

A Message from the Staff of the Renewable Energy Policy Project

By developing renewable energy projects, America's customer-owned rural electric cooperatives (RECs) can forge unique, recognizable and lasting links to local consumers, and thereby distinguish themselves from competitors in the coming electricity market. Collaboration on such efforts between electric companies and environmental advocates can raise knotty issues for both sides. But the following case study suggests that through careful cooperation, committed partners can resolve their problems.

The prospect of competing to retain customers alarms many RECs. The co-ops, whose high operating costs in part reflect their small size and scattered clientele, fear that large, predatory firms with lower costs will poach "their" customers. The co-ops' preparations for arriving changes have featured intense political effort; at the national level, this endeavor builds their national appeal and bipartisan Congressional support. Yet the most agile co-ops have turned their attention to building a strong brand identity, able to engage customers' long-term loyalty.

While RECs are uniquely vulnerable to competition, many retain enviable advantages. These include a long history of local economic development, successful resistance to antagonistic corporate "outsiders," good community relations, and experience in introducing new products without regulatory interference. But wise co-ops will resist the lure of superficial branding based only on appeals to history. Avoiding the tumble toward a commodity electricity market -- in which many co-ops could not compete -- will require a convincing commitment to customers' current and future well-being. As described here, managers of at least one co-op, Minnesota's Cooperative Power, believe that renewable energy development will help them to demonstrate that commitment.

Many co-ops, appreciating the threat of a competitive marketplace, will linger in the "denial stage." They will be joined there by some environmental advocates and supporters of renewable energy, who rightly fret that in an unstructured electricity market most consumers will buy the cheapest -- and dirtiest -- power available, without a thought for its environmental impact. Environmentalists will also correctly identify the vexing ethical and strategic questions -- well described in this paper -- raised by the option of collaborating with rural co-ops.

Yet we see grounds for hope in the story told here. While restructuring presents both peril and promise for co-ops and for the environment, we suspect that competition may be inevitable. We also note that renewables have not thrived in the "pre-restructured" electric system, and have little stake in the status quo! We therefore applaud attempts to adapt the renewable energy endeavor to new market realities, and we commend those electric companies such as Cooperative Power that have accurately identified environmental protection as a strategic key to a competitive corporate future. We believe that renewable energy can become a strong product for RECs.

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EXECUTIVE SUMMARY

In the Spring of 1996, a rural electric cooperatives (REC) and local renewable energy advocates in Minnesota began an effort to bring wind power to local consumers. The program asked customers to pay a "green premium" above their regular monthly electricity bills (or the price difference between electricity from wind power and electricity from a utility's current generating capacity). Both sides had concerns and hopes.

The distribution and generation and transmission cooperatives (the "co-ops") within the REC worried that the wind project would raise average rates, thereby compromising their competitive position versus other utilities. Also, they did not want the project to draw negative attention to existing coal-fired plants. Lastly, they did not want to reduce the operation of the coal-fired plants. But the co-ops identified benefits that outweighed the risks of the wind project. First, they believed (and later confirmed by polling) that their customers valued environmental protection. Offering wind power would strengthen its relations with customers and improve its competitive position in the future. Second, the project would encourage local economic development. Third, it would flexibly meet regulatory requirements, such as integrated resource planning and clean air standards, without raising average rates as customers volunteered to pay higher "green premiums."

Renewable energy advocates also had several concerns and interests. They were concerned that the "green premium" would be too high, fostering the perception that renewable energy costs significantly more than other energy alternatives. In addition, they feared that utilities would use the project as a weapon to attack as unnecessary legislative proposals to promote renewables. However, a variety of benefits outweighed these concerns. First, the project would bring potential environmental improvements to Minnesota. Second, it would encourage rural economic development. Third, it would be a useful tool to promote renewable energy as an affordable source of electricity. Finally, it could serve as a pilot project for future co-op green offerings.

The Participants

Participating co-ops consisted of Cooperative Power (CP), a generation and transmission co-op, and the Dakota Electric Association, a distribution co-op. CP operates generation facilities, including oil- and coal-fired combustion and hydropower, and owns transmission lines. DEA, one of 17 distribution co-ops served by CP, is in charge of power distribution to its customers, as well as billing and servicing. The remaining 16 distribution co-ops had the option to join the green power offering.

Renewable energy advocates included several local groups organized under the Minnesota Sustainable Energy for Economic Development (MN SEED) Campaign. The groups had considerable experience educating Minnesotans and lobbying the state legislature to cultivate favorable attitudes toward renewable energy. The Union of Concerned Scientists (UCS) provided technical input to the project and acted as a liaison between MN SEED and the co-ops.

The Result

As of November 1997, 11 of CP's 17 distribution co-ops have joined the green offering. The green premium is two cents per kilowatt-hour. The co-ops have secured 3,250 subscriptions of 100 kWh per month apiece. CP is close to its goal of 3,750 subscriptions to install 1.5 megawatts of wind power. It will install and begin operation of the wind turbines by November 1998.

The Lessons

- Advocacy and public outreach create the right conditions for project development. Co-ops want to satisfy customers. Consequently, for green offerings to succeed, the public must support renewable energy. Advocacy and public outreach by groups such as MN SEED and UCS are crucial to cultivating this support.

- Advocates should not let the perfect stand in the way of the good. Even if advocacy groups believe that green offerings are not ideal, sufficient replication of the offering can stimulate renewables markets, accelerate technology development, and reduce prices.
- Co-ops should make as long and stable commitment to a project as possible. In order to recover capital costs and guarantee steady revenue, investors in renewable energy want long and stable demand for a renewable energy project. Accordingly, Minnesota wind developers needed a 15-year contract commitment from CP to raise affordable capital and minimize the green premium.
- Co-ops and renewable energy project developers should minimize small project costs or maximize project sizes. Because small projects have comparatively high proportional transaction costs, either the project developer must organize projects cheaply, or the co-op must raise the project size to enjoy economies of scale, reduce proportional transaction costs, and lower green premiums.
- Advocates should give "project champions" time to work internally to build organizational support. By maintaining silence while the co-op project champions build support for projects within their Boards, advocates can improve the chances of Board approval without outside interference, and gain the trust of the project champions.
- Advocate-sponsored consulting is invaluable. Many advocates, such as UCS and MN SEED, have extensive experience in renewable energy technology and project planning. They also have direct contact with supporters of renewable energy, which proves useful to a co-op marketing a green power offering.
- Co-ops and advocates should target common interests. Project champions and advocates should emphasize their shared interests in promoting renewable energy to serve more customers, develop the local economy, and improve the environment.
- Grassroots environmental groups can effectively market green power programs. Grassroots advocates can reach out to supporters in a co-op's service area to assure the co-ops that their customers are interested in a green offering. Of course, before supporting a green offering, advocates must carefully evaluate it for price, "good" versus "bad" environmental products, and public communication requirements.
- Co-ops and advocates should communicate thoroughly and frequently. Open communications avoid misunderstandings and build confidence between co-ops and advocates.

