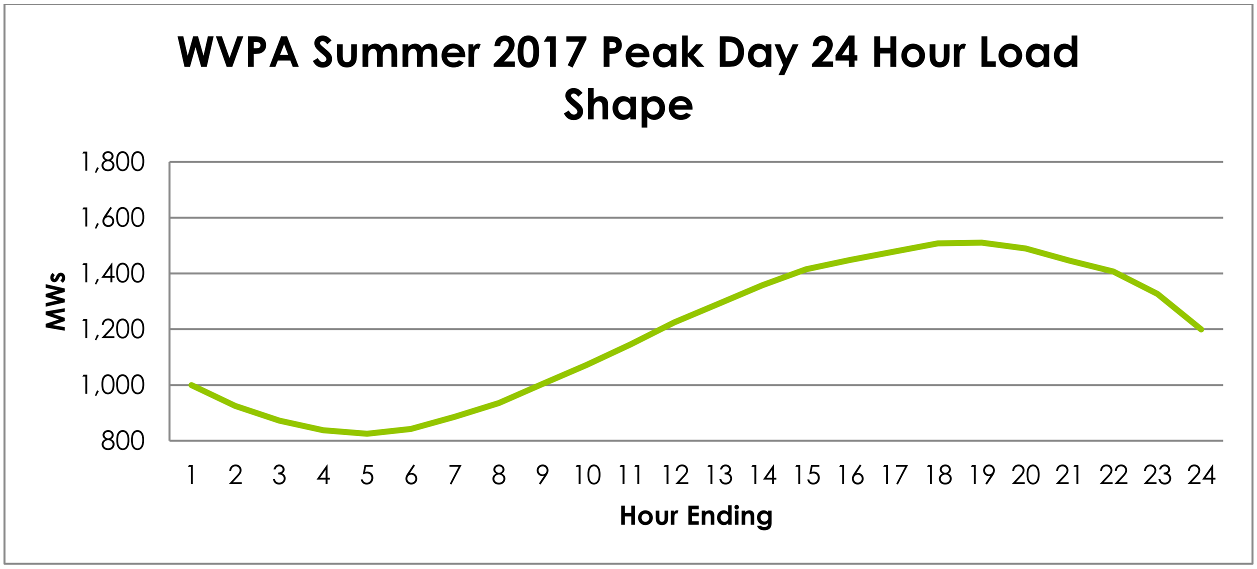


TABLE 2-3 Wabash Valley Coincident Peak Demands – Summer

Summer							
	Coincident Demand*	Peak			Day of Peak Temp. Range **		Consec. Days Over
Year	(MW)	Month	Day	Time EPT	Low F	High F	85°
2007	1,661.7	Aug	Tue	7 p.m.	74	91	2
2008	1,550.8	Jul	Tue	6 p.m.	63	88	1
2009	1,579.2	Jun	Thu	6 p.m.	73	94	7
2010	1,755.4	Jul	Fri	5 p.m.	77	94	3
2011	1,839.1	Jul	Thu	6 p.m.	76	99	7
2012^	1,750.3	Jul	Fri	6 p.m.	73	100	10
2013	1,660.7	Jul	Thu	7 p.m.	73	91	5
2014	1,591.9	Aug	Mon	5 p.m.	68	87	1
2015^^	1,479.3	Jul	Tue	7 p.m.	66	88	3
2016	1,592.3	Aug	Thu	7 p.m.	74	90	11
2017	1,510.3	Jul	Wed	7 p.m.	65	89	2

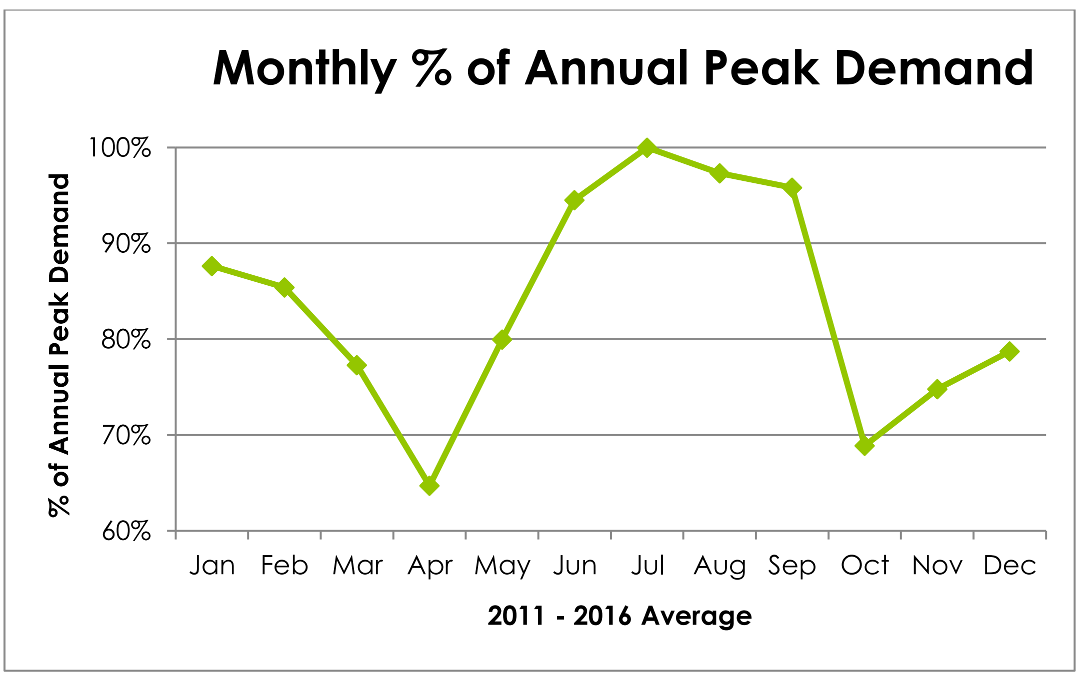
* Coincident demand includes pass-through load but excludes interruptible load
** Fort Wayne (AP) Weather Station
^ One Cooperative terminated Membership effective Jan. 2012
^^ One Cooperative terminated Membership effective Jan. 2015 and one cooperative terminated Membership effective July 2015

GRAPH 2-4 Daily Load Shape – Summer Peak

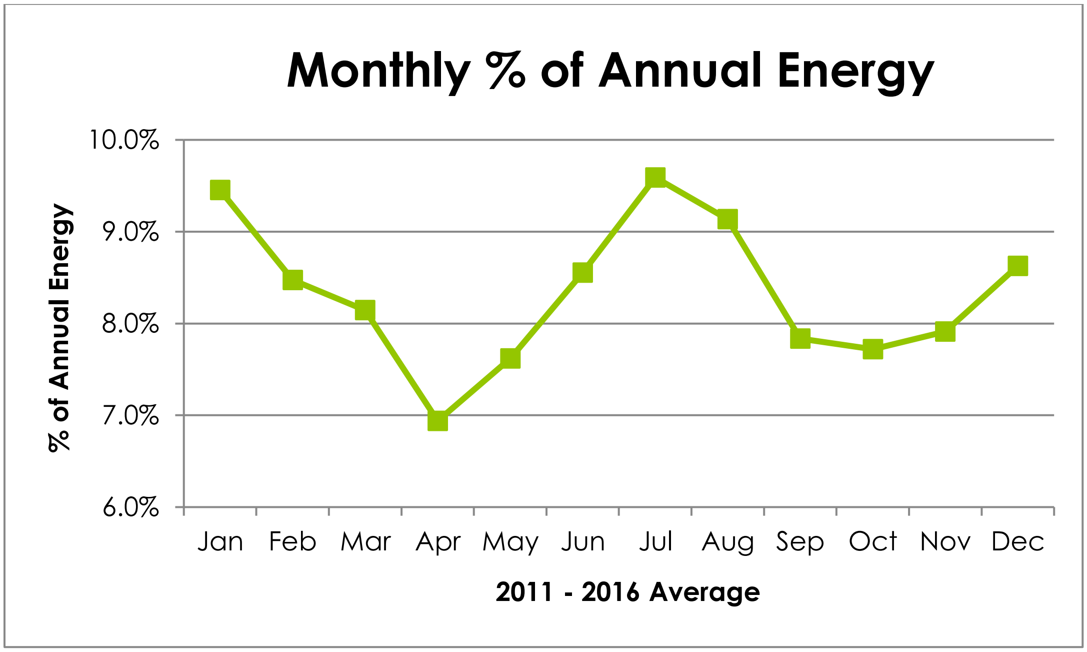


The following graphs illustrate the average monthly system load characteristics excluding interruptible load.

GRAPH 2-5 Monthly Load Summary - Annual Peak



GRAPH 2-6 Monthly Load Summary – Annual Energy



Residential Survey

Wabash Valley conducts a residential saturation survey on behalf of its Members every two years. Approximately 66% of residential customers have central air conditioning and 12% of residential customers use a heat pump to cool their homes. Nearly 27% of residential customers heat their homes with an electric system.

The Company has conducted surveys since the early 1980s. The results are used in the load forecast as an estimate of energy conservation measures and to develop programs that will better serve the residential customers. The last survey was conducted in late 2016 through early 2017.

In general, the results of the 2017 residential survey were comparable to the 2015 survey. Again for the 2017 survey, participants were asked additional energy-related questions including one designed to gauge the level of awareness and interest in distributed generation. Approximately 1% of survey participants have installed some form of on-site generation and another 10% have seriously considered installing it. This is a slight increase over the 2015 survey.

Non-Member Loads

As described in our system profile, Wabash Valley supplies power to two non-member customers under separate wholesale firm requirements agreements. We serve one non-member Michigan customer under a six-year contract ending in 2017. We serve the other non-member Indiana customer under a contract that ends in 2028. This non-member Indiana load is forecasted at approximately 195 MW and 1,037 GWh annually and is situated in the AEP sub-balancing area of PJM. This customer's demand above 20 MW may be interrupted.

Existing Resources

Wabash Valley's existing resources include both supply-side and DR resources. Supply-side resources include generation resources owned by the Company or purchased from other utilities. DR resources include a number of programs implemented by Wabash Valley's Members.

1. Supply-Side Resources

Wabash Valley owns several electric generating units within the MISO and PJM footprint. The following table summarizes Wabash Valley's generation ownership.

TABLE 2-7 Generation Ownership

Resource (Wabash Valley Share)	MW
Gibson Unit 5	156
Prairie State	83
Holland Energy	313.5
Wabash River Highland	160
Vermillion	240
Lawrence	86
Landfill Gas	53.6
Solar	1.6
Total Owned Generation	**1,093.7**

a. Gibson Unit 5

Owned generation includes a 25% undivided ownership in Gibson Unit 5 which Wabash Valley jointly owns with Duke Energy Indiana (Duke Indiana) and Indiana Municipal Power Agency (IMPA). Gibson Unit 5, located in southwestern Indiana, is a 625 MW coal-fired generating facility operated by Duke Indiana. Operating under the Gibson Unit 5 Joint Ownership, Participation, Operation, and Maintenance Agreement (Gibson 5 Agreement), each party is responsible for paying its proportionate share of operating costs for the plant. In return, the Company is entitled to approximately 156 MW of capacity and related energy output of the plant. Gibson Unit 5 is equipped with "scrubbers" to be in compliance with sulfur dioxide (SO_2) and particulate matter emissions regulations and programs. Duke Indiana also installed Selective Catalytic Reduction (SCR) equipment on Gibson Unit 5 for compliance with nitrogen oxide (NO_x) emission regulations. Duke Indiana is currently evaluating options for compliance with and monitoring potential changes to the final Carbon Pollution Emission

Guidelines for Existing Stationary Sources: Electric Utility Generating Units rule, the rule related to the Disposal of Coal Combustion Residuals (CCR) from Electric Generating Utilities and other significant environmental regulations.

Duke Indiana, the majority owner of Gibson Unit 5 and the other units at Gibson Station, has the responsibility for fuel procurement, fuel inventory, and operation. Gibson Station uses approximately 7.5 million tons of coal per year. The coal is purchased through various contracts and the spot market. Wabash Valley reviews Duke Indiana's fuel procurement contracts and practices on a regular basis.

Gibson Unit 5 has a 625 MW net dependable capacity and there are no anticipated changes in this capacity value for the period of the IRP.

b. Prairie State

In May 2016, Wabash Valley acquired a 5.06% interest in the Prairie State Energy Campus (PSEC) located in Marissa, Illinois, which consists of Prairie State Units 1 and 2 and an on-site captive coal mine. Unit 1 and Unit 2 were placed in commercial operation in June 2012 and November 2012, respectively. The total net capacity of the coal-fired generating facility operated by the Prairie State Generating Company (PSGC) is 1,650 MW. The Company's share totals 83 MW (split evenly between Units 1 and 2). Eight other public power utilities own the remaining 1,567 MW in various percentages of ownership. Operating under a Participation Agreement, each party is responsible for paying its proportionate share of operating costs for the plant.

PSEC was designed and constructed with modern environmental control technologies, including low NO_x burners, mercury extraction using calcium bromide with an activated carbon unit for back-up, selective catalytic reduction units to further reduce NO_x, dry and wet electrostatic precipitators to limit particulate emissions and SO_2 scrubbers.

PSEC's on-site captive coal mine produces bituminous coal from the Illinois Basin. Maximum annual production is approximately 7 million tons. It has proven reserves that are expected to provide the power plant with 100% of required fuel through about 2042. As a result, PSEC is not exposed to volatile coal prices or rising railroad transportation costs.

c. Holland Energy

Wabash Valley is a 50% owner of Holland Energy. Hoosier Energy is the other 50% owner. Holland Energy is an approximately 627 MW combined cycle generating facility comprised of two GE Frame 7FA combustion turbines, two Nooter-Eriksen Heat Recovery Steam Generators (HRSG) and a single Toshiba steam turbine. Both combustion turbines are equipped with a dry low-NO_x combustion burner system and inlet-air evaporative cooling. The HRSGs are equipped with SCRs and with large natural gas-fired duct burners to supplement steam production. The HRSGs both supply a single 344 MW

Toshiba steam turbine. The facility is equipped with Continuous Emission Monitoring Systems (CEMS) to monitor the NO_x emission from both HRSG stacks. Holland Energy is located on a combined 220-acre tract north of Effingham, Illinois.

The Company oversees natural gas procurement for Holland Energy. Holland Energy purchases natural gas from a single national supplier at market based rates. The supplier utilizes both their firm transportation and storage agreement on the Natural Gas Pipeline Company of America (NGPL) pipeline to service Holland Energy.

d. Wabash River Highland

In 2016, Wabash Valley ceased operation, and then sold, the coal gasification plant located adjacent to the Wabash River Combined Cycle facility. This coal gasification plant was integrated with the combined cycle plant operations and began commercial operation in 1995. It provided synthetic gas to the Unit 8 combustion turbine along with a majority of the steam for the 1950s vintage repowered Unit 1 steam turbine. At the same time that the gasification plant was shut down, the Company also permanently retired the Unit 1 steam turbine and ceased combined cycle operations at the site. In early April 2017, Wabash Valley completed the installation of new dry low-NO_x combustion hardware on the remaining Unit 8 combustion turbine, a GE Frame 7FA now referred to as Wabash River Highland CT, which continues to operate as a simple cycle peaker using natural gas as its only fuel source. In its new configuration, Wabash River Highland CT now has a nominal capacity of 160 MW with a summer capability of 139 MW. The combustion turbine is located in Vigo County, Indiana.

The Company procures the natural gas for Wabash River Highland by purchasing from a national supplier at market based rates.

e. Vermillion

The Vermillion generating station consists of eight (80 MW) gas-fired GE Frame 7EA generators. Wabash Valley owns a 37.5% undivided ownership interest in Vermillion or 240 MW. The summer capacity rating for each of the Vermillion units is 74 MW.

Duke Indiana, the majority owner of Vermillion, has the responsibility for fuel procurement and operations.

f. Lawrence

Wabash Valley owns one-third of the Lawrence generating station which consists of six GE LM6000 simple cycle generating units. Hoosier Energy owns the other two-thirds of the facility. Each of these gas-fired units has a summer capacity rating of 43 MW. The Lawrence facility was jointly constructed by Hoosier Energy and Wabash Valley and went into commercial operation in May 2005.

Hoosier Energy, the majority owner of Lawrence, has the responsibility for fuel procurement and operations.

g. Landfill Gas

Wabash Valley installed landfill gas-fired internal combustion (IC) generating units at existing solid waste landfill sites in central and northern Indiana and purchased a site at an existing solid waste landfill site in central Illinois. To date, the Company has installed and/or acquired fifty-one Caterpillar 3516 engine-generators and eight Caterpillar 3520 engine-generators at eight Waste Management (WM) landfill sites and one Peoria Disposal Company (PDC) landfill site which in aggregate are capable of generating over 53 MW. The IC generators at each site are operated and maintained under contracts with Waste Management of Indiana, Inc. and MacAllister Machinery Company, Inc.

h. Solar

Wabash Valley constructed three 540 KW community solar facilities located in Peru, IN, Paris, IL and Ste. Genevieve, MO. These facilities went into commercial operation in September 2017.

i. Power Purchases

Any remaining capacity and energy requirements come from power purchases from various sources. Wabash Valley has a mixture of base, intermediate, load following and peaking power purchase contracts. These contracts may be characterized as both long and short-term contracts. The Company purchases blocks and seasonal amounts of power from numerous suppliers. The major long-term resources are purchased from AEP, Duke Indiana, NextEra, Macquarie, Mercuria and Morgan Stanley. Also, Wabash Valley is currently purchasing 39 MW of output from wind turbines. As 29 MW of these wind power purchases terminate in the near term, the Company has contracted to purchase an additional 100 MW of output from two Meadow Lake Wind Indiana projects when they begin commercial operation in the first quarter of 2018 and 2019. Also, Wabash Valley has contracted to purchase an additional 100 MW of output from wind turbines at an Illinois wind project when it begins commercial operation in the first quarter of 2020. The following table describes the Company's existing purchased power resources.

TABLE 2-8 Wabash Valley's Power Purchases Summary

Wabash Valley's Power Purchases Summary				
Supplier	**Type**	**Expires**	**MW**	**Comments**
AEP	Firm	2033	160	Load Following
Duke Indiana	Firm	2032	70	85% Min. Capacity Factor
Duke Indiana	Unit Peaking	2021	50	
Duke Indiana	Firm	2031	150-180	65% Min. Capacity Factor; 180 MW beginning in 2020
Duke Indiana	Firm	2025	55	50% Min. Capacity Factor
Story Wind	Wind Turbine	2019	21	
NextEra	Firm	2017	50	Fixed Price
NextEra	Firm	2017-2018	100	Fixed Price
Macquarie	Firm	2017-2018	50	Fixed Price
BP Energy	Firm	2018	50	Fixed Price
Mercuria	Firm	2019-2023	100	Fixed Price
Morgan Stanley	Firm	2018-2025	100	Fixed Price
Morgan Stanley	Firm	2019-2022	100	Fixed Price
NextEra	Firm	2021-2030	50	Fixed Price
NextEra	Firm	2024-2032	50	Fixed Price
Morgan Stanley	Firm	2024-2035	50	Fixed Price
Agriwind	Wind Turbine	2018	8	
Pioneer Trail Wind Farm	Wind Turbine	2030	10	
Windy Ridge	Digester	2020	1.4	1 year auto renewals after 2020
County Line	Landfill Gas	2039	4	
Meadow Lake Wind V	Wind Turbine	2037	25	Expected to begin commercial operation in Q1 2018
Meadow Lake Wind VI	Wind Turbine	2038	75	Expected to begin commercial operation in Q1 2019
Illinois Wind Project	Wind Turbine	2039	100	Expected to begin commercial operation in Q1 2020
Various Suppliers	Short-Term	Various	Various	Usually 1-2 years in duration

j. Market Resources

Wabash Valley has numerous agreements which provide access to economical market energy and the ability to cover periods of extreme temperature or unplanned outages with emergency energy. These purchases are typically priced at the prevailing market price and do not include a significant demand charge. Additionally, the Company operates in the MISO and PJM energy markets. These markets provide energy to Wabash Valley loads at incremental hourly market prices.

k. Environmental Effects

Gibson Unit 5

Wabash Valley owns a minority share of Gibson Unit 5. Duke Indiana, the majority owner of Gibson Unit 5 and Gibson Station, includes the significant environmental effects from this unit in its IRP. Duke Indiana is currently evaluating options for compliance with and monitoring potential changes to the final Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units rule, the rule related to the Disposal of CCR from Electric Generating Utilities and other significant environmental regulations.

Prairie State

Wabash Valley owns a 5.06% share of the coal-fired generating facility operated by the PSGC. PSEC is currently regulated by the Acid Rain Program and the Cross-State Air Pollution Rule (CSAPR). PSGC does not receive Acid Rain Program allowances. Because PSEC commenced commercial operation after January 1, 2010, PSEC receives new unit set-aside allowances for both the CSAPR Annual NO_x and SO_2 programs – these allowances are determined during each operating year by the United States Environmental Protection Agency (USEPA). Starting with the 2017 NO_x ozone season, USEPA promulgated an update to CSAPR that tightened NO_x ozone season allowances and allocated allowances to PSGC; thus, PSEC is not subject to the new unit set-aside allowance program for the NO_x ozone season. If PSEC is short on allowances for any given program, Wabash Valley will elect to transfer the needed allowances from the Company's accounts, purchase allowances and/or request PSGC to purchase allowances on Wabash Valley's behalf.

PSEC has a Title V air operating permit issued by the Illinois Environmental Protection Agency (IEPA). The facility is equipped with the following types of environmental control technologies:

Type	Description
1. Low- NO_x Burners	Impede the formation of NO_x by lowering the temperature of the boiler flame to control the way coal combusts
2. Selective Catalytic Reduction (SCR)	Injects product into the air stream as it passes over a catalyst, causing NO_x to be converted to nitrogen and water
3. Dry Electrostatic Precipitator (Dry ESP)	Uses electrodes to place an electric charge on large particulates then captured by an oppositely charged plate
4. SO_2 Scrubbers (Scrubbers)	Injects a limestone/water mixture into the air stream, where it reacts to capture the SO_2
5. Wet Electrostatic Precipitator (Wet ESP)	Uses multiple high-voltage fields to attract fine particulates to an electrode, which is washed with water to capture the constituents
6. Mercury Control	Uses calcium bromide; to further reduce mercury, activated carbon can be injected

The PSEC removes more than 85% of NO_x, 98% of SO_2, 99% of particulate matter and 95% of mercury.

PSEC requires water to run both the power plant and mine. PSEC has an on-site pond that stores enough water for ~30 days' use or ~778M gallons. Water is pumped 15 miles from the Kaskaskia River, which is a tributary of the Mississippi River. PSEC acquired back-up water rights from the State of Illinois; if the flow of the Kaskaskia River is insufficient, then the State will release water from the Carlyle and Shelbyville Lakes into the Kaskaskia River to ensure sufficient flow. Water intake is permitted and monitored by the U.S. Army Corps of Engineers and the IEPA.

Holland Energy

Wabash Valley is a 50% owner of Holland Energy located in Illinois. The facility is a gas-fired combined cycle combustion turbine. It is currently regulated by the Acid Rain Program and CSAPR. It has a Title V air operating permit issued by the IEPA. The facility is equipped with SCR for NO_x removal. SO_2 emissions from a gas-fired facility are de minimis.

In terms of 2016 SO_2 and NO_x annual emissions, Holland Energy is in the neighborhood of:

***SO_2* (tons)**	***NO_x* (tons)**
<4	~74

As finalized, the USEPA's MATS rule does not apply to this facility as it is gas-fired.

Holland is not a significant generator of solid waste. Solids removed from the treatment of raw (incoming) water from the Kaskaskia River are shipped off-site to a non-hazardous landfill. No on-site landfills are present. Holland is not a large generator of hazardous waste. The CCR regulation, discussed for Gibson Unit 5 above, would not affect Holland as it combusts no coal. Water used within the plant processes comes from the Kaskaskia River. The facility has an intake structure to bring in the raw water and pre-treats the water prior to using it within the facility processes - water consumption currently averages 4,659 gallons per minute (GPM). The Holland Energy facility is permitted to discharge process waters and plant drainage to the Kaskaskia River through an outfall. Water discharge from this outfall currently averages 967.4 GPM. All storm water is permitted to be discharged through two outfalls to an unnamed tributary to Brush Creek. Potable water used at the facility originates from potable wells and sanitary wastewaters are now directed to a local treatment plant.

Holland is subject to the §316(b) Rule for Cooling Water Intake Structures at Existing Facilities. At this time, Holland has been granted an alternative compliance schedule as allowed by this rule and plans to submit the required documentation as agreed-to.

Wabash River Highland

The Wabash River Highland facility is owned by Wabash Valley. As previously stated, the facility is now a natural gas-fired simple cycle peaking unit. It is currently regulated by the Acid Rain Program and CSAPR. It has a Tile V air operating permit issued by the Indiana Department of Environmental Management (IDEM). The facility is equipped with dry low-NO_x burners for NO_x removal. SO_2 emissions from a gas-fired facility are de minimis.

SO_2 and NO_x air emissions on an annual basis are estimated as follows, but will vary from year to year:

SO_2 (tons)	**NO_x (tons)**
~4	~60

Similar to Holland, USEPA's MATS rule no longer applies to this facility as it is gas-fired.

Additionally, the plant is not a significant generator of solid waste as an operation. The CCR regulation, discussed for Gibson Unit 5 above, does not affect Wabash River Highland as it combusts no coal.

Because the plant does not utilize water for generation, Wabash River Highland neither consumes nor discharges process water. Therefore, Wabash

River Highland is permitted to discharge only storm water and metal cleaning waters.

