

Power Generation | Series 500 gas generator sets | 250–550 kW<sub>e</sub>

THE SUSTAINABLE SOLUTION THAT  
ALWAYS ANSWERS YOUR NEEDS.



A Rolls-Royce  
solution

The new Series 500 gas generator sets

## WE KEEP ON ANSWERING.

We answer your specific power generation needs with sustainable solutions that use natural gas – our new Series 500 generator sets. Equipped with a Module Control automation system that monitors all genset activities, the units seamlessly integrate with diverse microgrid environments and directly connect you to a world of service expertise.

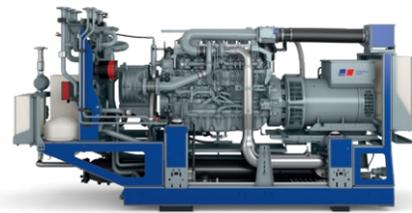
### Lifecycle solutions

More than great machinery, we aim to provide excellent solutions that last. As a single-source supplier, we support you at every step over the complete product lifecycle – from the planning and specifications to the project management, commissioning, service and more.

### Key facts

The new MTU Series 500 introduces natural gas generator sets to the 250-550 kWe power range. Available in 50 Hz and 60 Hz versions, these highly efficient units feature an optimized engine designed to greatly lower fuel costs, making them an ideal fit for a broad range of utility and industrial applications.

- Fuel: natural gas
- Output: 250, 360 and 550 kWe
- Frequency: 50 Hz and 60 Hz
- Compliant with industry codes and standards
- Efficiency: 3.1% more efficient than the previous Series 400 genset, best in class
- Flexibility: the MTU Module Control (MMC) automation system simplifies system control, integrates easily with diverse microgrids and creates a direct link to expert digital service support



MTU 6R500 GS



MTU 8V500 GS



MTU 12V500 GS

Depicted here are MTU Series 500 gensets with the extended scope of supply – flexible heat recovery unit (GR configuration) and exhaust gas recirculation (GC configuration).

Reliable and environmentally friendly

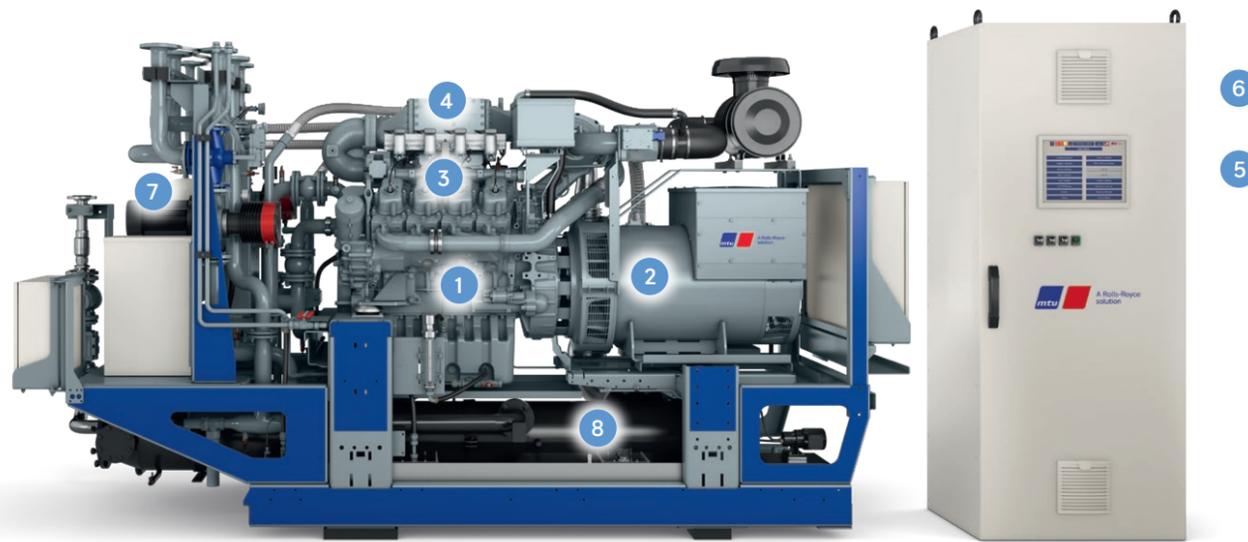
## MULTIPLE APPLICATIONS.

