

Green power, a piece of the puzzle

By Mack McConnell

Alternative energy sources, most of which are often called “green power,” have received increased attention nationwide since the California energy debacle. Although prices in the wholesale electricity market have dropped since then, energy issues are still hot topics.

Alternative energy sources are seen by some groups as ways to avoid future energy crises. The concepts of alternative energy generation are not new. Windmills and fossil fuel burning generators were providing electricity to some farms and ranches before distribution systems were built. Those generation methods fell by the wayside when utilities’ distribution systems began providing cheaper, more convenient and safer electric power.

Mostly for environmental reasons, awareness of green power sources gradually grew through the last half of the 20th Century. Government incentives have played a role in developing those sources. Recent incentives have increased the economic viability of some green power projects.

There is much confusion about exactly what are alternative energy sources and which of those sources are considered green.

“Green power is generally considered to be renewable resources that don’t consume fossil fuels,” said John Hines. Hines, one of two Montana representatives on the Northwest Public Power Council (NWPPC), was interviewed recently in the council’s Montana office in Helena. The council makes policy recommendations concerning power issues in the Northwest. Montana, Oregon, Idaho and Washington are represented on the council.

“Some people don’t consider hydropower to be green even though it is a renewable resource and does not deal with fossil fuels,” Hines continued. “One reason for that is some groups want to

Wind turbines range in size from tiny to enormous, like the one’s shown here.

Photo courtesy of SeaWest.

see other green power sources pursued and put into utility portfolios. Because most of the electricity in the Northwest is generated at dams, if hydropower were considered green, it could lessen the emphasis on those other sources. Also, the large hydro dams are detrimental to fish, especially migrating salmon. Therefore, hydropower is not considered to be as environmentally friendly as other green sources of power.”

Small hydro projects, however, are sometimes considered environmentally friendly and are therefore considered green. For example, a project to install hydroelectric generators in Tiber Dam on Lake Elwell has received green credits.

Presently, wind is the alternative energy source being most widely promoted in Montana and its neighboring states. Wind generation projects ranging in size from small residential roof top propellers to massive windfarms of gigantic wind turbines are being touted. There are several windfarms planned in the region, including at least two in Montana.

Along with a great deal of good information about wind power, there is quite a bit of misleading information, according to Hines. Most often that information is about the economics of wind projects.

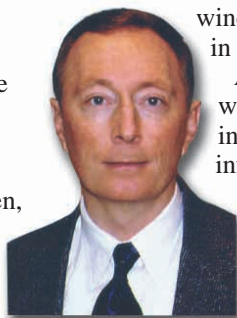
That is not to say some wind power projects, especially large ones, aren’t economically feasible, Hines says. They can be feasible because of government incentives that can bring the cost of electricity to customer down to rates that can be competitive in some markets and as a means to limit risk associated with fuel price volatility.

“For example,” Hines said. “In one case they are talking about 3 cents per kilowatt hour capital costs. That’s after a 1.7 cent federal tax credit. Wind power projects that can be brought on line by the end of next year may receive federal tax credits for the next 10 years, he said.

The upside

“There can be good reasons to build alternative energy projects,” said Hines. Properly sited generation projects of

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John Hines



Green power

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any kind can alleviate some transmission problems. Also, in the case of wind generation, it can fill in slack times in hydro generation, he added. Also, it allows for local control of the generation, he noted.

Alternative energy sources are also considered by industries and businesses that are concerned about power quality. Hines noted that a Bozeman area business is installing an on-site fuel cell because it feels it must have a power source that helps increase their reliability.

There are also instances in which building distribution lines to sites where electricity is needed is cost prohibitive. For example, solar powered pumps are often used to supply water to remote stock tanks. Some electric cooperatives in Montana have helped members obtain that technology.

"And because there are no fuels burned in these technologies, you don't have to deal with fuel price fluctuations," said Hines, "and there are no harmful emissions."

He also noted that states are requiring some alternative energy sources in utilities' portfolios. Montana law requires that the default supplier offer its customers an alternative product consisting of renewables. There are some benefits in having diverse portfolios anyway, he said. And of course the value of impacts or lack of impacts on the environment has to be figured in, he added.

The downside

There are also negatives included in such projects. Perhaps the greatest are the capital costs, said Hines.

"Without substantial government incentives, most are not economically competitive. And in the case of wind power and solar power, they are not available to serve all the time.

"The power may not be there when you need it," he said. "So it has to be 'firmed up' with other power sources. That costs money. And the transmission has to be available whether the resource is being used or not," he said. That transmission availability also has to be purchased, he added.

There are also much greater power fluctuations with wind-generated electricity than with power generated by conventional means, according to economist and council administrator John Bushnell.

Those fluctuations can cause problems on the transmission system. They can even cause the system to crash. A preliminary NWPPC power plan draft contains a consideration of putting a cap on the amount of such power allowed on the grid. The cap is due to the uncertainty on how and at what cost the system can integrate that type of power product.

Research is under way to find ways to "flatten out those oscillations," Bushnell said.

Concerning alternative energy generation at the residential level, consumers need to know all of the information ahead of time before they buy something, Hines said. Unless they are completely separated from their local utility's system, they will still have to pay for the distribution system that serves them, he said. And if they are going to feed electricity back onto the utility's line, there is equipment

needed and an agreement must be made with the utility.

In most cases, that can be worked out he said. But, he added, it may be more expensive than the consumer expects it to be.

"The bottom line," said Hines, "is people should have alternative energy choices available, but they should not expect other customers to subsidize those choices.

"Alternative energies have a role to play in the Northwest's energy picture now and I'm sure they will play a much larger role as technology develops," he said.

The cooperative prospective

Ravalli County Electric Cooperative Manager Ric Brown echoed many of Hines' opinions during the annual meeting of the Montana Electric Cooperatives' Association (MECA) in Great Falls in early October. Brown is also the chairman of MECA's legislative committee.

Like Hines, Brown sees a role for green power in the energy resources mix. He also agrees with Hines that customers, in the cooperatives' case, their members, who do not choose alternative energies should not have to subsidize those who do.

Alternative energies can help fill in energy gaps where they exist, especially with hydro, Brown said. But it is not realistic to expect them to replace hydro or coal or gas as sources for generating electricity.

"The cooperatives' aim has always been the best service possible with the lowest possible price," said Brown. "We want to adapt with change but keep that motto as our basic goal. We have to make sound business decisions."

Brown pointed out that most cooperatives are already buying some green power through their federal wholesale power providers. With the exception of a small hydro plant in Troy, none of Montana's 26 electric cooperatives have generation facilities. But combined, they have more miles of power line than investor-owned utilities in Montana.

One of their non-federal power providers, Basin Electric Power Cooperative headquartered in Bismarck, North Dakota, has recently announced plans to build large windfarms in that state and in South Dakota.

"We need to take a common sense approach to the energy picture," said Brown. "We need to protect the environment. We also need jobs and economic development."

In response to increasing inquiries to cooperatives about small alternative energy systems attaching to co-op lines, a MECA committee has drawn up a model distributed generation and net metering policy. That policy has been adopted by many of MECA's member cooperatives.

The aim of the policy is to facilitate interconnection with these sources without creating additional costs for the rest of their members and without jeopardizing the integrity of the cooperatives' distribution systems.

Brown suggests consumers make sure they have all the information about alternative energy systems before they purchase them. He said there have been some claims made by salespeople that may not be substantiated. He also said they should check out what incentives may be available and determine what the total costs and interconnection responsibilities may be.

"The cooperatives are not opposed to alternative energy sources," he emphasized. "We just want what is equitable for all of our members."