WEBINAR

Where are India's Electric Tractors?

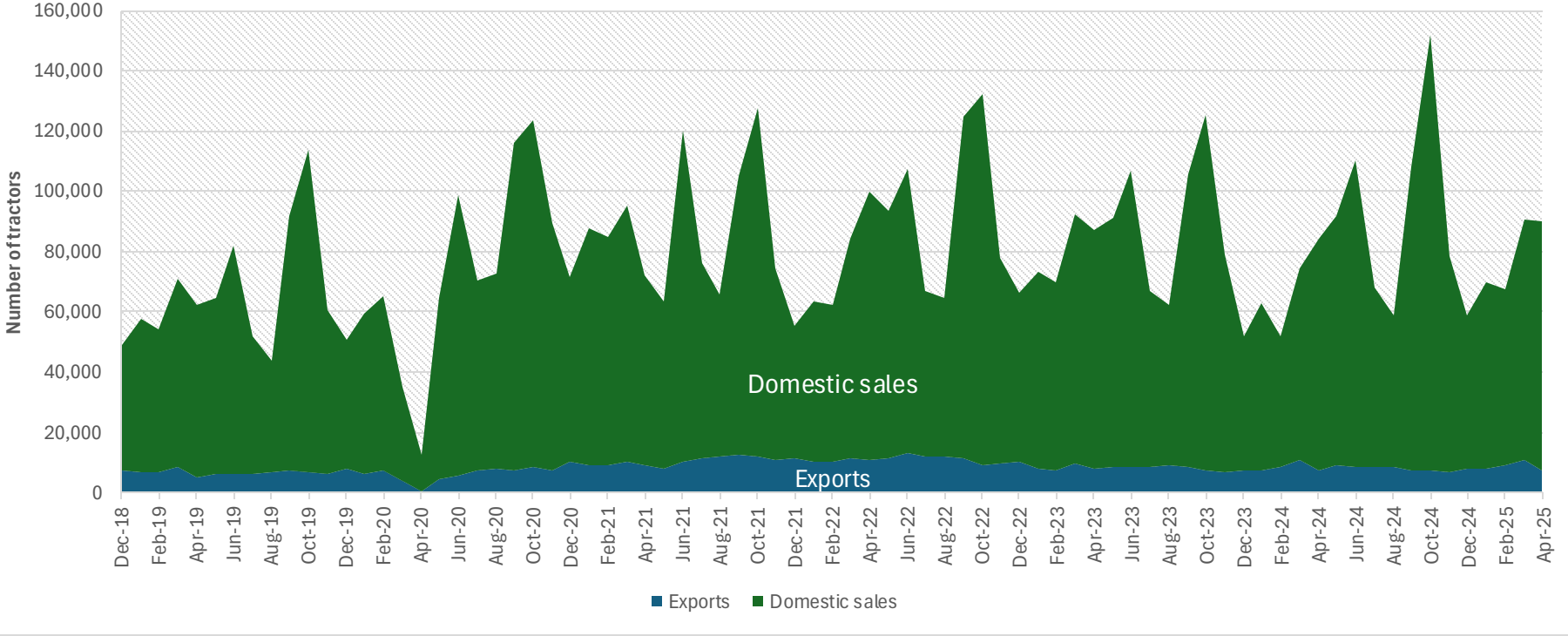
MAY 29, 2025

3:30PM - 5:00PM IST

icct
THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

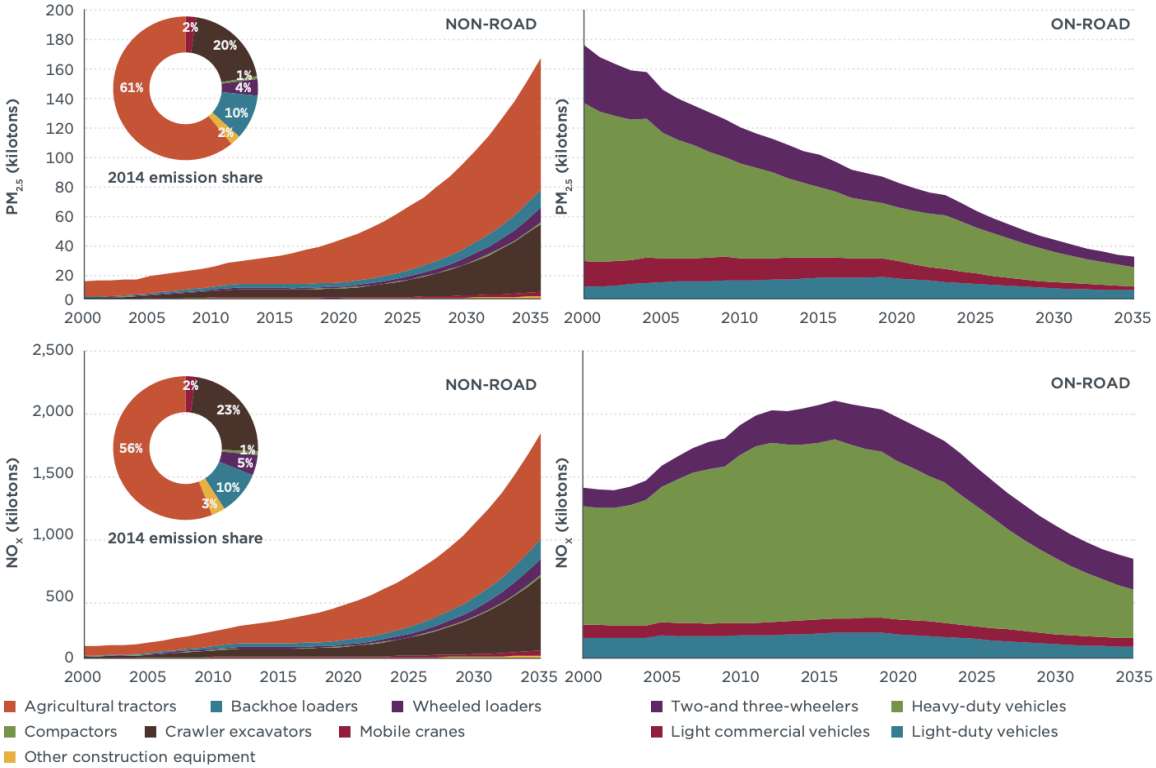
ET Auto

India produces about a million tractors annually, exporting ~15%



Source: Tractor Manufacturers' Association (https://www.tmaindia.in/consolidated-monthly-reports-2024.php#)

Emissions from non-road segment will soon exceed on-road segment



More than **50%** of PM2.5 and NOx emissions from **non-road sources** are from agriculture tractors.

More than **70%** of agriculture tractors (<37 kW) still comply to **TREM Stage III standards**

Electric Tractors can

- Mitigate these emissions
- Improve farmers' health
- Reduce farming costs

Source: Zhenying Shao, An emissions inventory for agricultural tractors and construction equipment in India (ICCT: Washington DC, 2016). http:// www.theicct.org/non-road-emissions-inventory-india

States are leading the way for incentivizing Electric Tractors

State	Year	Initiative
Maharashtra	2025	**15%** up to **INR 1.5 lakhs** of ex-factory cost for **1000** e-agricultural tractors and combined harvestors
Madhya Pradesh	2025	**100%** exemption of **motor vehicle tax and registration fees** for e-tractors
Andhra Pradesh	2024	Subsidy of **5%** on the cost of an e-tractor costing **INR 8 Lakhs** or below.
Haryana	2022	First **1000 units** purchased and registered in the state shall receive purchase incentive of **50%** up to **INR 5.00 lakh** of the ex-showroom price of vehicle.
Telangana	2020	**100%** exemption of **road tax & registration fee** shall be applicable for electric tractors purchased and registered in the state of Telangana

**However, not a single electric tractor was registered in FY 2024-25.*

Sources: *Haryana EV Policy 2022*; *Telangana EV and energy storage policy 2020-2030; Maharashtra EV Policy 2025-2030; New Andhra Pradesh Sustainable Electric Mobility Policy (4.0) 2024-29; Madhya Pradesh EV Policy 2025*

