Wärtsilä HY

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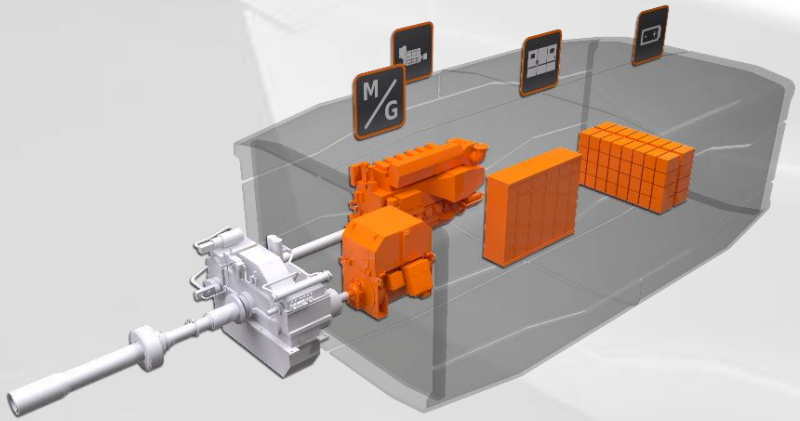
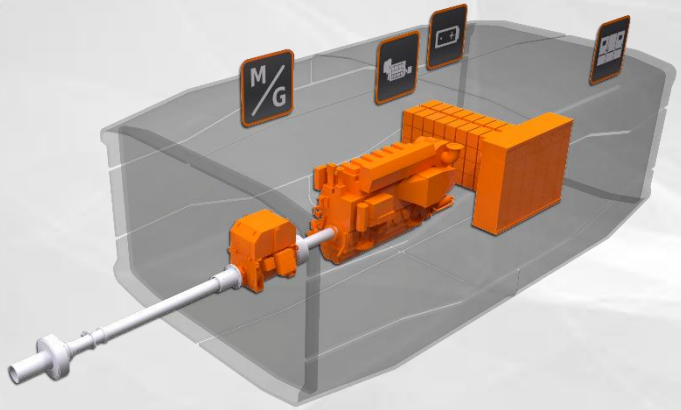
Genoa Shipping Week
30th June 2017

MECHANICAL-HYBRID PTO/PTI



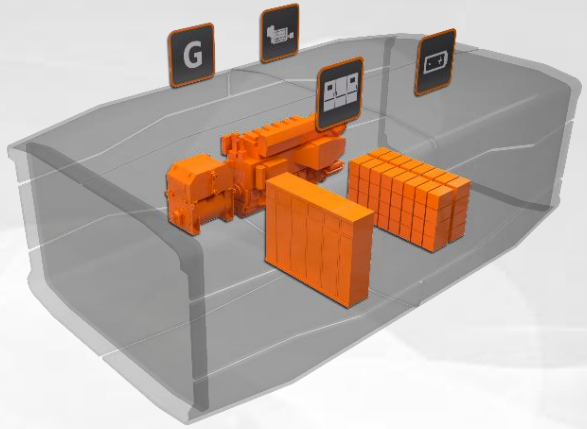
Main engine with clutch
PTO/PTI on the gearbox
Energy storage system
DC link and power drives
Energy Management System

MECHANICAL-HYBRID SHAFT M/G



Main engine with clutch
In-line shaft generator/motor
Energy storage system
DC link and power drives
Energy Management System

ELECTRICAL-HYBRID



Generating set
Energy storage system
DC link and power drives
Energy Management System

