

ROOSEVELT COUNTY ELECTRIC COOP., INC.

2007 INTEGRATED RESOURCE PLAN

Roosevelt County Electric Coop., Inc.

Integrated Resource Plan

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UTILITY BACKGROUND

Roosevelt County Electric Coop., Inc. (RCEC) is a rural utility headquartered in Portales, New Mexico. The Cooperative serves all of Roosevelt County and portions of Curry, Chaves and DeBaca Counties in New Mexico. In addition to serving rural areas, RCEC serves the towns of Arch, Causey, Dora, Elida, Floyd, Kenna and Milnesand and other small communities located within the service area.

RCEC's service area covers approximately 3,600 square miles and is located within the Southern High Plains district of New Mexico. The climate zone is semiarid with an average temperature of 57.7°F and an average rainfall of 16.28 inches per year.

As of December 2006, the Cooperative had 2,746 miles of distribution line and was serving 2,467 members (6,007 meters) in residential, commercial, irrigation and oil well pumping rate classes. Also included within the 5,657 meters are the various lighting classes served by the Cooperative: street lights, yard lights and commercial small lights. RCEC serves its members through nine Cooperative owned, distribution substations and has purchase contracts with Western Area Power Administration (WAPA) and Southwestern Public Service Company (SPS), a subsidiary of XCEL Energy.

The Cooperative's peak demand for 2006 was over 34 megawatts, with energy sales exceeding 159 million kW hours. The Cooperative's growth rate for the ten year time period 1996 – 2006 was 25% for energy. This growth is projected to slow down due to water supply issues. The decline in underground water supplies will continue to affect crop irrigation as well as the many dairies located within our service area.

To meet the future power needs of the members, RCEC shall continue to evaluate the most cost-effective way to provide for future power needs. The considerations will focus on demand-side resource programs and supply-side resources.

With the utility industry changing as rapidly as it has the past couple of years, it's difficult to make any long-term plans because of the uncertainty in the industry. Flexibility will be the key for RCEC to compete in a changing market. Fortunately, restructuring issues plaguing the electric industry in New Mexico have been delayed through 2007.

UTILITY PROFILE DATA (2006)

System Peak: 34,248	Date: July 20, 6:00 P.M.
Energy Sales:	159,679,787 (excluding losses)
Annual Load Factor:	53.3
Generation and Purchases:	
A. Energy generation of plants....	N/A
B. Contract energy purchases....	
1. Western Area Power....	11,994,086
2. Southwestern Public Service Co....	184,327,604
C. Total generation/purchase....	59,679,787
D. System losses....	19,628,789
E. System losses in percent....	10.95
F. Total energy to customers....	159,679,787

Number of customers and energy delivered by customer class:

	<u>Customers</u>	<u>KWHs</u>
Residential....	3,645	36,618,329
Commercial....	1,048	46,386,353
Industrial....	2	5,939,400
Street Lighting....	5	77,280
Irrigation....	<u>1,363</u>	<u>54,435,685</u>
	6,063	159,679,787

LOAD FORECASTING INFORMATION

RCEC utilizes its historical data to project future load growth. Although there are several methodologies used in the electric industry to forecast load patterns, this method has been effective for RCEC.

RCEC's load profile is mainly composed of Residential, Commercial, Industrial and Irrigation services. The Residential class consists of all farm and home uses not provided for in a special class. Growth continues in both the number of services in this rate class as well as within the kWh consumption per customer. There are also seasonal loads (mainly pressure pumps and electric fences) within this rate class however these services have a very small usage and are turned on and off several times a year.

The Commercial rate class is separated into two groups, small commercial and large commercial. The small commercial class of consumers covers all services pertaining to small business, oil field pumping and other related services with a less than 50HP demand.

The large commercial class of consumers covers all services pertaining to large business, oil field pumping and other related services with a 50HP demand and greater. There has been significant growth in this class primarily because of the increasing number dairy operations in our service area.

