

# WARTSILA EGCS FOR GLOBAL SULPHUR CAP 2020

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## ISOX – Inline scrubber



|                            |                    |
|----------------------------|--------------------|
| <b>Principle:</b>          | Inline, open spray |
| <b>No. of inlets:</b>      | 1                  |
| <b>Capacity range:</b>     | 1 MW – 20 MW       |
| <b>Wash water amounts:</b> | 55 m3/MWh          |
| <b>Dry running:</b>        | Yes                |

### Example dimensions 8 MW

|                        |                  |
|------------------------|------------------|
| <b>Total Height:</b>   | 10.500 mm        |
| <b>Tower diameter:</b> | 2.250 mm         |
| <b>Inlet height:</b>   | 0                |
| <b>Footprint:</b>      | 2.660 x 2.660 mm |
| <b>Weight:</b>         | 5 ton            |

## VSOX – Venturi scrubber



|                            |                      |
|----------------------------|----------------------|
| <b>Principle:</b>          | Venturi, packed beds |
| <b>No. of inlets:</b>      | 1-4                  |
| <b>Capacity range:</b>     | 1 MW – 80 MW         |
| <b>Wash water amounts:</b> | 45 m3/MWh            |
| <b>Dry running:</b>        | No                   |

### Example dimensions 8 MW

|                        |                  |
|------------------------|------------------|
| <b>Total Height:</b>   | 7.030 mm         |
| <b>Tower diameter:</b> | 2.500 mm         |
| <b>Inlet height:</b>   | 6.350 mm         |
| <b>Footprint:</b>      | 4.420 x 2.675 mm |
| <b>Weight:</b>         | 5,4 ton          |

**Wärtsilä I-SOx**

**1 – 18MW**



**Wärtsilä V-SOx**

**1 – 20MW**



**Wärtsilä V-SOx multiple**

**1 – 35MW**



**Wärtsilä Q-SOx**

**40 – 70MW**





## System Arrangements

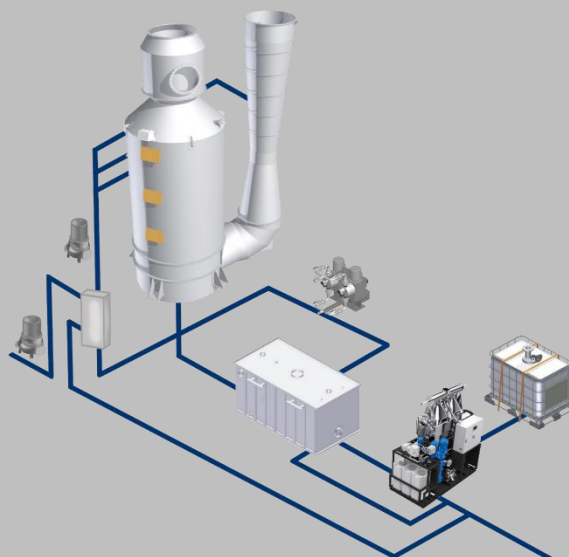
### Open loop

Ships operating in waters with sufficient alkalinity and no restriction on discharge water.



### Closed loop

Ships operating in low alkalinity waters or operating in zero discharge zones.



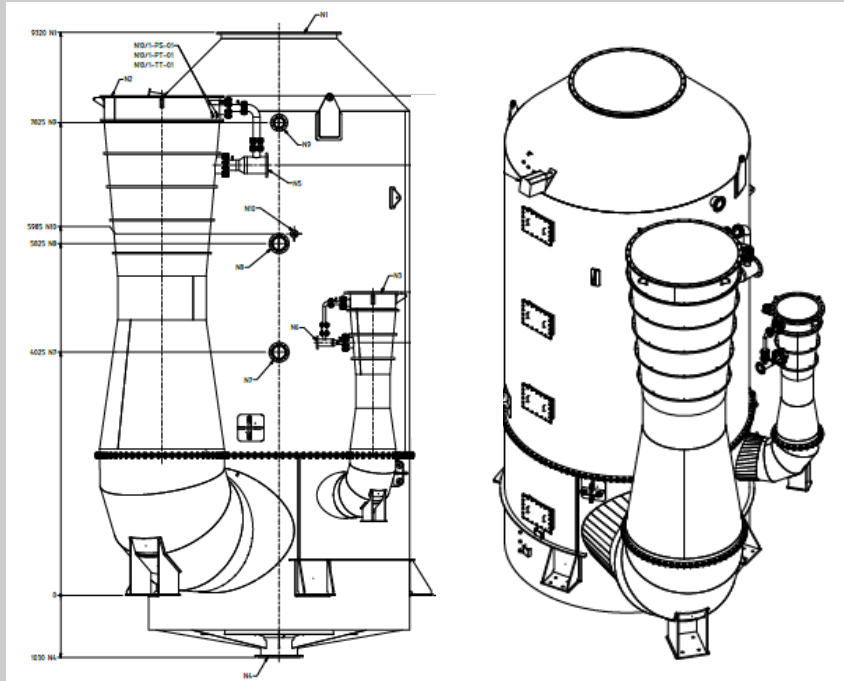
### Hybrid

Ships operating in all types of waters or requiring full operation flexibility.