Designed for different segments

Optimized for each project

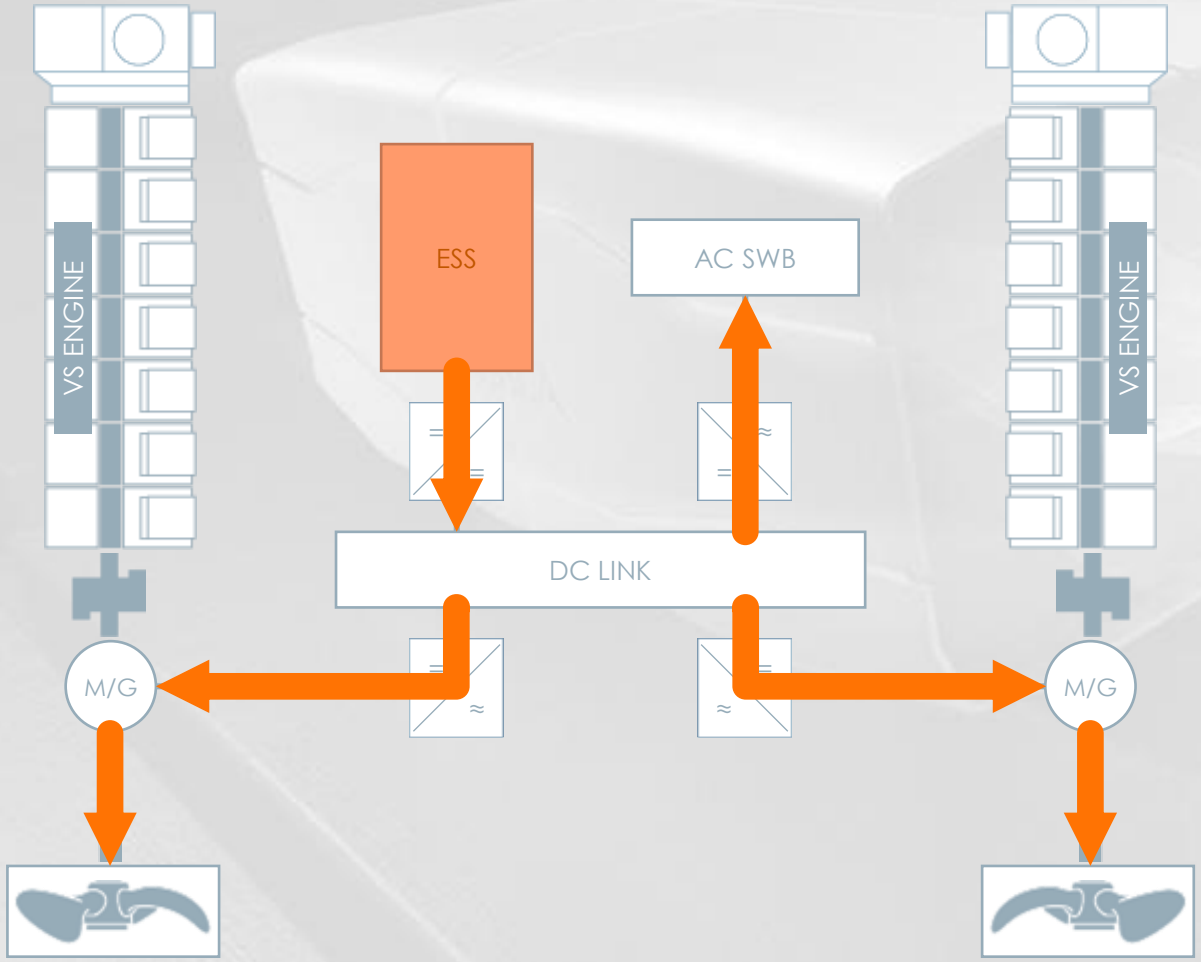
Wärtsilä HY on a 90 TBP tug

COMPARED SOLUTIONS




	REFERENCE	WÄRTSILÄ HY 27 250 kWh	WÄRTSILÄ HY 27 750 kWh	WÄRTSILÄ HY 20 1000 kWh
Main engines	2x W8L26 [2x 2720kW]	2x W8L26 [2x 2720kW]	2x W8L26 [2x 2720kW]	2x W6L26 [2x 2040kW]
Shaft gen-mot	2x Shaft M/G [2x 1000kWe]	2x Shaft M/G [2x 1000kWe]	2x Shaft M/G [2x 1000kWe]	2x Shaft M/G [2x 1000kWe]
Energy storage	-	250 kWh – 5C	750 kWh – 3C	1000 kWh – 3C
Propulsion	2x ST [2x ~2.8MW]	2x ST [2x ~2.8MW]	2x ST [2x ~2.8MW]	2x ST [2x ~2.8MW]
Shore connection	75 kWe	75 kWe	75 kWe	75 kWe
Auxiliary gensets	2x HS genset [2x 200kWe]	1x HS genset [1x 200kWe]	1x HS genset [1x 200kWe]	1x HS genset [1x 200kWe]