From industrial factories to data centers and from hospitals to power stations, the global demand for energy continues to rise. The new Series 500 is suitable for all types of power generation applications, from pure gensets to complex combined heat and power plants. It combines reliable and environmentally friendly power generation with reduced operating costs, high availability and digital connectivity to our global service network.

### Natural gas

- Public utility companies/municipalities, e.g. connection and feed-in to district heating networks
- Hospitals
- Industrial applications in general
- Hotels





The standard scope of supply (GB configuration) comprises the engine, generator, base frame, fuel gas train and MTU Module Control automation system.

Depicted here is an MTU 8V500 genset in GC configuration with MMC.

- 1 Gas engine**  
Improved combustion technology increases engine efficiency and lowers fuel costs.
- 2 Generator**  
Optimally tailored to the engine, the generator provides best-in-class reliability and efficiency.
- 3 Ignition system**  
A microprocessor-controlled ignition system optimally adjusts the ignition time and ignition energy to the quality of the gas.
- 4 Mixture cooler**  
The two-stage mixture cooler improves engine performance and heat utilization.
- 5 Digital connectivity**  
The system can be equipped with a data logger providing access to our digital solutions, including remote monitoring, fast and reliable service support and, soon, further features such as predictive failure prevention and operational optimization.

**6 MTU Module Control (MMC)**  
The MTU Module Control covers all important functions needed for controlling the whole system. It comes in a separate panel and is placed next to the genset.

- Key features:**
- Industrial PC with touch-screen colour display
  - Monitors all system processes
  - Logs all fault and status messages
  - Integrates seamlessly with other controls
  - Enables multi-module system networking
  - Supports numerous protocols (e.g. Ethernet, Profbus DP)

**Expanded scope of supply**

- 7 Flexible heat recovery unit (GR configuration)**  
This unit ensures highest thermal efficiencies for the jacket water, lube oil and coolant mixture.
- 8 Exhaust heat recovery (GC configuration)**  
The exhaust heat recovery system with exhaust heat exchanger achieves highest thermal efficiencies in CHP systems. With the MTU 12V500 GS version, the exhaust heat exchanger is supplied separately.



**Benefits:**



**Flexibility**  
The highly flexible MTU Module Control (MMC) automation solution enables simple integration, even with complex systems such as microgrids.



**Global service support**  
All units are fully integrated with the MTU service landscape and the support of our global service network.



**Integration expertise**  
Intelligent system integration with microgrids and complex plants to maximize operating cost savings is our specialty.



**Modularity**  
The modular nature of our products and individualized scope of delivery enables us to offer clients tailored solutions for all types of power generation applications (from pure gensets to complex combined heat and power plants).



**Low OPEX**  
Significantly higher power efficiency allows for significantly lower operating costs. 42.6% efficiency is "best in class" for this power segment.

