

# Which operational mode do you require?

## Baseload

Our generator sets supply continuous power to the grid with up to 98% availability. Service downtime is easily catered for with an N + 1/ N+ 2 configuration, ensuring 100% power plant output 365 days a year.

## Grid support

To compensate for intermittent renewable generation, fast back-up power is key. The fast start and ramp-up capabilities of our generator sets ensure that the grid stability is managed efficiently, both at high and low loads, giving you optimal fuel economy and low emissions.

## Hybrid mode

At hybrid plants, percentage of produced electricity varies between renewable energies, generating sets and energy storage. Based on calculated power output from renewable energy sources, our engines can be installed for firm capacity supply, or as a part of a micro grid application.

## Peaking

Fast power supply to meet heavy demand, perhaps only on an infrequent basis, is efficiently met with our fast-start mode.



# Thermal energy recovery

Make sure you make the most of your investment by optimising fuel usage with a combined heat and power solution. Waste heat from the engines can be efficiently used to generate steam or hot water for industrial processes, or to drive a combined cycle with a heat recovery boiler and a steam turbine.

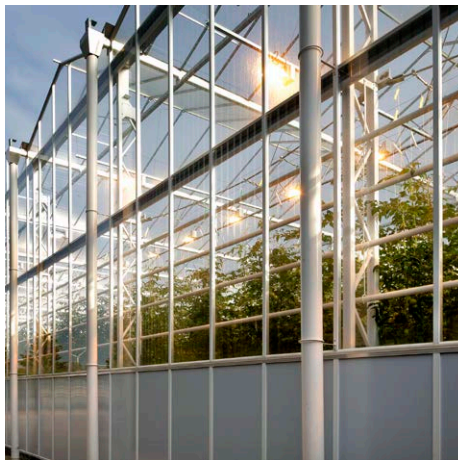
Hot water can also be used for district heating, and by means of an absorption chiller, cooled water can be used for air conditioning.

Another way to increase the overall efficiency of the generator sets is by reusing cleaned CO<sub>2</sub> to boost plant growth in greenhouses, or to produce carbonated

drinks. Efficiency of the power plant will then exceed 95%, a benefit for your business and for the environment.



District heating



Commercial industries



Combined cycle



## Hybrid power plants

Hybrid power plants are a result of combining fossil fuels, such as diesel or gas engines, with renewable energy, such as solar or wind, to create an integrated power generation unit.

For customers in remote areas and difficult terrain, or for those that are subject to an unreliable grid, hybrid plants are a source of energy security. Lower costs, due to a decreased reliance on traditional fuels, are an added benefit of hybrid plants as well.

Due to falling costs of renewable energy sources in the global market and technical advances, hybrid power plants have become a more economically feasible and common installation.

Rolls-Royce, a leading supplier of integrated power systems, is well positioned to be your hybrid plant solution provider. Our medium-speed gas and liquid fuel power plants are well suited for hybrid applications.