There exists only one Industrial load (greater than 1000KVA) on the Cooperative's system as of 2006.

The Irrigation class is composed of wells to pump water, center pivots to spread the water and booster pumps to boost the water where it is needed. The demand is dependant upon the annual precipitation and ground water levels. There is a major concern with the declining water level in underground water supplies and many area farmers are now utilizing water conservation techniques. In the latter part of 2000 and early 2001 there was a large number of irrigation services added to our system as a result of the high cost of natural gas. Since this time, we've converted several more wells as the prices of natural gas continue to increase.

RCEC uses the Power Requirement Study prepared for Rural Utility Service to project load forecasting. The Power Requirement Study is required every three years, but updated on an annual basis. The Long Range Forecast is also used for system planning needs. This is updated as needed. Recorded updates are in 1956, 1964, 1972, 1984 and 1995. As the system requires changes the forecast requirements are then updated also. This is reflected in our Work Plans that are prepared for Rural Utility Service.

EXISTING ENERGY RESOURCES

Reviewing RCEC's current energy sources, allocations, and pricing will be a good starting point when evaluating and comparing alternative supply and demand-side resources. RCEC has two separate purchase power contracts. Southwestern Public Service Company (subsidiary of XCEL Energy) is an all-requirements contract through 2015 but contains provisions for the Cooperative to obtain power from Western Area Power Administration.

Western Area Power Administration

WAPA's current contract with RCEC has been extended through September 2024. The Cooperative's demand and energy allotment fluctuates depending upon water flows and other restrictions.

Listed below are RCEC's purchases for 2006:

2006 Off Peak Purchases:	
	<u>AHP Energy</u>
January	965,859
February	859,902
March	941,542
April	1,051,633
May	1,167,680
June	831,792
July	1,097,763
August	1,293,097
September	892,590
October	933,167
November	925,071
December	<u>1,033,990</u>
Totals:	<u>11,994,086</u>
AHP Energy charges:	\$0.01043

Southwestern Public Service Company

Southwestern Public Service Company has served RCEC since 1939. RCEC currently has a power contract that expires December 31, 2015. The contract has a five-year notice of cancellation provision that may be exercised no sooner than the year 2010. As mentioned earlier, RCEC has been very satisfied with Southwestern Public Service Company with respect to the price and the service they have provided.

All scheduling of WAPA power and additional load requirements for RCEC are handled between WAPA and Southwestern Public Service Company personnel. This allows the Cooperative to utilize its resources more efficiently instead of having a full-time planner/power scheduler. There are so many unknown variables when trying to forecast loads that it can be financially disastrous for a utility if they miss a daily or hourly forecast. Southwestern Public Service Company's demand charge for customer shall be the sum of the non-coincident measured demands from all delivery points, but not less than 65% of the highest sum of the non-coincident measured demands established in the preceding 11 months. Energy is billed at a flat rate plus fuel cost adjustments.

Listed below are the 2006 purchases from Southwestern Public Service Company:

2006 Allocation:			
	<u>KW Billed</u>	<u>KW Delivered</u>	<u>Energy</u>
January	24,826	24,054	14,457,843
February	26,227	25,412	13,143,798
March	27,137	28,007	15,928,463
April	30,378	29,434	16,903,450
May	31,544	30,564	17,112,759
June	34,852	33,769	19,391,136
July	35,347	35,347	20,763,471
August	32,021	32,021	16,125,090
September	25,916	25,916	13,476,379
October	25,910	25,910	12,566,529
November	22,976	22,570	12,081,790
December	<u>23,592</u>	<u>22,976</u>	<u>12,376,896</u>
Totals:	<u>340,726</u>	<u>335,980</u>	<u>184,327,604</u>
Capacity charges:	\$ 3.88 per kW		
Energy charge:	\$ 0.002 per kWh	\$ 0.004 per kWh sales for resale	
Service Availability	\$ 364.00		
Fuel Cost Average	\$ 0.0353 per kWh		
* Resale values included in the monthly Energy totals			

CURRENT RESOURCE OPTIONS

ERC Loan Program

RCEC's Energy Resource Conservation (ERC) loan program began in 1987. Since that time, approximately 348 consumers have taken advantage of the 5% loans for the installation of insulation, storm windows and doors and heat pumps. Approximately \$1,919,287.00 has been loaned to consumers. These secured loans for energy improvements will in some cases pay for themselves within two-to-five years.

