

## LIST OF THE SCRUBBER PROJECTS

No:	Contract year / Case no:	Ship Owner	Vessels	Engines/ MW	Ship Type	Shipyard	Project Type / Date of commissioning	Scope of Supply
1 2 3	2013 (C1)	Langh Ship	*Ms Laura *Ms Marjatta *Ms Hjördis	1xME 5,85 MW 2xAE 0,43 MW	Dry Cargo Vessels		Retrofit *2013 *2014 *2014	Hybrid Scrubber
4 5	2014 (C1)	Langh Ship	*Ms Aila *Ms Linda	1xME 8,4 MW 1xAE 0,86 MW	Container Vessels		Retrofit *2014 *2014	Hybrid Scrubber
6	2014 (C10)	Bore	*m/v Bore Song	1xME 12 MW	Ro-Ro Vessel		Retrofit *2016	Hybrid Scrubber
7 8	2016 (C2)	NCL	*NB 707 *NB 708	2xME 16,8 MW 3xME 14,44 MW	Cruise Vessels	Meyer Werft	NB *2017 *2017	Hybrid Scrubbers *Multi-inlet
9	2017 (C50)	Bore	*m/v Bore Sea	1xME 12 MW	Ro-Ro Vessel		Retrofit *2017	Open Loop SO <sub>x</sub> Scrubber (Hybrid ready) *Single-inlet
10 11	2017 (C49)	Eimskip	*1 <sup>st</sup> vessel *2 <sup>nd</sup> vessel	1xME 17 MW 1xAE 1,98 MW 1xAE 1,32 MW	2150 TEU Container Vessels	Guangzhou Wenchong Shipyard	NB *2018 *2018	Hybrid SO <sub>x</sub> Scrubber + EGR WTS *Multi-inlet in-line
12	2017 (C49)	Royal Arctic Line	*1 <sup>st</sup> vessel	1xME 17 MW 1xAE 1,98 MW 1xAE 1,32 MW	2150 TEU Container Vessel	Guangzhou Wenchong Shipyard	NB *2018	Hybrid SO <sub>x</sub> Scrubber + EGR WTS *Multi-inlet in-line

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13 14	2017 (C90)	Ellingsen Shipping Group	*m/v Corona Sea *m/v Hafnia Sea	2xME 9,6 MW	Ro-Ro Vessels		Retrofit *2018 *2018	Open Loop SO <sub>x</sub> Scrubber Hybrid ready
15	2018 (C207)	Chios Navigation	*Hull no 8228	1xME 7,18 MW 3xAE 0,75 MW	50,000 dwt MR Tanker	Hyundai Mipo Dockyard Co Ltd	Retrofit *2018	Open Loop (Hybrid Ready) SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
16	2018 (C34)	Algoma Central Corporation	*1 <sup>st</sup> vessel	1xME 7,2 MW 3xAE 1,05 MW	Great Lakes Self Unloading Bulk Carrier		Retrofit *2018	Hybrid SO <sub>x</sub> Scrubber *Multi-inlet
17 18 19 20	2018 (C324)	DSD Shipping AS	*S465 *S467 *S468 *S473	1xME 7,18 MW 3xAE 1,0 MW	50,000 dwt MR Tankers	Hyundai Mipo Dockyard Co Ltd	NB *2019 *2019 *2019 *2020	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet *U-type
21 22	2018 (C305)	TRF Ship Management AS	*m/v Hudson *m/v TRF Horten	1xME 26,46 MW 3xAE 1,26 MW	VLCC Tanker		Retrofit *2019 *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet *U-type
23 24 25	2018 (C322)	TRF Ship Management AS	*HT-OT74-007 *HT-OT74-008 *HT-OT74-009	1xME 9,22 MW 3xAE 0,85 MW	74,000 dwt Oil Tankers	Jiangsu Hantong Heavy Industry	NB *2018 *2018 *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet *U-type
26 27 28 29	2018 (C332)	Awilco Eco Tankers Holding AS	*m/v Eco Leader *m/v Eco Future *m/v Eco Queen *m/v Eco Seas	1xME 24,36 MW 3xAE 1,32 MW	VLCC Tankers		Retrofit *2019 *2019 *2019 *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet *U-type
30 31	2018 (C274)	Unisea Shipping Ltd	*Aquafreedom *Aquabliss	1xME 13,5 MW 3xAE 1,17 MW	112,930 A-max COTs	Samsung Heavy Industries	NB *2019 *2020	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet *U-type

