

A novel utility scale power storage solution that allows energy to be stored at times of low electricity demand and to be released into the grid or to supply a large customer at peak periods.

The Highview Cryo Energy System liquefies air - essentially liquid nitrogen and stores it in large volumes at atmospheric pressure. Liquefied air expands 700 times when it changes back to a gas at ambient temperature. This expansion is used to drive a turbine to produce power.

KEY INDUSTRY CHALLENGES

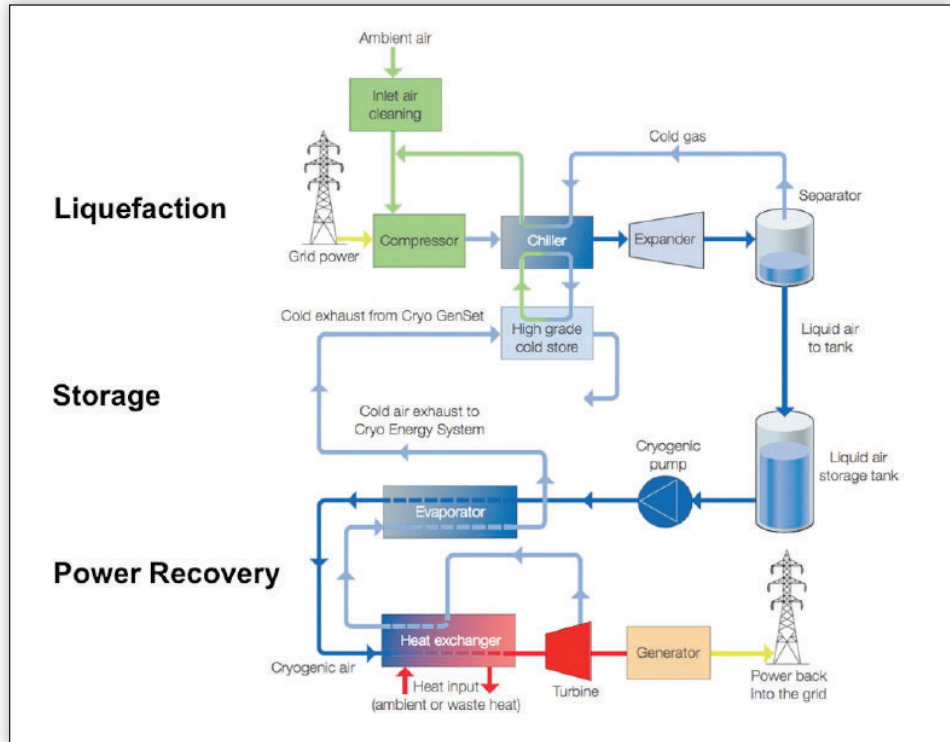
Renewable technologies such as wind and tidal power cannot be scheduled to match electricity demand.

- Power storage at large scale will reduce the national need for back up traditional plant
- Power storage can be used to address constraints in the electricity networks avoiding reinforcement and ancillary services can be provided to the grid
- Demand side management option for large consumers to reduce energy charges and provide a back up supply

BENEFITS AND TECHNICAL

INFORMATION

- One of only a few energy storage technologies, which can be delivered today at the 50-100MW scale
- Costain expertise in Cryogenics process technology allows us to build on a commercial scale
- Major components used within the system are already manufactured by OEMs, thereby significantly reducing development or OPEX cost risks



- Environmentally friendly solution. Liquid nitrogen / air is a common industrial product and does not harm environment
- The system is highly configurable to suit the application allowing optimised economic performance
- Not constrained by geography like pumped hydro storage; systems can be located near demand where they are required
- The technology can simultaneously convert industrial low-grade waste heat to power and can use industrial waste cold to improve efficiency

FURTHER LINKS

<http://highview-power.com>

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