

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: 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.

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

Customer Name:
City of Norton

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

Reporting Dates:	
IRP Due Date:	May 4, 2017
Annual Progress Report Due Date:	May 4 - annually

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 Norton
Address:	301 East Washington
City, State, Zip:	Norton, Kansas, 67654
Contact Person:	Dan Sisk
Title:	Electric Supervisor
Phone Number:	785-877-5030
E-Mail Address:	ntlinedept@ruraltel.net
Website:	www.cityofnorton.com

Type of Customer: Check one as applicable.	
<input checked="" type="checkbox"/>	Municipal Utility
<input type="checkbox"/>	Electric Cooperative
<input type="checkbox"/>	Federal Entity
<input type="checkbox"/>	State Entity
<input type="checkbox"/>	Tribal
<input type="checkbox"/>	Irrigation District
<input type="checkbox"/>	Water District
<input type="checkbox"/>	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 you 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)	24,634
Energy sales for Resale (MWh)	0
Energy Furnished Without Charge (MWh)	36
Energy Consumed by Respondent Without Charge (MWh)	1352
Total Energy Losses (MWh entered as positive number)	2723
Total Energy Usage (sum of previous 5 lines in MWh)	28,745
Peak Demand (Reporting Period)	
Highest Hourly Summer (Jun. – Sept.) Peak Demand (MW)	8.7
Highest Hourly Winter (Dec. – Mar.) Peak Demand (MW)	4.7
Date of Highest Hourly Peak Demand (mm/dd/yyyy)	7-21-16
Hour of Highest Hourly Peak Demand (hh AM/PM)	15:00 PM
Peak Demand (Historical)	
All-Time Highest Hourly System Peak Demand (MW)	9.5
Date of All-Time Hourly System Peak Demand (mm/dd/yyyy)	7-20-2005
Hour of All-Time Hourly Peak System Demand (hh AM/PM)	16:00 PM
Number of Customers/Meters (Year End of Reporting Period)	
Number of Residential Customers	1480
Number of Commercial Customers	294
Number of Industrial Customers	2
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.

Norton, the "Pheasant Capital of Kansas" and county seat of Norton County, is located 11 miles south of the Kansas Nebraska state line and 125 miles east of the Kansas Colorado state line in northwest Kansas at the intersection of the U.S. Highway 36 and U.S. Highway 283.

Norton is host to Prairie Dog State Park located at Keith Sebelius Reservoir, which provides year round outdoor activities including fishing, hunting, camping, and wild life viewing.

The City of Norton offers its residents electricity, water, sewer, and refuse removal. Natural gas and cable service are provided by independent providers, which Norton receives a franchise fee from. The City also offers a public swimming pool, tennis courts, and various park facilities.

The major employers in the Norton area are the Norton County Hospital, Norton Correctional Facility, Valley Hope Treatment Center, New Age Industrial, Miltech, Natoma Corporation, Nex-Tech and the Kansas Department of Transportation.

Norton seems to be growing and have a fairly strong economic structure.

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.

Norton Electric Department has 3 full-time linemen

Norton City Office

1 Administrator

1 City Clerk

1 Billing Clerk

1 Payroll Clerk

1 Desk Clerk

Electric staff is maintaining the systems and replacing old material in systems. We have received a CDBG Grant to fix substations; we are limited by funding regarding what improvements can be made.

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	8-3	31158
2008	8-1	31093
2009	7-9	29186
2010	8-2	30413
2011	8-5	30482
2012	8-8	31129
2013	8-2	30598
2014	8-3	29048
2015	8-5	29275
2016	8-7	28745

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	32356
2018	8.7	32680
2019	8.8	33006
2020	8.8	33339
2021	8.8	33670
2022	8.8	33701
2023	8.8	33721
2024	8.8	33723
2025	8.8	33740
2026	8.8	33801

Narrative Statement:

Over the past 10 years, the City of Norton has averaged a peak demand of 8.6 MW and an average total energy of 29895 MW.

Norton's population has stabilized over the past 10 years, but it is expected to hold steady in the future. The City does not see any large electric customers moving into the Norton area. Norton anticipates maintaining the current large electric users, and growth will be little at best.

Norton is forecasting a 1% annual growth in peak demand and energy use over the next 10 years. However, the biggest contributing factor in change to year-to-year electrical use for the City has been and will be the weather and might decrease because of solar energy.

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)).

Norton is in a contract with Prairie Land Electric, which is the local rural electric company for the Norton area. Prairie Land is also one of the 6 member cooperative of Sunflower Power.