LEPA Loan Program

RCEC's Low Energy Precision Application (LEPA) loan program began in 1997. As of 2006, \$511,616.00 has been loaned for LEPA sprinkler systems. These sprinkler systems show 97% efficiency due to a significant reduction in losses from evaporation and wind drift. As a result these systems save significant amounts of energy compared to other irrigation application methods. They also promote water conservation by reducing water losses from about 40% down to about 5% when compared to conventional furrow irrigation using underground pipe.

The table shows the following irrigation system inputs that were used in comparing a typical center pivot system with one using LEPA technology.

	LP Center Pivot	LEPA
application efficiency	.80	.97
kWh/ac-ft	5128	4229
hp	36.5	19.5
gpm	546	450
operating pressure	35 psi	13 psi

Interruptible Rate

RCEC has an interruptible rate available for commercial small, irrigation, dryer service, commercial large and oil well pumping with a load factor greater than 50% during the months of June through August.

Annual rebates for this rate are \$11.00 per KW or \$8.21 per horsepower controlled. This rebate will be paid in October of each year.

Interruptions are permitted from June through August from 12:00 noon to 10:00 PM. A maximum of 120 hours per year of interruption is possible. There is an initial three-year contract required, with year-to-year extensions until the member provides RCEC with a three-month notice of cancellation.

IDENTIFYING OTHER RESOURCE OPTIONS

Having reviewed RCEC's current resources, the next step in the process would be to identify other resources that would compliment RCEC's current resources and provide continued reliability at a competitive price.

There are several supply-side and demand-side options to consider and each option needs to be evaluated to determine cost effectiveness. RCEC has been able to compare various supply-side and demand-side options to determine which resources would be most cost effective for the Cooperative. Along with financial issues there are environmental issues, societal issues, and concern regarding future natural resources which issues must be considered in planning for the future.

From a supply-side standpoint, the Cooperative reviewed both conventional and renewable resources. From a demand-side perspective, the Cooperative considered what would be best for the customer and the utility. In reviewing these two types of resources, RCEC will need to consider the various issues that affect our society as a whole, as well as determining the economics of pursuing these resources as viable and long-term alternatives.

Supply-Side Options

Combustion Turbine (CT)

Combustion turbines in the past have been used primarily for peaking generation because of low capital cost despite high fuel cost. With increased natural gas availability and lower wholesale prices, natural gas is viewed as a viable fuel option when considering combustion turbine generation. Installing units smaller than 25MW are not considered as economical as larger units, although as efficiencies improve so will products. Listed below is a breakdown of the expected cost as previously determined:

Expected Operating Costs:

Leveled Annual Plant Investment	\$ 548,200.00
Leveled Annual O&M and Fuel Cost	\$2,548,702.00
Total Leveled Annual Costs	\$3,096,907.00
Average Capacity Factor Over Service Life	65%
Average Annul Generation (kWh)	56,940,000
Installed Capacity (kW)	10,000
Leveled Unit Cost (mills/kWh)	54.39

These estimated figures, when compared to RCEC's wholesale power cost, present an uneconomical option at the present time.

Biomass (Municipal Solid Waste MSW):

A feasibility study was performed in 2005 regarding open-loop anaerobic digestion and biogas production for electrical power generation. It was determined that the methane gases produced can be captured and used as a fuel source to create electrical power at an estimated cost range of \$0.03 to \$0.045 per kW.

