The City of Osage City Kansas

**Proud Past • Brilliant Future**

Rodney D. Willis, City Manager
201 South 5th Street
P.O. Box 250
Osage City, KS 66523
785-528-3714 Phone
785-528-4951 Fax
rwillis@osagecity.com

August 27, 2019

Western Area Power Administration
Attn: Power Marketing Manager
Rocky Mountain Region
5555 East Crossroads Blvd
PO Box 3700
Loveland, CO 80539-3003

Re: Integrated Resource Plan (IRP) for Osage City, Kansas

Dear Power Marketing Manager,

Please find enclosed the Integrated Resource Plan (IRP) for Osage City, Kansas and a copy of Resolution No. 1045 passed by the Osage City Council on August 27, 2019.

The City of Osage City would like to thank the Western Area Power Administration for their help in the development of the enclosed five-year plan. The City of Osage city looks forward to a long and mutually rewarding partnership with WAPA.

Sincerely,

Rodney D. Willis
City Manager

Enclosures

Cc: Greg Wright of Priority Power Management, LLC
Joey Lamond, Utilities Director

# 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, dispatchability, 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 (EPAct) 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) 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
Section 2 ..... Future Energy Services Projections (Load Forecast)
Section 3 ..... Existing Supply-Side Resources
Section 4 ..... Existing Demand-Side Resources
Section 5 ..... Future Resource Requirements and Resource Options
Section 6 ..... Environmental Effects
Section 7 ..... Public Participation
Section 8 ..... Action Plan and Measurement Strategies
Section 9 ..... Signatures and Approval

# INTEGRATED RESOURCE PLAN (IRP)
# 5-Year Plan

| Customer Name: |
|---|
| City of Osage City, Kansas |

| IRP History: Check one as applicable. | |
|---|---|
| | This is the submitter's first IRP submittal. |
| X | This submittal is an update/revision to a previously submitted IRP. |

| Reporting Dates: | |
|---|---|
| IRP Due Date: | May 1, 2017 |
| Annual Progress Report Due Date: | July 1, 2019 |

| Customer Contact Information: Provide contact information for your organization. The contact person should be able to answer questions concerning the IRP. | |
|---|---|
| Customer Name: | City of Osage City |
| Address: | 201 South Fifth Street |
| City, State, Zip: | Osage City, KS 66523 |
| Contact Person: | Joey Lamond |
| Title: | Director of Utilities |
| Phone Number: | 785-528-4124 |
| E-Mail Address: | jlamond@osagecity.com |
| Website: | www.osagecity.com |

| Type of Customer: Check one as applicable. | |
|---|---|
| X | Municipal Utility |
| | Electric Cooperative |
| | Federal Entity |
| | State Entity |
| | Tribal |
| | Irrigation District |
| | Water District |
| | Other (Specify): |

## 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 your submit to the U.S. Energy Information Administration (EIA).

| **Reporting Period** | |
|---|---|
| Reporting Period Start Date (mm/dd/yyyy) | 01/01/2016 |
| Reporting Period End Date (mm/dd/yyyy) | 12/31/2016 |
| **Energy Sales & Usage** | |
| Energy sales to Ultimate End Customers (MWh) | 33497 |
| Energy sales for Resale (MWh) | 0 |
| Energy Furnished Without Charge (MWh) | 60 |
| Energy Consumed by Respondent Without Charge (MWh) | 1055 |
| Total Energy Losses (MWh entered as positive number) | 1100 |
| Total Energy Usage (sum of previous 5 lines in MWh) | 35712 |
| **Peak Demand (Reporting Period)** | 8.7 |
| Highest Hourly Summer (Jun. – Sept.) Peak Demand (MW) | 8.7 |
| Highest Hourly Winter (Dec. – Mar.) Peak Demand (MW) | 5.4 |
| Date of Highest Hourly Peak Demand (mm/dd/yyyy) | 06/22/2016 |
| Hour of Highest Hourly Peak Demand (hh AM/PM) | 3:00 pm |
| **Peak Demand (Historical)** | |
| All-Time Highest Hourly System Peak Demand (MW) | 9.7 |
| Date of All-Time Hourly System Peak Demand (mm/dd/yyyy) | 08/09/2010 |
| Hour of All-Time Hourly Peak System Demand (hh AM/PM) | 4:00 pm |
| **Number of Customers/Meters (Year End of Reporting Period)** | |
| Number of Residential Customers | 1317 |
| Number of Commercial Customers | 298 |
| Number of Industrial Customers | 2 |
| Other (Specify): | |
| 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.