Under the new contract Prairie Land Electric will supply power to the City of Norton at cost plus 1 mill. This contract will be for 10 years.

Norton also received a 1789 KW summer allocation and a 1382 KW winter allocation from Western Area Power Administration. In 2014, WAPA extended Norton's contract through September 30, 2054.

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)
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.

Resource Description	Fuel Source (If applicable)	Contracted Demand (MW)	Type of Service (Firm, Non-firm, Requirements, Other)	Expiration Date (Year)
WAPA		1,789 summer 1,382 winter	firm	2054
Prairie Land Electric		Load following	firm	2023

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.)
Replace 100 & 400 watt HPS street lights with LED lights. Ongoing approximately 6 lights per month	Overall savings are estimated at 65 % which includes reduced maintenance
Christmas decorations -went to all LED's (ongoing)	Estimate same as above 65%
City buildings fixtures replaced with more efficient fixtures as required	Increase efficient usage
CDBG Grant to update 3 substations in town	Reduce losses and increase safety
New transformer and regulators at Prairie Land substation south of Norton	Increase voltage and reduce losses
Working on power factor and peak demand with customers	Install meters that read power performance and peak demand
Installing more efficient equipment	As needed basis

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 Norton is under contract with Prairie Land Electric starting January 1st, 2013 for 10 years to supply the city with its 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 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)).

Supply-Side Option	Applicability for Implementation or Further Consideration
Current contract with Prairie Land Electric	Current contract with Prairie Land Electric will be sufficient to meet our requirement until 2023
Solar installations by customers	Investigating costs and reliability
Solar Gardens	Investigating contract provisions

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
Continue to provide information to public on energy conservation	Information is available at the City Office
Replace motor and pumps at city facilities with energy efficient equipment	This will be on a as needed basis
Work with Prairie Land on improving power factor demand	

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)).

Norton entered into a 10-year contract with Prairie Land Electric on January 1st, 2013. Prairie Land Electric will provide Norton with power at cost plus 1 mill, which provides the City with an economic power resource for a 10-year period.

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)).

Our current power supplier is involved in wind generation and also complies with all EPA requirements.

Norton takes delivery of WAPA power which is a renewable hydroelectric energy source reducing the need for fossil fuel generation.

Norton will continue to work with the large electric users and the general public to encourage them to conserve energy.

All of the above actions help to minimize the impact on the environment by either reducing emissions, utilizing renewable resources, or reducing energy use.

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 5 year IRP report was reviewed by the Norton City Administrator and the Norton City Council, and copies are available to the public at the City Office.

Norton City Council approved the IRP 5 year plan for the City of Norton on May 16th, 2017.

The City will continue to have copies available for public review at the City Office.

Additional comments will be accepted throughout the year and will be implemented in the yearly IRP report.

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 City of Norton is in a 10 year contract with Prairie Land for all power requirements above the City's WAPA allocation. The City will work with Prairie Land to insure the most efficient electric system as possible.

The City Electric Department will continue to maintain and update the City's electric distribution system.

Overall, the City of Norton will continue to promote the efficient use of energy to its customers.

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
Prairie Land Electric Power Purchase Contract	01-01-2013	Load following	10 year contract in place

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
Light updating in the city office	2011	Unknown	Unknown	Completed
Update street lighting	Cont.	Unknown	Unknown	Replace with new fixtures as old fixtures fail
Upgrade distribution system as needed,	Cont.	Unknown	Unknown	Upgrade as needed and funds available
Tree trimming	Cont.	Unknown	Unknown	Completed annually as part of maintenance plan
CDBG – update 3 sub-stations	2017	Unknown	Unknown	2018

Measurement Strategies:

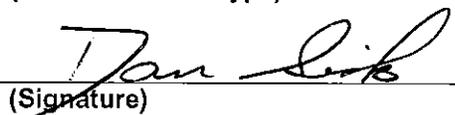
Describe your plan to evaluate and measure the actions and options identified in the IRP to determine if the IRP's objectives are being met. The plan must identify and include a baseline from which you will measure the IRP implementation's benefits. (See 10 CFR § 905.11 (b) (6)).

The City will annually review its peak demand and energy use included in this plan and make adjustments as needed for significant deviations.

Once a year, the IRP will be reviewed, to evaluate progress versus the plan. Norton will submit an annual IRP progress report as required by the Energy Planning and Management Program. The annual progress reports will be available for public review.

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)).

Dan Sisk	Electric Distribution Supervisor
(Name – Print or type)	(Title)
	June 7 th , 2017
(Signature)	(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>