Demand-side Options

Since Demand Side Management (DSM) programs are designed to reduce the demand for power, many utilities in need of additional capacity and energy consider DSM programs as an alternative to increased generation. The reason for this is some DSM programs are more cost effective when compared to the cost of new generation. Less generation will result in fewer air pollutants and will help preserve natural resources for future generations. Less generation also means less revenue for utilities.

RCEC is dependent on utility sales to maintain financial stability and to provide many services to the membership that would otherwise not exist without certain subsidies. Therefore, RCEC is faced with the difficult decision of considering DSM programs that are cost effective yet having to deal with the issue of lower revenues. Raising rates is one way to compensate for the lost revenue but that does not always benefit the majority. The following presents four basic perspectives to consider when evaluating DSM programs.

Participant's Perspective

Consumers must weigh the initial capital cost, ongoing operation and maintenance expenses, and any removal cost for old equipment. The benefits are lower utility bills and rebates from utilities, if any.

Ratepayer Perspective

This affects those ratepayers who choose not to participate as they could see electric rates increase to support DSM programs, and as all ratepayers of RCEC are also member/owners, even if rates do not rise, program costs will affect all members through the capital credit allocation process. The costs are revenue losses from the programs, utility cost for operating the program, and rebates paid, if any. The benefit to ratepayers comes from the reduction in capacity and energy purchases. Also, if DSM programs help reduce wholesale power costs and improve overall system load factor, all members will benefit from wholesale power cost reductions.

Utility Perspective

This perspective deals with the financial impact on the utility. Loss of energy sales and reduced revenues not only from program activities directly, but also consumers who choose an alternative fuel source for certain applications including irrigation, and home heating systems, could yield economic hardship for the Cooperative. Lost revenue is not considered because it will be made up through higher rates. Benefits are avoided capacity and energy cost.

Total Resource Cost Perspective

This looks at the overall cost and benefit to society. The environmental effects of generation are estimated to be a ten percent external factor that is added to the cost of generation. The costs are the program cost, participant's cost, and supply cost, if any. The benefits are reduced capacity and energy cost, plus the ten percent external factor for the environmental affects of generation.

The goal is to have all perspectives benefit from DSM programs, although in many cases, the ratepayer perspective does not benefit because not everyone participates in the program. Non-participants could be affected negatively with rate increases to help cover lost revenues. In reviewing the various DSM options, RCEC wanted to identify programs that had a short payback period and would benefit customers. There are engineering estimates, manufacture's data, technical data from utilities, and other general assumptions which are used to help filter through DSM programs.

For member conservation programs, RCEC continues to advertise and promote several construction and insulation rebate programs scaled for residential and commercial facilities. This program holds the greatest rewards for those members who choose to utilize energy conserving construction methods, as well as high efficiency heat pumps for home heating and cooling. In addition the Cooperative encourages and promotes energy conservation in homes and businesses through the use of information programs, including a monthly newsletter and interactive programming on the Cooperative's website, www.rcec.org. Members are also encouraged to use floor and attic insulation, storm windows, storm doors, caulking and weather-stripping.

The following five programs are aimed at reducing energy losses. No industrial programs were included in this evaluation. RCEC added to its industrial rates an interruptible rate. This rate reduction will save the qualifying members **approximately \$16,953.65 a year.**

- Residential water heater blanket and pipe insulation
- Residential water heating low flow fixtures
- Residential compact fluorescent lights
- Commercial compact fluorescent lights
- Commercial electronic ballast and T8 lamps.

Residential Water Heater Blankets and Pipe Insulation

This program is for customers with electric water heaters. Each water heater would have an insulation wrap placed around the water heater. Also, the hot water pipe exiting the water heater would have a piece of pipe insulation wrapped around the first five feet of pipe above the water heater.

Residential Water Heating Low Flow Fixtures

Low flow showerheads for the shower and faucet aerators for kitchen and bath sink. These products impede the flow of hot water.

