

Floating

Diesel Power Stations



MAN Diesel





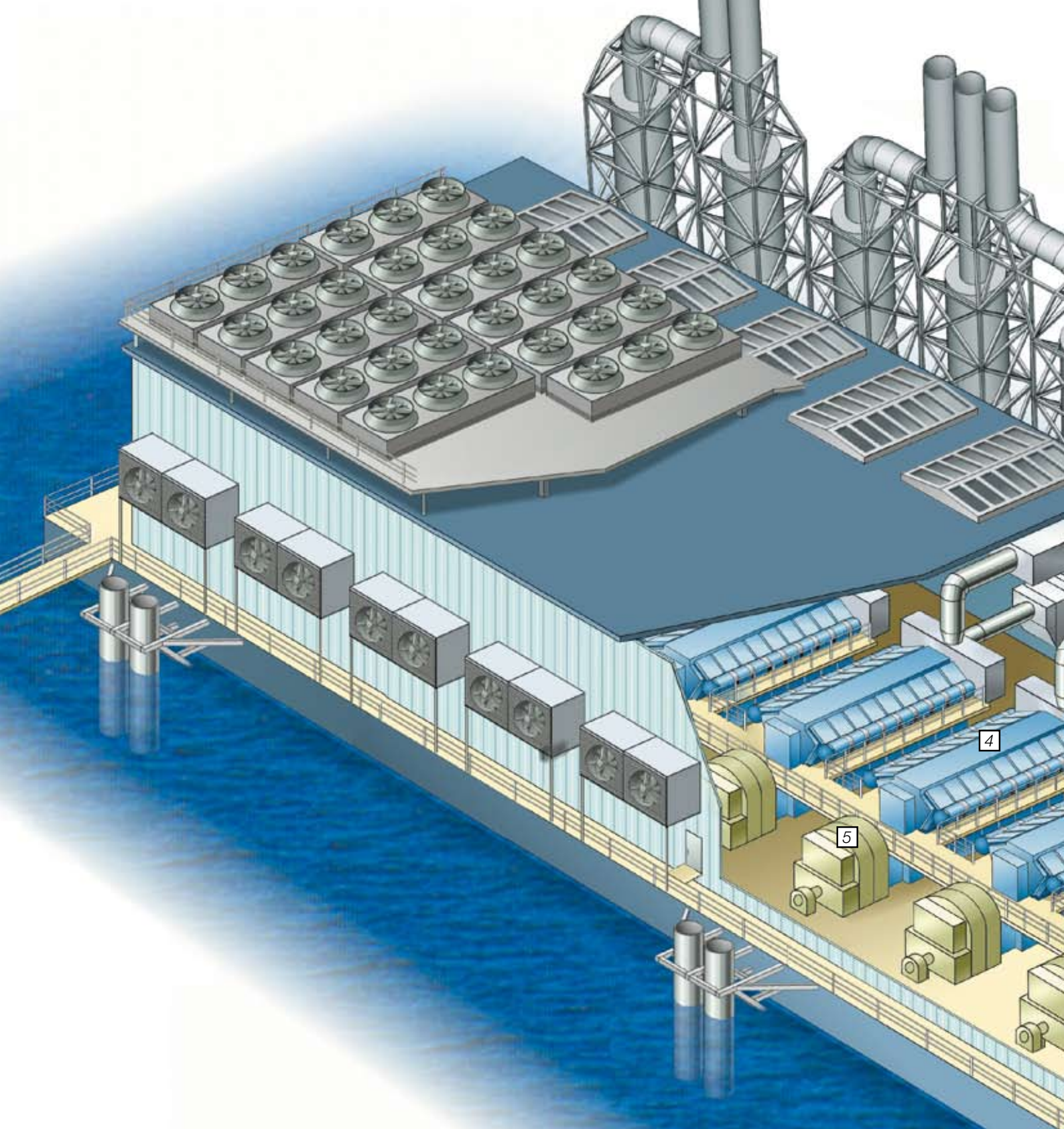
Floating Diesel Power Stations

For coastal regions or large river sites, "floating power stations" are an ideal solution for meeting power supply needs on a fast track basis.

The advantages are:

- >> Simple and straight forward location of power station where power is required.
- >> Supports rapid infrastructure development in remote regions.
- >> Short building times: for example 70 MW power station can be installed in less than 12 months.
- >> Reduced reliance on poor or non-existent local capabilities.
- >> Floating power stations can take advantage of financing incentives from shipbuilding regions.
- >> Unaffected by landslides and earthquakes.
- >> Minimal environmental impact as only a small area of coastal or up-river land is required.
- >> Independence from local infrastructure.
- >> The floating Diesel power station can be supplied with two cooling alternatives: sea water cooling or roof-mounted radiator equipment.
- >> Minimum operator's investment risk due to the mobility, versatility and adaptability of this type of plant.





