

## INTEGRATED RESOURCE PLAN (IRP)

Western Area Power Administration's (Western) customers must comply with the requirements of the Energy Planning and Management Program (EPAMP (10 CFR Part 905)) to meet the objectives of Section 114 of the Energy Policy Act of 1992 (EPAct). A Western customer is any entity that purchases firm capacity with or without energy, from Western under a long-term firm power contract. Integrated resource planning allows customers to meet the objectives of Section 114 of EPAct.

Integrated resource planning is a planning process for new energy resources that evaluates the full range of alternatives, including new generating capacity, power purchases, energy conservation and efficiency, renewable energy resources, district heating and cooling applications, and cogeneration, to provide reliable service to electric consumers. An IRP supports utility-developed goals and schedules. An IRP must treat demand and supply resources on a consistent and integrated basis. The plan must take into account necessary features for system operation, such as diversity, reliability, dispatch ability, and other risk factors. The plan must take into account the ability to verify energy savings achieved through energy efficiency and the projected durability of such savings measured over time. (See 10 CFR § 905.11 (a)).

### **Who May Use This Form:**

Utilities that primarily provide retail electric service that have limited staff, limited resource options, and obtain a significant portion of its energy needs through purchase power contracts are eligible to use this form. Utilities using this form may generate a limited amount of energy if the generating resources are primarily used as back up resources, to support maintenance and outages, or during periods of peak demand.

### **Completing This Form:**

To meet the Integrated Resource Planning reporting requirement, complete this form in electronic format in its entirety. Unaddressed items will be deemed incomplete and the IRP may not be eligible for approval. All of the data fields in this form automatically expand. Additional information may be attached to and submitted with this report. Western reserves the right to require supporting back-up materials or data used to develop this report. If there is any conflict between this form and the requirements defined in EPAMP, the requirements in EPAMP shall prevail.

### **Submit the completed report with a cover letter to:**

Attention: Power Marketing Manager  
Western Area Power Administration  
Rocky Mountain Region  
P.O. Box 3700  
5555 E. Crossroads Blvd.  
Loveland, CO 80539-3003

## EPAMP Overview

The Energy Planning and Management Program (EPAMP) is defined in the Code of Federal Regulations in Title 10, Part 905 (10 CFR 905). The purposes of EPAMP are to meet the objectives of the Energy Policy Act of 1992 (EPAAct) while supporting integrated resource planning; demand-side management, including energy efficiency, conservation, and load management; and the use of renewable energy.

EPAMP was initially published in the Federal Register at 60 FR 54714 on October 20, 1995, and revised in 65 FR 16795 on March 30, 2000, and 73 FR 35062 on June 20, 2008. 10 CFR § 905.11 defines what must be included in an IRP.

Western's Energy Services Web site ([www.wapa.gov/es/irp](http://www.wapa.gov/es/irp)) provides extensive information on integrated resource planning and reporting requirements. If you have questions or require assistance in preparing your IPR, contact your Western regional Energy Services representative.

## IRP Content

Cover Page.....	Customer Name & Contact Information
Section 1.....	Utility/Customer Overview
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# INTEGRATED RESOURCE PLAN (IRP) 5-Year Plan

<b>Customer Name:</b>
<b>City of Seneca, Kansas</b>

<b>IRP History:</b> Check one as applicable.	
	<b>This is the submitter's first IRP submittal.</b>
<input checked="" type="checkbox"/>	<b>This submittal is an update/revision to a previously submitted IRP.</b>

<b>Reporting Dates:</b>	
<b>IRP Due Date:</b>	June 1, 2015
<b>Annual Progress Report Due Date:</b>	Annually

<b>Customer Contact Information:</b> Provide contact information for your organization. The contact person should be able to answer questions concerning the IRP.	
<b>Customer Name:</b>	City of Seneca, Kansas
<b>Address:</b>	531 Main
<b>City, State, Zip:</b>	Seneca, Kansas, 66538
<b>Contact Person:</b>	Matt Rehder
<b>Title:</b>	City Administrator
<b>Phone Number:</b>	785-336-2747
<b>E-Mail Address:</b>	<a href="mailto:senecaks@gmail.com">senecaks@gmail.com</a>
<b>Website:</b>	<a href="http://www.seneca-kansas.us">www.seneca-kansas.us</a>

<b>Type of Customer:</b> Check one as applicable.	
<input checked="" type="checkbox"/>	<b>Municipal Utility</b>
<input type="checkbox"/>	<b>Electric Cooperative</b>
<input type="checkbox"/>	<b>Federal Entity</b>
<input type="checkbox"/>	<b>State Entity</b>
<input type="checkbox"/>	<b>Tribal</b>
<input type="checkbox"/>	<b>Irrigation District</b>
<input type="checkbox"/>	<b>Water District</b>
<input type="checkbox"/>	<b>Other (Specify):</b>

**SECTION 1****UTILITY/CUSTOMER OVERVIEW****Customer Profile:**

Enter the following data for the most recently completed annual reporting period. Data may be available on form EIA-861, which you submit to the U.S. Energy Information Administration (EIA).