E-tractor manufacturers and certified e-tractor models

AIS 168 - Specific Requirements for A6 and A7 Category Electric Power Train Agricultural Tractors
Enforced on January 2021 by

सड़क परिवहन और राजमार्ग मंत्रालय
Ministry of Road Transport and Highways

E-tractor Models with CMVR AIS 168 (A7) Certification issued by ARAI/ICAT		
Model	**OEM**	**Rated Power**
X45H2 AutoNxt	AutoNxt Automation	45 HP
Marut e-tractor 3.0	Sree Marut e-Agrotech	28 HP
Montra E-tractor	TI Clean Mobility	27 HP

Rated Power Category	Manufacturer	Location
>30 HP	Moonrider	Karnataka
	AutoNxt Automation	Maharashtra
	Bullwork Mobility	Karnataka
18 HP < P <30 HP	Sree Marut e-Agrotech	Gujarat
	Escorts Kubota	Haryana
	TI Clean Mobility	Tamil Nadu
18 hp or lower	Cygnus motors	Gujarat
	Sukoon Solutions	Uttar Pradesh
	Sonalika	Punjab
	CSIR CMERI	West Bengal

Sources: *Web sources and stakeholder consultations. This list is to the best of the author's knowledge and it is acknowledged that there may be other electric tractor manufacturers/models missed in this review.*

ICCT is studying real world energy savings from electric tractors, in Haryana

Left: Marut E-aggrotech's **28 HP** tractor being used for **transportation** of animal fodder, Yamuna Nagar, Haryana

Right: AutoNxt Automation's **45 HP** tractor being used to prepare soil for paddy using a **cultivator,** Karnal, Haryana

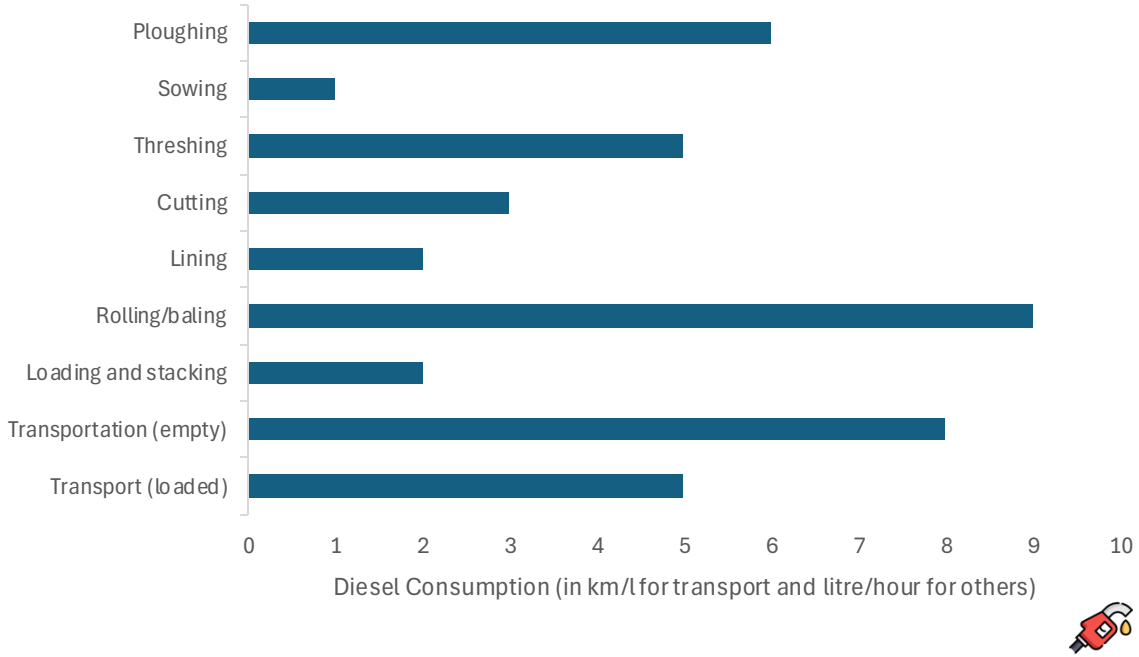
Source: Images from ICCT's ongoing electric tractor pilot in Haryana