Trust is critical and hard to come by. Co-ops and advocates often have little experience working together. However, as the co-ops in advocates in Minnesota proved, honesty, flexibility, and a willingness to listen are important for establishing a green offering.

Overall, utilities should appreciate the role that renewable energy can play in enhancing their service, especially in anticipation of customer-centered electricity competition. Advocates should use their superior knowledge of renewables, and their extensive contacts with key potential customers, to work sensitively with co-ops on green pricing programs. Green pricing programs are not a single, major breakthrough for renewable energy in the United States. However, by raising demand for renewable energy technologies and services, and possibly cultivating political constituencies for pro-renewables public policy, they represent incremental steps that can be combined to make a major contribution to sustainable energy use.

COOPERATIVE WIND: How Co-ops and Advocates Expanded Wind Power in Minnesota

by Michael W. Tennis, Paul Jefferiss, and Steve Clemmer

In the spring of 1996, a rural electric cooperative (REC) in Minnesota began a unique collaboration with local environmental and renewable energy advocates in order to offer renewable energy to their members. As a result, the members of several distribution cooperatives have been given the opportunity to support new wind energy development in Minnesota. They will pay for any "above-market" costs for this development through a "green pricing" tariff.

Although modest in scope, this initiative is important to sustainable energy advocates, RECs, and the renewable energy industry because it asked and answered some complex questions. Could the seemingly obvious reasons and opportunities for RECs to provide renewable energy to their members overcome the substantial barriers that have historically prevented them from doing so? Since no REC had previously developed renewable energy, what new factors, approaches, and participants might make the difference in this case?

The project has demonstrated that the confluence of interests among a variety of stakeholders does provide sufficient impetus for RECs to overcome obstacles and seize opportunities to develop renewable energy and rural economies. Further, and perhaps most important, the experience in Minnesota provides a model for RECs in other states.

This report begins with a description of the players and organizations involved, their structures and goals, and the opportunities for and barriers to renewable energy development they represent. The discussion proceeds from RECs in general to Minnesota RECs in particular, and then to the particular REC and advocacy organizations involved in this project. It includes an analytic description of the specific renewables development activities undertaken in this case, along with some surprises encountered along the way and an overview of activities remaining. The report concludes with a summary of the lessons learned during the process and suggestions for replicating the experience elsewhere.

THE ORGANIZATIONS INVOLVED OPPORTUNITIES AND BARRIERS

Rural Electric Cooperatives Background

Rural electric cooperatives appear to offer a natural home for renewable energy development. They are frequently located in areas rich in renewable resources and often serve geographically dispersed populations that are well matched to small-scale or distributed power systems. Moreover, they are member-owned and operate for the good of the local community. For these reasons, and because local renewable energy development and distributed resources could bring economic and environmental benefits to such communities, the connection between RECs and renewables seems obvious. Yet many RECs are located in areas equally rich in fossil resources, where avoided power costs are comparatively low. In addition, with relatively modest regulatory oversight and a comparatively conservative organizational culture, most RECs have been unwilling to move beyond a conventional resource mix.

The organizational structure of RECs is an important determinant of the opportunities they offer for renewable energy. First and foremost, RECs are owned and governed by the farms, homes, and businesses that pay the electric bills. Co-op "members" also receive "patronage rebates" if the revenues raised exceed the costs of operation.¹

RECs are usually set up in two functional groups: distribution cooperatives and generation and transmission (G&T) cooperatives (henceforth "co-ops"). Distribution co-ops own and operate the distribution system and customer meters and are directly responsible for serving and billing members. They generally buy the

energy and capacity that they need, often under exclusive or "all-requirements" contracts with a G&T co-op. Distribution co-ops are run by professional managers and governed by a Board of Directors consisting of co-op members.

G&T co-ops are owned by the distribution co-ops and serve to aggregate rural customer loads in order to take advantage of economies of scale. They own and operate transmission lines and generators or enter into wholesale power purchase contracts with other generators. G&T co-ops are staffed by utility professionals with expertise in transmission, generation, contracting, and regulatory affairs. They are governed by a Board that contains the managers and directors from the distribution co-ops of the system.

For the most part, this structure theoretically means that co-ops have the incentive, the power, and the mechanisms to make decisions to invest in options that would benefit their members, including renewable energy and distributed resources. Other factors, however, serve to inhibit them. Unlike investor-owned utilities, which raise money by selling stock and taking out loans, co-ops raise capital strictly by taking out loans. In the early years of the Rural Electrification Administration (now the Rural Utility Service), co-ops received low-cost loans at rates guaranteed by the Federal government.² Over the past decade or so, however, co-ops have received fewer such loans and now obtain most of their capital from conventional private sources. Since private sources generally consider renewable energy projects riskier than conventional alternatives, the cost of capital for such projects is higher, and may increase with the advent of competition.

In addition, only 28% of the distribution co-ops in 16 states are subject to some form of rate regulation by state Public Utilities Commissions (PUCs). Nor are power plant choices made by G&T co-ops regulated in most states. The lack of regulatory oversight, combined with an intrinsically conservative management culture, has generally led co-ops to exclude renewable energy from their resource portfolios. This has been reinforced by the ready availability of cheap fossil fuels from local sources, by a legacy of overcapacity from the 1970s and 1980s, and by the low avoided cost of power that results.

