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Wabash Valley Power Association, Inc.

2013
INTEGRATED RESOURCE PLAN

November 1, 2013

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SECTION I

I. INTRODUCTION

A. System Profile

Wabash Valley Power Association, Inc. (Wabash Valley) is a generation and transmission (G&T) cooperative based in Indianapolis, Indiana, that provides wholesale electricity to 26 distribution cooperatives (Members): twenty-one in the northern half of Indiana, three in Illinois, one in Missouri, and the Indiana consumers of an Ohio-based cooperative. In turn, these distribution cooperatives supply electricity to more than 330,000 retail members. Nearly 77 percent of our retail customer base resides in Indiana, with approximately 15 percent in Illinois, and 8 percent in Missouri. 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 Wabash Valley a Certificate of Convenience and Necessity on January 13, 1978, authorizing it to supply power to its Members. Wabash Valley exists to supply and deliver reliable wholesale power at a stable and competitive price to its Members and respond to their collective needs.

Although one Member exited the association on January 1, 2012, Wabash Valley replaced the approximate 100 MW Member load with a six year wholesale requirements sale agreement. Furthermore, two Members will terminate membership in 2015.

1. **Members** - The 26 Members of Wabash Valley are:

Member Name	***Location***
Boone REMC	Lebanon, IN
Carroll White REMC	Delphi, IN
Citizens Electric Corporation	Ste. Genevieve, MO
Corn Belt Energy Corporation	Bloomington, IL
EnerStar Electric Cooperative	Paris, IL
Fulton County REMC	Rochester, IN
Hendricks Power Cooperative	Danville, 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	Kentland, IN
NineStar Connect	Greenfield, IN
Noble REMC	Albion, IN
Northeastern REMC	Columbia City, IN
Parke County REMC	Rockville, IN
Paulding-Putnam EC	Paulding, OH
Steuben County REMC	Angola, IN
Tipmont REMC	Linden, IN
United REMC	Markle, IN
Wabash County REMC	Wabash, IN
Warren County REMC	Williamsport, IN

2. Service Area

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 the Members is used agriculturally for both crops and livestock. Many of the consumers of the Members are involved in agriculture, either directly or through related industries. Significant portions of the Members' consumers 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.

Map I-1 on the following page illustrates Wabash Valley's composite service area. The areas identified on this system are not exclusively served by the Members. Numerous municipal electric utilities, as well as investor-owned utilities, permeate this service area.

MAP I-1 --- Wabash Valley Service Area

Wabash Valley supplies electric power into six local balancing areas. Wabash Valley supplies all of the power requirements to its Members from owned generating resources or from resource purchases from other electric utilities or energy marketing companies. The electricity for Wabash Valley's Members is supplied through the transmission facilities owned by Wabash Valley or by facilities scheduled through the Midcontinent Independent Transmission System Operator (MISO) and PJM Interconnection (PJM) regional transmission organizations (RTO).

At the present time, the firm power requirements of Wabash Valley's Members are delivered in the MISO and PJM markets through the load zones of the following utilities. The following table illustrates the current percentages of the Wabash Valley requirements (kWh basis) that are delivered through that company.

TABLE I-2 --- Power Delivered by Balancing Area

Power Delivered by Balancing Area - As of 1/1/2014		
Sub-Balancing Area	**% Energy Delivered**	**Balancing Area**
Duke Energy Indiana (DUKE)	30%	MISO
American Electric Power (AEP)	26%	PJM
Northern Indiana Public Service Company (NIPSCO)	17%	MISO
Ameren Missouri (AMMO)	17%	MISO
Ameren Illinois (AMIL)	9%	MISO
Indianapolis Power and Light (IPL)	<1%	MISO

3. Cooperative Structure

As indicated previously, Wabash Valley is incorporated as a G&T cooperative serving our 26 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 Wabash Valley'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 monthly 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 Corporation'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.

Wabash Valley's enterprise risk management and strategic planning functions facilitate the development and oversee the implementation of a strategic plan that incorporates enterprise risks that require additional strategic focus. Throughout early 2013, Wabash Valley staff, the Board and CEOs/General Managers of our 26 Members engaged in a strategic planning process facilitated by a management consulting firm specializing in the energy industry. In September 2013, the Board approved the 2013 Strategic Plan which provides a roadmap that will guide the Company over the next 3-5 years. The plan centers around seven strategic priorities:

• Generation Portfolio	The generation portfolio will be planned and managed for stability and affordability
• Financial Focus	WVPA's financial strategy will be managed for the needs of the G&T and the needs of its members and end-use customers
• Member Growth	WVPA and its members will continue to seek and facilitate viable load retention and growth opportunities
• Risk Management	WVPA's risk management practices and reporting will be continually reviewed and enhanced
• Transmission Reliability	WVPA will put a priority on delivery services and the performance of its transmission providers
• CEO Succession Planning	WVPA's board will establish and maintain a CEO succession plan
• WVPA-Provided Services	If a business case can be made, WVPA will develop services to be made available to all distribution cooperatives

As a cooperatively owned electric utility, Wabash Valley is exempt from the public advisory process requirement in Section 4.170 IAC 4-7-2.1 of the IURC's Draft Proposed Rule amending 170 IAC 4-7 Guidelines for Integrated Resource Planning by an Electric Utility.

B. IRP Process

A multi-divisional work effort coordinates the integrated resource planning process at Wabash Valley. These groups represent the Administration, Budgets and Forecasting, Business Development, Power Production, and Power Supply departments. The Budgets and Forecasting Department is responsible for coordinating the development of the Integrated Resource Plan (IRP) with input from other areas.

There are six major steps in the IRP planning process at Wabash Valley:

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. Wabash Valley surveys residential consumers to determine the saturation levels of electric appliances and coordinates the forecast with each individual Member. Demographic and economic data from government agencies is considered in the projection of the Member's residential and small commercial consumers and sales. 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 III describes the forecasting model in more detail.

2. Energy Efficiency Evaluation

Wabash Valley does not directly serve any retail consumers. Those consumers are served by the individual Members. Energy Efficiency (EE) programs are evaluated for their benefit to Wabash Valley, its Members and their consumers by comparing program costs to the expected cost of a market-based resource or option purchase. Programs in 2012 and 2013 were and will 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 consumers, 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 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. Wabash Valley does not directly serve any retail consumers. Those consumers are served by the individual Members. DR programs are evaluated for their benefit to Wabash Valley, its Members and their retail consumers 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. Wabash Valley 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 MIDAS model, developed by MS Gerber and Associates in conjunction with EPRI and currently owned and maintained by Ventyx, is used to evaluate the production costs for the integrated plan. The Power Supply 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 II

II. RESOURCE ASSESSMENT

A. 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 Wabash Valley. The 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, the ACES staff is responsible for the dispatch of Wabash Valley'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.

B. 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 Wabash Valley and other load serving entities provide capacity to meet the requirements.

The 2013 capacity requirement is 14.2% 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 Unforced Capacity (UCAP) requirement is 6.2% for 2013. Wabash Valley must meet the 6.2% reserve requirements by identifying specific generation units or credits, adjusted for forced outages, often called "unforced capacity". Wabash Valley has approximately 75% of its load in the MISO region through 2014. After 2015, Wabash Valley has approximately 80% 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 15.3% installed (ICAP) and 9.0% UCAP. While Wabash Valley 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 14.2% in MISO and 15.3% in PJM are used for planning Wabash Valley's resource requirements needed in the future.

Wabash Valley now owns about 55% of its capacity requirements. The rest of Wabash Valley's current resources are provided under various contractual arrangements. Many of the contractual resources are firm supplies or have backup provisions. Wabash Valley plans to use the MISO and PJM capacity markets to meet some short term capacity needs of 100 MW or less. Wabash Valley currently plans for an annual reserve margin based on the MISO and PJM 2013 requirements.

C. Loads and Load Characteristics

1. 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, Wabash Valley's winter peak usually occurs at 8:00 p.m. and the summer peak generally occurs in the evening around 6:00 p.m. These peak times reflect the highly residential nature of Wabash Valley's load. Wabash Valley has one large consumer whose demand may be interrupted if it is above 20 MWs. The peak demand reported in Table II-1, Graph II-2, Table II-3 and Graph II-4 excludes the interruptible portion of this load.

TABLE II-1 --- Wabash Valley Coincident Peak Demands - Winter

Winter						
	Coincident Demand *	Peak			Day of Peak Temp. Range **	
Season	(MW)	Month	Day	Time	Low F	High F
02-03^	1,021.7	Jan	Thu	8 p.m.	0	8
03-04	1,075.0	Jan	Tue	8 p.m.	1	14
04-05	1,121.1	Dec	Mon	7 p.m.	5	20
05-06	1,186.7	Dec	Mon	8 p.m.	2	18
06-07^^	1,439.1	Feb	Mon	8 p.m.	-7	3
07-08	1,435.3	Jan	Fri	8 a.m.	-5	25
08-09	1,588.3	Jan	Thu	8 p.m.	-10	5
09-10	1,502.1	Dec	Thu	8 p.m.	9	17
10-11	1,490.6	Feb	Thu	8 a.m.	-12	9
11-12^^^	1,317.2	Jan	Thu	8 p.m.	17	40
12-13	1,391.5	Jan	Mon	8 p.m.	6	19

* Coincident demand excludes the interruptible load
** Fort Wayne (AP) Weather Station
^ Added three Cooperative Members during 2003
^^ Added one Cooperative Member during 2007
^^^ One Cooperative terminated Membership during 2012

GRAPH II-2 --- Daily Load Shape – Winter Peak

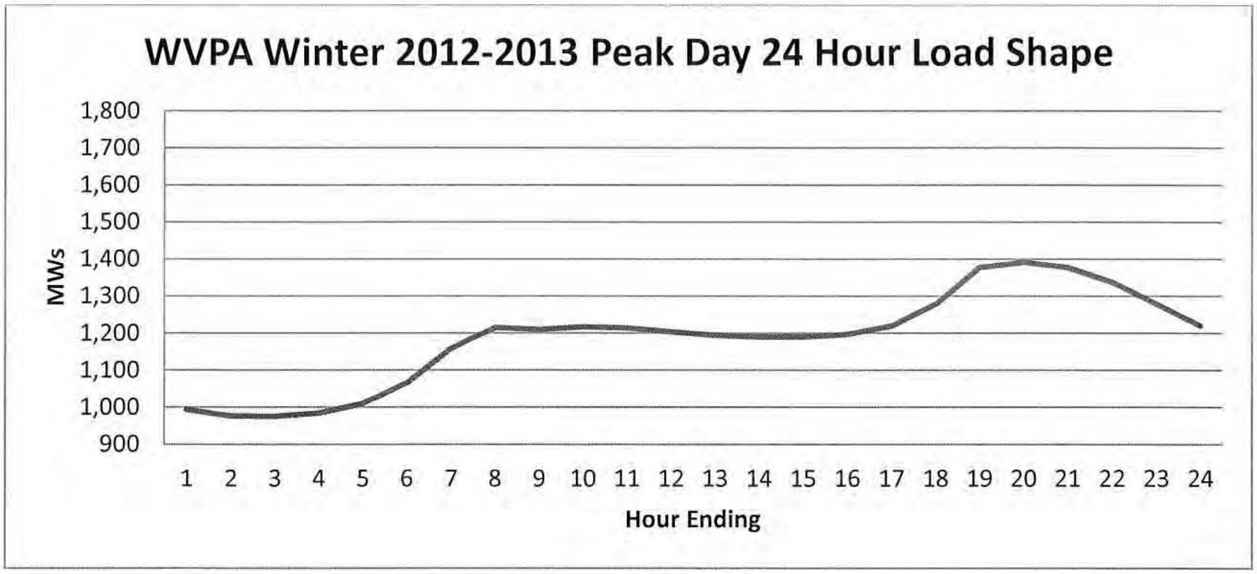
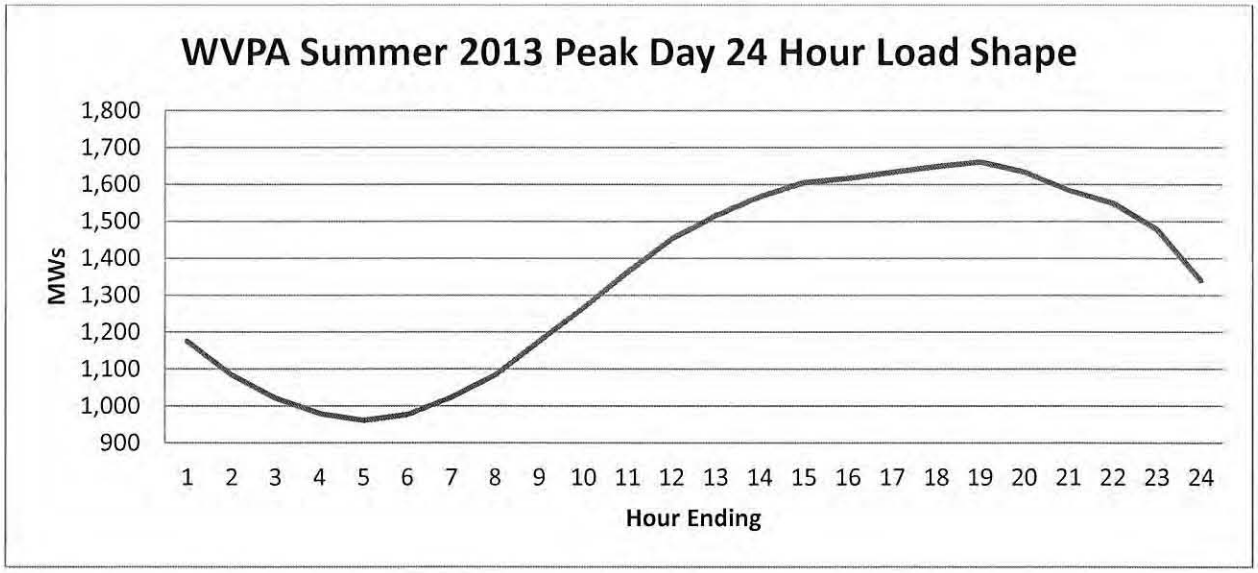


TABLE II-3 --- Wabash Valley Coincident Peak Demands – Summer

Summer							
	Coincident Demand*	Peak			Day of Peak Temp. Range **		Consec. Days Over
Season	(MW)	Month	Day	Time	Low F	High F	85°
03^	1,262.9	Aug	Thu	6 p.m.	60	91	2
04	1,235.0	Aug	Tue	6 p.m.	69	86	1
05	1,370.9	Jul	Mon	6 p.m.	76	91	2
06	1,470.4	Jul	Mon	6 p.m.	73	93	3
07^^	1,661.7	Aug	Tue	7 p.m.	74	91	2
08	1,550.8	Jul	Tue	6 p.m.	63	88	1
09	1,579.2	Jun	Thu	6 p.m.	73	94	7
10	1,755.4	Jul	Fri	5 p.m.	77	94	3
11	1,839.1	Jul	Thu	6 p.m.	76	99	7
12^^^	1,750.3	Jul	Fri	6 p.m.	73	100	10
13	1,660.7	Jul	Thu	7 p.m.	73	91	5