<b>Reporting Period</b>	
Reporting Period Start Date (mm/dd/yyyy)	01/01/2015
Reporting Period End Date (mm/dd/yyyy)	12/31/2015
<b>Energy Sales &amp; Usage</b>	
Energy sales to Ultimate End Customers (MWh)	32305
Energy sales for Resale (MWh)	0
Energy Furnished Without Charge (MWh)	471
Energy Consumed by Respondent Without Charge (MWh)	541
Total Energy Losses (MWh entered as positive number)	245
Total Energy Usage (sum of previous 5 lines in MWh)	33562
<b>Peak Demand (Reporting Period)</b>	
Highest Hourly Summer (Jun. – Sept.) Peak Demand (MW)	8.8
Highest Hourly Winter (Dec. – Mar.) Peak Demand (MW)	6.7
Date of Highest Hourly Peak Demand (mm/dd/yyyy)	07/13/2015
Hour of Highest Hourly Peak Demand (hh AM/PM)	14:00 PM
<b>Peak Demand (Historical)</b>	
All-Time Highest Hourly System Peak Demand (MW)	9.4
Date of All-Time Hourly System Peak Demand (mm/dd/yyyy)	07/22/2014
Hour of All-Time Hourly Peak System Demand (hh AM/PM)	15:00 PM
<b>Number of Customers/Meters (Year End of Reporting Period)</b>	
Number of Residential Customers	983
Number of Commercial Customers	219
Number of Industrial Customers	59
Other (Specify): Church and School	0
Other (Specify):	
Other (Specify):	
Other (Specify):	
Other (Specify):	

**Customer Service Overview:**

Describe your customer service territory and the services provided. Include geographic area, customer mix, key customer and significant loads, peak demand drivers, competitive situation, and other significant or unique aspects of the customer and/or service territory. Provide a brief summary of the key trends & challenges impacting future resource needs including population changes, customer growth/losses, and industrial developments.

Seneca is located in the far northeast corner of Kansas in Nemaha County. There is a balance of approximately 80% residential customers and 20% commercial and industrial customers. The largest industrial customer is Koch & Co. wood and cabinet manufacturing facility, which amounts to about 10% of the city's total sales. Their other large user is J-Six, an agricultural processing plant, which purchases over 5% of total retail sales. A good portion of Seneca's customer mix is agricultural based including customers such as Helena, Nemaha County Coop, and Sure Crop.

Seneca has plenty of development sites and aggressively seeks growth in the community. The Highway 36 corridor has been a good place to expand. In addition, the community is in the process of updating the downtown infrastructure by improving the streets and lighting. Health Care and assisted living sectors have shown great potential in the Seneca as well as other similar communities.

The city serves electricity, water and sewer services to the community. Natural gas, refuse removal, and cable service are provided through independent providers of which Seneca receives a franchise fee.

The population in Seneca has been fairly stable over the past several years with limited changes in our residential customer counts or commercial and industrial customer base. The community has seen most of its growth from increases in their large customers who have had production increase despite the slower economy. The city has monitored their billing more closely to insure better capture of all energy consumed.

The community continues to have issues with having enough affordable housing for lower level manufacturing employees.

**Electricity Utility Staff & Resources:**

Summarize the number of full-time equivalent employees by primary functions such as power production, distribution, and administration. Describe any resource planning limitations, including economic, managerial, and/or resource capabilities.

**Electric Distribution Department (3 full-time employees)**

- 1- City Electrician: Primary oversight of electrical operations and line work
- 2- Lineman: Assisting in maintenance duties

**City Hall (3 full-time employees)**

- 1- City Administrator: Management over all city departments, and responsible for managing the wholesale power supply of the city by participating in power supply pools
- 1- City Clerk: Management of documents of city government
- 1- Assistant City Clerk: Directly over utility billing and other duties

The City has limited staff time that they can allocate towards management of their electric department. The administrative staff is assigned to duties outside of the electric department so the development, administration and tracking of any energy related programs is difficult due to these time constraints.

**Historical Energy Use:**

Enter the peak system demand and total annual energy use for the preceding ten (10) reporting years. For total energy, include retail sales, energy consumed or provided without charge, and system losses.