Legend

1 Administration facilities

2 Control room

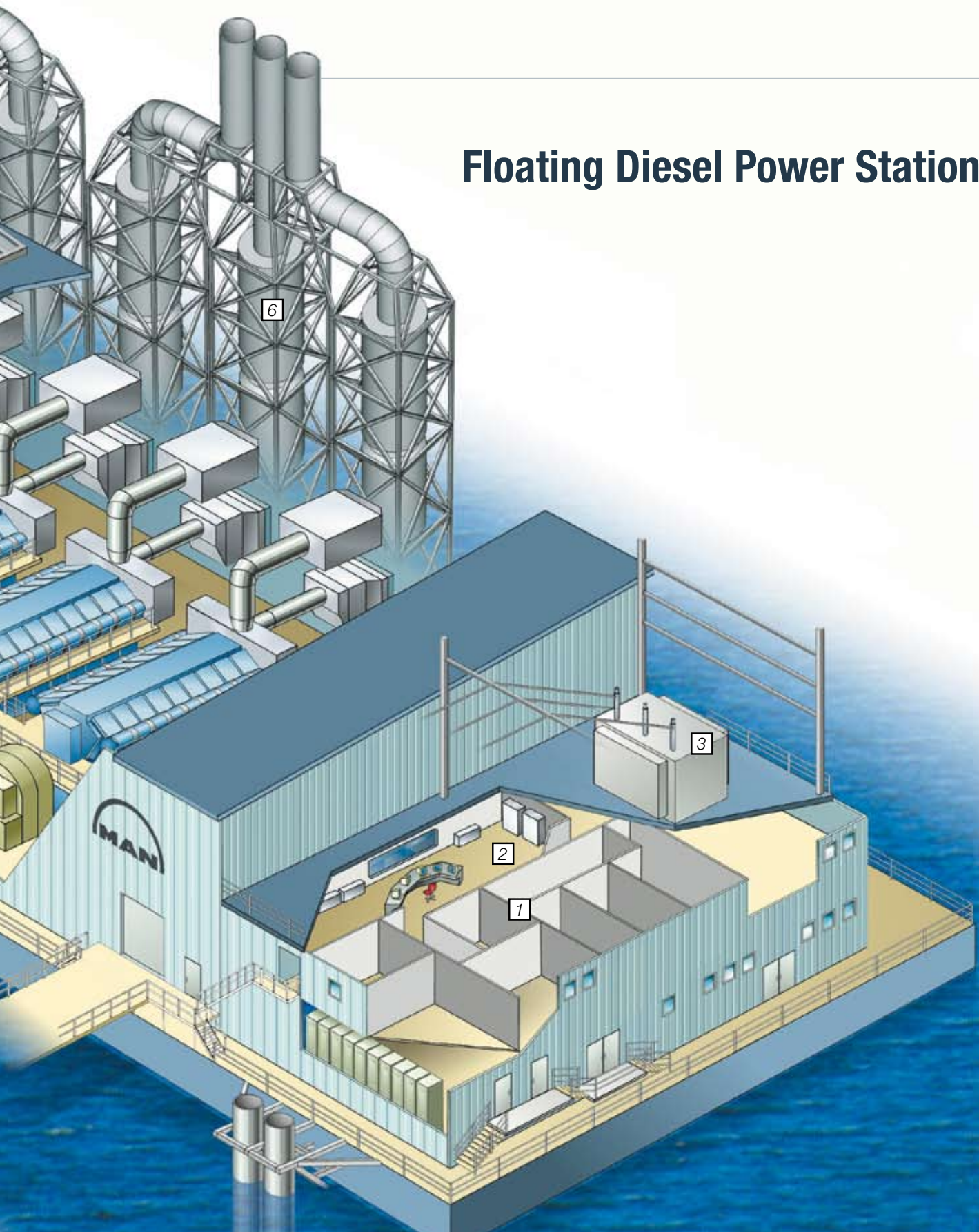
3 Step-up transformer

4 Engine

5 Alternator

6 Stack with waste-heat recovery boiler and silencer

Floating Diesel Power Station



Basic design and structure of a 72 MW floating Diesel power station

Main deck

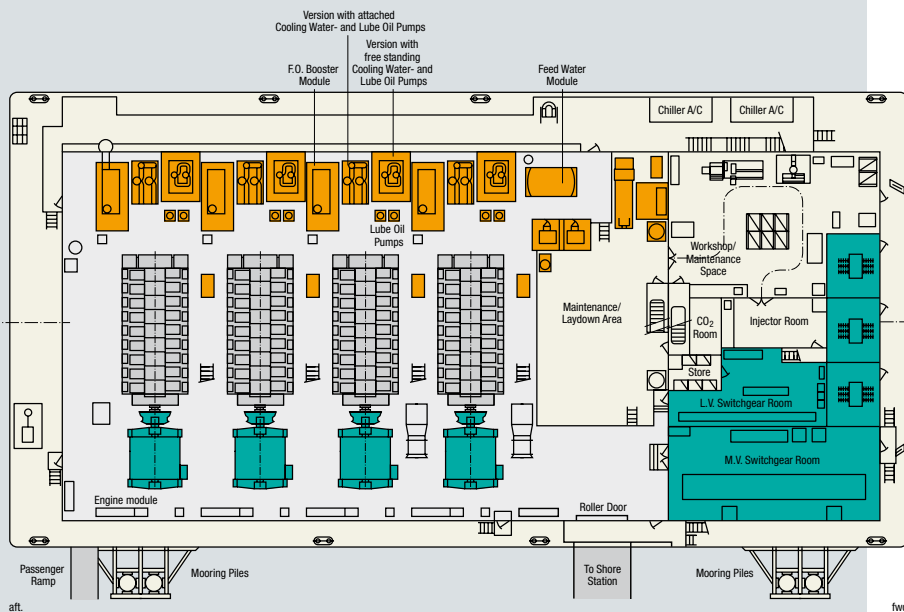
Diesel generating sets with cooling water, fuel, lubeoil separator, nozzle cooling modules, etc.
Workshops (mechanical and electrical) and electrical switchgear.