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32 33	2018 (C298)	CIN, Compagnia Italiana di Navigazione /Parent company Moby	*m/v Alf Pollak *m/v Maria Grazia Onorato	2xME 9,6 MW	Ro-Ro Vessels	Fayard	Retrofit *2019 *2019	Hybrid SO <sub>x</sub> Scrubber *Single-inlet *I-type
34 35 36 37	2018 (C353)	Damskibsselskapet Norden AS	*m/v Nord Superior *m/v Nord Supreme *m/v Nord Sustainable *m/v Nord Swift	1xME 7,57 MW 3xAE 1,05 MW	50,000 dwt MR Tankers		Retrofit *2019 *2019 *2019 *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
38 39 40 41 42 43	2018 (C420)	Damskibsselskapet Norden AS	*m/v Nord Colorado *m/v Nord Columbia *m/v Nord Copper *m/v Nord Baltic *m/v Nord Barents *m/v Nord Biscay	1xME 7,22 MW 3xAE 0,6 MW	Supramax 62k Bulklers		Retrofit *2019 *2019 *2019 *2019 *2019 *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
44 45	2018 (C420)	Damskibsselskapet Norden AS	*m/v Nord Peak  *m/v Nord Summit	1xME 8,4 MW 3xAE 0,53 MW 1xME 8,2 MW 3xAE 0,48 MW	Supramax 60k Bulklers		Retrofit *2020  *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
46	2018 (C355)	Delta Tankers Ltd	*m/v Delta Star	1xME 11,53 MW 3xAE 0,66 MW	Aframax Tanker		Retrofit *2020	Open Loop (Hybrid Ready) SO <sub>x</sub> Scrubber *Multi-inlet *U-type
47	2018 (C369)	Marmaras Navigation Ltd	*m/v Kydonia	1xME 12,24 MW 3xAE 0,78 MW	92K Bulk Carriers		Retrofit *2019	

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48 49 50 51 52 53 54 55	2018 (C472)	Marmaras Navigation Ltd	*m/v Pergamos *m/v Koutalianos *m/v Kyzikos *m/v Faneromeni *m/v Eptalafos *m/v Loxandra *m/v Prigipos *m/v Aris T	1xME 11,06 MW 3xAE 0,78	92K Bulk Carriers		Retrofit *2020 *2019 *2019 *2019 *2019 *2019 *2019 *2019	Open Loop (Hybrid Ready) SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
56 57	2018 (C385)	Ahrenkiel Steamship GmbH	*m/v Sagitta *m/v Rio Centaurus	1xME 28,88 MW 3xAE 2,3 MW	3500 TEU Containers		Retrofit *2019 *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
58 59	2018 (C384)	Ahrenkiel Steamship GmbH	*m/v Rio Charleston *m/v Rio Cadiz	1xME 36,56 MW 4xAE 2,16 MW	4300 TEU Containers		Retrofit *2020 *2020	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
60 61 62 63	2018 (C396)	Ultraship Aps	*m/v Atlantic Gas *m/v Adriatic Gas *m/v Balearic Gas *Celtic Gas	1xME 7,31 MW 3xAE 0,96 MW	Gas Tankers		Retrofit *2019 *2019 *2019 *2020	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet *U-type
64 65 66	2018 (C318)	TRF Ship Management	*ZIM Alabama *ZIM Texas *Mattina	1xME 36,56 MW 4xAE 1,8 MW	4250 TEU Container	TBC	Retrofit *2019 *2019 *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet *U-type
67 68 69	2018 (C331)	TBC	*m/v Kaya *m/v Pescara  *m/v Partici	1xME 31,92 MW 4xAE 1,4 MW  1xME 25,27 MW 4xAE 1,68 MW	4200 TEU Container Carrier		Retrofit *2019 *2020  *2020	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type

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70	2018 (C302)	Eimskip	*m/v Lagarfoss	1xME 9,0 MW	Container Vessel		Retrofit *2019	Open Loop (Hybrid Ready) SO <sub>x</sub> Scrubber *Single-inlet
71	2018 (C229)	Liber Maritime Ltd	*Hull Nos 5019	1xME 13,45 MW 2xAE 1,23 MW 1xAE 0,96 MW	114 900 DWT Aframax Tanker	Daehan	Retrofit *2019	Open Loop SO <sub>x</sub> Scrubber *U-type
72		Lyric Marine Ltd	*Hull Nos 5020	1xME 13,45 MW 2xAE 1,23 MW 1xAE 0,96 MW	114 900 DWT Aframax Tanker		Retrofit *2019	Open Loop SO <sub>x</sub> Scrubber *U-type
73 74 75	2018 (C286)	Polaris shipping Co., Ltd	*m/v Stellar Ace *m/v Stellar Crown *m/v Stellar Banner	1xME 22,75 MW 3xAE 1,2 MW	300K VLOC	STX Offshore & Shipbuilding	Retrofit *2019 *2020 *2020	Open Loop SO <sub>x</sub> Scrubber *U-type
76 77 78 79	2018 (C488)	Polaris shipping Co., Ltd	*m/v Solar Icon *m/v Solar Hope *m/v Solar Glory *m/v Solar Frontier	1xME 18,66 MW 3xAE 1,1 MW	180k Bulk Carrier	STX Offshore & Shipbuilding Co., Ltd	Retrofit *2019 *2020 *2020 *2020	Open Loop SO <sub>x</sub> Scrubber *U-type
80	2018 (C465)	Nissen Kaiun Co., Ltd	*m/v Eibhlin	1xME 16,58 MW 3xAE 0,6 MW	Bulker	TBC	Retrofit *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
81	2018 (C495)	Nissen Kaiun Co., Ltd	*m/v Hakata Princess	1xME 8,3 MW 3xAE 0,8 MW	TBC	TBC	Retrofit *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
82 83	2018 (C496)	Nissen Kaiun Co., Ltd	*m/v Nord Jewel *m/v Nord Joy	1xME 8,3 MW 3xAE 0,8 MW	Oil/chemical carrier	TBC	Retrofit *2020 *2020	Open Loop SO <sub>x</sub> Scrubber *In-line or U-type