Reporting Year	Peak Demand (MW)	Total Energy (MWh)
2005	6.4	27819
2006	7.2	28821
2007	6.3	31914
2008	8.0	32235
2009	7.4	29677
2010	8.8	35426
2011	8.5	33264
2012	8.8	37415
2013	8.0	35484
2014	9.1	37547

## SECTION 2 | FUTURE ENERGY SERVICES PROJECTIONS

### Load Forecast:

Provide a load forecast summary for the next ten (10) years; **and** provide a narrative statement describing how the load forecast was developed. Discuss any expected future growth. If applicable, you may attach a load forecast study and briefly summarize the results in this section. (See 10 CFR § 905.11 (b) (5)).

Load Forecast:

Reporting Year	Peak Demand (MW)	Total Energy (MWh)
2015	8.8	34753
2016	8.6	33843
2017	8.6	34012
2018	8.7	34182
2019	8.7	34353
2020	8.8	34696
2021	8.9	35044
2022	8.9	35394
2023	9.0	35748
2024	9.1	36106

Narrative Statement:

The city has had some growth but mostly offset by efficiency improvements and loss reductions so demand and consumption has been flat over the past few years. The forecast was based on one half percent increase per year through 2020, then 1 % beginning then.

## SECTION 3

## EXISTING SUPPLY-SIDE RESOURCES

### Existing Supply-Side Resource Summary:

Provide a general summary of your existing supply-side resources including conventional resources, renewable generation, and purchase power contracts (including Western Area Power Administration contracts). Describe the general operation of these resources and any issues, challenges, or expected changes to these resources in the next five (5) years. (See 10 CFR § 905.11 (b) (1)).

The City of Seneca is, currently, a member of the Kansas Municipal Energy Agency (KMEA) power pool known as the EMP3. It is one of 3 pools managed by KMEA. The city left their old supply the KPP and started taking service from KMEA beginning January 1, 2014. Currently, there are 10 cities in the EMP3. This power pool provides the city with all of its power requirements above the 652 kW Western Area Power Administration (WAPA) resource currently subscribed. And as a group, transmission and ancillary services are obtained.

The EMP3 has a number of different resources they have offered for consideration but each individual city can nominate a specific resource and each city is individualized. Seneca has a source from KCPL to provide a base resource that is energy only without capacity. Required capacity is purchased from the other member cities at an agreed upon price.

Seneca is on the operating board and helps to determine what that rate will be.

The City will need to replace the KCPL piece of load in 2017. All load following is provided by KMEA as part of the pool.



**Existing Generation Resources:**

List your current supply-side resources, including conventional resources and renewable generation. If you do not own any generating resources, insert N/A in the first row. Insert additional rows as needed.

<b>Resource Description</b> (Identify resources as base load, intermediate, or peaking)	<b>Fuel Source</b>	<b>Rated Capacity (MW)</b>	<b>In-Service Date (Year)</b>	<b>Estimated Expiration/Retirement Date (Year)</b>
N/A	N/A	N/A	N/A	N/A

**Existing Purchase Power Resources:**

List your current purchase power resources. Define whether the contract provides firm service, non-firm service, all requirements or another type of service. Include Western Area Power Administration resources. If applicable, include a summary of resources that are under a net metering program. Insert additional rows as needed.

<b>Resource Description</b>	<b>Fuel Source</b> (If applicable)	<b>Contracted Demand (MW)</b>	<b>Type of Service</b> (Firm, Non-firm, Requirements, Other)	<b>Expiration Date (Year)</b>
Western Area Power Adm		.652/.577	Firm	2054
KCPL Base Energy		2.85	Firm	2016
KMEA EMP3 Load Following		Load Following	Firm	Rolling 2 year notice

**SECTION 4****EXISTING DEMAND-SIDE RESOURCES**

Demand-side programs alter a customer's use pattern and include energy conservation, energy efficiency, load control/management, education, and distribution system upgrades that result in an improved combination of energy services to the customer and the ultimate consumer.

**Existing Demand-Side Resources:**

List your current demand-side programs, including energy conservation, energy efficiency, load control/management, education, or maintenance plans, or system upgrades. Programs may impact the utility distribution system, municipally owned facilities, and/or end-user energy consumption. Refer to Section 9 of this form for a list of example programs. Insert additional rows as needed.

*(See 10 CFR § 905.11 (b) (1)).*

<b>Program Description</b>	<b>Estimated Program Savings (MW and/or MWh if known)</b> (Include annual impact and impact over the life of the program if known.)
Air-conditioning load shed devices on about 190 Air-conditioners to shed about 760 kW on system	Estimated annual savings is \$20,520 based on \$2.25/kW capacity payments. This is based on 760 kW savings on peak hour kWhs conserved are minimal

## SECTION 5

# FUTURE RESOURCE REQUIREMENTS AND RESOURCE OPTIONS

### **Balance of Loads and Resources (Future Resource Requirements):**

Provide a narrative statement that summarizes the new resources required to provide retail consumers with adequate and reliable electric service during the 5-year resource planning period. Identify any federal or state regulations that may impact your future resource requirements. If you are not experiencing or anticipating load growth and a need for new resources, describe your current procedure to periodically evaluate the possible future need for new resources.

