



*City of Eudora, Kansas*

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*Electric Department*

City of Eudora

## Eudora WAPA RMR IRP 5 Year Report

Eldon Brown  
Electric Superintendent

## INTEGRATED RESOURCE PLAN (IRP)

Western Area Power Administration's (WAPA) 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 (EPAAct). A WAPA customer is any entity that purchases firm capacity with or without energy, from WAPA under a long-term firm power contract. Integrated resource planning allows customers to meet the objectives of Section 114 of EPAAct.

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. WAPA 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: Vice President of Power Marketing  
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.

WAPA's Energy Services Web site

(<https://www.wapa.gov/EnergyServices/Pages/energy-services.aspx>) provides extensive information on integrated resource planning and reporting requirements. If you have questions or require assistance in preparing your IPR, contact your WAPA regional Energy Services representative.

## IRP Content

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# INTEGRATED RESOURCE PLAN (IRP) 5-Year Plan

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

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

<b>Reporting Dates:</b>	
<b>IRP Due Date:</b>	Past Due
<b>Annual Progress Report Due Date:</b>	July 1, 2019

<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 Eudora
<b>Address:</b>	4 E. Seventh St.
<b>City, State, Zip:</b>	Eudora, KS 66025
<b>Contact Person:</b>	Eldon Brown
<b>Title:</b>	Electric Superintendent
<b>Phone Number:</b>	785-542-2153
<b>E-Mail Address:</b>	ebrown@cityofeudoraks.gov
<b>Website:</b>	www.cityofeudoraks.gov

<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)	01/01/2017
Reporting Period End Date (mm/dd/yyyy)	12/31/2017
<b>Energy Sales &amp; Usage</b>	
Energy sales to Ultimate End Customers (MWh)	40,584
Energy sales for Resale (MWh)	0
Energy Furnished Without Charge (MWh)	0
Energy Consumed by Respondent Without Charge (MWh)	2029
Total Energy Losses (MWh entered as positive number)	3887
Total Energy Usage (sum of previous 5 lines in MWh)	46500
<b>Peak Demand (Reporting Period)</b>	
Highest Hourly Summer (Jun. – Sept.) Peak Demand (MW)	12.22
Highest Hourly Winter (Dec. – Mar.) Peak Demand (MW)	7.4
Date of Highest Hourly Peak Demand (mm/dd/yyyy)	07/20/2017
Hour of Highest Hourly Peak Demand (hh AM/PM)	6:00 PM
<b>Peak Demand (Historical)</b>	
All-Time Highest Hourly System Peak Demand (MW)	13.0
Date of All-Time Hourly System Peak Demand (mm/dd/yyyy)	
Hour of All-Time Hourly Peak System Demand (hh AM/PM)	
<b>Number of Customers/Meters (Year End of Reporting Period)</b>	
Number of Residential Customers	2369
Number of Commercial Customers	146
Number of Industrial Customers	1
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 Eudora supplies electricity to about 6500 people in a square mile area, with about 146 commercial accounts, 1 industrial account and 2369 residential accounts. Our largest commercial customers are the School district buildings the industrial load is about 1400 KW with a 2500 KVA transformer. We have a new AMI system in place for meter reading but it has the potential of doing a lot more things.

**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.

Line Crew 2 apprentices- 1 Journeyman and Electric Superintendent  
City Hall takes care of paper work if needed and limited budget

**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	11.9	41,700
2008	11.6	42,400
2009	11.7	41,200
2010	12.6	46,700
2011	13.0	47,300
2012	12.3	46,100
2013	12.8	46,500
2014	12.8	47,800
2015	12.0	47,600
2016	12.4	48,500

**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	12.3	45,100
2018	12.4	45,300
2019	12.5	45,500
2020	12.6	45,800
2021	12.6	46,000
2022	12.8	46,200
2023	12.8	46,500
2024	12.9	46,700
2025	12.9	46,900
2026	13.0	47,100

Narrative Statement:

The load growth is estimated to be 0.49% or less per year with demand increasing very little.