The City of Osage City has approximately a two square mile footprint. We are a full service city providing Electric, Gas, Wastewater, Water, Solid Waste Collection and Recycling utilities to nearly 3,000 constituents.

Osage City is proud to be the home of the second oldest municipal electric generating facility in the state of Kansas, with service to commercial customers beginning in the fall of 1890.

Currently our generating facility has just over 11 MW of capacity.

The electric usage is almost evenly divided between residential, commercial and industrial customers. In 2016 residential customers used 34%, commercial customers used 28% and industrial customers used 38%.

The city presently has only one large industrial customer, an injection molding plastics company. They represent over a 2 MW load on our system at an approximately 75% load factor.

It is approximately 35 + or – miles to any larger cities, with a number of smaller communities within that radius.

The population has grown very little over the last 20 years, but is also not decreasing, as with many small mid-west communities.

The city's peak load requirement has been pretty flat over the past several years, although the industrial customer has provided a very stable and levelized base load. Due to changes in power supply, the city rarely has to rely on the operation of their own power plant.

## 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.

The City of Osage City has four full time employees in the Electric Production Department. These include the Power Plant Supt., and three operators.

There are four full time Electric Distribution employees, including the Distribution Supt., one Journeyman Lineman, and two Apprentice Lineman.

The city has a Director of Utilities position that is responsible for all of the city's utilities including Power Production, Power Distribution, Water Treatment and Distribution, Wastewater Treatment and Collection and Natural Gas Distribution.

Funds are transferred from the Electric Fund to pay its share of Administrative costs.

These staff positions have limited resources and available time to administer energy related programs but are very sensitive to their customers needs and demands for low competitive prices.

## 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) |
|---|---|---|
| 2007 | 9.7 | 37,282 |
| 2008 | 8.7 | 34,145 |
| 2009 | 8.7 | 36,042 |
| 2010 | 9.7 | 36,470 |
| 2011 | 8.30 | 32,136 |
| 2012 | 8.30 | 35,580 |
| 2013 | 8.10 | 35,991 |
| 2014 | 8.95 | 36,153 |
| 2015 | 8.78 | 36,663 |
| 2016 | 8.67 | 36,134 |

## 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) |
|---|---|---|
| 2017 | 8.7 | 36,763 |
| 2018 | 8.8 | 36,947 |
| 2019 | 8.8 | 37,131 |
| 2020 | 8.9 | 37,317 |
| 2021 | 8.9 | 37,504 |
| 2022 | 9.0 | 37,691 |
| 2023 | 9.0 | 37,880 |
| 2024 | 9.1 | 38,069 |
| 2025 | 9.1 | 38,259 |
| 2026 | 9.2 | 38,451 |

Narrative Statement:

The city load has leveled out over the past few years but will occasionally see swings in their overall load based on the business conditions of their largest customer. For the 10 year forecast the demand and energy was escalated a half percent per year. This large customer is a significant risk factor in planning since their actions can substantially impact the overall system.

## 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)).*

Currently, the city receives a small allotment (752) kw of Western Area Power Authority (WAPA) power in summer months and 632 kW in winter. There is an additional 2750 kW of base load from GRDA. They also take a resource considered a firm price base load energy only product that has been arranged through their membership in the EMP3 power pool since 2014.