* Dimensioned to be replaced once during vessel lifecylce



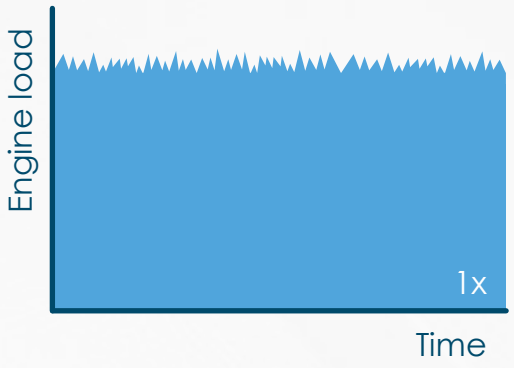
Green mode

Both engines off, all power supplied by batteries

SAIL OUT - 10 KN

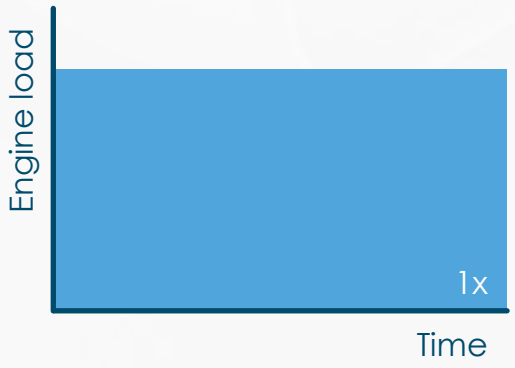
REFERENCE

Standard



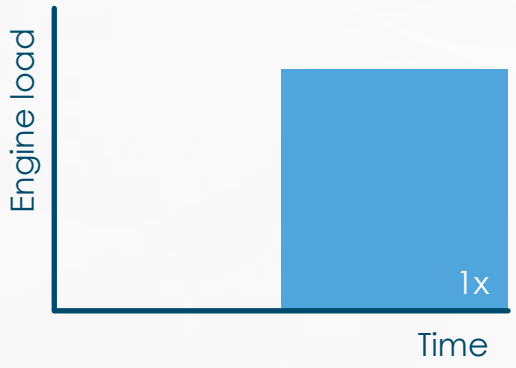
WÄRTSILÄ HY 27
250 kWh

Zero smoke



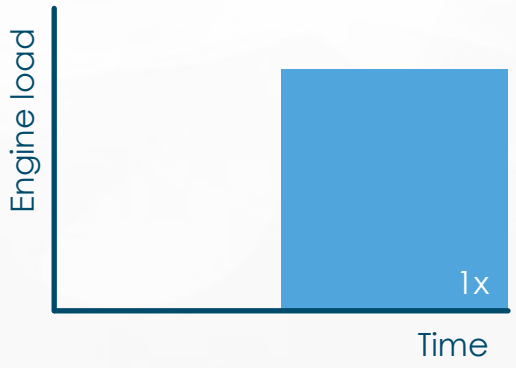
WÄRTSILÄ HY 27
750 kWh