The City currently is meeting its needs through all purchased capacity and energy in collaboration within the EMP3 power pool. In 2015, the city has 2 main identifiable resources being brought into the city. A base load of 2.85 MWs from KCPL that is delivered as an energy only product around the clock at a fixed price that has changes seasonally and annually. But the price is known and fixed for the duration of the term through 2016. After that time, the city will need to secure a replacement base load resource.

The WAPA hydro piece the city has is a cost-based resource that continues through 2024 but being extended through 2054.

The city buys the balance of its energy requirements from the SPP power pool through the load following arrangements of the EMP3/KMEA power pool. KMEA will manage all of our TCR's on a monthly basis.

With the exception of the capacity purchased from WAPA, all capacity requirements for the city are purchased from other cities within the KMEA EMP3 pool. The members of the pool meet annually to establish the price of this capacity

The cities within the pool can only sell peaking capacity that meets The National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines Rules that states that all emissions of toxic air pollutants from existing diesel powered stationary reciprocating internal combustion engines (NESHAP RICE) must be reduced. It will control emissions of formaldehyde, acetaldehyde, acrolein, methanol and other air toxics from diesel engines. This has impacted the availability of peaking units to purchase but Seneca knows that the capacity it buys meets these standards.

**Identification of Resource Options**

Identification and comparison of resource options is an assessment and comparison of existing and future supply-side and demand-side resources available to a customer based upon size, type, resource needs, geographic area, and competitive situation. Resource options evaluated must be identified. The options evaluated should related to the resource situation unique to each Western customer as determined by profile data such as service area, geographical characteristics, customer mix, historical loads, projected growth, existing system data, rates, financial information, and load forecast. (See 10 CFR § 905.11 (b) (1)).

Considerations that may be used to develop potential resource options include cost, market potential, consumer preferences, environmental impacts, demand or energy impacts, implementation issues, revenue impacts, and commercial availability. (See 10 CFR § 905.11 (b) (1) (iii)).

**Future Supply-side Options:**

List the future supply-side resource options that were considered and evaluated, including, but not limited to conventional generation, renewable generation, and power purchase contracts. Include a brief discussion on the applicability of each option for further consideration or implementation based on your system requirements and capabilities. If new resources are not required during the 5-year resource planning period, please indicate that below. Insert additional rows as needed. (See 10 CFR § 905.11 (b) (1)).

Supply-Side Option	Applicability for Implementation or Further Consideration
Westar Full-Requirements Contract	The investor owned utility who previously served Seneca offers a 10 year cost based full requirement contract that Seneca has researched either directly or through the area electric cooperative. The capacity charge made this product not feasible
KPP – 20 year membership	The KPP was the previous supplier for Seneca but they were changing from a 2 year notice of termination to a 20 year notice so the city served notice to terminate and left that pool
KMEA EMP3 Project	Seneca researched and accepted the offer from KMEA to participate with other cities to form a “collaborative” pool and manage their own resources by securing supplies independently, and then utilize KMEA to secure a load following resource. The city only was subscribing to take WAPA and the remaining energy from the market for a short term. A number of base load resources were then reviewed
Grand River Dam project (GRDA)	Several cities in the EMP3 power pool take their base load requirements from GRDA which is a base, firm capacity and energy resource. Seneca has evaluated it as well for a resource within the pool
Kansas City Power and Light (KCPL)	KCPL has offered a base resource of energy only power that the city can take for 2.5years and know the fixed price

**Future Demand-side Options:**

List the future demand-side resource options that were considered and evaluated. Demand-side programs alter a customer’s use pattern and include energy conservation, energy efficiency, load control/management, education, and distribution system upgrades that result in an improved combination of energy services to the customer and the ultimate consumer. Include a brief discussion on the applicability of each option for further consideration or implementation based on your system requirements and capabilities. Insert additional rows as needed. (See 10 CFR § 905.11 (b) (2)).