## VLCC – Cido, HMM, Sinokor, KLC, Glovis, Olympic, Sentek, TCC, Pantheon, Apollo, Hartree, etc

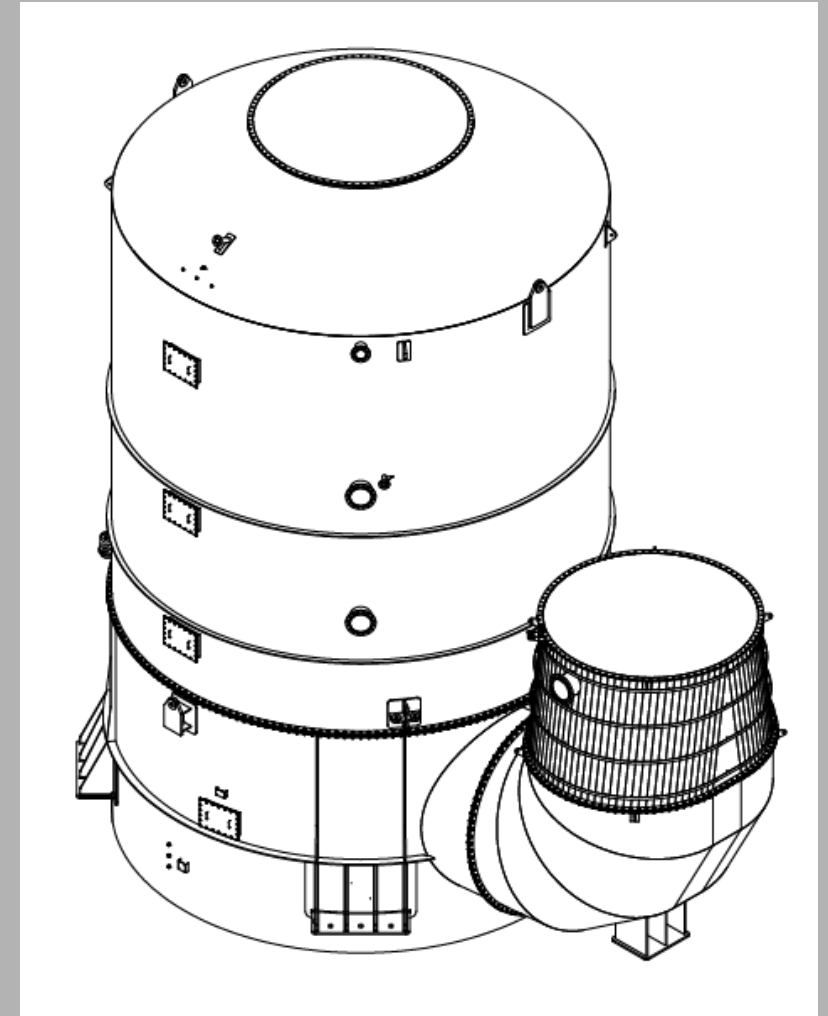
- Open Loop V-SOx scrubber system
- 22.5MW, 20MW, 25MW
- 1 M/E (1 Aux Boiler) & 3 G/Es (& Comp. Boiler)