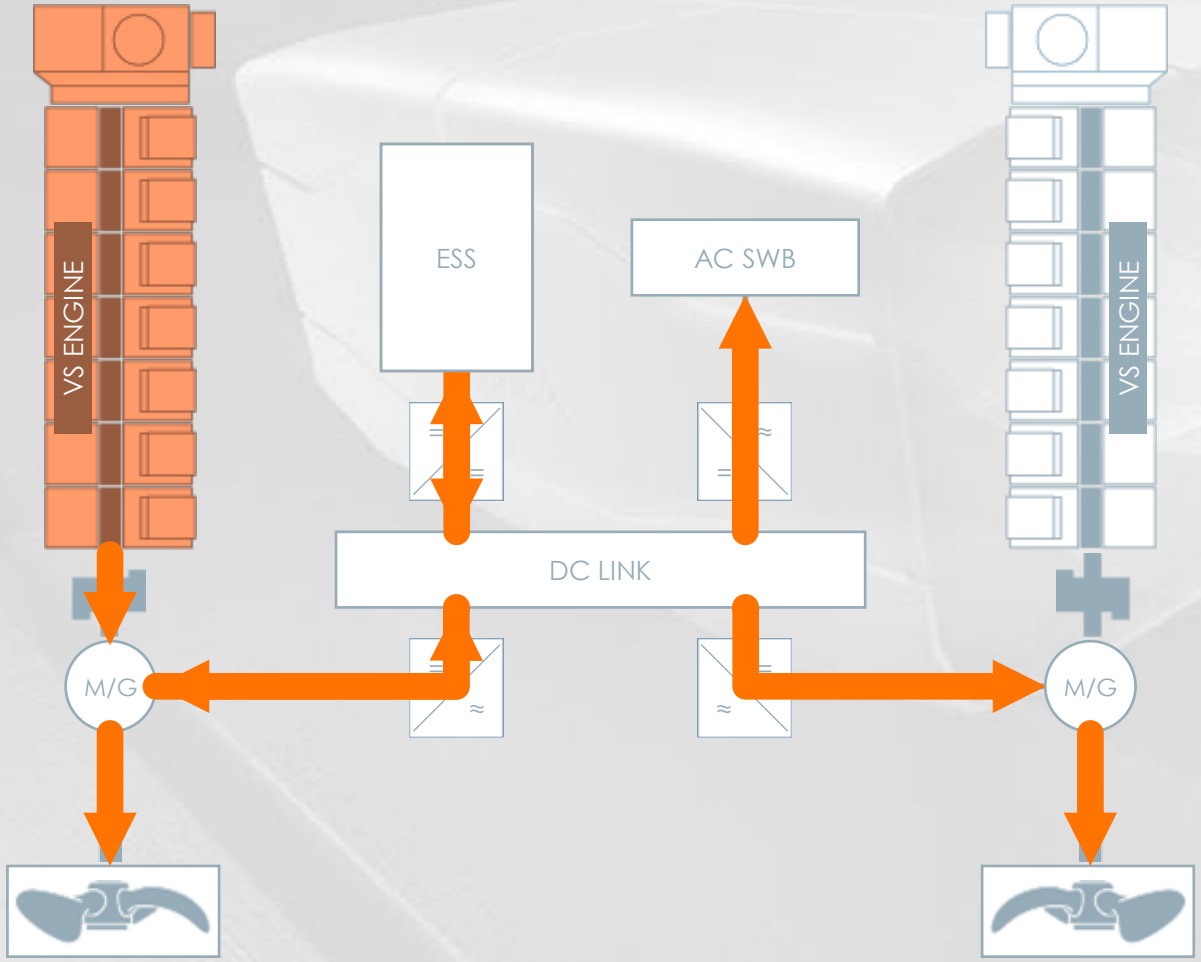
Zero smoke
Zero emissions
Low noise



WÄRTSILÄ HY 20
1000 kWh

Zero smoke
Zero emissions
Low noise



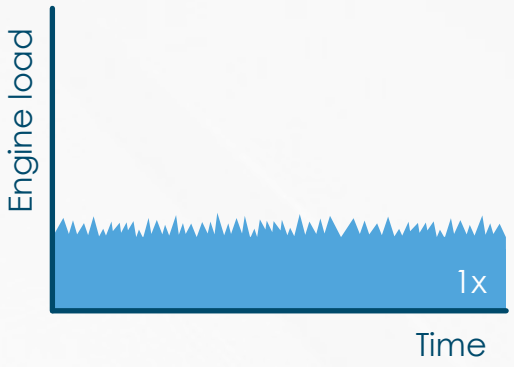


Start & stop

Low state of charge: engine provides power and recharges batteries

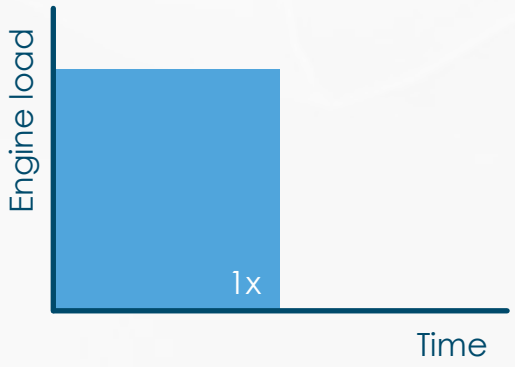
REFERENCE

Standard



WÄRTSILÄ HY 27
250 kWh

Less running hrs
Efficient engine load

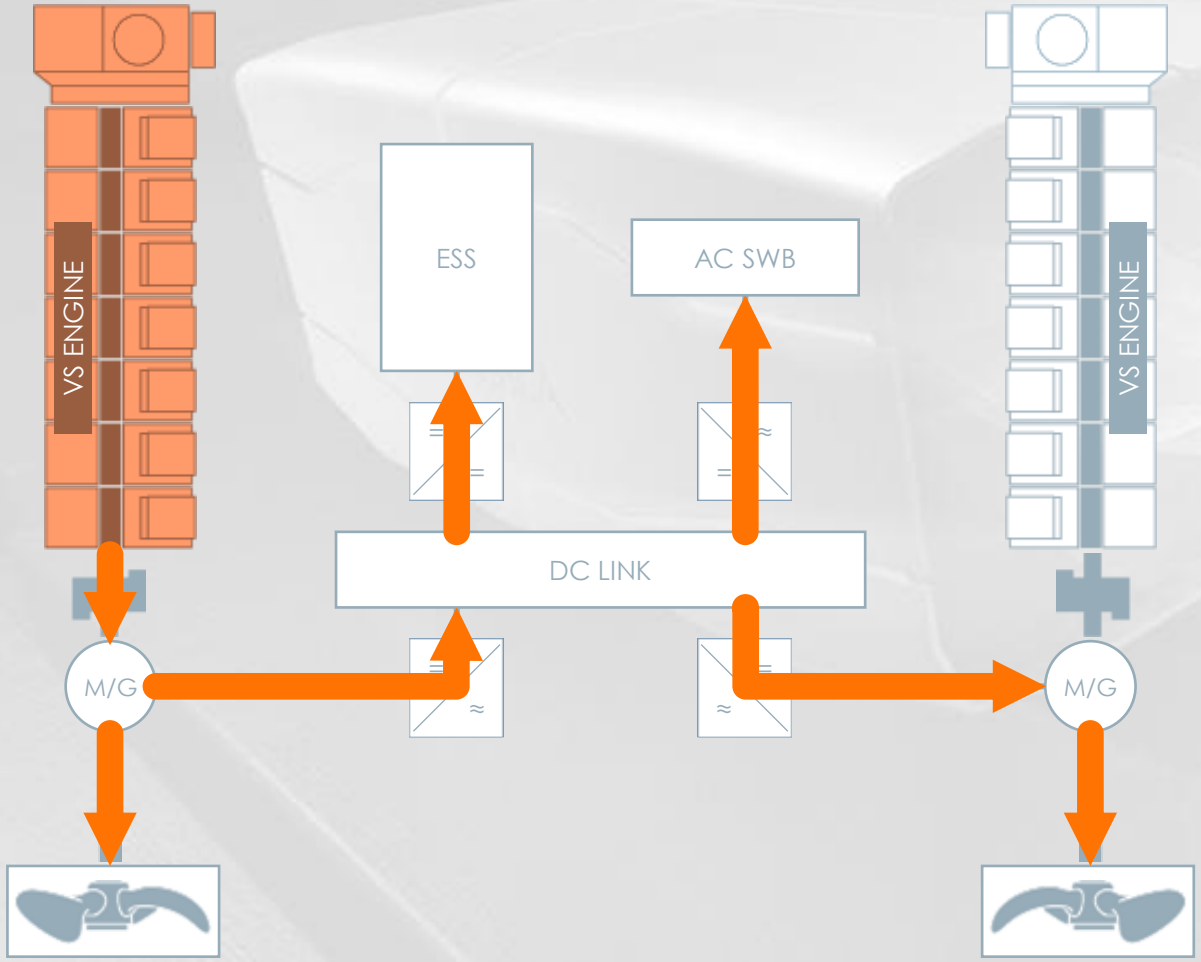