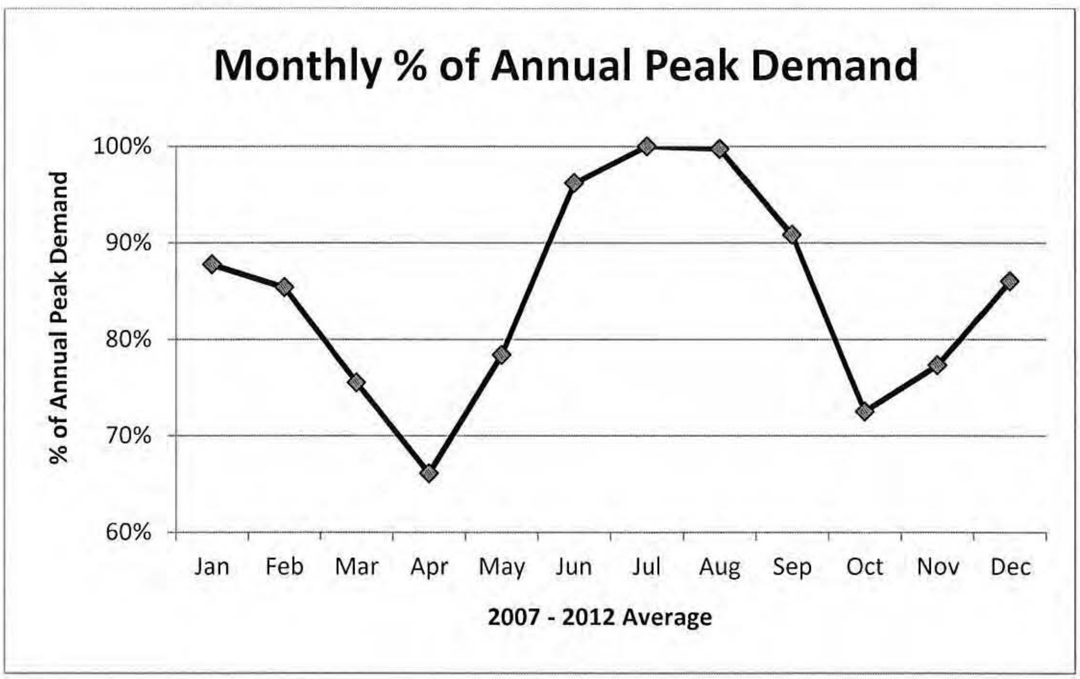
* Coincident demand excludes the interruptible load
** Fort Wayne (AP) Weather Station
^ Added three Cooperative Members during 2003
^^ Added one Cooperative Member during 2007
^^^ One Cooperative terminated Membership during 2012

GRAPH II-4 --- Daily Load Shape – Summer Peak

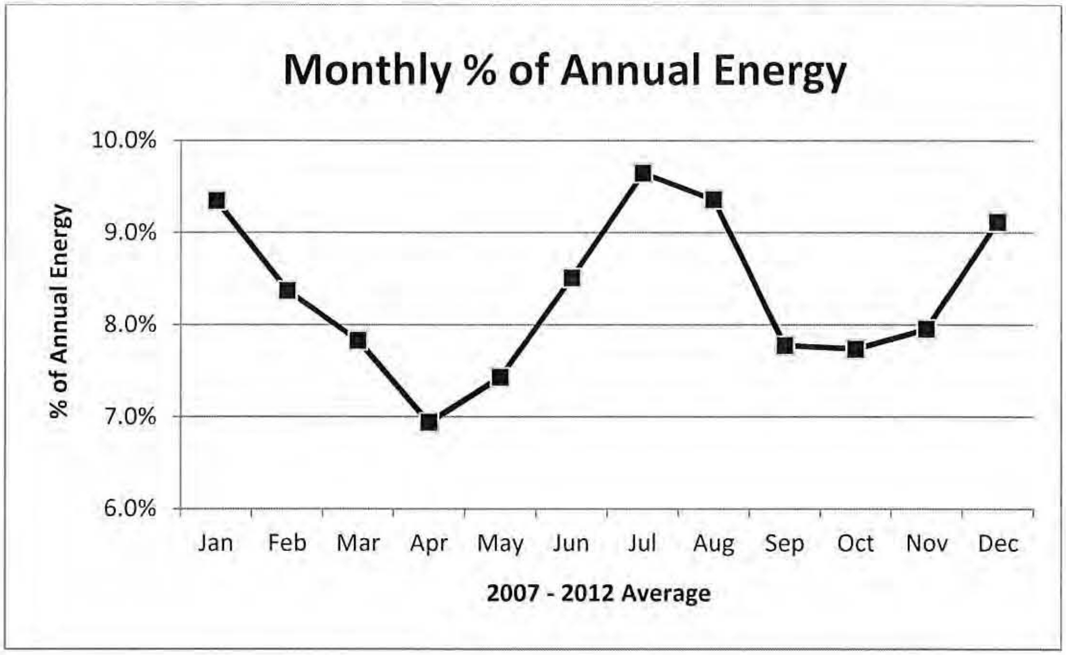


The following graphs illustrate the average monthly system load characteristics excluding interruptible load.

GRAPH II-5 --- Monthly Load Summary - Annual Peak



GRAPH II-6 --- Monthly Load Summary – Annual Energy



2. Residential Survey

Wabash Valley conducts a Residential Survey on behalf of its Members every two years. Approximately 65% of residential consumers have central air conditioning and 13% of residential customers use a heat pump to cool their homes. A quarter of residential consumers heat their homes with an electric system.

Wabash Valley 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 consumers. The last survey was conducted in late 2012.

3. Non-Member Loads

As described in our system profile, Wabash Valley lost a Member effective January 1, 2012. However, the approximate 100 MW Member load was replaced with a six year wholesale firm requirements sale in effect through 2017. The characteristics of this load are provided in Table II-7.

TABLE II-7 --- Non-Member Load Characteristics

Non-Member Load		
Year	**MW**	**GWh**
2014	112	566
2015	114	571
2016	114	576
2017	115	580

Approximately 89% of the energy requirements for this non-member load are delivered through the AEP sub-balancing area of PJM. The remaining 11% is delivered through the Consumers (CONS) sub-balancing area of MISO.

In 2015 when another Member terminates membership, Wabash Valley will retain one of their large commercial customers and provide service to them under a separate wholesale requirements sale agreement. This non-member load is forecasted at approximately 170 MW and 1,100 GWh annually and is situated in the AEP sub-balancing area of PJM. This customer's demand above 20 MW may be interrupted.

D. Existing Resources

Wabash Valley's existing resources include both supply-side and DR resources. Supply-side resources include generation resources owned by Wabash Valley 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.

Resource (Wabash Valley Share)	*MW*
Gibson Unit 5	156
Wabash River CC	262
Holland Energy	313.5
Vermillion	240
Lawrence	86
Landfill Gas	44
Total Owned Generation	1,101.5

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, Wabash Valley 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 the Clean Air Act. Duke Indiana also installed Selective Catalytic Reduction (SCR) equipment on the Gibson Unit 5 for compliance with NOx emission regulations. Duke Indiana is currently evaluating options for compliance with the Mercury and Air Toxics Standards (MATS) and other environmental regulations. Wabash Valley also has an agreement with Duke Indiana that provides reserve capacity and backup energy in the event of forced or planned outage of Gibson Unit 5. This agreement expires at the end of 2014.

Duke Indiana, the majority owner of Gibson Unit 5 and the other units at the Gibson Station, has the responsibility for fuel procurement, fuel inventory, and operation. Gibson Station uses approximately 8.5 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. Wabash River CC Generation Facility

This facility is a combined cycle plant located in Vigo County, IN and has synthetic gas supplied by a gasification plant. The gasification facility, which is owned by sgSolutions, converts solid fuel (petroleum coke) into a low-Btu synthetic gas (syngas) and generates steam to supply the combined cycle plant for power generation. The Wabash River combined cycle plant is also capable of operating on natural gas without the gasification plant in operation. Generating output of the Wabash River plant net of auxiliaries at the gasifier and combined cycle facilities is 220 MW.

sgSolutions currently purchases petroleum coke from a national broker. The existing contract procures approximately 580,000 tons per year sourced from one refinery in the Midwest. We are exploring other petroleum coke suppliers in the region. sgSolutions strives to maintain a target of 90 days of petroleum coke at the facility.

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 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 NOx 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 NOx emission from both HRSG stacks. Holland Energy is located on a combined 220 acre tract north of Effingham, Illinois.

Wabash Valley oversees natural gas procurement for Holland Energy. Wabash Valley 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. 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 MWs. The summer capacity rating for each of these Vermillion units is 74 MWs.

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

e. **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 megawatts. 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.

f. **Landfill Gas**

Wabash Valley has installed landfill gas fired internal combustion (IC) generating units at existing solid waste landfill sites in central and northern Indiana. To date, Wabash Valley has installed fifty-one Caterpillar 3516 engine-generators and two Caterpillar 3520 engine-generators at eight Waste Management landfill sites which in aggregate are capable of generating 44 MWs. The IC generators at each site are operated and maintained under a contract with Waste Management of Indiana, Inc. Wabash Valley is planning to construct a 3.2 MW landfill gas plant in 2014.

g. **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. Wabash Valley purchases blocks and seasonal amounts of power from numerous suppliers. The major long-term resources are purchased from AEP, Duke Indiana, Hoosier Energy, J. Aron, NextEra, Macquarie and JP Morgan. Also, Wabash Valley is currently purchasing 39 MW of output from wind turbines. Wabash Valley plans to purchase an additional 10 MW of output from wind turbines at an Indiana wind project when it begins commercial operation in the first quarter of 2015. The following table describes Wabash Valley's existing purchased power resources.

TABLE II-8 --- Wabash Valley's Power Purchases Summary

Wabash Valley's Power Purchases Summary				
Supplier	**Type**	**Expires**	**MW**	**Comments**
AEP	Firm	2026	240-275	Load Following
Duke Indiana	Firm	2032	70	
Duke Indiana	Unit Peaking	2021	50	
Duke Indiana	Firm	2026	150	7x24
Duke Indiana	Firm	2025	50	Load Shaped
Hoosier Energy	Unit Contingent	2017	276-300	
Story Wind	Wind Turbine	2018	21	
J. Aron	Firm	2015	150	Fixed Price
NextEra	Firm	2014-2018	50-100	Fixed Price
Macquarie	Firm	2014-2018	50	Fixed Price
JP Morgan	Firm	2019-2023	100	Fixed Price
Agriwind	Wind Turbine	2018	8	
Pioneer Trail Wind Farm	Wind Turbine	2030	10	
Windy Ridge	Digester	2017	1.4	1 year auto renewals after 2017
County Line	Landfill Gas	2038	4	Expected to begin commercial operation in 2014
Indiana Wind Project	Wind Turbine	2035	10	Expected to begin commercial operation in Q1 2015
Various Suppliers	Short-Term	Various	Various	Usually 1-2 years in duration

h. 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, Wabash Valley operates in the MISO and PJM energy markets. These markets provide energy to Wabash Valley loads at incremental hourly market prices.

i. Environmental Effects

Gibson Unit 5

Wabash Valley owns a minority share of Gibson Unit 5. Unit 5 is a coal-fired unit. Duke Indiana is the majority owner of Gibson Unit 5 and of Gibson Station and, therefore, includes the significant environmental effects from this unit in its IRP. As mentioned above, Duke Indiana is currently evaluating options for compliance with MATS and other environmental regulations.

Wabash River CC

The Wabash River CC Generation Facility is owned by Wabash Valley. Sulfur dioxide (SO_2) and nitrogen oxide (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)
~360	~260

Actual emissions are largely a function of the actual operational hours of the facility. The facility has an air operating permit ("Title V Permit") issued by the Indiana Department of Environmental Management (IDEM). It imposes a variety of limitations, consistent with federal and state environmental regulations.

Because the United States Environmental Protection Agency 's (EPA) Cross State Air Pollution Regulation (CSAPR) was vacated on December 30, 2011, the annual SO_2, annual NO_x and ozone season NO_x allowances continue to be administered under the Clean Air Interstate Rule (CAIR) with the acid rain regulations remaining in place. The EPA intended for CSAPR to replace CAIR as an allowance trading program.

Solid and hazardous waste generation at the Wabash River CC Generation Facility is minimal. This facility operates on syngas derived from petroleum coke and/or coal gasification. The gasification facility, sgSolutions, generates and disposes of approximately 530 tons of hazardous waste annually. The actual tons will vary from year to year, mostly a function of variability in the facility's operation time. Transportation, manifesting and disposal of the hazardous waste are governed by federal and state environmental regulations. Disposal of the hazardous waste is to a RCRA-regulated hazardous waste landfill located outside of Indiana. The vitreous non-hazardous solid waste ("slag") produced by operation of the gasification facility is used as structural fill off-site. Miscellaneous non-hazardous solid wastes generated at the facility are either recycled or shipped off-site for disposal in a subtitle D non-hazardous waste landfill. The facility does not operate an on-site landfill.

Water used within the plant processes comes from the Wabash River. Duke Indiana's Wabash River Generating Station is responsible for the intake structure that brings the raw water into the Wabash River Plant complex and pre-treats the water prior to sending the water to the Wabash River CC Generation Facility - water consumption averages 6.44

million gallons per day (MGD). The Wabash River CC Generation Facility is permitted to discharge process waters to the Wabash River through an outfall. Water discharge from this outfall currently averages 0.9 MGD. The facility is also permitted to storm water through a separate outfall to an unnamed tributary to the Wabash River at an average rate of 0.04 MGD. All sanitary wastewaters are directed to Duke Indiana's sewage treatment facility.

The EPA proposed a Coal Combustion Residual (CCR) regulation on June 21, 2010, but the publication of the final rule has been delayed. Wabash Valley is familiar with the proposed regulation, but cannot anticipate the regulatory provisions of the yet-to-be promulgated final regulation.

An electric utility boiler MACT, specifically mercury and air toxics rule (MATS), to regulate air emissions of "hazardous air pollutants" (HAPs) was finalized in December 2011. Wabash Valley commenced evaluation of the requirements and expects to be in full compliance with the regulation by the April 16, 2014 compliance date for the existing units.

The EPA proposed a revision to the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category in June 2013. These revisions propose to now include limitations for the gasification portion of the facility. At this time, Wabash Valley cannot anticipate the regulatory provisions of the final rule.

Holland Energy

Wabash Valley is an equal owner of Holland Energy located in Illinois. The facility is a gas-fired combined cycle, combustion turbine. It is currently regulated by the CAIR program. It has a Title V air operating permit issued by the Illinois EPA. The facility is equipped with SCR for NOx removal. 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. SO_2 emissions from a gas fired facility are de minimis. The CCR regulation, discussed above, would not affect Holland as it combusts no coal.

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

SO_2 (tons)	**NO_x (tons)**
<3	~60

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

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 stormwater 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.

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 they 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 Waste Management. These generating facilities are subject to air permits issued by IDEM, but as the sites are owned by Waste Management, the air permits are issued to it. These generating facilities do not create significant amounts of solid wastes.