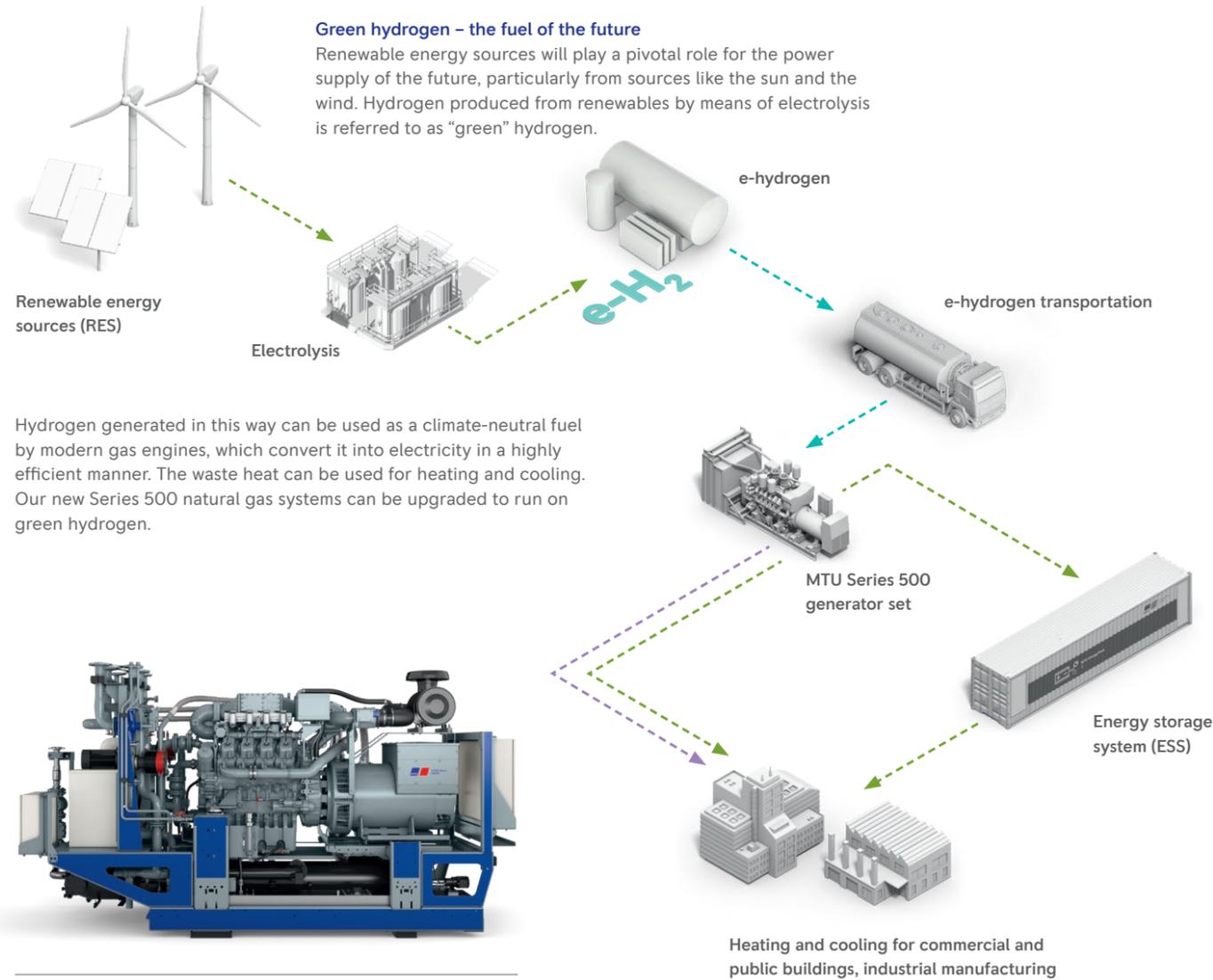


**Low emissions**  
Highly efficient combustion technology results in consistently low emissions.

Decarbonized solutions

# BE READY FOR CARBON-FREE ENERGY.

Hydrogen, which can be produced from diverse renewable resources, offers the potential for an energy future with near-zero greenhouse gas emissions. Hydrogen can be used to generate clean electricity, with water vapor and warm air as the only discharge – for example, by advanced gas gensets like our Series 500.



As of 2021, Series 500 can be powered with green hydrogen.



Flexible, available, resilient, economical.

## THE NEW SERIES 500 GENERATOR SETS.

## Performance/efficiency (Natural gas)

| Configuration                      |                | 50 Hz        |              |               | 60 Hz <sup>a</sup> |              |               |
|------------------------------------|----------------|--------------|--------------|---------------|--------------------|--------------|---------------|
|                                    |                | 6R           | 8V           | 12V           | 6R                 | 8V           | 12V           |
| Genset type                        |                | MTU 6R500 GS | MTU 8V500 GS | MTU 12V500 GS | MTU 6R500 GS       | MTU 8V500 GS | MTU 12V500 GS |
| Engine type                        |                | 6R500        | 8V500        | 12V500        | 6R500              | 8V500        | 12V500        |
| Output                             |                |              |              |               |                    |              |               |
| Electrical output <sup>1</sup>     | kWe            | 250          | 360          | 550           | 250                | 360          | 550           |
| Thermal output                     |                |              |              |               |                    |              |               |
| Engine heat <sup>2</sup>           | kWth (kBTU/hr) | 131          | 188          | 287           | 143 (488)          | 188 (645)    | 300 (1037)    |
| Exhaust heat <sup>3</sup>          | kWth (kBTU/hr) | 129          | 193          | 290           | 123 (491)          | 209 (720)    | 321 (1109)    |
| Low temperature <sup>4</sup>       | kWth (kBTU/hr) | 26           | 31           | 51            | 21 (72)            | 33 (113)     | 51 (174)      |
| Input                              |                |              |              |               |                    |              |               |
| Energy input                       | kWth (kBTU/hr) | 598          | 846          | 1290          | 619 (2109)         | 875 (3010)   | 1344 (4637)   |
| Efficiency                         |                |              |              |               |                    |              |               |
| Electrical efficiency <sup>5</sup> | %              | 41.8         | 42.6         | 42.6          | 40.5               | 40.8         | 40.5          |
| Total efficiency                   | %              | 85.2         | 87.6         | 87.4          | 86.9               | 86.2         | 86.8          |