WÄRTSILÄ HY 27
750 kWh

Much less running hrs
Efficient engine load

WÄRTSILÄ HY 20
1000 kWh

Much less running hrs
Efficient engine load

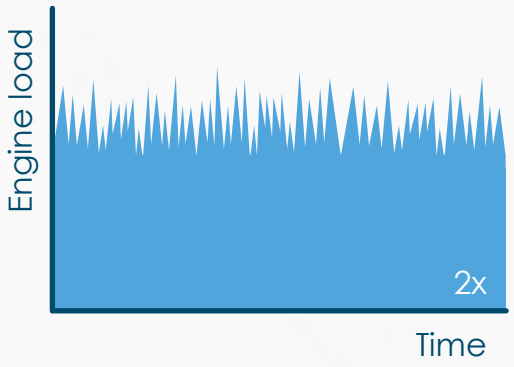


Peak shaving

One engine providing power, batteries taking sudden load peaks

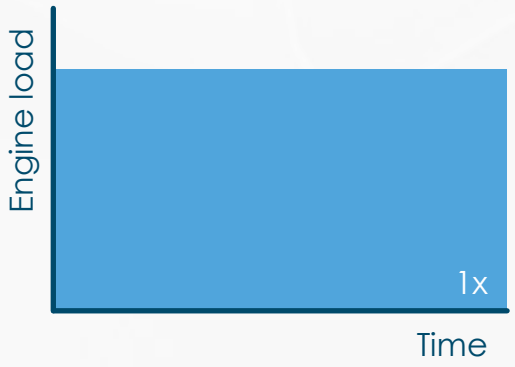
REFERENCE

Standard



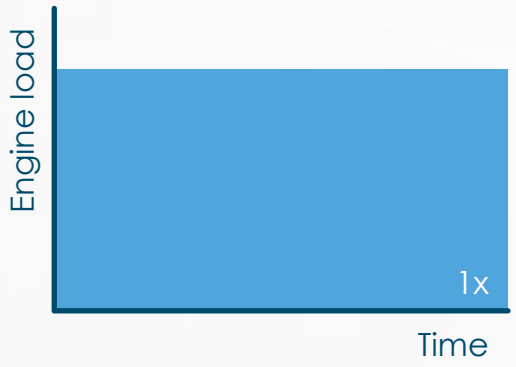
WÄRTSILÄ HY 27
250 kWh