SO_2 & NO_x Allowances
The federal CAIR rule remains in effect due to the December 30, 2011 vacatur of CSAPR which was previously known as the Transport Rule. The acid rain SO_2 allowance program also remains. The CSAPR vacatur is currently under review by the US Supreme Court. Wabash Valley cannot predict the final outcome of litigation.

Wabash Valley maintains an electronic SO_2 & NO_x emissions inventory. The inventory accounts for allowances held in reserve including any EPA allocations and allowances from market purchases. The allowance inventory is in accounts under the EPA'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 Wabash Valley is a minor owner, 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.

Wabash Valley routinely checks on the SO_2 & NO_x status under CAIR 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

2. 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, Wabash Valley 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 association added two new programs to its DR arsenal: the commercial and industrial-based Consumer Payback Plan and the residential air conditioner load management program. In early 2011, it was decided to suspend the Consumer 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 26 Members have signed agreements to participate in the PowerShift program. The PowerShift program enrolls participants' water heaters (WH), air conditioners (AC), pool pumps (PP), field irrigators (FI), and entire homes (EH). Please see the table below for details as of June 1, 2013.

Member	Total KW	WH Switches	AC Switches	FI Switches	EH Switches	PP Switches
Boone	584.40	974	-	-	-	-
Carroll White	203.20	282	34	-	-	-
Corn Belt	9,457.00	555	2,308	-	2,272	-
EnerStar	154.00	75	103	-	-	6
Fulton	3,872.00	1,111	61	98	-	-
Hendricks	964.80	1,333	165	-	-	-
Jasper	694.20	1,157	-	-	-	-
LaGrange	8,991.75	-	-	219	-	-
Miami-Cass	400.20	537	21	-	-	-
MJM	37.80	28	21	-	-	-
Parke	890.60	786	419	-	-	-
Steuben	2,280.40	454	380	41	-	-
Tipmont	570.00	950	-	-	-	-
Total	29,100.35	8,242	3,512	358	2,272	6

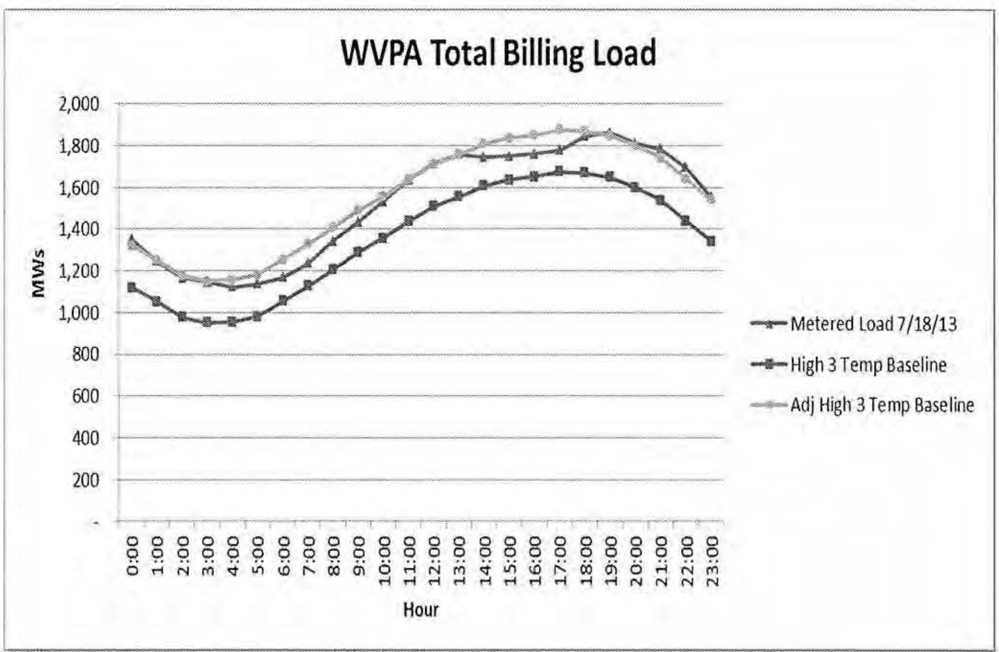
Wabash Valley has set a goal for the PowerShift program of 55 MW of controllable load by 2020, and will continue to grow past our goal so long as new participants continue to enroll.

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. Wabash Valley now approaches DR programs as a resource, just like a peaking plant. The economics, operation, and planning are all treated similar to a peaking plant.

a. Goals & Objectives

Much of Wabash Valley's power requirements are met through purchases from other utilities. Wabash Valley is also interested in reducing the average cost per unit by increasing its load factor, a measure of efficiency in utilization. With these factors in mind, Wabash Valley's objectives are to change the overall load shape by peak-clipping or the reduction of peak system loads, load-shifting/valley-filling, or promoting off-peak usage of power.

Marketing at Wabash Valley is a collaborative effort with the Members and is closely tied to Wabash Valley's DR efforts. Wabash Valley is working to promote end-use technologies that are beneficial to the retail consumer and allow Wabash Valley to control operating costs. Wabash Valley currently has 29 MW of peak load reduction enrolled in the PowerShift program. One of the potential problems with the direct control of consumer appliances is the inconvenience to the consumer. Wabash Valley is very concerned with potential negative impacts on consumers 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 Meter Data Management (MDMS) and Demand Response Management (DRMS) systems has provided Wabash Valley the ability to collect and analyze meter data with 5 minute, 15 minute, and 60 minute intervals at the retail and wholesale levels. The DRMS 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 MDMS collects all the meter data and provides that data to the DRMS for its calculations. The DRMS uses historical baseline calculations to provide load reduction values. The graph below is an example of our measurement and verification.



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 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 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 3 hours per participant.

Wabash Valley estimates greater than 15% demand response penetration of its consumers. This number is based on historic DLC device participation of 15% of total consumers along with projected new growth as the programs expand and grow. Wabash Valley does not expect any cost to be directly borne by consumers participating in DR programs.

3. Energy Efficiency Programs

Wabash Valley has been offering the following residential and commercial and industrial (C&I) programs since 2012. They are briefly described as follows:

a. Residential

i. **Second Refrigerator/Freezer Removal Program**
Residential consumers with an old, working second refrigerator/freezer will be given a "bounty" of $35 to give up the unit. Old units will be collected and recycled in an environmentally-friendly manner by a third party appliance recycling company. Participating consumers will receive education on the benefits of not replacing the refrigerator/freezer or replacing it with an ENERGY STAR model.

ii. **Air Source Heat Pump Rebate**
Residential consumers with existing electric heat (electric forced air, electric baseboard or ceiling cable, or an old heat pump) will be offered a rebate to install a new air source heat pump. New heat pumps must meet minimum efficiency standards.

iii. **Geothermal Heat Pump Rebate**
Residential consumers with existing electric heat (electric forced air, electric baseboard or ceiling cable) will be offered a rebate to install a new geothermal heat pump. New geothermal units must meet minimum efficiency standards.

iv. **Dual Fuel Heat Pump Rebate**
Residential consumers with existing electric heat (electric forced air, electric baseboard or ceiling cable) will be offered a rebate to install a new dual fuel air source heat pump. The new heat pump unit and fossil fuel furnace must both meet minimum efficiency standards.

v. **Touchstone Energy Home Program**
Energy efficient new construction program following a specific set of construction standards and providing a one-year heating and cooling cost guarantee.

In 2014, Wabash Valley will also offer the following new residential programs:

vi. **CFL Discount Program**
Via coupon program, Wabash Valley will be offering incentives on specific CFLs purchased by residential members.

vii. **Geothermal Heat Pump In Residential New Construction Rebate**
Residential consumers building a new home will be offered a rebate to install a new geothermal heat pump. New geothermal units must meet minimum efficiency standards.

viii. **Geothermal Heat Pump Replacing Propane Furnaces**
Residential consumers with existing propane furnaces will be offered a rebate to install a new geothermal heat pump. New geothermal units must meet minimum efficiency standards.

ix. **LED Security Lights**
Wabash Valley Member system co-ops will be offered a rebate to install LED security lights to retrofit existing 150W fixtures in residential use applications.

b. **Commercial & Industrial (C&I)**

i. **Lighting Retrofit Incentives**
Prescriptive rebate to encourage C&I accounts to replace existing inefficient lighting with new more efficient lighting. Incentive amounts will vary based on the type of bulb or fixture being replaced and installed.

ii. **HVAC Retrofit Incentives**
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**
Energy performance audits will be offered to K-12 school buildings. Buildings will be 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**
Energy performance audits will be offered to agricultural accounts. Buildings will be eligible to receive lighting, HVAC and agricultural specific measure incentives. Incentives will vary based on the equipment replaced and the energy savings of the new equipment installed.

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

In June 2013, Wabash Valley began offering the following new program to C&I members:

vi. **Business New Construction Program**

The intent of this program is to encourage the construction of energy-efficient commercial buildings. Incentives will be provided to increase building and system efficiency over the base energy code for Indiana, Illinois and Missouri. We have a set list of prescriptive measures, but 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.

The following table represents the planned energy efficiency and demand-related savings through 2016:

Savings Goals 2013-2016

Planned Net Annual Energy Savings at Generator (MWh)

	2013	2014	2015	2016	Cumulative Total
Residential	8,968	8,670	8,754	8,842	35,234
C&I	5,703	5,932	6,353	6,816	24,804
Total	14,671	14,602	15,107	15,658	60,038

Summer Net Coincident Demand Savings at Generator (MW)

	2013	2014	2015	2016	Cumulative Total
Residential	1.2	1.2	1.2	1.2	4.8
C&I	1.4	1.5	1.6	1.7	6.2
Total	2.6	2.7	2.8	2.9	11.0

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. Wabash Valley 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. Wabash Valley 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. Wabash Valley coordinates with PJM, MISO, and the appropriate transmission owners within both regional transmission organizations (RTOs) regarding both the maintenance of existing radial lines as well as the provision of new facilities. Further, 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 Wabash Valley.

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, Wabash Valley'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, Wabash Valley uses financial transmission rights (FTRs) to hedge the cost of the transmission congestion that does exist within the portfolio. Currently, Wabash Valley 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, Wabash Valley 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. Wabash Valley'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, Wabash Valley 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 Wabash Valley's proposed facilities. Wabash Valley, in turn, examines the study to extract any information on upgrades or additional costs that should be included in Wabash Valley'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. Currently, Wabash Valley's service area is unconstrained and is forecasted to remain that way in the future. As part of the forecasting process, Wabash Valley monitors the price of the capacity auctions and periodically surveys the market to determine if the locational capacity price is expected to diverge in in the future.

E. End Consumer Distributed Generation

Currently, Wabash Valley has a policy that any consumer owned generator greater than 10kW will sell any excess energy directly to Wabash Valley under the net billing concept and not net meter. Any consumer 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 consumer owned generator due to net metering. Any consumer owned generator 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.

1. Generation Planning

Wabash Valley has completed several distributed generation projects totaling less than 10 MW that are not emergency backup resources. These projects will supply part of the consumer'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. Wabash Valley 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 consumer 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 Wabash Valley to coordinate, as necessary, with the Member serving the distributed generation consumer. Wabash Valley facilitates discussions as requested between distributed generation end-use consumers 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 Consumer 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 Consumer'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 part of Wabash Valley's load forecasting process, Members provide input into their expected power requirements. As described in Section III.A, the forecast uses econometric and regression modeling to project peak demand and energy requirements, but this projection is adjusted as required to reflect the impact of consumer owned distributed generation. To date and for the foreseeable future, consumer distributed generation projects are expected to have minimal impact on Wabash Valley's load requirements.

SECTION III

III. LOAD FORECAST

The load forecast is the first step of the IRP process.

A. Wabash Valley Forecast Methodology

1. Overview

This section presents the methodology and sources used to develop the Wabash Valley Power Requirements Study. All of the projections are made with participation and final approval of the Member's management. Wabash Valley's forecast is made up of the summation of the individual Member systems. As such, the forecast represents a "bottom-up" approach. Econometric and regression models were the forecasting methodologies employed in developing the energy and demand requirements projections at the Member level. When using these techniques, it is assumed that the relationships between requirements and those influential factors included in the models remain the same in both the historical and forecast periods.

Wabash Valley does not employ end-use modeling because the data required for this type of study is too vast with twenty-six Members. The forecasting process relies heavily on internal system data, third-party demographics (including major appliance saturation), economic data, and insight from Member distribution cooperatives and Wabash Valley's staff.

Data collection consisted of the following:

1) 1983-2012 historic system data for each Member by consumer class
2) Wabash Valley monthly peak demand through December 2012
3) Projected Wabash Valley wholesale power costs
4) Consumer survey for most Member systems (saturation survey)
5) Member data request responses

External resources used for the forecasting included:

1) Woods and Poole Economics, Inc.
2) National Oceanic and Atmospheric Administration (NOAA)
3) U.S. Energy Information Administration (EIA)

2. Key Inputs and Assumptions

The following key inputs and assumptions were used in the econometric and regression modeling:

a. Weather Conditions

It is assumed that the weather conditions measured at one of five weather stations are representative of a Member's service territory. The five stations include Fort Wayne, Indianapolis, Peoria, South Bend, and St. Louis. Cooling and heating degree days were used to represent cumulative weather conditions, and values for each year of the forecast period are based on averages for the 20 years ending 2012.

b. Inflation

Inflation, as measured by the Purchase Consumption Expenditure ("PCE") deflator, is projected to increase at an average rate of 3.3% per year from 2012 through 2032. The PCE is projected by Woods & Poole Economics, Inc.

c. Economy

The models assume that growth in peak demand and energy requirements over time have been strongly influenced by economic conditions, including population, number of households, income, employment, retail sales, and gross regional product. It is assumed that the influences of these factors will continue over the next twenty years. Projections of the economic time series used in developing the base case load forecast were formulated using information obtained from Woods and Poole Economics. In the sections below, the growth rates are based on the sum of all economic series used in developing each of the Member load forecasts.

i. Population and Households

Population is projected to increase at an average rate of 0.9% per year from 2012 through 2032. This is equivalent to growth over the most recent ten years. Population and number of households are good indicators of the number of residential consumers. Population is also used as a driver for institutional and governmental electricity requirements, as larger populations tend to increase the need for government works. The number of households is projected to grow at a rate of 0.9% per year over the next twenty years. Like population, this is equivalent growth to the most recent ten years.