The fully equipped, noise-protected workshops and tool rooms mean that maintenance and repair work can be carried out on board.

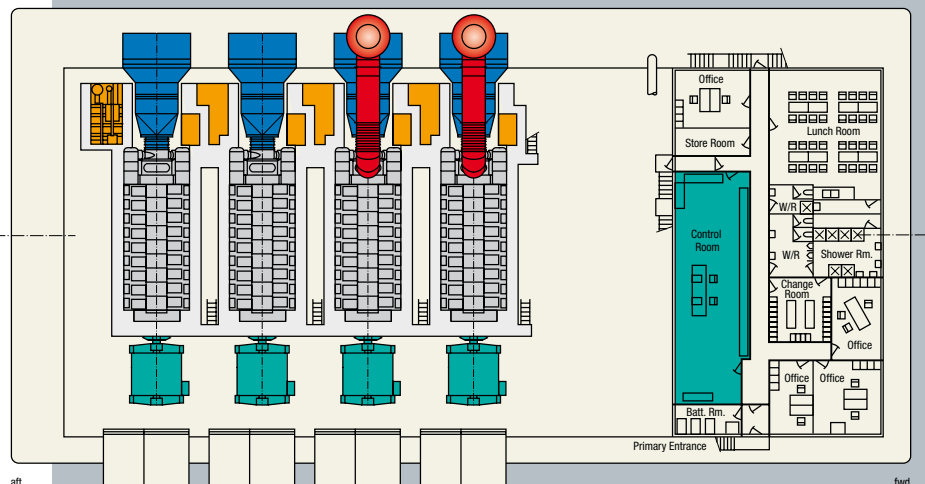
Upper deck

Control room, sanitary and social rooms.
The control room is noise-protected, air-conditioned and fire-protected. The social and sanitary rooms are designed to accommodate a crew of 15.

Main deck



Upper deck



Lower deck

Tanks with transfer pumps, fuel processing and seawater pumps. The seawater pump room features a multi-stage filter system for seawater cooling.

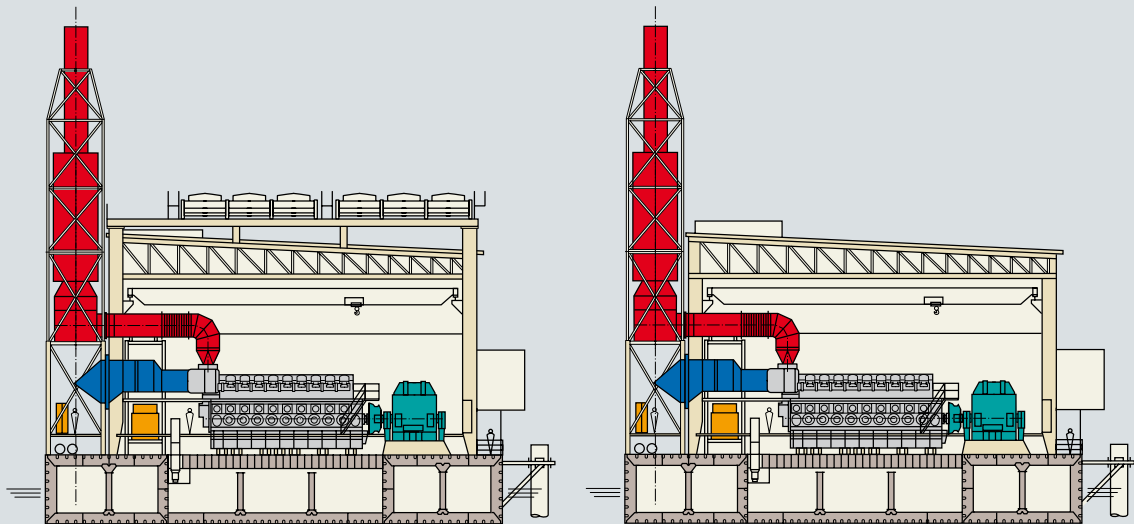
The tank capacities are designed for approx. two days of operation at 100% load. The fuel processing equipment is housed in separately ventilated and fire proof compartments.

Pontoon

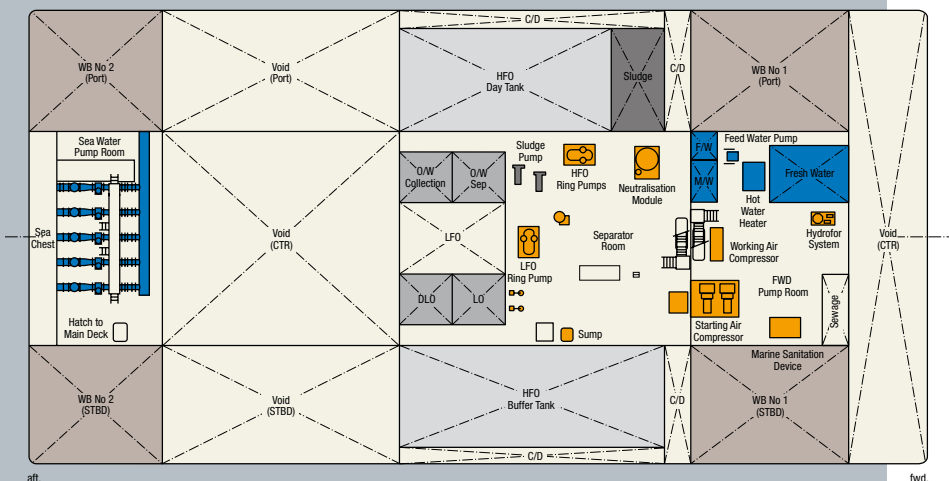
With noise-protected engine-house and front-end mounting for the electrical part, control room, open-air substation, sanitary and social rooms.