Simple Cycle Gas Turbines

Significant environmental effects from owned generation assets are modeled and accounted for in the budgeting process for unit operations. Vermillion Generation Station and Lawrence Generating Station consist of natural gas, simple cycle peaking units. Based on the fact that these units utilize natural gas as a fuel source and run relatively few hours on an annual basis, the emissions are negligible compared to other base load units. Other entities have responsibilities for compliance with the Title V air operating permits at these gas-fired peaker combustion turbine sites. These sites do not generate significant amounts of solid waste.

Landfill Gas

Wabash Valley owns several, small landfill gas generator facilities that are located on landfills owned by WM in Indiana and PDC in Illinois. The WM-related generating facilities are subject to air permits issued by IDEM; but because the sites are owned by WM, the air permits are issued to them. The Illinois facility is subject to air permits issued by IEPA to the Company as owner. These generating facilities do not create significant amounts of solid wastes.

SO_2 & NO_x Allowances

The Acid Raid Program and CSAPR are in effect. Wabash Valley maintains an electronic SO_2 & NO_x emissions inventory. The inventory accounts for allowances held in reserve including any USEPA allocations and allowances from market purchases. The allowance inventory is in accounts under the USEPA's Clean Air Markets Division (CAMD) which sets up a number of checks and balances for oversight of allowance transactions. For those facilities in which the Company is a minor owner (Gibson Unit 5, Lawrence Generating Station, PSEC and Vermillion Generating Station), the SO_2 allowances are held in accounts by the majority owner. For Holland Energy in Illinois, Wabash Valley maintains the allowance account under CAMD.

The Company routinely checks on the SO_2 & NO_x status under CSAPR and the Acid Rain Program:

- Amount of SO_2 & NO_x allowances present in the account
- Projected SO_2 & NO_x emissions estimates
- Actual SO_2 & NO_x emissions on a quarterly or semi-annual basis
- Current market price of SO_2 & NO_x allowances
- Tracking of volatility of SO_2 & NO_x allowance market

Carbon Emission Pollution Standards

In August 2015, USEPA finalized a suite of carbon emission pollution standards for new, modified, reconstructed and existing electric generating units. At this time, Wabash Valley is evaluating a compliance strategy with these standards for its facilities, routinely communicating with each state to determine each affected state compliance strategy and monitoring the status of these programs in litigation and currently under review by USEPA.

2. Demand-Side Management – Demand Response Resources

Wabash Valley and its Members have successfully included DR resources as part of their power supply portfolio since 1981, when the direct-load control (DLC) program for residential water heaters was established. Prior to 1986, each Member performed individual control of the load management devices to reduce their non-coincident peak billing demands. In 1986, the Company began centralized control of the DR program to more effectively manage overall association power costs.

Each year Wabash Valley works with its Members to evaluate the power supply environment and to determine how to incorporate DR programs into the overall power supply portfolio. In 1999, due to rising summer wholesale market prices, the Company added two new programs to its DR arsenal: the commercial and industrial-based Customer Payback Plan and the residential air conditioner load management program. In early 2011, it was decided to suspend the Customer Payback Plan mainly due to lack of participation. Also in 2011, Wabash Valley created two rate riders that will allow end use C&I customers the ability to participate in MISO's Emergency Demand Response Initiative and PJM's Emergency Load Response Program.

Since 2012, Wabash Valley has offered the PowerShift® program, an updated DLC program. To date, 19 of the 23 Members have signed agreements to participate in the PowerShift® program. The PowerShift® program includes participants' water heaters (WH), air conditioners (AC), pool pumps (PP), field irrigators (FI), entire homes (EH), ditch pumps (DP) and grain dryers (GD). Please see the table below for details as of June 1, 2017.

TABLE 2-9 Wabash Valley's PowerShift® Program Summary

Member	Total KW	WH Switches	AC Switches	FI Switches	EH Switches	PP Switches	DP Switches	GD Switches	C&I	Total Switches
Boone	1,135.20	1,892								1,892
Carroll White	2,317.00	3,295	340							3,635
Citizens	99.00	55	66							121
Corn Belt	9,076.80	463	1,729		2,020					4,212
EnerStar	428.88	140	214	3		6				363
Fulton	8,194.66	1,926	90	173						2,189
Hendricks	1,782.20	2,412	335							2,747
Jasper	961.80	1,603								1,603
Kankakee	7,221.15	438	927	107			20	7	16	1,515
LaGrange	11,113.59		143	268						411
Marshall	283.00	130	200			5				335
Miami-Cass	554.60	696	137							833
MJM	38.40	29	21							50
NineStar	87.20	77	41							118
Noble	3,281.80	17		92						109
Parke	3,170.80	2,321	905	8					10	3,244
Steuben	3,943.40	654	664	68		17				1,403
Tipmont	1,323.40	1,059	688							1,747
Total	**55,012.88**	**17,207**	**6,500**	**719**	**2,020**	**28**	**20**	**7**	**26**	**26,527**

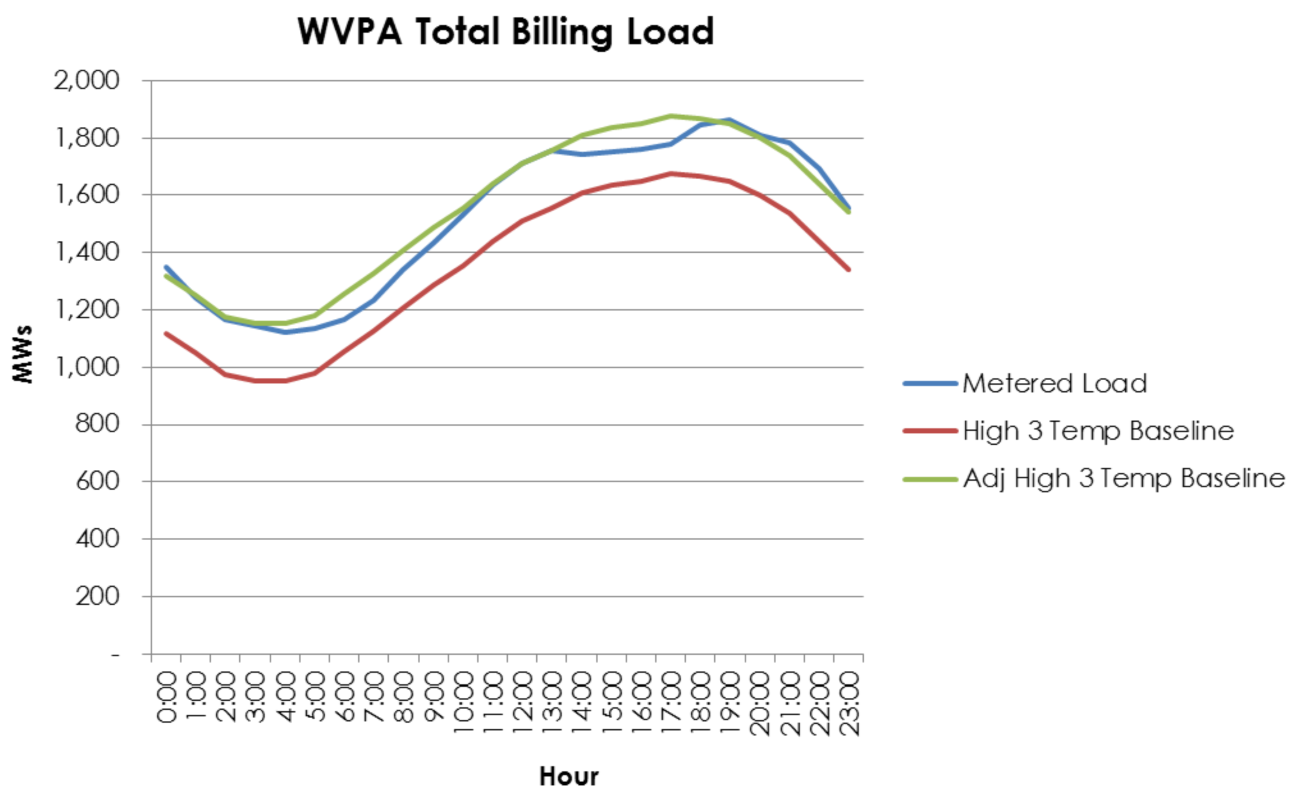
DR programs continue to be an integral part of Wabash Valley's power supply portfolio with the primary purpose to keep power supply costs as low as possible. The Company now approaches DR programs as a resource, just like a peaking plant. The economics, operation, environmental compliance evaluation and planning are all treated similar to a peaking plant. Wabash Valley is engaged with each affected state and will provide input on any federal or state plan that impacts Demand-Side Management in compliance with the final Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units rule.

a. Goals & Objectives

Wabash Valley and our Members possess a goal of controlling costs and improving efficiency in an effort to supply reliable power at a low and stable cost. In addition, the Company and our Members want to offer the end retail customer the greatest possible value in electric service and to assist them in improving their quality of life.

Marketing at Wabash Valley is a collaborative effort with the Members and is closely tied to the Company's DR efforts. Wabash Valley is working to promote end-use technologies that are beneficial to the retail customer and allow the Company to control operating costs. Wabash Valley currently has 55 MW of peak load reduction enrolled in the PowerShift® program. One of the potential problems with the direct control of customer appliances is the inconvenience to the customer. Wabash Valley is very concerned with potential negative impacts on customers and closely monitors this situation. The PowerShift® program has achieved a 75% reduction in total hours of interruption compared to the DLC program that preceded it. The implementation of a Distributed Energy Resource Management System (DERMS) has provided the Company the ability to collect and analyze meter data with 5 minute, 15 minute, and 60 minute intervals at the retail and wholesale levels. The DERMS schedules and provides measurement and verification for all the DR events. The measurement and verification of DR events is a significant task since DR is load that has not been consumed and a meter cannot measure the load. The DERMS collects all the meter data and performs measurement and verification calculations. The DERMS uses historical baseline calculations to provide load reduction values. The graph below is an example of our measurement and verification.

Graph 2-10 PowerShift® Measurement & Verification Example



b. Existing Programs

i. Water Heaters

Electric water heaters that have a two-way communicating advanced metering infrastructure (AMI) network switch installed can participate in the PowerShift® program. Wabash Valley has deemed that each water heater provides .6 KW of load reduction. This value was determined using historical analysis, industry best practices and has diversity built in. Under the PowerShift® program, all water heaters are shut off for 100% of the event duration.

ii. Air Conditioners

Air conditioners that have a two-way communicating AMI network switch installed can participate in the PowerShift® program. Wabash Valley has deemed that each air conditioner provides 1 KW of load reduction. This value was determined using historical analysis, industry best practices and has diversity built in. Under the PowerShift® program, all air conditioners are cycled off for 50% of the event duration, typically 15 minutes on and 15 minutes off.

iii. Pool Pumps

Pool pumps that have a two-way communicating AMI network switch installed can participate in the PowerShift® program. Wabash Valley has deemed that each pool pump provides 1 KW of load reduction. This value was determined using historical analysis, industry best practices and has diversity built in. Under the PowerShift® program, all pool pumps are shut off for 100% of the event duration.

iv. Field Irrigation

Field irrigators that have a two-way communicating AMI network switch installed can participate in the PowerShift® program. Wabash Valley has deemed that each field irrigator provides 75% of nameplate (ranging from 3 to 123 KW) pump horse power in KW reductions. Under the PowerShift® program, all field irrigators are shut off for 100% of the event duration. These participants provide 47% of the current PowerShift® load reductions.

v. Entire Home

Entire home participants currently use an older style switch utilizing one-way VHF communications. Wabash Valley is currently working with the AMI vendors to develop a two-way switch capable of meeting our needs. The entire home group averages 3.5 KW per participant. Under the PowerShift® program, all participants are shut off for 100% of the event duration; however, each event can only last up to 4 hours per participant.

vi. Ditch Pumps

Ditch pumps that have a two-way communicating AMI network switch installed can participate in the PowerShift® program. Wabash Valley has deemed that each ditch pump provides 75% of nameplate pump horse power in KW reductions. Under the PowerShift® program, all ditch pumps are shut off for 100% of the event duration.

vii. Grain Dryers

Grain dryers that have a two-way communicating AMI network switch installed can participate in the PowerShift® program. Wabash Valley uses the nameplate power rating for each dryer to obtain the KW reduction available. Under the PowerShift® program, all grain dryers are shut off for 100% of the event duration.

Wabash Valley is developing future programs including a commercial and industrial (C&I) program and a connected thermostat program. The PowerShift® program is a registered resource in MISO. This market determines when the program is called and the compensation the Company receives. MISO has not called on the program to date.

3. Demand-Side Management – Energy Efficiency Programs

The goal of Wabash Valley's EE programs is two-fold: deliver cost-effective energy savings and a high level of member satisfaction.

Wabash Valley started offering EE programs to its Member cooperatives in 2008 with the Touchstone Energy® Home Program, a residential new construction program focused on helping builders and homeowners construct a high performance, comfortable, durable and low energy cost home. Since 2008, the Company has worked jointly with our Member cooperatives, retail members and our Power Supply staff to develop attainable savings goals that lessen baseload power supply costs and increase retail member satisfaction throughout the service territory. At Wabash Valley, the POWER MOVES® initiative represents more than wholesale cost savings; it represents a way to help retail members (both residential and commercial/industrial) save on their monthly utility bills.

A brief description of the programs included in the 2017 POWER MOVES® EE program portfolio follows below. Further details of the program can be seen at our PowerMoves.com website.

a. Residential

i. Second Refrigerator/Freezer Removal Program

Residential customers are paid an incentive of $35 to give up older, working secondary refrigerators and/or freezers. These units are collected and recycled in an environmentally-friendly manner by a third party appliance recycling company. Participating customers will receive education on the benefits of not replacing the refrigerator/freezer or replacing it with an ENERGY STAR model. This program ended in November 2015 when our contractor, JACO, ceased operations; however, Wabash Valley is currently evaluating the future status of this program.

ii. Air Source Heat Pump Rebate

Residential customers are offered a rebate to install a new air source heat pump when they replace an existing electric resistance system, air source heat pump, propane or fuel oil heating system. New heat pumps must meet minimum efficiency standards.

iii. Geothermal Heat Pump Rebate

Residential customers are offered a rebate to install a geothermal heat pump when they build a new home. Additionally, retail customers with existing electric resistance or fossil fuel systems are also eligible for this rebate. New geothermal units must meet minimum efficiency standards.

iv. Touchstone Energy Home Program

Wabash Valley pays the Home Energy Rating System (HERS) fee to encourage residential customers building new homes to follow our specific set of high-performance construction standards. Wabash Valley also provides a one-year heating and cooling cost guarantee for homes that qualify for this program. The average size home in this program is 3,000 sq. ft. and has a guaranteed one-year heating cost of $550.

v. LED Discount Program

Wabash Valley offers an incentive of up to $3.00 on ENERGY STAR qualified LEDs purchased by residential customers.

vi. LED Security Lights

Wabash Valley Member cooperatives are offered a rebate of $75/fixture to retrofit existing cooperative-owned, non-LED security lights, to DLC qualified LED security lights with the goal of saving energy while also reducing costs of maintaining traditional security lighting.

b. Commercial & Industrial (C&I)

i. Lighting Retrofit Incentives

Wabash Valley offers a prescriptive rebate to encourage C&I accounts to replace existing inefficient lighting with new more efficient lighting. Incentive amounts vary based on the type of bulb or fixture being replaced and installed.

ii. HVAC Retrofit Incentives

Wabash Valley offers a prescriptive rebate to encourage C&I accounts to replace existing inefficient heating and cooling systems with new more efficient heating and cooling systems. New equipment must meet minimum efficiency standards.

iii. Schools Retrofit Program

Wabash Valley offers energy performance audits to K-12 school buildings. Buildings are eligible to receive lighting and HVAC incentives at a higher incentive level. Based on the audit, schools may also be eligible to receive incentives on additional measures.

iv. Agricultural Retrofit Program

Wabash Valley offers energy performance audits to agricultural accounts. Buildings are eligible to receive lighting, HVAC and agricultural specific measure incentives. Incentives vary based on the equipment replaced and the energy savings of the new equipment installed.

v. C&I Custom Retrofit Program

C&I customers who wish to receive incentives for energy efficient equipment that does not fit into any other C&I category are asked to submit energy savings projects for review by an independent third party engineering firm. Incentives are based on the projected amount of energy savings and a set amount per KWh.

vi. Business New Construction Program

The intent of this program is to encourage the construction of energy-efficient commercial/industrial buildings. Incentives are provided to increase building and system efficiency over the base energy code for Indiana, Illinois and Missouri. Wabash Valley has a set list of prescriptive measures, but we will also review projects and offer a custom rebate for items that are not included on the prescriptive list.

Owners/developers who are constructing a new commercial building or a new addition to an existing building, or are conducting a major renovation to an existing building or multi-family dwellings of six or more units are eligible for this program.

c. Evaluation, Measurement & Verification (EM&V) Approach and Objectives

EM&V activities, as well as continuous program improvements, are critical components of any demand-side management (DSM) EE program. EM&V activities are used to provide the information required to make good decisions and verify the effectiveness of past decisions regarding investment in the POWER MOVES® program. Continuous program improvements are needed to support the program goals as they evolve and expand to provide a higher level of retail customer satisfaction.

The Company has worked with Navigant since 2011 to develop our EM&V approach and plans. The overall evaluation approach is based on a philosophy of "integrated evaluation" that includes Navigant staff evaluators as members of project teams involved in the various stages of program planning, design, monitoring and evaluation. Consequently, Navigant validates program savings impacts, monitors program performance and ensures that incentives paid are proportionate to achieved savings. These activities serve as a way to audit, both internally and independently, the actual level of savings being delivered and to help maximize program effectiveness and ensure cost-effective program delivery.

Wabash Valley's continuous program improvements include integrating the findings of previous and current EM&V reports and working iteratively with evaluation and implementation contractors to determine future changes to programs. Additionally, feedback from retail customers and our Member cooperatives on both design and on-going EM&V priorities is encouraged. This allows all parties to shape the structure of the efficiency programs both initially and in an on-going way.

Wabash Valley's major objectives for our evaluation process include:

- Develop new, cost effective energy and demand saving programs and measures to meet the needs of our Members' retail customers.
- Quantify energy and peak demand savings impacts within the current POWER MOVES® portfolio.
- Determine process-related program strengths and weaknesses and identify ways in which the programs can be improved to better meet the needs of retail customers and our 23 Member cooperatives.
- Determine and continually improve program cost-effectiveness.
- Provide technical assistance and expert opinions to the Company, our Members and local trade allies.

For 2016, Wabash Valley's EM&V plan completed Evaluation Cycle 4, Wave 2 for the timeframe 4/1/2016 – 12/31/2016 reviewing select programs in our portfolio as shown in Table 2-11 below:

Table 2-11 EM&V Activities

Evaluation Period		EC-1	EC-2	EC-3	EC-4/W1	EC-4/W2
		2012	2013	1/2014 - 6/2015	7/2015 - 3/2016	4/2016 - 12/2016
Residential	Efficient Products			X		
	Existing Homes	X	X	X	X	X
	Touchstone Energy Home			X		
	Appliance Recycling	X	X	X		
	Utility Program			X		
Commercial	Comprehensive	X	X	X	X	X
	Custom	X	X	X	X	X
	New Construction (BNC)		X	X	X	X

The following tables present Wabash Valley's annual energy savings from EE programs for 2010-2016 and cumulative program highlights for 2008-2017:

Table 2-12 Energy Efficiency MWh Savings 2010-2017

Wabash Valley EE Savings (MWh)								
	2010	2011	2012	2013	1/2014 – 6/2015	7/1/2015 – 3/31/2016	4/2016 – 12/2016	1/2017 – 12/2017 (As of 8/2017)
MWh Savings	5,043	4,898	13,579	22,717	27,330	23,488	64,604	25,192
					Verified	Verified	Verified	Goal: 34,277

Note: EM&V time period switched to 18 months from a calendar year in 2014. EM&V for the 2017 calendar year is anticipated to take place in mid-2018.

Table 2-13 Energy Efficiency Cumulative Program Highlights 2008-2017 (As of 8/2017)

Cumulative Program Highlights	
Residential Member Participants	41,481
C&I Member Participants	1,312
Total Amount of Incentives Paid	$14,299,000
Avoided Power Supply Cost @ $40/MWh	$17,268,000

The savings goal for 2017 is 34,277 MWh.

4. Transmission Resources

Wabash Valley takes service under the PJM tariff for delivery to load in the AEP balancing area and service under the MISO transmission tariff for Ameren-Illinois, Ameren-Missouri, IP&L, and Duke Indiana local balancing areas. The Company continues receiving grandfathered transmission service under the MISO Tariff for the NIPSCO area. All ancillary services are coordinated or purchased through these agreements.

In the Duke Indiana planning area, along with Duke Indiana and IMPA, Wabash Valley owns a proportionate share of the transmission system referred to as the Joint Transmission System (JTS). The Transmission and Local Facilities Agreement and the Operation and Maintenance Agreement (Transmission Agreement) divides the ownership of the JTS, as well as proportionately divides the operating costs and revenues among the three partners. The JTS is under MISO operational control. Duke Indiana, as the majority JTS owner, is directly responsible for planning and operation of the joint system with MISO. The Company coordinates planning with Duke Indiana via committees established within operating contracts between Duke Indiana, IMPA and Wabash Valley. The goal of this arrangement is to plan for an optimal transmission system utilizing a single system design approach.

In other balancing areas, Wabash Valley predominately owns short radial transmission lines. The Company coordinates with PJM, MISO, and the appropriate transmission owners within both regional transmission organizations (RTOs) regarding both the maintenance of existing transmission lines as well as the provision of new facilities. Furthermore, Wabash Valley provides long-range load forecast information to support coordinated planning within the RTOs.

Wabash Valley does not prepare or file FERC Form 715 Annual Transmission Planning and Evaluation Report. FERC Form 715 is considered "Critical Energy Infrastructure Information" (CEII). This form is filed by Duke Indiana on behalf of the Company.

5. Transmission Impacts on Resource Planning

As described above, Wabash Valley participates within both the MISO and PJM RTOs. The structure of both RTOs inherently incorporates the value of transmission by operating the markets with locational pricing. The locational marginal price (LMP) is influenced by the impact of transmission congestion within the markets. Therefore, the LMP provides the value of the transmission transfer capability for delivery of energy. Currently, the Company's load is located primarily in regions with adequate transmission facilities. Congestion is not a major factor in Wabash Valley's overall power portfolio. However, the Company uses financial transmission rights (FTRs) to hedge the cost of the transmission congestion that does exist within the portfolio. Currently, the Company has adequate allocations of FTRs to provide cost hedging for Wabash Valley sources to its load through the existing FTR allocation processes in PJM and MISO. Due to the nature of the FTR processes in the RTOs this may change due to the future availability and configuration of transmission capability.

By utilizing the LMP, the Company does take into account the value of transmission system upgrades. Wabash Valley uses Indiana Hub forecasted market prices as an assumption in the IRP. Wabash Valley allows the market to price the value of expected transmission use and limits in the future relative to the definition of the Indiana Hub. The Company's resources and loads are located generally in or near the Indiana Hub, so the price provides a reasonable estimate of value over the time horizon of the study.

Additionally, both RTOs administer locational capacity markets that incorporate the ease of transfer capability to determine the pricing in the zones. Currently, Wabash Valley's load and the majority of its resources are located in unconstrained zones. MISO and PJM have processes to evaluate and integrate new transmission to improve transmission system reliability and market efficiency.

Wabash Valley provides data and information to MISO and PJM as a part of several processes to support each RTOs overall transmission planning process:

1) Wabash Valley provides load forecasts and planning information to the local balancing/transmission areas and to the RTOs. Both RTOs have processes to plan for additional facilities in a coordinated manner to meet the reliability needs and improve the value of the transmission system. These planning processes include projects being built for reliability and to improve transmission congestion to reduce cost. As available, the Company uses information from the RTOs to estimate costs and evaluate changes in the system that could impact Wabash Valley's plans.

2) Wabash Valley provides planning information to MISO and PJM for Interconnection Studies as well as to the regional transmission owner/operator for new and/or upgraded facilities required to support load or generation. Wabash Valley informs them of ongoing load growth and generation installations. The result of these interconnection processes is a study which incorporates the Company's proposed facilities. Wabash Valley, in turn, examines the study to extract any information on upgrades or additional costs that should be included in the Company's evaluation of a specific project.

3) Wabash Valley offers or self-schedules its generation to meet the requirements of MISO's and PJM's locational capacity markets. MISO and PJM clear the markets and limit importing capacity between capacity zones. As part of the forecasting process, the Company monitors the price of the capacity auctions and periodically surveys the market to determine locational capacity price.

End Customer Distributed Generation

Currently, Wabash Valley has a policy that any customer owned generator greater than 10kW will sell any excess energy directly to the Company under the net billing concept and not net meter. A Member may request a waiver to manage customer owned generation greater than 10kW but less than 25 kW. The waivers are evaluated on a customer by customer basis. Any customer owned generator 10 kW or less is managed locally by the Member. Wabash Valley promotes net billing as a way to prevent other Members from subsidizing the customer owned generator due to net metering. The Company also allows the Members to have community solar generation up to 100 kW or ½% of the Member's coincident peak load, whichever is greater. Any community solar or customer owned generation is factored into the IRP either through the inclusion of such resource as a generator or utilizing the generator to offset load as a behind the meter resource while being cognizant of any environmental regulations that may impact these generators. If the generator is used to offset load, the amount of peak and energy adjustment depends on the type of generation. If the facility is wind, little adjustment would be made due to the low output and minimal peak reduction impact of intermittent wind. If, on the other hand, the facility is expected to operate at a high load factor, the Company would remove the annual energy output and the average kW output of the generator from the load forecast.

1. Generation Planning

Wabash Valley's Members' retail customers have completed several distributed generation projects totaling less than 10 MW that are not emergency backup resources. These projects will supply part of the customer's energy requirements, while the local Member will supply the remainder.