Generally, the number of people per household is expected to decline through the early 2020s in the United States, after the recession and housing market troubles caused an increase in the number of people per household in 2008/2009. The future decline is due to two major factors: 1) the continued loss of Baby Boomers, and 2) young adults (Generations X and Y) waiting longer to get married and have children. After that decline, the number of people per household is expected to increase again as Generations X and Y begin their families in earnest.

ii. Household Income

Household income is the economic variable that drives residential consumption. As more money is available in the household, larger homes and more electric appliances will be purchased, and people will generally increase usage. Real household income is projected to grow at a compound rate of 1.5% per year through 2032.

iii. Commercial Activity

Three economic variables are used to represent economic activity for the commercial sector: employment, gross regional product ("GRP"), and retail sales. Employment is a good indicator of commercial consumer growth if the commercial classification is non-agricultural (offices, retail outlets, restaurants, etc.). Employment is projected to grow by 1.4% per year from 2012 through 2032. GRP is the total economic output for a regional economy (equivalent to the national gross domestic product) and is a good indicator of industrial and manufacturing output. Real GRP is projected to increase by 2.3% per year throughout the forecast horizon. Real retail sales are projected to grow by 1.8% from 2012 through 2032.

d. Price of Electricity

Wabash Valley requested information about potential changes in retail rates in the next three years from each Member. If a Member cooperative indicated expected rate changes, those expectations were built into the forecast of retail price of electricity. Beyond the next three years, we have assumed that retail price of electricity will rise at the rate of inflation, meaning real prices will be constant in the long-term. The retail price of electricity is used in projections of residential and small commercial usage.

e. Appliance Market Share

For the residential average use model, electric air conditioning and heating market share was taken into account by weighting weather variables by market share. Currently, air conditioning market share is higher than space heating market share, therefore there is more room for market penetration in heating appliances than in cooling appliances. However, electric heating faces greater competition with propane and natural gas than does electric air conditioning. Market share of electric water heaters and miscellaneous plug loads (e.g., cell phone chargers, DVRs, cable boxes, and phantom loads) are also expected to increase throughout the forecast period as well. Market share information, used in the residential average use model, was updated this year to reflect Wabash Valley's 2013 residential appliance saturation study.

f. Lighting Assumptions

Changes in residential lighting will create downward pressure on residential average usage over time. Natural progression from replacement of incandescent bulbs with compact fluorescent lights ("CFL") and, ultimately, light emitting diode ("LED") lighting will cause lighting consumption to decline. Furthermore, the load forecast captures the impacts associated with the Energy Independence and Security Act ("EISA") of 2007, which is a federal mandate for manufacture of more efficient incandescent bulbs beginning in 2012. These effects were modeled using assumptions developed by the EIA for their Annual Energy Outlook 2012.

g. Electric Vehicles

The load forecast does not project the impact of electric vehicles. The technology is still in its infancy 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, such a transition at a meaningful level is not likely to occur in the next several years. Wabash Valley will continue to monitor the likelihood of this issue impacting future energy requirements.

3. Weather Normalization

The impact of weather was explicitly accounted for in the load forecast development. The residential and small commercial classes were the most weather sensitive. The econometric models 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 III-10.

B. Forecast Results

1. Energy Sales

Total energy sales, net of pass-through, are projected to increase at an average compound rate of 0.7%, or approximately 53 GWh, per year over the next twenty years. Forecasted growth differs from historical growth due in part to the departure of one Member cooperative in 2012 and the forecasted departure of two Member cooperatives in 2015. The following table displays the energy sales projections and growth rates.

Energy Sales Forecast (net of Pass-Through)

Year	Energy Sales (GWh)	Avg 5-Year Growth (GWh)	Compound Avg 5-Year Growth
2007	7,946		
2012	7,626	(64)	(0.8%)
2017	7,613	(3)	(0.0%)
2022	7,818	41	0.5%
2027	8,260	89	1.1%
2032	8,678	83	1.0%

Increases in residential and small commercial consumers drive long-term load growth for the total system. Table III-1 shows historical and forecasted Total Member Consumers by Class. The energy sales forecast is the sum of individual class forecasts, which are discussed below and include distribution line losses. Further details of the energy sales forecast are provided in Table III-2 Total Member System Requirements, Table III-3 Member System Requirements Net of Pass-Through Loads and Table III-4 Total Member Energy by Class, Net of Distribution Losses (GWh).

a. Residential Class

The residential classification accounted for 90.4% of accounts and 55.8% of energy sales in 2012. Therefore, considerable time and effort is put into developing the residential forecasts. Economic recovery is expected to result in moderate growth in the next couple of years before more typical long-term growth prevails. However, the impact of two Member systems leaving in 2015 leads to an average projected growth of 1,525 additional accounts each year through 2032, equating to a compound growth of 0.5% per year. For 2016 to 2032, the average growth is 0.9% per year, or 2,835 net accounts per year. Residential consumers are modeled as a function of households.

Average use per consumer per month is projected to rise slowly throughout the forecast horizon. Under normal weather conditions average use will go from a weather-normalized value of 1,122 kWh/consumer/month in 2012 to 1,241 kWh/consumer/month in 2032. That equates to a 0.5% average increase per year. Increasing appliance and home efficiencies will put downward pressure on average use in the future, especially recently adapted federal efficiency standards for incandescent lighting. However, the efficiency gains will be offset by a combination of larger home sizes, an increase in electric appliance share (especially heating), and a larger number of plug load electric devices such as cell phone chargers, second refrigerators, DVD players, DVR devices, home computers, and video games. Average use was modeled employing an econometric model that takes household income, electric appliance market share, people per household, price of electricity, and heating and cooling degrees into account.

Residential energy sales are projected by taking the product of the consumer forecast and the average use forecast. Residential energy sales are projected to increase at an average rate of 1.0% per year from 2012-2032. That is equivalent to an additional 44 GWh each year for the class.

b. Small Commercial Class

The small commercial classification includes all non-residential accounts with a less than 1,000 kVa transformer. The class includes agricultural applications such as grain drying and small restaurants, offices, retail stores, and gas stations. In 2012, 6.3% of the customers on the system were classified as small commercial, and they consumed 19.7% of the energy sold. Small commercial consumers are projected to grow by an average of 95 per year throughout the forecast horizon. Small commercial consumers were modeled as a function of residential customers and employment.

Small commercial average use was modeled as a function of weather and retail sales per employee. The model predicts very little growth in average use for the class over time. Average use is projected to grow by 0.3% per year through 2032.

Small commercial energy sales are projected to grow by 0.7% per year from 2012 through 2032. That is equivalent to an additional 11 GWh each year for the class.

c. Large Commercial Class

The large commercial classification includes larger non-residential accounts greater than 1,000 kVA, including large restaurants and offices, retail stores, and manufacturing. Individual accounts are tracked for the purpose of forecasting for this classification. The large commercial forecast was provided by Member cooperative staffs. The class is expected to drop from 1,678 GWh in 2012 to 1,563 GWh by 2032 due to two Members leaving the system in 2015.

d. Other Classifications

Other classifications considered for the 2013 Load Forecast include seasonal, irrigation, public lighting, public authority, and sales for resale. In most instances, these classes are a small proportion of total system energy sales for a cooperative. Seasonal average use was projected as a function of residential average use. Other classes were projected using simple time series trend methods.

e. Pass-Through Customers

Pass-Through customers are large power customers who require separate forecasting. Each customer in this class works directly with Wabash Valley to make power supply decisions. As a result, each customer is forecasted separately and their load is not included in the total energy or peak load managed by Wabash Valley. However, the large power customers are included in Wabash Valley's total planning load because Wabash Valley 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" customers in this document. The Pass-Throughs' energy sales have been added in a separate column in Table III-2.

2. Wabash Valley Uncontrolled Peak Demand

The coincident peak ("CP") represents the WVPA system peak demand. Peak demand is projected by applying an average load factor to projected energy requirements. The load factor is held constant, which assumes that peak demand and energy will grow at the same rate over time.

Coincident Peak Forecast (net of Pass-Through)

Year	Coincident Peak (MW)	Avg 5-Year Growth (MW)	Compound Avg 5-Year Growth
2007	1,639		
2012	1,669	6	0.4%
2017	1,533	(27)	(1.7%)
2022	1,599	13	0.8%
2027	1,691	18	1.1%
2032	1,777	17	1.0%

WVPA's CP demand is projected to increase by 0.4% per year, reaching 1,926 MW by 2032, when pass-through loads are included. CP demand is projected to reach 1,777 MW net of pass-through loads by 2032. Table III-4 shows historical and forecasted Member Coincident Peak Demand. Wabash Valley historical load peak demand by customer class is not readily available and Wabash Valley does not forecast peak demand by customer class.

3. Wabash Valley Performance of Previous Energy and Demand Forecasts

GRAPH III-6 Wabash Valley Energy Forecast and GRAPH III-7 Wabash Valley Peak Forecast illustrate the performance of previous load forecasts. The entrance and exit of Member cooperatives and the economic downturn have been significant factors influencing forecasted performance for the last ten years.

C. Range Forecasts

In addition to modeling for expected requirements, Wabash Valley has also developed four range forecasts consistent with the requirements of the Rural Utilities Services (RUS) for a load forecast and include: optimistic economy, pessimistic economy, extreme weather and mild weather. Further details of the range forecasts are provided in Table III-8 Range Forecast Member Energy Requirements Net of Pass-throughs (GWh) and Table III-9 Range Forecast Member CP Demand Net of Pass-Throughs (MW).

1. Optimistic Economy

An econometric model of energy requirements as a function of gross regional product (GRP) and heating and cooling degree days was developed to generate energy requirements under optimistic economic conditions. To generate the optimistic forecast, the optimistic case GRP forecast was increased compared to the base case projection. The econometric model coefficient is used to estimate the optimistic energy requirements forecast. Under the optimistic scenario, energy requirements will grow by 1.2% per year, reaching 9,767 GWh by 2032. The optimistic forecast is 12.5% higher than the base case forecast in 2032.

To produce optimistic CP demand projections, the load factor from the base case forecast is applied to optimistic energy requirements. Under this scenario, peak demand would reach 2,002 MW in 2032, growing by 0.9% per year. The 2032 optimistic demand is 12.7% higher than the base case forecast for 2032.

2. Pessimistic Economy

For a pessimistic economy scenario, total GRP is projected to grow at a lower rate than the base case. The same econometric GRP coefficient is then used to produce the pessimistic forecast for energy requirements. Under the pessimistic scenario, total energy will reach 7,692 GWh by 2032, which is 11.4% lower than the base case. The pessimistic case averages growth of less than 0.1% per year from 2012 through 2032.

To produce pessimistic CP demand projections, the load factor from the base case forecast is applied to pessimistic energy requirements. Under this scenario, peak demand would reach 1,573 MW in 2032, declining by 0.3% per year. The 2032 pessimistic demand is 11.5% lower than the base case forecast for 2032.

3. Extreme Weather

Extreme weather for this scenario is total degree days that have a probability of occurrence of 5% (1 out of 20 years). An econometric model of energy requirements as a function of heating and cooling degree days was estimated to measure the impact of weather on energy. The weather coefficients were applied to extreme degree days to estimate extreme energy requirements. Under the extreme weather scenario, energy requirements are 2.5% higher than the base case, growing by 0.8% per year and reaching 8,892 GWh by 2032.

To forecast extreme CP demands, historical load factors were analyzed to determine an extreme decrease in load factor possible from extreme weather conditions. The extreme load factor is applied to base case energy requirements to estimate extreme CP. Under this scenario, CP demand would reach 2,022 MW by 2032, which is 13.8% higher than the base case. The extreme CP growth would average 1.0% per year from 2012 through 2032.

4. Mild Weather

The mild weather scenario represents mild weather with a 5% probability of occurrence. The econometric coefficients for heating and cooling degree days were applied to calculate the mild energy requirements scenario. Under the mild scenario, total energy requirements would grow by an average of 0.5% per year, reaching 8,463 GWh by 2032. That is 2.5% lower than the base case.

A mild load factor is applied to base case energy requirements to estimate mild CP. Under this scenario, CP demand would be 10.7% lower than the base case, reaching 1,586 MW by 2032 and declining by 0.3% per year.

Table III-1

WABASH VALLEY POWER ASSOCIATION

2013 Base Case Load Forecast
Total Member Consumers by Class

Year	Notes	Residential	Small Commercial	Large Commercial	Seasonal	Irrigation	Public Lighting	Public Authority	Sales for Resale	Total Consumers	% Growth
2006		290,849	22,213	136	9,460	503	2,186	296	0	325,643	
2007	[1]	317,994	25,658	166	9,396	625	1,767	572	1	356,179	9.4%
2008		320,670	26,671	173	9,639	763	1,715	568	2	360,201	1.1%
2009		322,084	25,767	250	9,240	823	2,031	558	2	360,755	0.2%
2010		325,238	25,021	243	9,302	884	2,695	558	2	363,943	0.9%
2011		326,445	25,459	295	7,175	948	3,005	559	2	363,888	0.0%
2012	[2]	300,359	20,850	288	6,683	539	3,106	557	2	332,384	-8.7%
2013		303,067	21,108	290	6,684	750	3,115	566	2	335,582	1.0%
2014		306,314	21,399	296	6,678	837	3,123	569	2	339,218	1.1%
2015	[3]	307,001	21,542	296	6,681	884	3,132	571	2	340,109	0.3%
2016		285,496	19,672	289	6,685	901	1,344	574	2	314,961	-7.4%
2017		289,096	19,900	289	6,688	904	1,353	576	2	318,808	1.2%
2018		292,708	20,126	288	6,694	908	1,361	578	2	322,664	1.2%
2019		296,112	20,350	288	6,700	911	1,370	581	2	326,313	1.1%
2020		299,385	20,570	288	6,708	914	1,378	583	2	329,828	1.1%
2021		302,553	20,783	289	6,719	917	1,387	586	2	333,236	1.0%
2022		305,581	20,991	289	6,730	919	1,395	588	2	336,495	1.0%
2023		308,439	21,189	289	6,741	921	1,404	590	2	339,576	0.9%
2024		311,187	21,382	290	6,752	924	1,412	593	2	342,542	0.9%
2025		313,843	21,567	290	6,763	926	1,421	595	2	345,407	0.8%
2026		316,430	21,749	290	6,774	928	1,429	598	2	348,200	0.8%
2027		318,964	21,925	291	6,785	931	1,438	600	2	350,935	0.8%
2028		321,444	22,098	291	6,797	933	1,446	602	2	353,613	0.8%
2029		323,871	22,266	291	6,808	935	1,455	605	2	356,232	0.7%
2030		326,241	22,430	292	6,819	938	1,463	607	2	358,792	0.7%
2031		328,564	22,591	292	6,830	940	1,472	610	2	361,300	0.7%
2032		330,854	22,747	292	6,841	942	1,480	612	2	363,770	0.7%

AVERAGE GROWTH RATES

Period	Residential	Small Commercial	Large Commercial	Seasonal	Irrigation	Public Lighting	Public Authority	Sales for Resale	Total Consumers
12-17	-0.8%	-0.9%	0.1%	0.0%	10.9%	-15.3%	0.7%	0.0%	-0.8%
17-22	1.1%	1.1%	0.0%	0.1%	0.3%	0.6%	0.4%	0.0%	1.1%
22-27	0.9%	0.9%	0.1%	0.2%	0.3%	0.6%	0.4%	0.0%	0.8%
27-32	0.7%	0.7%	0.1%	0.2%	0.2%	0.6%	0.4%	0.0%	0.7%
12-32	0.5%	0.4%	0.1%	0.1%	2.8%	-3.6%	0.5%	0.0%	0.5%
16-32	0.7%	0.7%	0.1%	0.1%	0.2%	0.5%	0.3%	0.0%	0.7%

[1] Citizens Electric Corporation joined Wabash Valley.
[2] One member cooperative left Wabash Valley in 2012.
[3] Two member cooperatives are leaving Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.