**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)).

In addition to a WAPA allocation, the City of Eudora currently has a full requirements agreement with KCP&L for all capacity and energy needs. The contract with KCP&L has been extended to the year 2028.

**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>
Full Requirements Contract with KCP&L	System Product	Applicable to monthly peak load (6-12 MW)	Firm	June 1, 2028
Western Area Power Administration	Hydro	.605	Firm	2054

**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.)
With the addition of AMI system, the city will be able to have closer & more accurate readings and less rereads which will show some savings to labor and allow man power to be used elsewhere.	

**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 of Eudora has a system product from KCP&L which includes multiple technologies from a fuel source perspective (nuclear, coal, natural gas, and wind). In addition, the City of Eudora receives a federal hydro allocation from Western. There are no current RPS standards in the State of Kansas. However, the City of Eudora realizes the importance to have a diverse power supply portfolio and we are looking at opportunities to add flexibility in our current power supply agreement with KCP&L.

**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 WAPA 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)).

<b>Supply-Side Option</b>	<b>Applicability for Implementation or Further Consideration</b>
Possible extension with KCP&L to 2028	The City of Eudora has extended our current capacity and energy agreement with KCP&L until 2028.
Solar Project in possible future	With the ITC's sun setting and expiring in the not so distant future, there might be a possibility for Eudora to either build a solar farm in Eudora or participate in a solar PPA.

**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
	The addition of the AMI system will reduce meter reading errors, allow for closer attention to line loss calculations and KWH usage, along with the ability to meter green energy usage. In addition, in 2019 a system study of Electrical needs will be performed.

**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 Eudora was a customer of Westar for many years and decided to make a switch to a different provider due to escalating energy prices. There are no current RPS standards in Kansas, but the City feels that we are getting a slice of many technologies with our current arrangement with KCP&L. With no current RPS, economics is the main driver in our current power supply portfolio and will be the main driver if we decide to extend our current arrangement with KCP&L.

**Environmental Effects:**

To the extent practical, WAPA 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). WAPA 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)).

The City of Eudora has a system product from KCP&L from multiple fuel sources including wind, nuclear and natural gas which a very minimal impact on carbon emissions. In addition, the City of Eudora is interested in the possibility of participating in a low cost wind PPA or possibly looking into a solar project within in the City limits or nearby over the next couple of years.

**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)).

Used a survey of future needs that the citizens would like to see done. Developed a Master Plan for Parks, doing study for electric, water, and sewer and done cost of service study and separated the different rates with tariffs for each.

**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)).

Hope to have more options for the rate payers in the future.

**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>
Possible extension of current system product (capacity and energy) with KCP&L	2018 or 2019	6-12 MW	Eudora will continue to evaluate long-term economics with JAA (KMEA) and third-party consultant
Solar opportunity	2019-2020	.3 MW	Eudora will continue to evaluate through our JAA is participating in a solar project is economical

### 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
Continue Tree trimming program	2018	Unknown	unknown	
Programmable Thermostats in City buildings				
½ owner of Infrared machine with Baldwin City				
Upgrading Distribution lines and sub station feeders				

**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)).

We will use the information that we collect from the hourly and daily reads of the AMI system to have more accurate information of the electric system and where the loads are at. This will allow us to determine where and when to do upgrades and show growth trends.

**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>Eldon Brown</b> (Name – Print or type)	<b>Electric Superintendent</b> (Title)
<i>Eldon Brown</i> (Signature)	<b>10-15-2018</b> (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 WAPA'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:

<input type="checkbox"/>	Customer will post the approved IRP on its publicly available website and send the URL to WAPA.
<input checked="" type="checkbox"/>	Customer would like WAPA to post the approved IRP on WAPA's website.

**IRP Updates:**

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

**IRP Annual Progress Reports:**

WAPA'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 WAPA's on-line reporting tool, which can be accessed at:

<http://www.wapa.gov/FormsAuth/Login.aspx?ReturnUrl=/irpsubmit/irpsubmit.aspx>