Minnesota Co-ops

In Minnesota, G&T co-ops are required to prepare integrated resource plans for review and approval by the Minnesota Public Utilities Commission. Due to their participation in the regulatory process in Minnesota, G&T co-ops play a more active role in shaping state laws and policies governing the electric utility industry than their counterparts in other states.

Renewable energy has a relatively high political profile in Minnesota. In 1994, the legislature mandated a large, investor-owned utility -- Northern States Power (NSP) -- to install 425 megawatts (MW) of wind capacity and 125 MW of biomass capacity by 2002. In exchange, NSP was allowed to store nuclear waste above ground temporarily at the Prairie Island nuclear power plant. Since then, legislators have encouraged other utilities in the state, including co-ops, to support renewable energy actively. Through their regulatory and legislative involvement, Minnesota co-ops also have more contact with stakeholders such as environmental and consumer groups. All these factors tend to improve prospects for renewable energy development in Minnesota co-ops.

In this project, Dakota Electric Association (DEA) is the lead distribution co-op interested in offering green power to its customers.³ With more than 75,500 members, DEA is the second largest distribution co-op in Minnesota and about eight times the size of the median distribution cooperative in the United States. DEA is also unusual among distribution co-ops because it serves a county that is largely a suburb of a major city (Minneapolis and Saint Paul, to the north). Its 507-square-mile service territory borders that of Northern States Power. DEA believes that its members are environmentally conscious, and it has succeeded with a number of environmental initiatives in the past, including a fluorescent light recycling program conducted with the Dakota County government. This perception and experience created a context in which a renewable development project was a possibility. At the same time, DEA's electricity rates are essentially equal to NSP's on average. The co-op believes this rate parity is very important to maintain.

Cooperative Power (CP) is the generation and transmission co-op that acquires and delivers power to Dakota Electric and 16 other distribution co-ops serving 500,000 customers in Minnesota (see Figure 1). This power travels over 2,000 miles of high-voltage transmission lines to 261 substations monitored by the distribution co-ops. CP receives 85% of the capacity it needs from two coal-fired power plants. Its "flagship" resource is Coal Creek, a 1,100-MW coal-fired power plant in North Dakota that it co-owns with United Power Association, another G&T co-op serving rural Minnesota. This baseload plant was built in the 1970s and burns low-sulfur lignite coal from an adjacent strip mine. CP also receives coal-fired electricity from a plant located just across the Minnesota border near La Crosse, Wisconsin, which is operated by Dairyland Power Cooperative, another G&T cooperative.

The other generating resources providing peaking capability and statistical reliability to the CP mix include an oil-fired combustion turbine generator and hydropower from the Western Area Power Administration. Like other utilities in the upper Midwest, CP has been growing into the excess baseload capacity that it owns. As a result, the value of new power resources added to the CP system -- the avoided costs -- are low, in essence determined by the cost of marginal operation of the Coal Creek plant. Between 1991 and 1995, this plant had an average operating cost of 1.79¢ per kilowatt-hour, making it the ninth lowest-cost plant out of 700 steam electric plants in the country.

Costs this low present a formidable obstacle for renewable energy to overcome. Although the Cooperative Power system is growing relatively slowly, it is currently adding some peak load capacity.

The Minnesota Advocacy Community

Advocates of renewable energy and environmental protection in Minnesota are well organized under the Minnesota Sustainable Energy for Economic Development (MN SEED) Campaign and have been effectively advocating for renewables in the Minnesota legislature for a number of years. In cooperation with local advocates, the Union of Concerned Scientists (UCS) helped launch SEED Campaigns in Minnesota, Iowa, and Nebraska following the release by UCS of Powering the Midwest in 1993.⁴ That report documented the potential economic and environmental benefits of renewable energy development in 12 Midwestern states. It also recommended policies for achieving this potential. The goal in forming the SEED Campaigns was to mobilize grassroots support to advocate for renewable energy at the state and local levels.

The MN SEED Campaign consists of UCS and many of the prominent environmental and advocacy groups in Minnesota, including Minnesotans for an Energy Efficient Economy (ME3), The Minnesota Project, Clean Water Action, the Izaak Walton League, and the Sustainable Resources Center. The primary motivations behind MN SEED support for renewables are the potential environmental quality improvements and rural economic development that large-scale development of these natural resources would bring to the state.

Although the Minnesota energy advocacy community considers Northern States Power's legislated renewables mandate one of its major successes, advocates are also looking for opportunities to support significant new efforts by other utilities and businesses in the state. MN SEED works closely with agencies like the Minnesota Agricultural Extension Service and the county or regional economic development agencies as well as with groups of farmers and citizens. With a stated goal of creating a sustainable energy supply for the state, MN SEED is ultimately seeking a fundamental shift in the state's energy resource mix toward in-state renewable resources. When presented with a renewables initiative from a co-op in Minnesota, therefore, UCS and the rest of the MN SEED Campaign were anxious to consider supporting the effort, albeit with some reservations.

THE CO-OP WIND PROJECT

UCS first learned of CP/DEA interest in a wind project during a meeting sponsored by the Northwest Area Foundation in March 1996. Several key staff members from CP and DEA expressed an interest in acquiring some renewable power for their members. These individuals were quite senior in their organizations and had managerial responsibilities in regulatory affairs, environmental management, rates and contracts, and public relations. (These key individuals are referred to hereinafter as the project champions.) The champions at

Dakota Electric felt that a renewables initiative would strengthen already strong relations with its members by giving them something they would value, would enhance its competitive position in the future, and would be consistent with political and regulatory trends in Minnesota.⁵

Co-op representatives were focused from the beginning on a "green pricing" program, in which co-op members would be given the opportunity to fund wind power projects on the CP system by paying modest premiums on their monthly bills. The champions felt that this type of initiative would be welcomed by many co-op members, would satisfy legislators and thereby perhaps avoid a legislative mandate, and would probably be acceptable to their own organizations.

Co-op Leadership

There is no question that the critical event that initiated this project was the decision by the project champions at CP and DEA to tell interested members of the environmental and renewable advocacy community that they were considering providing wind energy to co-op members. The two groups -- utilities and advocates -- then began the careful process of developing confidence and trust in one another and crafting a plan to obtain approval for and implement a green pricing program.