Table III-2

Year	Notes	Sales Net Pass-Through (GWh)	% Growth	Pass-Through (GWh)	% Growth	Total System Sales (GWh)	% Growth
		WABASH VALLEY POWER ASSOCIATION					
		2013 Base Case Load Forecast Total Member System Requirements					
2006		6,429		670		7,099	
2007	[1]	7,946	23.6%	1,102	64.5%	9,048	27.5%
2008		8,096	1.9%	1,136	3.0%	9,232	2.0%
2009		7,859	-2.9%	921	-18.9%	8,780	-4.9%
2010		8,332	6.0%	1,165	26.6%	9,497	8.2%
2011		8,276	-0.7%	1,359	16.6%	9,635	1.5%
2012	[2]	7,626	-7.9%	1,431	5.3%	9,057	-6.0%
2012	*[3]*	*7,612*	*-0.2%*	*1,431*	*0.0%*	*9,044*	*-0.1%*
2013		7,739	1.7%	1,400	-2.2%	9,139	1.1%
2014		7,958	2.8%	1,776	26.8%	9,735	6.5%
2015	[4]	7,696	-3.3%	1,361	-23.4%	9,057	-7.0%
2016		7,511	-2.4%	818	-39.9%	8,328	-8.0%
2017		7,613	1.4%	829	1.4%	8,442	1.4%
2018		7,433	-2.4%	1,116	34.6%	8,549	1.3%
2019		7,535	1.4%	1,131	1.3%	8,666	1.4%
2020		7,627	1.2%	1,146	1.3%	8,773	1.2%
2021		7,728	1.3%	1,161	1.3%	8,889	1.3%
2022		7,818	1.2%	1,177	1.3%	8,994	1.2%
2023		7,903	1.1%	1,192	1.3%	9,096	1.1%
2024		7,997	1.2%	1,208	1.3%	9,205	1.2%
2025		8,081	1.1%	1,224	1.3%	9,305	1.1%
2026		8,168	1.1%	1,241	1.3%	9,409	1.1%
2027		8,260	1.1%	1,257	1.3%	9,518	1.2%
2028		8,342	1.0%	1,274	1.3%	9,616	1.0%
2029		8,424	1.0%	1,291	1.3%	9,716	1.0%
2030		8,516	1.1%	1,309	1.3%	9,824	1.1%
2031		8,598	1.0%	1,327	1.4%	9,925	1.0%
2032		8,678	0.9%	1,345	1.4%	10,022	1.0%

AVERAGE GROWTH RATES						
12-17	0	0.0%	(120)	-10.3%	(120)	-1.4%
17-22	41	0.5%	69	7.2%	110	1.3%
22-27	89	1.1%	16	1.3%	105	1.1%
27-32	83	1.0%	17	1.3%	101	1.0%
12-32	53	0.7%	(4)	-0.3%	49	0.5%
16-32	73	0.9%	33	3.2%	106	1.2%

[1] Citizens Electric Corporation joined Wabash Valley.

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

[3] Represents weather normalized values for 2012.

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

Table III-3

WABASH VALLEY POWER ASSOCIATION 2013 Base Case Load Forecast Member System Requirements Net of Pass-Through Loads								
Year	Notes	Customers	% Growth	Energy Net Distr. Losses (GWh)	% Growth	Distribution Line Losses	Energy Sales (GWh)	% Growth
2006		325,643		6,117		4.9%	6,429	
2007	[1]	356,179	9.4%	7,549	23.4%	5.0%	7,946	23.6%
2008		360,201	1.1%	7,704	2.1%	4.8%	8,096	1.9%
2009		360,755	0.2%	7,497	-2.7%	4.6%	7,859	-2.9%
2010		363,943	0.9%	7,956	6.1%	4.5%	8,332	6.0%
2011		363,888	0.0%	7,928	-0.4%	4.2%	8,276	-0.7%
2012	[2]	332,384	-8.7%	7,289	-8.1%	4.4%	7,626	-7.9%
2012	*[3]*	*332,384*	*-8.7%*	*7,277*	*-0.2%*	*4.4%*	*7,612*	*-0.2%*
2013		335,582	1.0%	7,393	1.6%	4.5%	7,739	1.7%
2014		339,218	1.1%	7,604	2.9%	4.4%	7,958	2.8%
2015	[4]	340,109	0.3%	7,371	-3.1%	4.2%	7,696	-3.3%
2016		314,961	-7.4%	7,172	-2.7%	4.5%	7,511	-2.4%
2017		318,808	1.2%	7,270	1.4%	4.5%	7,613	1.4%
2018		322,664	1.2%	7,098	-2.4%	4.5%	7,433	-2.4%
2019		326,313	1.1%	7,195	1.4%	4.5%	7,535	1.4%
2020		329,828	1.1%	7,283	1.2%	4.5%	7,627	1.2%
2021		333,236	1.0%	7,379	1.3%	4.5%	7,728	1.3%
2022		336,495	1.0%	7,465	1.2%	4.5%	7,818	1.2%
2023		339,576	0.9%	7,547	1.1%	4.5%	7,903	1.1%
2024		342,542	0.9%	7,637	1.2%	4.5%	7,997	1.2%
2025		345,407	0.8%	7,717	1.1%	4.5%	8,081	1.1%
2026		348,200	0.8%	7,801	1.1%	4.5%	8,168	1.1%
2027		350,935	0.8%	7,889	1.1%	4.5%	8,260	1.1%
2028		353,613	0.8%	7,967	1.0%	4.5%	8,342	1.0%
2029		356,232	0.7%	8,046	1.0%	4.5%	8,424	1.0%
2030		358,792	0.7%	8,133	1.1%	4.5%	8,516	1.1%
2031		361,300	0.7%	8,212	1.0%	4.5%	8,598	1.0%
2032		363,770	0.7%	8,288	0.9%	4.5%	8,678	0.9%

AVERAGE GROWTH RATES							
12-17	(2,715)	-0.8%	(1)	0.0%		0	0.0%
17-22	3,538	1.1%	39	0.5%		41	0.5%
22-27	2,888	0.8%	85	1.1%		89	1.1%
27-32	2,567	0.7%	80	1.0%		83	1.0%
12-32	1,569	0.5%	51	0.7%		53	0.7%
16-32	3,051	0.9%	70	0.9%		73	0.9%

[1] Citizens Electric Corporation joined Wabash Valley.
[2] One member cooperative left Wabash Valley in 2012.
[3] Represents weather normalized values for 2012.
[4] Two member cooperatives are leaving Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.

Table III-4

WABASH VALLEY POWER ASSOCIATION

2013 Base Case Load Forecast
Total Member Energy by Class, Net of Distribution Losses (GWh)

Year	Notes	Residential	Small Commercial	Large Commercial	Seasonal	Irrigation	Public Lighting	Public Authority	Sales for Resale	Total Energy	% Growth
2006		3,892	1,391	766	28	10	8	22	0	6,117	
2007	[1]	4,430	1,595	1,404	31	22	9	58	0	7,549	23.4%
2008		4,422	1,616	1,549	30	21	9	57	0	7,704	2.1%
2009		4,314	1,530	1,533	30	23	11	54	2	7,497	-2.7%
2010		4,546	1,555	1,733	31	21	11	56	3	7,956	6.1%
2011		4,506	1,545	1,763	25	23	11	52	3	7,928	-0.4%
2012	[2]	4,066	1,433	1,678	24	23	11	51	3	7,289	-8.1%
2012	*[3]*	*4,043*	*1,443*	*1,678*	*24*	*23*	*11*	*51*	*3*	*7,277*	*-0.2%*
2013		4,104	1,467	1,710	24	23	11	52	3	7,393	1.6%
2014		4,187	1,492	1,809	24	25	12	52	3	7,604	2.9%
2015	[4]	4,035	1,422	1,796	25	26	11	52	3	7,371	-3.1%
2016		3,933	1,364	1,757	25	27	10	53	3	7,172	-2.7%
2017		4,003	1,385	1,763	26	27	10	53	3	7,270	1.4%
2018		4,073	1,407	1,498	26	27	10	54	3	7,098	-2.4%
2019		4,146	1,428	1,501	26	27	11	54	3	7,195	1.4%
2020		4,208	1,449	1,504	27	27	11	55	3	7,283	1.2%
2021		4,276	1,470	1,512	27	27	11	55	3	7,379	1.3%
2022		4,337	1,490	1,515	27	27	11	55	3	7,465	1.2%
2023		4,396	1,509	1,518	28	27	11	56	3	7,547	1.1%
2024		4,458	1,528	1,526	28	28	11	56	3	7,637	1.2%
2025		4,515	1,547	1,529	28	28	11	57	3	7,717	1.1%
2026		4,576	1,565	1,533	28	28	11	57	3	7,801	1.1%
2027		4,638	1,583	1,540	29	28	11	57	3	7,889	1.1%
2028		4,694	1,600	1,544	29	28	11	58	3	7,967	1.0%
2029		4,751	1,618	1,548	29	28	11	58	3	8,046	1.0%
2030		4,813	1,635	1,556	30	28	11	59	3	8,133	1.1%
2031		4,871	1,651	1,559	30	28	11	59	3	8,212	1.0%
2032		4,926	1,668	1,563	30	28	11	60	3	8,288	0.9%

AVERAGE GROWTH RATES

Period	Residential	Small Commercial	Large Commercial	Seasonal	Irrigation	Public Lighting	Public Authority	Sales for Resale	Total Energy	% Growth
12-17	-0.2%	-0.8%	1.0%	1.2%	3.2%	-1.2%	0.9%	-1.9%		0.0%
17-22	1.6%	1.5%	-3.0%	1.3%	0.4%	0.6%	0.8%	0.0%		0.5%
22-27	1.3%	1.2%	0.3%	1.1%	0.3%	0.6%	0.7%	0.0%		1.1%
27-32	1.2%	1.0%	0.3%	1.0%	0.3%	0.6%	0.7%	0.0%		1.0%
12-32	1.0%	0.7%	-0.4%	1.2%	1.0%	0.1%	0.8%	-0.5%		0.7%
16-32	1.4%	1.3%	-0.7%	1.2%	0.3%	0.6%	0.7%	0.0%		0.9%

[1] Citizens Electric Corporation joined Wabash Valley.
[2] One member cooperative left Wabash Valley in 2012.
[3] Represents weather normalized values for 2012.
[4] Two member cooperatives are leaving Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.

Table III-5

WABASH VALLEY POWER ASSOCIATION 2013 Base Case Load Forecast Member Coincident Peak Demand							
Year	Notes	Load Net of Pass-Through MW	% Growth	Pass-Through CP MW	% Growth	Total System CP MW	% Growth
2006		1,451		54		1,505	
2007	[1]	1,639	13.0%	152	181.5%	1,791	19.0%
2008		1,537	-6.2%	121	-20.4%	1,658	-7.4%
2009		1,571	2.2%	115	-5.0%	1,686	1.7%
2010		1,680	6.9%	198	72.2%	1,878	11.4%
2011		1,779	5.9%	101	-49.0%	1,880	0.1%
2012	[2]	1,669	-6.2%	95	-5.9%	1,764	-6.2%
2013		1,568	-6.1%	106	11.7%	1,674	-5.1%
2014		1,607	2.5%	110	3.8%	1,717	2.6%
2015	[3]	1,491	-7.2%	87	-21.3%	1,578	-8.1%
2016		1,512	1.4%	87	0.5%	1,599	1.3%
2017		1,533	1.4%	88	1.5%	1,621	1.4%
2018		1,519	-0.9%	123	39.1%	1,642	1.3%
2019		1,540	1.4%	125	1.4%	1,665	1.4%
2020		1,559	1.2%	126	1.4%	1,685	1.2%
2021		1,580	1.3%	128	1.4%	1,708	1.3%
2022		1,599	1.2%	130	1.4%	1,729	1.2%
2023		1,616	1.1%	132	1.4%	1,748	1.1%
2024		1,636	1.2%	133	1.4%	1,769	1.2%
2025		1,653	1.1%	135	1.4%	1,789	1.1%
2026		1,671	1.1%	137	1.4%	1,809	1.1%
2027		1,691	1.1%	139	1.4%	1,830	1.2%
2028		1,707	1.0%	141	1.4%	1,849	1.0%
2029		1,725	1.0%	143	1.4%	1,868	1.0%
2030		1,744	1.1%	145	1.4%	1,889	1.1%
2031		1,761	1.0%	147	1.4%	1,908	1.0%
2032		1,777	0.9%	149	1.4%	1,926	1.0%

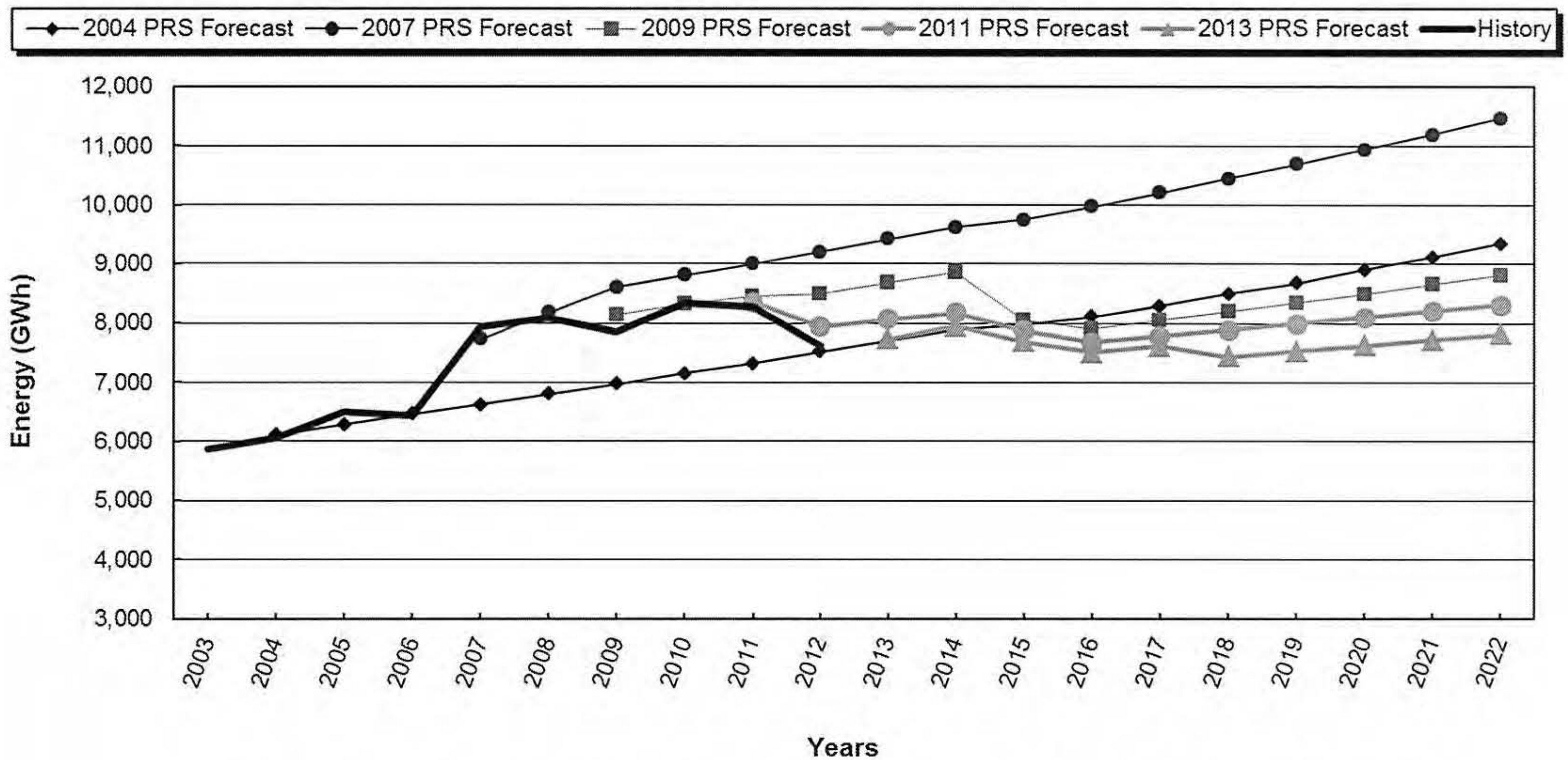
AVERAGE GROWTH RATES						
12-17	(27)	-1.7%	(1)	-1.4%	(29)	-1.7%
17-22	13	0.8%	8	8.0%	21	1.3%
22-27	18	1.1%	2	1.4%	20	1.1%
27-32	17	1.0%	2	1.4%	19	1.0%
12-32	5	0.3%	3	2.3%	8	0.4%
16-32	17	1.0%	4	3.4%	20	1.2%

[1] Citizens Electric Corporation joined Wabash Valley.