Pontoon: Air cooled option

Sea water cooled option



Lower deck



Basic design and structure of a 72 MW floating Diesel power station

Principal dimensions

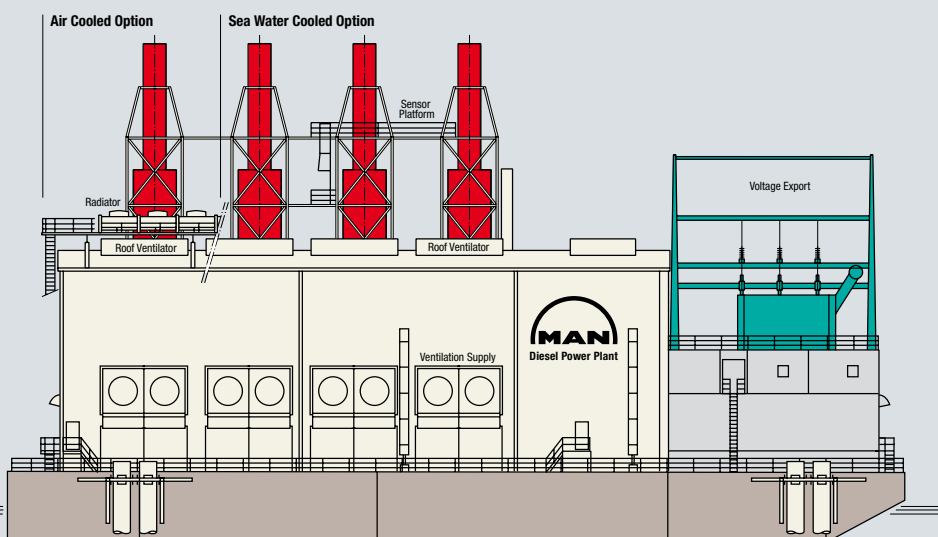
Hull characteristics in m

Length	62.9
Beam	31.8
Depth	4.8
Draft	2.9

Tank capacities (98% full) in m³

HFO buffer tank	365
HFO day tank	292
LFO storage tank	133
Lube oil storage tank	47
Sludge tank	73
Dirty lube oil tank	23
Oily water collection tank	47
Oily water settling tank	47
Lube oil service tank (integral with engine)	28
Fresh water tank	81
Maintenance water tank	26
Feedwater tank	17
Sewage tank	25
Ballast tanks (forward total) in tonnes	899
Ballast tanks (aft total) in tonnes	749
Lube oil maintenance tank	23

