

Innovation around waste heat and renewable fuels

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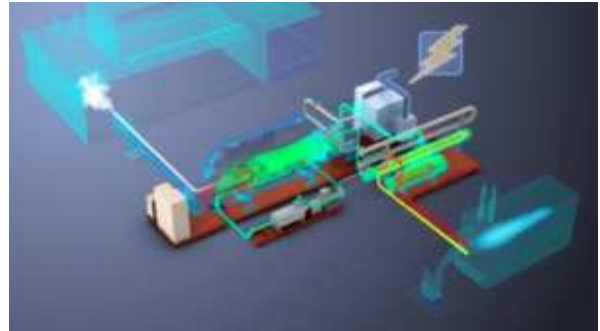
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Making good use of heat generated, and otherwise discarded, at thermal power generation is of course the basis for all CHP technology. Hence cogeneration plants maximize fuel-use efficiency by feeding that heat to supply the needs of buildings, **district heating systems** or industrial processes.

Slightly different, and usually smaller in scale, is a device used to generate electricity from a range of industrial sources of 'waste' heat, or from renewable heat sources. It was a manufacturer of such devices, **Turboden**, which won this year's COGEN **Europe** award for technology and innovation.

Italy's designer and maker of Organic Rankine Cycle (ORC) turbogenerators says it has more than 300 installations in 34 countries and has recently developed installations that make use of geothermal heat sources for steam and power production in Turkey, Germany and Croatia.



Much of today's innovation around cogeneration, which was traditionally fuelled by coal and latterly by natural gas, is about identifying waste heat sources and renewable fuels, even for large industrial applications. The last month has seen reports of CHP plants fuelled with locally-produced biofuels under development in Scotland and Switzerland. Supported by the UK Green Investment Bank, a Scottish whisky distillery is to use local forestry residues for its energy plant; the GIB is also participating in a biomass CHP scheme to be built in Wales.

Meanwhile, a Swiss bottling plant is relying on manure from local farms – plus coffee grounds produced on-site – as fuel for its CHP scheme. Last, a new deep geothermal energy scheme is to supply three-quarters of the steam requirements of a starch production company in eastern France.

Talking innovation, geothermal district heating schemes form another local energy success story in Europe, where the 250-scheme sector is growing rapidly, according to the European Geothermal Energy Council. The traditional markets of France and Hungary are being supplemented by countries in Central and Eastern Europe.

In another age it used to be fine – and bankable – to build power stations that used fossil fuels at very low efficiencies to generate power for distribution over large distances to consumers. No more – innovation into renewable and 'waste' fuels, making use of local resources and using energy locally is the name of the innovation game.