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

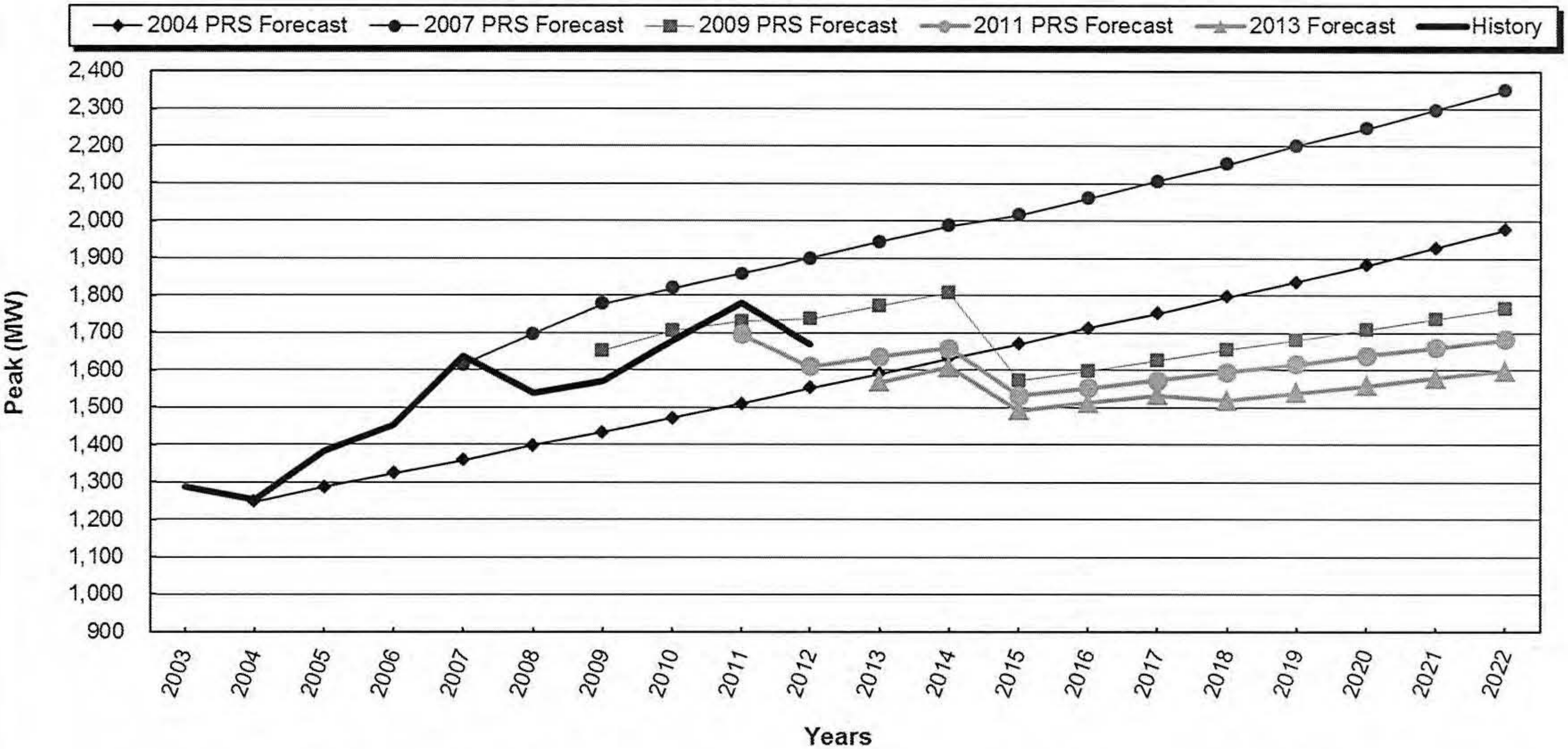
[3] Two member cooperatives are leaving Wabash Valley in 2015. This forecast reflects the departure of one member on 1/1/2015 and one member on 7/1/2015.

Graph III-6
Wabash Valley Energy Forecast
(Excludes Pass-Through Loads and Non-Member Sales)



Note: Three new Members added in 2003. One Member added in 2007. One Member exited in 2012. Two Members exit in 2015.

Graph III-7
Wabash Valley Peak Forecast
(Excludes Pass-Through Loads and Non-Member Sales)



Note: Three new Members added in 2003. One Member added in 2007. One Member exited in 2012. Two Members exit in 2015.

Table III-8

WABASH VALLEY POWER ASSOCIATION RANGE FORECAST Member Energy Requirements Net of Pass-Through Loads (GWh)						
Year	**Notes**	**Base Case**	**Optimistic Economy**	**Pessimistic Economy**	**Extreme Weather**	**Mild Weather**
2006		6,429				
2007	[1]	7,946				
2008		8,096				
2009		7,859				
2010		8,332				
2011		8,276				
2012	[2]	7,626				
2013		7,739	7,782	7,698	7,972	7,508
2014		7,958	8,045	7,875	8,192	7,728
2015	[3]	7,696	7,823	7,579	7,922	7,479
2016		7,511	7,670	7,354	7,725	7,296
2017		7,613	7,816	7,414	7,828	7,399
2018		7,433	7,682	7,191	7,648	7,219
2019		7,535	7,831	7,249	7,750	7,321
2020		7,627	7,971	7,296	7,842	7,413
2021		7,728	8,122	7,349	7,942	7,513
2022		7,818	8,265	7,391	8,032	7,603
2023		7,903	8,405	7,428	8,118	7,689
2024		7,997	8,555	7,470	8,211	7,782
2025		8,081	8,697	7,503	8,295	7,866
2026		8,168	8,845	7,537	8,383	7,954
2027		8,260	9,000	7,574	8,475	8,046
2028		8,342	9,147	7,599	8,556	8,127
2029		8,424	9,296	7,623	8,639	8,210
2030		8,516	9,458	7,654	8,730	8,301
2031		8,598	9,613	7,676	8,813	8,384
2032		8,678	9,767	7,692	8,892	8,463

AVERAGE GROWTH RATES					
12-17	0.0%	0.5%	-0.6%	0.5%	-0.6%
17-22	0.5%	1.1%	-0.1%	0.5%	0.5%
22-27	1.1%	1.7%	0.5%	1.1%	1.1%
27-32	1.0%	1.6%	0.3%	1.0%	1.0%
12-32	0.6%	1.2%	0.0%	0.8%	0.5%
16-32	0.9%	1.7%	0.1%	1.1%	0.7%

[1] Citizens Electric Corporation joined Wabash Valley.

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

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

Table III-9

WABASH VALLEY POWER ASSOCIATION RANGE FORECAST Member CP Demand Net of Pass-Through Loads (MW)						
Year	**Notes**	**Base Case**	**Optimistic Economy**	**Pessimistic Economy**	**Extreme Weather**	**Mild Weather**
2006		1,451				
2007	[1]	1,639				
2008		1,537				
2009		1,571				
2010		1,680				
2011		1,779				
2012	[2]	1,669				
2013		1,568	1,576	1,559	1,780	1,400
2014		1,607	1,624	1,590	1,825	1,436
2015	[3]	1,491	1,515	1,468	1,695	1,331
2016		1,512	1,544	1,480	1,718	1,350
2017		1,533	1,574	1,492	1,742	1,368
2018		1,519	1,570	1,469	1,729	1,355
2019		1,540	1,601	1,481	1,753	1,374
2020		1,559	1,630	1,491	1,774	1,391
2021		1,580	1,661	1,502	1,798	1,409
2022		1,599	1,691	1,511	1,819	1,426
2023		1,616	1,720	1,518	1,839	1,442
2024		1,636	1,751	1,527	1,861	1,459
2025		1,653	1,780	1,534	1,881	1,475
2026		1,671	1,811	1,541	1,902	1,491
2027		1,691	1,843	1,549	1,923	1,508
2028		1,707	1,874	1,554	1,942	1,523
2029		1,725	1,905	1,559	1,962	1,539
2030		1,744	1,938	1,565	1,983	1,556
2031		1,761	1,970	1,570	2,003	1,571
2032		1,777	2,002	1,573	2,022	1,586

AVERAGE GROWTH RATES					
12-17	-1.7%	-1.2%	-2.2%	0.9%	-3.9%
17-22	0.8%	1.4%	0.2%	0.9%	0.8%
22-27	1.1%	1.7%	0.5%	1.1%	1.1%
27-32	1.0%	1.7%	0.3%	1.0%	1.0%
12-32	0.3%	0.9%	-0.3%	1.0%	-0.3%
16-32	1.0%	1.8%	0.2%	1.8%	0.3%

[1] Citizens Electric Corporation joined Wabash Valley.

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

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

Table III-10

WABASH VALLEY POWER ASSOCIATION Actual versus Normalized Energy Requirements (GWh)		
Year	Actual	Weather Normalized
2006	6,429	6,589
2007	7,946	7,789
2008	8,095	8,085
2009	7,859	7,964
2010	8,332	8,089
2011	8,275	8,153
2012	7,626	7,612

SECTION IV

IV. SELECTION OF RESOURCE OPTIONS

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

A. Supply-Side Resource Options

Due to the forecasted departure of two of Wabash Valley's Members in 2015, Wabash Valley's resource portfolio will give the company adequate capacity to meet projected demand requirements through 2016. Wabash Valley plans to meet some short-term industrial capacity needs in 2013-2016 through market purchases.

Wabash Valley regularly determines the amount of capacity it will need to meet its load requirements (including reserves) over the next one to two years, as well as a twenty year planning horizon. Once its power supply requirements are determined, Wabash Valley evaluates several types of power supply alternatives, including long-term and short-term power supply agreements, new generating capacity, and wholesale energy market purchases. Each of these resources is evaluated using Wabash Valley'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, and baseload generating resources (both independently and jointly, both existing and new), in anticipation of capacity needs in 2017 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 peaking and intermediate resources. An examination of the EIA's Capital Cost Estimates for Utility Scale Electricity Generating Plants Report[1] indicates that a new generic 85 MW E-class CT peaking resource would cost around $973/kW installed (stated in 2012 dollars). This estimate assumes the CT plant is equipped with only Dry Low NOx (DLN) combustion hardware, and does not include a Selective Catalytic Reduction (SCR) system. For planning purposes, variable and fixed O&M costs were also obtained from the EIA report and adjusted for start-up gas, major maintenance, property tax and insurance estimates similar to our Vermillion units.

[1] Updated Capital Cost Estimates for Utility Scale Generating Plants, U.S. Energy Information Administration, April 2013

The report also provided information on more advanced combustion turbines. These are larger capacity units which utilize a larger (210 MW) F-class CT. Wabash Valley estimates the installed cost of a new advanced CT would be about $676/kW installed (stated in 2012 dollars). This estimate assumes the CT plant is equipped with only DLN combustion hardware, and does not include a SCR system. For planning purposes, variable and fixed O&M costs were also obtained from the EIA report and adjusted for start-up gas, major maintenance, property tax and insurance estimates similar to our Vermillion units.

As Wabash Valley first forecasts a need for additional capacity in 2017, the installed cost of expansion alternatives needs to be escalated to 2017 dollars for comparison purposes. The advanced CT has a $746/kW installed cost estimate in 2017 dollars. The advanced CT's projected capacity and operating costs are presented in Table IV-1 Expansion Plan Alternatives.

2. Combined Cycle Expansion Alternatives

The EIA report also provided information on both conventional and advanced combined cycle (CC) plants. The conventional CT utilizes two F5-class combustion turbines and one steam turbine. Wabash Valley estimates the installed cost of a new conventional CC of around 620 MW would be about $917/kW installed (based on 2012 dollars). This estimate assumes the CC plant includes a SCR and oxidation catalyst for control of carbon monoxide. For planning purposes, variable and fixed O&M costs were also obtained from the EIA report and adjusted for start-up gas, major maintenance, property tax and insurance estimates similar to our Holland plant.

The report also provided information on more advanced combined cycle plants. This advanced plant is smaller in scale (400MW) and utilizes one H-class combustion turbine and one steam turbine. Wabash Valley estimates the installed cost of a new advanced CC would be about $1,023/kW installed (based on 2012 dollars). This estimate assumes the CC plant includes a SCR and oxidation catalyst for control of carbon monoxide. For planning purposes, variable and fixed O&M costs were also obtained from the EIA report and adjusted for start-up gas, major maintenance, property tax and insurance estimates similar to our Holland plant.

The conventional CC has a $1,013/kW installed cost estimate in 2017 dollars. The conventional CC's projected capacity and operating costs are presented in Table IV-1.

3. Baseload Power Expansion Alternatives

Based on Wabash Valley's current portfolio and its twenty year projected capacity needs, Wabash Valley does not believe it has a need for additional baseload generation before 2027. The options for new baseload include natural gas combined cycle units and Integrated Gasification Combined Cycle (IGCC). Historically, combined cycle units have not been competitive with coal for baseload in this region of the country, but this has changed due to increased natural gas supply and continued environmental uncertainty surrounding the installation of coal-fired units. The combined cycle facility estimated at $917/kW installed is more competitive than a new coal–fired unit estimated at $3,784/kW. For planning purposes, heat rate, variable and fixed

O&M estimates were obtained from the Energy Information Administration Report noted above.

