

Pictures: Eight Ski Resorts That Give Green Energy a Lift

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Whistler Blackcomb: Micro-Hydropower



Photograph by Taylor S. Kennedy, National Geographic

From lifts and lights to the machines that make and groom snow, running a ski resort is energy intensive. But many ski centers around the world are using less energy, and getting it from greener sources, in the face of rising fuel costs and concern over climate change, which could be a spoiler for all snow sports enthusiasts.

Whistler Blackcomb in British Columbia, Canada, has embraced creative means to go green, generating its own renewable power by harnessing on-site natural resources of water and gravity.

The Fitzsimmons micro-hydro renewable energy project taps the power of the Fitzsimmons River, which runs through the heart of the resort under the Peak 2 Peak Gondola. Roiling mountain waters turn turbines that return an estimated 32 gigawatt-hours of electricity to the grid each year—an amount equal to Whistler Blackcomb's stated annual energy consumption.

Warren Rider, of the Ski Areas Citizens Coalition (SACC) and Rocky Mountain Wild, said such energy initiatives can attract customers. "We truly believe that an environmental ethic is there among most skiers and snowboarders," he said. "They will make choices on where to go based on a lot of factors but, given the opportunity, one of them is the environmental responsibility of the ski areas themselves."

Davos, Switzerland: A Renewables Array



Photograph by Arno Balzarini, Keystone/AP

Blue skies, stunning views, and thousands of adrenaline-pumping vertical feet await skiers on a classic tour of the summit spine on the Flueela-Wisshorn above Davos, Switzerland. Known as the meeting place of the world's financial elite as host of the annual World Economic Forum, Davos was the first of the Alps resorts to receive "Energy City" status.

Since 2008, Davos has partnered with neighboring Klosters on a suite of environmental and energy improvements. Though hydro remains the area's largest non-fossil fuel energy source, at some 25 percent, geothermal, solar, and biomass energy production has doubled since 2008 and is slated to spike further in the future.

Forward-thinking initiatives here also include operational biogas plants fueled by sewage treatment facilities. Conservation underlies all of these efforts, and public transportation is the linchpin. Ski passes at Davos include unlimited free use of buses and trains throughout the Davos Klosters area.

Aspen Highlands, Colorado: Solar Leader



Photograph courtesy Daniel Bayer, Aspen Ski Resorts

A worker clears snow from a small solar array at the Aspen Highlands patrol headquarters building in Colorado. These particular solar panels produce only a tiny amount of power but are located in a very visible spot to highlight the resort's larger commitments to energy initiatives.

"We're also looking at pursuing utility-scale clean energy," said Auden Schendler, who heads sustainability for Aspen Skiing Company, "and we established the industry's biggest on-mountain solar array at almost 12,000 feet (3,658 meters)."

Aspen Highlands, like two of the other three Colorado resorts owned by Aspen's "Ski Co," is one of 2011's top ten environmentally sensitive ski resorts in the Western U.S. as ranked by the Ski Area Citizens Coalition.

SACCs Warren Rider said the rankings help give skiers and boarders green choices, and they reach a wider audience as well. "In many cases ski areas operate on public land. We believe it's incredibly important that any operation on public land, whether a ski area or a timber sale, needs to operate in a sustainable way. The public is the landowner so these rankings give them an opportunity to see how these areas are being managed."

Aspen Skiing Company has been a leader in pushing for global warming policy, including filing a brief supporting the states that took a landmark case to the Supreme Court to force the U.S. government to regulate carbon dioxide as a pollutant.

Lech, Austria: Local Biomass



Photograph by Daniel Berehulak, Getty Images

Lech is a postcard-perfect village in the Austrian Alps that takes a community approach to renewable energy. About 90 percent of Lech's hotels and lodges are heated by a communal biomass plant that burns wood chips and wood waste that comes from local farmers, sustainable forest harvests, and avalanche pathway debris.

The facility has dramatically cut dependence on fossil fuels and also helped to eliminate a persistent pollution problem that once compromised Lech's clean mountain air. Home heating oil emissions have plunged here, thanks to the biogas plant, while traffic exhaust and fuel use have been slashed by emphasizing public transportation.