## Technical data – 50 Hz (60 Hz)

| Configuration                       |           | 6R500             | 8V500             | 12V500            |
|-------------------------------------|-----------|-------------------|-------------------|-------------------|
| GR <sup>b</sup> and GC <sup>c</sup> |           |                   |                   |                   |
| Bore/Stroke                         | mm (inch) | 170/120 (5.1/6.2) | 170/120 (5.1/6.2) | 170/120 (5.1/6.2) |
| Rated speed                         | rpm       | 1500 (1800)       | 1500 (1800)       | 1500 (1800)       |
| Length                              | mm (inch) | 4700 (185)        | 4900 (193)        | 5100 (201)        |
| Width                               | mm (inch) | 1400 (55)         | 1600 (67)         | 1400 (55)         |
| Height                              | mm (inch) | 2200 (87)         | 2400 (94)         | 2300 (91)         |
| Dry weight                          | kg (lb)   | 4300 (10110)      | 5800 (10800)      | 6200 (14600)      |

a) 60 Hz: Preliminary data

b) GR: Includes standard configuration (engine, generator, base frame, fuel gas train, MTU Module Control) with flexible heat recovery unit

c) GC: Includes GR configuration with exhaust heat recovery

NOx &lt; 500 mg/mn3 at 5% O2 dry (NOx &lt; 1 g/bhp-hr at 5% O2 dry)

All data refer to maximum load in accordance with ISO 3046-1

- 1) cos-phi = 1,0
- 2) Heat output from engine cooling with tolerance of ± 8%
- 3) Heat output from exhaust (exhaust cooling to 120°C (248°F)) with tolerance of ± 8%
- 4) Inlet temperature at 38°C (100°F)
- 5) Methane number: ≥ 80 natural gas

Any specifications, descriptions, values, data or other information related to dimensions, power or other technical performance criteria of the goods as provided in this general product information are to be understood as non-binding and may be subject to further changes such as, but not limited to, technical evolution at any time.