<b>Demand-Side Option</b>	<b>Applicability for Implementation or Further Consideration</b>
Off-peak rates	The city offers a rate ordinance that encourages consumers to take service off-peak verses during time that the city demand is highest. The current limit on the size and amount of load that can be served under this program is being considered to be expanded since it has passed the “test “ phase and has proven to work.
Street light replacement	The city will work to replace all street lights in city with higher efficient lamps
Key account management	Work with large consumers to move production off-peak and help them to better manage usage. There is potential to work with these few customers to help them manage their usage and therefore help the city manage as well.
Internal load control	Develop an energy efficiency program for internal city use to curtail load during peak hours
Residential Load Management Program	The community has had good participation in this program over the years with little or no communication or promotion. The city will enhance the operating system to better control the load shed

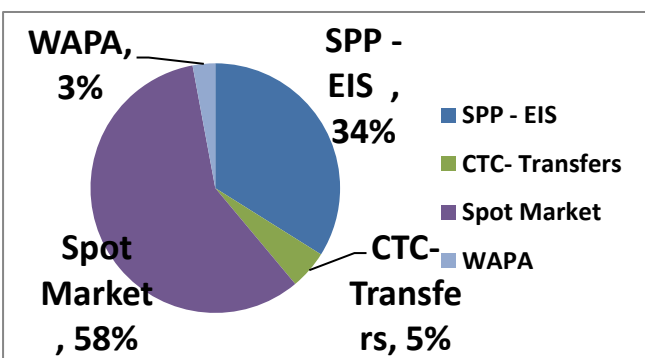
### Resource Options Chosen:

Describe the resource options that were chosen for implementation or further consideration and clearly demonstrate that decisions were based on a reasonable analysis of the options. Resource decisions may strike a balance among applicable evaluation factors such as cost, market potential, customer preferences, environmental impacts, demand or energy impacts, implementation issues or constraints, revenue impacts, and commercial availability. (See 10 CFR § 905.11 (b) (1) (iv)).

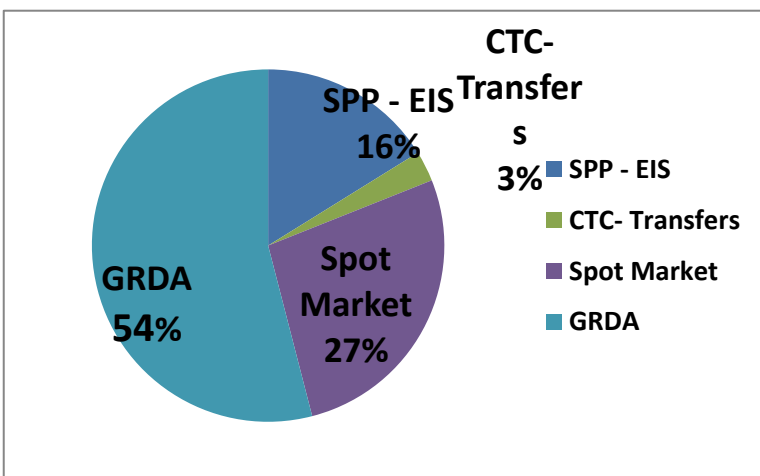
The city of Seneca was previously a member of the Kansas Power Pool (KPP), and had been taking the majority of their electric requirements from this organization since summer of 2008. The primary driver for the city to join this power pool was because they were offering a power supply with a 2 year obligation while the other options we were considering had considerably longer terms. While the summer of 2008 was not a great year in terms of price we had to pay (due to a number of reasons including record high gas prices and a rush in pool growth), overall, the membership in the pool had been satisfactory.

However, through changes in pool structure, it was determined to leave the pool and join the KMEA pool EMP3. Once this decision was made, the city needed to decide if they wanted to secure a base resource or just be exposed to the hourly market fluctuations.

The two options credited a resource allocation as follows:



With a base resource the city allocation was as follows:



The city identified savings in excess of 20% by leaving the KPP and moving to the new EMP3 pool. The pros and cons of the decision were as follows:

**Pros:**

- No involvement is required.
- All decisions can be made by others within pool if so desired.
- City can participate on either Executive Board or as an active participant on the Board of Directors and have input through that as well as various committees
- Not be obligated for long-term as long as careful how votes are done on various projects.
- Minimal long-term risk if vigilant on issues and as long as there are other 2 year cities remaining

**Cons:**

- Cost are uncertain for short-term members
- Uncertain on how many cities are 2 year members and may have limited representation on boards and committees
- Pay for others generation that isn't used by Seneca
- Continuous effort to extend agreements
- Cost have increased

Summary of the other options other than the KPP looking at are :

- Leaving the KPP and join the Kansas Municipal Energy Agency (KMEA) pool they are calling the EMP3
- Leaving the KPP and taking service as a standalone city again from either Westar or others like regional Coop.
- Leaving the KPP and join a Westar administered pool

The following chart is a summary of ESTIMATED PROJECTIONS of cost under a modeled forecast.