Given the current state of impending legislation and the lack of Wabash Valley baseload need prior to 2027, Wabash Valley believes its needs are best addressed by simple cycle, combined cycle, and purchased power alternatives. However, for comparison purposes, projected capacity and operating costs of baseload alternatives are presented in Table IV-1. For this analysis, a $4,177/kW installed cost estimate (in 2017 dollars) for an IGCC is applied.

TABLE IV-1: Expansion Plan Alternatives – Peaking, Intermediate, and Baseload Power Resources (Stated in 2017 dollars)

Unit	200-MW Advanced Simple Cycle CT	200-MW Conventional Combined Cycle	600-MW IGCC
Typical Load Factor	8%	30%	85%
Capacity Cost ($/kW-month)	$6.40	$8.69	$35.85
Fixed Cost ($/kW-month)	$0.91	$1.45	$5.96
Variable O&M Cost ($/MWh)	$3.52	$3.97	$7.97
Fuel Cost ($/MWh)	$42.90	$31.02	$23.36
Avg. Total Cost ($/MWh)	$171.65	$81.30	$98.71
Avg. Cost at different Load Factors			
5% Load Factor	$246.80	$312.85	$1,176.92
10% Load Factor	$146.61	$173.92	$604.12
20% Load Factor	$96.51	$104.46	$317.72
30% Load Factor	$79.81	$81.30	$222.26
40% Load Factor	$71.46	$69.73	$174.52
50% Load Factor	$66.46	$62.78	$145.88
60% Load Factor	$63.12	$58.15	$126.79
70% Load Factor	$60.73	$54.84	$113.15
80% Load Factor	$58.94	$52.36	$102.92
90% Load Factor	$57.55	$50.43	$94.97

Note that projected fuel cost is based on an estimated 2017 natural gas price of $4.40 per million Btu (Henry Hub basis plus $0.12 delivery adder). Due to the uncertainty of the form of any carbon legislation or future air pollution legislation, all future CO_2 and air legislation assumptions have been removed from this IRP.

4. 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. Wabash Valley 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 Wabash Valley will partner with another entity in building or purchasing additional generation.

5. 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. ACES manages the daily market interactions of Wabash Valley and uses market purchases or sales to improve Wabash Valley's net cost.

Wabash Valley typically purchases short-term market power and options to meet transient peak demands caused by extreme weather. Through ACES, it also optimizes its energy portfolio by purchasing energy from the market when that energy has a lower cost than dispatching additional power resources. However, Wabash Valley 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.

6. 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. Wabash Valley 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 to Wabash Valley load, impact on diversification of Wabash Valley's power portfolio, overall price risk exposure, equity requirements, and contract term.

7. Carbon and Further Air Legislation

Wabash Valley is uncertain when future carbon or further air pollution legislation may occur and in what form. For purposes of this IRP, Wabash Valley does not assume any costs, but future legislation probabilities are factors when assessing new resources.

8. Environmental Effects

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

For peaking and intermediate capacity expansion, Wabash Valley evaluated resources that represented 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 (NOx), along with minor amounts of other air emissions. These units may be regulated for emissions of carbon dioxide (CO_2). Solid and hazardous waste generated by these units is expected to be negligible. Wabash Valley's evaluation of these units includes potential NOx 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 Wabash Valley'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, Wabash Valley's purchase power contract provisions require that the supplying facility will be operated in compliance with applicable environmental regulations and operating permit conditions.

B. 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 Wabash Valley'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 2013 through 2032, excluding transmission service fees, are shown on Table IV-3. Note that this table gives avoided costs for both capacity and energy components.

TABLE IV-3: 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)
2013	0.000	37.02	27.17	31.76
2014	0.000	37.04	26.30	31.30
2015	0.000	37.57	26.24	31.52
2016	0.000	38.64	27.79	32.82
2017	5.647	39.82	28.45	33.72
2018	5.788	40.95	28.54	34.32
2019	5.932	42.50	29.56	35.59
2020	6.081	44.45	30.44	36.99
2021	6.233	47.14	32.30	39.21
2022	6.388	52.40	35.93	43.57
2023	6.548	57.59	39.67	47.99
2024	6.712	68.25	47.23	57.02
2025	6.880	70.22	48.52	58.63
2026	7.052	72.46	49.84	60.37
2027	7.228	75.58	50.90	62.40
2028	7.409	75.71	51.67	62.78
2029	7.594	78.72	53.72	65.36
2030	7.784	79.69	55.31	66.66
2031	7.978	81.28	56.41	68.00
2032	8.178	82.91	57.54	69.36

Note that the avoided cost of capacity is zero until capacity is needed in 2017. Additional detail and data regarding the calculation of Wabash Valley's avoided cost forecast are included in Appendix F of this report.

C. Demand Response Resource Options

Wabash Valley's planning and evaluation of DR 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 consumer acceptance of new programs. Wabash Valley has a Demand Response Committee that is comprised of Members' personnel.

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
- Evaluating consumer impact
- Technology review
- 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 which allows Wabash Valley 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**
Wabash Valley and its Members have the goal of controlling costs and improving efficiency in an effort to have reliable power supply at stable and low cost. In addition, Wabash Valley and the Members enjoy a special relationship with their consumers and wish to offer these consumers the greatest value possible 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 Wabash Valley'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 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.

Wabash Valley 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 results of the economic review process drive further program investigation in areas such as customer impact and technological feasibility.

e. **Conduct Economic Screening**
Economic screening is used to ensure efficient and equitable program design for the participant, the Member and Wabash Valley. It broadly determines how the program will ultimately affect the participant and non-participant, and the rates paid by all consumers.

Many internal tests are designed to quantify the impacts of a DR program for a particular group, such as the end consumers, program participants, the Members and Wabash Valley.

The primary objective of DR at Wabash Valley is the reduction of wholesale power costs to the association. Secondarily, DR is used in emergency situations when capacity in the Midwest region is constrained.

Reduction of wholesale power costs to Wabash Valley's Members is the starting point for all economic screening. The existing DR programs enable Wabash Valley to reduce costs by reducing peak demand during times of high market prices. The avoidance of call option purchases is another factor in determination of program economics. If the DR programs enable Wabash Valley to avoid expensive call option market purchases, Wabash Valley weighs the difference between the call option cost and program expansion.

2. Demand Response Resource Forecast

Wabash Valley has a plan to install 55 MW of two-way direct-load control (DLC) DR as part of the PowerShift program by 2020. This plan will encompass controlling water heaters, air conditioners, pool pumps, field irrigators, entire homes and other equipment as necessary. After 2020, Wabash Valley plans to add roughly 1%-2% new participants each year. Wabash Valley predicts that by 2030 approximately 60 MW of DLC will be available through the PowerShift program.

3. Control Strategies for Demand Response Programs

The current control strategies incorporated in the plan are designed to minimize system costs while maintaining consumer satisfaction. Wabash Valley controls its DR resources to meet multiple objectives. These resources are primarily used to reduce seasonal peaks and high wholesale market prices and to help maintain system reliability. DR resources are also used occasionally to meet reserve requirements.

D. 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 Wabash Valley'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. Wabash Valley 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 Wabash Valley pays its share of the capacity purchased through the PJM tariff requirements.

As noted in Section II of this report, Wabash Valley is not a Local Balancing Authority (formerly known as transmission control areas). As discussed in Section II.D.4, Wabash Valley works with Duke Indiana regarding facility planning within the JTS, with the goal of maintaining transmission system reliability. Wabash Valley 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.

E. Base Resource Plan

Wabash Valley's power supply team analyzes all opportunities to improve the company's power supply portfolio. These opportunities can include the purchase/sale of generating assets, purchase/sale of cost-based power agreements, and purchase/sale of fixed priced forward contracts. Analysis is performed to evaluate risk, reliability, and cost impact to its members. While Wabash Valley has developed and maintains a detailed resource plan to serve forecasted Member load requirements, that plan would obviously be impacted by taking advantage of opportunities that develop.

Appendix D consists of a copy of the twenty year resource plan. The worksheet includes 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 seasonal resources. Since Wabash Valley's composite load requirements show an average load factor of approximately 55% to 65%, the company plans to maintain a power supply resource ratio of approximately 65% baseload capacity to 35% peaking capacity with a move toward a greater percentage of natural gas units (i.e. combined cycle).

In early 2005, three Members gave notice of their intent to exit from Wabash Valley by 2015. One Member exited January 1, 2012; however, Wabash Valley continues to provide power to that former Member through a six year wholesale requirements sale agreement that expires December 31, 2017. The second Member will no longer be supplied by portfolio resources effective January 1, 2015 and the third Member will no longer be supplied by portfolio resources effective July 1, 2015.

Table IV-4 shows Wabash Valley's existing generating resources and anticipated capacity needs through 2032. Power supply requirements include expected Member demand, losses, contractual firm sales, and estimated reserves. The projected power supply requirement decreases from 2014 to 2015 due to the withdrawal of the two Members noted above. Note that the expansion plan indicates that Wabash Valley has only short term capacity needs before 2017. These needs will likely be satisfied through market purchases.

Even though the majority of our scenarios identified simple-cycle combustion turbines as the best way to meet our short term and intermediate term capacity needs, it was not always the definitive answer to our capacity needs and risk portfolio. In many situations, natural gas fired combined cycle plants resulted in lower costs and risk for our Members. Wabash Valley has decided to use CTs prior to 2027 as the base case for our 2013 IRP; however, a small change in assumptions and market conditions would specify combined cycle plants as the preferred resource to meet future needs.

Table IV-4: Power Supply Expansion Plan						
Year	Power Supply Requirements MW (1)	Existing Owned & Contracted Power Resources (MW) (2)	Planned Additions (MW)	Generation Needs (MW)	Combined -Cycle (NG)	Combustion Turbine (NG)
2014	1,973	1,853	39	81	0	0
2015	1,860	1,801	46	13	0	0
2016	1,884	1,803	53	27	0	0
2017	1,910	1,702	56	152	0	200
2018	1,806	1,559	63	184	0	200
2019	1,831	1,562	64	205	0	200
2020	1,854	1,565	68	221	0	200
2021	1,878	1,533	68	278	0	400
2022	1,901	1,524	72	304	0	400
2023	1,922	1,528	72	323	0	400
2024	1,945	1,531	76	338	0	400
2025	1,969	1,514	76	379	0	400
2026	1,999	1,426	80	492	0	500
2027	2,074	1,067	80	927	600	500
2028	2,095	1,067	85	944	600	500
2029	2,117	1,067	85	966	600	500
2030	2,140	1,067	89	985	600	500
2031	2,162	1,067	89	1,007	600	500
2032	2,186	1,038	92	1,056	600	500

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

Note that planned additions include planned renewable, as well as expansion of our demand response program.

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.

A worksheet identifying power production resources and showing the unit power costs for each resource is provided in Appendix E. This worksheet shows the capacity, along with forecasted fixed O&M costs, variable O&M costs, and fuel costs for each of Wabash Valley's power supply resources 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. Wabash Valley has escalated its 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%.

SECTION V

V. SCENARIO ANALYSIS

A. Financial Forecast

The financial forecast is developed using a custom built financial forecasting model (developed by MCR). Production cost estimates are generated by the resource dispatch section of MIDAS, and those costs are input into the MCR model. The financial analysis logic calculates Wabash Valley'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.

The IRP generally anticipates long-term power supply purchases to meet future power requirements. 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. Following is a summary of major objectives of Wabash Valley'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.

The IRP meets the guidelines of Wabash Valley's financial policy. The five year levelized revenue requirements (excluding Pass Through loads) of the base plan are $612.7 million per year. The discount rate used is 7.20%. This represents Wabash Valley's forecasted long-term borrowing rate.

B. Stochastic Modeling

Internally, Wabash Valley utilizes MIDAS, a deterministic model, for our financial forecast. However, Wabash Valley contracts with ACES to provide us risk management functions including stochastic modeling. The model inputs are under the direction and oversight of Wabash Valley. Results of the ACES model are reported to Wabash Valley on a monthly basis or per request.

C. Scenario 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. Other scenarios are developed as needed to examine the potential impact of uncertainties due to Member load changes, plant outages, off-system sales opportunities, resource availability, and similar system planning functions.

Future Member energy requirements, wholesale electric, natural gas and coal 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 III of this report, the 2013 Power Requirements Study produced an econometric model that forecasts energy usage based on several factors, including optimistic and pessimistic economy. The high and low load scenarios were based on these two scenarios.

An econometric model of energy requirements as a function of gross regional product (GRP) and heating and cooling degree days was developed to generate energy requirements under both optimistic and pessimistic economic conditions. For an optimistic economy scenario, total GRP is projected to grow at a higher rate than in the base case. For a pessimistic economy scenario, total GRP is projected to grow at a lower rate than in the base case.

2. Market Prices

Wabash Valley uses projections of wholesale electric power, natural gas and coal market prices in forecasting expected production costs. The MIDAS production cost model estimates the amount of energy purchased from or sold to the wholesale electric market based on unit dispatch limitations, the marginal cost of incremental supply from Wabash Valley's portfolio, and the projected market price at the time of a proposed transaction.

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. Holland Energy and the Vermillion Generation Station are dispatched against the Chicago City Gate natural gas prices. All of Wabash Valley's remaining natural gas resources are either natural gas-fired generating units or have energy costs that are otherwise 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. Gibson is Wabash Valley's sole coal fired unit, but Wabash Valley also has unit contingent purchase power agreements linked to four coal-fired resources. Moreover, Wabash Valley has entered into several portfolio based purchase power agreements which are significantly invested in coal generation.

Recent history can attest to the widening 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 both as a seller and buyer. Therefore, Wabash Valley considers it prudent to assess a scenario where market prices not only decreased from the current forecasted levels but also increased. Wabash Valley's high/low price scenarios are as follows:

- High Prices: Coal @ \$100/ton, Natural Gas @ \$10/MMBtu, On-Peak Market Prices move in relation to Natural Gas & Coal Prices, Off-Peak Market Prices and Pet Coke Prices move with relation to Coal Prices
- Low Prices: Coal @ \$30/ton, Natural Gas @ \$1/MMBtu, On-Peak Market Prices move in relation to Natural Gas & Coal Prices, Off-Peak Market Prices and Pet Coke Prices move with relation to Coal Prices

From a risk management perspective, Wabash Valley believes it is prudent to examine the effects of extreme high and low market prices upon our power supply portfolio.