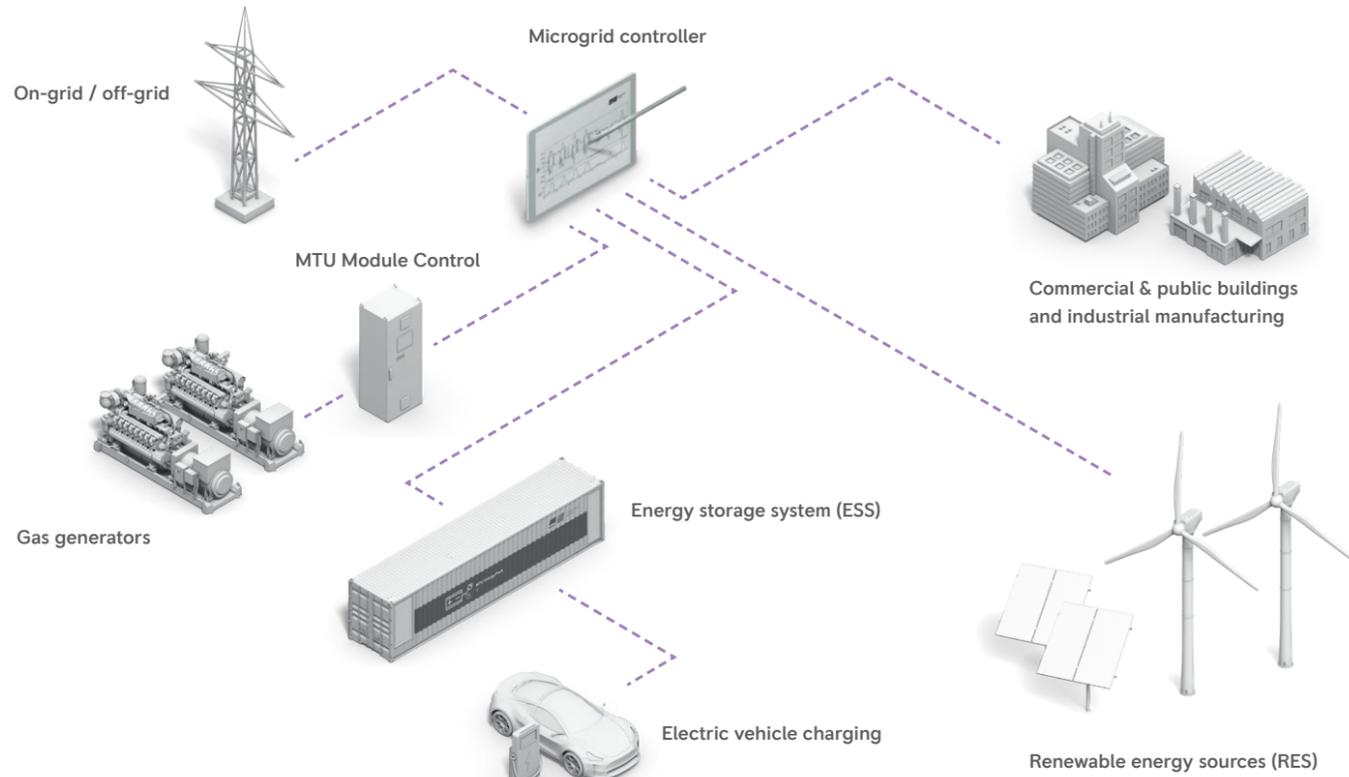


Microgrid intergration

# MICROGRID SERVICES, SYSTEM INTEGRATION AND SMART CONTROL.

Our microgrid systems offer a wide variety of solutions and services. Each one can be individually designed to serve specific needs.

Special microgrid services we offer include consulting, planning, the single-source supply of hardware and software as well as installation and maintenance. Apart from the efficiency of our Series 500 gensets, our experts can show you ways to achieve even more substantial savings – for example, when these are embedded into the microgrid together with various energy sources and storage solutions.



Are you curious whether microgrids can help save on energy costs?

Contact us today at:  
info@ps.rolls-royce.com  
Or call +49 7541 90-7777

Project planning and engineering

# TEAMING UP FOR YOUR SUCCESS.

**Our support for your individual project**

As a rule, every power generation project is different. Knowing this, we place great value on working closely with clients in planning and engineering the best possible solution for their individual requirements. Our commitment to teaming up to find optimal solutions covers every step of the lifecycle – from simulation to the client-specific solution, commissioning, digital aftersales, repowering and remanufacturing.

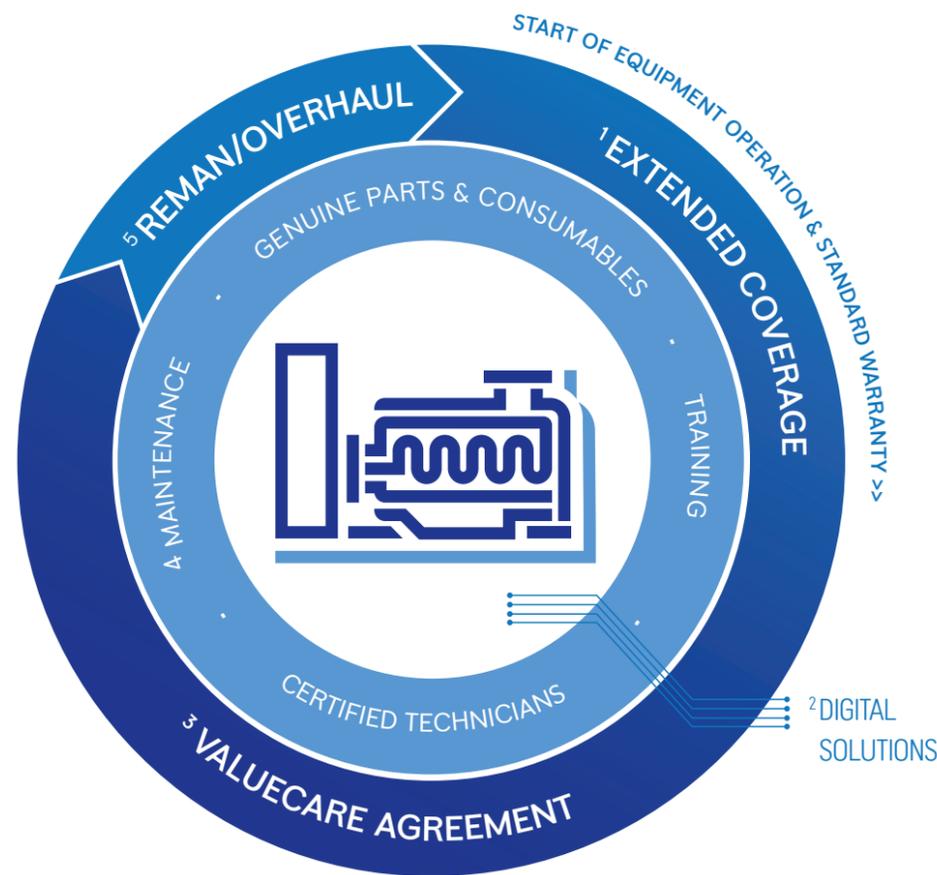
- Help with planning your new power generation solution
- Expertise to help you incorporate it into your application
- Detailed engine, system and component explanations
- Planning stage budget proposal and fixed implementation price
- Design and planning of peripheral systems
- Advice on service solutions
- Help with legal questions (e.g. German Renewable Energy Act levy, formaldehyde bonus)