All the project champions were involved in aspects of the co-ops' business that brought them into contact with legislators, regulators, and public advocates. They often explored larger issues such as utility restructuring, legislative initiatives, and the national and global environmental trends that shape the future of their industry. These responsibilities and this exposure put them in the natural position of being among the first in their organizations to see developing threats and opportunities.

Identifying these is one thing; shaping the actions of organizations to respond effectively is quite another. In trying to develop a co-op response to the popular political pressure to promote renewable energy in Minnesota, the project champions faced many of the same challenges as renewables advocates who try to influence the energy policy decisions of legislators and other policymakers. The champions felt sure that at least some Board members and managers would be cautious about the idea. They were also concerned that few of the distribution co-ops had polled their membership to determine constituency feeling about their organization in general or renewable energy in particular (although DEA did include questions about renewables in the annual poll of members conducted in fall 1996). Without feedback from supportive members, the champions expected managers and Board members to adopt a more circumspect attitude toward renewables, partly because their experience with wind technology was limited.

This situation created one of the cornerstones for collaboration between the co-op project champions and the MN SEED members -- the shared task of educating and convincing decision-makers to take action on developing renewable energy resources.

Especially in the first six to eight months of the project, the co-op champions themselves had few resources -- personal time, staff time, or money -- to undertake this task or to update their own knowledge of green pricing programs and wind energy. This is where collaboration with the advocates proved invaluable.

Collaboration With Advocates

Until this project began, the dominant paradigm for advocacy of renewables in Minnesota involved marshaling popular support to influence legislators. With enough popular support, legislators would propose, promote, and ultimately pass legislation requiring utilities in the state to build renewable energy projects. These legislative initiatives were always conducted in the face of vigorous opposition from the utilities.

When the advocates realized champions within the co-ops might be interested in providing renewables to their customers, they were quick to see an opportunity for a new collaborative approach to support their mission. This realization led to some strategy meetings among advocates and to preliminary overtures from MN SEED leadership to the champions at the co-ops.

For MN SEED, the CP/DEA-sponsored effort represented an opportunity for the campaign and its supporters to act on their commitment to cleaner, renewable resources. Furthermore, they believed it would send a message to policymakers and utilities that their constituents, members, or customers believe that environmental protection is important and that renewable energy projects are a tangible and effective means to that end.

At the same time, many members of the advocacy community were themselves skeptical and wanted to proceed cautiously, for a variety of reasons. First, from their perspective, a green offering is not the most equitable or appropriate means of supporting renewable energy development. It relies on the willingness of a few committed individuals to pay for environmental and economic benefits that will be enjoyed by all, and it is unclear whether voluntary participation will be sufficient nationwide to let renewables overcome the variety of barriers they face and compete with conventional sources on an equal footing. Second, if the premium is too high it can create or perpetuate the perception that renewable energy is significantly costlier than other alternatives.

There was another, more subtle and complex consideration for the advocacy community. One was that advocates in Minnesota have actively promoted the renewables portfolio standard (RPS) as an effective means of overcoming some of the limitations of green marketing. They were concerned that utilities might use the CP and DEA projects to try to persuade the legislature that an RPS was not necessary.

In the end, after a great deal of internal debate, the community decided to support the initiative because it was a way to get the word out about renewables, and to use utility resources to do so. They also considered that it would be useful experience for the utility and could serve as an example for similar projects elsewhere.

Having made that decision, however, they knew the project would only achieve these goals if it ultimately worked. Advocates are justifiably cautious when considering renewables initiatives promoted by utilities. Their concern is that most utilities have vigorously opposed environmentalists' efforts to get significant renewables development under way and have revealed a real flair for finding the negative in renewables projects. Under a "green pricing" initiative such as this, program success requires that utilities portray renewables to their customers in very positive terms. In the early history of green pricing efforts in the United States, utilities have shown time and again that they are unable to develop green programs that win customer trust and deliver renewables at low cost.

These concerns led the MN SEED campaign to focus its involvement on keeping wind project costs low and on increasing co-op member participation.

It was also important to provide technical input to project development. Early in the process, UCS convinced the other MN SEED members that it could play this technical role and act as the liaison between the two groups. UCS could offer the co-ops some valuable technical information and perspectives on their program while at the same time advancing MN SEED goals.

At this point, UCS solicited and received some financial support from the Renewable Energy Policy Project that enhanced its ability to participate in the project. As a result, UCS was able to conduct a series of meetings and communications with the champions. Its collaboration was designed primarily to provide the champions with the best available technical information from successful green pricing programs and wind procurements, and to offer feedback on co-op ideas that reflected the perspectives and sensibilities of the advocacy community. At the same time, UCS was keeping MN SEED members informed about project progress and explaining co-op positions and ideas.

The collaboration faced its first important test as it worked toward the initial meetings between the champions and their Boards. These were designed first to inform and ultimately to gain approval for the project. The project champions were keen to avoid publicity on the project before it received Board approval. Advocates thus worked diligently and effectively to keep work on the project quiet outside a relatively small circle of individuals. Ironically, the most valuable contribution from the renewable advocates in the early

stages of the effort may therefore have been exercising restraint in informing and mobilizing their constituencies in support of the offering. Advocacy efforts to generate public support were held in reserve until after the offering had been made public by the co-ops. At that time, they worked actively to educate their own members and build participation in the offering.

Informing the Board

The process for winning approval of the green offering entailed making informational presentations to Board members at several monthly meetings, taking feedback from these meetings, polling individual member-system managers regarding their concerns and potential to participate, modifying the proposed program accordingly, and submitting the revised plan for a vote by the Board. The first Board meetings for the champions within Cooperative Power and Dakota Electric Association were held in April 1996.

The champions developed their informational presentations for their respective Boards with little input from the advocates. The idea put forward at these first meetings was to make a renewable energy offering available to the members of all the distribution co-ops on a green pricing basis. Cooperative Power expected the initial technology to be wind energy, although other technologies, including agricultural waste- fueled biomass projects, were not ruled out for the future.⁶ The G&T co-op, Cooperative Power, would arrange to acquire or contract for the renewable power and would pass any "above-market" costs directly through to the participating distribution co-ops in proportion to their customer subscriptions to the offering. The distribution co-ops would be responsible for "marketing" the offering to their members and maintaining billing and other records.

