BRIGHT FUTURE? The ski industry hopes to do well by doing good as it expands into alternative energy, such as the solar array, in Carbondale, Colo., funded by the Aspen Skiing Company.

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Off the Grid

As resorts invest in renewable energy, the biggest hurdle—ironically—could be environmental approval. By Paul Tolme

Auden Schendler skins up the Cirque, a blustery ridgeline high atop Colorado's Snowmass resort, and stops at the base of a 165-foot-tall weather tower. "It fell over the first time they tried to put it up," says Aspen Skiing Company's sustainability director. "Too windy."

Built last September, and now anchored by high-tension cables, the tower collects wind data for what would be a record-setting renewable energy project: the world's highest wind farm. If all goes as planned—a big if—three massive wind turbines will be erected atop the Cirque, at 12,450 feet, in late 2010 or 2011.

Construction would be daunting. A 450-ton crane would have to be transported to the mountaintop worksite, underground transmission lines laid, roads cleared—all without damaging the Cirque's high-alpine habitat. The payoff? A whopping 15 gigawatts of electricity annually—nearly 50 percent of the power needed to run Aspen's four resorts.

"A few years ago, people would have said no way," says Jim Stark, winter sports administrator for the U.S. Forest Service's Aspen office. "Now everyone is saying go for it." Mandated by an executive order to explore renewable energy projects on public lands, the Forest Service—not Aspen Ski Co.—proposed the project, and the federal agency sees it as a key pilot program.

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The biggest hurdle, ironically, could be environmental concerns. Building and operating the wind farm in a sensitive ecosystem will take a thorough environmental vetting. Critics could surface this summer when Stark initiates an environmental review required under the National Environmental Policy Act—federal law that has delayed or shelved many resort developments. So far, though, wilderness advocates have assured Stark they will not oppose the project. Aspen would finance the estimated $12 million cost.

The company already has a history of spending big money on renewable energy, including funding a $1.1 million, 150-kilowatt solar energy array last year in neighboring Carbondale—the largest solar setup in Western Colorado.

Leitner-Poma, one of the world's largest ski lift manufacturers, would supply the turbines. The company recently launched a subsidiary, Leitwind, to capitalize on the booming global demand for wind turbines. "We see this as a very feasible project," says Tom Clink, Poma's North American sales manager.

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Wind power is experiencing a mini boom in the mountains. No turbines existed at ski areas in 2006. By the end of this year, there could be four, from Massachusetts's Berkshire East Ski Area to Vancouver's Grouse Mountain. In 2008, Leitwind erected a turbine at the Austrian ski area Salzstiegl to provide 100 percent of the power for its operation.

Surprisingly, it wasn't a megaresort that erected the ski industry's first wind turbine, but 170-acre Jiminy Peak, which installed the Zephyr in 2007 after seeing its energy prices jump 50 percent in two years. "It's been a smashing success," says Jiminy's sustainability director James VanDyke. The Massachusetts area receives about 40 percent of its annual power needs from the Zephyr. The motivation was simple. "This was not about climate change," VanDyke says. "This was a business decision." The $3.3 million investment is on pace to pay for itself in 7.5 years. "Then we get free power."

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Wind turbines are a good solution for ski areas because they have a faster payback rate than solar arrays and can supply huge amounts of power. Also, ski resorts have a natural advantage in harnessing wind power: They're located on mountaintops. And they also "have roads and infrastructure and electrical lines that allow you to tie into the grid," says Otto Van Geet, a senior engineer with National Renewable Energy Laboratory in Golden, Colo., who is providing technical assistance to the Cirque project.

BLOWING IN THE WIND Jiminy Peak, Mass., built the ski industry's first wind turbine in 2007. During the windy winter months, the turbine supplies up to 50 percent of the resort's energy needs.

Even so, not all resorts are interested. "We aren't in the energy generation business," says Vail Resorts CEO Rob Katz. Maintaining a wind farm, Katz says, would detract from the resort's primary mission: customer service. Instead, Vail is going on an energy diet. Katz has directed the company to cut energy use 10 percent by year's end. The company is also dabbling in microhydro power. Streetlights in the proposed green-themed Ever Vail base village will be partially powered by currents of nearby creeks.

Whistler Blackcomb, B.C., meantime, is partnering on the ski industry's largest microhydro installation, which hopes to feed the B.C. grid with energy equivalent to all of the power used by the resort–North America's biggest–by next year. "We can't conserve our way out of this problem," says Arthur De Jong, Whistler's mountain planning manager.

More than 60 ski areas pay a premium to buy renewable energy credits (RECs), allowing them to claim to "offset" their use of fossil fuel power. But the credits are controversial. Aspen, among the first to claim it was 100 percent wind powered, has stopped buying RECs, viewing them as a corporate cop-out.

As the ski industry moves into the energy future, the Cirque wind farm "would be a model for the ski industry," Schendler says, breathless from both his enthusiasm and lack of oxygen. The turbines would be designed for the harsh alpine environment, with sensors that detect ice buildup. The bases of the towers would measure 12 feet in diameter. "These are monsters," Poma's Clink says.

Schendler, who has passionately fought to protect the Cirque from any development, balked when Stark proposed the project in 2007. Then he looked at a satellite image of the Cirque on his computer and clicked back, taking a long-distance view of the Colorado mountaintop. "It's a speck on the map," he says. "If we can't do this here, then where?" •

Wind, Water and Sun

The ski industry looks to lead the way in alternative energy. Here's a partial timeline: **2007** ◗ Jiminy Peak, Mass., builds a 1.5 megawatt wind turbine, the industry's first. **2008** ◗ Salzstiegl, Austria, becomes the first ski area to power its whole operation from a wind turbine; Aspen Skiing Company builds a 150 KW solar array; construction begins on Whistler's 7.5 MW hydro-electric project. **2009** ◗ Grouse Mountain, B.C., plans to erect a 1.5 MW turbine; Berkshire East, Mass., plans to erect up to a 650 KW turbine. **2010 or 2011** ◗ Aspen Ski Co. plans to start operation of three turbines on Snowmass Mountain.

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