How complete lifecycle solutions help

# ENSURE A LONG, RELIABLE LIFE.

As your equipment ages, its needs – and yours – change. Our full portfolio of service solutions wrap around your investment, providing 360 degrees of customized support, for optimal value at every stage of life.



- 1 Avoid the unexpected with added protection beyond the standard warranty.
- 2 Make better decisions faster with digitally-enhanced tools.
- 3 Maximize availability and optimize lifecycle costs with a ValueCare Agreement.
- 4 Improve system performance and extend equipment life with on-demand support.
- 5 Keep a good thing going with factory reman/overhaul solutions.

ValueCare Agreements

# FOCUS ON YOUR OPERATIONS. LEAVE THE REST TO US.

You've got a tough job. With us as your partner, you'll get the power, performance and peace of mind to get it done right. Our digitally connected power systems and ValueCare Agreements make it easy to keep your business running smoothly and reduce total cost of ownership by maximizing uptime, optimizing lifecycle costs and helping you avoid equipment-related business disruptions through preventive maintenance.

Service solutions designed around your priorities

ValueCare Agreements make it easy to optimize lifecycle costs, maximize uptime and devote more time and resources to your core business, with tailored solutions to move your business forward.

The table lists three levels of ValueCare Agreements: Bronze, Silver, and Gold. Each level has an icon and a list of benefits. A clock icon is positioned above the Gold level.

| Icon | Level  | Key Benefit                                   | Additional Benefits  |
|------|--------|---|--|
|      | Bronze | Ensure parts availability and price stability | <ul style="list-style-type: none"> <li>Digital connectivity (MTU Go! Connect) and access to MTU Go! platform</li> <li>Automated delivery of parts (preventive) at a predefined rate based on operating hours</li> <li>Preventive maintenance labor options to fit your business needs</li> <li>Our dedicated support for technical issues</li> <li>Quarterly reporting of completed and upcoming maintenance and costs</li> <li>Annual on-site engine health check by our technician</li> </ul>  |
|      | Silver | Eliminate unexpected maintenance costs        | <ul style="list-style-type: none"> <li>Proactive maintenance planning, troubleshooting and remote engine health monitoring</li> <li>Fixed pricing per operating hour for maintenance and repairs</li> <li>Key corrective maintenance components always in-stock at our main warehouses</li> <li>24/7 standby service with remote technical support</li> <li>Quarterly reports, including reliability analysis (mean time between failure)</li> </ul> <p><i>Silver also includes all benefits of Bronze level</i></p>   |
|      | Gold   | Maximize operational uptime                   | <ul style="list-style-type: none"> <li>Operational uptime commitment to meet or exceed your availability targets</li> <li>Regular supervision by local service partner (e.g. monitoring of parts stock, improvements)</li> <li>24/7 emergency assistance with on-site support</li> <li>Monthly reports, including availability and average repair times</li> <li>Asset health monitoring</li> <li>Annual performance meetings and trend analysis with us to address technical updates, engine fleet data, operational optimization and more</li> </ul> <p><i>Gold also includes all benefits of Silver &amp; Bronze levels</i></p> |



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