OLOID **OLOID Solution** GmbH

Mixing of a storage pond to produce technical snow
Alpspitzbahn, Nesselwang, Germany

Alpspitzbahn Nesselwang
http://www.alpspitzbahn.de

Operation
1 storage pond with OLOID Type 400

Period
Since September 2021

Success
Reliable homogenization and breaking of the temperature stratification (15 kW ventilation to 0,25 kW OLOID)

Reduces running times of the cooling towers (75 kW) for generating technical snow significantly

Plant description:
The Alpspitzbahn Nesselwang GmbH & Co. KG was looking for an energy-saving alternative to keep the storage pond free of ice and mixing it to produce technical snow. Even when the temperatures are well below zero, there must not be a closed layer of ice on the pond, so that the water can be used to produce snow on the ski slopes. Previously, the customer worked with pressure ventilation from below, with a compressor (15 kW connected load). A cooling tower with a capacity of 75 kW was also used to lower the water temperature for the production of artificial snow. The storage pond has a maximum volume of approx. 20,000m³.

OLOID-use and success:
For homogenization (breaking up the temperature stratification in the storage pond) and the production of technical snow for the ski lift operator, an OLOID type 400 was installed in August 2021 and the process was observed and documented by the operator.
By the flow generated and the intake of the slightly warmer water layers from the depths, the OLOID type 400 fulfilled the desired task with only 0,25 kW motor connection power. The installation was carried out without a crane and could be easily implemented without the need for complex diving operation.
By the mixing of the OLOID and the associated reduction in water temperature, the running time of the cooling towers could be significantly reduced, so that a total saving of electricity for the season of approx. 42,768 kWh was achieved by saving the operation of the pressure ventilation and also the cooling towers.
At around 15 cents/kWh the customer saved energy costs of over €6,000.

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measurement date	01.10.2021	08.10.2021	05.11.2021	26.11.2021	02.12.2021	08.12.2021	28.01.2022
outside temperature	17°C	8°C	5,6°C	6,5°C	1,5°C	0,5°C	-1,5°C

water depth	measured temperature	01.10.2021	08.10.2021	05.11.2021	26.11.2021	02.12.2021	08.12.2021	28.01.2022
0 m		13,6°C	11,9°C	7,0°C	4,6°C	2,5°C	1,7°C	1,7°C
1 m		13,6°C	11,9°C	7,1°C	4,5°C	2,6°C	1,8°C	1,8°C
2 m		13,6°C	11,9°C	7,1°C	4,5°C	2,7°C	1,9°C	2,0°C
3 m		13,6°C	11,9°C	7,1°C	4,5°C	2,7°C	2,2°C	2,0°C
4 m		13,6°C	11,9°C	7,1°C	4,5°C	2,7°C	2,2°C	2,0°C
5 m		13,6°C	11,9°C	7,1°C	4,5°C	2,7°C	2,2°C	2,0°C
6 m		13,6°C	11,9°C	7,1°C	4,5°C	2,7°C	2,2°C	2,0°C
7 m		13,6°C	11,9°C	7,1°C	4,5°C	2,7°C	2,2°C	-
8 m		13,4°C	11,7°C	7,2°C	4,5°C	2,7°C	2,2°C	-