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84	2018 (C539)	Nissen Kaiun Co., Ltd behalf of Southern Route Maritime S.A.	*m/v Huge Hakata	1xME 17,69 MW 3xAE 0,58 MW	Bulker	TBC	Retrofit *2019	Open Loop SO <sub>x</sub> Scrubber
85	2018 (C502)	Nissen Kaiun Co., Ltd	*m/v Southern Reverence	1xME 12,5 MW 3xAE 0,85 MW	Tanker	TBC	Retrofit *2019	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet in-line or U-type
86			*m/v Southern Rouse				*2019	
87			*m/v Southern Leader				*2019	
88			*m/v Southern Glory				*2019	
89			*m/v Pusaka Borneo				*2019	
90			*m/v Pusaka Java				*2019	
91	2018 (C520)	Maersk Tanker	*m/v Maersk Piper	1xME 15,26 MW 3xAE 0,85 MW	Tanker	TBC	Retrofit *2019	Open Loop Hybrid ready SO <sub>x</sub> Scrubber *Multi-inlet U-type
92	2018 (C483)	Maersk Tanker	*1 <sup>st</sup> S-Class (P110K)-43	1xME 11,3 MW 3xAE 1 MW	Tanker	TBC	NB	Open Loop Hybrid ready SO <sub>x</sub> Scrubber *Multi-inlet U-type
93			*2 <sup>nd</sup> S-Class (P110K-44)				*2021	
94			*3 <sup>rd</sup> S-Class (P110K-45)				*2021	
95	2019 (C503)	Nissen Kaiun Co., Ltd	*m/v Cool Spirit	1xME 13,77 MW 5xAE 1,5 MW	Bulker	TBC	Retrofit *2019	Open Loop SO <sub>x</sub> Scrubber *In-line or U-type
96			*m/v Baltic Spirit				*2019	
97	2019 (C495B)	Nissen Kaiun Co., Ltd	*m/v Blue Butterfly	1xME 8,3 MW 3xAE 0,8 MW	TBC	TBC	Retrofit *2019	Open Loop SO <sub>x</sub> Scrubber *In-line or U-type
98	2019 (C555)	Nissen Kaiun Co., Ltd	*m/v Cologne	1xME 17,69 MW 3xAE 0,58 MW	Bulker	TBC	Retrofit *2020	Open loop Sox Scrubber In-line or U-Type

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99 100	2019 (C525)	Cido Shipping (H.K.) Co., Ltd	*Mercury Hope *Mermaid Hope	1xME 25 MW 3xAE 0,8 MW	VLCC Tanker VLCC Tanker		Retrofit *2019 *2019	Open Loop SO <sub>x</sub> Scrubber
101 102	2019 (C442)	AET Petroleum Tanker (M) Sdn Bhd	*Bunga Kasturi Lima *Bunga Kasturi Enam	1xME 25 MW 3xAE 1,02 MW	VLCC Tanker VLCC Tanker	TBC	Retrofit *2019 *2019	Open Loop SO <sub>x</sub> Scrubber
103 104 105 106	2019 (C393)	Prime Tanker Management Inc.	*Emerald Shiner *River Shiner *Golden Shiner *Sand Shiner	1xME 15,92 MW 3xAE 1,1 MW	Tanker	TBC	Retrofit *2020 *2020 *2020 *2020	Open Loop SO <sub>x</sub> Scrubber
107 108	2019 (C576)	Delta Tankers	*1 <sup>st</sup> vessel *2 <sup>nd</sup> vessel	1xME 3xAE	VLCC Tanker VLCC Tanker	TBC	Retrofit *2020 *2020	Open Loop SO <sub>x</sub> Scrubber *Multi-inlet *U-type
109 110 111	2019 (C563)	Finnlines	*Hull No JLZ8180407 *Hull No JLZ8180408 *Hull no JLZ8180409	1xME12,7 MW	Ro-Ro Ro-Ro Ro-Ro	Nanjing Jinling Shipyard Co. Ltd	NB *2020 *2020 *2020	Open Loop So <sup>x</sup> Scrubber *In-Line *U-type
112 113	2019 (C595)	Frank Lichtwald, Reederei Eicke GmbH&Co KG	*m/v Kornett *m/v Laura Ann	1xME 8,4 MW	Containers, Sietas type 168	TBC	Retrofit *2020 *2020	Open Loop So <sup>x</sup> Scrubber Hybrid ready
114 115	2019 (C477)	NCL	*Hull No 6308 *Hull No 6309	4xME 9,6 MW	Cruise Vessel	Fincantieri	NB *2021 *2023	Hybrid Scrubber
116 117	2019 (C175)	Samskip/Nav-Tech	*Helgafell *Arnarfell	1xME 8,4 MW	Container vessel, Sietas type 174	TBC	Retrofit *2020 *2020	Open Loop So <sup>x</sup> Scrubber Hybrid ready

