Power Systems Research
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ECMA

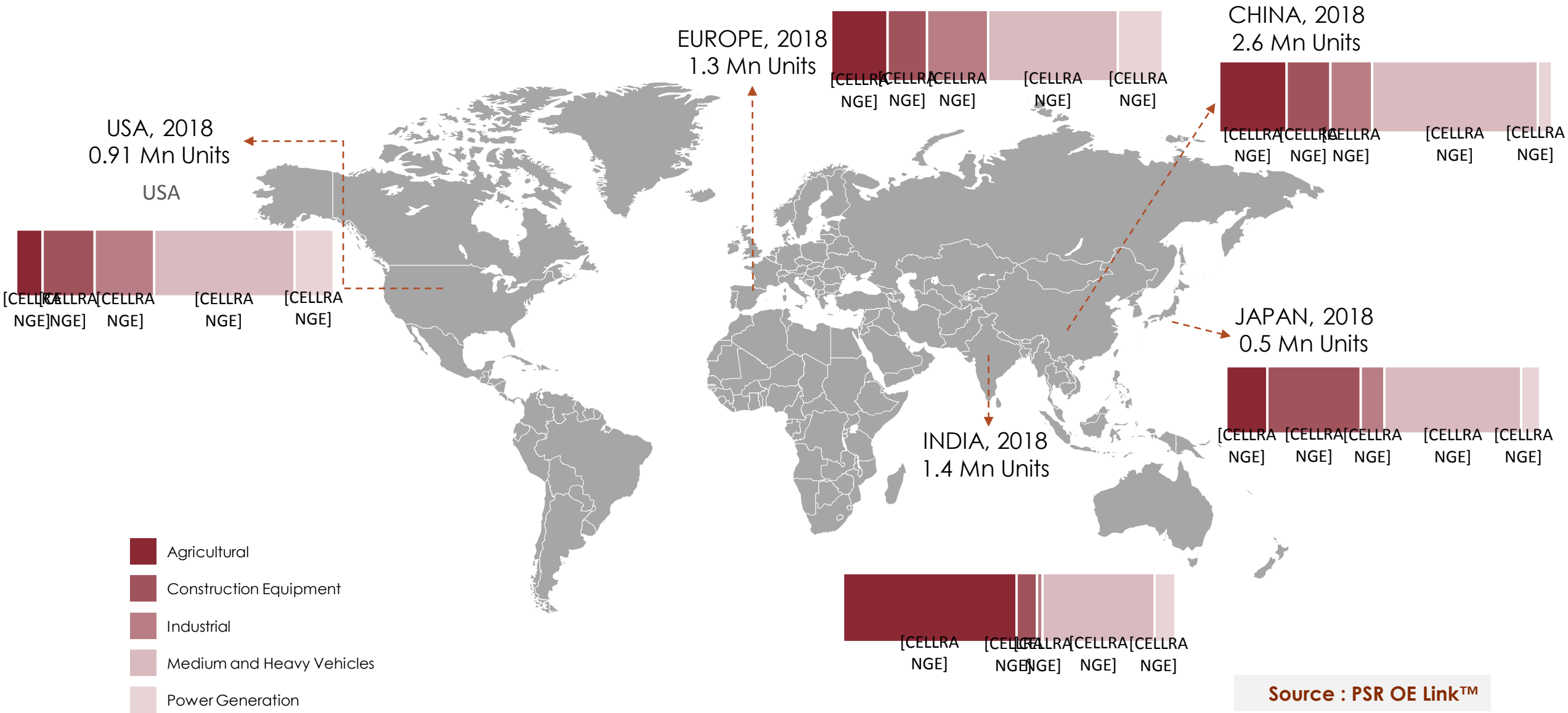
Market Perspectives: Heavy Duty Engines (>2L CI Engines) On Road and Off Road