The EMP3 is a collaboration group of 12 Kansas cities that keep their own resources but work together to share excess resources or obtain additional supply contracts. The City has participated in this pool for 2 years to date. The pool is currently negotiating a contract for a small wind supply (estimating 1.8M kWh annually from this resource for the city). Additionally the pool is negotiating with another long-term fixed price product for a fixed monthly volume that would replace a significant portion of the current base resource.

The City is looking at extending the firm base resource for 10 years.

## 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.

| **Resource Description** (Identify resources as base load, intermediate, or peaking) | **Fuel Source** | **Rated Capacity (MW)** | **In-Service Date** (Year) | **Estimated Expiration/ Retirement Date** (Year) |
|---|---|---|---|---|
| Nordberg, FS6 138-HSC, peaking | Diesel & Nat. gas | 1.135 | 1956 | NA |
| Nordberg, FS6 138-HSC, peaking | Diesel & Nat. gas | 1.250 | 1960 | NA |
| Fairbanks Morse, 38TDD 8&1/8 peaking | Diesel & Nat. gas | 2.050 | 2012 | NA |
| Fairbanks Morse, 38TD 8&1/8 peaking | Diesel & Nat. gas | 2.070 | 1967 | NA |
| Fairbanks Morse, 38TDD 8&1/8 peaking | Diesel & Nat. gas | 2.070 | 1970 | NA |
| Fairbanks Morse, 38TD 8&1/8 peaking | Diesel & Nat. gas | 1.135 | 1983 | NA |
| Fairbanks Morse, 31AD 18 Peaking | Diesel & Nat. gas | 1.798 | 1984 | NA |
| Caterpillar, 3508, peaking | Diesel | .800 | 2000 | NA |
| Caterpillar, 3508, peaking | Diesel | .800 | 2000 | NA |

## 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.

| **Resource Description** | **Fuel Source** (If applicable) | **Contracted Demand (MW)** | **Type of Service** (Firm, Non-firm, Requirements, Other) | **Expiration Date** (Year) |
|---|---|---|---|---|
| WAPA | Hydro | Winter CROD-.632 Summer CROD-.759 | Firm | 9-30-2054 |
| GRDA | Coal, Hydro, Gas | 2.750 | Firm | 2026 |

| Resource Description | Fuel Source (If applicable) | Contracted Demand (MW) | Type of Service (Firm, Non-firm, Requirements, Other) | Expiration Date (Year) |
|---|---|---|---|---|
| NextEra Energy | Nuclear, Storage, Solar, Gas, Wind | .75 | Firm | 6-30-2020 |
| Market Energy | | | Non-firm | 12-31-2018 |
| | | | | |
| | | | | |

## 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)).*

| Program Description | Estimated Program Savings (MW and/or MWh if known) (Include annual impact and impact over the life of the program if known.) |
|---|---|
| The city has continued retrofitting non-efficient street lighting over the past several years. This project was initiated in 2012. | Estimated savings of 88 mWhs. Approximate savings of $5,800 annually. 880 mWhs over 10 years |
| The City has implemented a tree trimming program to both reduce outages and reduce losses through energy going to ground. | Estimated savings is not quantifiable but both energy savings and customer services benefits exist |
| Key Account Large consumer Energy Conservation Support Program. Focused on high usage equipment | Un-quantifiable due to usage patterns varying with sales. |
| Customer Peak Shaving | The City provides for a load shaping rate for their larger commercial customers to encourage higher load factors. Currently, they have balanced over 50 kW, savings of over $2000 per year. |
| Interruptible Load or load shaping | The City doesn't have any customers that could potentially participate in interrupting load at this time. They have implemented a new demand rate to encourage shifting their load from on peak to off peak times to increase load factor. The City will continue to evaluate opportunities with their customers on this initiative. |

