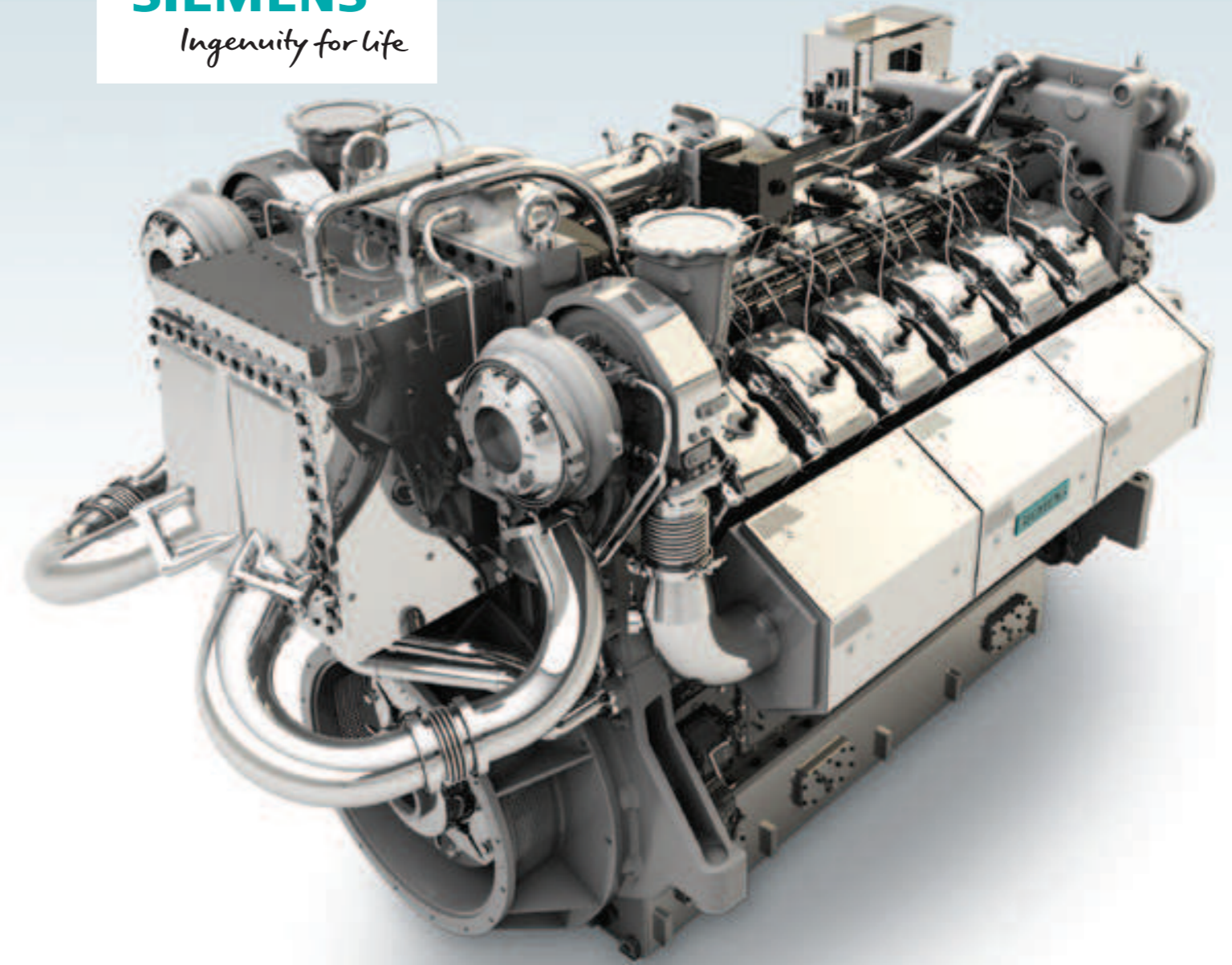


SIEMENS
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Benchmarks in Efficiency

Siemens SGE-EM Gas Engines

siemens.com/e-series-gas-engines

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Power and Gas Division
4400 N Alafaya Trail
Orlando, FL 32826, USA