2. Transmission Planning

Wabash Valley coordinates the interconnection of distributed generation with the area transmission owners and the appropriate RTO. The Company provides information as required by their transmission system planning staffs so that appropriate studies can be carried out. This includes information to these operators about the location and operation of customer generation resources. Wabash Valley will provide assistance to its Members on an as-required basis, particularly for those distributed generation facilities requiring interconnection with transmission facilities.

3. Distribution Planning

The Distributed Generation policy calls for the Company to coordinate, as necessary, with the Member serving the distributed generation customer. Wabash Valley facilitates discussions as requested between distributed generation end-use customers and Members to develop a formal Interconnection Agreement.

The Interconnect Agreement generally includes provisions that address:

- Certification, from a qualified electrical engineer, of the reliability and safety of the proposed distributed generation project or facility and interconnection equipment;
- Transmission of power from the distributed generation project or facility to any load utilizing a Member distribution system;
- Reimbursement to Wabash Valley and the Member for the costs of interconnection facilities installed, constructed, or maintained for a distributed generation project or facility;
- Installation of necessary safety and system protection equipment and implementation of operating protocol to assure the safety of Wabash Valley, Member, and other personnel as may be affected by the operation or existence of a distributed generation facility;
- Indemnification of Wabash Valley and a Member by a Customer which owns the distributed generation project or facility against liability for any injuries or damages to person or property which might result from the operation or existence of the distributed generation facility and, upon request, proof of the Customer's ability to financially guarantee the indemnification;

- Responsibility and requirements for the control, operation, and maintenance of the distributed generation project or facility and any related equipment;
- Metering requirements and payment for any net energy exported to the grid from the distributed generation project or facility;
- Wabash Valley and the Member inspection rights of the project; and
- Proof of insurance held by the owner of the distributed generation, both prior to and during commercial operation of the distributed generation, in an amount equaling that which is identified within the Interconnection Agreement.

4. Load Forecasting

As further described in Section 3, the forecast uses regression modeling to project peak demand and energy requirements, but this projection is adjusted as required to reflect the impact of customer owned distributed generation. To date, customer distributed generation projects have had minimal impact on Wabash Valley's load requirements. The Company continues to monitor technology developments in distributed products to determine if future load will be impacted by customer generation or storage.

Section 3
LOAD FORECAST AND FORECASTING METHODOLOGY

Introduction

Upon review of Power Requirements Studies produced over the last decade, Wabash Valley concluded that we have been consistently over-forecasting energy and demand when using our existing load forecasting methodology. To improve our forecast, in late 2016 the Company engaged Itron, a technology and services company with expertise in energy forecasting, to develop a new load forecast modeling framework for Wabash Valley and its Member systems utilizing Itron's MetrixND® regression modeling software and Forecast Manager™ database. After initial development by Itron, the Company's Budgets and Forecasting department analyzed the preliminary load forecast results. Wabash Valley then refined the estimated models and assumptions based upon information and insights from varied internal resources. The Company's Board approved the final 2017 Power Requirements Study (PRS) for use in the 2018 Budget and 2017 IRP as our Base Case Load Forecast.

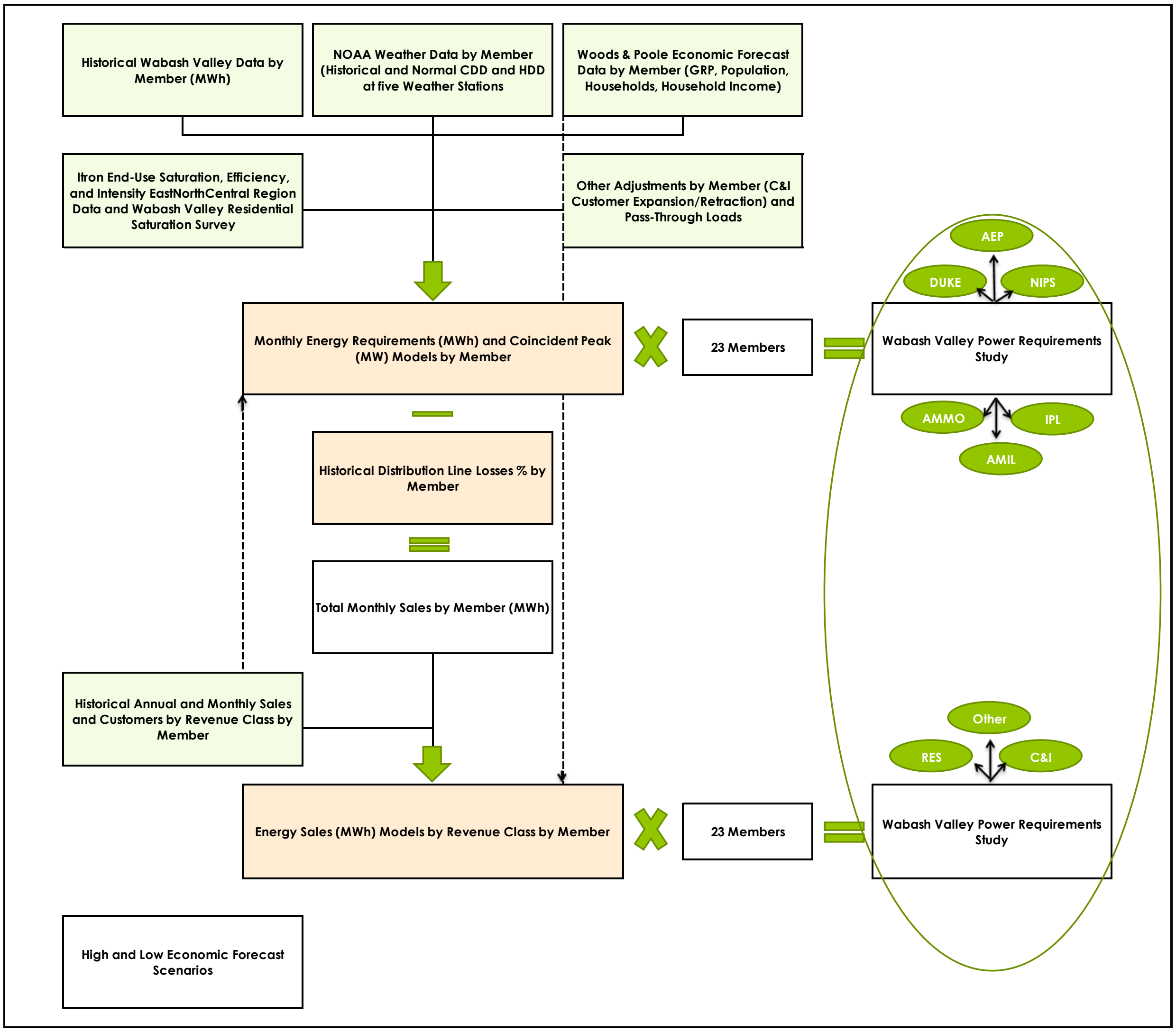
Overview

As Wabash Valley's membership is comprised of twenty-three Member systems spread throughout three states, two RTOs and six sub-balancing areas, we recognize the need to analyze and forecast loads on a granular level. In our new modeling framework, the Company continues to aggregate individual Member system load forecasts. We estimate separate monthly energy (MWh) and coincident peak demand (MW) models for each Member using linear regression; the models incorporate end-use intensity trends as well as county-level economic and weather data specific to the Member service area. We derive Member retail sales by applying distribution loss factors to Member total energy requirement forecasts.

We derive monthly residential, commercial and industrial (C&I), and other (primarily street lighting) forecasts for each Member. The residential forecast is based on monthly customer and average use forecasts where the average use model is estimated using an end-use model specification. Given availability of historical monthly residential sales, we are able to construct strong statistical residential customer and average use models. We use simple trend models to estimate street lighting sales. We derive monthly C&I sales forecast by subtracting residential, and other sales from total member retail sales; historical monthly C&I sales were either not available or included data discrepancies, making it difficult to directly estimate C&I forecast models.

We believe that one of the factors that significantly improves our forecast approach is capturing end-use efficiency improvements in both the residential and commercial (through Member-weighted intensity indices) sectors. As we developed our forecast models at the individual Member level, forecasts capture the unique customer mix, economics, and weather conditions associated with the Member service area. Figure 3-1 depicts Wabash Valley's load forecast development process.

Figure 3-1 Load Forecast Development Process

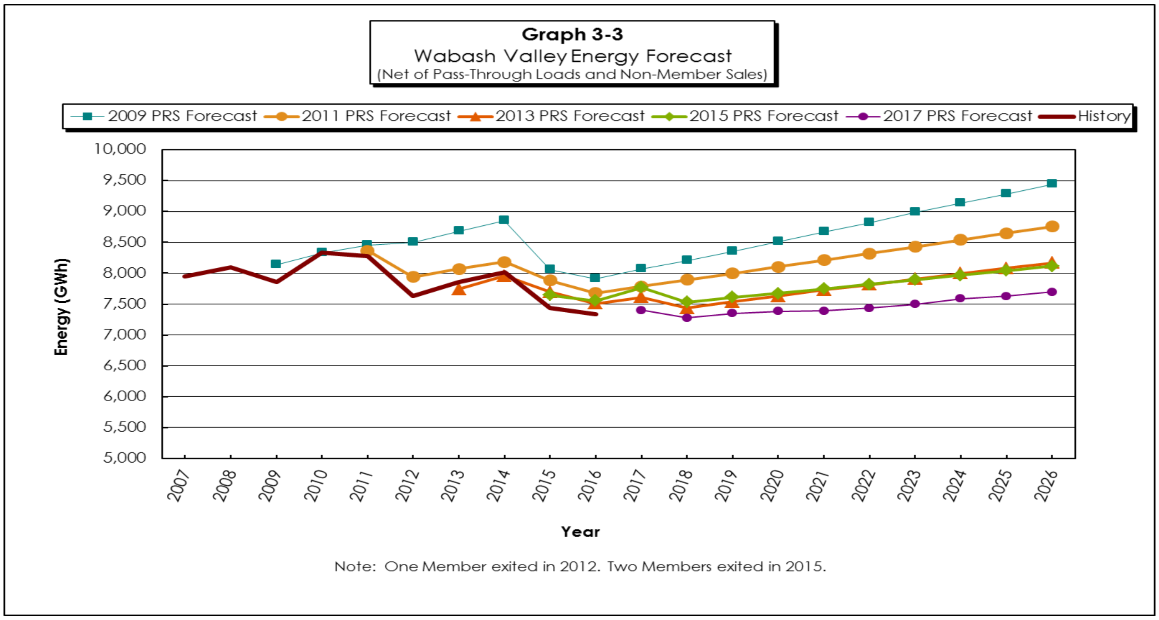


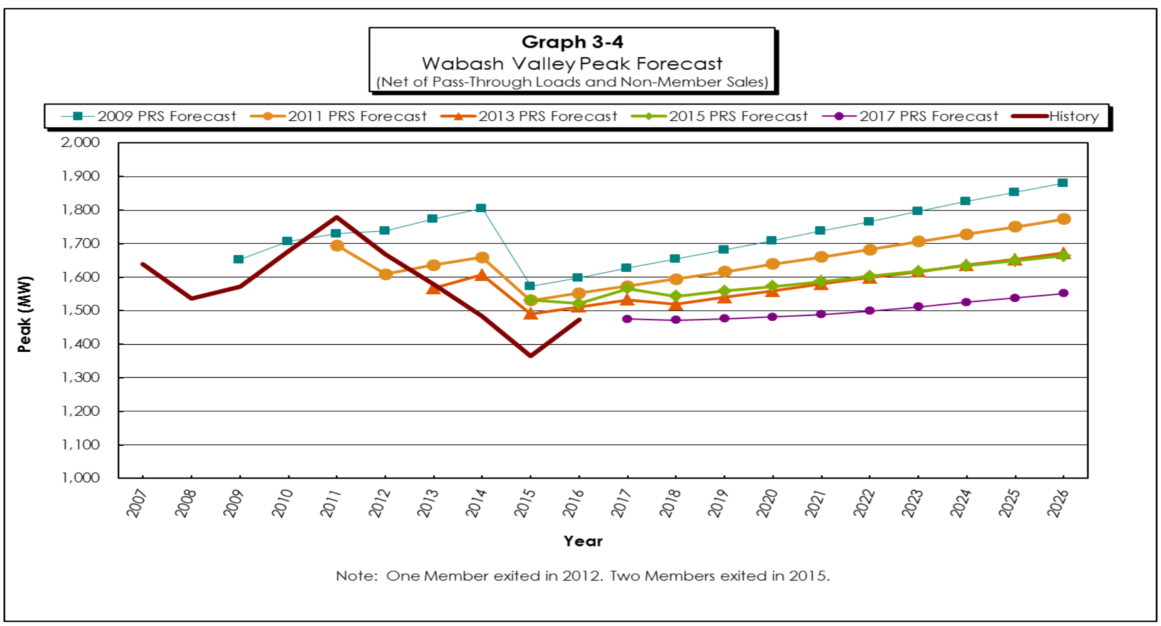
Over the 2018 to 2036 time frame, the Company's 2017 PRS forecasts modest average load growth of 0.9% per year for energy and summer coincident peak demand. Table 3-2 summarizes annual energy sales and summer coincident peak net of Pass-Through Loads ("motherload"). The drop in forecasted energy sales and demand between 2017 and 2018 is due to two customers moving to the Pass-Through Loads classification in 2018. Pass-Through Loads customers are large power customers with non-conforming load that require separate forecasts.

Table 3-2
Base Case Load Forecast Energy Sales and Summer Coincident Peak Forecast
(Net of Pass-Through Loads)

Year	Energy Sales (GWh)	% Change	Summer Coincident Peak (MW)	% Change
2017	7,401		1,475	
2018	7,277	-1.7%	1,472	-0.2%
2019	7,347	1.0%	1,476	0.3%
2020	7,382	0.5%	1,482	0.4%
2021	7,391	0.1%	1,489	0.5%
2022	7,435	0.6%	1,499	0.7%
2023	7,500	0.9%	1,512	0.9%
2024	7,590	1.2%	1,525	0.9%
2025	7,628	0.5%	1,537	0.8%
2026	7,696	0.9%	1,551	0.9%
2027	7,782	1.1%	1,568	1.1%
2028	7,895	1.5%	1,586	1.1%
2029	7,964	0.9%	1,605	1.2%
2030	8,034	0.9%	1,620	0.9%
2031	8,105	0.9%	1,635	0.9%
2032	8,205	1.2%	1,652	1.0%
2033	8,260	0.7%	1,668	1.0%
2034	8,336	0.9%	1,684	1.0%
2035	8,422	1.0%	1,702	1.1%
2036	8,531	1.3%	1,719	1.0%
18-36		0.9%		0.9%

Graph 3-3 and Graph 3-4 compare the current and prior-year forecasts. The exit of three Members and the economic recession have had a significant impact on the load forecasts. The 2009 PRS Forecast, completed in the midst of the economic downturn, was still optimistic assuming a return to business as usual. The 2011, 2013, and 2015 PRS Forecasts were each more conservative but display the over-forecasting tendency. The 2017 PRS Forecast, developed with our new modeling framework, appears to trend more closely to history. As we move forward, the Company will seek to gauge the performance of the 2017 PRS forecast against actual results and adjust our modeling framework and key inputs and assumptions accordingly.





Key Inputs and Assumptions

Regression analysis is a statistical process for estimating the relationships between a dependent variable and the factors that impact that variable over time. The load forecast is based on regression models that relate monthly energy, demand, customers, and average use (in the residential sector) to changes in weather conditions, household growth, economic activity, and end-use energy intensity. Forecast model drivers are described below:

1. Historical Wabash Valley Data

2006-2016 historical wholesale hourly load data (MWh) by Member.

2. Weather Data

Historical and normal monthly heating degree days (HDD) and cooling degree days (CDD) are calculated from daily temperature data measured by the National Oceanic and Atmospheric Administration (NOAA) at five weather stations: Fort Wayne IN, Indianapolis IN, Peoria IL, South Bend IN and St. Louis MO.

For energy sales, Itron selected the base temperature by analyzing the sales/weather relationship and determining the temperature at which heating and cooling loads begin. A temperature base of 55 degrees is used in calculating HDD and a temperature base of 65 degrees is used in calculating CDD. Normal degree-days are calculated by averaging monthly degree-days over a 20-year period (1997 to 2016).

For peak demand, Itron selected the base temperature by analyzing the coincident peak/weather relationship and determining the temperature at which heating and cooling peak demand occurred. A temperature base of 50 degrees is used in calculating peak HDD and a temperature base of 70 degrees is used in calculating peak CDD. Normal peak-day degree-days are calculated over a 10-year period (2006 to 2015) using a *rank and average* approach. Rank and average entails *ranking* monthly peak-day HDD and CDD within each year from the highest to the lowest value and then *averaging* across the ten-year period. The resulting peak-day degree-days are then mapped to specific months based on the likelihood of where they will occur (e.g., the highest peak-day CDD is mapped to July and the highest peak-day HDD is mapped to January.)

3. Economic Data

The base load forecast incorporates Woods & Poole 2016 county forecasts of Gross Regional Product (GRP), population, number of households and household income. We derive Member-level, economic data by weighting economic data across counties based on the number of customers in each county. Table 3-5 shows forecasted economic growth for the Company as a whole.

Table 3-5 Key Composite Economic Variables – Avg. Growth Rates

Variable	2018-2036 %	2010-2016 %
GRP	2.1%	2.6%
Population	0.9%	0.8%
Households	0.7%	1.4%
Household Income	2.3%	2.8%

4. End-Use Appliance Saturation and Efficiency Trends Data

End-use energy intensity projections are based on Energy Information Administration (EIA) 2016 appliance saturation and efficiency projections for the East North Central U.S. Census Division (this includes Illinois, Indiana, Ohio, Michigan and Wisconsin). End-use saturation and efficiency projections are combined in a set of residential and commercial Excel spreadsheets developed by Itron. Residential end-use saturation estimates are adjusted to reflect results from Wabash Valley's 2017 residential saturation survey.

5. Large Customer Load Adjustments

Wabash Valley made limited energy and demand adjustments (spot load adjustments) to account for specific expected expansions and retractions of large commercial load. These estimated adjustments were provided by Member cooperative staff or developed through internal insights and discussions.

Wabash Valley also separately forecasted Pass-Through Loads customers who are large power customers with non-conforming load. The Pass-Through Loads customers have the ability to customize their power supply portfolio based on their respective risk tolerances. As a result, each customer is forecasted separately, utilizing forecasts provided by each customer meshed with internal insights and discussions, and their load is not included in the total energy or peak load managed by the Company. However, the large power customers are included in Wabash Valley's total planning load because the Company has the ultimate responsibility to meet the large power customers' energy requirements and make purchases at market to meet the minimum reliability requirements. These customers are collectively referred to as "Pass-Through Loads" customers in this document. The Pass-Through Loads' energy sales and summer coincident peak demand are reflected in a separate column in Table 3-10 Total Member System Requirements and Table 3-13 Member Summer Coincident Peak Demand, respectively.

6. Historical Member Sales Data

Historical retail sales (kWh), customers and revenue are provided by each Member. Residential data is available on a monthly basis, and C&I and Other are available on an annual basis.

7. Demand-Side Management

Potential Demand Response (DR) and future program-related energy efficiency (EE) savings are treated as a resource rather than a reduction to load.

8. Electric Vehicles

Wabash Valley's 2017 PRS does not project the impact of electric vehicles. The technology is still gaining momentum; and, adoption in rural areas is not likely until infrastructure and testing has occurred in urban areas. Although a transition of the American economy to electric vehicles would also transform electricity consumption magnitude and patterns, the Company does not expect such a transition at a meaningful level to occur in our service territory within the next few years. We will continue to monitor the likelihood of this issue impacting future energy requirements.

Methodology

The Company estimates system energy (MWh) and coincident peak demand (MW) forecasts for each Member using an econometric modeling approach developed by Itron. The model variables include an economic term, a weather term, and a weighted energy intensity term that reflects Member residential/commercial customer mix, service area economy, and geographic location. Member residential sales forecast are derived from monthly customer and average use forecast models. Residential average use models incorporate household income, household size, and end-use intensity projections.

1. Energy Requirements Model

We modeled monthly energy as a function of monthly heating, cooling, and other use energy requirements. The approach entails constructing heating, cooling, and other use model variables that integrate an economic index, energy intensity index, and monthly HDD and CDD. Models also include monthly binary variables to capture seasonal variation, and binaries to capture large outliers that cannot be explained with available data.

Economic Index. The economic index weights service area number of households and GRP. The index reflects economic conditions in the Member service area. For example, the economic index for one Member is calculated as:

- $EconIdx = HH\_IDX^{\wedge 0.7} * GDP\_IDX^{\wedge 0.3}$

Households (HH_IDX) and Gross Regional Product (GDP_IDX) are indexed to a common year (2009) and combined such that the weights equal 1.0. For many Members, number of households has a much stronger weight. The weights are determined by evaluating out-of-sample model statistics for different sets of weights.

End-Use Intensity Index. End-Use Intensity Indexes are developed for heating, cooling, and other use based on EIA's end-use saturation, efficiency, and intensity forecasts for the East North Central Census Division. We weighted residential and commercial intensities to reflect the mix of residential and commercial sales within the Member service area. For example, the cooling intensity index for one Member is calculated as:

- $Cool\_IDX = ResCool\_IDX^{\wedge 0..64} * ComCool\_Idx^{\wedge 0.36}$

Similar weighted indices are constructed for Heating and Other Use.

Model Variables. Cooling (XCool), Heating (XHeat), and Other Use (XOther) model variables are constructed by combining the economic and intensity indices with Member service area CDD, HDD, and number of calendar days. Model variables are calculated as:

- XCool = CDD65_Idx * Econ_Idx * Cool_Idx
- XHeat = HDD55_Idx * Econ_Idx * Heat_Idx
- XOther = Days_Idx * Econ_Idx * Other_Idx

The cooling index incorporates information about residential and commercial cooling equipment saturations, residential and commercial cooling equipment efficiency standards and trends, thermal integrity and size of homes and commercial square footage. The economic index variable is derived from information related to households and GRP.

The heating index incorporates information about residential and commercial heating equipment saturations, residential and commercial heating equipment efficiency standards and trends, thermal integrity and size of homes and commercial square footage. The economic index variable is derived from information related to households and GRP.

The XOther variable estimates the non-weather sensitive sales and is similar to the XHeat and XCool variables. The other index incorporates information about residential and commercial base load appliance and equipment saturation levels such as use associated with the following equipment: electric water heaters, refrigerators, separate freezers, electric ranges and ovens, electric clothes washers and driers, dishwashers, television sets, lighting, ventilation, office equipment and miscellaneous load. The economic index variable is derived from information related to households and GRP.

2. Coincident Peak Model

We estimated the coincident peak demand models using a similar specification. The difference is that the model variables are constructed using monthly coincident peak-day CDD and HDD. Peak-day CDD and HDD are determined by finding the average daily temperature for each weather station that occurred on the day of the system peak. For modeling, we assigned each Member to one of five regional weather stations based on that Member's geographic location. Model variables are constructed as:

- PkXCool = PkCDD70_Idx * Econ_Idx * Cool_Idx
- PkXHeat = PkHDD50_Idx * Econ_Idx * Heat_Idx
- PkXOther = Econ_Idx * Other_Idx

Non-weather related monthly variation is captured in the peak model using monthly binaries.

3. Sales to System Model

Member sales are based on the Member system energy requirements forecast. We calculate historical *sales to energy ratios* for each Member. We then use a simple regression model to project the ratio through the forecast period. Member sales forecasts are then derived by multiplying the Member energy forecast by the *sales to energy ratio* forecast. On average, the *sales to energy ratio* is 0.956 implying a system average distribution loss factor of 4.4%.

We estimated customer class sales (residential, commercial, and other use) for each Member. Monthly regression models are estimated for residential and other use sales are projected with exponential smoothing models. We calculated monthly commercial sales as total retail sales minus residential and other use; historical data does not support directly estimating monthly commercial sales models.

4. Residential Customers and Average Use Models

We derived the residential sales forecast as the product of customer and average use forecasts. Customer forecast models are simple regression models that relate monthly customers to number of households in the counties served by the Member. Residential average use forecast is derived from a monthly Statistically Adjusted End-Use (SAE) model. The SAE model entails estimating a linear regression model that relates monthly customer average use to customer heating requirements (XHeat), cooling requirements (XCool), and other end-use energy requirements (XOther). The constructed model variables incorporate household income, household size, weather conditions, and end-use energy intensities. Models also include monthly binaries to account for monthly variation not captured by the model variables and binaries for large residuals that cannot be explained with available data.

5. Other Classifications Models

Simple linear regression with a trend variable or exponential smoothing models are used to forecast Member sales classified as *Other*. Other sales include: Seasonal, Irrigation, Public Street & Highway Lighting, Other Sales to Public Authority and Sales for Resale.

6. Non-coincident Peak to Coincident Peak Model

Member's non-coincident peak demand forecast is based on the historical relationship between the Member's own peak (non-coincident demand) and Member's system coincident peak. We used historical Member load data to construct a monthly demand ratio of own peak to coincident peak demand. A simple regression model is used to project the demand ratio over the forecast horizon. We then derived a non-coincident peak demand forecast by multiplying the coincident peak demand forecast with the demand ratio forecast.

7. Energy and MW Ratio Models

Fifteen of Wabash Valley's twenty-three Members serve load within a single sub-balancing area. The other eight Members serve load within two or more sub-balancing areas. For these eight Members, we allocated load to the sub-balancing areas based on historical sub-balancing area load ratios.