Session 6 : 12 Noon

15th November, 2019

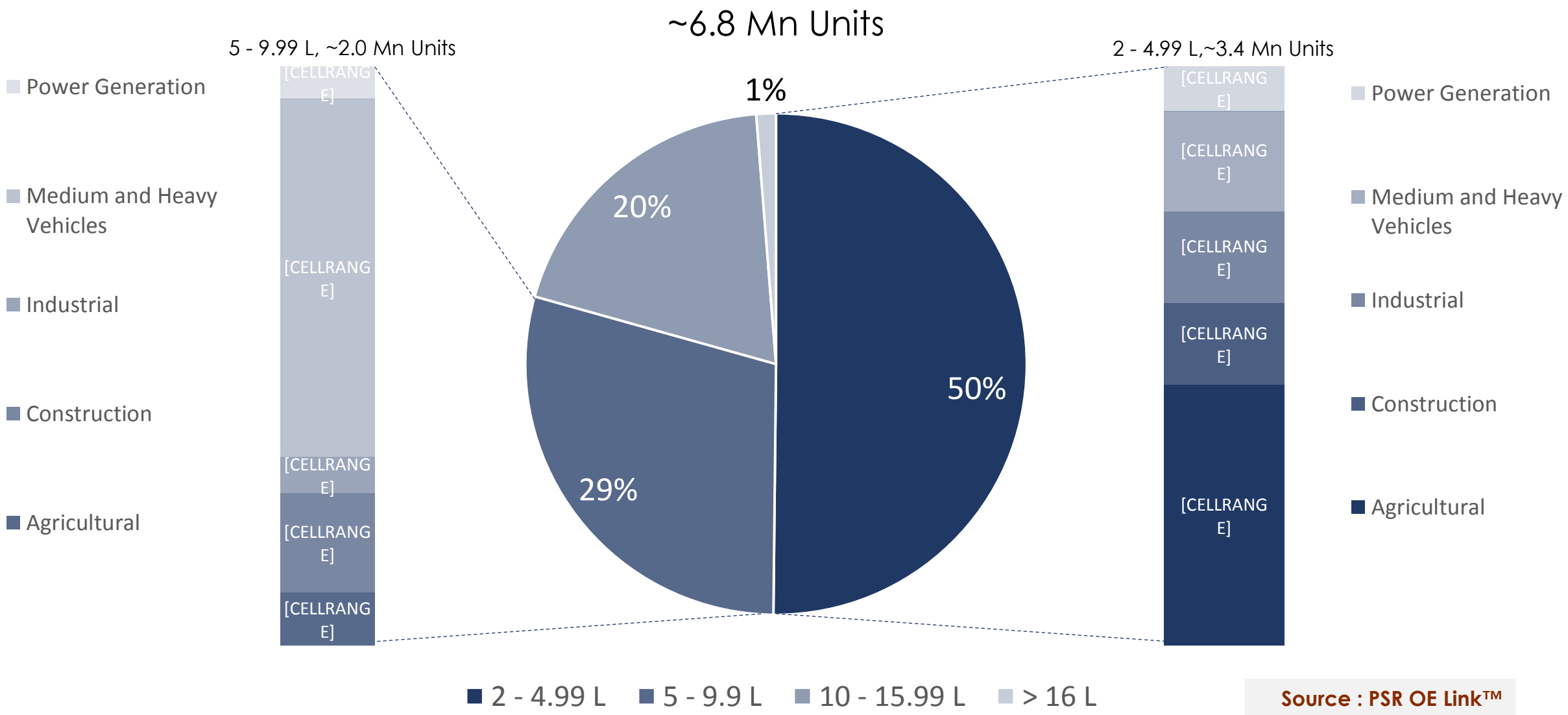
www.powersys.com

Global Heavy Duty (CI) Engine Production 2018 (>2.0L Diesel Engines)



