Gas power for data centers

Efficient, cost-effective and sustainable power for data centers

Modern data centers need reliable power generation at all times. Wärtsilä engine power plants provide highly efficient, cost-effective and sustainable primary or back-up power and can be fully renewable if fuelled by biogas. This solution also enables new business models by allowing data centers to turn their power generation assets into a profitable investment by selling excess electricity to the grid.

THE CHALLENGE | THE SOLUTION | BENEFITS
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A need to reduce data centers’ primary and back-up power generation costs and emissions without compromising reliable energy supply. | Wärtsilä’s fast, reliable, flexible and affordable engine power plants powered by clean burning gas and replace back-up diesel generators. | Highly efficient, cost-effective and reliable power with lower emissions as well as a new business model allowing data centers to sell excess electricity to the grid.

“Wärtsilä’s solution for data centers means you can make money with your power generation assets by selling excess electricity – while saving on operating costs and reducing your carbon footprint with cleaner burning fuels.”
HOW IT WORKS
Wärtsilä’s solution for data centers is based on flexible and reliable power generation delivered by a Wärtsilä 34SG engine power plant, which allows you to get your data center up and running even without a connection to the grid. These plants also enable you to replace diesel with cleaner burning gas such as liquefied natural gas (LNG) and biogas to reduce your environmental footprint. Our engines ramp up and down in less than a minute to meet fluctuating demand.

The Wärtsilä 34SG engine is a proven and reliable technology. The modular design of our power plants reduces construction time and costs. If needed, more engines can be easily added to meet future energy demands.

FOR BACK-UP AND SELF GENERATION AT DATA CENTERS
Our power plant solution supports both data centers that need back-up generation and those that rely on a power plant for self generation. With a grid connection, the solution enables the selling of excess electricity to the grid while providing cost savings and reducing generation-related emissions.

BACK-UP GENERATION BUSINESS CASE
SAMPLE CALCULATION FOR THE UK MARKET

Traditional model
- Electricity purchased from market
- High-speed diesel engines as back-up

Wärtsilä 34SG power plant
- Electricity purchased from market
- Wärtsilä 34SG engines with 12h LNG storage for back-up
- Wärtsilä 34SG engines used if market price is high
- Excess power sold on the market

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<tr>
<th></th>
<th>TRADITIONAL</th>
<th>WÄRTSILÄ</th>
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<tbody>
<tr>
<td>Installed engines</td>
<td>19 x 3 MW high-speed diesel</td>
<td>7 x 10 MW Wärtsilä 34SG</td>
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<tr>
<td>Operating cost</td>
<td>-22.9 MEUR</td>
<td>-25.0 MEUR</td>
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<tr>
<td>Net sales</td>
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<td>Cost of debt</td>
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<tr>
<td>Annual net cost</td>
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WÄRTSILÄ’S SOLUTION IS 14% CHEAPER WITH APPROXIMATELY 30% LOWER CO₂ EMISSIONS

SELF-GENERATION BUSINESS CASE
SAMPLE CALCULATION FOR THE UK MARKET

Traditional model
- Electricity generated by gas engines
- High-speed diesel engines as back-up

Wärtsilä 34SG power plant
- Wärtsilä 34SG engines with 12h LNG back-up generate electricity
- Excess power sold on the market

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<thead>
<tr>
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WÄRTSILÄ’S SOLUTION IS 16% CHEAPER WITH APPROXIMATELY 30% LOWER CO₂ EMISSIONS

wartsila.com/energy/data-centers
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