Instant load taking
Stable engine load



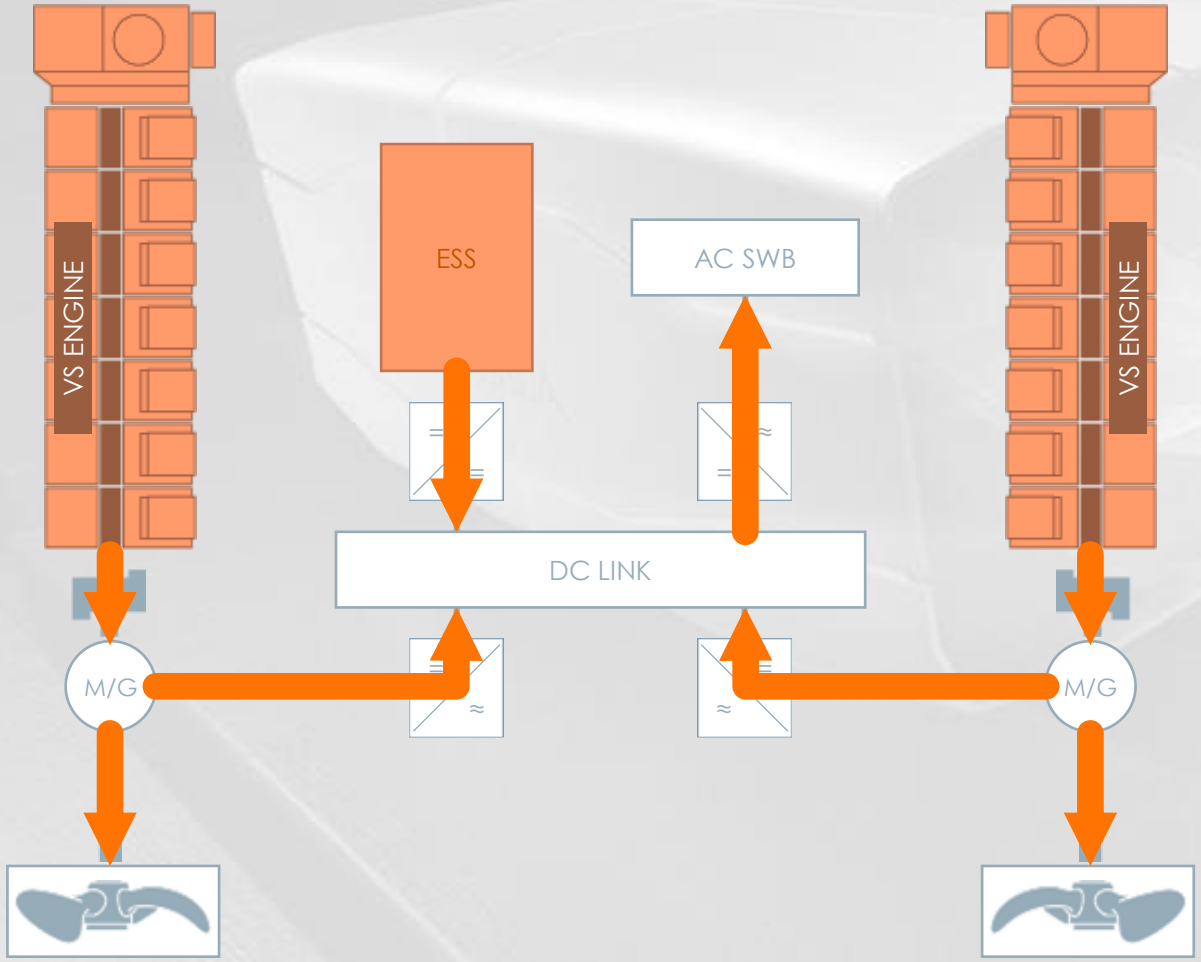
WÄRTSILÄ HY 27
750 kWh

Instant load taking
Stable engine load



WÄRTSILÄ HY 20
1000 kWh

Instant load taking
Stable engine load

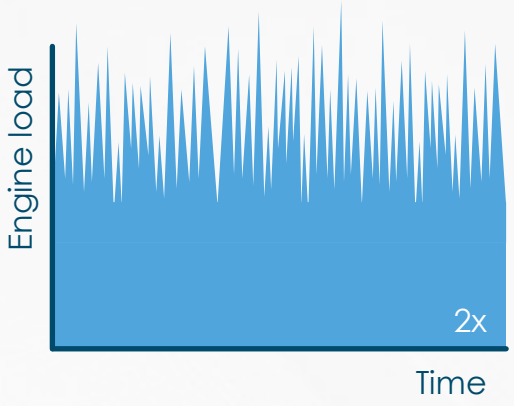


Power boost

Batteries and engines providing power simultaneously

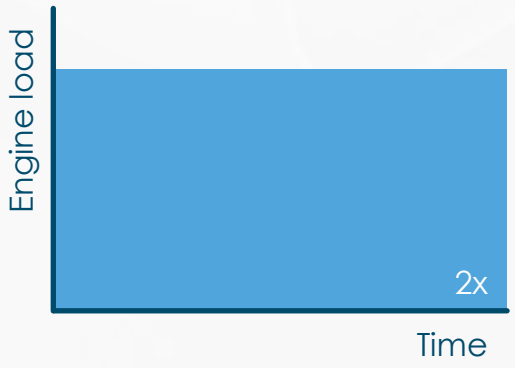
REFERENCE

Standard