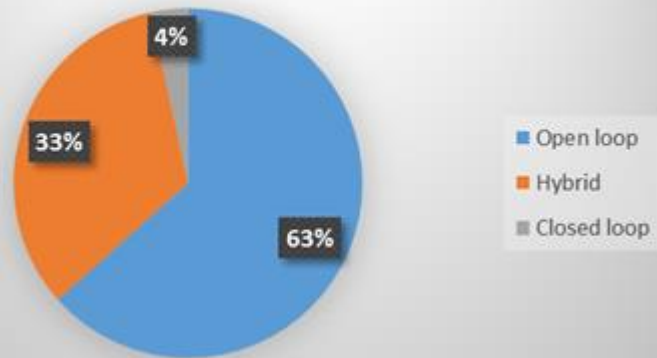




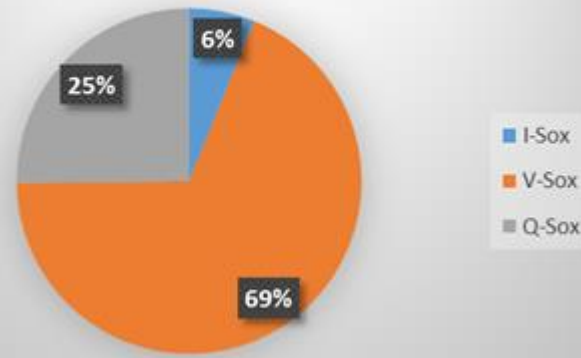




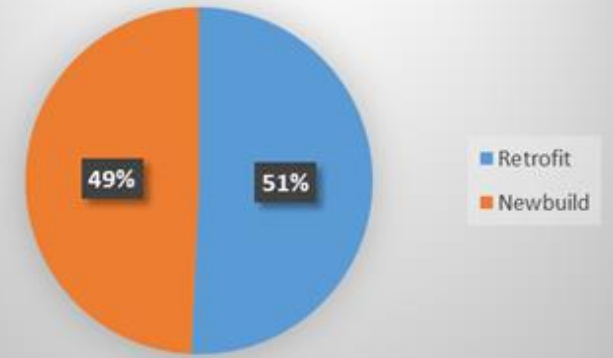
System Type



Scrubber Type

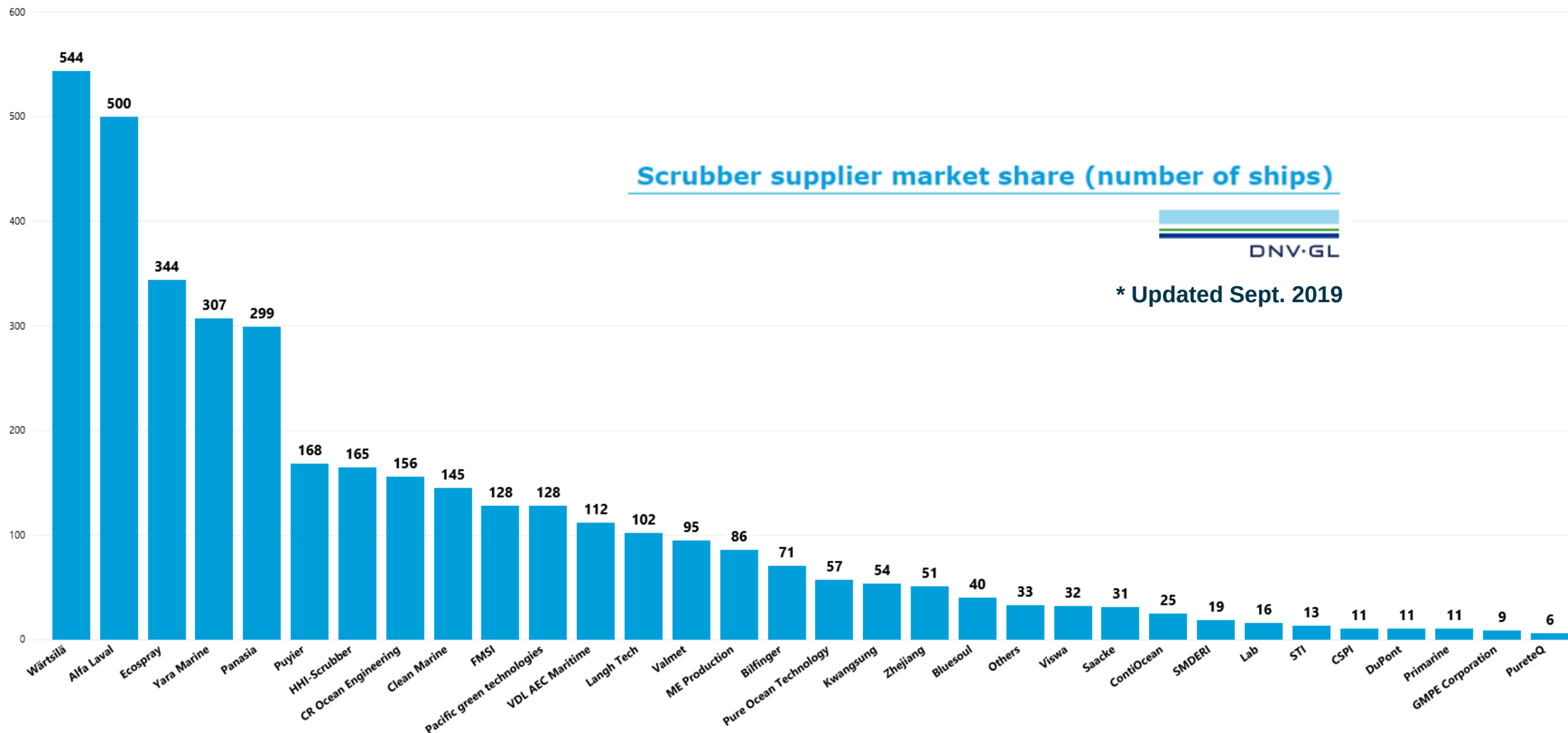


Retrofit/New build



**\* No. of Vessels : 552, No. of Scrubbers : 715 as of Sept. 2019**







**WÄRTSILÄ**

**Thank you for your attention!**