SUMMARY							Difference off
	WAPA	Supplier	D&T	Capacity Pur	Total	\$/kWh	Low cost option
WESTAR POOL	\$ 90,987.00	\$ 1,412,570.00	\$ 332,913.36	\$ 107,069.00	\$ 1,943,539.36	\$ 0.0538	
EMP3	\$ 85,502.41	\$ 1,666,115.38	\$ 332,913.36	\$ 77,022.35	\$ 2,161,553.50	\$ 0.0598	\$ (20,299.76)
KPP	\$ 85,909.66	\$ 2,072,330.23	\$ 23,613.36		\$ 2,181,853.26	\$ 0.0580	\$ -
EMP3 10% diversity	\$ 85,502.41	\$ 1,706,210.25	\$ 332,913.36	\$ 63,583.15	\$ 2,188,209.18	\$ 0.0606	\$ 6,355.93
KMEA EMP3	\$ 94,857.00	\$ 1,646,358.00	\$ 332,913.36	\$ 160,050.00	\$ 2,234,178.36	\$ 0.0618	\$ 52,325.10
KPP 2012	\$ 85,909.66	\$ 2,245,014.74	\$ 23,613.36		\$ 2,354,537.76	\$ 0.0601	\$ 172,684.51

*Being Developed*  
*Modeled*  
*Current*  
*Modeled with 10%*  
*KMEA version*  
*Proposed*

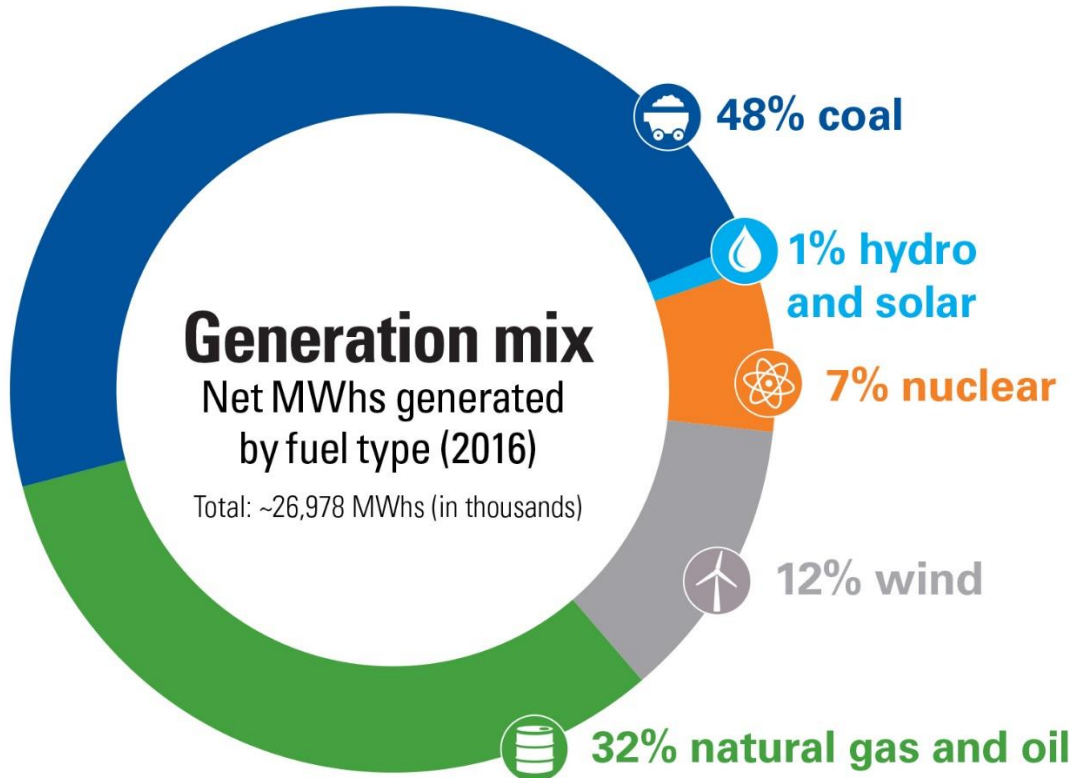
The KPP numbers are current year. The 2012 proposed are the rates being proposed for next year. The EMP3 numbers are what were modeled based on next years numbers. The KMEA EMP3 numbers are what KMEA provided and projected 2 years out to 2014 so escalated numbers accordingly.

The new pool has benefitted the city and has produced the expected results that the city anticipated. The city started service in January 2014. With a base resource, the city is obtaining cost in the mid \$0.05/kWhs.

**Environmental Effects:**

To the extent practical, Western customers must minimize environmental effects of new resource acquisitions and document these efforts. IRPs must include a qualitative analysis of environmental impacts in summary format. Describe the efforts taken to minimize adverse environmental effects of new resource acquisitions. Describe how your planning process accounts for environmental effects. Include a discussion of policies you conform with or adhere to, and resource decisions that have minimized or will minimize environmental impacts by you and/or your wholesale electricity supplier(s). Western customers are neither precluded from nor required to include a qualitative analysis of environmental externalities as part of the IRP process. If you choose to include a quantitative analysis, in addition to the summary below, please attach separately. (See 10 CFR § 905.11 (b) (3)).