E-tractors can save energy across applications

Farming

Crop Residue Management

Transport



Source: Preliminary insights from author's field work in Haryana

Thank you

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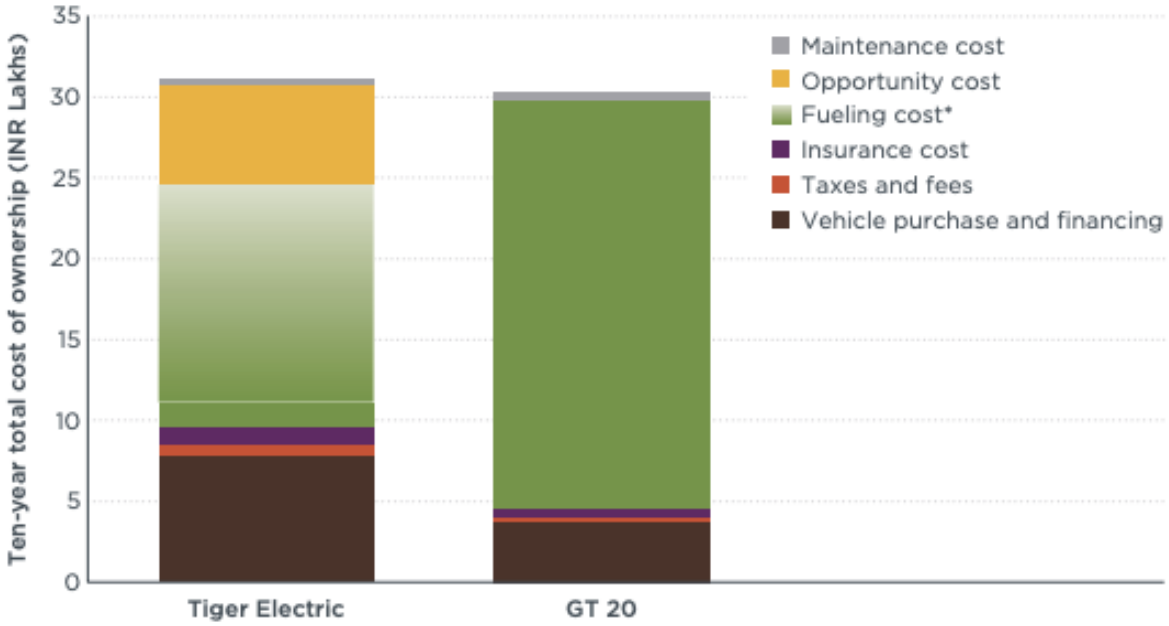
What agriculture applications can electric tractors target?

Classification	Tractor Activity	Diesel consumption
Farming 	Ploughing	6 litre/hour
	Sowing	1 litre/hour
	Threshing	5 litre/hour
Crop Residue Management 	Cutting	3 litre/acre (for paddy), 2.5 litre/acre (for others)
	Lining	2 litre/hour
	Rolling/baling	9 litre/hour
	Loading and stacking	2 litre/hour
Transportation		7-8 km/litre (empty), 4-5 km/litre (loaded)