Source : PSR OE Link™

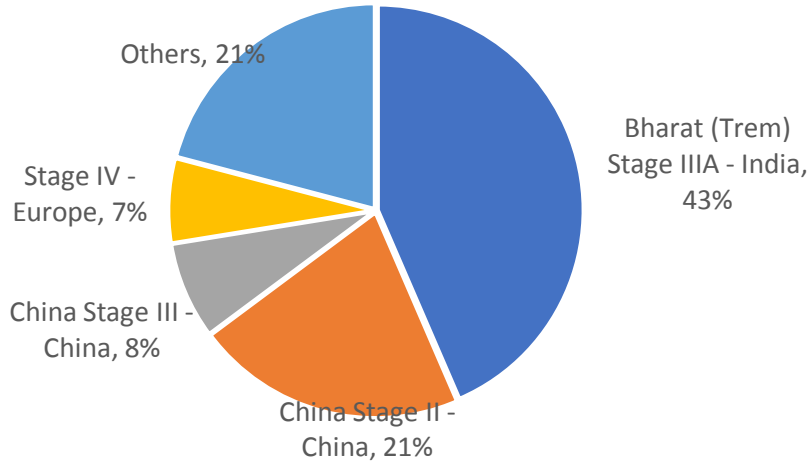
Global Heavy Duty (CI) Engine Production 2018 – By Engine Size