Forecast Model Assessment

We evaluated model in-sample statistics to assess the models' explanation of historical load variation. Key model statistics include the R-squared, Adjusted R-squared, Mean Absolute Percent Error (MAPE) and Durbin-Watson statistic. Overall, statistics indicated strong model fit. Member energy requirements models' Adjusted R-Squared ranges from 0.863 to 0.987 with an average Adjusted R-Squared of 0.940. Average Member energy model MAPE is 2.3%. Monthly coincident peak demand variation tends to be a bit higher than energy as coincident peak demand is determined partly by simultaneous demand of other Members. Coincident peak models' Adjusted R-Squared ranges from 0.754 to 0.944; the average across all models is 0.880. The average coincident peak model MAPE is 4.4%. Table 3-6 summarizes the model statistics.

Table 3-6 Model Statistics

Model	Statistic	Range	Average	Median
Energy Requirements	**R-squared**	87.8% - 98.9%	94.6%	95.1%
	Adj R-squared	86.3% - 98.7%	94.0%	94.6%
	MAPE	1.4% - 3.8%	2.3%	2.3%
	Durbin-Watson	1.8 – 2.1	2.0	2.0
Coincident Peak	**R-squared**	77.5% - 95.3%	89.3%	89.7%
	Adj R-squared	75.4% - 94.4%	88.0%	88.6%
	MAPE	3.4% - 5.7%	4.4%	4.3%
	Durbin-Watson	1.8 – 2.1	2.0	2.0

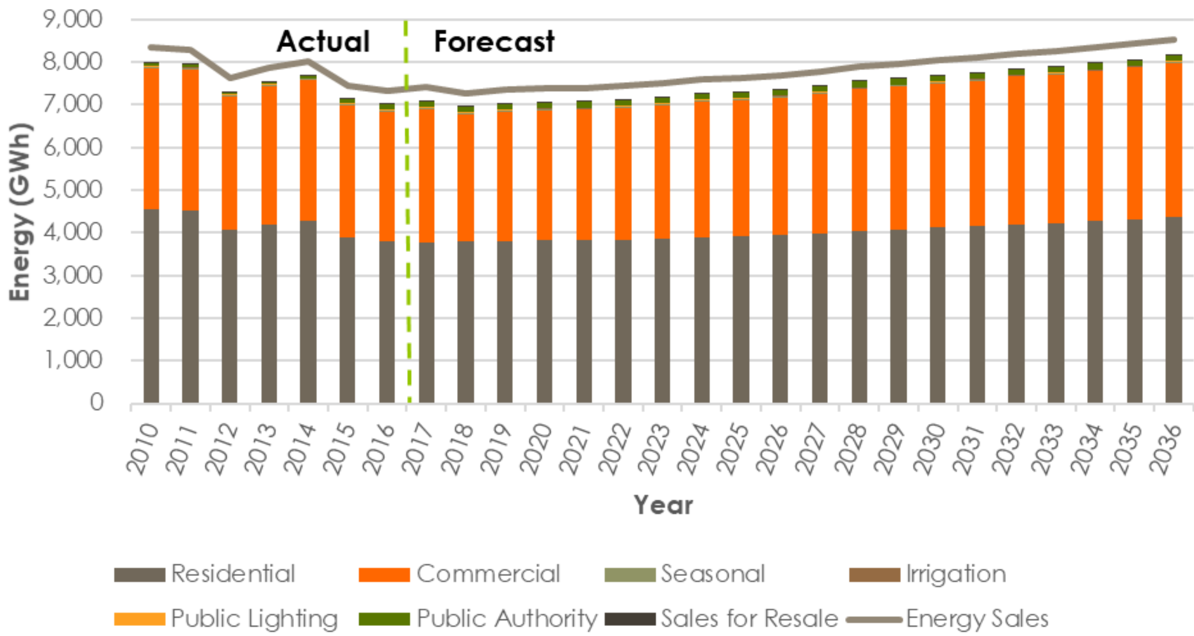
We also examined model predicted values and residuals as part of the model assessment task. This includes looking for residual patterns (ideally we would not find any pattern) and identifying and correcting for large outliers.

Furthermore, we assessed forecasted energy, peak, and sales growth rates for consistency against household, gross regional product, energy intensity trends and combination of these variables. Given strong historical and projected efficiency gains, long-term energy requirements track lower than regional economic growth projections. At the individual Member level, annual energy requirements for 2018 to 2036 average between 0.0% to 1.9% growth; coincident peak demand growth averages between 0.1% and 1.9%. The range of these average growth rates reflects the diversity of our Member systems.

Base Case Forecast Result

We develop total system energy requirements, peak demand, and class sales by aggregating Member-level forecasts. Graph 3-7 illustrates Wabash Valley's base case wholesale energy sales and Members' retail sales by revenue class.

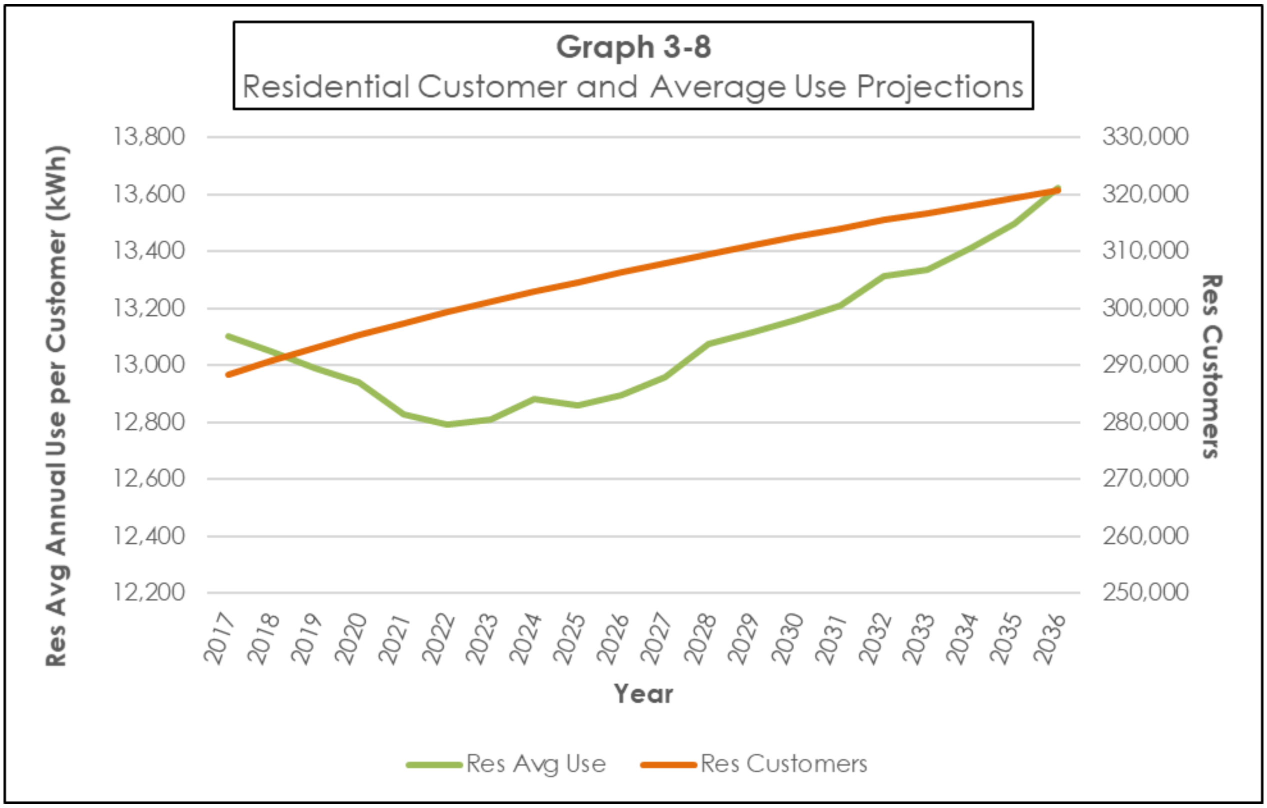
Graph 3-7
Wabash Valley Base Case Energy Forecast (GWh)
(Net of Pass-Through Loads)



Through 2036, system energy requirements are expected to average 0.9% annual growth. From 2018 to 2036, residential sales increase by 0.8% annually and commercial sales increase by 1.1% annually. The other revenue classes are essentially flat.

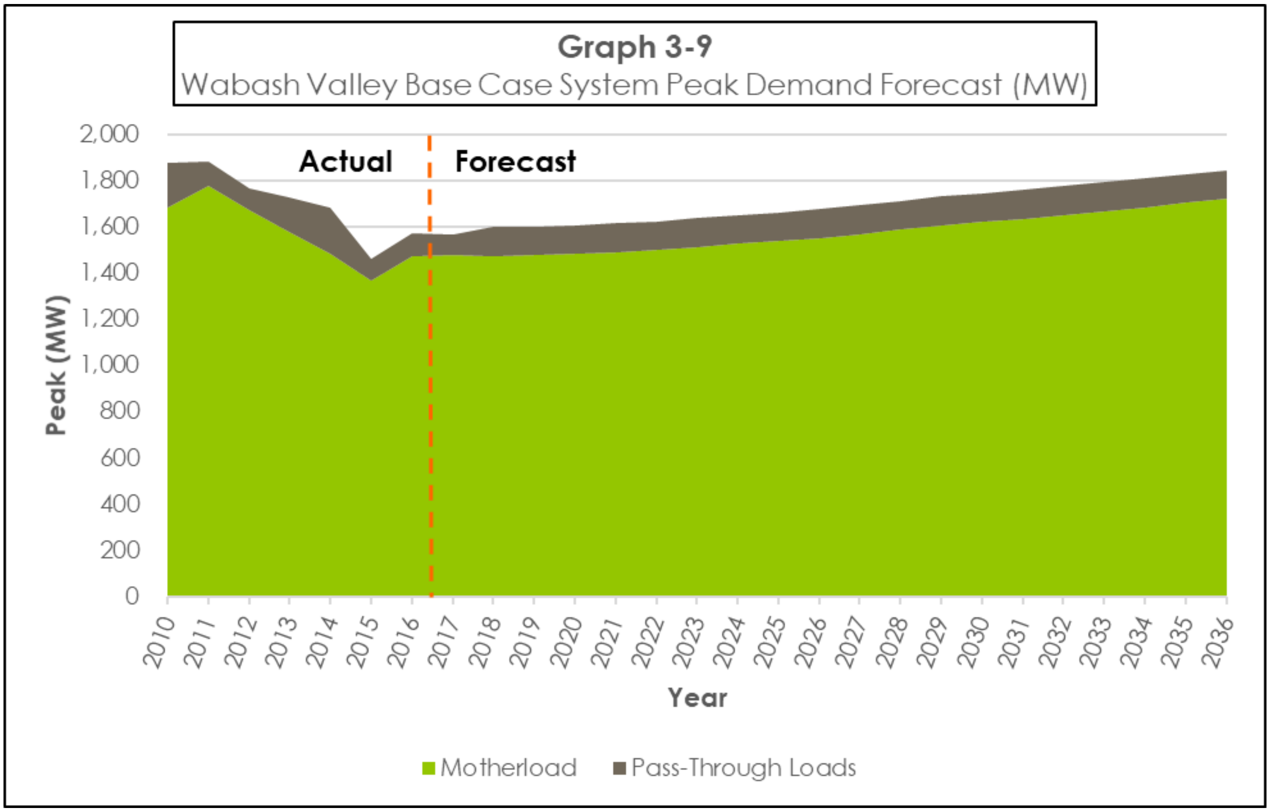
Forecasted residential sales are driven primarily by customer growth. On a system-wide basis, residential customers are expected to grow by an average 0.5%. Residential customer growth is concentrated in the more suburban service territory directly surrounding Indianapolis. Average use is projected to be relatively flat growing by 0.3% over the forecast horizon. However, average use per customer initially declines by an average of 0.7% from 2016 to 2021 and then increases at an average rate of 0.4%

thereafter. Graph 3-8 depicts Wabash Valley's residential customer and average use projections.



We derive the commercial sales forecast by subtracting residential and other customer classes from total retail sales. Although the small and large commercial revenue classes are not specifically modeled, Member commercial sales forecasts are consistent with forecast assumptions. On an aggregate basis, commercial sales are projected to average 1.1% annual growth over the next twenty years; this compares with 1.6% annual sales growth from 2010 to 2016 after adjusting for the exit of three Member cooperatives. The commercial sales forecast is lower as both GRP and household projections are lower than in the 2010 to 2016 period. Commercial sector end-use intensity projections are expected to decline as a result of federal energy efficiency standards and technological improvements in lighting, refrigeration, heating and cooling.

Summer coincident peak demand is projected to increase 0.9% per year, reaching 1,719 MW in 2036 for our motherload and 1,844 MW including Pass-Through Loads. Graph 3-9 shows historical and forecasted summer peak demand for our motherload and additional Pass-Through Loads. Wabash Valley historical load peak demand by customer class is not readily available and the Company does not forecast peak demand by customer class.



Tables 3-10 through 3-13 provide system forecast details.

Model inputs, results and statistics are included in Appendix G in electronic format.

Table 3-10

WABASH VALLEY POWER ASSOCIATION 2017 Base Case Load Forecast Total Member System Requirements							
Year	Notes	Sales Net Pass-Through (GWh)	% Growth	Pass-Through (GWh)	% Growth	Total System Sales (GWh)	% Growth
2010		8,332		1,165		9,497	
2011		8,276	-0.7%	1,359	16.7%	9,635	1.5%
2012	[1]	7,626	-7.9%	1,431	5.3%	9,057	-6.0%
2013		7,856	3.0%	1,520	6.2%	9,376	3.5%
2014		8,018	2.1%	1,628	7.1%	9,646	2.9%
2015	[2]	7,443	-7.2%	1,088	-33.2%	8,531	-11.6%
2016		7,332	-1.5%	618	-43.2%	7,950	-6.8%
2017		7,401	0.9%	637	3.1%	8,038	1.1%
2018	[3]	7,277	-1.7%	915	43.6%	8,192	1.9%
2019		7,347	1.0%	918	0.3%	8,265	0.9%
2020		7,382	0.5%	918	0.0%	8,300	0.4%
2021		7,391	0.1%	919	0.1%	8,310	0.1%
2022		7,435	0.6%	919	0.0%	8,354	0.5%
2023		7,500	0.9%	919	0.0%	8,419	0.8%
2024		7,590	1.2%	919	0.0%	8,509	1.1%
2025		7,628	0.5%	919	0.0%	8,547	0.4%
2026		7,696	0.9%	919	0.0%	8,615	0.8%
2027		7,782	1.1%	919	0.0%	8,701	1.0%
2028		7,895	1.5%	919	0.0%	8,814	1.3%
2029		7,964	0.9%	919	0.0%	8,883	0.8%
2030		8,034	0.9%	919	0.0%	8,953	0.8%
2031		8,105	0.9%	919	0.0%	9,024	0.8%
2032		8,205	1.2%	919	0.0%	9,124	1.1%
2033		8,260	0.7%	919	0.0%	9,179	0.6%
2034		8,336	0.9%	919	0.0%	9,255	0.8%
2035		8,422	1.0%	919	0.0%	9,341	0.9%
2036		8,531	1.3%	919	0.0%	9,450	1.2%
AVERAGE GROWTH RATES							
16-21		12	0.2%	60	8.3%	72	0.9%
21-26		61	0.8%	-	0.0%	61	0.7%
26-31		82	1.0%	-	0.0%	82	0.9%
31-36		85	1.0%	-	0.0%	85	0.9%
16-36		60	0.8%	15	2.0%	75	0.9%
18-36		70	0.9%	0	0.0%	70	0.8%

[1] One member cooperative left Wabash Valley in 2012.
[2] Two member cooperatives left Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.
[3] Two accounts will move onto the Pass-Through rate in 2018.

Table 3-11

WABASH VALLEY POWER ASSOCIATION 2017 Base Case Load Forecast Member System Requirements Net of Pass-Through Loads						
Year	Notes	Energy Net Distr. Losses (GWh)	% Growth	Distribution Line Losses	Energy Sales (GWh)	% Growth
2010		7,962			8,332	
2011		7,934	-0.4%	4.1%	8,276	-0.7%
2012	[1]	7,298	-8.0%	4.3%	7,626	-7.9%
2013		7,535	3.2%	4.1%	7,856	3.0%
2014		7,676	1.9%	4.3%	8,018	2.1%
2015	[2]	7,142	-7.0%	4.0%	7,443	-7.2%
2016		7,013	-1.8%	4.4%	7,332	-1.5%
2017		7,078	0.9%	4.4%	7,401	0.9%
2018	[3]	6,956	-1.7%	4.4%	7,277	-1.7%
2019		7,024	1.0%	4.4%	7,347	1.0%
2020		7,057	0.5%	4.4%	7,382	0.5%
2021		7,066	0.1%	4.4%	7,391	0.1%
2022		7,108	0.6%	4.4%	7,435	0.6%
2023		7,169	0.9%	4.4%	7,500	0.9%
2024		7,256	1.2%	4.4%	7,590	1.2%
2025		7,292	0.5%	4.4%	7,628	0.5%
2026		7,358	0.9%	4.4%	7,696	0.9%
2027		7,439	1.1%	4.4%	7,782	1.1%
2028		7,547	1.5%	4.4%	7,895	1.5%
2029		7,614	0.9%	4.4%	7,964	0.9%
2030		7,681	0.9%	4.4%	8,034	0.9%
2031		7,749	0.9%	4.4%	8,105	0.9%
2032		7,845	1.2%	4.4%	8,205	1.2%
2033		7,897	0.7%	4.4%	8,260	0.7%
2034		7,971	0.9%	4.4%	8,336	0.9%
2035		8,052	1.0%	4.4%	8,422	1.0%
2036		8,157	1.3%	4.4%	8,531	1.3%
AVERAGE GROWTH RATES						
16-21		11	0.2%		12	0.2%
21-26		58	0.8%		61	0.8%
26-31		78	1.0%		82	1.0%
31-36		82	1.0%		85	1.0%
16-36		57	0.8%		60	0.8%
18-36		67	0.9%		70	0.9%

[1] One member cooperative left Wabash Valley in 2012.

[2] Two member cooperatives left Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.

[3] Two accounts will move onto the Pass-Through rate in 2018.

Table 3-12

WABASH VALLEY POWER ASSOCIATION 2017 Base Case Load Forecast Total Member Energy by Class, Net of Distribution Losses (GWh)										
Year	Notes	Residential	Commercial	Seasonal	Irrigation	Public Lighting	Public Authority	Sales for Resale	Total Energy	% Growth
2010		4,553	3,288	30	21	11	56	3	7,962	
2011		4,513	3,308	24	23	11	52	3	7,934	-0.4%
2012	[1]	4,073	3,111	24	23	11	51	5	7,298	-8.0%
2013		4,196	3,242	19	16	11	46	5	7,535	3.2%
2014		4,287	3,292	18	17	11	46	5	7,676	1.9%
2015	[2]	3,897	3,092	16	10	12	110	5	7,142	-7.0%
2016		3,799	3,037	17	19	11	121	9	7,013	-1.8%
2017		3,780	3,115	17	16	11	130	9	7,078	0.9%
2018	[3]	3,795	2,978	17	16	11	130	9	6,956	-1.7%
2019		3,807	3,033	17	16	12	130	9	7,024	1.0%
2020		3,821	3,052	17	16	12	130	9	7,057	0.5%
2021		3,815	3,067	17	16	12	130	9	7,066	0.1%
2022		3,830	3,094	17	16	12	130	9	7,108	0.6%
2023		3,858	3,127	17	16	12	130	9	7,169	0.9%
2024		3,903	3,169	17	16	12	130	9	7,256	1.2%
2025		3,918	3,190	17	16	12	130	9	7,292	0.5%
2026		3,951	3,222	18	16	12	130	9	7,358	0.9%
2027		3,991	3,263	18	16	12	130	9	7,439	1.1%
2028		4,048	3,314	18	16	12	130	9	7,547	1.5%
2029		4,081	3,348	18	16	12	130	9	7,614	0.9%
2030		4,115	3,381	18	16	12	130	9	7,681	0.9%
2031		4,150	3,414	18	16	12	130	9	7,749	0.9%
2032		4,201	3,459	18	16	12	130	9	7,845	1.2%
2033		4,226	3,486	18	16	12	130	9	7,897	0.7%
2034		4,267	3,519	18	16	12	130	9	7,971	0.9%
2035		4,312	3,555	18	16	12	130	9	8,052	1.0%
2036		4,371	3,601	18	16	12	130	9	8,157	1.3%
AVERAGE GROWTH RATES										
16-21		0.1%	0.2%	0.0%	-3.4%	1.8%	1.4%	0.0%		0.2%
21-26		0.7%	1.0%	1.1%	0.0%	0.0%	0.0%	0.0%		0.8%
26-31		1.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%		1.0%
31-36		1.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%		1.0%
16-36		0.7%	0.9%	0.3%	-0.9%	0.4%	0.4%	0.0%		0.8%
18-36		0.8%	1.1%	0.3%	0.0%	0.5%	0.0%	0.0%		0.9%

[1] One member cooperative left Wabash Valley in 2012.

[2] Two member cooperatives left Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.

[3] Two accounts will move onto the Pass-Through rate in 2018.

Table 3-13

WABASH VALLEY POWER ASSOCIATION

2017 Base Case Load Forecast
Member Summer Coincident Peak Demand

Year	Notes	Load Net of Pass-Through MW	% Growth	Pass-Through CP MW	% Growth	Total System CP MW	% Growth
2010		1,680		198		1,878	
2011		1,779	5.9%	101	-49.0%	1,880	0.1%
2012	[1]	1,669	-6.2%	95	-5.9%	1,764	-6.2%
2013		1,578	-5.5%	149	56.8%	1,727	-2.1%
2014		1,484	-6.0%	198	32.9%	1,682	-2.6%
2015	[2]	1,365	-8.0%	94	-52.5%	1,459	-13.3%
2016		1,473	7.9%	99	5.3%	1,572	7.7%
2017		1,475	0.1%	91	-8.1%	1,566	-0.4%
2018	[3]	1,472	-0.2%	125	37.4%	1,597	2.0%
2019		1,476	0.3%	125	0.0%	1,601	0.3%
2020		1,482	0.4%	125	0.0%	1,607	0.4%
2021		1,489	0.5%	125	0.0%	1,614	0.4%
2022		1,499	0.7%	125	0.0%	1,624	0.6%
2023		1,512	0.9%	125	0.0%	1,637	0.8%
2024		1,525	0.9%	125	0.0%	1,650	0.8%
2025		1,537	0.8%	125	0.0%	1,662	0.7%
2026		1,551	0.9%	125	0.0%	1,676	0.8%
2027		1,568	1.1%	125	0.0%	1,693	1.0%
2028		1,586	1.1%	125	0.0%	1,711	1.1%
2029		1,605	1.2%	125	0.0%	1,730	1.1%
2030		1,620	0.9%	125	0.0%	1,745	0.9%
2031		1,635	0.9%	125	0.0%	1,760	0.9%
2032		1,652	1.0%	125	0.0%	1,777	1.0%
2033		1,668	1.0%	125	0.0%	1,793	0.9%
2034		1,684	1.0%	125	0.0%	1,809	0.9%
2035		1,702	1.1%	125	0.0%	1,827	1.0%
2036		1,719	1.0%	125	0.0%	1,844	0.9%
AVERAGE GROWTH RATES							
16-21		3	0.2%	5	4.8%	8	0.5%
21-26		12	0.8%	-	0.0%	12	0.8%
26-31		17	1.1%	-	0.0%	17	1.0%
31-36		17	1.0%	-	0.0%	17	0.9%
16-36		12	0.8%	1	1.2%	14	0.8%
18-36		14	0.9%	-	0.0%	14	0.8%

[1] One member cooperative left Wabash Valley in 2012.

[2] Two member cooperatives left Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.

[3] Two accounts will move onto the Pass-Through rate in 2018.

Alternative Forecasts

In addition to modeling the base case load forecast, Wabash Valley also developed two alternative forecasts estimating load under high and low economic growth. To accomplish this, the Company adjusted the key input economic data of GRP, Population, Households and Household Income by applying escalation or de-escalation factors. We developed these factors using information obtained from the Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2017 report comparing the EIA's Reference Case to their High Economic Growth and Low Economic Growth cases.

After adjusting the key input economic data, Wabash Valley created a high economic set and low economic set of models for each Member and then summed up the results for the Company. Comparisons of the high and low economic growth forecasts to the base case load forecast are provided below and in Table 3-14 through Graph 3-16.

1. High Economic Growth

In the high economic growth case, energy requirements will grow by 1.1% per year, reaching 8,868 GWh by 2036. The high economic growth energy forecast is 3.9% higher than the base case forecast in 2036.

Under this scenario, summer coincident peak demand also grows by 1.1% per year, reaching 1,794 MW in 2036. The high economic growth demand forecast is 4.3% higher than the base case forecast in 2036.

2. Low Economic Growth

In the low economic growth case, energy requirements will grow by 0.6% per year, reaching 8,059 GWh by 2036. The low economic growth energy forecast is 5.5% lower than the base case forecast in 2036.

Under this scenario, summer coincident peak demand also grows by 0.6% per year, reaching 1,616 MW in 2036. The low economic growth demand forecast is 6.0% lower than the base case forecast in 2036.

