



## Scrubbers (FGDs), 2019 Report

*The "Report"*

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## From the Editors

To our subscribers:

Since 1993, McCoy has measured the breadth, depth, and competitive elements of the power generation markets we serve. Our scope includes a clear mandate to judge market share.

It is our conviction that the appropriate interval with which to assess OEM efficacy is annual.

All our best,  
Bob McCoy  
Dave Hetherington

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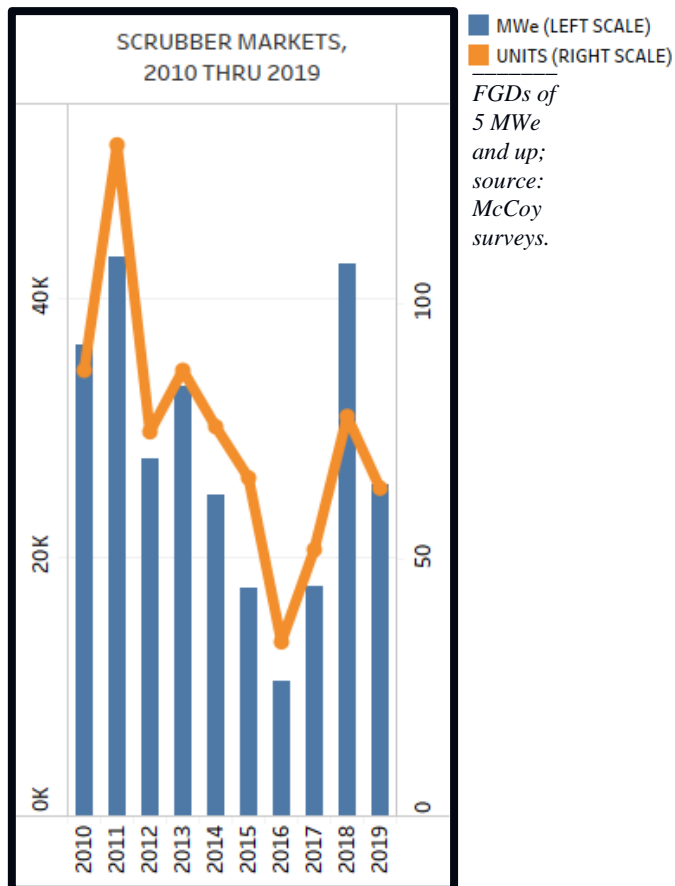
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# Summary