Residential Compact Fluorescent Lights

The light output per watt of power for fluorescent lighting when compared to incandescent lighting is four times greater. Compact fluorescents are made to fit into incandescent medium base sockets.

Commercial Compact Fluorescent Lighting

This is the same technology as the residential program, but it is used in commercial applications.

Commercial T-8 Lamps With Electronic Ballast's

Major improvements have been made in lighting technology. More efficient ballast and lamps are available to help reduce lighting and improve lighting quality.

PROGRAM ASSUMPTIONS

The following results are based upon estimates and assumptions used by a study done by Southwestern Public Service Company to determine energy and demand consumption for its New Mexico customers. Utilities recognize that each resident and business is different in their energy usage and habits. In order to validate energy and demand usage, as well as savings, some standardization must be applied. Therefore, the figures below will be based on SPS' data and standard utility practices to estimate energy and demand usage, and savings per customer class and customer.

Utilities look at how each customer class impacts the total system. Energy sales for each customer class are divided by the total system sales to see what percentage each customer class is contributing to the total system. Those percentages are then used to estimate the kW demand for each customer class and how it relates to the total system peak demand. The total energy sales for each customer class are then segmented into various sectors. For example, the residential class would have lighting, cooling, heating, cooking, miscellaneous items, etc. These sectors would then have estimated annual energy consumption

for that particular end-use product. There are other factors used to help evaluate programs such as, estimated appliance consumption, appliance saturation, residential sales by end use, demand impact, applicability, marketability, feasibility, potential energy savings, potential demand savings, and cost versus benefits.

RESIDENTIAL PROGRAMS

It is estimated that there are around 1185 electric water heaters in the RCEC's service area, so the first two programs would benefit only a small portion of our residential customers. The lighting program would benefit all residents if they chose to participate. Listed below are the technologies and the figures associated with the individual residential programs.

Residential Water Heater Blanket and Pipe Insulation Program

• Estimated annual energy savings per home	127.7 kWh
• Estimated number of electric water heaters	1450
• Estimated annual energy savings	185,165 kWh
• Cost of Measure per	\$16.12
• Life of Measure (Years)	5
• Cost of Conserved Electricity	\$0.03/kWh

Based on the electric water heater rates of \$0.054 the estimated annual savings would be \$9,998.91.

The estimated cost for the heater blanket and five-foot pipe insulation would be \$16.12 for a cost of \$23,374.00.

Marketing, administration, and evaluation cost would be about 20% of the technology cost or \$4,674.80.

Total DSM program cost would be \$23,374.00 or \$19.34 per customer.

Based on the projected estimates and assuming everything being equal, the customer would realize a savings after 34 months using a simple pay back method.

Residential Water Heater Low Flow Fixtures

Much of the technical information is the same as above except the feasibility of installing the new fixtures onto old existing fixtures is not considered 100%, but is estimated to be around 95% since there would be situations where new fixtures could not connect to old style fixtures.

• Annual Energy Savings per Home (kWh)	204.09
• Number of Eligible Homes	1450
• Total Annual Energy Savings (kWh)	295,934 kWh
• Cost of Measure per Home	\$24.63

- Life of Measure (Years) 10
- Cost of Conserved Electricity \$0.03

Based on the kWh (from 2006 financial form) electric water heater rates of \$0.054 on the kWh reduction, the annual savings would be \$15,980.44.

The estimated cost for a showerhead, kitchen and bathroom sink aerator is about \$24.63 for a total cost of \$35,713.50.

Marketing, administration and evaluation cost would be about \$7,142.70. If the program was combined with the water heater blanket program the cost could be blended together to lower overall cost.

Total DSM program cost would be \$42,856.20 or \$29.56 per customer.

Again, assuming everything being equal, the projected savings would give the customers a payback within 73 months.

Aside from the energy savings, water conservation is another important issue.