Table 3-14

WABASH VALLEY POWER ASSOCIATION 2017Alternative Forecasts Member Energy Requirements Net of Pass-Through Loads (GWh)				
Year	Notes	Base Case	High Economic Growth	Low Economic Growth
2010		8,332		
2011		8,276		
2012	[1]	7,626		
2013		7,856		
2014		8,018		
2015	[2]	7,443		
2016		7,332		
2017		7,401	7,405	7,383
2018	[3]	7,277	7,294	7,222
2019		7,347	7,380	7,257
2020		7,382	7,430	7,258
2021		7,391	7,454	7,237
2022		7,435	7,512	7,250
2023		7,500	7,585	7,281
2024		7,590	7,693	7,336
2025		7,628	7,732	7,345
2026		7,696	7,813	7,387
2027		7,782	7,911	7,449
2028		7,895	8,042	7,541
2029		7,964	8,137	7,590
2030		8,034	8,232	7,639
2031		8,105	8,329	7,689
2032		8,205	8,452	7,768
2033		8,260	8,534	7,805
2034		8,336	8,644	7,859
2035		8,422	8,763	7,919
2036		8,531	8,868	8,059
AVERAGE GROWTH RATES				
16-21		0.2%	0.3%	-0.3%
21-26		0.8%	0.9%	0.4%
26-31		1.0%	1.3%	0.8%
31-36		1.0%	1.3%	0.9%
16-36		0.8%	1.0%	0.5%
18-36		0.9%	1.1%	0.6%

[1] One member cooperative left Wabash Valley in 2012.

[2] Two member cooperatives left Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.

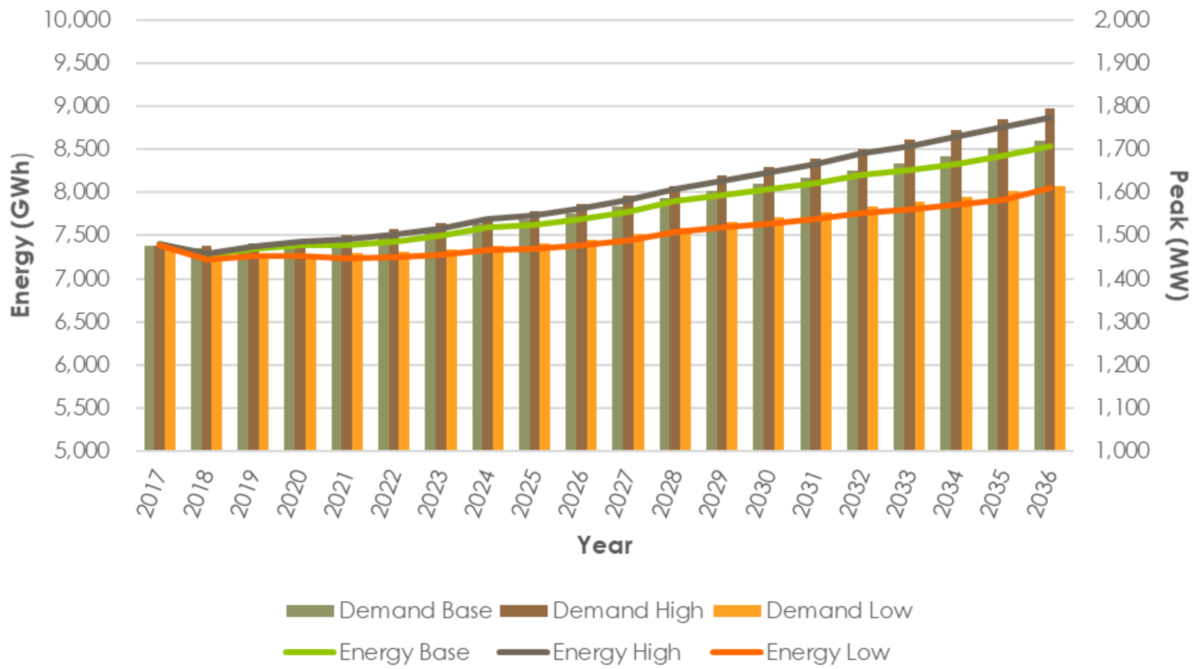
[3] Two accounts will move onto the Pass-Through rate in 2018.

Table 3-15

WABASH VALLEY POWER ASSOCIATION 2017Alternative Forecasts Member Summer CP Demand Net of Pass-Through Loads (MW)				
Year	Notes	Base Case	High Economic Growth	Low Economic Growth
2010		1,680		
2011		1,779		
2012	[1]	1,669		
2013		1,578		
2014		1,484		
2015	[2]	1,365		
2016		1,473		
2017		1,475	1,475	1,471
2018	[3]	1,472	1,475	1,461
2019		1,476	1,482	1,458
2020		1,482	1,491	1,457
2021		1,489	1,501	1,459
2022		1,499	1,514	1,463
2023		1,512	1,529	1,469
2024		1,525	1,543	1,476
2025		1,537	1,558	1,482
2026		1,551	1,574	1,491
2027		1,568	1,594	1,504
2028		1,586	1,615	1,517
2029		1,605	1,639	1,532
2030		1,620	1,658	1,543
2031		1,635	1,679	1,554
2032		1,652	1,700	1,566
2033		1,668	1,722	1,579
2034		1,684	1,744	1,591
2035		1,702	1,769	1,603
2036		1,719	1,794	1,616
AVERAGE GROWTH RATES				
16-21		0.2%	0.4%	-0.2%
21-26		0.8%	1.0%	0.4%
26-31		1.1%	1.3%	0.8%
31-36		1.0%	1.3%	0.8%
16-36		0.8%	1.0%	0.5%
18-36		0.9%	1.1%	0.6%

[1] One member cooperative left Wabash Valley in 2012.
[2] Two member cooperatives left Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.
[3] Two accounts will move onto the Pass-Through rate in 2018.

Graph 3-16
Wabash Valley Base and Alternative Energy and Demand Forecasts
(Net of Pass-Through Loads)



Weather Normalization

The impact of weather was explicitly accounted for in the load forecast development. The energy requirements, coincident peak and residential average use models all incorporated heating and cooling degree days and applied projected normal weather to the forecasts. The historical actual versus weather normalized energy requirements are presented in Table 3-17.

Table 3-17

WABASH VALLEY POWER ASSOCIATION		
Actual versus Normalized Energy Requirements (GWh)		
Year	Actual	Weather Normalized
2010	8,332	8,206
2011	8,276	8,228
2012	7,626	7,631
2013	7,856	7,821
2014	8,018	7,939
2015	7,443	7,424
2016	7,332	7,283

Section 4
SELECTION OF RESOURCE OPTIONS

Wabash Valley continuously reviews and analyzes potential future resource options to meet its projected peak and energy requirements. The Company's goal is to develop and maintain a diverse portfolio of power supply resources, both supply-side and demand-side, with contract terms, fuel supplies, counterparties and ownership options that promote reliable, low-cost service to its Members.

Supply-Side Resource Options

Wabash Valley regularly determines the amount of capacity we will need to meet our load requirements (including reserves) over the next one to two years, as well as a twenty-year planning horizon. Wabash Valley's resource portfolio shows that the Company needs additional capacity to meet projected demand requirements starting in 2018. Once our power supply requirements are determined, Wabash Valley evaluates several types of power supply alternatives, including long-term and short-term power supply agreements, RTO capacity auctions, new generating capacity and wholesale energy market purchases. We evaluate each of these resources using the Company's production cost and financial analysis models to determine which supplies, or combinations of supplies, meet expected requirements at the least cost. Additionally, Wabash Valley analyzes the resources with stochastic risk modeling to evaluate the impact of uncertainty with the proposed resource.

Wabash Valley continues to examine potential new peaking, intermediate, baseload and renewable[i] generating resources (both independently and jointly, both existing and new), in anticipation of capacity needs in 2018 and beyond. Estimated costs for new capacity are compared to expected long-range wholesale electric market prices.

1. Peaking Power Expansion Alternatives

Wabash Valley reviews multiple sources to estimate the cost of new resources. An examination of the EIA's Capital Cost Estimates for Utility Scale Electricity Generating Plants Report[1] indicates that the installed capital cost, including AFUDC, for a new 237 MW gas-fueled, F-class advanced combustion turbine (CT) and associated electric generator peaking resource is approximately $734/kW (stated in 2017 dollars). This estimate assumes the advanced CT plant is equipped with only dry low-NO_x (DLN) combustion hardware to mitigate emissions and does not include a Selective Catalytic Reduction (SCR) system. For planning purposes, we also obtained variable and fixed O&M costs from the EIA report and adjusted for property tax and insurance estimates based on the average of our existing resources. The advanced CT's projected capacity and operating costs are presented in Table 4-1 Expansion Plan Alternatives.

2. Intermediate and/or Baseload Power Combined Cycle Expansion Alternatives

The EIA report indicates that the installed capital cost, including AFUDC, for a new conventional natural gas combined-cycle (CC) 702 MW resource is approximately $1,089/kW (stated in 2017 dollars). The facility utilizes two natural gas-fueled F5-

[1] Capital Cost Estimates for Utility Scale Electricity Generating Plants, U.S. Energy Information Administration, November 2016

class CTs and associated electric generators, two supplemental-fired heat recovery steam generators (HRSG), and one condensing steam turbine (ST) and associated electric generator operating in combined-cycle mode. Each CT is designed to produce nominally 242 MW and includes a DLN combustion system and a hydrogen-cooled electric generator. The two triple-pressure HRSGs include integrated deaerators, SCRs, oxidation catalyst for the control of carbon monoxide, and supplemental duct firing with associated combustion management. The ST is a single-reheat condensing ST designed for variable pressure operation, designed to produce an additional 246 MW. The ST exhaust is cooled in a closed-loop condenser system with a mechanical draft cooling tower. The CTs are equipped with inlet evaporative coolers to reduce the temperature of the turbine inlet air to increase summer output. The CC plant also includes a raw water treatment system consisting of clarifiers and filters and a turbine hall, in which the CTs, ST, and HRSGs are enclosed to avoid freezing during periods of cold ambient temperatures. We also obtained variable and fixed O&M costs from the EIA report and adjusted for property tax and insurance estimates based on the average of our existing resources. The CC's projected capacity and operating costs are presented in Table 4-1 Expansion Plan Alternatives.

3. Baseload Power Pulverized Coal Expansion Alternatives

The EIA report indicates that the installed capital cost, including AFUDC, for a new ultra supercritical coal 650 MW resource is approximately $4,165/kW (stated in 2017 dollars). This estimate assumes the coal plant is equipped with a SCR system for controlling NO_X, a baghouse for the collection of particulate material and a wet flue gas desulfurization absorber for controlling SO_2. We also obtained variable and fixed O&M costs from the EIA Report and adjusted for property tax and insurance estimates based on the average of our existing resources. The coal plant's projected capacity and operating costs are presented in Table 4-1 Expansion Plan Alternatives.

TABLE 4-1 Expansion Plan Alternatives – Peaking, Intermediate and Baseload (Stated in 2017 dollars)

Unit	50-MW Advanced CT	50-MW Combined Cycle	50-MW Pulverized Coal
Typical Load Factor	7%	35%	85%
Capacity Cost ($/kW-month)	$4.76	$7.05	$26.97
Fixed Cost ($/kW-month)	$0.84	$1.20	$3.85
Variable O&M Cost ($/MWh)	$10.97	$3.59	$4.72
Fuel Cost ($/MWh)	$32.34	$21.05	$18.57
Avg. Total Cost ($/MWh)	$152.87	$56.95	$73.13
Avg. Cost at different Load Factors			
5% Load Factor	$196.66	$250.71	$867.95
10% Load Factor	$120.03	$137.69	$445.70
20% Load Factor	$81.71	$81.17	$234.58

Unit	50-MW Advanced CT	50-MW Combined Cycle	50-MW Pulverized Coal
30% Load Factor	$68.94	$62.34	$164.20
40% Load Factor	$62.56	$52.92	$129.01
50% Load Factor	$58.72	$47.27	$107.90
60% Load Factor	$56.17	$43.50	$93.83
70% Load Factor	$54.34	$40.81	$83.77
80% Load Factor	$52.98	$38.79	$76.23
90% Load Factor	$51.91	$37.22	$70.37

Note that projected fuel cost is based on an estimated 2017 natural gas price of $3.19 per MMBtu (Chicago City Gate basis) and coal price of $2.11 per MMBtu (Illinois Basin basis).

4. Renewable[i] Power Expansion Alternatives

For Wabash Valley's 2017 IRP, we are evaluating several renewable[i] power expansion alternatives, including landfill gas (LFG), wind, utility-scale photovoltaic solar and battery storage. We obtained wind, solar and battery storage cost estimates from the EIA report and adjusted for property tax and insurance estimates based on the average of our existing resources. For LFG, we utilized current internal cost estimates since the Company has experience constructing and operating this type of resource. These renewable[i] alternatives' projected capacity and operating costs are presented in Table 4-2 Renewable[i] Expansion Plan Alternatives. Additionally in consideration of the declining cost of renewables[i], in Section 5 Scenario Analysis, we determine the cost at which wind, solar and battery resources begin to compete with natural gas resources.

TABLE 4-2 Renewable[i] Expansion Plan Alternatives – LFG, Wind, Solar and Battery (Stated in 2017 dollars)

Unit	3-MW LFG	10-MW Wind	10-MW Solar	1-MW Battery
Installed Capital Cost ($/kW)	$1,608	$1,951	$2,670	$2,964
Typical Load Factor	90%	42%	15%	90%
Capacity Cost ($/kW-month)	$10.41	$12.63	$17.29	$19.19
Fixed Cost ($/kW-month)	$4.95	$3.65	$2.12	$3.67
Variable O&M Cost ($/MWh)	$16.74	$0.00	$0.00	$4.22
Fuel Cost ($/MWh)	$9.13	$0.00	$0.00	$29.07
Avg. Total Cost ($/MWh)	$49.26	$53.10	$177.25	$68.10

Note that projected battery fuel cost is based on average 2017 off-peak market prices adjusted for charge efficiency.

5. Joint Project Participation

Wabash Valley evaluates the potential cost benefits in participating as an equity partner in the construction or purchase of generating capacity versus sole ownership. This type of project involves joining with other electric utilities or developers in evaluating and developing generating facilities. The Company continues to monitor projects for possible participation as they develop.

In certain scenarios, where capacity estimates of the expansion plan alternatives exceed Wabash Valley's needs, it is assumed the Company will partner with another entity in building or purchasing additional generation.

6. Environmental Effects

Wabash Valley's evaluation of all supply-side resources includes assessment of each alternative's environmental impact. The Company currently owns generating units and purchases power through contracted supplies.

For peaking and intermediate capacity expansion, Wabash Valley evaluated resources that represent both construction of new facilities and power purchase agreements from existing resources. New peaking and intermediate unit construction alternatives consisted entirely of natural gas units. These units are regulated for nitrogen oxides (NO_x), along with minor amounts of other air emissions. These units will eventually be regulated for emissions of carbon dioxide (CO_2). Solid and hazardous waste generated by these units is expected to be negligible. The Company's evaluation of these units includes potential NO_x control equipment, adjustments to combustion temperature, and permit limitations. Our final assessment concludes that these units could operate as peaking resources with limited operating hours and not exceed the limits set in the air emissions control operating permits.

Wabash Valley also evaluated purchasing peaking power capacity from wholesale power marketers. These purchases are typically made from existing generating resources with a proven record of environmental compliance. Contract provisions in the Company's purchase power agreements stipulate that the resource will be operated in compliance with applicable environmental regulations and operating permit conditions.

Baseload power agreements are purchased from other electric utilities or from wholesale power marketers. The power supply offered may be from an existing resource able to demonstrate compliance with applicable environmental regulations. The supply may also be offered from a proposed but as-yet nonexistent facility. As with new generating units, Wabash Valley determines that the proposed resource has appropriate control technology and operating processes included in the cost of power supply. Again, the Company's purchase power contract provisions require that the supplying facility will be operated in compliance with applicable environmental regulations and operating permit conditions.

Due to the lack of clarity of any carbon pollution regulation at this time, Wabash Valley did not attempt to estimate the cost of complying with carbon regulation for purposes of this IRP. However, the Company acknowledges that carbon pollution standards and other probable future regulations are factors when assessing new resources.

7. Seasonal Power Supply Alternatives

Wabash Valley works closely with ACES in identifying and quantifying market prices and short-term market positions. ACES was established by Wabash Valley and other REMC utilities to optimize short-term market transactions and provide risk assessment services.

The Company typically purchases short-term market power and options to meet transient peak demands caused by extreme weather or seasonal maintenance outages. Through the MISO and PJM markets, Wabash Valley also optimizes its energy portfolio by purchasing energy from the market when that energy has a lower cost than dispatching additional power resources. However, the Company continues to be concerned about volatile market prices. Wabash Valley uses ACES risk assessments of expected future market prices in making decisions regarding additional market energy or option purchases to hedge the cost of power.

8. Supply-Side Resource Selection Factors

Wabash Valley employs several decision making factors in selecting new power supply resources. While price is clearly important, Wabash Valley also considers the technical viability of a proposed project. This includes an analysis of the long-term reliability of the resource, assessing any fuel supply, environmental compliance and transmission interconnection constraints. The Company also evaluates the credit-worthiness of any proposal's counter-party, especially when considering the likelihood of proposed (but uninitiated) projects meeting targeted completion dates. Some of the additional factors that Wabash Valley considers are operational flexibility, resource deliverability and location, impact on diversification of the Company's power portfolio, overall price risk exposure, equity requirements and contract term.

Demand-Side Resource Options

Wabash Valley's planning and evaluation of DR and EE programs is highly dependent upon a collaborative process with its Members. Input from the Members is invaluable for the process of evaluating existing programs, collecting information on program implementation, gaining information on the program's technical and economic potential and customer acceptance of new programs. The Company has both a Demand Response Committee and an Energy Efficiency Committee that are comprised of Members' personnel.

For Wabash Valley's 2017 IRP, we are evaluating our demand-side resource options on a comparable basis to our supply-side resources. For DR, we utilized current internal cost estimates based on recent experience building out our programs. For EE, we obtained high-level program cost estimates from a condensed study of achievable efficiency potential. These demand-side alternatives' projected capacity and operating costs are presented in Table 4-3 Demand-Side Expansion Plan Alternatives.

TABLE 4-3 Demand-Side Expansion Plan Alternatives – DR and EE (Stated in 2017 dollars)

Unit	1-MW DR	1-MW Residential EE	1-MW Small Comm EE	1-MW Large Comm EE
Installed Capital Cost ($/kW)	$344	$1,371	$441	$441
Typical Load Factor	1%	60%	60%	60%
Capacity Cost ($/kW-month)	$2.23	$8.88	$2.86	$2.86
Fixed Cost ($/kW-month)	$4.92	$0.00	$0.00	$0.00
Avg. Total Cost ($/MWh)	$978.75	$20.27	$6.52	$6.52

1. DR Planning Process

The Demand Response Committee is responsible for the continuing DR planning process. The screening process consists of the following steps:

- Identifying DR measures and technologies
- Determining if measures are consistent with overall goals
- Determining if there is adequate market potential
- Conducting economic evaluation
- Securing approval from executive level and Board of Directors
- Implementing Programs

a. Identify DR Technologies

Wabash Valley uses several sources of information to identify potential DR technologies. A major source of program possibilities is the Members' knowledge and experience with various technologies that allows the Company to compile options that have some degree of viability before conducting a formal analysis. Wabash Valley also identifies potential programs through association with the Cooperative Research Network, various trade journals, conferences and seminars.

b. Determine if Measures are Consistent with Overall Goals

The primary objective of DR at Wabash Valley is the reduction of wholesale power costs to the association. Wabash Valley and our Members possess a goal of controlling costs and improving efficiency in an effort to supply reliable power at a low and stable cost. In addition, Wabash Valley and our Members want to offer the end retail customer the greatest possible value in electric service and to assist them in improving their quality of life.

c. Assess Market Potential

This step involves assessing the potential application of the technology in the Company's service territory. This step eliminates the measures that would not prove successful because of an economic or technical inability to utilize the technology. Wabash Valley gauges customer interest and identifies potential pilot areas. The Company does not currently utilize standard tools for determining market potential but is investigating the options.

d. Conduct an Economic Evaluation

While all of the DR programs are reviewed on an annual basis, Wabash Valley incorporates a five-year forward look at the wholesale market to conduct its overall economic evaluation process. With the volatility of the wholesale power markets, program economics change frequently. Wabash Valley and the Demand Response Committee work diligently to keep economics current and programs flexible.

The Company has developed a screening process for each program concept that is under consideration. An initial evaluation is required for determination of individual program benefits and costs. This evaluation is also required to maintain efficient program design of existing programs. The evaluation requires sufficient and reliable data to provide accurate screening. The screening is then used to ensure efficient and equitable program design for the participant, the Member and Wabash Valley. The screening broadly determines how the program will ultimately affect the participant and non-participant, and the rates paid by all customers. Many internal tests are designed to quantify the impacts of a DR program for a particular group.

e. Securing Approval and Implementation

If all the screenings and evaluations prove positive, the Company seeks approval of the DR program from the executives and Board of Directors. Once approved, the DR program is rolled out to all Members. Wabash Valley supports the programs as long as they continue to meet the Company's goals.

2. Control Strategies for DR Programs

The current control strategies incorporated in the plan are designed to minimize system costs while maintaining customer satisfaction. Wabash Valley has registered our DR programs with MISO who uses our programs as a resource to maintain grid reliability. Because of our market participation, the Company receives planning and/or capacity credits for our DR programs in the wholesale market.

3. EE Planning Process

The Energy Efficiency Committee is responsible for the continuing EE planning process. The committee recommended a series of residential programs and commercial and industrial programs for the Wabash Valley portfolio. Programs were selected based on each Member's mix of customers, electric energy end-uses and power supply requirements. Working with our program planning and design consultant, the Committee develops programs and EM&V protocols to assess the technical and economic viability of EE programs. Subsequently, our consultant validates program savings impacts, monitors program performance and ensures that incentives paid are proportionate to achieved savings. These activities serve as a way to audit, both internally and independently, the actual level of savings being delivered and to help maximize program effectiveness and ensure cost-effective program delivery. Additionally, feedback from retail customers and our Member cooperatives on both design and on-going EM&V priorities is encouraged. This allows all parties to shape the structure of the efficiency programs both initially and in an on-going manner.

Avoided Costs

The mix of transmission and power supply resource assets, along with transmission congestion in the region, impacts short-term avoided costs for Wabash Valley. The long-term avoided cost for capacity approaches the incremental cost of a new peaking unit and the cost of network transmission to deliver the capacity to the distribution points of the Company's Members.

The avoided energy costs are based upon the economic dispatch order of all production resources. The avoided energy costs generally phase into the cost of high efficiency peaking resources during peak times and coal-based energy during off-peak times.

Estimated annual avoided costs for 2017 through 2036, excluding transmission service fees, are shown in Table 4-4. Note that this table gives avoided costs for both capacity and energy components.

TABLE 4-4 Wabash Valley Avoided Cost Forecast (amounts stated in nominal dollars)

Year	Capacity ($/kW-month)	Peak Energy ($/MWh)	Off-Peak Energy ($/MWh)	Around the Clock Energy ($/MWh)
2017	4.356	28.37	24.95	26.58
2018	4.465	30.51	26.50	28.39
2019	4.577	30.24	25.78	27.87
2020	4.691	27.83	24.50	26.07
2021	4.809	27.29	23.91	25.51
2022	4.929	27.17	24.23	25.64
2023	5.052	29.66	25.70	27.56

Year	Capacity ($/kW-month)	Peak Energy ($/MWh)	Off-Peak Energy ($/MWh)	Around the Clock Energy ($/MWh)
2024	5.178	30.41	26.30	28.23
2025	5.308	30.60	26.62	28.47
2026	5.440	32.41	27.92	30.03
2027	5.576	32.75	28.28	30.37
2028	5.716	33.76	29.12	31.36
2029	5.859	35.35	30.85	32.95
2030	6.005	36.64	31.77	34.06
2031	6.155	38.56	33.37	35.79
2032	6.309	40.35	35.33	37.68
2033	6.467	41.81	36.60	39.02
2034	6.629	43.17	37.81	40.30
2035	6.794	44.03	38.57	41.10
2036	6.964	44.91	39.34	41.92

Additional detail and data regarding the calculation of Wabash Valley's avoided cost forecast are included in Appendix D of this report.

System Reliability

Wabash Valley's system planning goal is to assure a highly reliable supply of electric power to its Members at the lowest reasonable cost. Market price uncertainties and risks associated with power delivery and contract counter-party creditworthiness have resulted in a shift in the Company's power supply strategy toward more resource ownership. While ownership decreases certain risks, it increases the risk of unavailable supply due to unit outage. As participants in the MISO and PJM RTOs, Wabash Valley is able to share in the reserves of the region. MISO analyzes the required reserves for the region. The Company provides an accounting of resources to MISO or purchases capacity in an auction to comply with the reserve requirements under the process outlined in the MISO tariff. Wabash Valley is also a member of the PJM reserve sharing group. As such, PJM determines the reliability criteria for Wabash Valley load served in that region. PJM acquires resources to meet the reserve requirements in the region and the Company pays its share of the capacity purchased through the PJM tariff requirements.

As noted in Section 2 of this report, Wabash Valley is not a Local Balancing Authority (formerly known as transmission control areas). As discussed in Section 2 Transmission Resources, Wabash Valley works with Duke Indiana regarding facility planning within the JTS, with the goal of maintaining transmission system reliability. The Company is also a member of MISO and PJM. These groups are the security coordinators and monitor the bulk transmission system in order to maintain reliable interconnected operations. Wabash Valley actively participates in their working groups addressing transmission equipment capacity, availability, scheduling and reliability.

Resource Portfolio Modeling

The goal of Wabash Valley's IRP is to identify a mix of new resources that, when considered with our existing portfolio, provides the best combination of expected costs and associated risks and uncertainties for Wabash Valley and our Members. To achieve that goal, we utilized the PLEXOS® model to evaluate each of these supply-side and demand-side resource options on an equivalent basis. Plexos® selects resources in order to reduce the overall portfolio cost, regardless of whether the resource is on the supply or demand-side. Specifically, we ran the Plexos® LP long-term optimization model, also known as "LT Plan®," and the Plexos® medium-term simulation model, also known as "MT Schedule®," to find the optimal portfolio of future capacity and energy resources that minimizes the Company's variable and fixed costs over the twenty-year plan horizon.