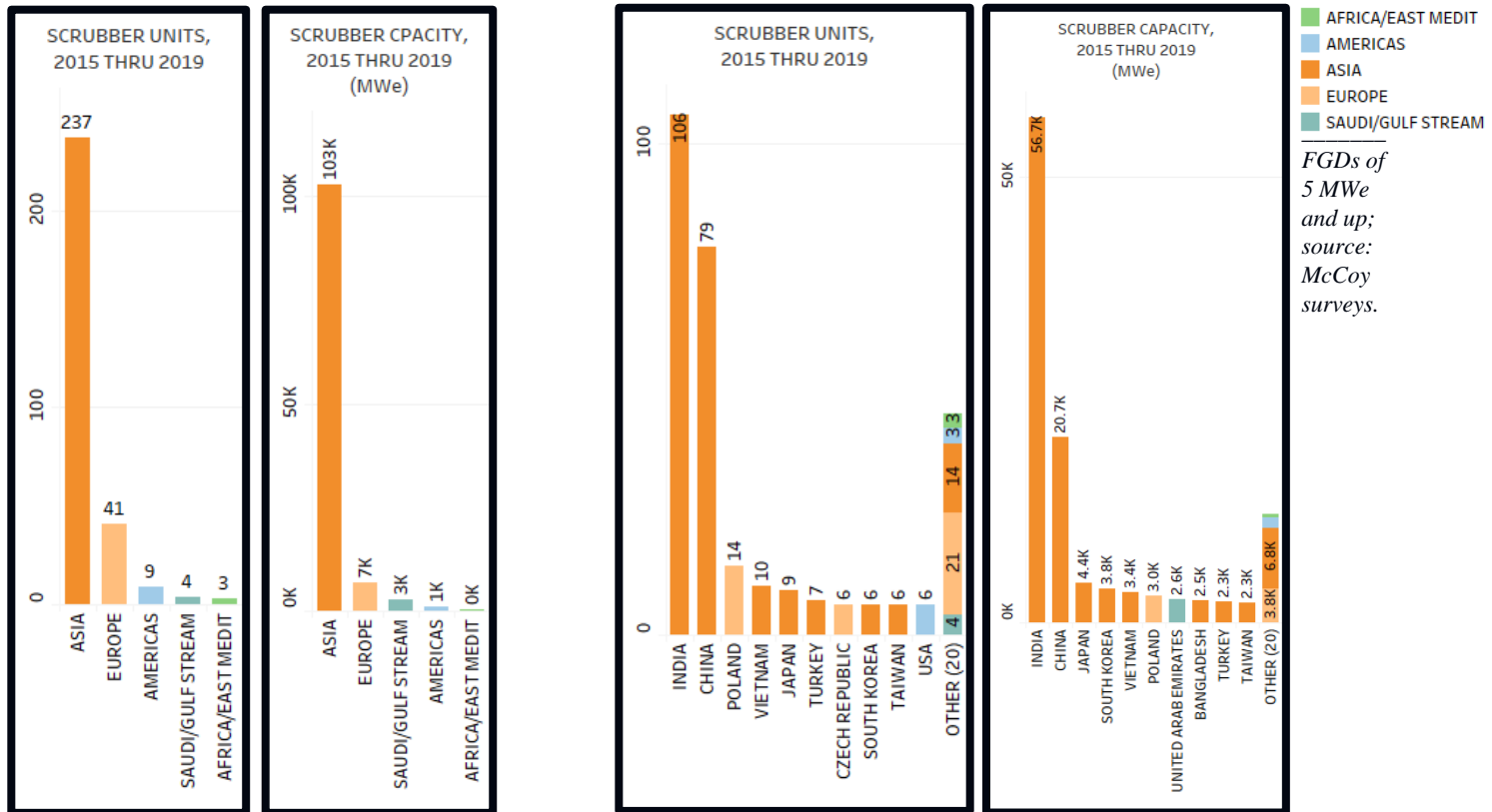
The flue gas desulphurization (FGD or Scrubber) markets amounted to 64 units and 25.6 GWe (image right) in 2019. Relative to the average annual unit and capacity levels of the five-year period through 2018 which were 61 units and 22.6 GWe, 2019 totals were 5% and 13% higher, respectively.

On the pages that follow, we present observations on geographic demand, Scrubber technology selection and OEM market share.



