

## COMPANY PROFILE

Munich-based Orcan Energy AG is a leading CleanTech company that develops efficient energy solutions that generate CO<sub>2</sub>-free electricity from unused waste heat. Orcan solutions can be connected wherever waste heat is generated: at industrial and geothermal plants, on ships or at engine power plants. With waste heat solutions from Orcan, customers can simultaneously reduce electricity costs and improve the eco-balance of their plant. Orcan Energy was founded in 2008 by physicist Dr. Andreas Sichert (now CEO) and engineers Dr. Andreas Schuster and Richard Aumann, and currently employs around 60 people.

The efficiency PACK developed by Orcan Energy converts waste heat energy into electricity on the basis of organic rankine cycle technology. The efficiency PACK works in a similar way to a steam power plant: By using organic media that evaporate at a lower temperature than water, waste heat can be used even at comparatively low temperatures starting at 60 degrees. Engine exhaust gases, steam, thermal oil and cooling water can thus contribute to electricity production. Users of the efficiency PACK thus benefit from CO<sub>2</sub>-free electricity at extremely low power generation costs of around 3 cents per kilowatt hour of electricity. If the technology is introduced on a large scale, costs can even be reduced to as little as 1 cent. Orcan Energy thus offers the lowest electricity generation costs from waste heat in the entire industry worldwide. The electricity is fed directly into the power grid or can be used immediately.

Orcan Energy's portfolio includes production-ready integration solutions (waste heat recovery as a component) and ready-to-install power generation modules (plug & play). Thanks to intensive research, development and market testing, Orcan Energy is now the technology leader in the low temperature range from 60 degrees.

Since Orcan Energy exclusively utilizes tried-and-tested standard components to produce the efficiency PACK, which boasts an innovative design, operation of the solutions is particularly stable and low-maintenance. Since the Orcan technology is also extremely flexible in terms of the source of waste heat, it can be used in virtually all scenarios in which waste heat is generated – in foundries, biogas installations, glass-making plants, building materials production, breweries, as well as ship and truck engines.

To open up further distribution channels, Orcan Energy decided on a strategic collaboration with two industrial giants in late 2019. In cooperation with E.ON, the company is now offering efficiency PACKs as an all-round carefree package. E.ON supplies its customers with safe, CO<sub>2</sub>-free and cost-effective electricity through solutions by Orcan Energy. From planning to installation, financing, plant operation and plant maintenance, E.ON takes over energy supply as a complete, tailor-made package. E.ON and Orcan Energy's aim is to make it even easier for all industrial operators to use their waste heat.

The second partner is MAN, who is also providing its global marine and power orcan customers with waste heat recovery technologies, for retrofitting to their engines.

Further, Orcan Energy has entered into a cooperation with international industry giant Alfa Laval for the distribution of the powerful eP M 150.200 marine heat recovery solution. Alfa Laval markets Orcan`s ORC solution under license under its own name E-PowerPack as part of its comprehensive portfolio of marine equipment, while also providing worldwide service for it.

To harness Orcan Energy`s expertise in efficient energy solutions for developing new sales markets in Asia, the company established a joint venture at the beginning of 2018 with VPower Group International Holdings LTD, China`s leading company for integrated power generation systems, and the financially strong CITIC Pacific Ltd. As the first joint project, the world's first 90-megawatt power plant fleet with 70 second-generation ORC products was built and put into operation in 2019 in Myanmar, Southeast Asia. The first large-scale use of ORC-based waste heat solutions is not only a milestone for Orcan Energy, but for the entire ORC technology. Further parks of this size are in planning.