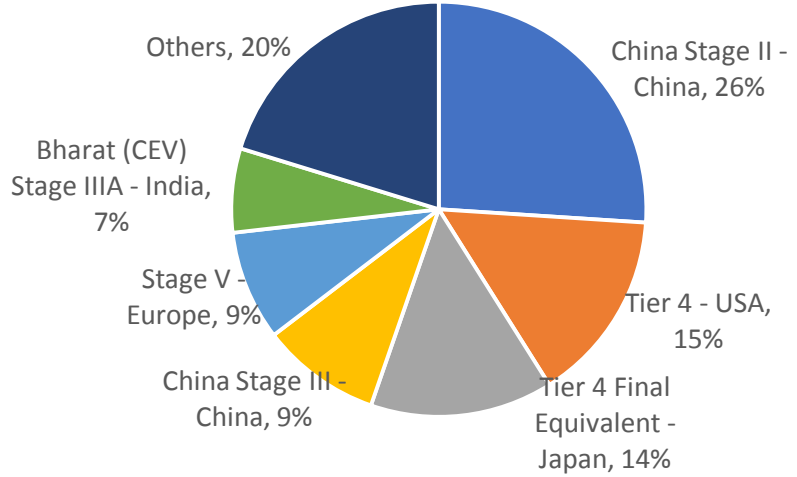
Source : PSR OE Link™

Global – 2018 Segment Wise Emission compliance

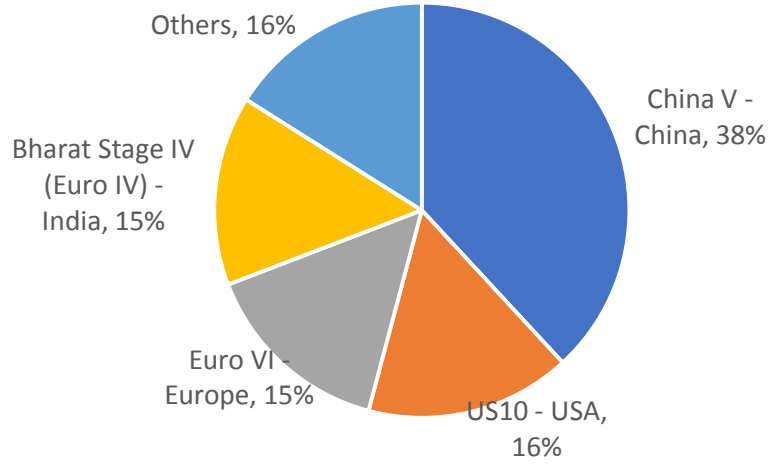
Agricultural : ~1.8 Mn Units



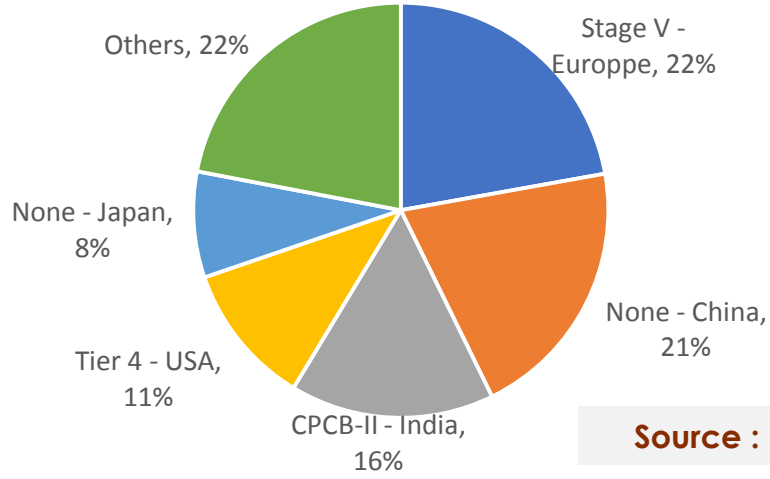
Construction Equipment : ~0.9 Mn Units



MHCV : ~3 Mn Units



Power Generation : ~0.5 Mn Units



Source : PSR OE Link™

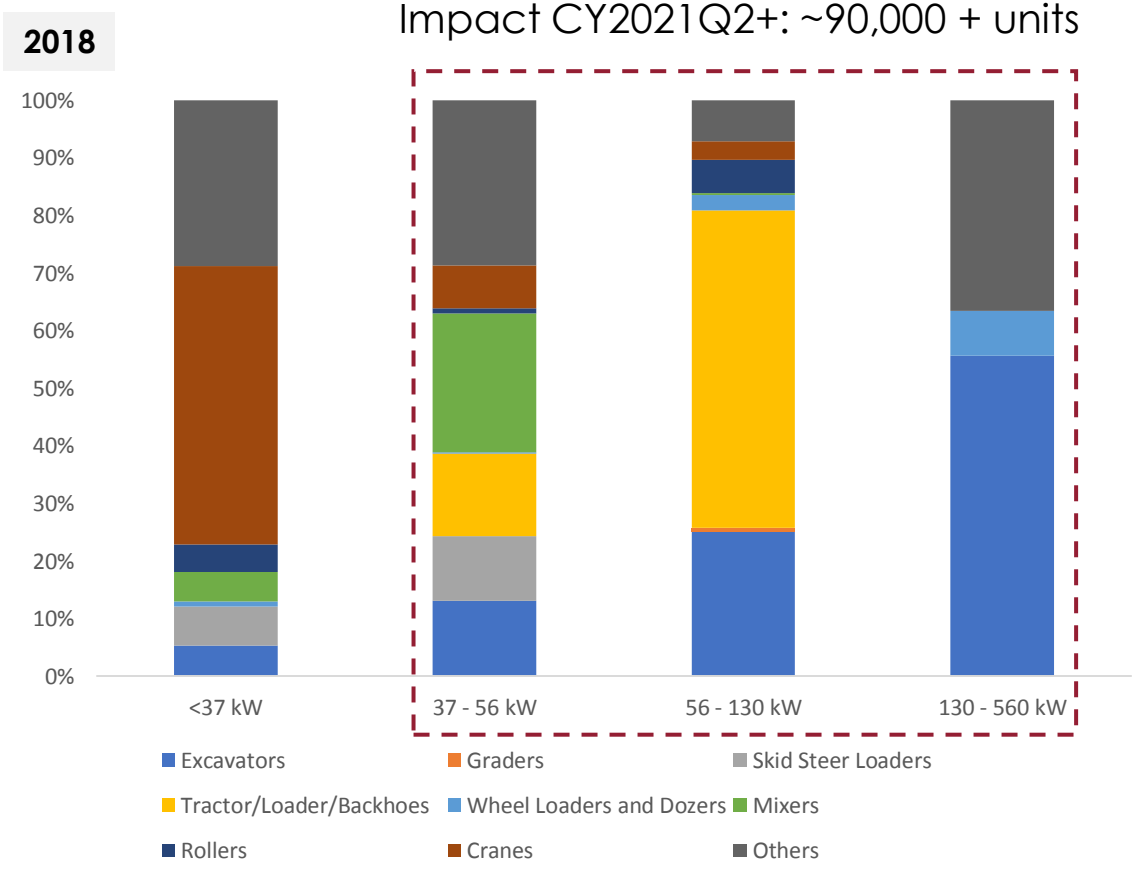
India Construction Equipment – Impact of emission change

Impact of Emission Changes (CEV IV/V)