Residential Compact Fluorescent Lighting

- Annual Energy Savings per Home (kWh) 175.2
- Number of Eligible Homes 2,744
- Total Annual Energy Savings (kWh) 480,749
- Cost of Measure per Home \$16.63
- Life of Measure (Years) 12.5
- Cost of Conserved Electricity \$.012

The estimated annual energy savings on average (from 1996 financial form) residential rates of \$0.054 cents per kWh would be \$25,960.45.

Estimated cost for the program based on every household purchasing one compact fluorescent would be \$16.63 or \$45,632.72.

Marketing, administration, and evaluation cost would be around \$9,126.54.

Total estimated DSM program cost would be \$54,759.26 or \$19.96 per customer. Compact fluorescent average life is 10,000 hours.

A payback would depend upon the wattage difference and the daily hours of operation.

COMMERCIAL PROGRAMS

The two commercial DSM programs deal strictly with lighting and retrofitting incandescent bulbs with compact fluorescents and changing standard ballast and T12 lamps for electronic ballast and T8 lamps. The estimated total kWh sales for commercial lighting are 82,222kWhs. These totals are divided between the two technologies. Because of demand charges and the tiered rate structure for energy, it is difficult to calculate actual savings for each business without knowing the number of lamps, wattage of lamps, and hours of operation.

Commercial Compact Fluorescent Lighting (CFL)

Based on an energy rate of \$0.070147 cents per kWh, the annual savings would be around \$5,899.08.

Program cost would depend on the number of participating businesses and this number of fixtures available for retrofit. The estimated cost per CFL is around \$16.63.

Commercial Electric Ballast and T8 Lamps

The estimated annual energy savings based on a \$0.070147 rate would be around \$630.31.

The savings would result from lower power consumption per light fixture. The payback time would depend upon the businesses' hours of operation. For example, a standard ballast and lamp combination consumes 192 watts per hour of operation. A new electronic ballast and T8 lamps consumes around 120 watts per hour. Fluorescent lamps have an average life of 20,000 hours, so over the life of the lamp there is long term energy savings. Assuming an average life of T8 lamp to be 18,000 hours. The estimated life based on 50 hours/week X 52 weeks would be 6.92 years.

RCEC continues to focus on other programs aimed at reducing energy losses on a distribution-wide system level as well. These programs consist of upgrading substation equipment, transmission and distribution feeder circuits, monitoring system power factor and improving street and security lighting.

Upgrading Substation Equipment, Transmission and Distribution Feeder Circuits

The Cooperative's current four-year work plan, 2006 – 2009, calls for rebuilding and upgrading approximately 23.5 miles of distribution line to support the load growth predominately in the oil fields. In addition, the cooperative plans to convert 15.5 miles of single-phase electrical line to three-phase for reliability and to support a developing oil field. The total estimated cost for these upgrades is \$1,755,000. Also in this work plan, 17 miles of new, three-phase line will be constructed. These improvements will not only reduce loading on distribution circuits thereby reducing line loss values, they will increase system reliability, improve service to existing consumers and provide for new load growth.

Monitor System Power Factor for Optimal Performance

RCEC continues to monitor power factor system-wide. Distribution upgrades/rebuilds have helped to improve power factor and the system continues to operate at greater than 97 percent lagging power factor under normal operating conditions.

Street and Security Lighting Improvements

RCEC has discontinued installation of new mercury vapor lighting systems. As an alternative, the Cooperative offers a 100-watt high-pressure sodium fixture to replace the 175-watt mercury vapor. This replacement fixture produces 1,600 more lumens while consuming twenty less kWh per fixture. Also, the Cooperative offers a 250-watt high-pressure sodium fixture to replace 400-watt mercury vapor, producing 4,000 more lumens while consuming seventy less kWh per fixture.

LEAST-COST OPTIONS

Supply-side options

Deregulation and competition has dramatically affected the utility industry. Current market conditions indicate the battle between utilities to be the lowest cost provider has started and will not be over for some time. This battle to be the low cost provider has influenced the wholesale purchase power market to the point that wholesale contracts in many cases are a better choice than self-generation.