The presentations cautiously emphasized the likely positive impact on customers and legislators. They were intended to reassure Board members that the initiative would not have negative financial consequences for CP and its members. The champions informally polled managers before the presentation to assess the likely mood and receptivity of the group and found few strongly held opinions either for or against renewables. The key to initial acceptance of the idea would rest in the dynamics of the groups during the presentations.

At the CP Board meeting in April, the main concern for Board members was that CP should offer renewable energy "at cost" to consumers who chose it. This proposal was made in view of the fact that the electric industry was becoming more competitive and that studies by other utilities had indicated that only a small percentage of consumers might be willing to pay more for renewables.

Champions presented this project as offering several benefits to CP, including that:

- *consumer choice would allow some to choose renewables and would foster loyalty and goodwill;
- the project would foster economic development in the CP service area;
- any extra costs would be paid for by the customers who incur them;
- the project would help meet the integrated resource planning goal of diversifying CP's generation mix; and
- the project would address legislative desires in a flexible manner that did not raise average rates.

At the same time, champions carefully addressed "hot button" issues within the two co-ops. Primary among these were that:

- in promoting the initiative, existing coal-fired resources could not be portrayed as bad;
- as a result of undertaking the initiative, use of the existing coal-fired resource could not decrease and these costs could not increase;

- the offering should not "hurt" any distribution co-op that chose not to participate;
- the offering should not be perceived as solely benefiting one member co-op -- that is, it should hold potential benefits for most, if not all, distribution co-ops in the system; and
- the initiative should not raise rates at DEA, so that their competitive position would be compromised.

Getting Board Approval

In response to feedback and suggestions from a member manager, the project champions revised their formulation for the project. Rather than seek approval of a program that included all the distribution co-ops right from the start, they proposed a pilot project between CP and DEA that would be offered to any other interested co-ops. This allowed member managers to decide for themselves whether the benefits outweighed the risks. In the meantime, the champions contacted many Board members and managers to provide individual briefings on the concept and to get a better understanding of their interests and concerns about the idea. These personal contacts helped answer many important questions. Another essential ingredient to obtaining final Board approval at both CP and DEA was having a reliable estimate of the premium that might be associated with a wind energy offering. It was also important to develop and provide a description of the mechanisms -- rate tariff, outreach, and so on -- that would be used to promote the offering to members. Ultimately, managers supported the project because they knew there would be customers who wanted it.

Developing Price Premium Estimates

One place where UCS participation added substantial value to this collaboration was in refining the process by which Cooperative Power developed estimates of the price premium necessary to bring the offer to DEA members. The premium was calculated by subtracting CP's avoided cost of power (the avoided cost of energy from the low-cost coal-fired power plants in North Dakota) from the local price of wind energy. The avoided cost of capacity was based on the "accredited capacity" that the wind project would earn and the price of peaking power plants in the Mid-Continent Area Power Pool (MAPP) in which CP operates.⁷ Together, these avoided costs were quite low, approximately 1.5-2.0¢ per kilowatt-hour (kWh).

To help develop credible estimates of wind project costs, UCS hired Steve Smiley of Bay Energy Services, the engineer and analyst behind the Traverse City Light and Power (TCL&P) Green Pricing project.⁸ Smiley's direct experience in TCL&P's project was valued highly by everyone in the coalition and he quickly and credibly addressed questions and concerns raised by the champions as planning for the project moved forward. Smiley advised CP to purchase or contract for power only from wind technologies that were mature and well proven. He provided CP with contacts for a number of qualified technology suppliers. He also encouraged CP to compare the value of owning the wind turbines with acquiring wind energy by contract.⁹ In addition to recommending equipment suppliers, Smiley provided CP with a draft request for proposals (RFP) that, with minor revisions, CP used to obtain quotes or bids from wind turbine vendors and project developers.

Even with Smiley's advice, this part of the project was quite difficult. The request for proposals was open to misunderstanding because it solicited information on two different options: quotations on "turn key" wind installations that would be owned and operated by CP, and estimates for power purchase contracts from wind projects owned by developers. Part of the difficulty stemmed from the RFP being sent to both wind turbine suppliers and wind project developers. Some turbine suppliers were not prepared to develop projects under contract, while some project developers were unable or unwilling to sell wind turbines to the utility. Altogether the co-op received responses from eight parties: two proposed project development only, two proposed project development or equipment supply, and four proposed equipment supply only.

UCS expected that the cost of wind power from a co-op-owned project would be lower than a power supply contract from a developer, and therefore supported that option. But taking full responsibility for ownership

and operation of a wind project was too large a step for CP. The novelty of the technology, the relatively small size of the initial effort, and the high level of uncertainty regarding the success of a green offering among the distribution co-ops all combined to make the co-op ownership option unpalatable to CP management.¹⁰

One important lesson came out of the responses to the first RFP. CP had requested that project developers provide prices based on a 10-year contract term, with options for additional terms of 5 and 10 years.¹¹ This term was shorter than wind developers and their lenders and investors were used to. As a result, initial bids were considerably higher than expected. Feedback from developers indicated that the original terms forced them to structure both the debt and the equity portions of the project over a 10-year period. This short time frame raised the cost per kilowatt-hour considerably. The options in the CP RFP to purchase power in years 11 through 15 and 16 through 20 apparently had little or no value to developers. Based on these responses, CP's preliminary estimate of the cost of wind power was 5.5-6.5¢/kWh, implying a green power premium of approximately 4-5¢/kWh.

The advocates' had an immediate negative response to this level of premium. Expectations of a lower premium had been set in part by the experience at Traverse City Light and Power, where the premium on a single 600-kilowatt wind turbine was only 1.58¢/kWh in a less energetic wind regime than the one anticipated in Minnesota.¹²

After reviewing the bids, CP quickly reissued the RFP with a contract term of 15 years, giving developers the opportunity to lower project costs and therefore to charge a lower premium on the wind energy. Cooperative Power also considered some additional aspects of the wind project that added to its value, and accordingly increased the credit earned for avoided costs. Finally, the co-op defined the green premium as a pass-through cost that would be tied to the actual costs of the resources that were ultimately acquired, without adding any overhead or other markups. The final estimate for the premium used by DEA in its evaluation of their member offering was 3-4¢/kWh, although this premium was eventually lowered to 2¢/kWh.

