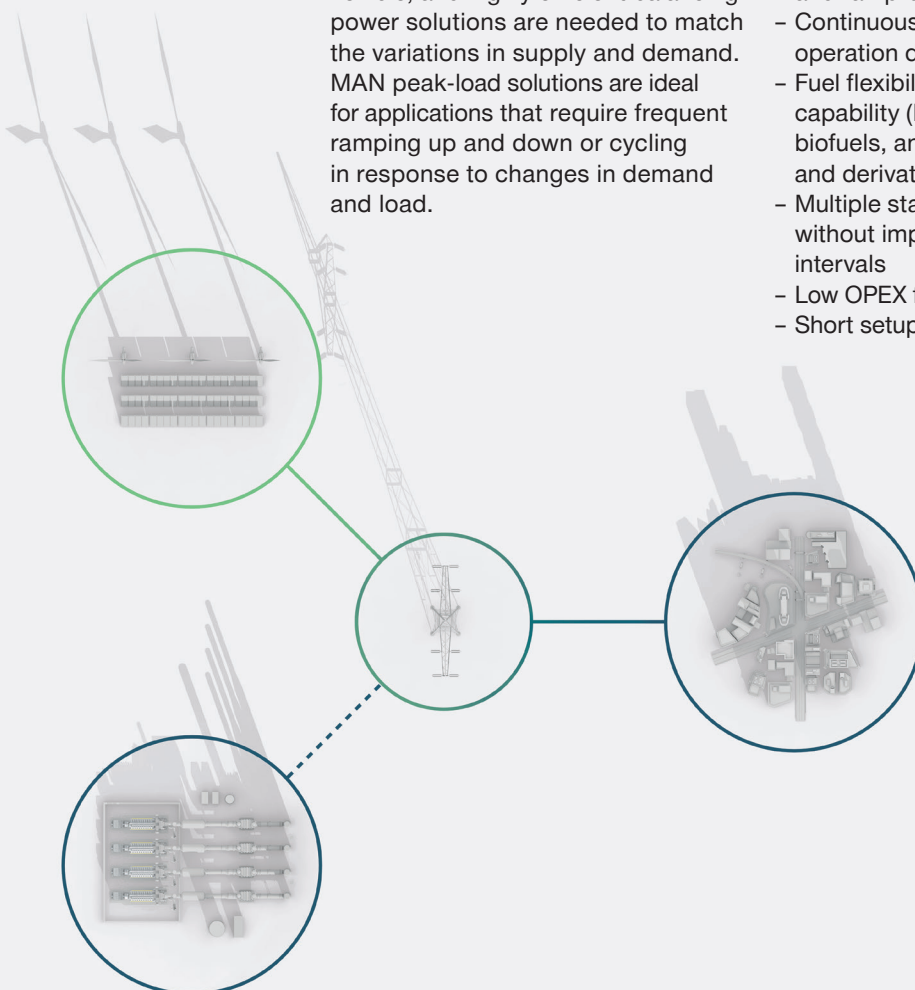


MAN peak-load and balancing solutions

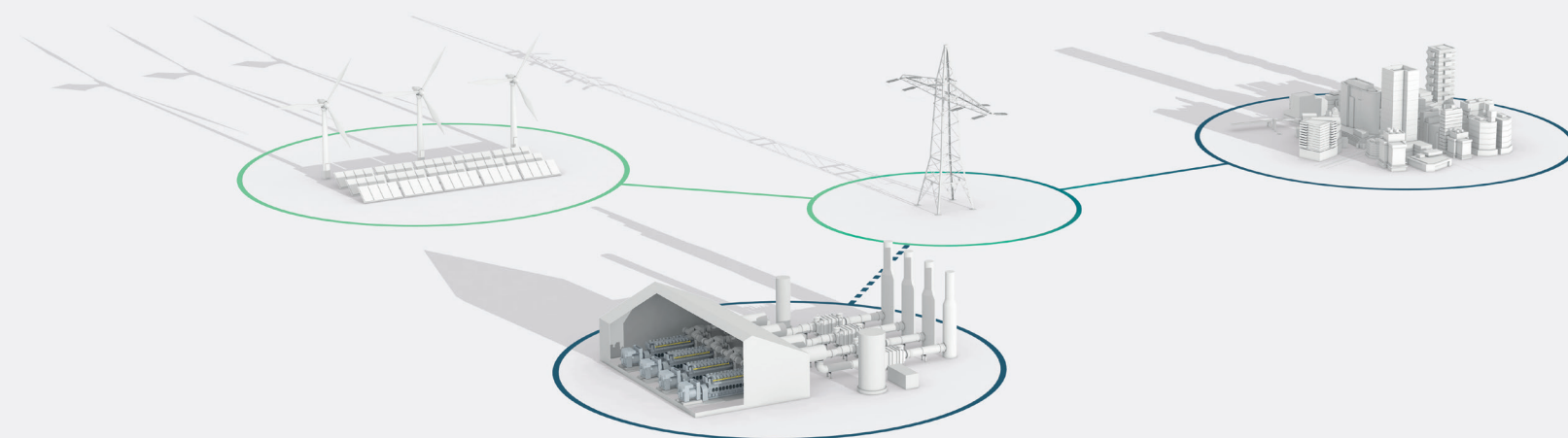
The growing share of non-dispatchable renewable energy sources (RES) in power grids makes it difficult for power producers to provide stable and reliable base power. Responsive, flexible, and highly efficient balancing power solutions are needed to match the variations in supply and demand. MAN peak-load solutions are ideal for applications that require frequent ramping up and down or cycling in response to changes in demand and load.