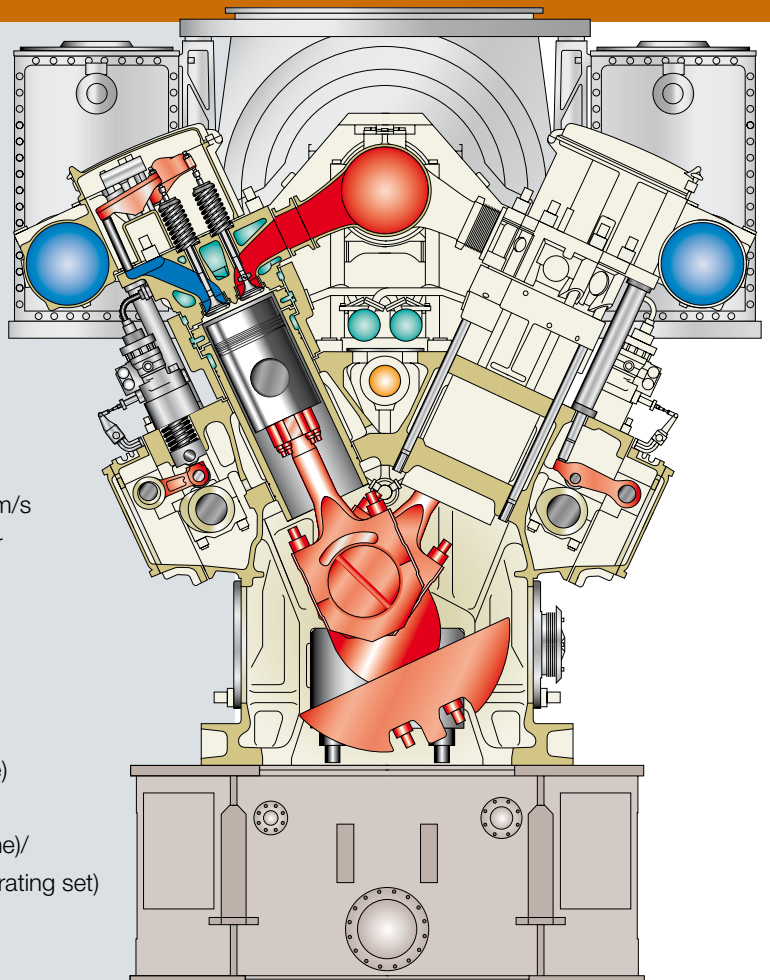
Side view



Engine 18V48/60

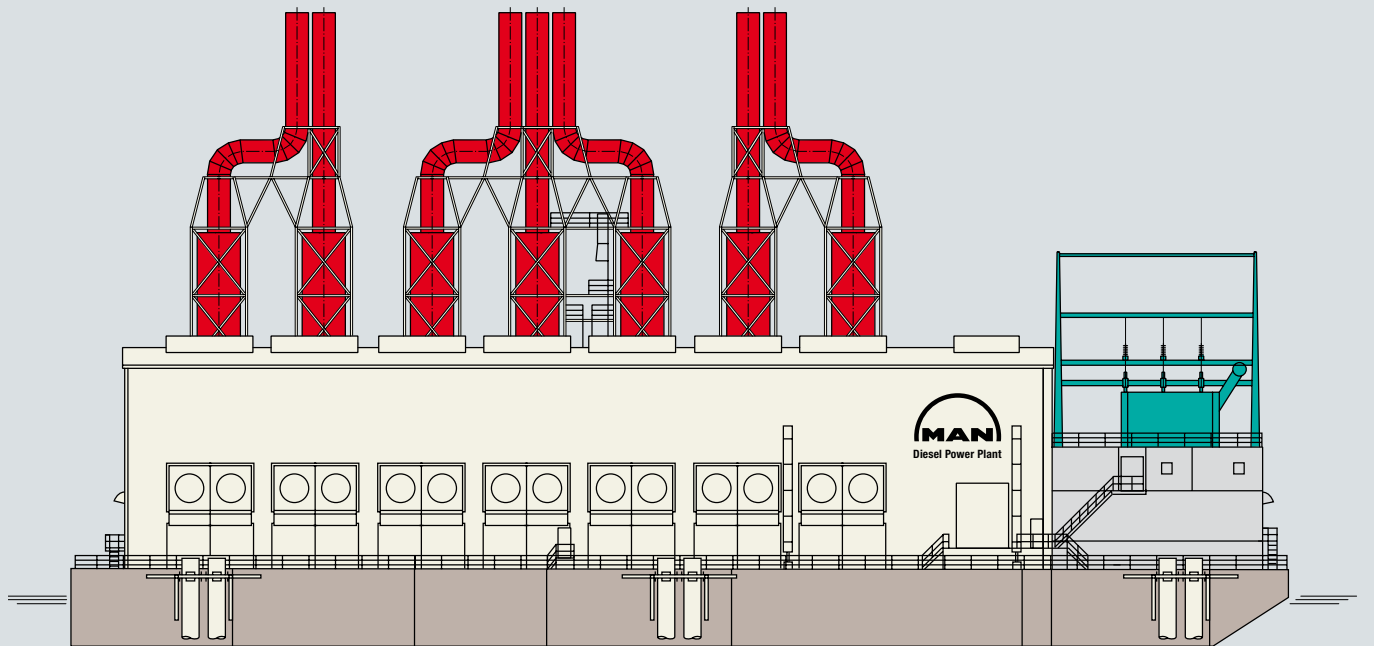
Engine cycle:	Four-stroke
Turbocharging system:	Constant pressure
Bore:	480 mm
Stroke:	600 mm
Swept volume per cylinder:	108.6 dm ³
Power to weight ratio:	13.7 kg/kW
Engine speed (60 Hz/50 Hz):	514 rpm – 500 rpm

Mean piston speed (60 Hz/50 Hz):	10.3 m/s – 10.0 m/s
Mean effective pressure (60 Hz/50 Hz):	22.6 bar/23.2 bar
Cylinder cooling (one-stage):	Cooling water
Charge-air cooler (two-stage):	Fresh water
Fuel injector cooling:	Fresh water
Starting method:	Compressed air
Cylinder output (MCR) at 514 rpm/500 rpm:	1 050 kW (engine)
Power output (maximum continuous rating):	18 900 kW (engine)/ 18 400 kW (generating set)
Heat rate (mechanical power):	7 387 kJ/kWh
Specific lubricating oil consumption:	0.60 g/kWh