With this information in hand, CP made a final presentation to its Board and in December 1996 obtained the approvals necessary to finalize the program with DEA. Once CP had its Board approvals, DEA sought and received the approval of its Board to develop a green pricing tariff for the program and to submit it to the MN PUC.

Developing a Green Pricing Offering

In this project, Dakota Electric Association, the distribution co-op, was responsible for "marketing" the green offering directly to retail consumers. In addition, as an electricity supplier that is rate-regulated by the Public Utilities Commission in Minnesota, DEA was responsible for obtaining approval for the program from the MN PUC. From the earliest stages of this project, DEA was confident that a large number of customers would respond favorably to a green initiative. The environmental advocates were able to confirm this expectation because they had a substantial number of active supporters in the DEA service area and had campaigned there extensively on environmental and nuclear safety issues. DEA also felt that it had a strong enough reputation for environmental responsibility within the community to be credible in delivering the offering to its members.

DEA champions did not rely solely on their untested expectations about DEA membership response, however. As noted earlier, they polled their members on their interest in receiving a renewable energy offering. The poll was done in the context of an annual DEA survey on a broad set of topics critical to its business and members. Member opinion was collected by conducting telephone interviews with several hundred individuals who represented a cross section of co-op membership. Inserting questions on a green offering was difficult because of the breadth of other topics DEA wanted information on and the need to keep the interview to 15-20 minutes. Adding consideration of the green offering delayed the poll by approximately one month.

At this stage, DEA also benefited from Steve Smiley's experience developing and marketing the green

offering at TCL&P. He provided examples of the promotional materials and tariff sheets used by TCL&P, described TCL&P's successes and disappointments as they rolled out their offering, and shared information on the motivations of commercial and residential customers who participated in the TCL&P program.

Although DEA chose not to duplicate it, one feature of the TCL&P offering surprised and impressed all participants. All TCL&P program participants converted their entire electricity bills over to the green rate. They thus willingly accepted a price premium of 17-23%, depending on rate class, or \$7.58 per month for the average residential customer. DEA opted instead for a green pricing program where members were able to purchase monthly load blocks of 100 kilowatt-hours at the green price. This more incremental approach allowed members to participate in the program over a wider range of monthly premiums.

Getting the Word Out -- Environmental Advocates and DEA

Perhaps the strongest reason for this collaboration was that both the environmental community and the co-ops wanted the program to succeed and be well subscribed. MN SEED wanted to see new renewable energy development in Minnesota because of the environmental and economic development benefits it can deliver. The organizations that belong to MN SEED also have many members that are likely to be participants in the plan. In the abstract, both MN SEED and the co-ops were very interested in working together to get the word out on the offering and to ensure its success.

IF YOU ARE A DAKOTA ELECTRIC CUSTOMER, YOU MAY SOON HAVE THE OPPORTUNITY TO PURCHASE WIND ENERGY!

Dakota Electric has requested approval from the Minnesota Public Utilities Commission to begin selling renewable energy from wind generators. Renewable energy will likely be offered in units of 100 kilowatt-hours for a small premium -- just a few dollars extra each month. The average family uses about 600 kilowatt hours each month so you can decide how much renewable wind energy you want, and buy just that much. The first offering will be limited to the first interested families -- so indicate your interest now!

YES! I WANT TO KNOW MORE ABOUT THIS GREAT NEW PROGRAM!

Please Print

Name

Address ZIP

Send more information

I want to sign up! # BLOCKS

Signing up here does not commit you to the program, but insures that you will get priority access to sign up information in this limited program. Thank you from Clean Water Action, working with Dakota Electric.

As a practical matter, considerable work was required to craft the specific message that everyone could use, and to decide on the intensity of the outreach effort mounted by the environmental community. As mentioned earlier, the co-ops were concerned that their existing generating resource should not be portrayed as "dirty" in order to promote the "clean" wind energy offering. After some discussion, there was reasonable agreement on portraying the green option in positive terms -- as an indigenous renewable resource, with zero emissions, representing an exciting new technology. Ultimately, MN SEED and DEA agreed on a written statement that canvassers from Clean Water Action, a key member of the coalition, could leave with folks they contacted:

Dakota Electric provided UCS with a draft of a Question and Answer brochure that it planned to make available to its members. Dubbed the "wind power program" in the brochure, CP eventually changed the name to the "Renewable Energy Option Program." Co-op members were asked to make a one-year

commitment and were told to expect electricity bills to increase \$3-4 per 100-kWh block purchased. In 1997, CP successfully lobbied the Minnesota legislature to allow the project to qualify for a 1.5¢/kWh production incentive. This allowed CP to lower the price to \$2 per block and raised the advocates' level of comfort with the project. Participants who had already signed up for the program at \$4 per block simply doubled their subscriptions rather than reduce their monetary commitment. Participants will begin to be charged only when the wind project is delivering power to the grid.

CP's goal is to obtain 3,750 subscriptions of 100-kWh blocks per month, which will allow them to install 1.5 MW of wind power by November 1998.¹³ By the end of November 1997, CP's participating distribution co-ops had already obtained 3,250 subscriptions and a business had expressed interest in purchasing an additional 400 blocks, bringing CP to within 100 blocks of its goal.

Synergy and Surprises

Although the project champions initially positioned this effort as a "pilot" program between CP and DEA, 11 more of CP's 17 distribution co-ops eventually decided to offer the program to their customers. As a result, the program eventually became a full-fledged program on the Cooperative Power system, available to all the distribution co-ops at their request. In a creative arrangement, half of the cost of developing the educational and program materials will be paid for by Cooperative Power and half by DEA. Thus the other, smaller co-ops on the CP system can take advantage of DEA's ground-breaking work.