Impact 2021Q2+

	<37 kW	37 - 56 kW	56 - 130 kW	130 - 560 kW
Excavators*	2%	8%	85%	5%
Graders			100%	
Skid Steer Loaders	23%	77%		
Tractor/Loader/Backhoes		4%	96%	
Wheel Loaders and Dozers	3%	1%	89%	7%
Mixers	9%	85%	6%	
Compactors	7%	2%	91%	
Cranes	48%	15%	37%	
Impact of Emission Changes	Low	Medium	Highest	Low

Impact CY2021Q2+: ~90,000 + units



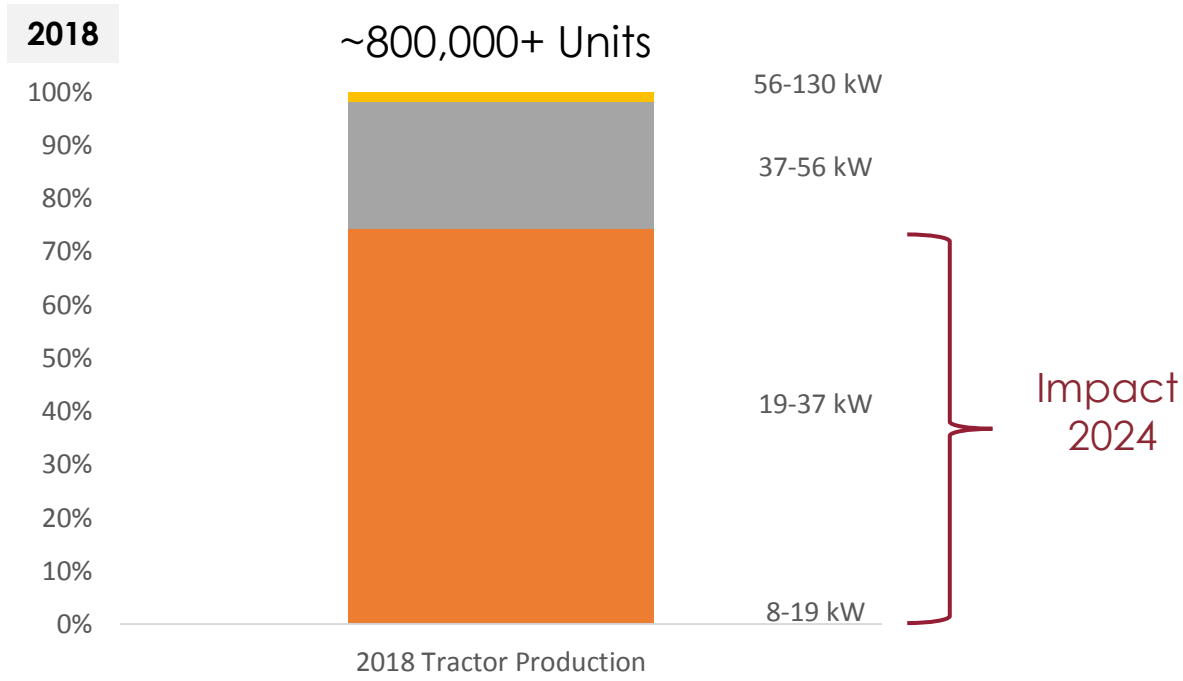
Source : PSR OE Link™

India Tractors – 2018 Production by engine size

Impact of Emission Changes (TREM IV/V)