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<b>118 119</b>	2019 (C594)	Stena Line	*m/v Stena Lagan *m/v Stena Mersey	1xME 10,8 MW	Ro-Ro Ro-Ro	TBC	Retrofit *2020 *2020	Hybrid SOx Scrubber
<b>120 121</b>	2020 (C610)	Nissen Kaiun Co., Ltd	*m/v Star Courage *m/v Star Spirit	1xME 13,77 MW 5xAE 1,5 MW	Bulker Bulker	TBC	Retrofit *2020 *2020	Open Loop SOX Scrubber *In-line or U-type
<b>122</b>	2020 (C573)	Trasmed/Astander	*m/v Jose Maria Entrecanales	4xME 10,8 MW	Ro-Ro	TBC	Retrofit *2020	Open Loop So <sup>x</sup> Scrubber Hybrid ready
<b>123 124</b>	2021 (C583)	Finnlines	*1 <sup>st</sup> vessel *2 <sup>nd</sup> vessel	4xME 7,2 MW	Ro-Pax	Weihai	NB *2022 *2023	Hybrid SOx Scrubber 4 x In-line towers per vessel
<b>125</b>	2021 (C647)	Algoma	*1 <sup>st</sup> vessel	1xME 7 MW 3xAE 1,1 MW	Bulker	TBC	NB *2023	Closed Loop SOx Scrubber



## LIST OF THE WTS PROJECTS

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1 2 3 4	2015 (C11)	RCCL	*Jewel of the Seas *Serenade of the Seas *Brilliance of the Seas *Radiance of the Seas		Cruise Vessels		Retrofit *2016 *2016 *2016 *2016	Water Treatment System
5 6 7	2015 (C11)	Celebrity Cruises/RCL	*Celebrity Summit *Celebrity Constellation *Celebrity Millennium		Cruise Vessels		Retrofit *2017 *2017 *2017	Water Treatment System
8 9	2016 (C17)	RCCL	*Spectrum of the Seas *NB 713	TBC	Cruise Vessels	Meyer Werft	NB	Water Treatment System
10	2017 (C64)	Stena Line	*m/v Scandinavica	4xME 6,48 MW	Ro-Pax Vessel		Retrofit *2017	Water Treatment System *Multi-inlet in-line

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11	2019 (509)	Wallenius	*Eukor	TBC	Car Carriers	TBC	Retrofit	Water Treatment System						
12			*Morning Celine				*2019							
13			*Torrens				*2019							
14			*Toronto				*2019							
15			*Toledo				*2019							
16			*Morning Lady				*2020							
17			*Tonsberg				*2020							
18			*Morning Lena				*2020							
19			*Morning Laura				*2020							
20			*Morning Lily				*2020							
21			*Tysla				*2020							
22			*Tugela				*2020							
23			*Figaro				*2020							
24			*Carmen				*2020							
25			*Morning Concert				*2020							
26			*Parsifal				*2021							
27			*Tiger				*2021							
28			*Salome				*2021							
29			*Morning Chorus				*2021							
30			*Titania				*2021							
31			*Morning Peace				*2021							
32			2019 (C568)				HGS/Hakuyo		*Morning Cindy	TBC	Car Carriers	TBC	Retrofit	Water Treatment System
33							HGS/Hakuyo		*Morning Christina				*2020	
34							HGS/Hakuyo		*Morning Catherine				*2020	
35							HGS/Hakuyo		*Morning Calypso				*2020	
36							HGS/Shoei		*Morning Cornella				*2019	
37							HGS/Shoei		*Morning Charlotte				*2020	
38			2019 (C572)				Hyundai Heavy Industries		*Morning Claire	TBC	Car Carrier	TBC	Retrofit *2020	Water Treatment System