Benefits at a glance

- Highly reliable engines for grid stability in volatile power environments with fast starting and ramp-up capability
- Continuous part- and low-load operation down to 15 % load
- Fuel flexibility and multi-fuel capability (liquid and gaseous fuels, biofuels, and hydrogen admixtures and derivatives)
- Multiple start and stop capability without impacting maintenance intervals
- Low OPEX for increased profitability
- Short setup times



Instant power for grid stability



Challenging times

Utilities, municipalities, and independent power producers have to balance volatile power environments, supply ancillary services, and achieve their annual profit with a low number of operating hours.

Sudden load peaks can be caused by high power demand from heavy industry, seasonal peaking (winter/summer) and peak hours in cities (morning/evening).

Integrating RES in the power grid leads to inconsistent power generation: It can cause power shortages when there is no wind or sun, but also leads to overproduction of power in very sunny and windy conditions. In low-load periods, this can result in an excessive waste of power.

System solutions

Dealing with peak demands and compensating for production imbalances are two sides of the same coin: Ensuring grid stability. MAN Energy Solutions provides decentralized, flexible, fast-starting, and highly efficient peaking solutions to balance power demand and production.

The flexible peaking power plant solution can provide short-term load, or pulse load, for example, in response to a sudden output reduction from renewable power sources or spikes in demand.

Our modular and scalable power plant designs enable short plant setup times and lead to low interest during construction (IDC) and early positive project cash flows.

With multiple engine starts and stops per day, our efficient gensets offer fast power availability without impacting maintenance intervals. This makes long periods between overhauls possible. MAN Energy Solutions also provides its customers with optimized service concepts to reduce their maintenance costs.

Making the most of all fuel sources

We offer total fuel flexibility with a range of liquid fuel, dual fuel, and gas engines. These reliable engines give you the flexibility to respond to changing environmental regulations and fuel availability. Known for their reliability, efficiency, and performance, our engines also have extremely low exhaust emissions.

We regard natural gas as a key component in our transition to a carbon-free future, since it is easy to adapt existing gas-based equipment to carbon-neutral synthetic natural gas (SNG). MAN Energy Solutions is also developing engines that run on future fuels, such as green hydrogen and its derivatives like green ammonia, and green methanol.

MAN gas engines are already able to use SNG to operate with complete climate neutrality, and even make 25% hydrogen admixtures possible today. MAN Energy solutions is planning to launch fully hydrogen-powered four-stroke engines in 2025.

We cover all the bases

Customized peaking solutions

Whether you hire us as your main contractor or want us to take care of your maintenance, we are at your service. Make MAN Energy Solutions your main contractor or your consortium leader for greater peace of mind. We plan, prepare, and develop your power plant. We can be a one-stop shop as your complete engineering procurement construction (EPC) partner or step in when you need us.

Emission control

Our MAN Energy Solutions experts make sure your operations meet and exceed environmental standards, be it CO₂, NO_x or sound. We have developed power plant technology to ensure full compliance.

Key applications

Peaking and balancing

Our plants provide dynamic peaking power for applications that require an immediate response to load demands. Our balancing power plants allow for short ramp-up times, along with safe and efficient part- and low-load operation down to 15 %.

Energy storage solutions

It is possible to incorporate energy storage systems to create solutions that are even more dynamic.

Additional energy storage helps ensure power availability and grid stability, and supports the engines. This leads to lower fuel expenses, and may reduce the number of engines required.

Balancing RES

MAN Energy Solutions integrates RES with highly fuel-efficient gensets into energy storage and management systems that control the share of each power production unit. The RES system can always provide the maximum possible CO₂-neutral power, with the genset smoothing power fluctuations and providing a certain share of base-load power.

Expert advice and implementation

With decades of experience as a leading provider in the global energy industry, we can provide you with the exact support you need as our partner. Our expertise covers the entire project implementation phase, from planning and obtaining loans, to the taking over certificate (TOC), always taking into account the legal aspects of your business.

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