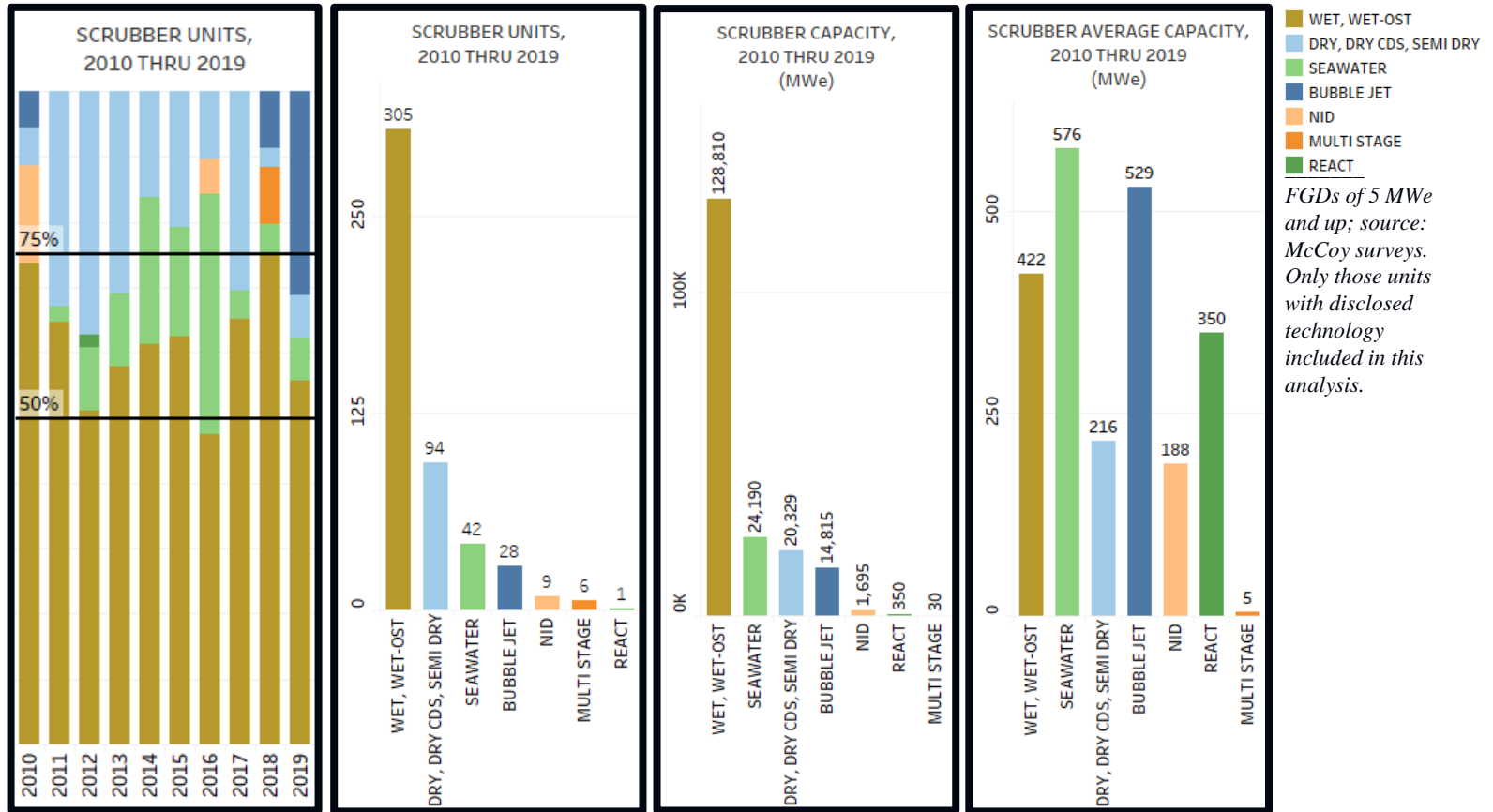
# Geographic Demand

Asia remains the epicenter of Scrubber activity. For the five-year period through 2019, Asia accounted for 81% of all units and 90% of all capacity (images far and middle left), India was the biggest market, China was the second biggest market, and these two countries combined for 63% of global units and 68% of global capacity (images middle and far right).