Along with the projected capacity and operating costs of new resources, Wabash Valley uses several sources of information in forecasting power production costs. These sources include prices, escalation rates and indices specified in existing company contracts, and current market information provided by ACES. Appendix B Wabash Valley Unit Power Costs identifies the Company's power production resources and presents the unit capacity and power costs, e.g. forecasted fixed O&M costs, variable O&M costs and fuel costs, for each resource over the next twenty years. Some of the power purchase agreements have only an energy price component, while others have fixed, fuel and O&M costs based on capacity. Some of the resources are fixed-price for the term of the contract. We have escalated our variable-priced contracts with increases consistent with industry natural gas and coal price forecasts. Other costs have been escalated at an assumed general inflation rate of 2.5%. Appendix C Market Price Assumptions displays forward power market prices for Indiana Hub, with and without carbon, the Henry Hub natural gas forward market price and a forward coal market price.

Base Resource Plan

Wabash Valley's base resource plan is built on the expected, or most likely, assumptions regarding energy requirements and peak demand, resource costs (e.g. capital, O&M), market prices, governmental policies and regulations and other conditions. The following key inputs shaped our base scenario:

- We use the 2017 base case load forecast described in Section 3 Load Forecast and Forecasting Methodology. Under this forecast when including pass-through loads, both energy and demand growth averages 0.8% per year between 2018 and 2036;
- We retire existing LFG generating units at the end of their respective expected twenty-year life;
- Existing power purchase agreements expire at the end of current contract;
- Lower natural gas prices due to plentiful natural gas production and inventory levels;
- Liquid capacity market assumed to exist to meet short-term needs;
- No carbon price assumptions due to the lack of clarity at this time; and

- No Gibson Unit 5 retirement although the retirement of older coal resources may be a way to respond to emerging environmental regulations. As a joint owner in this facility, we will work with our partners to evaluate future retirement decisions.

Table 4-5 Power Supply Expansion Plan summarizes Wabash Valley's existing generating resources and anticipated capacity needs through 2036. Power supply requirements include expected Member demand, losses, contractual firm sales, and estimated reserves. Existing owned & contracted power resources decline over the plan horizon due to the expiration of existing purchase power agreements at their respective current delivery end date and due to the retirement of LFG generating units. Planned additions anticipate that we will purchase the output from three different wind projects when they begin commercial operation in 2018, 2019 and 2020. Power supply requirements - Existing owned & contracted power resources - Planned additions = Capacity needs. The last four columns of Table 4-5 present the optimal portfolio of supply-side and demand-side resources that meets Wabash Valley's future capacity needs under this base scenario.

Table 4-5 Power Supply Expansion Plan

Year	Power Supply Requirements MW (1)	Existing Owned & Contracted Power Resources (MW) (2)	Planned Additions (MW) (2)	Capacity Needs (MW) (2)	Capacity Market (2)	CC (NG) (2)	CT (NG) (2)	EE (2)
2018	1,843	1,512	3	328	337	0	0	0
2019	1,748	1,521	10	217	218	0	0	0
2020	1,900	1,538	20	342	354	0	0	0
2021	1,762	1,502	20	240	48	0	192	0
2022	1,773	1,490	20	263	70	0	192	1
2023	1,786	1,491	20	275	0	96	192	1
2024	1,801	1,492	20	289	0	96	192	2
2025	1,814	1,469	20	325	34	96	192	3
2026	1,829	1,438	20	371	0	192	192	4
2027	1,847	1,439	20	388	0	192	192	9
2028	1,832	1,433	20	379	0	192	192	14
2029	1,852	1,420	20	412	10	192	192	19
2030	1,868	1,413	20	435	0	192	240	24
2031	1,885	1,333	20	532	71	192	240	29
2032	1,902	1,201	20	681	0	384	288	33
2033	1,920	1,162	20	738	29	384	288	38
2034	1,950	993	20	937	0	576	336	42
2035	1,969	993	20	956	0	576	336	46
2036	1,988	991	20	977	16	576	336	50

(1) Power resource requirements include PJM and MISO reserves.
(2) Resources are reported at their unforced capacity (UCAP) value.

Appendix A contains a more detailed schedule of Wabash Valley's Base Expansion Capacity Plan (UCAP Capacity). The schedule displays the expected load requirements for Wabash Valley's Members and for firm non-member sales each year, including losses and reserve requirements. The load forecast is compared to the current expected capacity supply-side and demand-side resources. Any remaining resource requirements to meet load for a specific year are divided between future peaking, future baseload and future incremental resources. Since Wabash Valley's composite load requirements show an average load factor of approximately 55% to 65%, the Company plans to attain a power supply resource ratio of approximately 60% baseload/intermediate capacity to 40% peaking capacity with a move toward a greater percentage of natural gas units (e.g. combined cycle and peakers).

As depicted above, Wabash Valley's resource portfolio shows that the company needs additional capacity to meet projected demand requirements in 2018. From 2018 to 2020, the base resource plan recommends that we purchase incremental capacity from the market. Past 2020, the base resource plan recommends that we add a total of 576 MW of baseload CC resources and 336 MW of peaking CT resources along with some incremental market capacity purchases in certain years. Additionally, the base resource plan proposes we add an additional 50 MW of EE. Although our optimization model did not choose our DR programs during the 20-year plan horizon, Wabash Valley may choose to continue to build DR resources in the near term to enhance Member and end retail customer value. Coal, solar, wind and battery resources were not selected as they were not economic under the base scenario.

Some of Wabash Valley's near term capacity needs are driven by our Pass-Through Loads. The Pass-Through Loads customers have the ability to customize their power supply portfolio based on their respective risk tolerances. Traditionally, our Pass-Through Loads customers desire to meet these needs through purchases from the PJM and MISO capacity markets.

Wabash Valley's power supply team analyzes all opportunities to improve the Company's power supply portfolio while being cognizant of any regulation that may affect these sources. These opportunities may include the purchase/sale of generating assets, purchase/sale of cost-based power agreements and purchase/sale of fixed priced forward contracts. We analyze these opportunities to evaluate risk, reliability, and cost impact to our Members. While Wabash Valley has developed and maintains a detailed resource plan to serve forecasted Member load requirements, we may adjust that plan if we are able to take advantage of economic opportunities that arise.

---

[i] Wabash Valley supports renewable energy by owning landfill gas generation and purchasing the output from wind farms and biogas generators. Wabash Valley sells, separately, the environmental attributes associated with this generation to its members and third parties, and therefore does not claim the generation as renewable within our own supply portfolio.

Section 5
SCENARIO ANALYSIS

Financial Forecast

The financial forecast is developed using a custom built financial forecasting model (developed by MCR). Production cost estimates are generated by PLEXOS®, and those costs are input into the MCR model. The financial analysis logic calculates the Company's expected revenue requirement based on production costs, capital recovery costs and financial performance targets such as TIER (Times Interest Earned Ratio), DSC (Debt Service Coverage Ratio), Fixed-Charge Ratio and Equity Percentage.

While Wabash Valley may consider sole or joint ownership of generating facilities, each project would first be measured against a comparable power purchase agreement. Wabash Valley is continuing to work to maintain its financial health through adherence to a prudent financial policy. The following is a summary of major objectives of the Company's financial policy:

1. Minimize the long-run cost of providing service to the Members with recognition that the quality of such service will be maintained at levels consistent with prudent utility practice and acceptable risk levels.

2. Preserve Wabash Valley as a going concern entity by maintaining and replacing its assets in accordance with industry standards and ensuring that adequate amounts of funds are available from internal and external sources to accommodate these needs.

3. Maintain the ability to access capital markets in order to finance facilities required to accommodate the Members' demand for electricity by maintaining the financial standards required of these markets for credit worthiness.

Scenario Modeling

Based on past experience and proposed carbon emissions regulation, the Company identified four alternate expansion plans that could have a significant impact on production costs. The four alternate expansion plans are:

- □ High Economic Growth
- □ Low Economic Growth
- □ Carbon Emissions Regulation with Coal Retirement Option
- □ Renewable[i] Cost Improvements

Wabash Valley executed the Plexos® LT Plan® and the Plexos® MT Schedule® models deterministically under these four alternate scenarios to find the optimal portfolio of future capacity and energy resources that minimizes the Company's variable and fixed costs under each scenario over the twenty-year plan horizon.

We then tested each alternate expansion plan against several combinations of stochastic variables to determine how each plan performed against an unknown future. The following discussion provides a summary of each alternate expansion plan, a description of our stochastic assumptions and the results of our modeling.

Alternate Expansion Plans

1. High Economic Growth

The high economic growth scenario consists of adjusting model inputs for: member load, fuel prices, capacity prices and energy prices.

Member Load

As described in Section 3 of this report, Wabash Valley adjusted key input economic data of GRP, Population, Households and Household Income of the 2017 Power Requirements Study by applying escalation factors consistent with the Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2017 report High Economic Growth case (as compared to the Reference Case). Peak demand growth under the High forecast is 1.1% per year.

Fuel, Capacity and Energy Prices

Wabash Valley reviewed the volatility of historical forward-looking price curves used in long-term forecasts over the previous ten years. We applied this data to our base case market price assumptions. Due to the extreme volatility of the curves, we constrained our alternative price calculations to one standard deviation of the mean. Below is a comparison of the 20-year growth rates of the high economic growth plan to the base case:

Price	High Growth Rate	Base Growth Rate
Energy 7x24 Price	3.8%	2.1%
Natural Gas Price	4.6%	2.7%
Coal Price	5.0%	2.9%
Capacity Price (2019-2036)	8.9%	8.1%

Note: Very low capacity auction values in the 2017-2018 timeframe exaggerates the 20-year growth rate; therefore, we present only an 18-year growth rate.

A summarized preliminary expansion plan for the High economic condition sensitivity is shown in Table 5-1. This plan indicates that, under strong economic growth conditions, Wabash Valley would purchase slightly more capacity from the market from 2018 to 2020 and add 3 MW of EE. From 2021 to 2036, the high economic growth plan recommends that we add a total of 672 MW of baseload CC resources and 336 MW of peaking CT resources along with an additional 47 MW of EE and incremental capacity market purchases in certain years. This is 96 MW more of baseload/intermediate resources than the Company's base case.

TABLE 5-1 Power Supply Expansion Plan, High Economic Growth

Year	Power Supply Requirements MW (1)	Existing Owned & Contracted Power Resources (MW) (2)	Planned Additions (MW) (2)	Capacity Needs (MW) (2)	Capacity Market (2)	CC (NG) (2)	CT (NG) (2)	EE (2)
2018	1,847	1,512	3	332	340	0	0	1
2019	1,756	1,521	10	225	223	0	0	2
2020	1,913	1,539	20	354	363	0	0	3
2021	1,778	1,503	20	255	60	96	96	4
2022	1,793	1,492	20	281	84	96	96	5
2023	1,809	1,493	20	296	3	192	96	6
2024	1,825	1,494	20	311	17	192	96	7
2025	1,841	1,472	20	349	54	192	96	8
2026	1,859	1,441	20	398	6	288	96	9
2027	1,881	1,442	20	419	22	288	96	14
2028	1,866	1,436	20	410	0	288	144	18
2029	1,892	1,423	20	449	0	288	144	22
2030	1,914	1,416	20	478	0	288	240	28
2031	1,937	1,338	20	579	21	288	240	30
2032	1,959	1,206	20	733	0	480	240	34
2033	1,984	1,167	20	797	39	480	240	38
2034	2,022	993	20	1,009	0	672	336	42
2035	2,049	993	20	1,036	0	672	336	46
2036	2,067	991	20	1,056	0	672	336	50

(1) Power resource requirements include PJM and MISO reserves.
(2) Resources are reported at their unforced capacity (UCAP) value.

2. Low Economic Growth

The low economic growth scenario consists of adjusting model inputs for: member load, fuel prices, capacity prices and energy prices.

Member Load

As described in Section 3 of this report, Wabash Valley adjusted key input economic data of GRP, Population, Households and Household Income of the 2017 Power Requirements Study by applying de-escalation factors consistent with the Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2017 report Low Economic Growth case (as compared to the Reference Case). Peak demand growth under the Low forecast is 0.6% per year.

Fuel, Capacity, and Energy Prices

Wabash Valley reviewed the volatility of historical forward-looking price curves used in long-term forecasts over the previous ten years. We applied this data to our base case market price assumptions. Due to the extreme volatility of the curves, we constrained our alternative price calculations to one standard deviation of the mean. Below is a comparison of the 20-year growth rates of the low economic growth plan to the base case:

Price	Low Growth Rate	Base Growth Rate
Energy 7x24 Price	-0.4%	2.1%
Natural Gas Price	0.0%	2.7%
Coal Price	-0.4%	2.9%
Capacity Price (2019-2036)	6.0%	8.1%

Note: Very low capacity auction values in the 2017-2018 timeframe exaggerates the 20-year growth rate; therefore, we present only an 18-year growth rate.

The estimated expansion plan under the Low economic growth sensitivity is shown in Table 5-2. In the conditions of this sensitivity, Wabash Valley would purchase slightly less capacity from the market from 2018 to 2020. From 2021 to 2036, the low economic growth plan recommends that we add a total of 384 MW of baseload CC resources and 336 MW of peaking CT resources along with 50 MW of EE and incremental capacity market purchases in certain years. This is 192 MW less of baseload/intermediate resources than the Company's base case.

TABLE 5-2 Power Supply Expansion Plan, Low Economic Growth

Year	Power Supply Requirements MW (1)	Existing Owned & Contracted Power Resources (MW) (2)	Planned Additions (MW) (2)	Capacity Needs (MW) (2)	Capacity Market (2)	CC (NG) (2)	CT (NG) (2)	EE (2)
2018	1,828	1,510	3	315	323	0	0	0
2019	1,724	1,519	10	195	196	0	0	0
2020	1,868	1,535	20	313	324	0	0	0
2021	1,721	1,499	20	202	107	0	96	0
2022	1,724	1,487	20	217	122	0	96	0
2023	1,729	1,487	20	222	79	0	144	0
2024	1,735	1,487	20	228	85	0	144	0
2025	1,740	1,464	20	256	113	0	144	0
2026	1,748	1,432	20	296	9	0	288	0
2027	1,761	1,432	20	309	16	0	288	5
2028	1,750	1,426	20	304	6	0	288	10
2029	1,765	1,412	20	333	30	0	288	15
2030	1,776	1,404	20	352	0	0	336	20
2031	1,788	1,325	20	443	83	0	336	25
2032	1,801	1,192	20	589	31	192	336	30
2033	1,814	1,153	20	641	79	192	336	35
2034	1,838	993	20	825	65	384	336	40
2035	1,851	993	20	838	74	384	336	45
2036	1,878	991	20	867	98	384	336	50

(1) Power resource requirements include PJM and MISO reserves.
(2) Resources are reported at their unforced capacity (UCAP) value.

3. Carbon Emissions Regulation with Coal Retirement Option

For purposes of our 2017 IRP base scenario, Wabash Valley did not include any carbon price assumptions. However, for purposes of scenario analysis, we assume carbon regulation impacts will take effect in 2030. We used a "carbon tax" for purposes of modeling. This tax ranges from $7.78/ton in 2030 to $26.30/ton in 2036. We also adjusted market energy and fuel prices to reflect the impact of higher production costs.

Furthermore, under this scenario, we allowed the expansion planning model to retire coal plants. The potential coal plant retirements were based solely on economics including fuel, variable and fixed O&M, emissions costs, depreciation, insurance, taxes and cost to retire (book value). Gibson Unit 5 was retired in 2030. This was mostly due to the costs of emissions as the carbon scenario was the only scenario in which coal was retired. Prairie State Units 1 and 2 were not retired due to lower operating costs that more than offset the carbon tax.

The estimated expansion plan under the carbon emissions regulation with coal retirement option scenario is shown in Table 5-3. Wabash Valley has the same overall needs as the base case from 2018 to 2020. From 2021 to 2036, this expansion plan recommends that we add a total of 672 MW of baseload CC resources and 384 MW of peaking CT resources. This is 96 MW more of baseload/intermediate resources and 48 MW more of peaking resources than the Company's base case.

TABLE 5-3 Power Supply Expansion Plan, Carbon Emissions Regulation with Coal Retirement Option

Year	Power Supply Requirements MW (1)	Existing Owned & Contracted Power Resources (MW) (2)	Planned Additions (MW) (2)	Capacity Needs (MW) (2)	Capacity Market (2)	CC (NG) (2)	CT (NG) (2)	EE (2)
2018	1,843	1,512	3	328	337	0	0	0
2019	1,748	1,521	10	217	218	0	0	0
2020	1,900	1,538	20	342	354	0	0	0
2021	1,762	1,502	20	240	48	0	192	0
2022	1,773	1,490	20	263	71	0	192	0
2023	1,786	1,491	20	275	0	96	192	0
2024	1,801	1,492	20	289	0	96	192	1
2025	1,814	1,469	20	325	35	96	192	2
2026	1,829	1,438	20	371	0	192	192	3
2027	1,847	1,439	20	388	0	192	192	8
2028	1,832	1,433	20	379	0	192	192	13
2029	1,852	1,420	20	412	11	192	192	18
2030	1,868	1,266	20	582	0	288	288	23
2031	1,885	1,187	20	678	74	288	288	28
2032	1,902	1,055	20	827	0	480	336	33

Year	Power Supply Requirements MW (1)	Existing Owned & Contracted Power Resources (MW) (2)	Planned Additions (MW) (2)	Capacity Needs (MW) (2)	Capacity Market (2)	CC (NG) (2)	CT (NG) (2)	EE (2)
2033	1,920	1,016	20	884	31	480	336	38
2034	1,950	847	20	1,083	0	672	384	42
2035	1,969	847	20	1,102	0	672	384	46
2036	1,988	845	20	1,123	18	672	384	50

(1) Power resource requirements include PJM and MISO reserves.
(2) Resources are reported at their unforced capacity (UCAP) value.

4. Renewable[i] Cost Improvements

For purposes of our 2017 IRP base scenario, Wabash Valley assumed that the cost of building renewable[i] resources escalates by the estimated inflation rate of 2.5% annually over the forecast horizon. Recent history has shown that the cost of building renewable[i] resources is not necessarily subject to the same escalation as fossil fuel generating options. Therefore, in this scenario, we determined the cost (capital and fixed O&M) at which wind, solar and battery resources begin to compete with natural gas resources as energy and capacity options. We made no other adjustments to operating parameters, such as capacity factor improvements, UCAP value or tax benefits. The primary reason the costs had to drop so significantly to be competitive is due to these resources' low capacity factors and their low contribution to UCAP value. These renewable[i] technologies were selected when their costs (in 2017 dollars) reached the following prices:

Technology	Capital Cost ($/kW)	% Decrease from Base	Fixed Cost ($/kW-year)	% Decrease from Base
Wind	$1,300	-33%	$25	-43%
Solar	$1,000	-63%	$9	-65%
Battery	$700	-76%	$10	-77%

The estimated expansion plan under the renewable[i] cost improvements scenario is shown in Table 5-4. Wabash Valley has the same overall needs as the base case from 2018 to 2020. From 2021 to 2036, the cost of renewable[i] resources decreases making them more competitive with natural gas resources. The renewable[i] cost improvements expansion plan recommends that we add a total of 384 MW of baseload CC resources and 480 MW of peaking CT resources along with 50 MW of EE, 45 MW of wind, 10 MW of solar, 9 MW of battery and incremental capacity market purchases in certain years. Compared to the Company's base case, 48 MW of natural gas resources is displaced by wind, solar and battery resources. Keep in mind that these volumes are stated in UCAP values. In ICAP values, 450 MW of wind, 20 MW of solar and 9 MW of battery displace 50 MW of natural gas generation.

TABLE 5-4 Power Supply Expansion Plan, Renewable[i] Cost Improvements

Year	Power Supply Req. MW (1)	Existing Owned & Contracted Power Resources (MW) (2)	Planned Additions (MW) (2)	Capacity Needs (MW) (2)	Capacity Market (2)	CC (NG) (2)	CT (NG) (2)	EE (2)	Wind (2)	Solar (2)	Battery (2)
2018	1,843	1,512	3	328	337	0	0	0	0	0	0
2019	1,748	1,521	10	217	218	0	0	0	0	0	0
2020	1,900	1,538	20	342	354	0	0	0	0	0	0
2021	1,762	1,502	20	240	24	0	192	0	9	10	5
2022	1,773	1,490	20	263	46	0	192	1	9	10	5
2023	1,786	1,491	20	275	0	0	240	2	19	10	5
2024	1,801	1,492	20	289	12	0	240	3	19	10	5
2025	1,814	1,469	20	325	47	0	240	4	19	10	5
2026	1,829	1,438	20	371	0	96	240	5	29	10	5
2027	1,847	1,439	20	388	0	96	240	10	29	10	5
2028	1,832	1,433	20	379	0	96	240	15	38	10	9
2029	1,852	1,420	20	412	0	96	240	20	38	10	9
2030	1,868	1,413	20	435	0	96	288	25	45	10	9
2031	1,885	1,333	20	532	54	96	288	30	45	10	9
2032	1,902	1,201	20	681	0	288	336	34	45	10	9
2033	1,920	1,162	20	738	13	288	336	38	45	10	9
2034	1,950	993	20	937	15	384	432	42	45	10	9
2035	1,969	993	20	956	30	384	432	46	45	10	9
2036	1,988	991	20	977	0	384	480	50	45	10	9

(1) Power resource requirements include PJM and MISO reserves.
(2) Resources are reported at their unforced capacity (UCAP) value.

Stochastic Assumptions

Scenario analysis is an ongoing process at Wabash Valley. Financial forecasts are generally updated quarterly to reflect changes in wholesale electric, natural gas and coal market prices. We develop other scenarios as needed to examine the potential impact of uncertainties due to Member load changes, plant outages, economic purchase and sales opportunities, resource availability and similar system planning functions.

Future Member energy requirements, wholesale electric, natural gas, coal and capacity market prices and environmental legislation are expected to have a significant impact on production costs. Wabash Valley developed scenarios to examine the impact of each uncertainty.

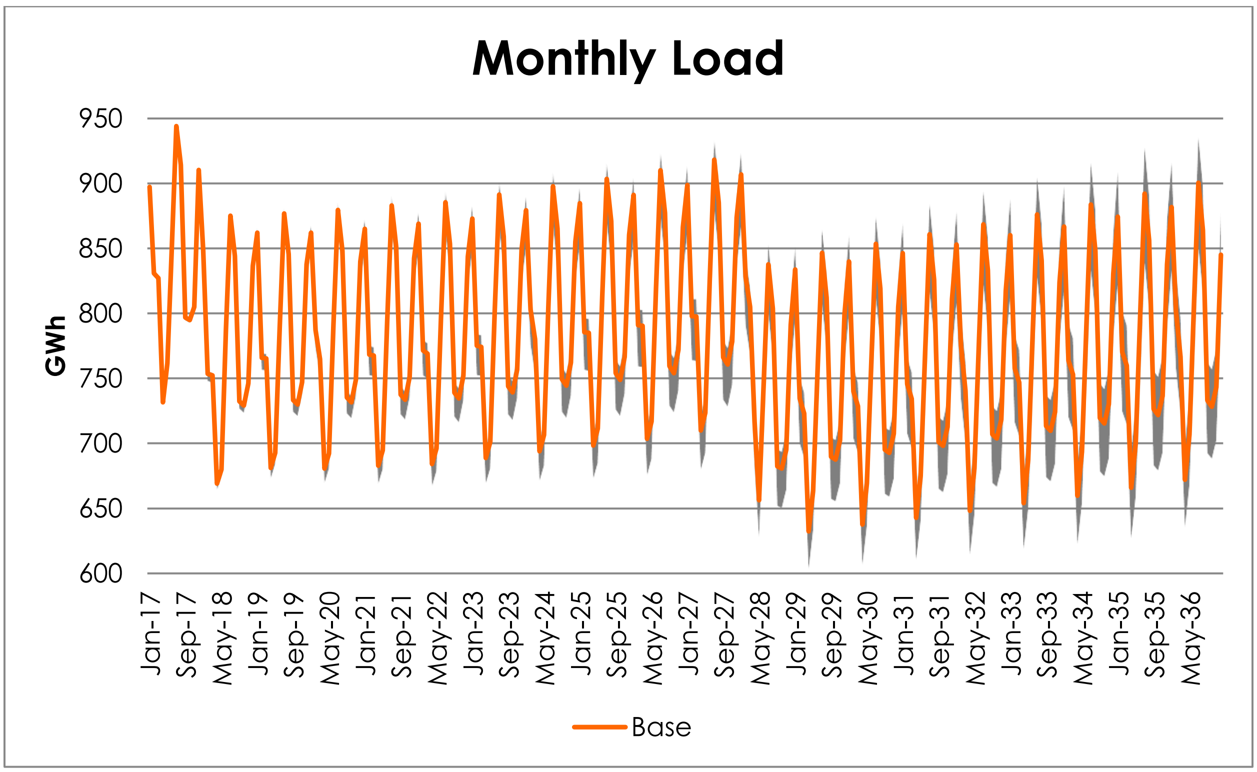
1. Member Energy Requirements

As discussed in Section 3 of this report, the 2017 Power Requirements Study produced a base case load forecast of Member consumption. Wabash Valley also developed two alternative forecasts estimating load under high and low economic growth. The High Economic Growth and Low Economic Growth expansion plans were based on these two forecasts.