During the last couple of years, SPS has attempted to breach specific contract provisions but RCEC has vigorously stood-up and defended the existing all-requirements contract. SPS' goal was to utilize restructuring laws in New Mexico as a means to breach the wholesale contract and begin charging market-based rates within five years.

Having reviewed current supply-side resources and comparing the cost, and the feasibility of the new resources to the cost of our existing wholesale contracts, it appears that the best resource choice for RCEC at the present time is to maintain the current wholesale contracts.

Demand-side options

Over the past several years many utilities across the country have spent millions of dollars in products and rebates for customers toward demand-side management programs. Today a lot of the same utilities have ceased their rebate programs because the utility industry is changing. Open access, deregulation, and competition for customers have caused the utilities to ask the question, “Why spend millions of dollars on customer programs when they might choose another utility as their power supplier?”

The purpose of DSM programs is to help utilities lower loads because of the lack of available capacity and energy, avoid the high cost of new generation, and help to preserve natural resources. No one really knows what will happen to the electric industry and how it will affect utilities if it is completely deregulated. When the dust settles, instead of using DSM programs as a way to save energy, it may be used a marketing tool to sway customers to another utility. Whatever happens in industry, RCEC as a player in the market, needs to consider what is best for the utility and its customers. The DSM programs listed above do have a positive benefit to cost factor, but are customers willing to spend the extra money to purchase the more efficient equipment if the utility doesn't provide rebates?

IRP ACTION PLAN

Traditionally, utilities have relied upon 20-year planning horizons in their decision-making process. The days of long-term power planning are over and utilities are not faced with a new set of rules that have not been completely outlined. With this uncertainty, power planning and utility decision-making for the future is very difficult since everyone is treading into unknown waters.

As a means of minimizing the uncertainty utilities are facing, integrated resource planning has been introduced to help utilities recognize their strengths and weaknesses more clearly in an era of unprecedented change. Understanding where the utility is positioned in terms of current and future resources, the price of those resources, and the reliability of those resources will help the utility prepare itself to meet future load requirements in an economical and environmentally safe manner.

Having an action plan as a road map will help RCEC meet the needs of its customers. With all the anticipated changes in the industry, RCEC is submitting a two-year and a five-year plan as a means of planning for the future. These plans are intended to test the residential and commercial markets with technologies that will save customers money over time.

Short-Term Planning

A two-year plan will consist of the following goals and objectives:

RCEC will continue to rely upon existing purchase power contracts to meet current and future power needs. This decision is based upon the following reasons:

1. RCEC's WAPA resource is a low-cost renewable resource. RCEC's WAPA resource contract has been extended to September 2024. The New Mexico Legislature in the Electric Utility Restructuring Act of 1999 specifically recognized this pertinent resource.
2. The Southwestern Public Service Company contract when compared to other resources is low cost and diverse in nature utilizing coal, natural gas and off-system purchases when economically advantageous.
3. Power reliability has been good with Southwestern Public Service Company and they also handle all of RCEC's scheduling and power needs. This allows RCEC to forego having to have a full-time forecaster and planner/scheduler for daily and hourly power requirements.
4. RCEC's current all-requirements contract with SPS is effective through 2015, with a five-year notice of cancellation clause beginning in 2011. Due to the uncertainties in both the state and federal restructuring efforts, RCEC values the current contract, as the best source of protection against the instability restructuring is likely to cause in the short term.

RCEC will continue to expand its ERC program to adopt the Rural Utility Service (RUS) ERC program which has greater capabilities and allows for members to obtain energy savings loans (for heat pumps, insulation, etc.) at a 5% rate.

RCEC plans to continue to expand its "Interruptible Rate" industrial program to other consumers. This program seems to produce the greatest amount of savings and has the greater impact on the supply side management.