Source: Preliminary insights from author's field work in Haryana

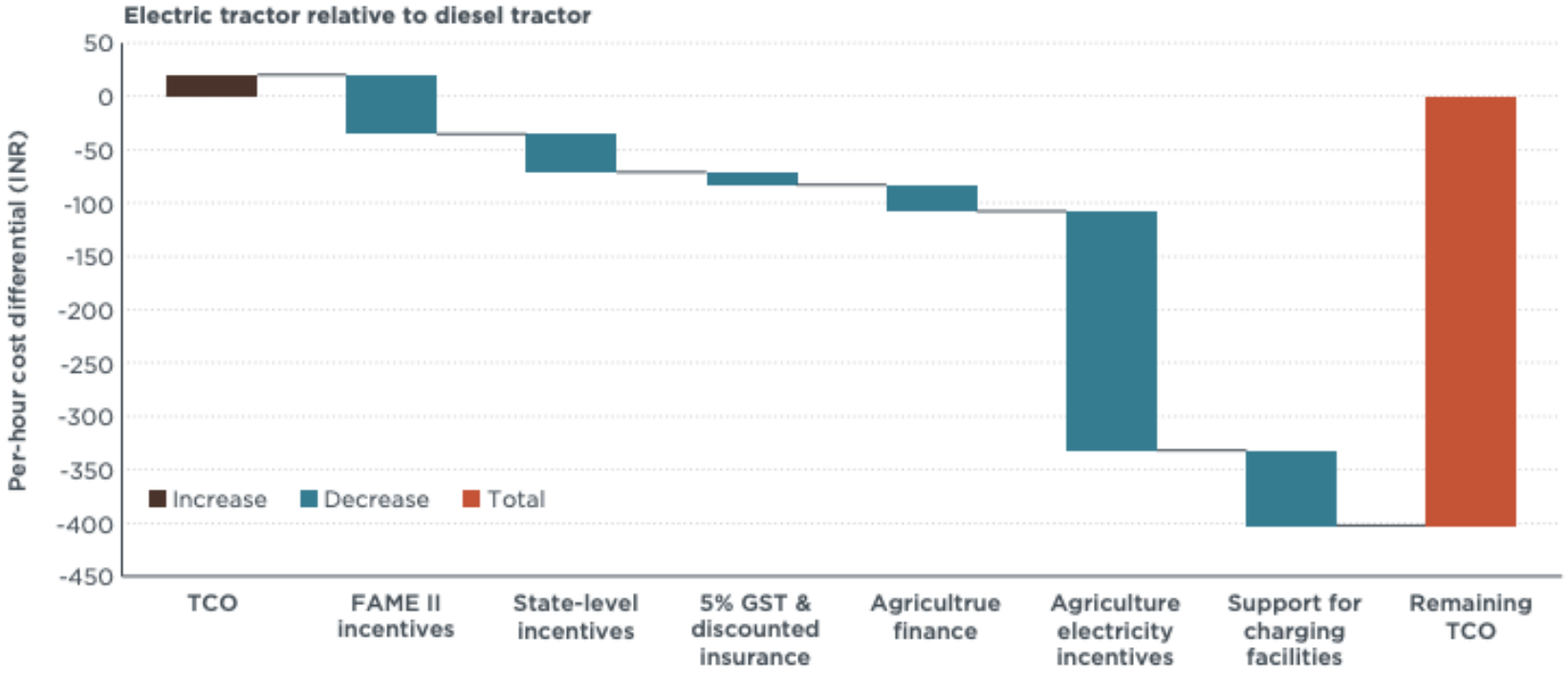
10-year TCO of E-Tractor is only 3% higher than Diesel



Fuel type	Manufacturer	Model	HP category	No. of gears	Lift capacity (kg)	Forward speed (kmph)	Showroom price (INR Lakh)
BEV	Sonalika	Tiger Electric	20 hp /-15 kW	6F+2R	500	24.9	5.99
Diesel	Sonalika	GT 20	20 hp /-15 kW	6F+2R	650	23.9	2.85

https://theicct.org/publication/india-hvs-evs-incentives-elec-tractors-india-oct22/

Policy measures and Incentives can narrow the TCO gap between Electric and Diesel Tractors



