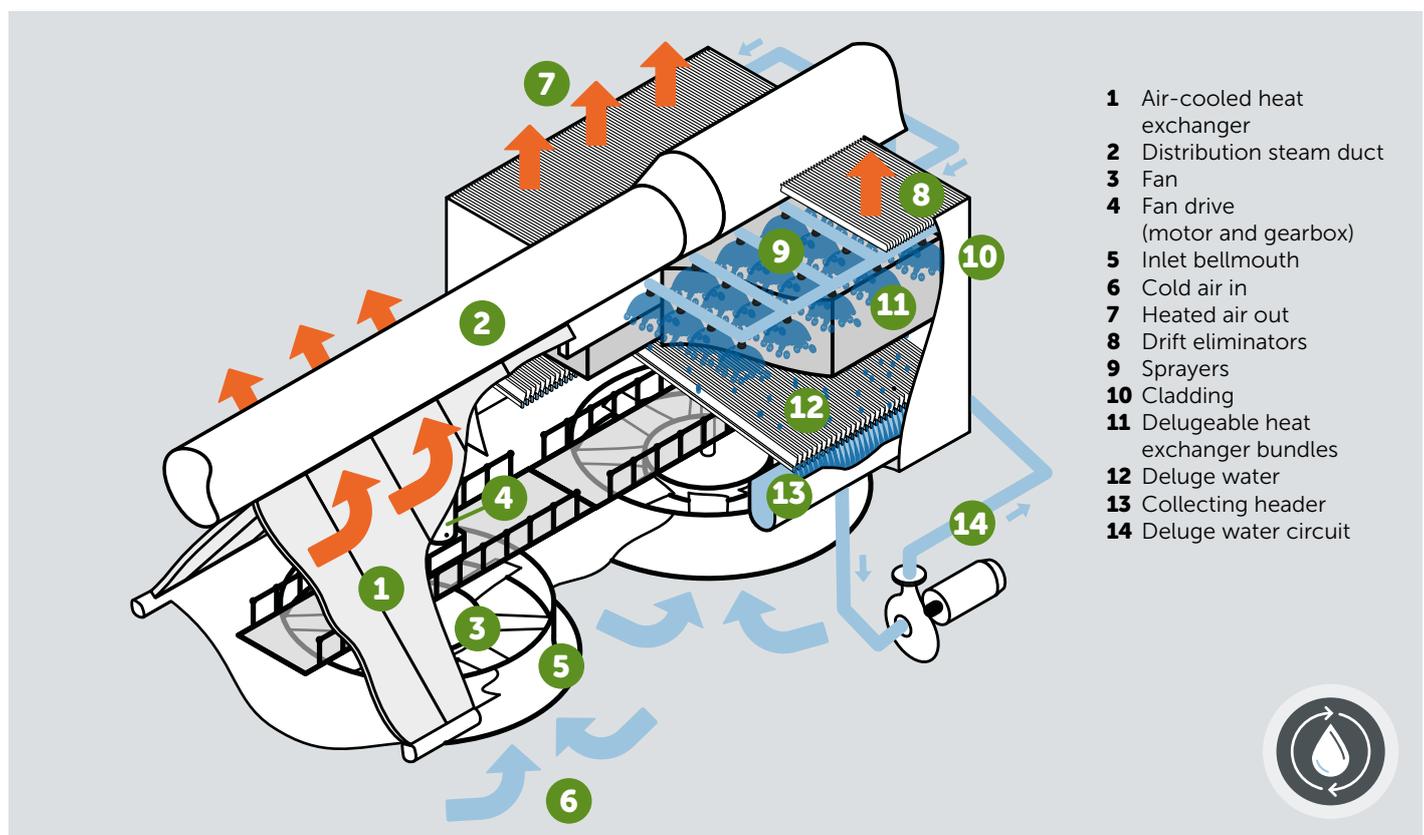


## NEW HYBRID COOLING TECHNOLOGY – ACC WITH DELUGE COOLING

The Deluge ACC is the latest technological achievement in hybrid cooling, where the primary interest is in dry cooling, but where limited water resources are available for use during certain periods of the year.



ENEXIO is one of the leading consortium partners of the EU-funded Horizon 2020 Research and Innovation programme called "MinWaterCSP" with the aim to develop advanced cooling technologies as well as integrated water management plans to reduce cooling system water consumption by up to 95% relative to wet only cooling systems.

The increase in scarcity of water resources worldwide is one of the main drivers towards the use of dry-cooling (cooling with air) for power plant cooling purposes instead of the more conventional wet-cooling (cooling with water) approach. However, even though dry-cooling methods allow an order of magnitude reduction in cooling water consumption, the overall power cycle efficiency is generally lower compared to cases where wet-cooling is implemented.