Siemens Holding Spain, S.A.
Barrio de Oikia, 44
20759 Zumaia (Gipuzkoa) Spain
PO Box 30
Tel: (Int'l +34) 943 86 52 00
Fax: (Int'l +34) 943 86 52 10

For more information, please contact
our Customer Support Center.
Phone: +49 180 524 70 00
Fax: +49 180 524 24 71
(Charges depending on provider)

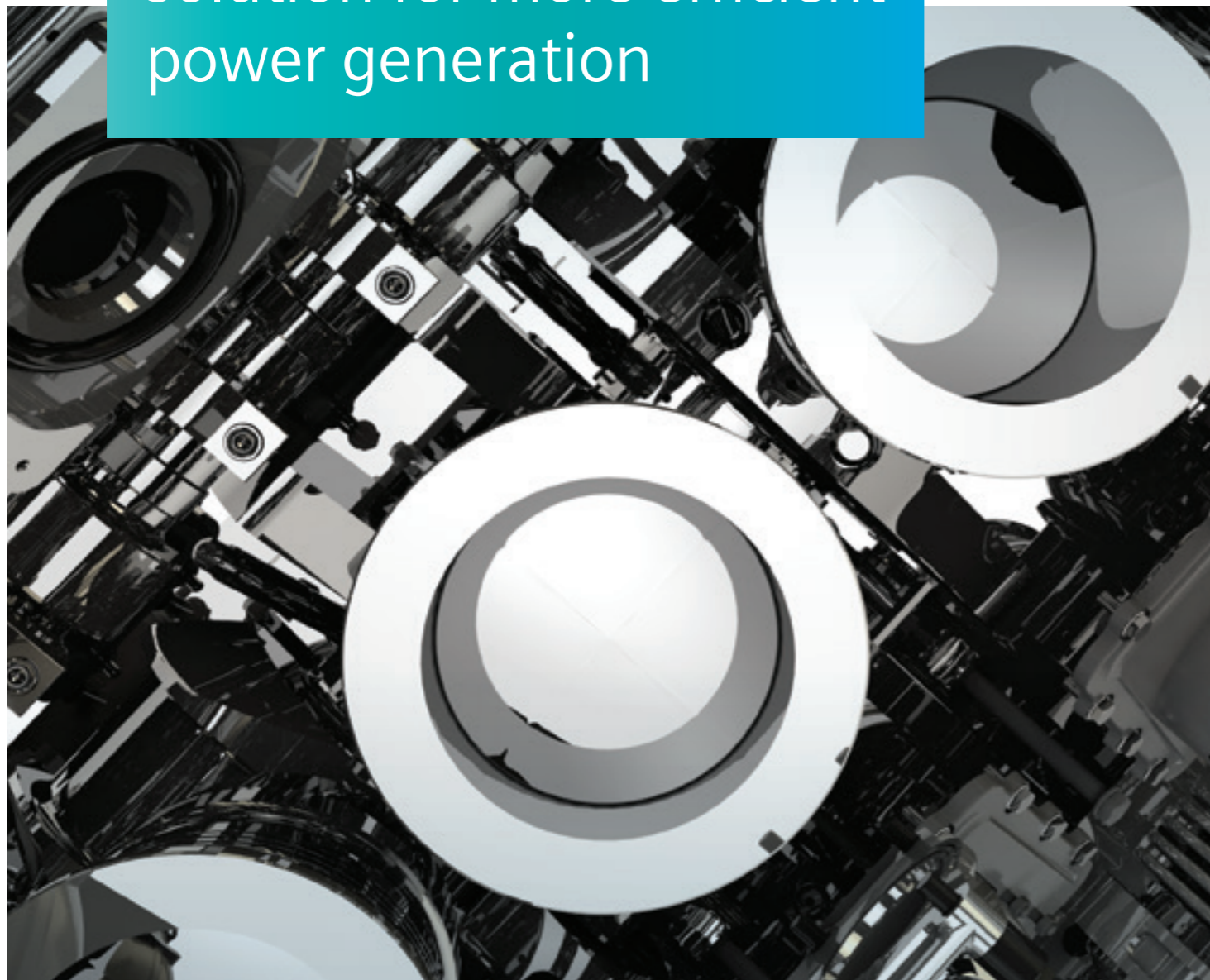
E-mail: support.energy@siemens.com

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Subject to changes and errors.

The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

The new best-in-class solution for more efficient power generation



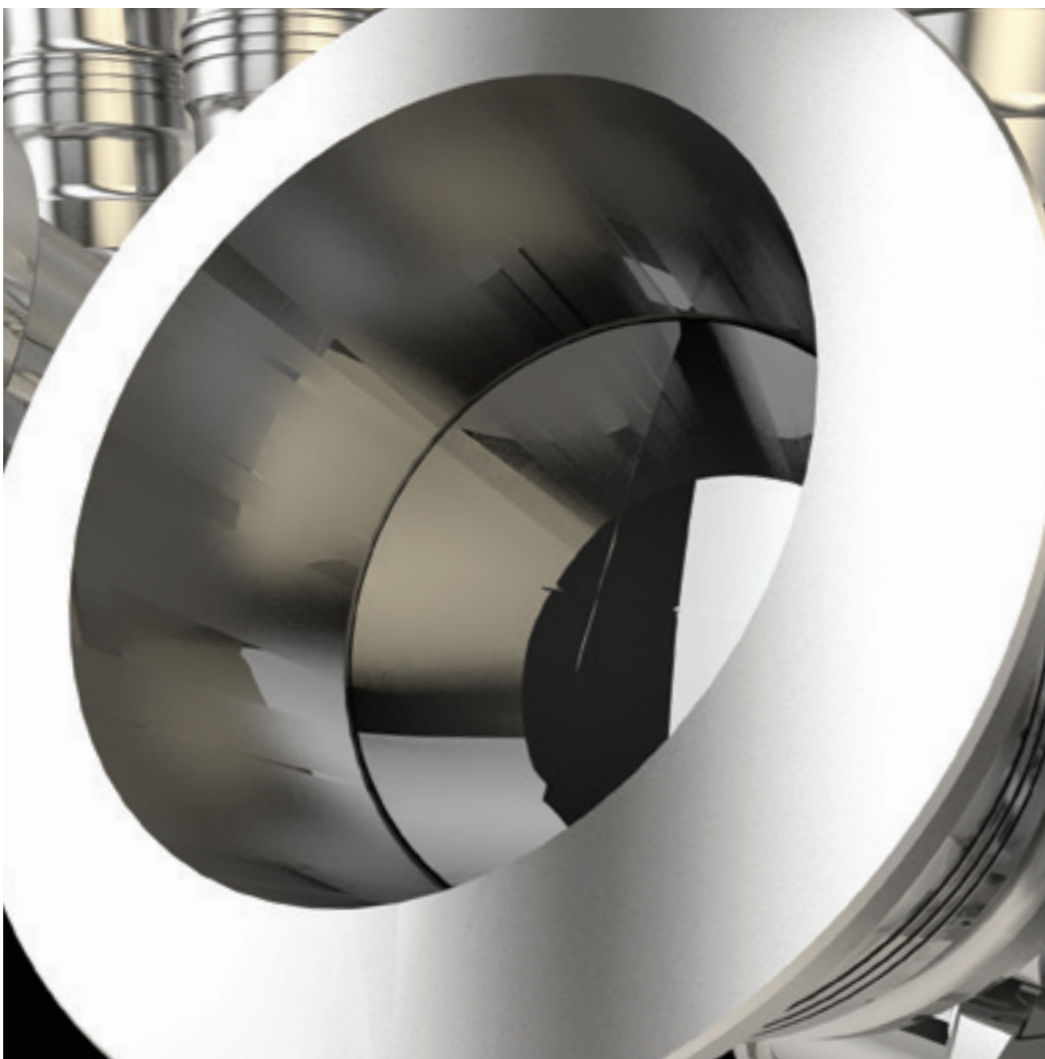
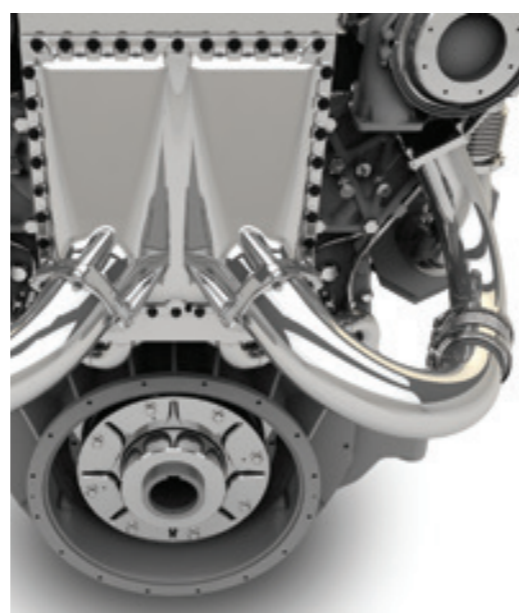
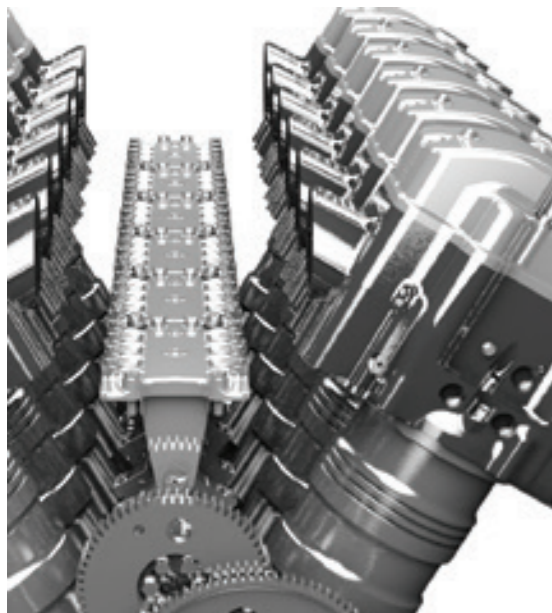
The best-in-class solution with the best-in-class cycle time

- **Robust, compact design** provides more relief for long-lasting performance
- **Spark-ignited lean-burn unit** ensures low emissions
- **Innovative pre-combustion chambers** provide efficient and stable combustion
- **12 unique high-volume cylinders** deliver highest displacement
- **Less maintenance** compared to 16-cylinder engine options
- **Fast cycle times and implementation**
- **Smallest footprint** in the competitive set

| | | | |
|----------------------|-----------|---------------------------|------------------------|
| CYLINDER ARRANGEMENT | V12 | BMEP* | 19.2 bar |
| DISPLACEMENT | 86 liters | MECHANICAL EFFICIENCY | 46.6% |
| BORE | 195 mm | ELECTRICAL EFFICIENCY | 45.4% |
| STROKE | 240 mm | THERMAL EFFICIENCY | 43.7% |
| COMPRESSION RATIO | 13.5:1 | GLOBAL EFFICIENCY | 89.1% |
| MECHANICAL POWER | 2,065 kWb | EXHAUST TEMPERATURE | 352 °C |
| ELECTRICAL POWER | 2,012 kWe | NO _x EMISSIONS | 500 mg/Nm ³ |

*Brake Mean Effective Pressure

To learn more about the new SGE-EM gas engines from Siemens, visit [siemens.com/e-series-gas-engines](https://www.siemens.com/e-series-gas-engines)

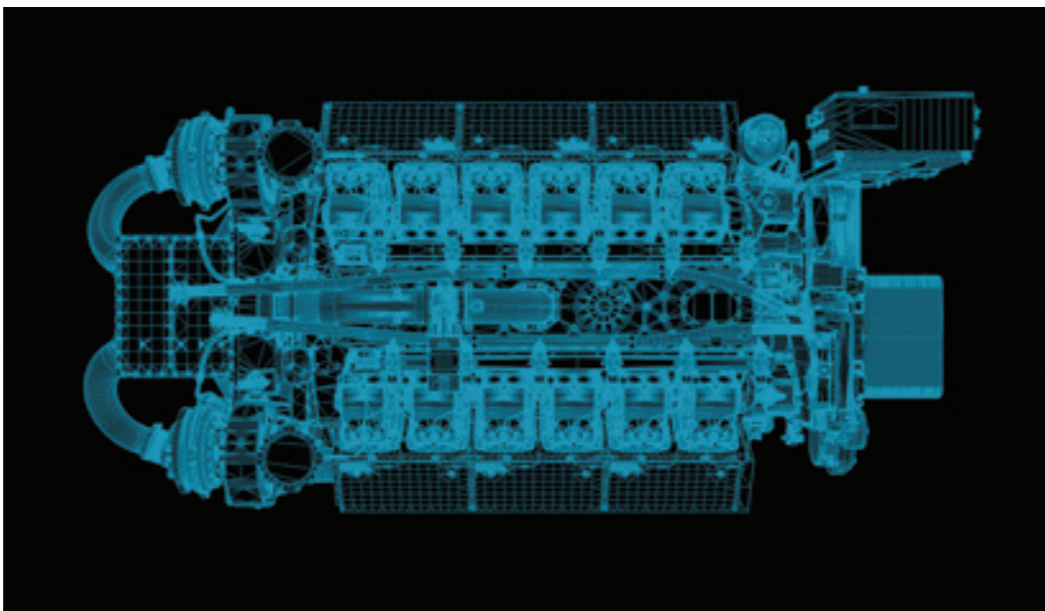
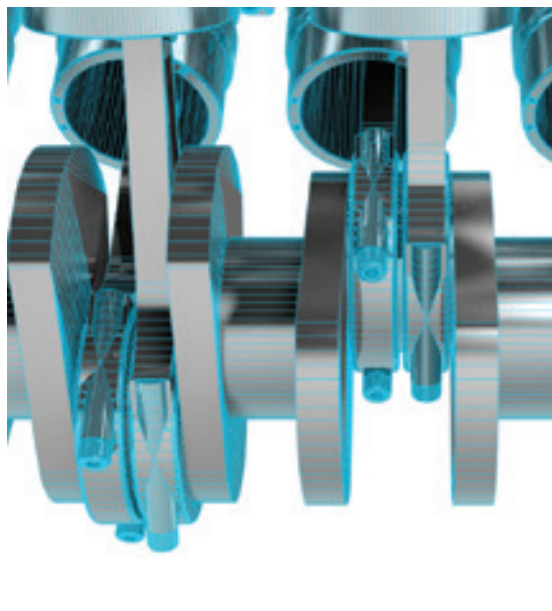


Highest electrical efficiency in the 2 MW-class

Before today, when it came to 2 MW-class engines, your options were limited. Now, there's a powerful new choice available: the new SGE-EM gas engines from Siemens. The result of years of development, testing, refinement, and innovative engineering, they deliver a number of benefits that make them a true competitive choice.

Uncompromising performance to meet ever-growing demands

Economic pressures. Customer demands. Reliability concerns. Regulatory standards. In the world of power generation, you face plenty of challenges. If you want to successfully overcome them, you need to have the best solution in place. Our new SGE-EM gas engines are your best solution.



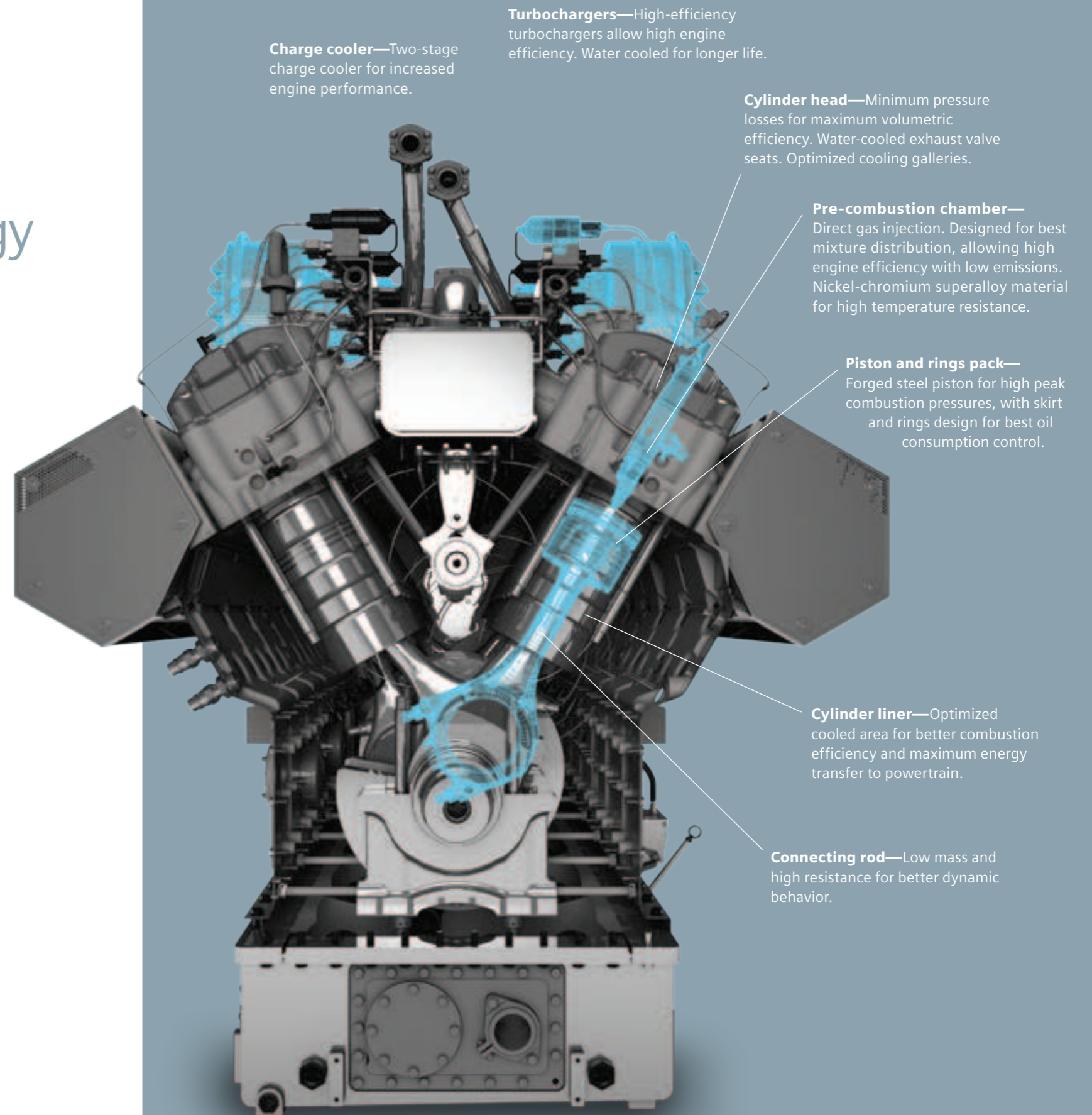
Innovative engine design and combustion technology

At Siemens, we're known for innovation, and the new E-Series engines carry that torch of ingenuity with a unique cylinder design that produces the highest displacement in the 2 MW-class, innovative pre-combustion chambers, spark-ignited lean-burn control capabilities, and a robust overall design that ensures maximum flexibility in a wide variety of conditions.

- Natural gas-powered engines
- Exceptional displacement
- Low maintenance
- Efficient and stable combustion
- Optimized materials

Maximum efficiencies in the smallest footprint.

The new E-Series engines are not only the new competitive choice in the 2 MW-class, they're also the most compact. Their unique ability to deliver high power output with incredibly low emissions helps you create a smaller footprint—both physical and environmental.



Charge cooler—Two-stage charge cooler for increased engine performance.

Turbochargers—High-efficiency turbochargers allow high engine efficiency. Water cooled for longer life.

Cylinder head—Minimum pressure losses for maximum volumetric efficiency. Water-cooled exhaust valve seats. Optimized cooling galleries.

Pre-combustion chamber—Direct gas injection. Designed for best mixture distribution, allowing high engine efficiency with low emissions. Nickel-chromium superalloy material for high temperature resistance.

Piston and rings pack—Forged steel piston for high peak combustion pressures, with skirt and rings design for best oil consumption control.

Cylinder liner—Optimized cooled area for better combustion efficiency and maximum energy transfer to powertrain.

Connecting rod—Low mass and high resistance for better dynamic behavior.