| Program Description | Estimated Program Savings (MW and/or MWh if known) (Include annual impact and impact over the life of the program if known.) |
|---|---|
| | |
| Conservation/Energy Efficiency | The City regularly meet with customers on various energy efficiency products and opportunities. They offer energy audits for customers at a reduced cost in collaboration with large consumers that can impact the load shape of the city. |
| Key account management | Work with City customers to help them understand power and how to efficiently use it. We will sit down with large users of power and explain how we buy and generate power and how their usage pattern can impact these costs. |

| SECTION 5 | FUTURE RESOURCE REQUIREMENTS AND RESOUCE 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 has enjoyed recent cost savings by being a member of the KMEA run EMP3 pool. They have 2 of their resources under long term contracts without any options for change. The balance of their requirements are being met by a 2.5 year firm energy only supply from KCPL and load following from the pool.

The city currently has its own peaking capacity that is in compliance of The National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines Rules (NESHAP RICE). It will control emissions of formaldehyde, acetaldehyde, acrolein, methanol and other air toxics from diesel engines. This has increased city cost to maintain these units.

Recently, the city has experienced only moderate load growth, so it has not been necessary to go out and obtain new resources. The energy portfolio in place is adequate at this time but it will soon be time to replace the expiring KCPL resource. The EMP3 pool is currently evaluating a number of options which include significant percentages of renewable resources as a portion of the total purchased power.

## 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 |
|---|---|
| KPP – 20 year membership | The city reviewed joining the Kansas Power Pool (KPP). This would involve the city relying on the pool, and its staff, to make all arrangements and decisions on future power supplies. The pool has been in place since 2007. Cost is higher but more hands off. |
| Westar Full-Requirements Contract | The investor owned utility who serves Osage City offers a full requirement contract called GFR that establishes price based on current annual cost. |
| KCPL | The City explored a fixed price RTC energy only resource to fulfill the around the clock requirement |
| KMEA EMP3 Project | Osage City is continually evaluating their membership in the KMEA EMP3 pool |
| | |

## 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)).*

| Demand-Side Option | Applicability for Implementation or Further Consideration |
|---|---|
| Encourage residential and commercial load management program | The community has not focused on helping customers manage their load over the years but could invest some time and effort into helping them understand and manage their loads in the future. |
| Off-peak rates | The city has a rate ordinance that encourages consumers to take service with a demand and energy component and therefore use energy more efficiently or move to off-peak versus during time that the city demand is highest. Currently, there is a limit on the size and amount of load that can be served under this program while it has been "tested". The city is evaluating if it should be expanded. |
| 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. |
| Establish a City Energy Task Force | Identify areas within the city's own facilities where energy can be conserved and establish timelines to make improvements This is an area the City has not focused on but can easily put in place |
| Continuation of existing efforts | The efforts underway from Section 4 will be continued in the future. |
| | |
| | |

## 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 now takes service with the resources through EMP3 so that is the main driver in the resource decisions. The city actively participates in the EMP3 group decision making process when considering new resources.

Discussion Points for City of Osage City KMEA EMP3 Decisions

- Currently the City of Osage City has a contract with KMEA for all their requirements above their other project-based resources (GRDA and WAPA). That contract runs through December 31, 2019. Additionally, the city just began (1/1/17) taking a new resource (Next Era) on a 2.5 year contract within the EMP3 pool which will expire June 30, 2020. The EMP3 pool is regularly examining new resources to guarantee its members the most cost efficient, reliable resources through collaboration, synergies, and "volume buying" efforts.

- If the current "test" of the NextEra resource proves to be as reliable as claimed, the EMP3 group will attempt to negotiate a longer term contract for this resource. A significant portion of the NextEra supply is from renewable resources.

- The EMP3 group is currently negotiating for a block of power provided by wind generation farms.