Although the electric heater and pipe insulation program indicated a short-term payback, RCEC feels that it represents such a small portion of its membership that it would not be worth the additional time and effort to see the program through.

As for the compact fluorescent lighting, RCEC no longer advertises or stocks these items but RCEC will obtain them and sell them on a net cost basis as a part of our energy efficiency marketing program.

RCEC will continue to monitor and support the development of renewable energy projects in New Mexico, particularly within our service area. If RCEC deems it to be economically feasible, RCEC will work with SPS to incorporate additional renewable resources.

Long-Range Planning

Since no one is sure what impacts deregulation will have on utilities in future years, preparing a five-year plan is done with much conservatism. Several different load forecasts have been prepared based on different growth scenarios.

1. These forecasts would need to be updated and reviewed.
2. Assuming no dramatic changes occur during the next five years, RCEC would want to review current supply-side options and compare them to existing contracts.
3. It is anticipated that the above projects will become viable programs and implemented as DSM measures. This will require ongoing program review.
4. In the event customer and utility needs change during this period, existing programs would need to be re-evaluated to determine if they are achieving the desired results. If not, then other customer programs would need to be evaluated.

Electric utility restructuring at both the state and federal level will certainly affect future planning. In addition, further development of renewable energy projects and state and federal renewable energy portfolio standards will affect supply-side issues. RCEC's long-range plan will continue to focus on the same issues as noted in the short-term, while monitoring the electric industry.

VALIDATION AND EVALUATION

Each of the projects above will require different methods to validate present consumption versus projected savings. The ERC loan project will require reviewing the customers' monthly utility bills and determining the energy savings effectuated from the installation of energy efficient improvements (i.e. heat pumps). Performing an energy audit of the customers' residence will help to differentiate the differences. Many assumptions will still have to be made regarding the energy usage of various electric devices and consideration for the length of time items are on. Predicting the savings will be based upon manufacturer data estimates and comparing it to previous usage patterns. This will require ongoing program review.

The interruptible rate program will require continuous monitoring to determine the number of incidents consumers are interrupted and determine their overall savings.

In the event customer and utility needs change during this period, existing programs would need to be re-evaluated to determine if they are achieving the desired results. If not, then other customer programs would need to be evaluated.

ENVIRONMENTAL EFFECTS

In addition to the power contract with WAPA, RCEC has a long-term, all-requirements contract with Southwestern Public Service. WAPA power comes from hydro generation that is renewable and very environmentally friendly. It would be reasonable to assume that the bulk of RCEC's power purchase from Southwestern Public Service Company comes from fossil fuels (coal and natural gas) and is, therefore, considered unfriendly to the environment. Southwestern Public Service Company has been very aggressive in resource acquisitions of traditional fossil fuels, renewables, and alternative generation sources. Because of the vast amount of resources which Southwestern Public Service Company possesses, it is difficult to determine from which generation source RCEC power needs are being met.

In an effort to comply with Western's requirements to minimize adverse environmental effects, Southwestern Public Service Company located in Amarillo, Texas, was contacted about Southwestern Public Service Company's efforts regarding air quality and environmental issues. Their response was "Southwestern Public Service Company is doing everything it can to minimize the effects of CO₂." He explained they (Southwestern Public Service Company) are "doing everything they can to comply with federal and state mandate regarding atmospheric pollutants. SPS now has some of the cleanest fossil fuel plants in the nation."

GOVERNING BODY APPROVAL AND PUBLIC PARTICIPATION

RCEC scheduled and published a date for a public meeting on the morning of December 17, 2007 in the Portales News Tribune regarding this integrated resource plan. Copies of the document were made available to the public before the meeting. In addition, the Cooperative's Board of Trustees will receive a report of this IRP planning process on the afternoon of December 18, 2007.

There was no public input and the Cooperative's General Manager approved the Integrated Resource Plan.

Jerry W. Partin
General Manager

Date: