



# Marine



# The DPF solution for your genset and propulsion engine

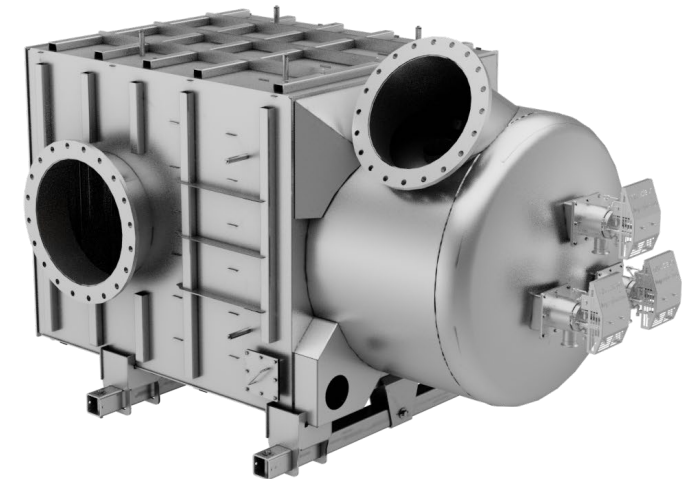
Have a clean deck

## benefits

- **No water contamination** by soot and oil and always **clean upholstery and teak**
- Fully automated DPF regeneration **independent of engine operation**
- Possibility to **combine with SCR-system and silencer**
- **Easy to service** modular DPF design
- **No sulfur limitation** on MDO fuel

## technical description

- Active regenerated DPF **reduces black carbon emissions to more than 98%**
- For Diesel engines in the range of **200kW to 3MW**
- **Customized solutions** for engines **>3MW** upon request
- **Highly flexible integration** into any engine room design



## applications

- Standard offer from 200kW to 3MW
- Yachts
- Inland waterway vessels
- Work boats
- Ferries
- Gensets / Main engines

Innovation

RFQ ready

In production

## certification

Type approved  
by members of





# The generic SCR

Meet IMO III with the highest flexibility

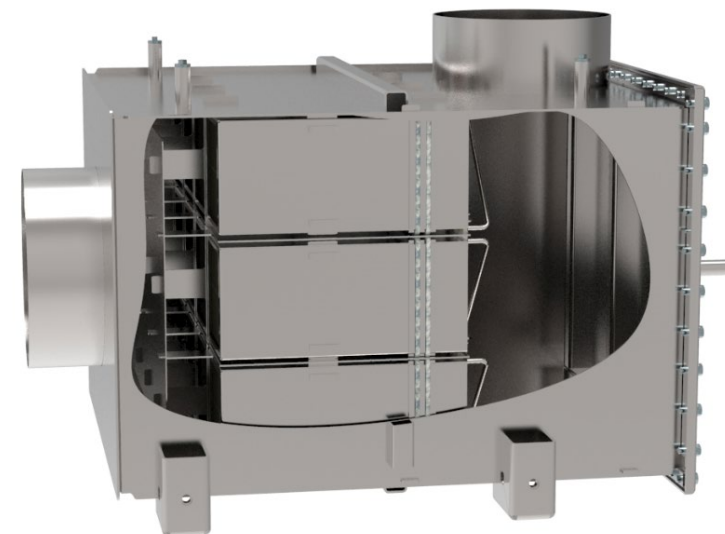
## benefits

- IMO TIER III **certified product** - adaptable to TIER II engines
- Reliable, robust & flexible via validated modular approach for simple scalability and unrivaled **time to market**
- Switchable outside ECA to **lower urea consumption**
- **Global Service** and spare parts supply
- **Emission certification available** for major engine brands

## technical description

- For Diesel engines **up to 9MW**
- **Full engineering control** of all components: inhouse development and production of Apparatus, Coating & Steelwork
- Air assisted DEF injection for **maximum robustness**
- **Handles all DEF concentrations** from 32.5% to 40%
- CFD internal studies to ensure **homogeneous distribution**, NH3 slip control, deposit proven design **for any systems arrangement**

*Customized options available*



## applications

- Yachts
- Inland waterway vessels
- Work boats
- Ferries
- Gensets / Main engines

Innovation

RFQ ready

In production

## certification



Compliant

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# The combined solution

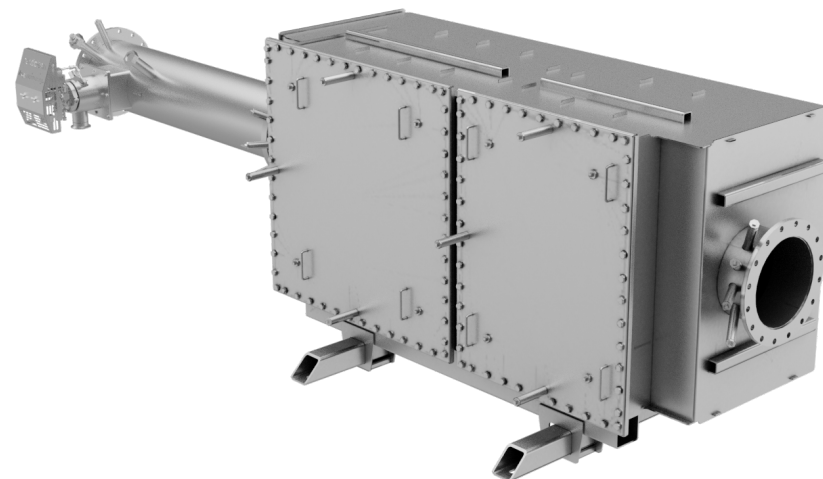
Be compliant with comfort

## benefits

- IMO III **compliant & clean deck** at once
- Switchable outside ECA to **lower urea consumption**
- **Unrestricted** engine operation
- **Outstanding service life** due to in house developed heavy duty filter substrate
- **Optimized fuel economy** by online monitoring of filter condition
- Optimized for very low backpressure to **minimize fuel penalty**
- **No sulfur limitation** on MDO fuel

## technical description

- For Diesel gensets and propulsion engines in the range of **200kW to 3MW**
- **Easy to service** modular DPF and SCR catalyst
- Active regenerated DPF **reduces black carbon emissions to more than 98%**
- **Active DPF regeneration** by Diesel burner or electrical heater
- **Inhouse developed and produced** heavy duty DPF substrate with outstanding ash tolerance ensuring longest service intervals
- **Highly flexible integration** into any engine room design



## applications

- Standard offer from 200kW to 3MW
- Yachts
- Inland waterway vessels
- Work boats
- Ferries
- Gensets / Main engines

Innovation

RFQ ready

In production

## certification



Compliant

Type approved  
by members of





# YACHT



# The compact SCR solution

Fit in all engine rooms

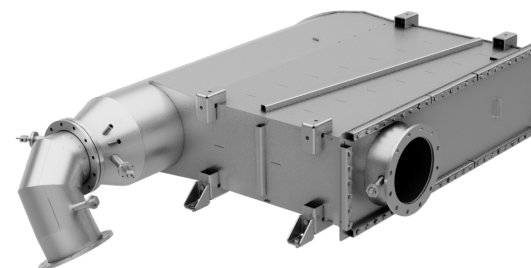
## benefits

- The most **compact Tier II/Tier III switchable** SCR in the market
- IMO TIER III **certified product** - adaptable to TIER II engines
- **Reliable, robust & flexible**, switchable outside ECA Zone
- **Global Service** and spare parts supply
- External piping **highly flexible**

## technical description

- Scalable and validated from **600kW up to 2000kW** engine power
- New in-house catalyst development: **optimized performances** (lower back pressure, mechanical stability)
- CFD internal studies to ensure **homogeneous distribution**, NH3 slip control, deposit proven design **for any systems arrangement**
- Optimized steel thickness to **minimize weight**
- One inlet and **several outlet positions**

*Customized options available*



## applications

- From 600kW up to 2000kW
- For yacht below 500GT
- Displacement or planning hull
- Possible to add a silencer
- Covers multiple engine brands

Innovation

RFQ ready

In production

## certification



Compliant

Type approved  
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# The E-Power solution for your genset

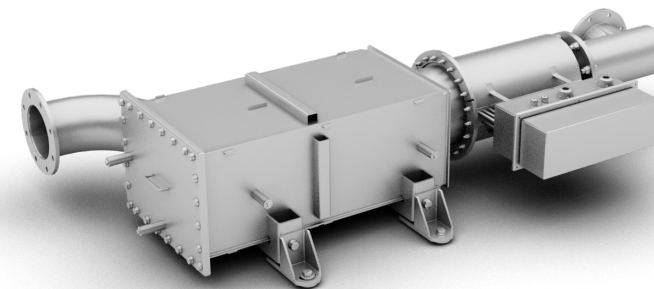
Have a clean deck

## benefits

- **No water contamination** by soot and oil and always **clean upholstery and teak**
- Fully automated DPF regeneration **independent of engine operation**
- Integrated load-bank function to **keep your engine clean**
- **Very low maintenance** required due to absence of moving parts
- Integrated soot load control assures **minimal fuel consumption**

## technical description

- Active regenerated DPF **reduces black carbon emissions to more than 98%**
- For Diesel gensets in the range of **55kW to 200kW**
- Available as **208V or 400V** installation
- **Highly flexible integration** into any engine room design
- **No sulfur limitation** on MDO fuel



## applications

- Diesel gensets from 55kW to 200kW
- Displacement or planning hull Yacht

Innovation

RFQ ready

In production

## certification

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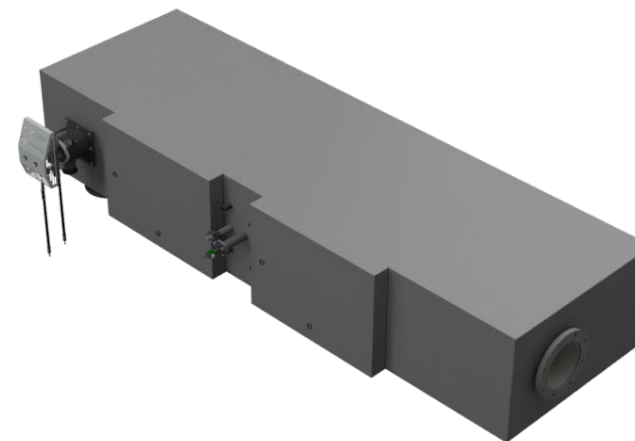


# All in one

## DPF/SCR with integrated Silencer

### benefits

- **Easy to install** within engine or genset contours
- **Single source** exhaust engineering and delivery
- **Easy integration** on top of genset
- **Highest ash tolerance** to allow long service intervals
- **Save costs on urea** thanks to the **IMO Tier II/IMO Tier III switchable feature**
- **Short lead time** – less engineering alignment
- **Optimized** back pressure
- **Performance guaranteed**



### technical description

- **35db(A) insertion loss** as standard
- Active regenerated DPF **reduces black carbon emissions to more than 98%**
- **Robust full flow regeneration burner**
- **Single service side**

### applications

- **Displacement Yachts**
- **Semi displacement Yachts**
- **Port authority vessels**
- **Gensets up to 500 kW**

innovation

RFQ ready

In production

### certifications



Lloyd's  
Register Type approval

Other type approvals on request





# INLAND&PORT

# The combined solution

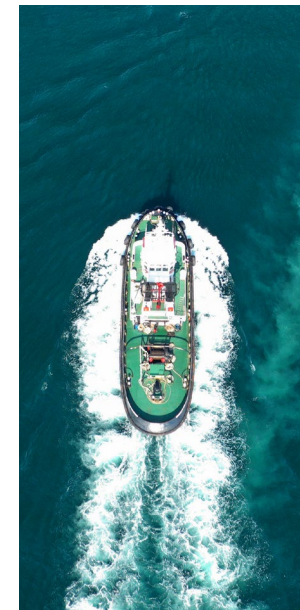
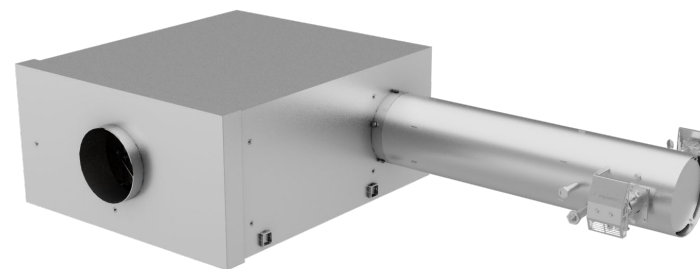
Meet regulations and optimize TCO

## benefits

- **EU Stage V** ready
- **Active regenerated DPF**
- Switchable outside ECA to **lower urea consumption**
- **Unrestricted** engine operation
- **Outstanding service life** due to in house developed heavy duty filter substrate
- **Optimized fuel economy** by online monitoring of filter condition
- Optimized for very low backpressure to **minimize fuel penalty**
- **No sulfur limitation** on MDO fuel

## technical description

- For Diesel gensets and propulsion engines in the range of **200kW to 3MW**
- **Easy to service** modular DPF and SCR catalyst
- Active regenerated DPF **reduces black carbon emissions to more than 98%**
- **Active DPF regeneration** by Diesel burner or electrical heater
- **Inhouse developed and produced** heavy duty DPF substrate with outstanding ash tolerance ensuring longest service intervals
- **Highly flexible integration** into any engine room design



## applications

- Standard offer from 200kW to 3MW
- Tugboats
- Dredgers
- Inland waterway vessels
- Ferries
- Port authority vessels

Innovation

RFQ ready

In production

## certification

Compliant



EU Stage V ready



Type approved  
by members of



# The SCR solution

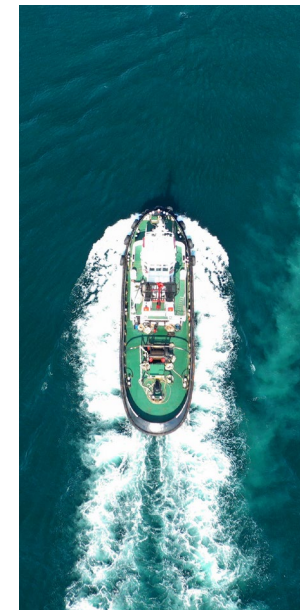
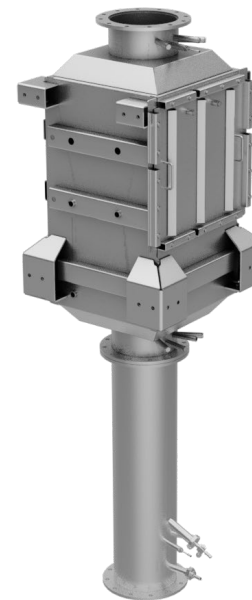
## Robust and flexible

### benefits

- IMO TIER III **certified product** - adaptable to TIER II engines
- Switchable outside ECA to **lower urea consumption**
- **Emission certification available** for major engine brands
- **Tailor-made design** for both first fits and retrofits
- **Global service** and spare parts supply

### technical description

- Air assisted DEF injection for **maximum robustness**
- **Handles all DEF concentrations** from 32.5% to 40%
- **Catalyst of different geometry** and formulation for customized layout
- **Flexible design to fit complex engine room geometries**



### applications

- Standard offer up to 9MW
- Tugboats
- Dredgers
- Inland waterway vessels
- Ferries
- Port authority vessels

Innovation

RFQ ready

In production

### certification

Compliant



EU Stage V ready



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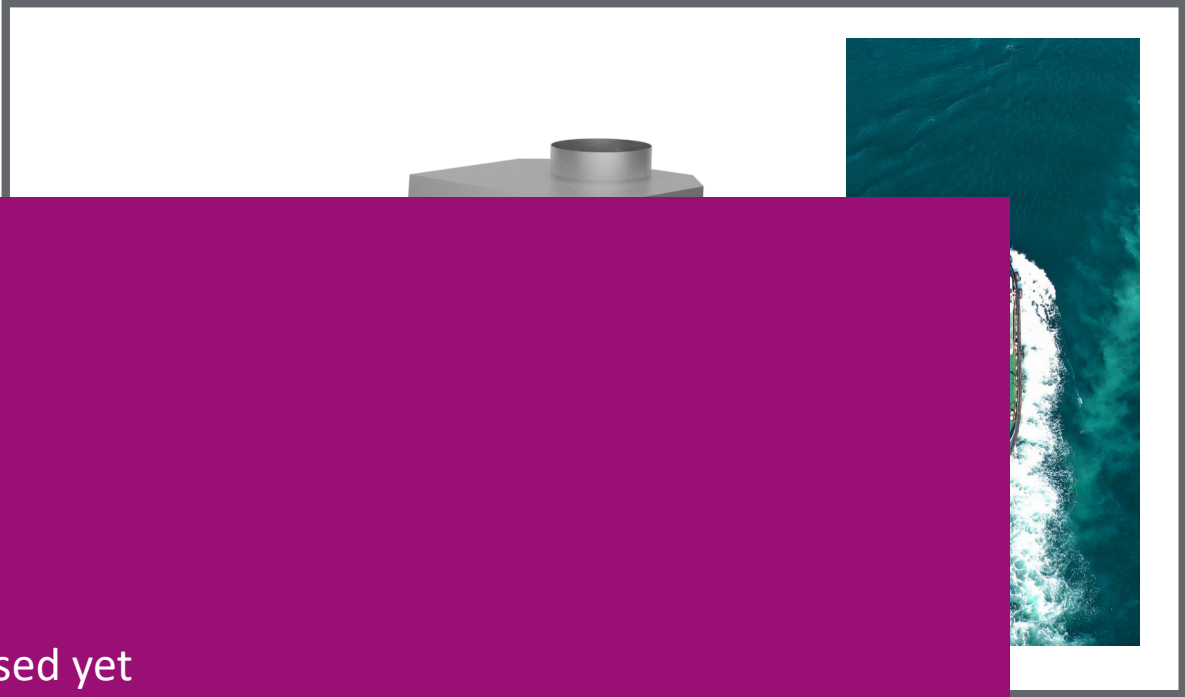


# The MW DPF

XXXXX

## benefits

- EU Stage V & VI capable
- **Maximum availability** due to semi automatic on-board ash removal
- **Retrofit and newbuild**



Not to be released yet

**compliant**  
V/VI capable



# CRUISE&FERRY



# The Cruise & Ferry combined solution

For both, high and medium speed engines

## benefits

- **EU Stage V / Euro VI** capable
- **Tailor-made design** for both first fits and retrofits
- **Unrestricted engine operation**
- **Outstanding service life** due to in house developed heavy duty filter substrate
- **Optimized fuel economy** by online monitoring of filter condition
- Optimized for very low backpressure to **minimize fuel penalty**
- **No sulfur limitation** on MDO fuel

## technical description

- For Diesel gensets and propulsion engines in the range of **200kW to 3MW**
- **Customized solutions** for engines **>3MW** upon request
- **Easy to service** modular DPF and SCR catalyst
- Active regenerated DPF **reduces black carbon emissions to more than 98%**
- **Active DPF regeneration** by Diesel burner or electrical heater
- **Inhouse developed and produced** heavy duty DPF substrate with outstanding ash tolerance ensuring longest service intervals
- **Highly flexible integration** into any engine room design

## applications

- Standard offer from 200kW to 3MW
- Cruise vessels
- Ferries
- High- and medium-speed engines

innovation

RFQ ready

In production

## certifications

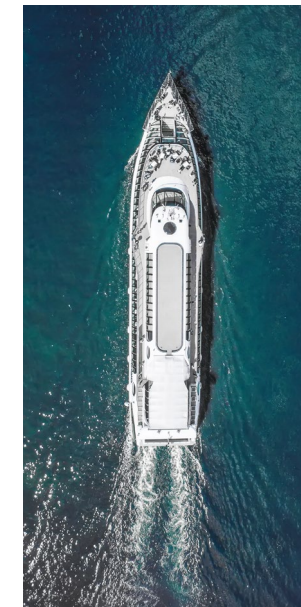
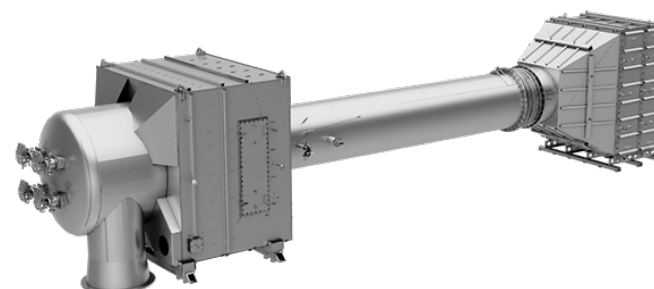
Compliant



EU Stage V ready



Type approved  
by members of



# The Cruise & Ferry SCR system

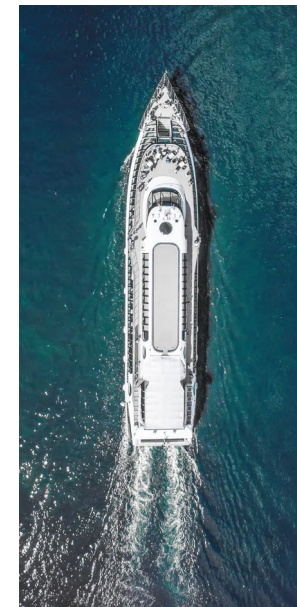
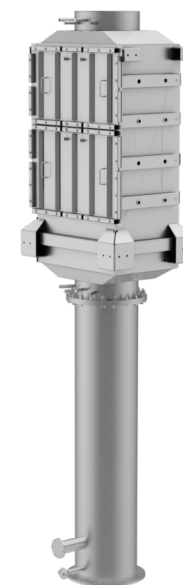
For both, high and medium speed engines

## benefits

- **IMO Tier III** emission compliance
- **Operate in IMO II mode outside ECA to lower urea consumption**
- **EU Stage V** capable
- **Emission certification available** for major engine brands
- **Tailor-made design** for both first fits and retrofits
- **Global service** and spare parts supply

## technical description

- **Air assisted dosing system** for long-term reliable operation
- **Complete set of auxiliaries** process equipment to cover most applications
- Catalyst of different geometry and formulation for **customized layout**
- **Flexible design** to fit complex engine room geometries



## applications

- **Standard offer up to 9MW**
- **Work vessels**
- **Cruise vessels**
- **Mega Yacht**
- **Research vessels**

innovation

RFQ ready

In production

## certifications



**Compliant**

- **IMO Tier III**
- **EU Stage V**
- **EPA tier IV**



# The MW DPF

XXXXX

## benefits

- EII Stage V & VI capable

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- Possibility to tune engine towards **maximum fuel economy**: close cooperation with engine manufacturer required

Not to be released yet



compliant  
I capable



# MERCHANT

# The merchant SCR solution

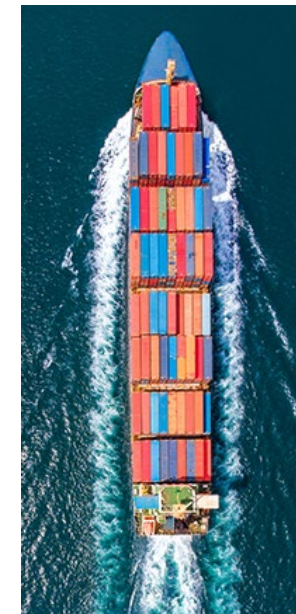
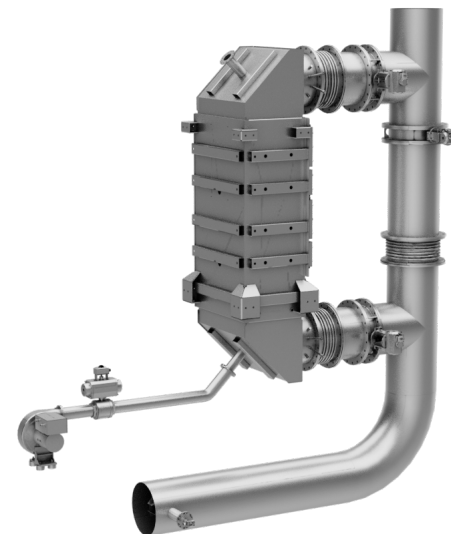
A simple way to fleet appreciation

## benefits

- **IMO Tier III** emission compliance
- Highest catalyst lifetime ensuring **minimal TCO**
- **Emission certification available** for major engine brands
- **Tailor-made design** for both first fits and retrofits
- **Global service** and spare parts supply

## technical description

- **Air assisted dosing system** for long-term reliable operation
- 100% Gastight in bypass operation under HFO to maximize catalyst lifetime
- **Complete set of auxiliaries** process equipment (e.g.: dust blower)
- Catalyst of different geometry and formulation for **customized layout**
- **Flexible design** to fit complex engine room geometries



## applications

- Standard offer up to 9MW
- Merchant vessels
- Medium speed Gensets

innovation

RFQ ready

In production

## certifications



**Compliant**