

INTEGRATED RESOURCE PLAN (IRP)

Date: 12/01/12

IRPs shall consider all reasonable opportunities to meet future energy resource requirements using Demand Side Management techniques, new renewable resources and other programs that will provide retail consumers with electricity at the lowest possible costs, and minimize, to the extent practicable, adverse environmental effects.

To meet your Integrated Resource Planning reporting requirement, complete the following. Unaddressed items will be deemed incomplete and not eligible for approval. Western reserves the right to require customers to provide any supporting back-up data used to support and develop this report.

Customer Contact Information:

(Provide contact information for your organization. Contact person should be able to answer questions concerning the plan)

Customer Name:	Colorado River Agency Electrical Services
Address:	12000 1st Avenue
Contact Person:	Roger Hawkins
Title:	Public Utilities Specialist
Phone Number:	928-669-7155
E-Mail Address:	roger.hawkin@bia.gov
Website:	

Type of Customer:

(Check one as applicable)

<input type="checkbox"/>	Municipal
<input type="checkbox"/>	State
<input checked="" type="checkbox"/>	Federal CY 2012 - 2016
<input type="checkbox"/>	Irrigation District
<input type="checkbox"/>	Water District
<input type="checkbox"/>	Other (Specify) _____

Identification of Resource Options (considerations that may be used to develop potential options include cost, market potential, consumer preferences, environmental impacts, demand or energy impacts, implementation issues, revenue impacts, and commercial availability):

Supply-side options:

(Including, but not limited to: purchase power contracts and conventional and renewable generation)

List existing supply-side options:	List future supply-side resource options considered and evaluated:
PD-P	None at this time
CRSP	
Headgate Rock Generation Dam	
Purchase "Spot Market"	

Demand-side options:

List existing demand-side options:	List future demand-side resource options considered and evaluated:
Street lights	Bill stuffers, suggestions to reduce energy usage
Irrigation pumps	
Upgrade Bulbs	
SCADA	
Evaluations of equipment & Technology	

Resource options chosen:

(Provide a narrative statement that describes the option chosen and clearly demonstrates that decisions were based on a reasonable analysis of the options)

PDP
 CRSP
 Headgate Rock Generation Dam
 Spot Market

At this time no new resources are needed and will be annually evaluated for future loads. Load growth is less than 1% per year and a few years have actually been negative. Very small amount of CRA's energy is purchased on the spot market.

Action Plan:

Specific Action Items to be implemented over the Next 5 Years:

(Lists are not meant to be inclusive, complete and provide other action items as applicable)

Energy Consumption Improvements:

Proposed Items	Begin Date	End Date	Est. kW capacity savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Boiler, Furnace, air conditioning retrofits					
Weatherization, insulation					
storm windows/doors					
Insulation of air ducts, boilers, pipes, etc.					
Clock thermostats and equipment system timers					
Heat pumps					
Energy audits					
Public education programs		On going			Note: Monthly bill stuffers and/or notes on invoices
Loan arrangements or rebate program for energy efficient equipment					As needed from WAPA, infrared camera
Use of infrared heat detection equipment					
Energy efficient lighting		On going			Approx. 50 per year
Equipment inspection programs		On going			Weekly inspections
Electric motor replacements					
Upgrading of distribution lines/substation equipment		On going			Substation and Distribution line upgrade and maintenance
Power factor improvement					
Other: 69 KV loop		06/01/2015			completion date is estimated

Renewable Energy Activities:

Proposed Items	Begin Date	End Date	Est. kW savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Solar thermal/photovoltaic projects					
Day lighting technologies					
Active solar installations					
Biomass/refuse-derived fuels					
Geothermal projects					
Small-scale hydro projects					
Other: Hydro Generation					In the process of getting certified as renewable

Load Management Techniques:

Proposed Items	Begin Date	End Date	Est. kW savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Load management devices/systems					
Demand control techniques and equipment					
Smart meters or automated equipment	On going				Approximately 30% complete
Time-of-use meters					
Other: SCADA	On going				Radio communication upgrades/installed 2014

Rate Design Improvements:

Proposed Items	Begin Date	End Date	Est. kW savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Cost-of-service pricing					
Elimination of declining block rates					
Time-of-day rates					
Seasonal rates					
Interruptible rates					
Other: Rate study		2016			No rate increase since 1986

Agricultural Improvements:

Proposed Items	Begin Date	End Date	Est. kW savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Irrigation pump utilization/scheduling		On going			New SCADA 98% delivery
Irrigation pump testing or efficiency improvements					
Electric motor replacement		On going			Electric Motors are being updated on an as needed basis.
Photovoltaic pumping systems					
Ditch lining or piping		On going			Upgrading/new gates/ 6 miles lined ditches
Laser land leveling		On going			90% laser leveled
Pumpback systems					
Water conservation programs		On going			New SCADA system, increase efficiency to 85%
Other: Lift pumps					2 newer more efficient 2014

Environmental Effects:

(Provide a narrative statement that sets forth the efforts taken to minimize adverse environmental effects of new resource acquisitions)

In the next five years CRA does not anticipate adding new resource acquisitions, therefore, there will be environmental impact.

Public Participation:

(Customers must provide ample opportunity for full public participation in preparing and developing an IRP. Provide a brief description of 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 it responded to the public comments)

The CRA's public participation process is normally by way of Notices, published in the area newspapers, message on or flyers attached to invoices asking for either written comments or inviting personal inquires at its Headquarters in Parker, Arizona. Also notifications are posted in public places, such as CRA's Finance office, Post Office etc. The above process was just used to notify the public of changes to CRA's Operations Manual.

See attached

Future Energy Service Projections:

(Provide a load forecast to show expected growth or expansion; or a narrative statement concerning expected future growth)

Calendar Year	Peak Demand (kW)	Total Energy (kWh)
2012	22,967	87,680,808
2013	23,197	88,557,616
2014	23,429	89,443,192
2015	23,663	90,337,624
2016	23,890	91,241,000

Or Narrative Statement:

CRA's service area has shown little to no growth over the last 14 years. Growth was calculated at 1 percent for future growth.

Measurement Strategies:

(Provide a brief description of measurement strategies for options identified in the IRP to determine whether the IRP's objectives are being met. These validation methods must include identification of the baseline from which a customer will measure the benefits of its IRP implementation)

Ongoing process, not an exact time frame, Approximately 50 Street lights are changed out or replaced per year. Services to pumps are up graded one to two per year.

IRP Approval:

(Indicate that all of the IRP requirements have been met by having the responsible official sign below; or provide documentation that the IRP has been approved by the appropriate governing body)

Charles Mack	Supervisory Electrical Engineer
(Name – Print or type)	(Title)
<i>Charles F. Mack</i>	1-17-14
(Signature)	(Date)

Other Information:

(Provide/attach additional information if necessary)