Impact CY2024 Q2+

	8-19 kW	19-37 kW	37-56 kW	56-130 kW
2018 Tractor Production	0.5%	74%	24%	2%



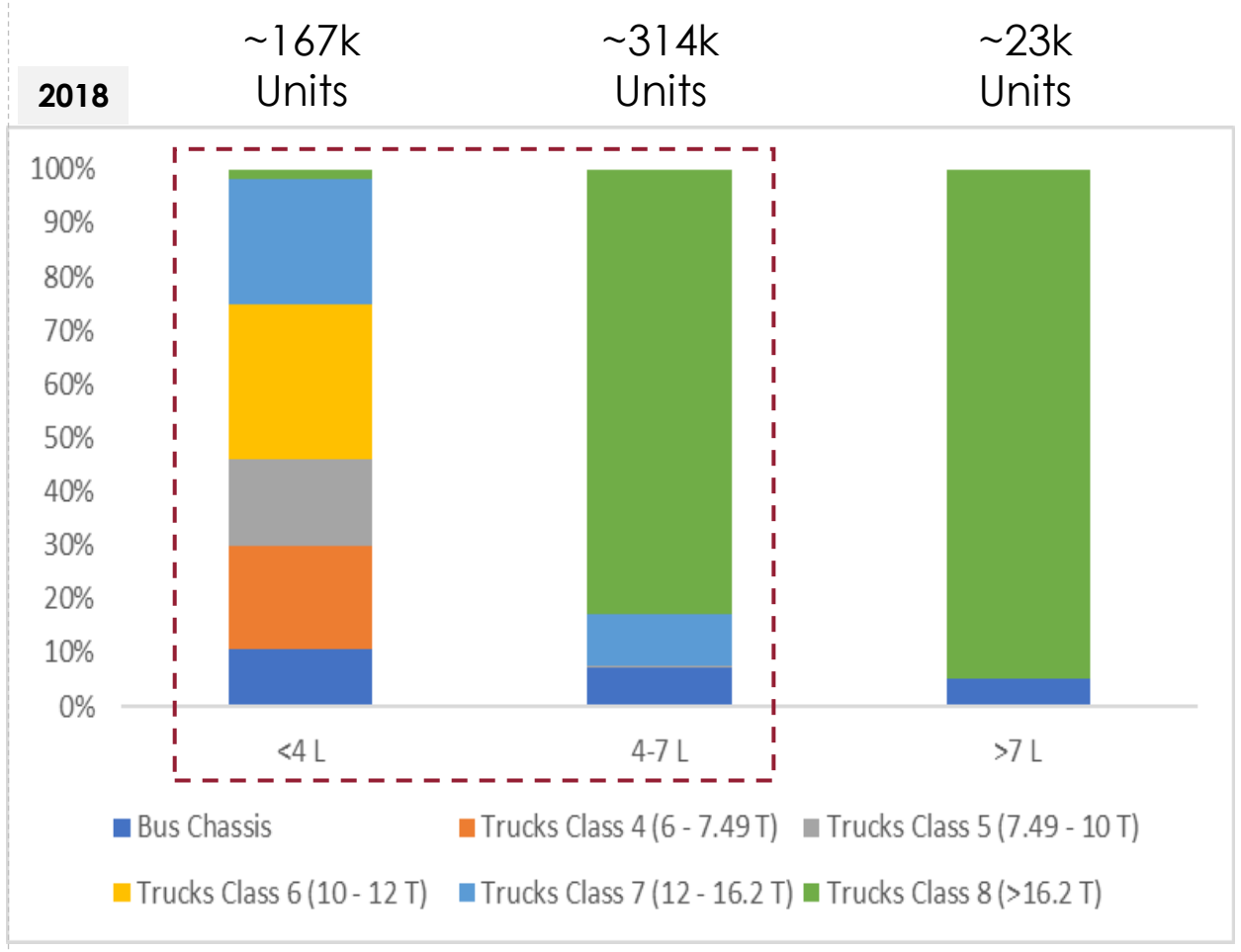
Source : PSR OE Link™

India MHCV – Impact of emission change by power rating

Impact of Emission Changes (BS6)

	<100 kW	100-200 kW	>200 kW
Bus Chassis	69%	28%	3%
Trucks Class 4 (6 - 7.49 T)	100%		
Trucks Class 5 (7.49 - 10 T)	100%		
Trucks Class 6 (10 - 12 T)	65%	35%	
Trucks Class 7 (12 - 16.2 T)	54%	46%	
Trucks Class 8 (>16.2 T)	1%	94%	5%

	<4 L	4-7 L	>7 L
Bus Chassis	43%	54%	3%
Trucks Class 4 (6 - 7.49 T)	100%		
Trucks Class 5 (7.49 - 10 T)	96%	4%	
Trucks Class 6 (10 - 12 T)	100%		
Trucks Class 7 (12 - 16.2 T)	56%	44%	
Trucks Class 8 (>16.2 T)	1%	91%	8%



Source : PSR OE Link™

Concerns, Readiness & Effectiveness of compliance and enforcement of Emission Norms

- ❑ Fuel consumption meter
- ❑ Fuel quality consistency
- ❑ Fine-tuning Real-driving emissions (RDE) framework
- ❑ Reliability of distribution and refill network, quality control of Urea refill infrastructure for SCR
- ❑ Tampering of emission control devices
- ❑ Restriction/Scrappage of In-service older Diesel Vehicles

Broadly in the time horizon of 2020-2024 several parameters will be phased in.