Half to two-thirds of the total subscriptions to date have come from DEA members, even though DEA represents only 40 percent of CP's total sales. This can be traced to the fact that DEA began offering the program to its members much earlier, to the advocacy organizations' help in marketing the program to DEA members, and to the demographics of DEA members, many of whom live in suburban communities south of Minneapolis and Saint Paul.

A negative and complicating factor was that another utility made a fundamentally different type of green offering at about the same time. The DEA offering was based on the development of new renewables capacity. The other offering was made by United Power Association (UPA) on the basis of Northern States Power's existing legislative mandate, raising serious concerns among the advocates that customers were being misled and that the company was benefiting twice.

This raised difficult issues for the advocates. First, given the public's lack of detailed knowledge, the subtlety of the issue, and the limited educational resources at their disposal, it was difficult for the advocates to explain to the public why they supported the DEA offering but not the one from UPA. They were concerned that the apparently contradictory stance might lead to public cynicism and undermine their credibility. The advocates were also uncomfortable that the public's inability to distinguish between "good" and "bad" wind development might lead people to remember only that environmental advocates had opposed wind development in general. Finally, there was concern among the advocates that DEA might decide that advocate opposition to the UPA/NSP offering was responsible for delays in getting the co-op project off the ground.

The advocates in this situation and others have not fully resolved how to inform the public about "good" and "bad" environmental projects, while maintaining credibility for themselves and "good" renewable energy projects in general. Furthermore, they must maintain cordial relations with the project sponsors. These challenges will persist as green power offerings take root and become increasingly widespread next to offerings based on previous regulatory or legislative requirements. Nevertheless, despite the potential complications, the advocates in this case did manage to maintain support for the burgeoning CP/DEA project and to inform customers about how it differed from UPA's offering.

Activities Remaining

As of the end of November 1997, the program was close to meeting its goal for obtaining subscriptions. The following activities remained:

- obtain other program subscriptions;
- complete the procurement of renewable resources;
- install wind project and begin operation by November 1998; and
- evaluate the effectiveness of the program.

Since CP was close to meeting its subscription goal, the collaboration between the co-ops and the advocates appears to have achieved some success in reaching out effectively to co-op members. Of course, it is too early to determine the ultimate success of the program. Any evaluation should identify the characteristics, motivations, and perceptions of the residential, commercial, and industrial customers that chose the green offering. It should also explore the opportunities for expanding the program to additional distribution co-op members. Furthermore, it should examine more fully the degree to which the utility co-op and the MN SEED efforts complemented one another, as well as the difficulties that were experienced. This information should be helpful to utilities, advocacy organizations, policymakers, and power marketers interested in the opportunities for green products in both regulated and competitive markets.

LESSONS LEARNED

This project had produced, by November 1997, a number of striking and important lessons for the utility and renewables industries and for the advocacy community:

1. Advocacy and public outreach create the right conditions for project development.

By working for years to create an atmosphere of support for renewables in the state legislature and among the citizenry, the advocacy community laid the groundwork that made this project possible. The co-ops cited both pressure from legislators and interest among their customers as their primary reasons for undertaking this initiative. Satisfying customers was the driving force for the co-ops.

2. Advocates should not let the perfect stand in the way of the good.

Striking an appropriate balance and crafting an acceptable program were not easy. Ultimately the advocacy community believed that although a green pricing offering of renewables is not perfect energy policy, they valued a sincere effort by the co-ops to begin developing renewables and worked diligently to shape and then support it.

Indeed, if the advocacy groups were not willing to support a flexible and incremental program, they would have hurt the chances of acceptance by the co-op Boards. Moreover, if replicated sufficiently broadly, projects of this kind will help stimulate renewables markets overall and accelerate technology development and price reductions.

3. Co-ops should make as long and stable a commitment to a project as possible.

Along with being willing to compromise on key issues that allow a project to proceed, it is important to minimize adverse effects. The uncertainty in the number of subscribers who choose to participate from year to year runs at odds with the need for certainty in power contract revenues to obtain project financing. This, in turn, will raise the cost of capital and the cost of the project, reduce participation, and reinforce negative preconceptions. The longer and more stable a commitment customers can therefore be encouraged to make, the better. At the same time, it is clearly unrealistic to expect customers to commit to participation for the full life of a project.

In this case, subscription commitments were for one year. This means that the co-op itself must be prepared to make a commitment that involves some level of risk. Initially in this project, the co-ops proposed a 10-year contract with options for an additional 5 and 10 years. This resulted in premiums that were unacceptably high, however. Eventually, the distribution co-ops made a 15-year commitment to the G&T co-op, which then made the same commitment to project developers.

4. Co-ops and renewable energy project developers should minimize small project costs or maximize project sizes.

Another problem with this type of effort is its small scope. Small projects are burdened with proportionately higher development and transaction costs, which can make them considerably more expensive than larger, broader-based efforts. These high costs can then perpetuate the perception that renewables are too expensive and may discourage policymakers and others from proposing aggressive renewables efforts.

The ability of renewables project developers to put together cost-competitive projects at small, flexible sizes will therefore be an important indicator of the potential for expanding green pricing offerings among smaller utilities. If small project sizes produce excessive price premiums, then modest green pricing initiatives will be discouraged.

Alternatively, it may be possible to increase the size of projects. One rationale for the existing multimember co-op structure is the ability to benefit from the economies of scale in generation that are enjoyed by aggregating load from several communities. In the context of distributed resources, such economies would come not from aggregating load but from minimizing transaction and other costs.

With confidence gained and lessons learned from this project, other co-op systems may be able to expand beyond a pilot project from the outset. With experience, it may also be possible for a co-op to own and operate the generation equipment itself, rather than entering a power purchase agreement. Both these options would tend to lower the cost of cooperative wind projects, and reduce the premium charged.

5. Advocates should give "project champions" time to work internally to build organizational support.

Since the project champions within the co-op involved the advocacy community before full organizational approval had been obtained, it was essential for advocates to avoid publicity until the co-op Boards had approved the idea. Their success in this approach was important in two major ways. First, it allowed the champions to develop ideas and receive approval for the new project without outside interference. Second, the advocates built considerable trust within the co-op by their actions in this early stage of the project.