Through the new EMP3 pool, over 45% of City energy is being delivered by KCPL through the base load supply. The price for this product was based on the system average cost and resource of KCPL so our supply portfolio for this amount of our energy is as follows:



The balance of our resource will be comprised of WAPA Hydropower and the market.

This is a significant amount of renewable resources in our mix.

Within the 48% of resources that are generated by coal, the following is the explanation of air quality improvements they have made:



**We operate some of the cleanest and most efficient coal-fired plants in the country.**

We are working to reduce emissions with the best available technology. For example, our Iatan 2 plant emits 1.3 million tons less carbon dioxide annually than the U.S. average for coal plants. And after the completion of retrofits to La Cygne, 72% of our coal fleet will have emission-reducing scrubbers installed. See below for more information about our efforts at specific plants.

**Iatan 2**

One of the largest, cleanest and most efficient coal-fired power plants in the United States, Iatan 2 provides 850 megawatts of electricity, enough to power 850,000 homes.

A supercritical steam boiler allows for maximum efficiency, using 10% less fuel and generating 10% lower emissions than typical coal-fired facilities.

State-of-the-art air quality controls reduce overall emissions. The facility emits 1.3 million tons less carbon dioxide annually than the U.S. average for coal plants.

A zero liquid discharge unit minimizes wastewater production through evaporation and reuse.

POWER Magazine named Iatan 2 as the 2011 Plant of the Year, citing the innovation, collaboration and expertise evident on the project.

**La Cygne Generating Station**

KCP&L is joint owner of this 1,450 megawatt coal-fired plant, which is undergoing environmental improvements to meet federal and state regulations for air-quality and emissions.

When the project is complete, La Cygne will have the best available emission-reducing technology.

The project includes the installation of two wet scrubbers and a selective catalytic reduction system.

Once these improvements are complete, 72% of our coal fleet will have emission-reducing scrubbers installed.

**Hawthorn Unit 5**

Reflecting a focus on efficiency, the Hawthorn Unit 5 coal-fired generation station was rebuilt in just 22 months, more than a year faster than the industry norm. The improvements increased capacity to 565 megawatts while reducing emissions.

The project took advantage of best-available control technology to dramatically lower air emissions.

Air quality control equipment included an SCR system for NOx (nitrogen oxide) reduction, dry FGD for SO2 (sulfur dioxide) control and a pulse jet fabric filter for particulate control.

## SECTION 7

## PUBLIC PARTICIPATION

### **Public Participation:**

Customers must provide ample opportunity for full public participation in preparing and developing an IRP. Describe the public involvement activities, including how information was gathered from the public, how public concerns were identified, how information was shared with the public, and how your organization responded to the public's comments. *(See 10 CFR § 905.11 (b) (4)).*

This IRP and the resources selected have been conducted over meetings, discussions between City Staff, KMEA, The City Council appointed Energy Committee and several public City Council meetings

Council meetings are covered in the local newspaper and aired on local television.

With the help of the city's energy consultant and through the results of these meetings have helped assemble the IRP. Some of the keys issues that have come from these public forums are the desire for the city to maintain their independence, flexibility and control cost. They have inquired about internal generation, the effectiveness of their load control and the importance of public power to the community.

Considerable discussions have occurred regarding the feasibility of purchasing renewable resources independently verses obtaining the renewable resources as part of bigger power purchases.

The public will again be invited to review and comment on the IRP during a public comment period from March 8<sup>th</sup> through March 15<sup>th</sup>, 2017. The notice of this review period will be posted in the local paper.

Additional comments will be accepted throughout the year for the yearly updates..

## SECTION 8

## ACTION PLAN & MEASUREMENT STRATEGIES

### **Action Plan Summary:**

Describe the high-level goals and objectives that are expected to be met by the implementation of this resource plan within the 5-year resource planning period. Include longer term objectives and associated time period(s) if applicable. (See 10 CFR § 905.11 (b) (2)) and (See 10 CFR § 905.11 (b) (6)).

The long term goals of Seneca are maintain the lowest cost energy supply for their customers and being a good steward of natural resources and the environment. They also want to be able to supply reliable, stable priced energy to help their community thrive.

This resource plan will help accomplish these goals by creating an avenue to collaborate and work together with neighboring cities to obtain competitive power supply that comes from reliable, environmentally conscious power suppliers.

The city has focused on who they do business with and how they get their power as primary considerations in developing this IRP. Maintaining shorter term options allows us flexibility in the event a supplier changes the way they do business. Seneca believes that the electric industry has changed so much over the years that certain governmental entities such as WAPA are ok to contract long term for power, but caution should be used if entering into long term agreements with private companies that the city has little control over their business practices.

