

Introduction Climate Club Trophy - Projects

Craftsbury Outdoor Center (Craftsbury, Vermont USA)

Project: Minimizing the impact on the local ecological systems

Club:

The Craftsbury Outdoor Center is a non-profit organization with a three-part mission:

- Support and promote participation in and excellence in lifelong sports with a special focus on rowing, nordic skiing, biathlon and running
- use and teach sustainable practices
- protect and manage the surrounding land, lake and trail



Sustainable initiatives and positive impact:

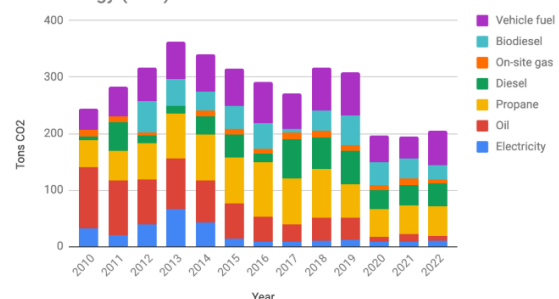
- **Snow depot storage system:** The depot allows us to blow snow when it is really cold (more energy-efficient) and then store the snow for the following year. It guarantees early season snow which allows many local schools, club and university teams in the eastern US to avoid traveling. This avoids the carbon impact of these groups flying west or north to find snow. We supplement our natural snow and our snow depot supply by blowing snow when temperatures drop. We try to find the coldest windows because colder temperatures result in more snow created with less energy. Blowing snow does require a generator since we do not have 3-phase power and that generator unfortunately runs off of diesel. In order to capture the waste heat off this generator we engineered some heat exchange systems to capture the waste heat in three places (turbo air, exhaust air, and coolant) when we are making snow and that waste heat gets dumped into a giant central tank that stores heat for many buildings on campus.



- Energy:** We have three different solar arrays—solar trackers in the stadium, panels on the roof of the ski lodge building, and panels on the roof of the garage and maintenance shed. All together, we have 140 kW of solar, and generate approximately 65% of our electricity needs. As we have reduced our use of fossil fuels, we have increased our use of electricity by installing mini-split heat pumps and ground-sourced heat pumps for space and water heating. We also offer seven level 2 EV charging stations in our parking lots which our visitors can use for free.
- Facilities:** Our ski lodge is net zero and utilizes very thick insulated walls, a high overhang roof to shade in summer, but let in low winter sun, and an underground tube air exchange system that passively heats or cools air depending on the season. The main heating system at the Outdoor Center's campus uses a large underground water tank to store heat produced in several ways:
 - 1) We have 3 high-efficiency wood boilers. We burn wood that is either harvested from the woodland property on which our ski trail system is located, or from other nearby properties also being sustainably managed. We work with a Forester to implement a harvest pattern that keeps the forest healthy, diverse, and not over-harvest.
 - 2) We gather the waste heat from our snow-making 3-phase generator, which supplements our hot water when we are making snow.
 - 3) We use heat pumps to supplement as needed.
 - 4) In the summer we use solar thermal panels.
- Monitoring:** We monitor our energy use from all sources, and estimate our carbon footprint for each year, as part of our goal to reduce our carbon footprint as much as possible. The graph shows the progress we have made with our on-site carbon footprint, as well as the areas for improvement in the future.



COC Energy (CO2) Totals 2010-2022



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Deutscher Alpenverein - Sektion Ulm (Ulm/Dornstadt, Germany)

Project: "Sustainability at home & on the road"

Club:

The German Alpine Club - Section Ulm with the biathlon division pursues measures that help to work more economically and on the other hand have positive effects on the environment with the two columns

- "Sustainability at home"
- "Sustainability on the Road"

Sustainable initiatives and positive impact:

- **Sustainability at home:**

Cistern: During the 2014 expansion, we installed a cistern that collects surface water at the biathlon center, providing resources for snowmaking. We use the latter very sparingly - that is, only when there is a real prospect that we will benefit from the prepared tracks for several weeks.



Bullet trap: We have been collecting the shot projectiles at our small-bore shooting range since 2005. The collected lead is then sold and the proceeds flow into our youth work.

Cold Hall: In order to offer our athletes better conditions for indoor training, we are implementing a cold hall with a short tartan track as part of our current construction of a new functional building. This offers a roof in case of bad weather, but is not heated - after all, we are winter sports enthusiasts.

Heat pump: The remaining part of the functional building, the shell of which is already in place - including a workshop, changing rooms and sanitary facilities - will be heated with a heat pump after completion.



- **Sustainability on the Road:**

Van-Cooperations: For the transport of our athletes and their luggage to competitions or (rare) training measures in other places, we have a mini van, which is financed by the Swabian Ski Association. However, this is not always sufficient for several trips at the same time. That's why we've had cooperative

agreements with two of our partners since this winter: two regional companies provide us with vans on demand that would otherwise be parked in the yard on non-working weekends. All sides benefit from this: The parents of our young athletes save time-consuming and cost-intensive journeys. At the same time, we save the atmosphere CO2 emissions that would be generated by private cars.



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ASV Martell (Martell/South Tyrol, Italy)

Project: Hydroelectric power plant for green electricity

Club:

The ASV Martell is an amateur sports club, with its own section for biathlon, located in the heart of the Stelvio National Park and always striving to promote and develop sports, in harmony with the environment.



Sustainable initiatives and positive impact:

- **Green electricity:** At the Martell Biathlon Center, we were able to switch completely to green electricity at the start of the 2022/23 winter season. The municipality of Martell has built a hydroelectric power plant where we can tap the electricity for the biathlon facility. Both the facility, the snow production and also the administration building will be powered by this green electricity. The heating of the building has been running for several years with a wood chip plant. We are always trying to use new and energy-saving technology for our snow production and are here in constant exchange with a company. For us it is important to continue on this path in the future in order to reduce our ecological footprint and to practice the sport in a sustainable way.



- **Green snow production:** Through our green snow production and management of the biathlon facility with its own electricity, we have already taken a good step in the right direction. In the future we still have ideas and projects that will take us even further. Among others, charging stations for e-cars are planned directly at the biathlon facility. We also want to continue to keep the amount of waste at our events small and avoid waste wherever possible.