Berkshire East: Wind Power



Photograph courtesy Berkshire East

Amid mountaintop fog, a small family-owned New England resort prepared last season to seize a big distinction. When installation of this turbine was completed in January, Berkshire East became the world's first 100 percent wind-powered ski resort. The project was partially-backed by state and federal grants and should reach an economic "break-even" point within a decade.

Soaring energy costs are one of the reasons that small ski resorts struggle. Berkshire East's operators have said that trading rising electricity bills for fixed loan payments, and free fuel costs, was essential to the area's continued economic viability.

The installation also eliminates 1,400 tons of annual greenhouse gas emissions-the equivalent of taking about 250 cars off the road each year. The win-win nature of such projects is making them increasingly popular.

"The ski industry has been very involved with trying to further efficiency in their operations," said Troy Hawks of the (U.S.) National Ski Areas Association (NSAA). "First it just makes financial sense-one benefit of being green is that it also positively impacts your bottom line. But it also involves a sincere concern for the environment. Many people that live and work around ski resorts, and many of the people who go to ski resorts, are like-minded outdoors people who want to see the environment sustained for future generations."

Méribel, France: Hydropower and Biofuel



Photograph by Pierre Jacques, Corbis

France's enormous Three Valleys resort, of which Méribel is just one part, buys renewable hydropower to run nearly 2,000 snow guns and almost 200 ski lifts. Biodiesel is also used in all company vehicles. In the Alps, as in the United States, the prospect of climate change worries resort owners and drives their actions on energy use.

"Opinions vary just like opinions vary in the general public," said NSAA's Troy Hawks. "Some resorts are very concerned, they've launched their own studies about how climate change might impact them by 2030 or 2050. Some are a little less concerned but I think in general the resorts' actions show where they stand on the issue and they've been proactive, launching initiatives like the Climate Challenge to reduce their carbon footprints."

"Skiing is a way for Americans to understand climate change in a tangible way," added Aspen Skiing Company's Auden Schendler. If you say, well, the insurance industry is concerned about climate change, it's not immediately obvious how or why they are concerned. With skiing it's in your face. Hey, we're worried about the snow going away."

Grand Targhee, Wyoming: Efficiency



Photograph courtesy Grand Targhee Resort

Skiing magazine named Grand Targhee Resort its "greenest" last year, and the Wyoming destination won the environmental excellence award from the National Ski Areas Association as well.

Grand Targhee has been honored for achievement in an aspect of energy environmentalism that's perhaps less sexy but absolutely critical—conservation and efficiency.

"Creating more efficiency in the resort is probably the first step," said NSAA's Troy Hawks. "It doesn't make a lot of sense to introduce solar panels or a wind turbine if your buildings are losing heat out the windows."

Aspen Skiing Company's Auden Schendler also touts "radical efficiency," but believes the industry can play a much wider role by using high-profile resorts and snow sports athletes to push for changes in national energy policy. "The snow sports industry is a \$66 billion business," he said. "Our message to Washington is, we're not radical environmentalists, we're businesspeople, and snow sports represent a huge piece of the economy."

SkiWelt, Austria: Solar Tow



Photograph courtesy Albin Niederstrasser, Kitzbüheler Alpen

In terms of terrain access and vertical feet SkiWelt's "Sonnenlift" is barely a blip. But the humble rope tow is a watershed in terms of renewable energy. Sonnenlift is the first ski lift to be entirely powered by its own set of photovoltaic panels. With capacity to generate 12,000 kilowatt-hours per year for a lift that requires 9,000 kilowatt-hours annually, the system even manages to return excess energy to the grid. The 673-foot-long (205 meter-long) connector lift in Brixen im Thale, Austria, might just be a harbinger of much bigger things to come.

Sonnenlift's photovoltaic system uses 1,216 square feet (113 square meters) of collection panels fitted to the south-facing side of the resort's valley station. It can move some 900 skiers uphill each hour in any kind of weather. When the sun isn't shining, SkiWelt draws "stored" power from the grid to run the lift (some of the excess that the solar system supplied to the grid when the sun was shining). The lift fulfills only a tiny fraction of skier needs at sprawling SkiWelt, but it's an intriguing example of the possible.