# Scrubber Technology Selection

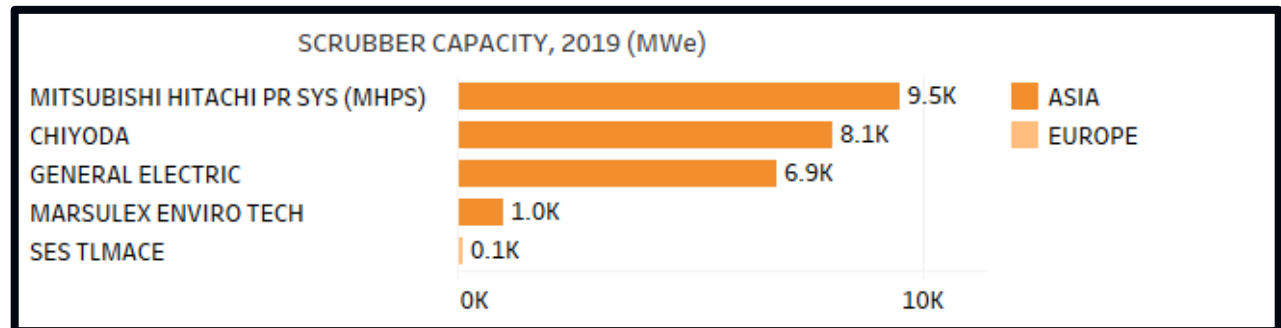
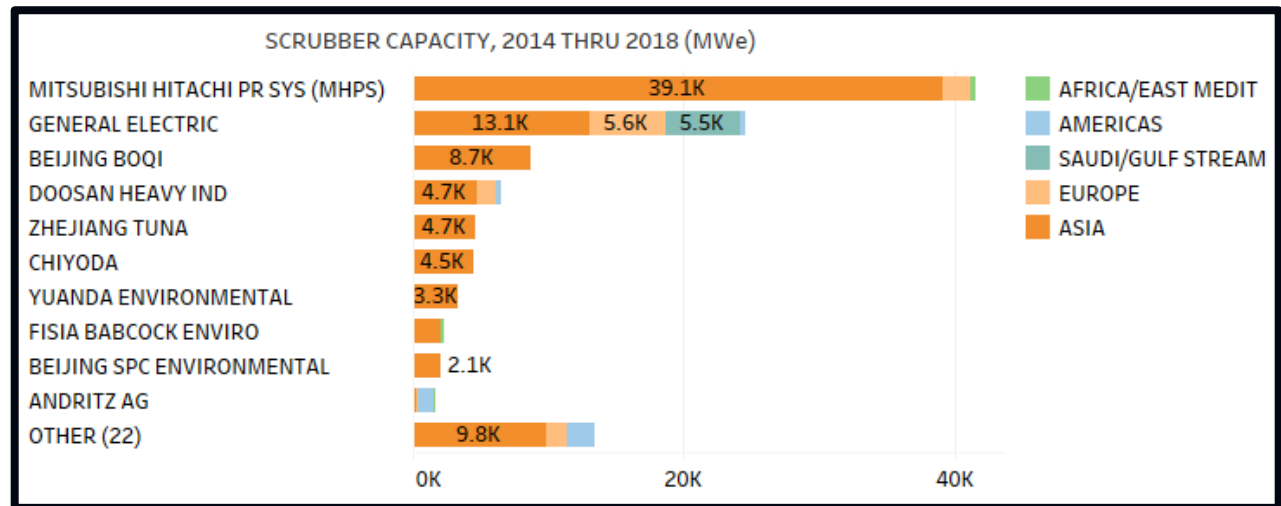
Wet technology was the most selected Scrubber technology in 2019, accounting for 56% of units (image far left). For the decade through 2019, Wet Scrubbers were 63% of global units (image middle left) and 68% of global capacity (image middle right), and the average unit was 422 MWe, the third highest such total among Scrubber technologies (image far right).



# Market Share Discussion: Capacity

Over the five-year period through 2018, the market leader by capacity was MHPS with 37% share on order flow of 41.5 GWe. GE was second with share of 22% (image right, top).

For 2019, MHPS was the leader with 37% share; Chiyoda was second with share of 32%; GE third with 27% (image right, bottom).