6. Advocate-sponsored consulting is invaluable.

In the early stages of this project, co-op staff needed technical and market consulting support to develop their ideas efficiently. By consulting with the project staff through a highly credible professional, UCS and MN SEED added considerable value to this effort. Steve Smiley was able to provide valuable help on what kind of equipment to select, how to structure the wind procurement RFP, and how to develop and market the green offering itself.

7. Co-ops and advocates should target common interests.

The utility and advocates in this project had much less in common than the advocates might have hoped. Nevertheless, it was possible to lay a sufficient foundation on which to build a solid

program by identifying and emphasizing the shared interest in renewables sparked by both political and popular considerations.

8. Grassroots environmental groups can effectively "market" green power programs.

MN SEED's capabilities in marketing this program were enormously important to the project. Its willingness to canvass and otherwise contact supporters in the Dakota Electric Association service area assured all participants that the co-op members most likely to adopt such a program would hear about the idea from a highly credible third party. This type of "endorsement" was very helpful.

At the same time, advocates must be aware of and deal with subtle and complex political pressures and issues and make hard decisions -- about when, and at what price, to support green offerings; about how to distinguish between good and bad products; and about how to communicate their decision-making principles to the public.

9. Co-ops and advocates should communicate thoroughly and frequently.

There were many occasions during the development of this program when miscommunications could have occurred and misunderstandings could have developed between the advocates and the co-ops. Regular, open communications early on between the co-ops and UCS and later between the co-ops and Clean Water Action helped the project stay on track.

10. Trust is critical and hard to come by.

The advocates and co-ops in the project had very little experience working together constructively prior to this project and, in most instances, had been adversaries. This history made the process of developing trust between the parties difficult but absolutely critical to the project's success. The lesson here is that honesty, flexibility, and a willingness to listen are key elements to success for projects of this kind.

REPLICATING THIS EXPERIENCE

The positive experience between clean-energy advocates and utilities in this wind energy green pricing project can be replicated in other windy areas. One key to success is to identify sincere utility champions who appreciate the role that wind power or other renewables can play in enhancing the service that their utility provides. Making the connection between this activity and a future of customer-centered competition is also an important motivation for utilities.

On the advocacy side, success hinges on a willingness to work sensitively with utility champions to nourish ideas that promote common goals and objectives without letting a desire for the perfect stand in the way of the good. Advocates can enhance this type of collaboration by using their superior knowledge and understanding of environmentally preferred power resources to guide and facilitate the development of a green pricing program. In addition, advocates have direct contacts with the segment of the market that should be most interested in and supportive of clean energy. These contacts and the advocates' experience running educational and legislative campaigns are powerful contributions to any collaboration with a utility.

There is considerable value in having an "interpreter" participate in the project. In this program, Steve Smiley and the Union of Concerned Scientists played this role, communicating the goals and perspectives of the advocates and utilities to one another and providing technical expertise on wind technology and economics when it was needed early in the project.

Conventional environmental advocacy relies primarily on major breakthroughs along the lines of the NSP renewables mandate. But green pricing programs like the one implemented by Cooperative Power and the Dakota Electric Association are important incremental steps along the way to such achievements. The

renewables industry needs a string of similar innovations -- sustained orderly development -- in order to build a vital and successful industry suited to meeting the critical and growing energy needs of the United States and the world.

FOOTNOTES

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1 Co-ops are careful to distinguish their "members" from the customers of conventional investor-owned utilities or municipal utilities.

2 The cost of capital for investor-owned utilities (IOUs) is typically higher than that for co-ops for two main reasons: the inclusion of higher cost equity in the capital structure of IOUs, and the lower cost of government-guaranteed debt available to co-ops.

3 Dakota Electric Association is unusual among co-ops in general and unique in Minnesota in that it is rate regulated by the Minnesota Public Utilities Commission. This situation makes DEA more involved with and affected by state policy than the other distribution co-ops on the CP system.

4 Powering the Midwest: Renewable Energy for the Economy and the Environment, Michael C. Brower, Michael W. Tennis, Eric W. Denzler, and Mark M. Kaplan (Union of Concerned Scientists, 1993). Visit the Union of Concerned Scientists at <http://www.ucsusa.org>.

5 When the project began, none of the co-ops had polled any of its members specifically about their interest in and willingness to pay for renewables. DEA did include questions about renewables in its annual poll of members conducted in the Fall of 1996.

6 One idea was using the wastes from livestock feedlots to produce biogas for a small generator. Several co-op managers had contacts with managers of this type of facility and were quite positive about the idea. On the other hand, many of the members of MN SEED could not actively support facilities like this because they perceived them to be "corporate farming" and a potentially troubling source of water pollution. Many advocates are working actively against the trend in Minnesota toward large feedlots which threaten water and air quality and sustainable family farming.

7 The MAPP has developed a statistical method that is used to determine the amount of conventional generating capacity that a wind project can displace. For each month of the year, the output from the wind project on a hourly basis is determined and compared to the hourly load for the utility system purchasing the wind power. Monthly "accredited capacity" calculated in this way, measured in percent of wind farm rated capacity, ranges from 10% during summer months to 40% to 50% during the windier winter, spring, and fall months.

8 For more information on the Traverse City green pricing program, see Edward Holt, Green Power for Business: Good News from Traverse City, Research Report No. 1 (College Park, Md.: Renewable Energy Policy Project, July 1997). Visit REPP at <http://www.repp.org> or order from REPP at (202) 293-2833.

9 In the Traverse City green pricing program, TCL&P chose to own and operate the wind turbine itself rather than enter into a power purchase agreement with a wind developer.

10 Ultimately, the CP Board ruled specifically that the wind energy would be procured under contract.

11 This contract term was probably longer than CP would have preferred due to the uncertainty of both enrollment and long-term participation in the green offering. On the other hand, wind developers typically obtain power purchase agreements for 20 years or more in order to secure loans and investments in projects.

12 Two factors were primarily responsible for the lower premium at TCL&P: higher utility avoided costs, (2.4 cents/kWh) and lower project costs due to utility ownership. The municipal utility cost of capital and ability to use 100% debt financing produces the most favorable financial conditions for wind development.

13 3,750 monthly purchases of 100 kWh blocks is approximately the demand that would be met by 1.5 MW of wind power under local conditions.