Basic structure of a 124 MW floating Diesel power station

Side view



Principal dimensions

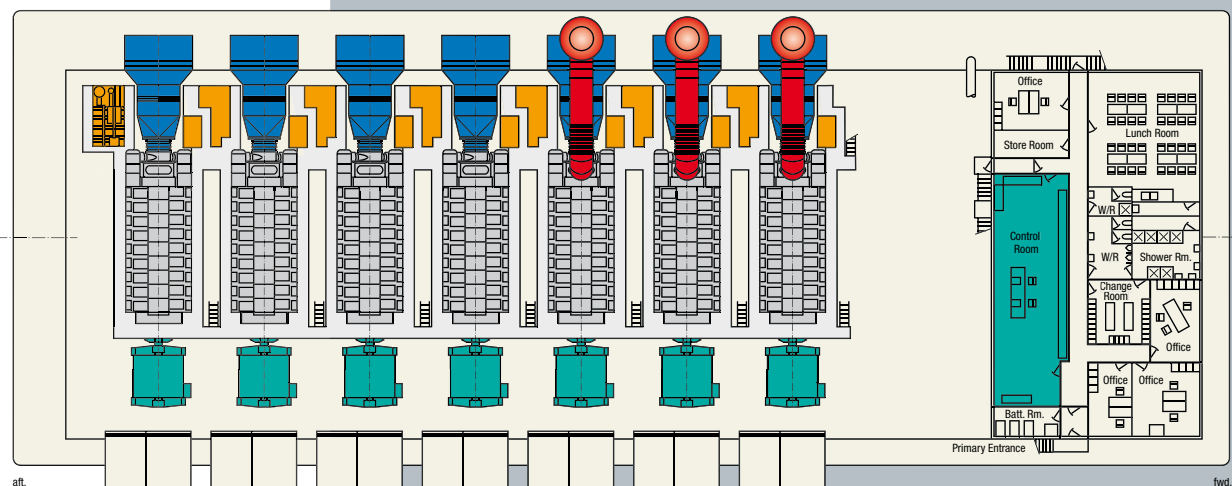
Hull characteristics in m

Length	85.1
Beam	31.8
Depth	5.4
Draft	3.45

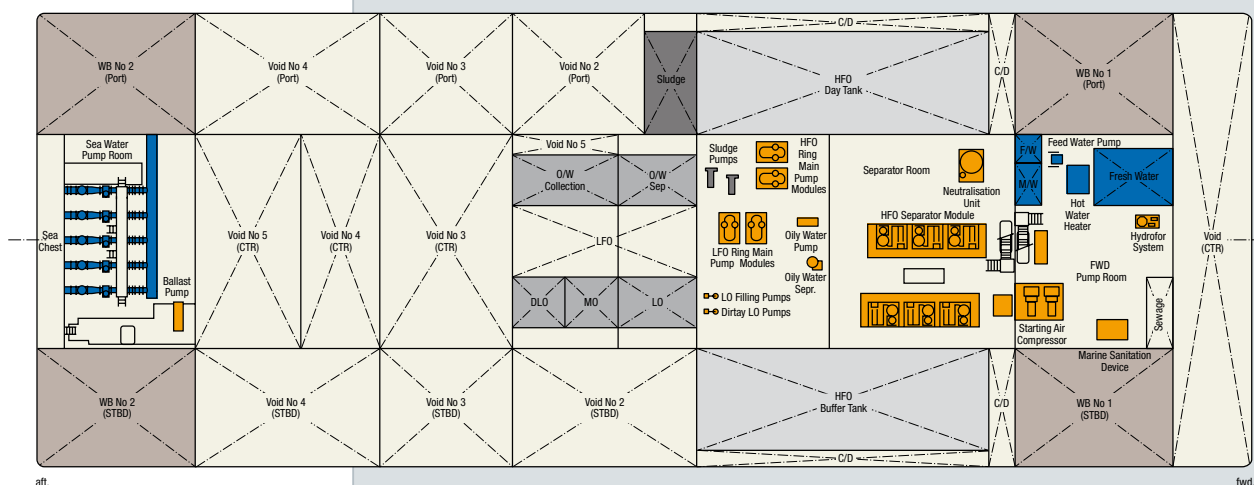
Tank capacities (98% full) in m³

HFO buffer tank	488	Fresh water tank	93
HFO day tank	488	Maintenance water tank	28
LFO storage tank	274	Feedwater tank	19
Lube oil storage tank	82	Sewage tank	30
Sludge tank	88	Ballast tanks (forward total)	
Dirty lube oil tank	55	in tonnes	1 010
Oily water collection tank	109	Ballast tanks (aft total)	
Oily water settling tank	82	in tonnes	1 010
Lube oil service tank		Lube oil maintenance tank	55
(integral with engine)	28		