Seneca is committed to advancing the efforts of public power so dealing with public power entities will remain a priority as we have done in the past with WAPA, Brown-Atchison, and the Kansas Power Pool, KMEA and EMP3 collaboration pool

The city is hoping to continue its community involvement through comments , suggestions, and increased participation in energy efficiency programs.

**Specific Actions:**

List specific actions you will take to implement your plan over the 5-year planning horizon.

**New Supply-Side Resource Acquisitions:**

List new resource options your organization is planning to implement, investigate, or pursue in the next five years. Include conventional generation, renewable resources, net metering programs, and purchase power contracts. Include key milestones such as the issuing an RFP, executing a contract, or completing a study. (See 10 CFR § 905.11 (b) (2)).

<b>Proposed New Resource</b>	<b>Begin Date</b>	<b>Est. New Capacity (MW)</b>	<b>Milestones to evaluate progress and/or accomplishments</b>
WAPA	Cont	1	January 1, 2016
KCPL	1/2017	2.85	January 1, 2016
GRDA	1/2017	2.85	January 1, 2016
Longer term peak capacity	1/2017	9	January 1, 2017

### New Demand-Side Programs & Energy Consumption Improvements:

List energy efficiency, energy conservation, and load management programs your organization is planning to implement or evaluate in the next five years. Include key milestones to evaluate the progress of each program. Insert additional rows as needed. (See 10 CFR § 905.11 (b) (2)).

Example programs could include:

- Education programs & communications
- Energy efficient lighting upgrades
- Energy audits
- Weatherization & Insulation
- Window/doors upgrades
- Boiler, furnace or air conditioning retrofits
- Programmable thermostats
- Equipment inspection programs
- Use of infrared heat detection equipment for maintenance
- Tree-trimming/brush clearing programs
- Electric motor replacements
- Upgrading distribution line/substation equipment
- Power factor improvement
- Loan arrangements for energy efficiency upgrades
- Rebate programs for energy efficient equipment
- Key account programs
- Load management programs
- Demand control equipment
- Rate designs
- Smart meters (Time-of-Use Meters)

Proposed Items	Begin Date	Est. kW capacity savings per year	Est. kWh savings per year	Milestones to evaluate progress and/or accomplishments
Street light retrofit program	1/2017	600	1200 mWh	6/2016
Load shed A/C program	1/2016	700	0	6/2016
On-site generation	1/2017	9000	0	1/2017

**Measurement Strategies:**

Describe your plan to evaluate and measure the actions and options identified in the IRP to determine if the IRP's objectives are being met. The plan must identify and include a baseline from which you will measure the IRP implementation's benefits. (See 10 CFR § 905.11 (b) (6)).

City Staff will meet quarterly on this to determine that task are being done towards meeting the IRP. A report will be given to the City Council energy committee twice a year to update on progress and public council meeting will be updated annually.

The baseline will be calendar year 2015 of how things have been and then document changes and compare against overall usage of city. These changes will be noted and graphed for progress review.

WAPA requires Seneca to provide an annual progress report on the status of the action items they have identified as part of this plan. These updates will address the progress that has been made on each of the items listed in the earlier sections.

**SECTION 9****SIGNATURES AND APPROVAL****IRP Approval:**

Indicate that all of the IRP requirements have been met by having the responsible official sign below; **and** provide documentation that the IRP has been approved by the appropriate governing body (i.e. provide a copy of the minutes that document an approval resolution). (See 10 CFR § 905.11 (b) (4)).

<b>Matt Rehder</b>	<b>City Administrator</b>
_____	_____
<b>(Name – Print or type)</b>	<b>(Title)</b>
_____	_____
<b>(Signature)</b>	<b>(Date)</b>

**Other Information:**

(Provide/attach additional information if necessary)

**IRP Posting Requirement:**

10 CFR § 905.23 of the EPAMP as amended effective July 21, 2008, facilitates public review of customers' approved IRPs by requiring that a customer's IRP be posted on its publicly available Web site or on Western's Web site. Please check the method in which you will comply with this requirement within thirty (30) days of receiving notification the IRP has been approved:

	Customer will post the approved IRP on its publicly available website and send the URL to Western.
	Customer would like Western to post the approved IRP on Western's website.

**IRP Updates:**

Western's customers must submit updated IRPs every five (5) years after Western's approval of the initial IRP.

**IRP Annual Progress Reports:**

Western's customers must submit IRP progress reports each year within thirty (30) days of the anniversary date of the approval of the currently applicable IRP. Annual progress reports can be submitted using Western's on-line reporting tool, which can be accessed at: [www.wapa.gov/es/irp](http://www.wapa.gov/es/irp)