### Advantages of the Deluge ACC

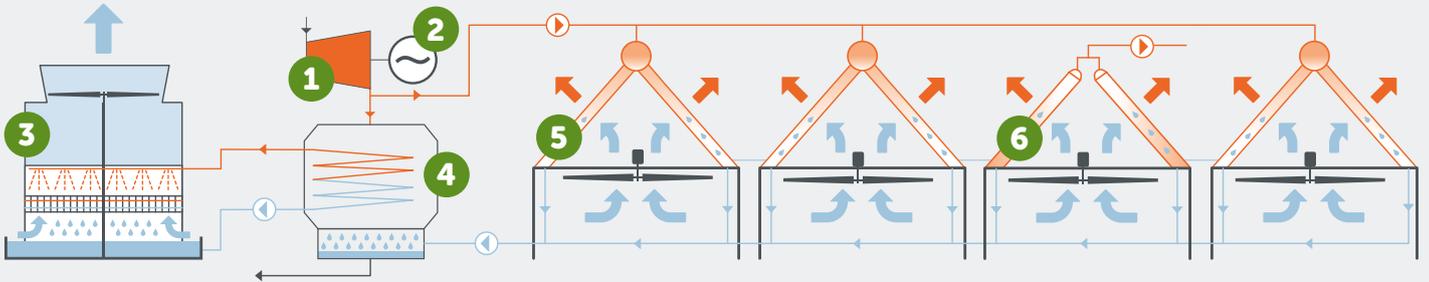
- Most efficient dry-cooling solution for high peak ambient temperatures
- A dry-cooling solution resistant to adverse ambient conditions such as high wind speeds and hot air recirculation
- Reduction of auxiliary power consumption which results in an increase of gross turbine output
- Short lead time and minimized construction costs
- Smaller footprint compared to all-dry systems
- Less water consumption compared to all-wet systems



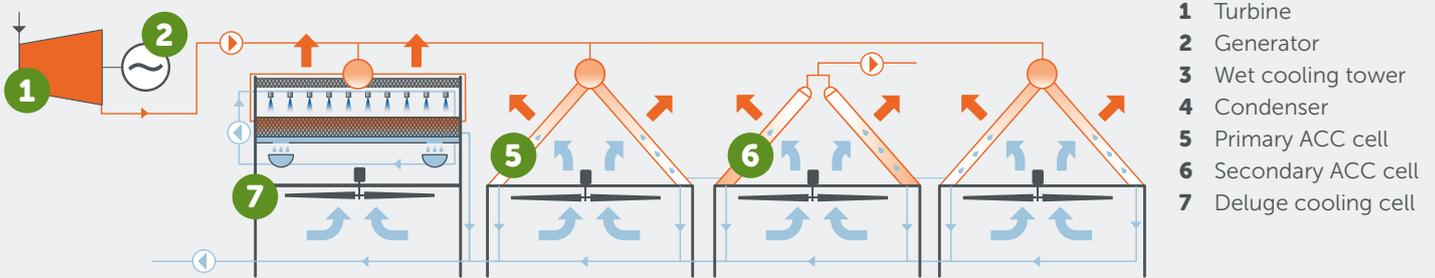
This project has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 654443

## DELUGE ACC CONSTRUCTION AND TESTING

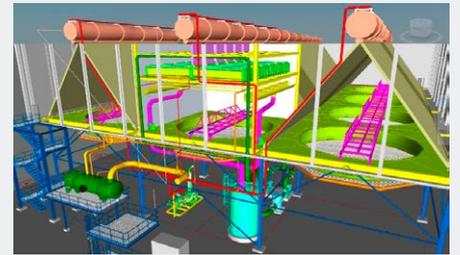
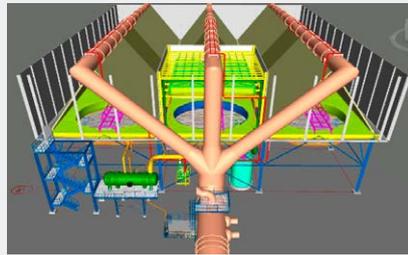
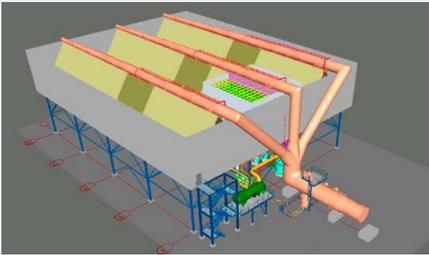
### Established parallel ACC and wet-cooling system



### New compact Deluge ACC wet and dry direct system



- 1 Turbine
- 2 Generator
- 3 Wet cooling tower
- 4 Condenser
- 5 Primary ACC cell
- 6 Secondary ACC cell
- 7 Deluge cooling cell



Full-scale test facility in Stellenbosch, South Africa

- The integrated hybrid cooling system consists of traditional dry ACC fan cells and a small number of wet cells, where steam is condensed inside tube bundles through external deluge cooling.
- **Construction advantage:** In comparison to the existing hybrid condensing systems, the Deluge ACC eliminates the use of the separate wet-cooling towers, surface condenser and large cooling water recirculating piping and pumps, minimizing investment costs and plot area.
- **Operational advantage:** Turbine backpressure and associated generator output can be maintained during peak ambient temperatures and under other adverse ambient conditions such as strong winds and hot air recirculation.

Contact us and get to know more about the new Deluge ACC

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