Main deck



Lower deck



Basic structure of a 148 MW floating Diesel power station

Principal dimensions

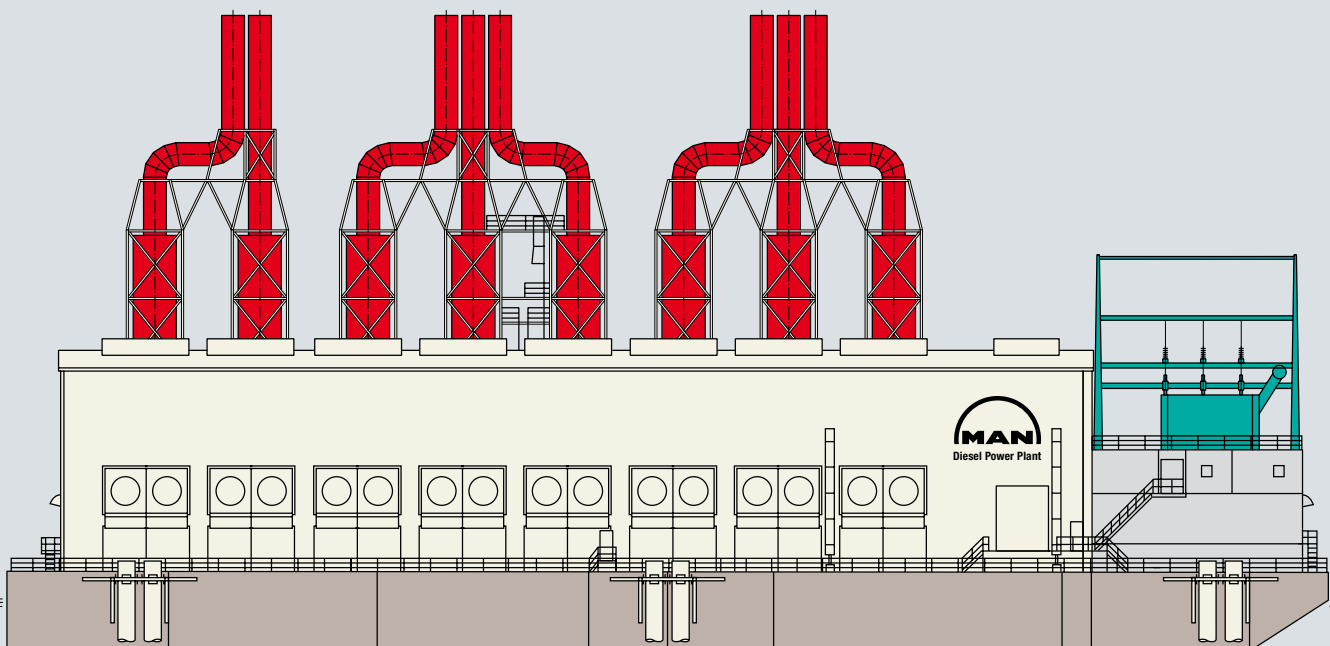
Hull characteristics in m

Length	92.5
Beam	31.8
Depth	5.4
Draft	3.45

Tank capacities (98% full) in m³

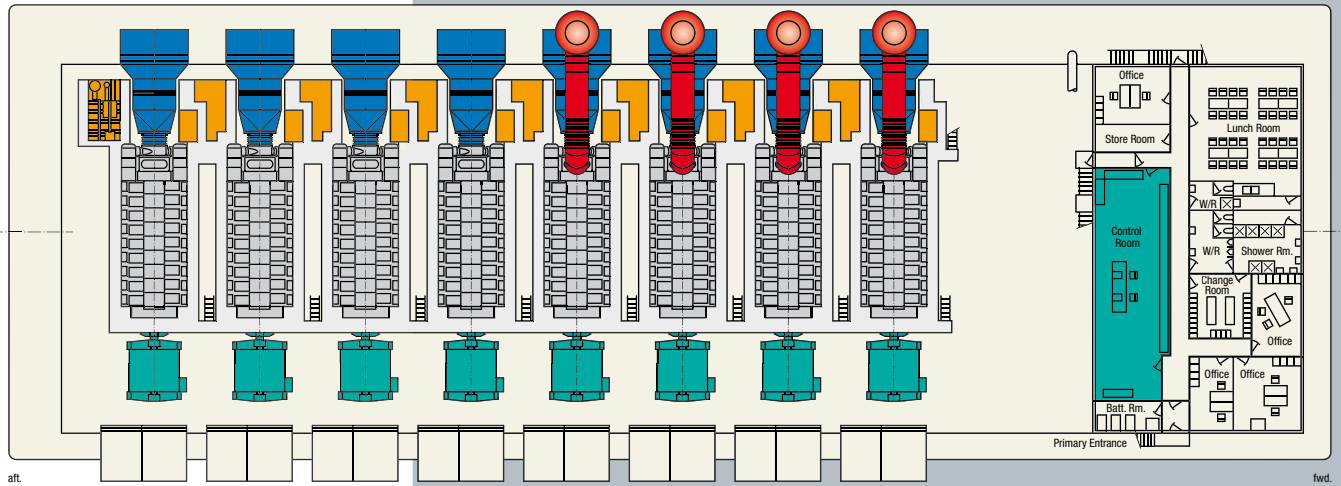
HFO buffer tank	488	Fresh water tank	93
HFO day tank	488	Maintenance water tank	28
LFO storage tank	274	Feedwater tank	19
Lube oil storage tank	82	Sewage tank	30
Sludge tank	88	Ballast tanks (forward total)	
Dirty lube oil tank	55	in tonnes	1 010
Oily water collection tank	109	Ballast tanks (aft total)	
Oily water settling tank	82	in tonnes	1 010
Lube oil service tank		Lube oil maintenance tank	55
(integral with engine)	28		