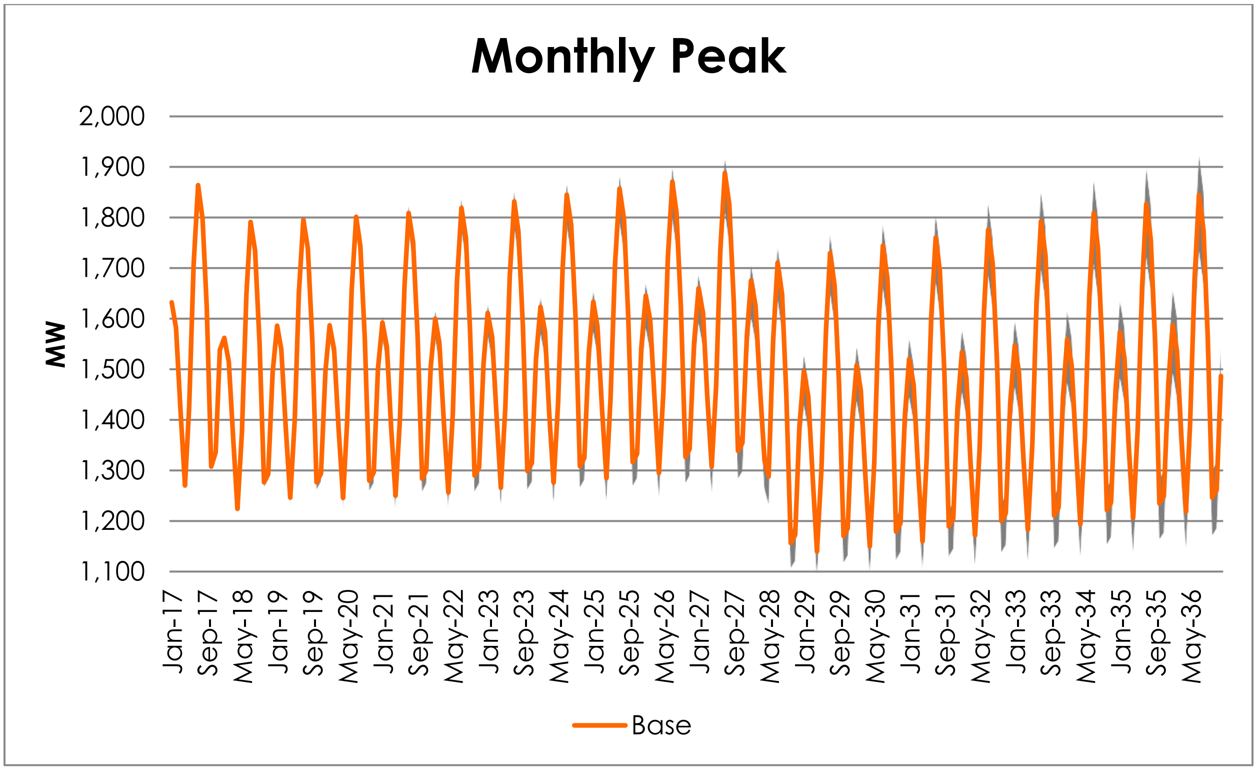
The high economic growth energy and demand forecasts are 3.9% higher and 4.3% higher, respectively, than the base case forecast in 2036. The low economic growth energy and demand forecasts are 5.5% lower and 6.0% lower, respectively, than the base case forecast in 2036.

For stochastic modeling purposes, we created a Member Load variable using the low economic growth forecast as the floor and the high economic growth forecast as the ceiling. The resulting variable profile is reflected in the following graphs:

GRAPH 5-5 Monthly Load (GWh)



GRAPH 5-6 Monthly Peak (MW)



2. Market Prices

Wabash Valley uses projections of wholesale electric power, capacity, natural gas and coal market prices in forecasting expected production costs. The PLEXOS® production cost model estimates the amount of energy purchased from the wholesale electric market based on unit dispatch limitations, the marginal cost of incremental supply from the Company's portfolio and the projected market price at the time of a proposed transaction. For this IRP, Wabash Valley chose to limit market purchases to a maximum of 223 MW. We added this limit in part because Wabash Valley's Pass-Through Loads customers have traditionally chosen to meet their energy requirements by entering into short-term forward contracts or purchasing on the spot market. Furthermore, we did not want to presume that higher volumes of spot energy would be available while planning to meet the long-term energy requirements of our Members.

Wabash Valley projects natural gas prices, based on the forward prices at the Henry Hub and Chicago City Gate delivery nodes, for resources with fuel costs indexed to natural gas prices. The Company calculates fuel costs and dispatch prices for Holland Energy, Vermillion and the natural gas portion of our cost based purchase power agreements using Chicago City Gate natural gas prices. The remaining natural gas resources are indexed to Henry Hub natural gas prices.

Wabash Valley also projects coal prices, based on the spot market in the Illinois Basin, for resources with fuel costs that are either coal-fired or fuel costs that have a relationship to the fluctuation in coal prices. The Company owns a share of two coal-fired resources, Gibson Unit 5 and Prairie State Units 1 and 2. Prairie State includes an on-site captive coal mine and is not subject to the price volatility of Illinois Basin coal. However, the unhedged coal related to Gibson Unit 5 and the cost based purchase power agreements is indexed to Illinois Basin forward cost projections.

Recent history can attest to the broadening volatility of energy, natural gas and coal markets. Long-range market price forecasts provided by ACES and other forecasting sources suggest a steady increase in energy market prices. Wabash Valley is active in the energy market as both a seller and buyer. Therefore, the Company considers it prudent to assess a scenario where market prices not only decrease from the current forecasted levels but also increase.

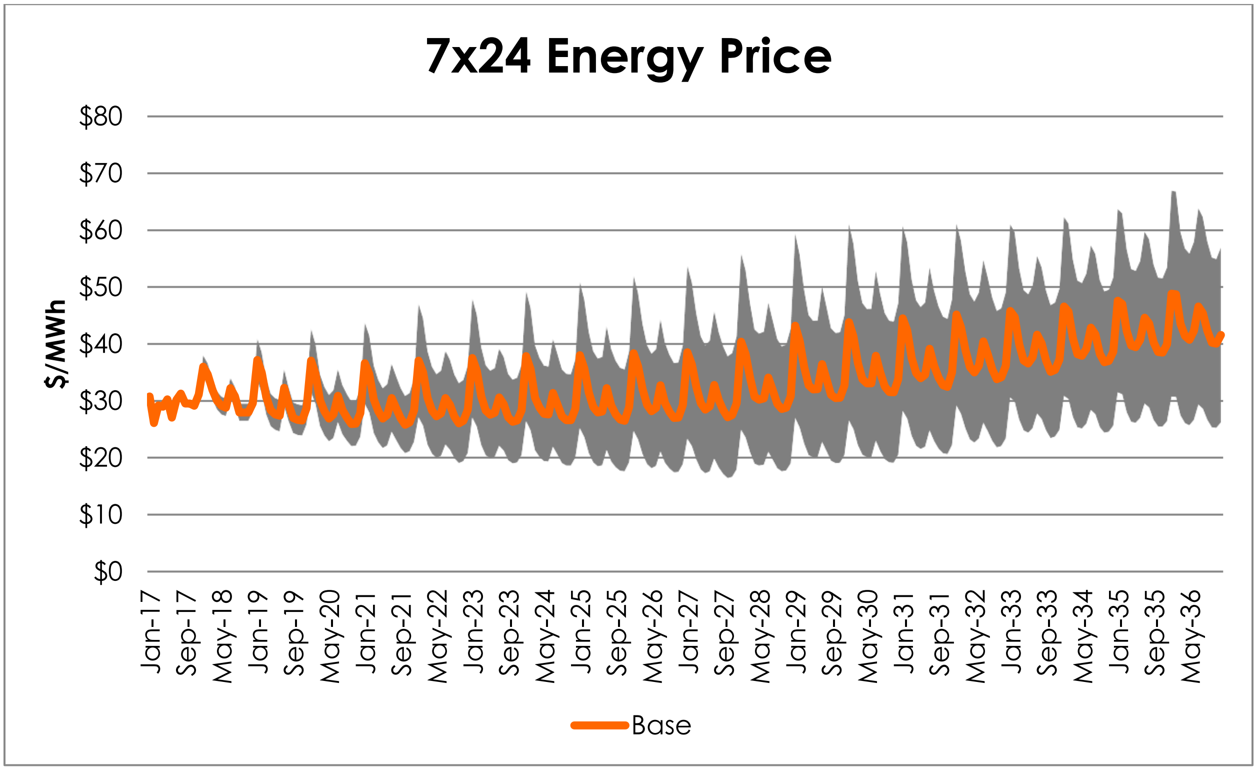
As stated previously, price volatility is based on the volatility of historical forward-looking price curves used in long-term forecasts over the previous ten years. Mainly, Wabash Valley analyzed period-over-period growth in the individual forecasts. Therefore, year one volatility is significantly lower than year twenty volatility.

Wabash Valley's Market Price stochastic variables are defined as follows:

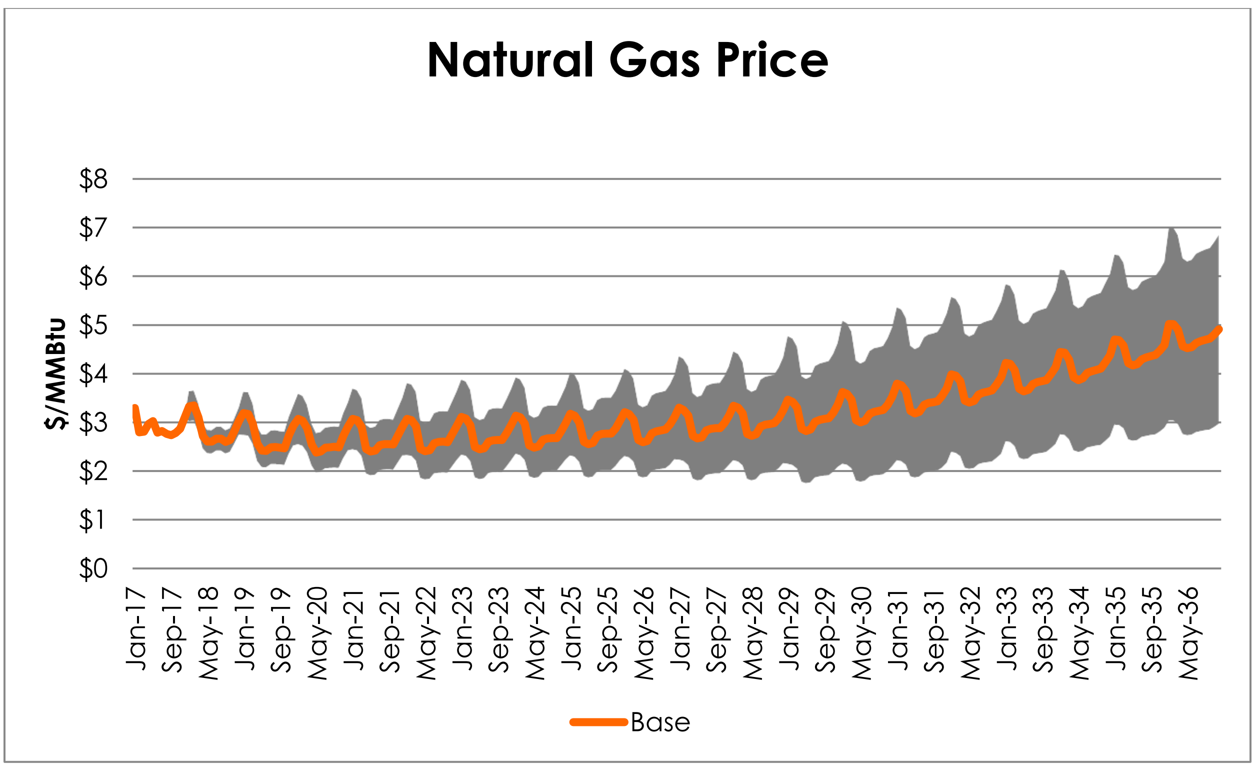
- Energy Prices: Ranged from prices used in the high economic growth scenario (37% above base prices in 2036) to prices used in the low economic growth scenario (37% below base prices in 2036).
- Natural Gas: Ranged from prices used in the high economic growth scenario (40% above base prices in 2036) to prices used in the low economic growth scenario (40% below base prices in 2036).
- Coal Prices: Ranged from prices used in the high economic growth scenario (46% above base prices in 2036) to prices used in the low economic growth scenario (46% below base prices in 2036).
- Capacity Prices: Ranged from prices used in the high economic growth scenario (53% above base prices in 2036) to prices used in the low economic growth scenario (53% below base prices in 2036).

The resulting variable profiles are reflected in Graph 5-7, Graph 5-8, Graph 5-9 and Graph 5-10.

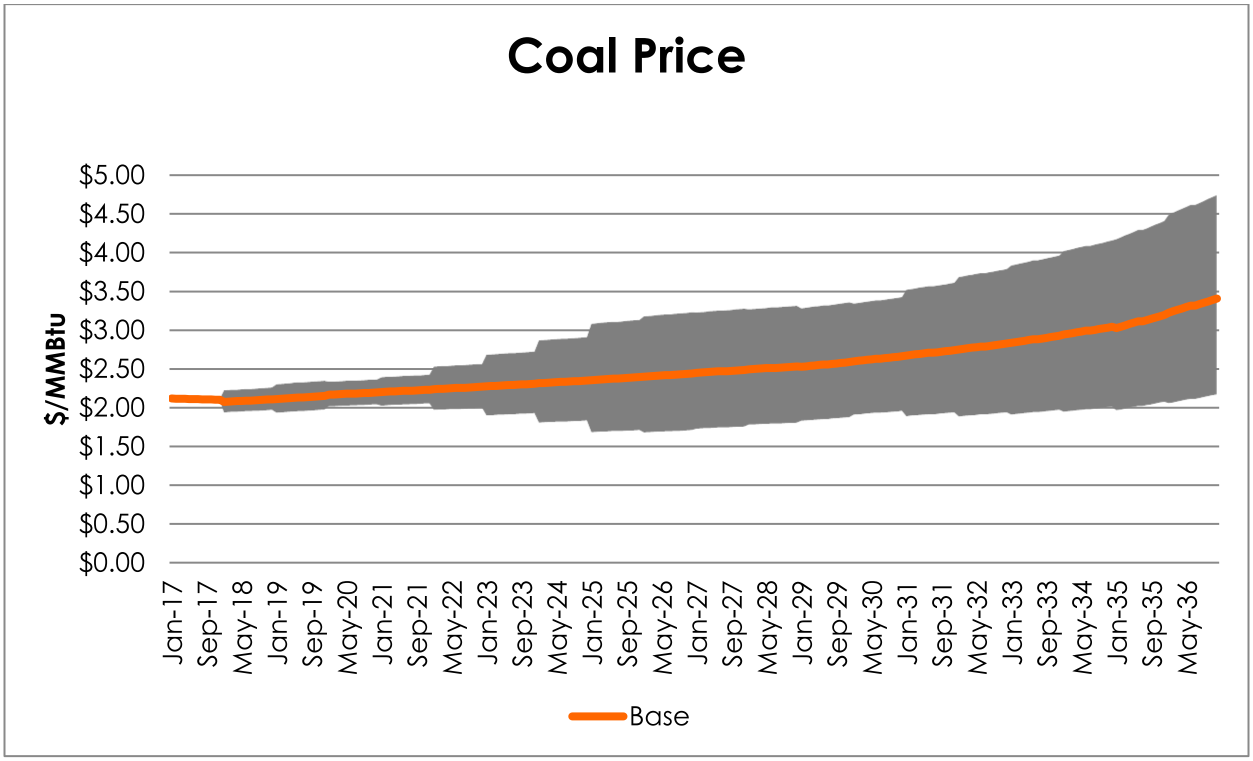
GRAPH 5-7 7x24 Energy Price



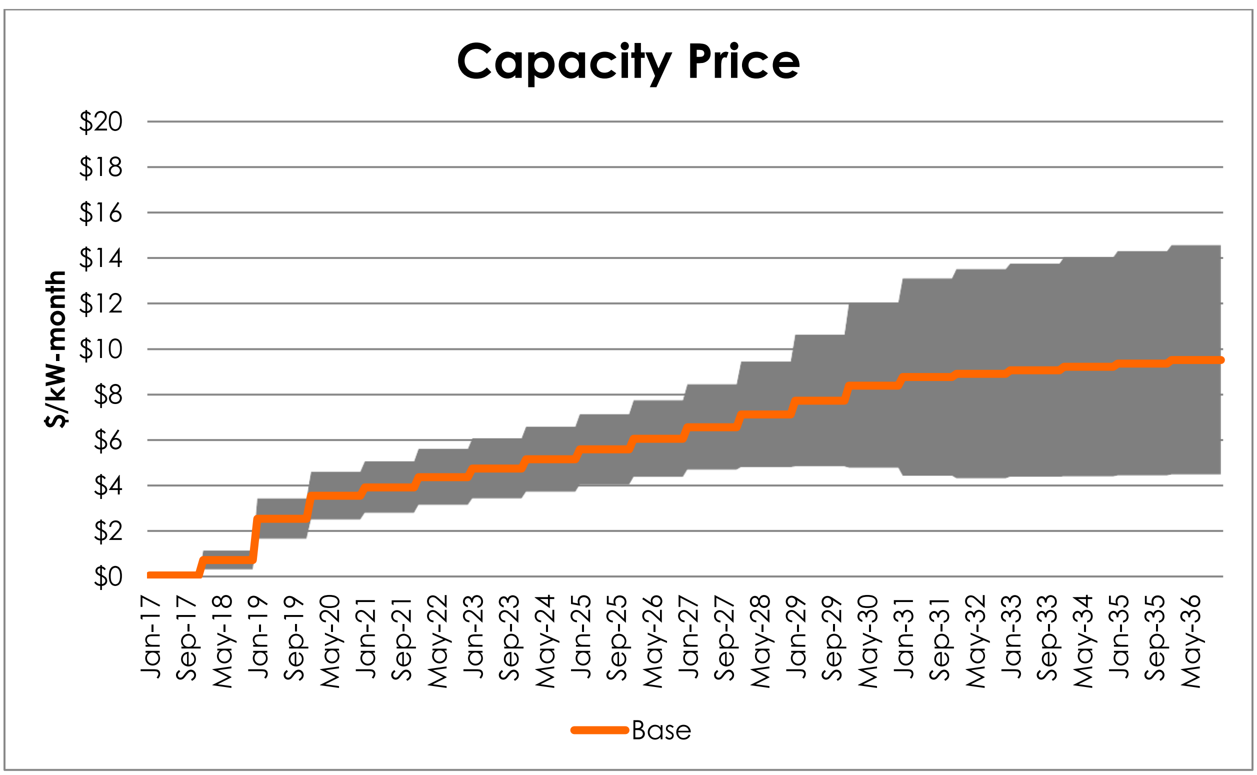
GRAPH 5-8 Natural Gas Price



GRAPH 5-9 Coal Price



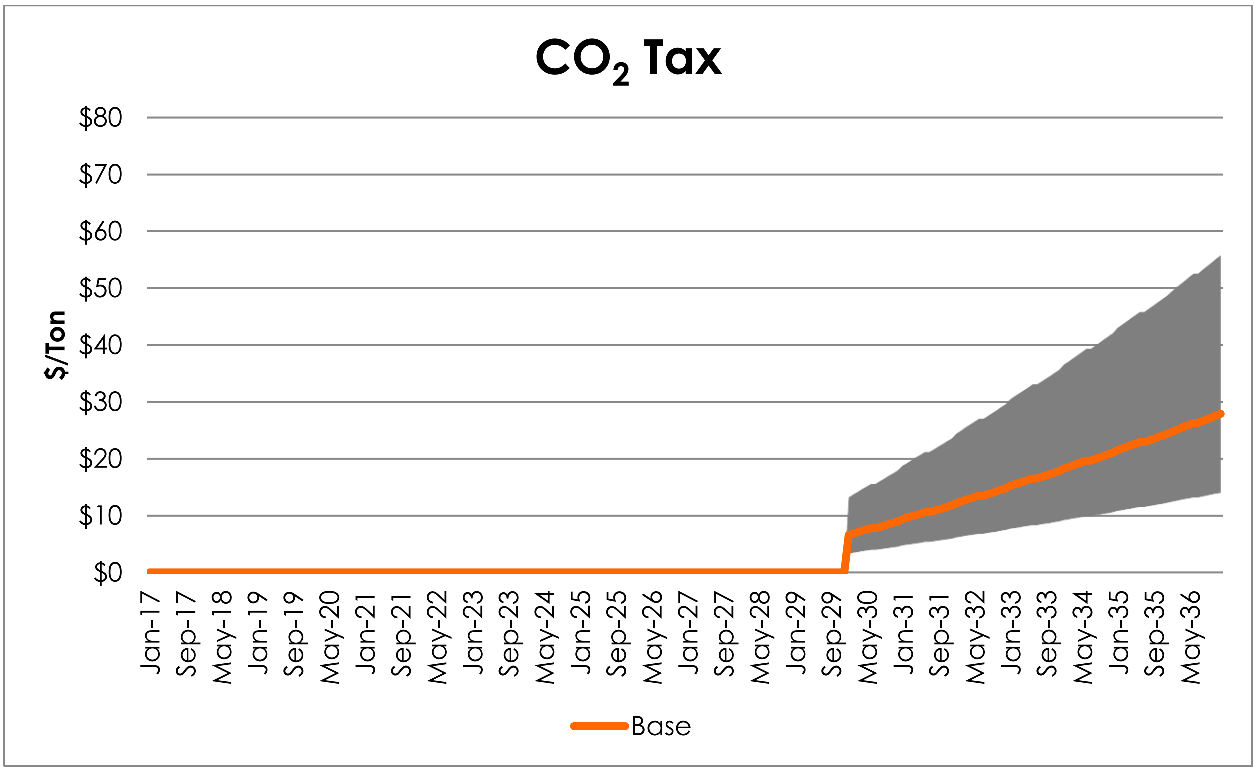
GRAPH 5-10 Capacity Price



3. Carbon Tax

Wabash Valley obtained carbon tax projections and the resulting effect on energy and fuel prices from ACES. Since no history exists on which to base volatility, we initially used the same range parameters as used in defining the energy prices variable. However, based on the influx of renewables[i] in utility portfolios, this approach no longer seemed logical. Therefore, we elected to broaden the volatility of the carbon tax. For purposes of this IRP, the Company chose a range of +100% to -50%. It is important to note that we used a separate set of base and stochastic energy and fuel prices that assume carbon regulation impacts will take effect in 2030. The resulting variable profile is reflected in Graph 5-11.

GRAPH 5-11 CO_2 Tax



Scenario Results

The following discussion provides a summary of the impact of the stochastic variables on our base expansion plan and our four alternate expansion plans. Please note that all of the costs reflected in the charts are 20-year levelized costs. Therefore, the impact of carbon appears to have nominal impact since the effect of carbon regulation does not start until 2030. For example, if we levelized the base case carbon impact over seven years, the result is a $20.73/MWh spread instead of the $10.43/MWh shown in Chart 5-12.

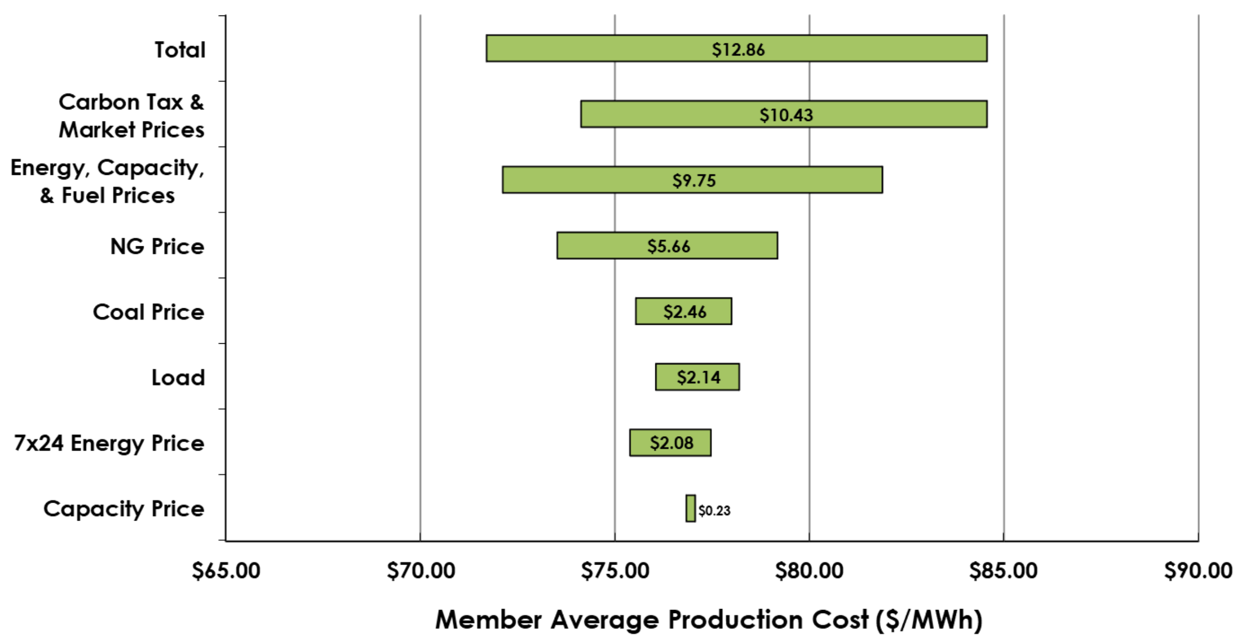
Wabash Valley believes our recent portfolio changes, such as the additions of Prairie State with its on-site captive coal mine, fixed price energy purchases, wind purchase power agreements and the renegotiation and extension of "slice-of-system" purchase power agreements, have helped to manage risk associated with load and price fluctuations. In addition, other refinements including modeling improvements and enhancements to assumptions and stochastic variable ranges have also contributed to differences between the 2017 IRP and prior submissions.