- As a member of the pool, KMEA manages all aspects of project-based (GRDA & WAPA) resources as well as the new resource contract with NextEra, buying and selling in the SPP market to balance the city's supply/demand. For this service, KMEA charges a percentage fee for their management which resulted in a total fee of $85K in 2016 for administration and other costs. This amount represents approximately 4.8% of their total purchased power costs.

## SECTION 6 | ENVIRONMENTAL EFFECTS

**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)).*

**Electricity Generation**
Our balanced portfolio is responsive to factors like fuel prices as well as regulatory and legislative initiatives, In addition to our Policy No 6-1 Environmental Considerations adopted June 20, 1990 and reviewed March 21, 2012.

NextEra Energy is the primary resource other than the city's hydro-electric contracts (WAPA & GRDA [30% hydro]). NextEra believes that providing energy should have minimal impact on the environment. They generate electricity using wind, solar, water, natural gas and nuclear power, as well as energy storage–providing all clean or renewable energy to customers in a way that is sensitive to the environment. NextEra operates over 17,000 megawatts of wind and solar generation in North America and has been ranked the #1 green utility in the US and #2 in the world based on carbon emissions and renewable energy capacity.

Combined with the hydroelectric power through the GRDA and WAPA contracts, the vast majority of the city's power is being provided by clean/renewable resources. Renewables are generally not yet capable of providing uninterrupted electricity, so they can't be relied upon to serve our customers all the time. As part of the EMP3 pool, the city receives the balance of its power through participation in the SPP market to cover all imbalances. Approximately 13% of the city's total power supply was provided by the SPP market in 2016. We continually explore ways to broaden our sustainable strategy and comply with renewable energy mandates.

Osage City's generating facilities provide approximately 6,400 megawatts (MW) of capacity for our customers. They allow us to follow environmental regulations while reliably meeting customer needs at an affordable price.

## 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 is similar in structure to previous version discussed between city staff over meetings during the following groups:

1. City Staff
2. The City Council appointed Energy Committee
3. Various Council meetings

The Council meetings are covered in the local newspaper.

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 maintaining levels of internal generation to cover their full load, the effectiveness of their rates and ordinances and the importance of public power to the community. They have also voiced concern about rates compared to other cities and the uniqueness of having a customer who uses such a large percentage of their total sales.

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 Osage City are to maintain the lowest cost energy supply for their customers and be a good steward of natural resources and the environment. They want to supply reliable energy at a stable price 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.

Osage City is committed to advancing the efforts of public power so dealing with public power entities will remain a priority, if possible.

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)).*

| Proposed New Resource | Begin Date | Est. New Capacity (MW) | Milestones to evaluate progress and/or accomplishments |
|---|---|---|---|
| Buckeye Wind | 7/1/2018 | .15-.25 | July 2019 |
| NextEra firm base resource | 1/1/2017 | .75 | January 2018 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## 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 |
|---|---|---|---|---|
| Commercial Eff Program | 12/2016 | Unk | Unk | 12/2018 |
| Power factor Improvement | 12/2017 | Unk | Unk | 12/2018 |
| Metering upgrades | 12/2018 | Unk | Unk | 1/2020 |
| Rate Design | 1/2018 | 50 | 100 Mwh | 1/2020 |
| Line Clearance Program | 1/2017 | unk | unk | 1/2018 |
| Infrared Scanning | 1/2017 | unk | unk | 1/2018 |
| | | | | |
| | | | | |

**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)).*

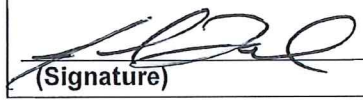
City Staff will meet quarterly on this to determine that tasks are being done towards meeting the IRP. A report will be given to the City Council twice a year to update on progress and public council meeting will be updated annually.

The baseline will be calendar year 2016 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 Osage City 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)).*

| | |
|---|---|
| Joey Lamond<br>(Name – Print or type) | Director of Utilities<br>(Title) |
|  <br>(Signature) | 9-5-2019<br>(Date) |

**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. |
| X | 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