1. India would come close to fuel neutral standards (as diff. between petrol and diesel emissions narrow substantially)
2. Vehicles will be tested for real world emissions and in-service compliance (Ofcourse it needs fine-tuning on certain aspects)
3. Under the new standards particle numbers from tailpipe will be counted to ensure effective emissions control devices or particulate traps are adopted – to alteast eliminate 95 per cent of the particles.

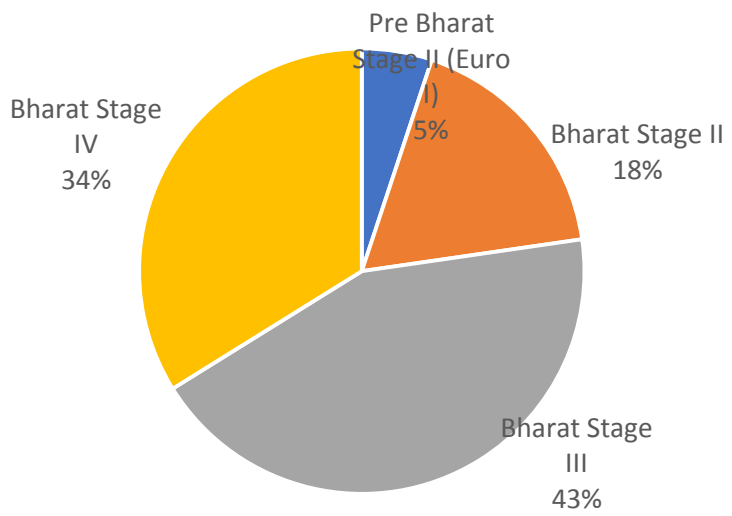
India – Proposed Scrappage Policy to have limited impact…

Voluntary Vehicle Fleet Modernisation Programme (V-VMP)

On Road – MHCV (Heavy Duty CI)

Vehicles complying to lesser emission norms - **2017 Parc**

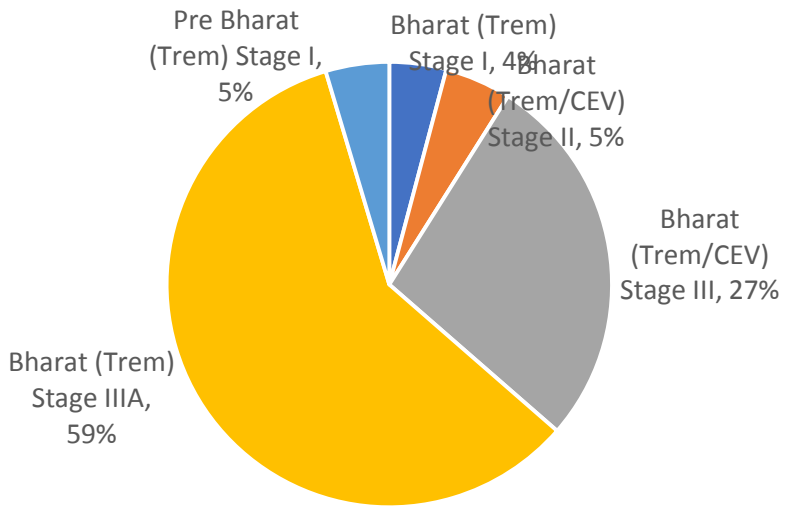
~3.8Mn



Off Road – Tractors, CE (Heavy Duty CI)

Vehicles complying to lesser emission norms – **2017 Parc**

~6.9Mn



Euro I: 2000
Euro/BS II: 2001 – Apr 2005
Euro/BS III: Apr. 2005-2010
Euro/BSIV: Apr. 2010-2017

Source : PSR PartsLink™

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THANK YOU

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