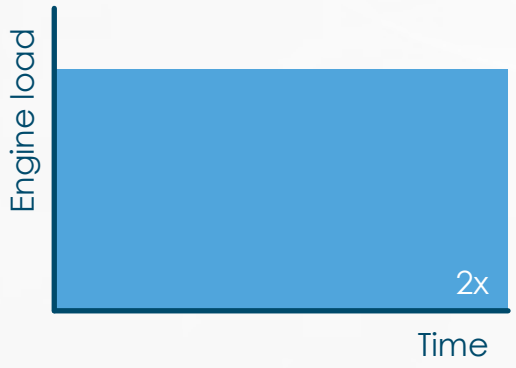
WÄRTSILÄ HY 27
250 kWh

Instant load taking
Power boost
Stable engine load



WÄRTSILÄ HY 27
750 kWh

Instant load taking
Power boost
Stable engine load



WÄRTSILÄ HY 20
1000 kWh

Instant load taking
Power boost
Stable engine load

ENHANCING CUSTOMER VALUES

Safety & Reliability

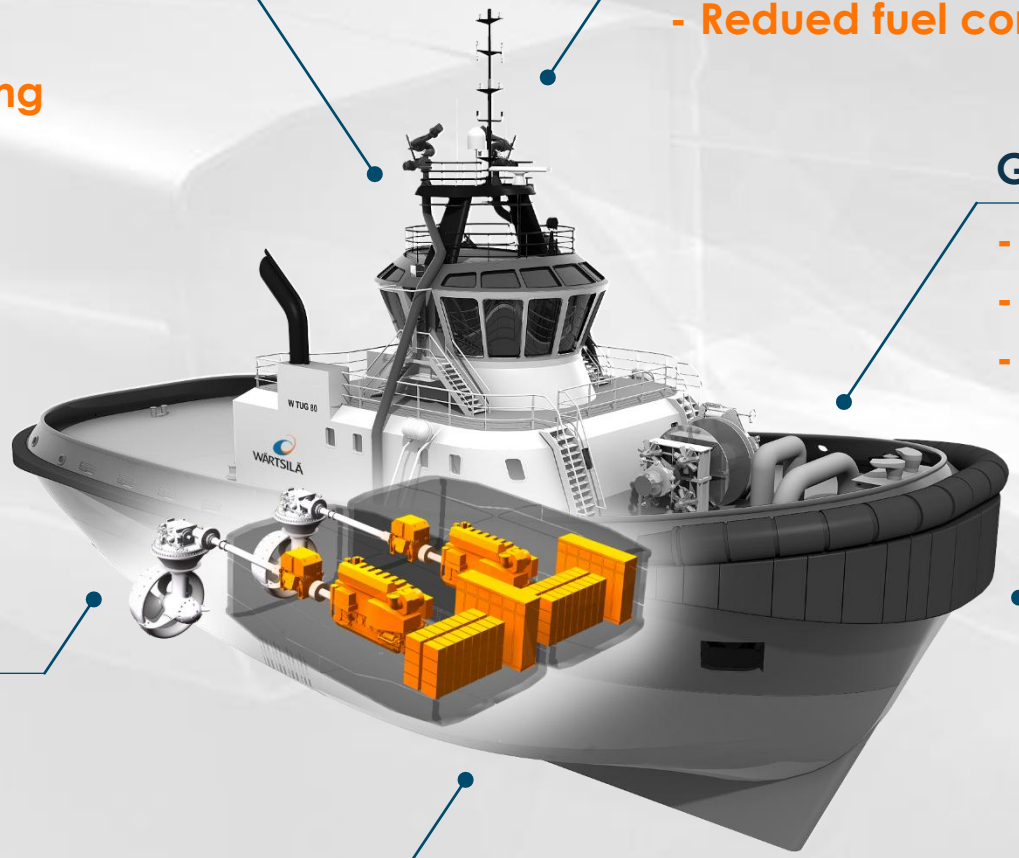
- Built-in redundancy
- Back-up logics
- Instant load taking