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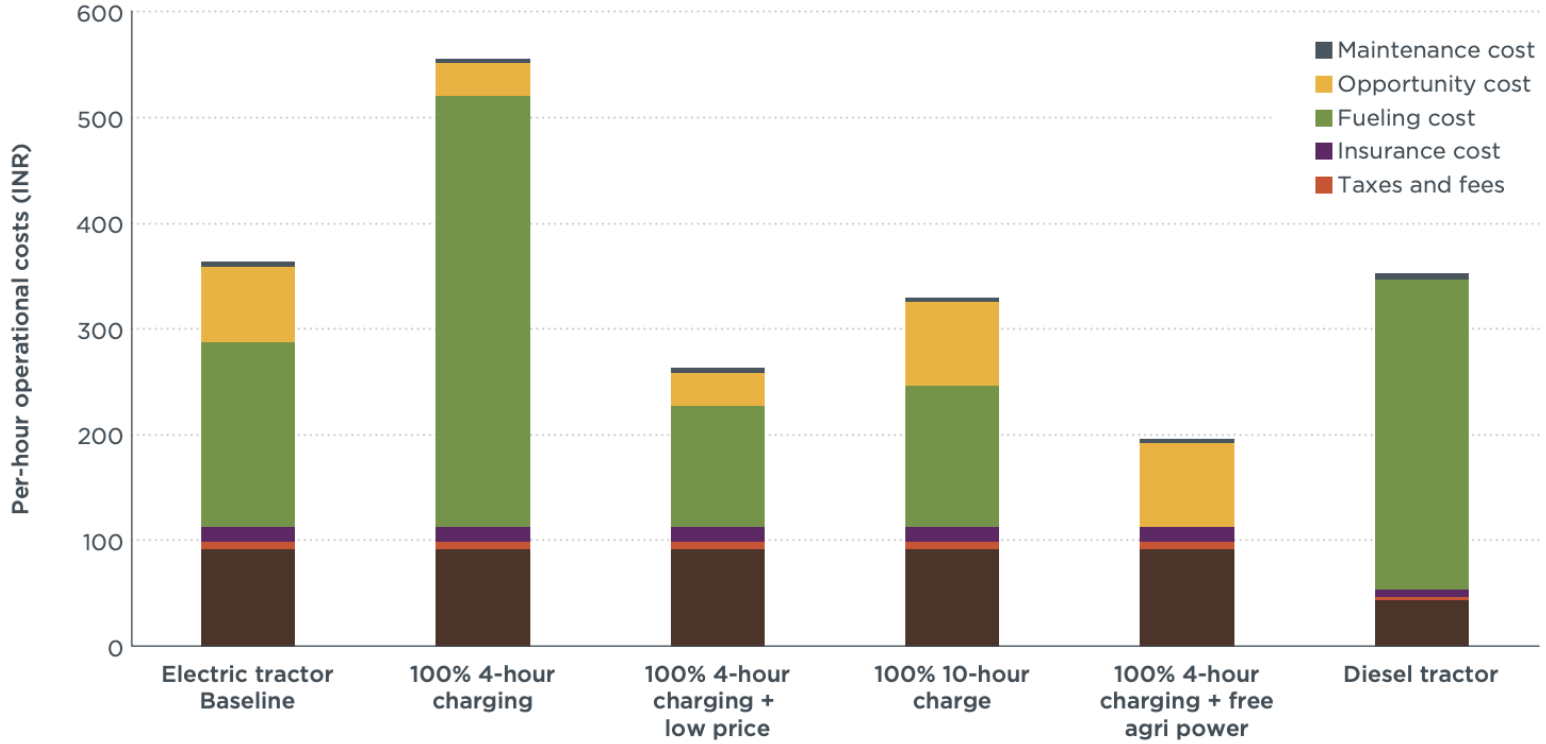
Discounted power rates or free electricity allowances could significantly lower E-Tractor TCO and be fiscally sustainable



Interest in Electric Tractors in India is currently limited, despite their potential to offer significant benefits

Individual Farmers

- Lower operating costs
- Lower fuel costs
- Lower vibrations
- No exposure to diesel fumes
- Higher productivity

Governments

- Lower pollutant emissions
- Global strategic advantage
- Energy security by reduced diesel
- Increase agriculture production through constant torque of electric motors

Manufacturers

- Adapt to emerging ZEV mandates and stricter standards for tractors
- Expand exports