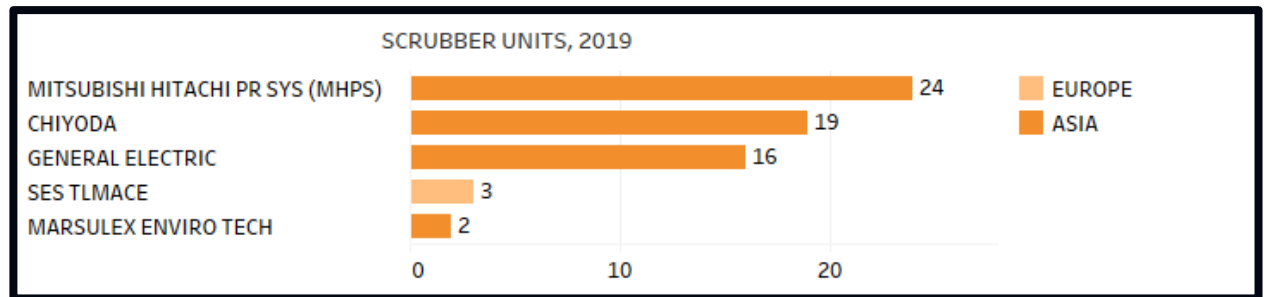
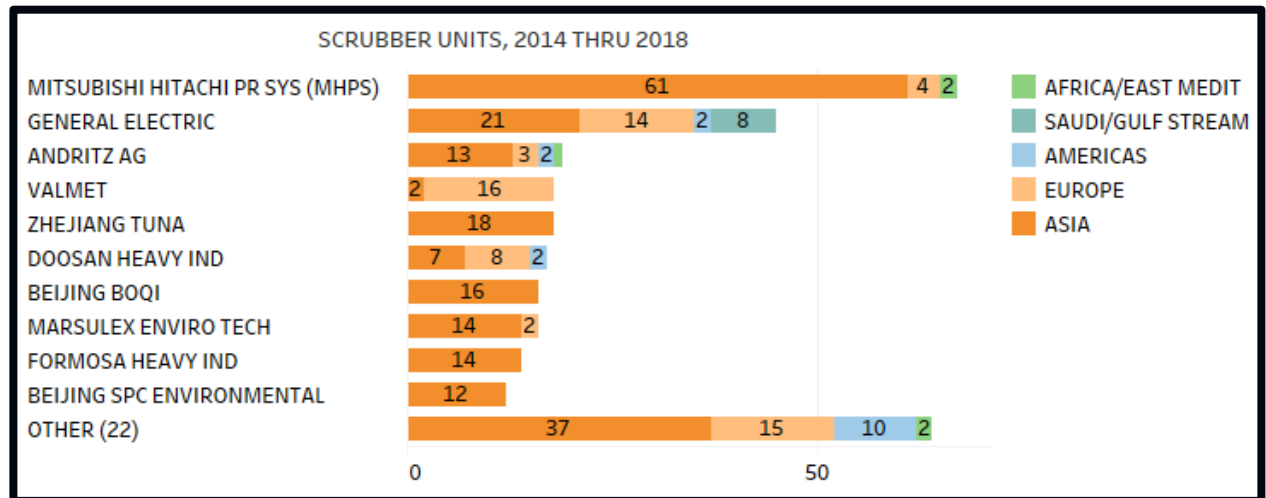


FGDs of 5 MWe and up; source: McCoy surveys.

# Market Share Discussion: Units

Turning to units, MHPS was also the leader for the five-year period through 2018 with share of 22% on 67 units. GE was second with share of 15% (image right, top).

For 2019, MHPS, Chiyoda and GE finished one, two and three with shares of 38%, 30%, and 25% respectively (image right, bottom).



FGDs of 5 MWe and up; source: McCoy surveys.

# 2019 Official League Table – Technology Owner <sup>(i)</sup>

TECHNOLOGY OWNER	MWe 2019	MARKET SHARE	TECHNOLOGY OWNER	UNITS 2019	MARKET SHARE
MITSUBISHI HITACHI PR SYS (MHPS)	9,500	37.2%	MITSUBISHI HITACHI PR SYS (MHPS)	24	37.5%
CHIYODA	8,080	31.6%	CHIYODA	19	29.7%
GENERAL ELECTRIC	6,860	26.8%	GENERAL ELECTRIC	16	25.0%
MARSULEX ENVIRO TECH	1,000	3.9%	SES TLMACE	3	4.7%
SES TLMACE	115	0.5%	MARSULEX ENVIRO TECH	2	3.1%
TOTAL	25,555	100.0%	TOTAL	64	100.0%

*FGDs of 5 MWe and up; source: McCoy surveys.*