Operational costs

- Reduced maintenance
- Redued fuel consumption

Performance

- Continous EMS tuning
- Easy EMS expansion



Green image

- Green mode
- Start & Stop
- Smokeless operations

Weight & Volume

- Less cylinders
- GA flexibility

Interfaces with suppliers

- Reduced interfaces
- Less commissioning days
- In-house integration
- Single set of documentation
- Guaranteed performance

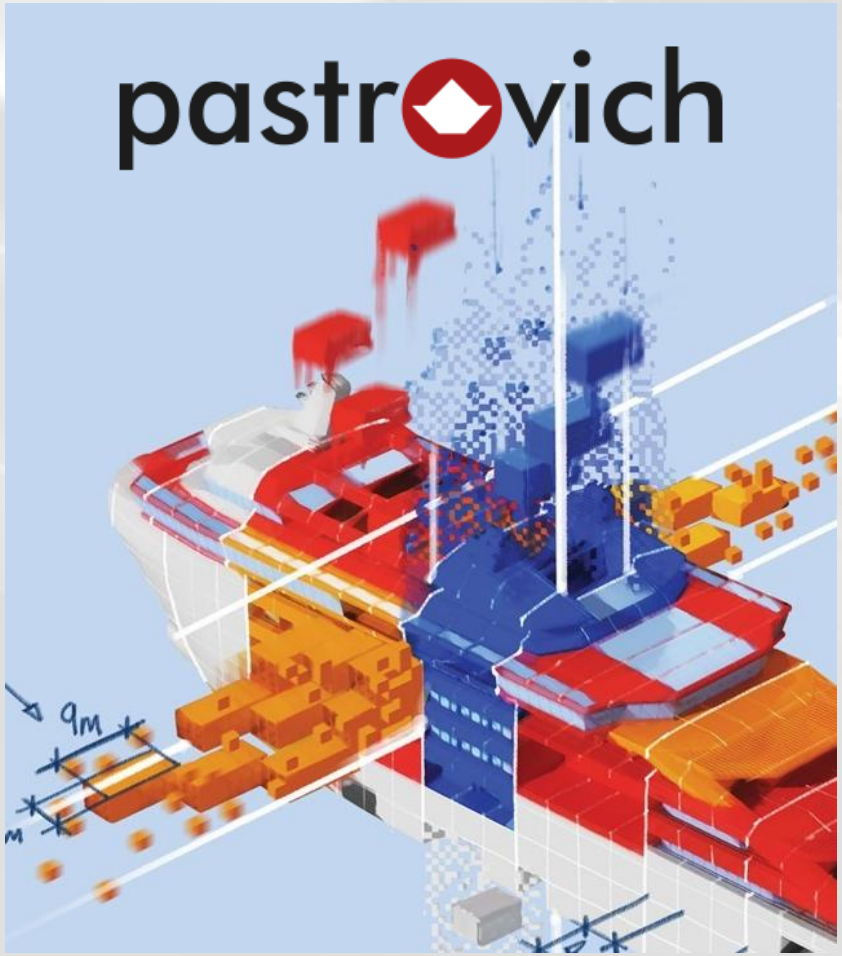
Bollard pull

- Power boost (higher TPB)

WÄRTSILÄ

Approval in Principle

Dedicated design



Contract signing

Wärtsilä HY

Thank you

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