1. Base Expansion Plan

We executed our base expansion plan against the stochastic variables defined earlier. Chart 5-12 shows the impact of the various risk components. The largest risk component is carbon emissions regulation. At this time, any carbon regulation is unknown as to specific form, magnitude or timing. Additional information is necessary before the Company can develop this analysis further. As stated earlier, the carbon tax overall levelized effect on the portfolio is somewhat misleading due to costs being levelized over twenty years.

Market energy, capacity and fuel price volatility also has a large impact on levelized cost. We based our stochastic samples on the historical forward-looking price curves used in long-term forecasts over the previous ten years. Over that time frame, the natural gas, coal, capacity and spot energy markets have experienced dramatic price changes. These market fluctuations combined with the predominance of new natural gas generation are major drivers of cost volatility.

Chart 5-12 Base Expansion Plan - Scenario Sensitivity
Impact of Risk Components
Levelized Average Cost (2017 - 2036)



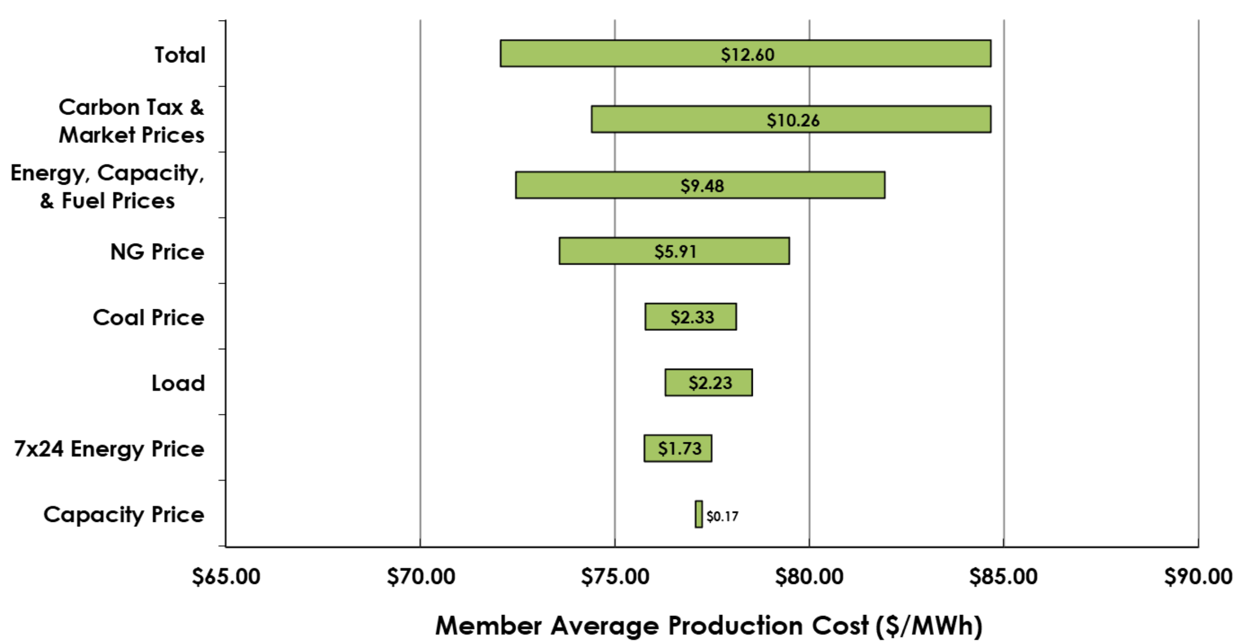
2. High Economic Growth Expansion Plan

We executed our high economic growth expansion plan against the stochastic variables defined earlier. Chart 5-13 shows the impact of the various risk components. The main difference between the high economic growth expansion plan and the base expansion plan is the greater and more immediate need for baseload natural gas generation that is being driven by higher load requirements and higher energy prices. Spot energy purchases decrease under the high economic growth scenario, even with greater load, due to the efficiency of new combined cycle operating parameters that make it less expensive to generate power than purchase power.

In addition, we should note that costs in the high economic growth scenario would decrease if we had permitted an outlet for excess generation via market sales. Since we focus solely on the resources needed to serve our Member load, all model runs within this IRP disallow market sales.

With more natural gas resources and less reliance on the energy and capacity markets in this portfolio, our exposure to natural gas prices increased while our exposure to energy and capacity prices decreased. Moreover, new natural gas generation displaces some of our coal generation leading to less coal price and carbon tax exposure.

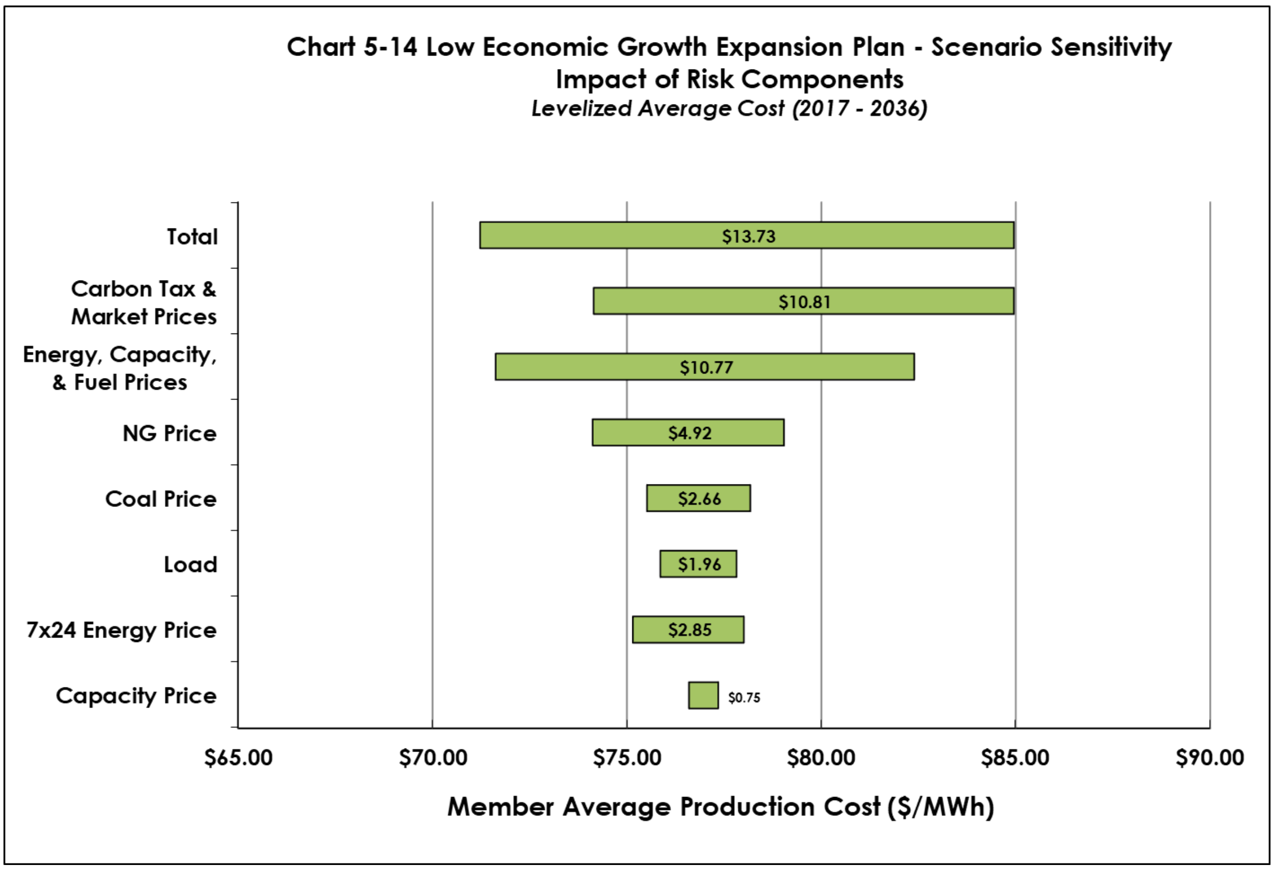
Chart 5-13 High Economic Growth Expansion Plan - Scenario Sensitivity
Impact of Risk Components
Levelized Average Cost (2017 - 2036)



3. Low Economic Growth Expansion Plan

We executed our low economic growth expansion plan against the stochastic variables defined earlier. Chart 5-14 shows the impact of the various risk components. The main difference between the low economic growth expansion plan and the base expansion plan is reduced need for baseload generation being driven by lower load requirements and cheap capacity and energy markets. Spot energy purchases increase significantly under the low economic growth scenario, even with lower load, averaging more than 40 MW of additional around the clock energy purchases and an increase of 30 MW of capacity purchases over the base expansion plan.

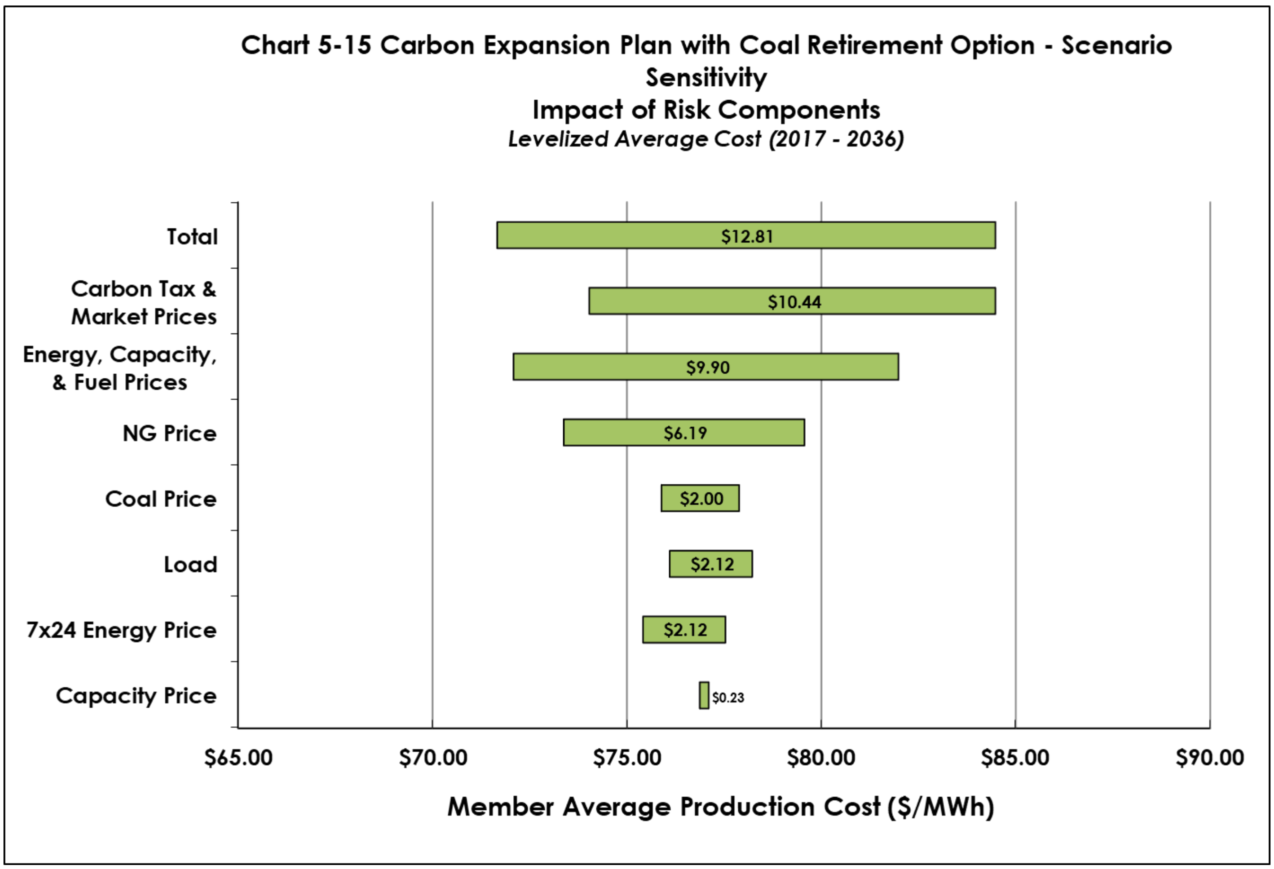
With greater spot energy and capacity purchases, our exposure to energy and capacity prices increased. In addition, under this expansion plan, coal assumes a greater share of our portfolio, so carbon tax and coal price exposure increased slightly. Carbon tax exposure also includes increased energy prices which affects this expansion plan more heavily due to its reliance on the spot market.



4. Carbon Regulation Expansion Plan with Coal Retirement Option

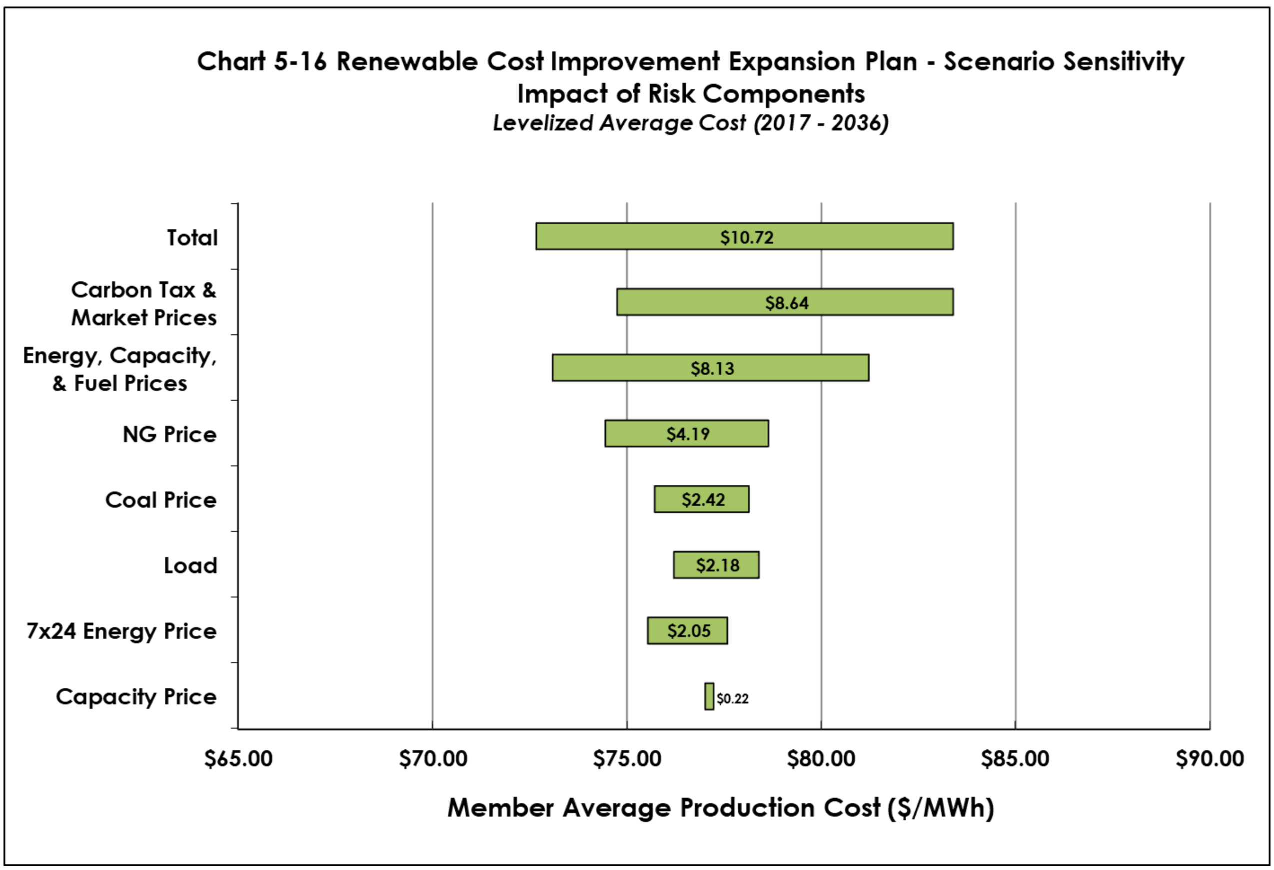
We executed our carbon regulation expansion plan with coal retirement option against the stochastic variables defined earlier. Chart 5-15 shows the impact of the various risk components. In this expansion plan, Gibson Unit 5 is retired in 2030. This expansion plan and the base expansion plan are essentially the same through 2029 at which time the model builds an extra 100 MW of baseload CC resources and an extra 50 MW of peaking CT resources.

With more natural gas resources and less reliance on coal in this portfolio, our exposure to natural gas prices increased while our exposure to coal prices decreased. Our exposure to load, energy prices, capacity prices and carbon regulation remained similar to the base plan. We expected our exposure to carbon regulation to decrease with the retirement of Gibson Unit 5. However, we realized that at a certain carbon tax within the sampling, Gibson Unit 5 stopped dispatching. Therefore, at the high tax end of the sampling, Gibson Unit 5 was essentially idled which limited the base plans' exposure to carbon regulation.



5. Renewable[i] Cost Improvements Expansion Plan

We executed our renewable[i] cost improvement expansion plan against the stochastic variables defined earlier. Chart 5-16 shows the impact of the various risk components. We created this expansion plan to determine the costs at which wind, solar and battery resources begin to compete with natural gas resources as energy and capacity options; and, previously we described the costs at which these technologies became an economic resource within our portfolio. This portfolio performed well against the defined stochastic variables, as these renewable[i] resources do not have any fuel costs or carbon emissions. While these technologies are not currently available at the costs indicated previously, Wabash Valley recognizes the value of a diversified portfolio and continues to evaluate renewable[i] resources on a project-by-project basis. If the cost of these renewable[i] resources continues to decrease as these technologies mature as has occurred recently, the Company may be able to participate in select opportunities; however, other outside forces such as a solar tariff or changes to wind tax credits could also affect the cost of renewable[i] energy. If more economic, Wabash Valley may opt to acquire renewable[i] energy through a comparable purchase power agreement rather than construction.



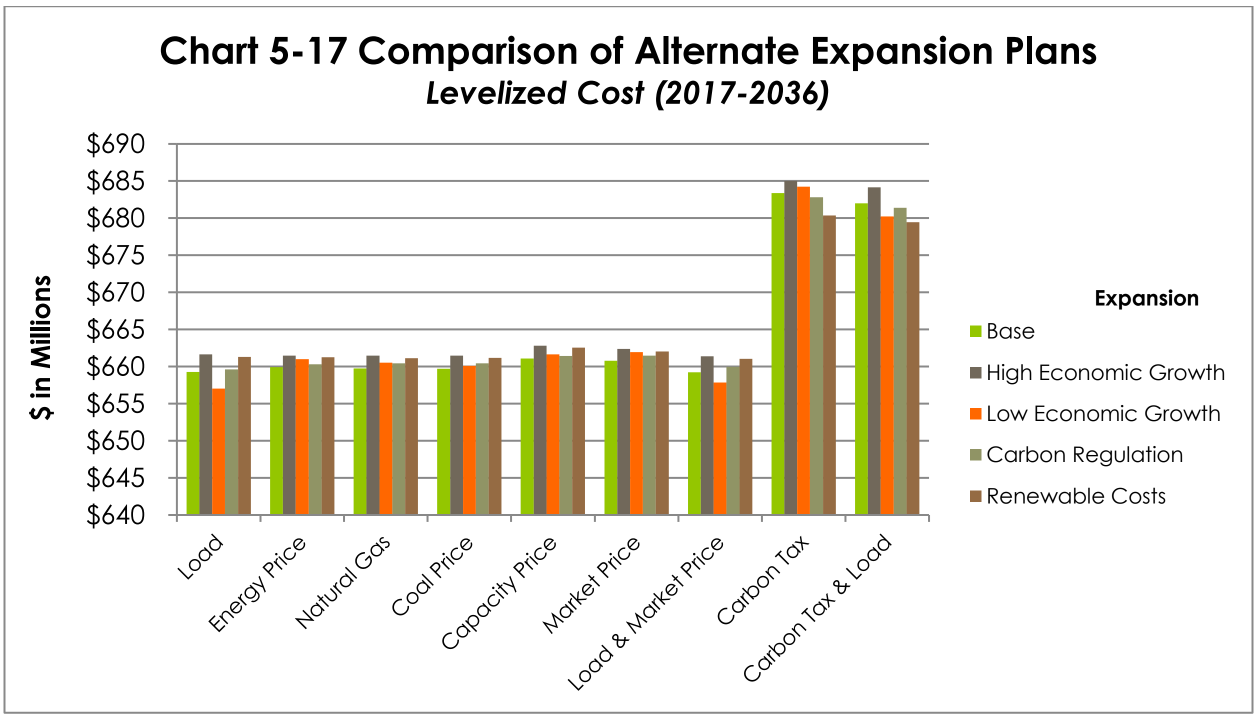
Conclusions

The objective of Wabash Valley's IRP is to develop a resource portfolio that minimizes the long-run cost of providing service to our Members while delivering that service at levels consistent with prudent utility practice and acceptable risk levels.

While the Company may consider sole ownership of a generation asset, it is more likely that we will participate in a joint ownership project or enter into a long-term power purchase agreement in order to diversify our portfolio while taking advantage of economies of scale. Because of this, the models in this IRP are designed to look at different fuel options along with energy efficiency and demand response alternatives as well as participation in RTO capacity markets.

Aside from incremental capacity market purchases, as expected, natural gas resources were chosen as the primary capacity expansion alternative. However, if the cost of renewable[i] energy continues to decline, wind, solar and battery resources may become viable baseload/intermediate resource options especially in a carbon-regulated environment. As stated earlier, the primary obstacles preventing the model from selecting renewable[i] resources is their cost, capacity factor and UCAP value.

Chart 5-17 displays a comparison of 20-year mean levelized costs for the alternate expansion plans with the various stochastic parameters.



Short-term Action Plan

Wabash Valley has made substantial progress towards the activities outlined in our 2015 IRP short-term action plan.

- In January 2016, Wabash Valley petitioned the Indiana Utility Regulatory Commission (IURC) for an issuance of a Certificate of Public Convenience and Necessity to purchase and own an existing baseload coal resource totaling approximately 83 MW. In April 2016, both the Federal Energy Regulatory Commission (FERC) and IURC approved the purchase. In May 2016, Wabash Valley acquired a 5.06% interest (totaling 83 MW) in the Prairie State Energy Campus (PSEC) located in Marissa, Illinois, which consists of Prairie State Units 1 and 2 and an on-site captive coal mine.
- Wabash Valley retired the steam turbine at Wabash River Unit 1 in 2016 and converted the combustion turbine at Wabash River Highland in April 2017.
- Wabash Valley placed an additional 6.4 MW of landfill gas in-service in January 2017 at Liberty III located in White County, Indiana.
- In 2015, Wabash Valley had 44 MW of peak load reduction enrolled in the PowerShift® program with a goal of reaching 47 MW by 2016. As of 2017, we have 55 MW enrolled in the PowerShift® program.
- Wabash Valley constructed three 540 KW community solar facilities located in Peru, IN, Paris, IL and Ste. Genevieve, MO. We placed these facilities in-service in September 2017.
- Working with our joint owners, Wabash Valley has made specific capital expenditures on transmission plant to improve our investment position within the JTS.
- Wabash Valley has complied with the Mercury and Air Toxics Standards (MATS) and the Cross-State Air Pollution Rule (CSAPR).
- Wabash Valley's Members have increased participation in our EE programs as described in Section 2.

Major activities in the next three years include:

- Wabash Valley has contracted to purchase 25 MW of wind power from Meadow Lake Wind V, located in White County, Indiana, due to commence commercial operation in the first quarter of 2018.
- Wabash Valley has contracted to purchase 75 MW of wind power from Meadow Lake Wind VI, located in White County, Indiana, due to commence commercial operation in the first quarter of 2019.
- Wabash Valley has contracted to purchase 100 MW of wind power from an Illinois wind project due to commence commercial operation in the first quarter of 2020.

- Although our base resource plan does not propose adding EE resources in the 2018-2020 time period, at the request of our Members Wabash Valley will continue to coordinate five residential and six commercial/industrial EE programs and work to increase Member participation in these programs.
- Although our base resource plan does not propose adding DR resources in the 2018-2020 time period, Wabash Valley plans to expand its current demand response program in 2018 to meet or exceed the goal of reaching 58 MW enrolled in the PowerShift® program by 2018. Expansion in 2019 and 2020 may continue as long as it enhances Member and retail customer value.
- Wabash Valley will continually evaluate available projects that show potential to provide cost effective renewable[i] energy.
- To continually improve reliability, expenditures will be made in upgrades or additions to Wabash Valley's transmission system plus the Company will look to maintain its investment position within the JTS.
- Wabash Valley will manage its resources to meet its capacity and reliability requirements of MISO, PJM and Reliability First.
- Wabash Valley will monitor developments surrounding the carbon emission pollution standards for new, modified, reconstructed and existing electric utility generating units and other environmental legislation. The Company expects to take the necessary steps to meet requirements and manage the cost impacts for the Members. These steps may include installing facilities at power stations in order to continue economic operation of the Company's existing generation facilities.
- Wabash Valley may seek alliances, partnerships and opportunities for joint operations with other electric utilities. These activities may include participation in new or existing power production facilities and combined system planning. The Company anticipates that these strategies have the potential to produce lower costs and mitigate risks.

[i] Wabash Valley supports renewable energy by owning landfill gas generation and purchasing the output from wind farms and biogas generators. Wabash Valley sells, separately, the environmental attributes associated with this generation to its members and third parties, and therefore does not claim the generation as renewable within our own supply portfolio.