

# REDUCING CO2 EMISSIONS THROUGH FOLDABLE CABINS AND RENEWABLE HEATING

## OC OSLO NORWAY

### ABSTRACT

Holmenkollen Skifestival continued its leadership in sustainability by targeting two key sources of event emissions: transport and heating. Partnering with Renta AS and PelEnergy AB, the OC introduced foldable waxing cabins, reducing truck transport by 80%, and replaced diesel heating in the VIP tent with renewable electricity and pellets, cutting heating emissions by 90%. All smaller tents were heated with renewable electric systems, making the entire site fossil-free. Next, the team aims to pilot mobile heat pumps to move toward a fully emission-free event.

### WHAT WAS THE GOAL?

Holmenkollen Skifestival set out to further reduce CO2 emissions from its annual events, even after achieving 100% renewable electrical power use across most of its operations. The Organising Committee (OC) identi-

fied two key areas for improvement: the transport of temporary waxing cabins and the heating of the VIP tent. The aim was to find new solutions that would lower emissions while remaining financially feasible, using innovations that other venues could easily adopt.

### HOW WAS THE GOAL ACHIEVED?

In collaboration with its service providers, Renta AS and PelEnergy AB, Holmenkollen Skifestival implemented two main solutions:

- **Foldable waxing cabins:** Traditional fixed-frame waxing cabins require two per truck, meaning 45 trucks are needed to transport 90 cabins. The OC introduced foldable cabins that allow ten to be transported per truck, cutting that number down to nine. This represents an 80% reduction in transport-related emissions and significant savings in logistics costs.



- **Renewable heating in the VIP tent:** The large two-storey VIP tent (“Kollenteltet”) was previously heated by diesel systems. In 2024, it was converted to a hybrid system combining renewable electricity and pellet heating (as backup for colder conditions). Pellets, made from renewable biomass, emit up to 90% less CO<sub>2</sub> than fossil fuels.

All smaller tents and temporary structures were heated using electric units connected to the local grid, resulting in 100% fossil-free heating across the event area.

Overall, these innovations reduced emissions from transport and heating by around 80–90%, helping Holmenkollen maintain its leadership position in sustainable event management.

Reported results (2024): The OC reports that CO<sub>2</sub> emissions were reduced by almost 95% compared with the previous setup. In 2024, weather conditions meant the VIP tent could be heated using renewable grid electricity and solar gains, so no pellets were used during the event. The OC has not calculated the savings as a total CO<sub>2</sub> figure in tonnes.

## WHICH IBU SUSTAINABILITY ISSUES DOES IT ADDRESS?

- **Emissions from energy use for heating, cooling and power** – Replacing diesel with renewable electricity and biomass pellets drastically reduced fossil fuel dependency.
- **Emissions from travel & transport** – The introduction of foldable waxing cabins reduced truck transport emissions by 80%.
- **Unsustainable sourcing practices** – Where pellet heating is used (e.g., in colder conditions), sourcing certified pellets supports responsible supply chains.
- **Innovation and knowledge sharing** – The OC worked with suppliers to develop practical, scalable solutions that can be replicated by other organisers.

## WHAT WERE THE CHALLENGES FACED?

Balancing ecological ambition with financial practicality proved challenging. The organisers initially hoped to achieve 100% renewable electrical heating, but this was not technically possible due to the size and location of the main tent.

Finding suppliers able to provide innovative solutions at scale was another key challenge. Negotiations with service providers required persistence to ensure both environmental performance and operational reliability.

**Operational learning:** No technical issues were reported with the foldable cabins themselves. The only issue encountered was melting snow, which caused the ground under the cabins to shift (a weather-related challenge rather than a container/design problem).



**Click here to watch the video**

## WHAT ARE THE NEXT STEPS?

Following the 2024 event, the OC is continuing to explore alternative heating solutions for large temporary structures. At the time of reporting, there is no confirmed heat pump solution ready for implementation. The OC also noted that pellet-based heating is expensive, and is therefore assessing other options that remain reliable and financially feasible.

**Oslo has shown how innovation in logistics and heating can drastically cut emissions, setting a new standard for sustainable event operations in biathlon.**

For further information on the sustainability work of the IBU, please visit:

<https://www.biathlonworld.com/inside-ibu/sustainability>