3. Carbon Emission Legislation

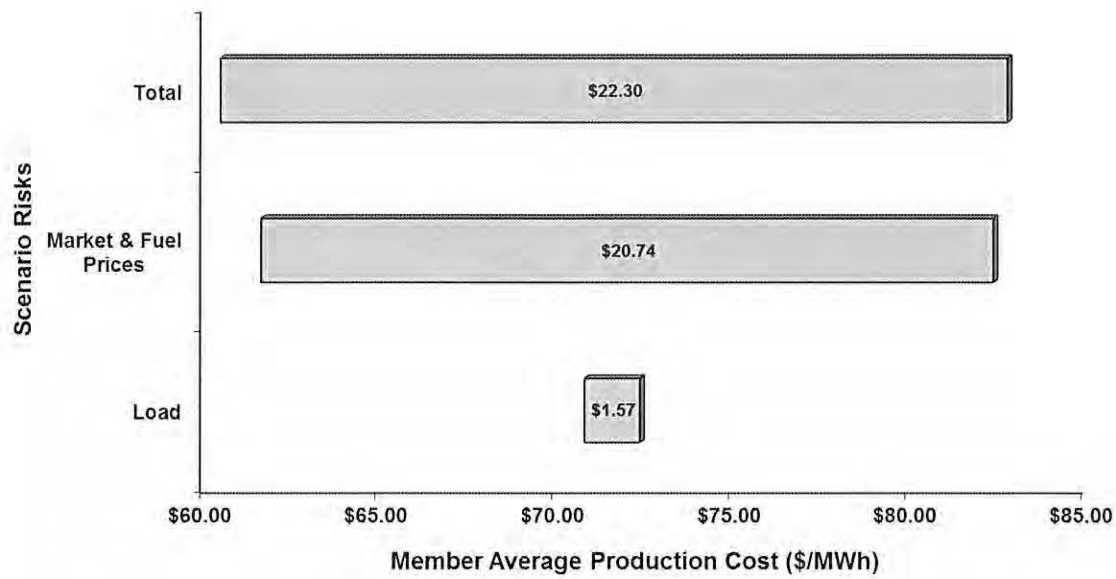
For purposes of the 2013 IRP base case, Wabash Valley has not included any CO_2 legislation assumptions. For purposes of scenario analysis, Wabash Valley assumes CO_2 legislation will be implemented in 2023. Wabash Valley analyzes its base scenario with and without carbon emission legislation in order to assess the magnitude of the impact on production costs. CO_2 price assumptions are based on the ACES long-term forecast and are depicted in Appendix G Market Price Assumptions.

D. Scenario Results

Wabash Valley used the MIDAS planning model to forecast the production cost impact of each scenario. Market price volatility continues to be the main driver of production costs. Baseload coal fired resources (such as Gibson Unit 5) and intermediate natural gas resources (such as Holland Energy) are much more sensitive to changes in market prices. Baseload resources are often shut down for economic reasons or running at minimum load while combined-cycle resources supply greater amount of load demands.

During the ten year study period, Wabash Valley switches from a net seller of wholesale power to a much more level position. This is caused by the expiration of a 276 MW purchase power agreement in 2017, partially offset by an expiring non-member sale in 2017 and the departure of two members in 2015. Due to this level position, rising fuel and energy prices usually lead to an increase in Member rates while falling costs lead to a decrease in rates. No baseload or intermediate resources are added until 2027 when Wabash Valley's baseload purchase power agreements begin to expire; therefore, this levelized market exposure exists throughout the majority of the 20 year forecast. Results of individual scenario components are shown in Chart V-1.

Chart V-1: Scenario Sensitivity
Impact of Risk Components
Levelized Average Cost (2014 - 2023)



Wabash Valley combined test elements and created a set of nine scenarios. The MIDAS model was used to estimate the impact of these scenarios on forecasted average production cost. These nine endpoints are the combination of the market price and Member load. It should be emphasized that the scenario analysis considered only impacts to average production cost. Other expenses, including depreciation, property taxes, administrative and general expenses, debt service, and other non-production operation and maintenance expenses were not included in this analysis.

Chart V-2 provides a summary of the nine scenarios Wabash Valley evaluated, showing the change in estimated average production cost for a study horizon through 2023. The significant increase in the maximum case in 2016 is a result of two Members leaving in 2015. Wabash Valley believes this analysis shows that our current and planned power supply resources will successfully mitigate market price and energy forecast uncertainties described above.

Chart V-2: Production Cost Scenarios

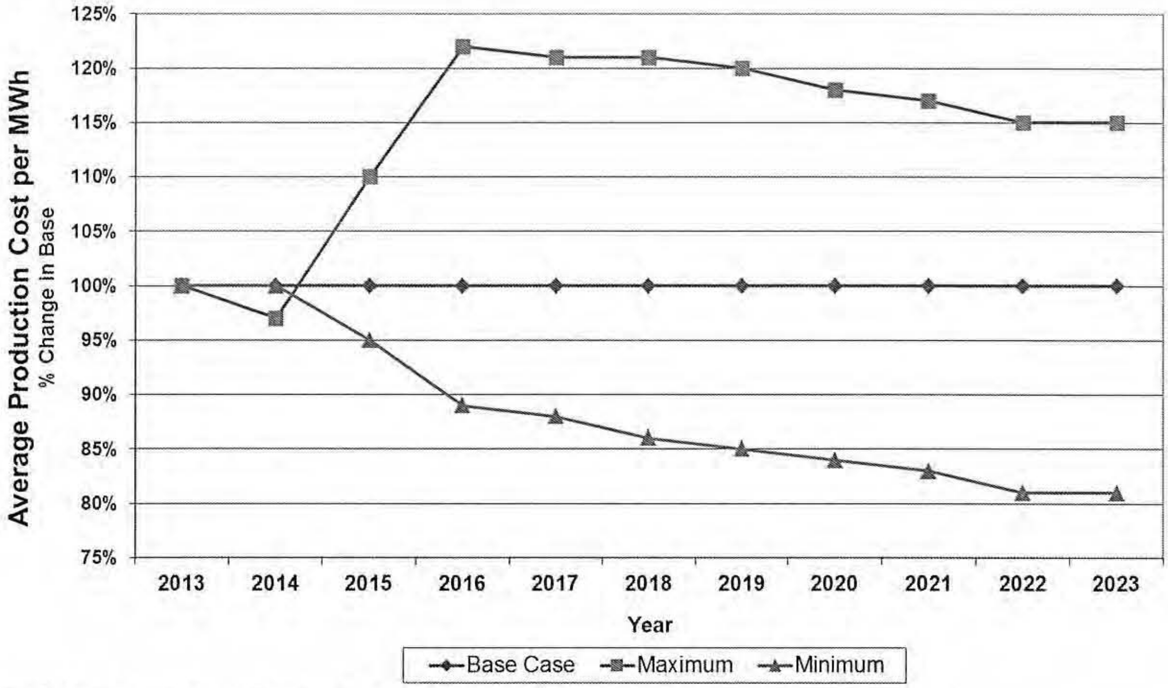
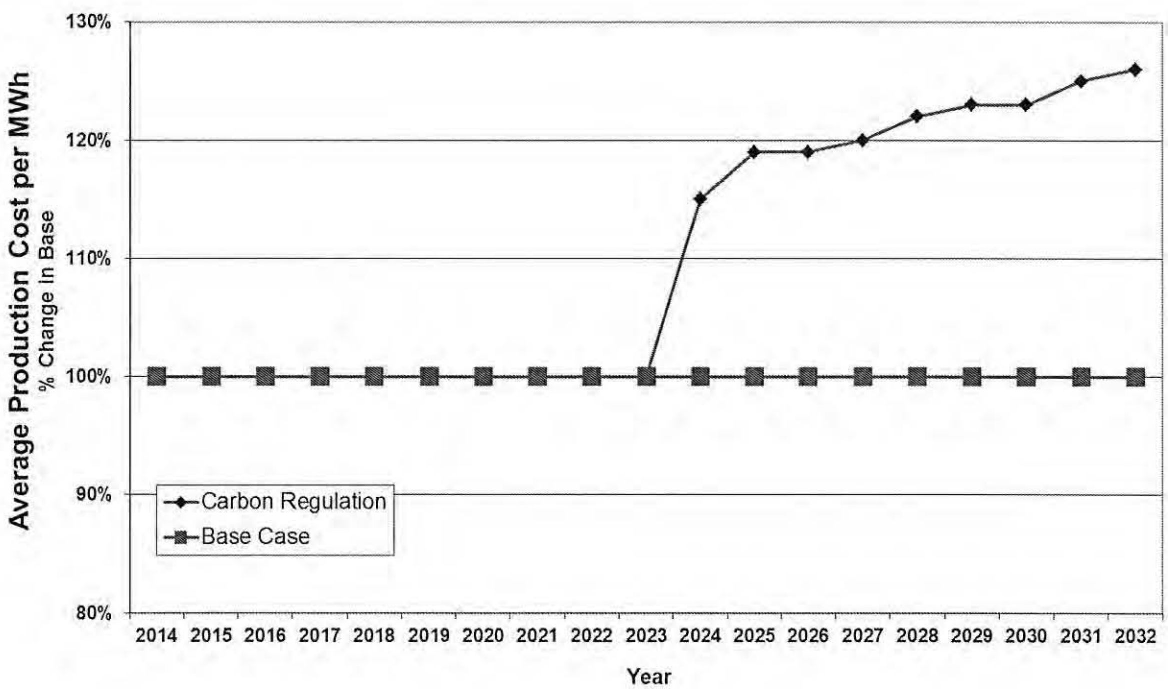


Chart V-3 shows the effect of adding the carbon legislation assumptions from Wabash Valley's forecast. Wabash Valley assumes 100% of the cost of complying with potential legislation.

Chart V-3: Carbon Legislation's Effect on Production Cost



E. Alternate Expansion Plans

As described in Section III of this report, Wabash Valley's 2013 Power Requirements Study produced an econometric forecast of Member consumption. One of the elements of this forecast is a projection of the region's economic growth. Wabash Valley's base case forecast uses the expected rate of economic growth. The forecast, however, also included sensitivities for higher-than-expected (High) and lower-than-expected (Low) economic growth.

As mentioned previously, two Wabash Valley Members will exit in 2015. These departures are reflected in all scenarios. Ignoring the impact of the departing Members, peak demand growth under the High forecast is 1.4% per year. Under the Low forecast, peak demand grows by 0.1% per year.

Wabash Valley examined the peak demand forecast for each of these sensitivities and developed an estimated capacity expansion plan for them. A summary of a preliminary expansion plan for the High economic condition sensitivity is shown in Table V-4a. This table indicates that, under strong economic growth conditions, Wabash Valley needs do not vary much from the base case. 200 MW of capacity is still needed in 2017 with another 400MW needed by 2025. This is 100MW more than Wabash Valley's base case. Similar to the base scenario, Wabash Valley will need 600-700MW of baseload/intermediate power to replace expiring purchase power agreements in 2027. Power supply requirements in Tables V-4a and V-4b include expected Member demand, losses, contractual firm sales, and estimated reserves.

TABLE V-4a: Power Supply Expansion Plan, High Economic Growth

Year	Power Supply Requirements MW	Existing Owned or Contracted Power Resources (MW)	Planned Additions (MW)	Generation Needs (MW)	Baseload/ Intermediate	Peaking
2014	1,993	1,856	39	97	0	0
2015	1,888	1,807	46	34	0	0
2016	1,922	1,813	53	56	0	0
2017	1,957	1,714	56	187	0	200
2018	1,862	1,575	63	224	0	200
2019	1,897	1,581	64	252	0	200
2020	1,930	1,587	68	275	0	200
2021	1,967	1,558	68	340	0	400
2022	2,000	1,553	72	375	0	400
2023	2,034	1,560	72	402	0	400
2024	2,069	1,567	76	426	0	400
2025	2,106	1,553	76	476	0	600
2026	2,150	1,469	80	601	0	600
2027	2,243	1,113	80	1,050	600	600
2028	2,280	1,117	85	1,078	600	600
2029	2,316	1,120	85	1,112	600	600
2030	2,356	1,124	89	1,143	600	600
2031	2,394	1,128	89	1,177	600	600
2032	2,436	1,103	92	1,241	600	600

The estimated expansion plan under the Low economic growth sensitivity is shown below in Table V-4b. In the conditions of this sensitivity, Wabash Valley still has needs as early as 2017 and baseload/intermediate needs in 2027.

TABLE V-4b: Power Supply Expansion Plan, Low Economic Growth

Year	Power Supply Requirements MW	Existing Owned or Contracted Power Resources (MW)	Planned Additions (MW)	Generation Needs (MW)	Baseload/ Intermediate	Peaking
2014	1,954	1,853	39	62	0	0
2015	1,834	1,801	46	0	0	0
2016	1,847	1,803	53	0	0	0
2017	1,863	1,702	56	105	0	200
2018	1,753	1,559	63	131	0	200
2019	1,768	1,562	64	142	0	200
2020	1,780	1,565	68	147	0	200
2021	1,796	1,533	68	195	0	200
2022	1,807	1,524	72	211	0	200
2023	1,817	1,528	72	218	0	200
2024	1,830	1,531	76	223	0	200
2025	1,841	1,514	76	251	0	200
2026	1,859	1,426	80	353	0	400
2027	1,917	1,067	80	770	400	400
2028	1,925	1,067	85	774	400	400
2029	1,934	1,067	85	783	400	400
2030	1,944	1,067	89	788	400	400
2031	1,952	1,067	89	796	400	400
2032	1,960	1,038	92	830	400	400

F. Three Year Plan and Implementation

Major activities in the next three years include:

- Wabash Valley plans to expand its current demand response program which will contribute approximately an additional 18 MW to its portfolio in 2014-2016 growing to approximately 60 MW upon full implementation.
- Wabash Valley plans to purchase 4 MW of landfill gas power from the County Line Landfill project due to commence commercial operation in early 2014.
- Wabash Valley plans to purchase 20 KW of solar power from the Hendricks Power Cooperative Solar Project due to commence commercial operation in mid 2014.
- Wabash Valley plans to install 3.2 MW of landfill gas fired internal combustion engines. The generating units are projected to be on-line in late 2014.
- Wabash Valley also plans to install 3.2 MW of landfill gas fired internal combustion engines in 2016.

- Wabash Valley plans to purchase 10 MW of wind power from an Indiana wind project due to commence commercial operation in the first quarter of 2015.
- Wabash Valley will continually evaluate available projects that are expected to provide cost effective renewable energy.
- Expenditures will be made in upgrades or additions to Wabash Valley's transmission system plus Wabash Valley will look to improve its investment position within the JTS.
- Wabash Valley expects to take steps to further evaluate peaking, intermediate, and baseload resources of up to 400 MW to meet its expected requirements over the next ten years.
- Wabash Valley will manage its resources to meet its capacity and reliability requirements of MISO, PJM, and Reliability First.
- Wabash Valley will take the necessary steps to comply with the Mercury and Air Toxics Standards (MATS) by the required compliance dates.
- Wabash Valley will monitor the litigation surrounding the Cross-State Air Pollution Rule (CSAPR) and monitor the status of carbon and other environmental legislation. Wabash Valley expects to take the necessary steps to meet any requirements and manage the cost impacts for the Members. These steps may include installing facilities at power stations in order to economically continue operation of Wabash Valley's existing generation facilities.
- Wabash Valley will continue to coordinate nine residential and six commercial/industrial EE programs.
- Wabash Valley will coordinate the departure of two Members in 2015.
- Wabash Valley may investigate alliances, partnerships, and opportunities for joint operations with other regional electric utilities. These activities may include participation in new power production facilities and combined system planning. Wabash Valley anticipates that these strategies have the potential to produce lower costs and mitigate risks.