Side view

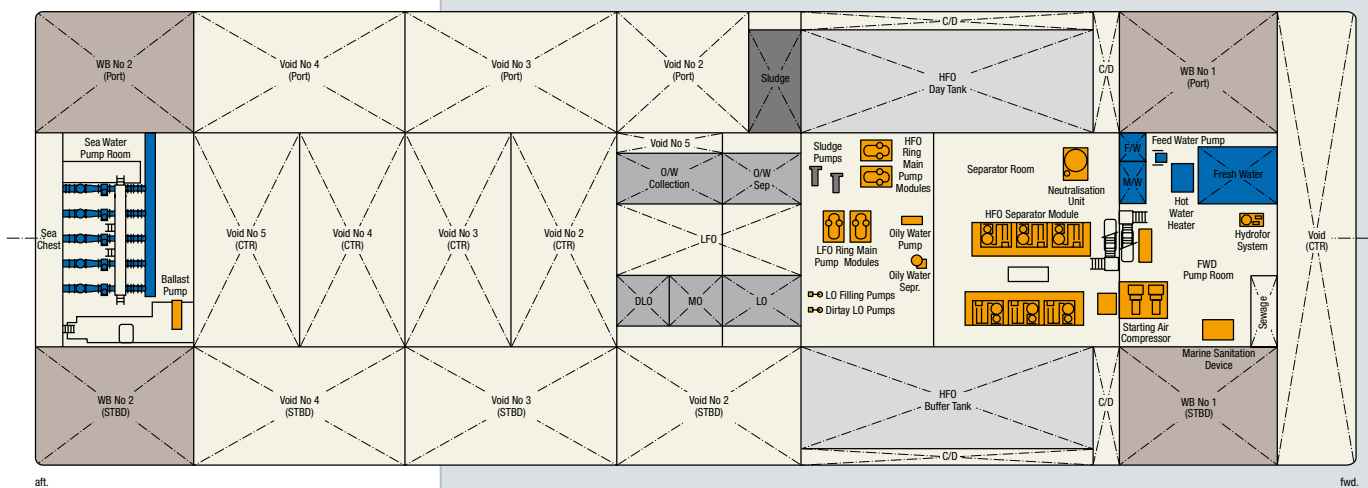




Main deck

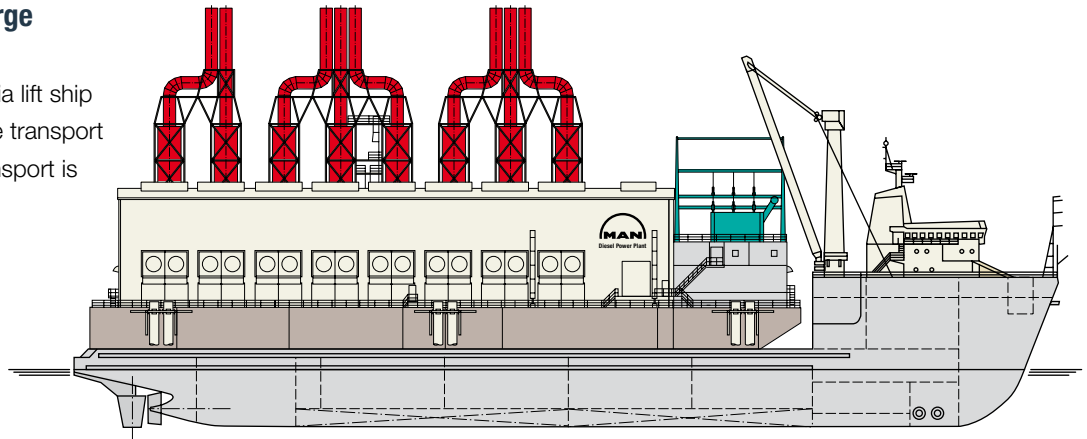


Lower deck



Transporting the barge

Seaborne transport is via lift ship or towable, submersible transport barge. River-bound transport is by tugs.



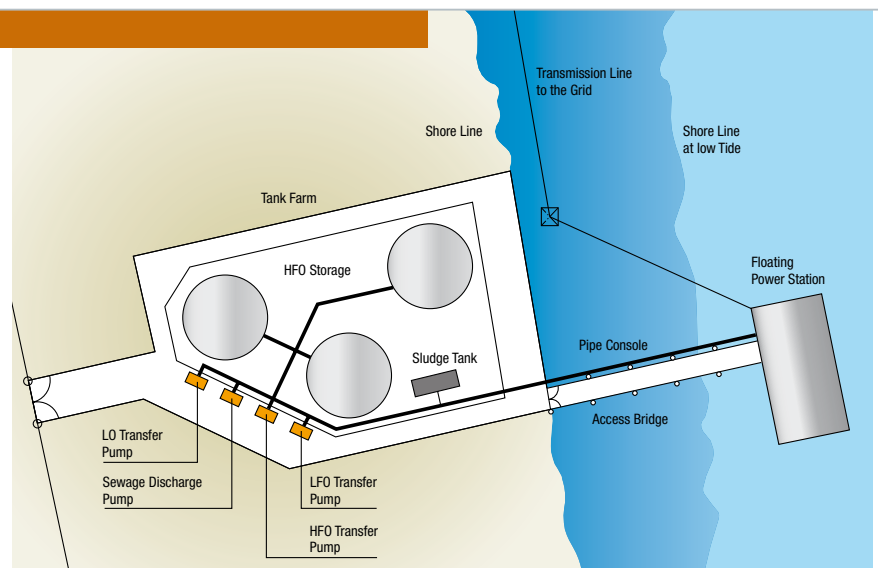
Waste-heat utilisation

The overall efficiency of the power plant can be improved by utilising waste engine heat from the exhaust gas and cooling water, e.g. in a freshwater pro-

duction system for generating drinking water, both for meeting on-board needs and for supplying drinking water to the local community.

Tank farm

Usually the tank farm for fuel storage is erected on land, although it can be installed on an additional "tanker barge". The use of "tanker barges" ensures complete independence from the local infrastructure. Fuel is supplied by tanker, tank trailer lorry, barge or pipeline.





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