

MALAYSIA DIESEL – EV OUTLOOK



Fuel Cost
Government Incentives
EV vs Conventional HDD
EV Niche: Smaller Trucks
Our Builds
Standards and Testing

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MALAYSIA DIESEL – EV OUTLOOK

Malaysia Fuel Prices (per liter) Aug 2022

RON95 : 0.46 \$ (RM2.05)

RON97 : 0.97 \$ (RM4.35)

Diesel : 0.48 \$ (RM2.15)



Not much financial incentive for Electric Propulsion

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Government EV incentives:

Some encouragement of Local manufacturing

Charging stations (built @ govt facilities & “tax incentives”)

Conversion of Govt fleets to EV (20% by 2025)

Consumer incentives:

100% excise & import tax exemption for first 10,000 units
(through 2022)

50% tax reduction after that

“Mostly this allows a few high rollers to buy their expensive toys cheaper” (popular opinion)

HEAVY DUTY DIESEL TRUCKS

Conventional vs EV

Volvo FH Truck Range: 1000km

Volvo FV Electric Range: 300km

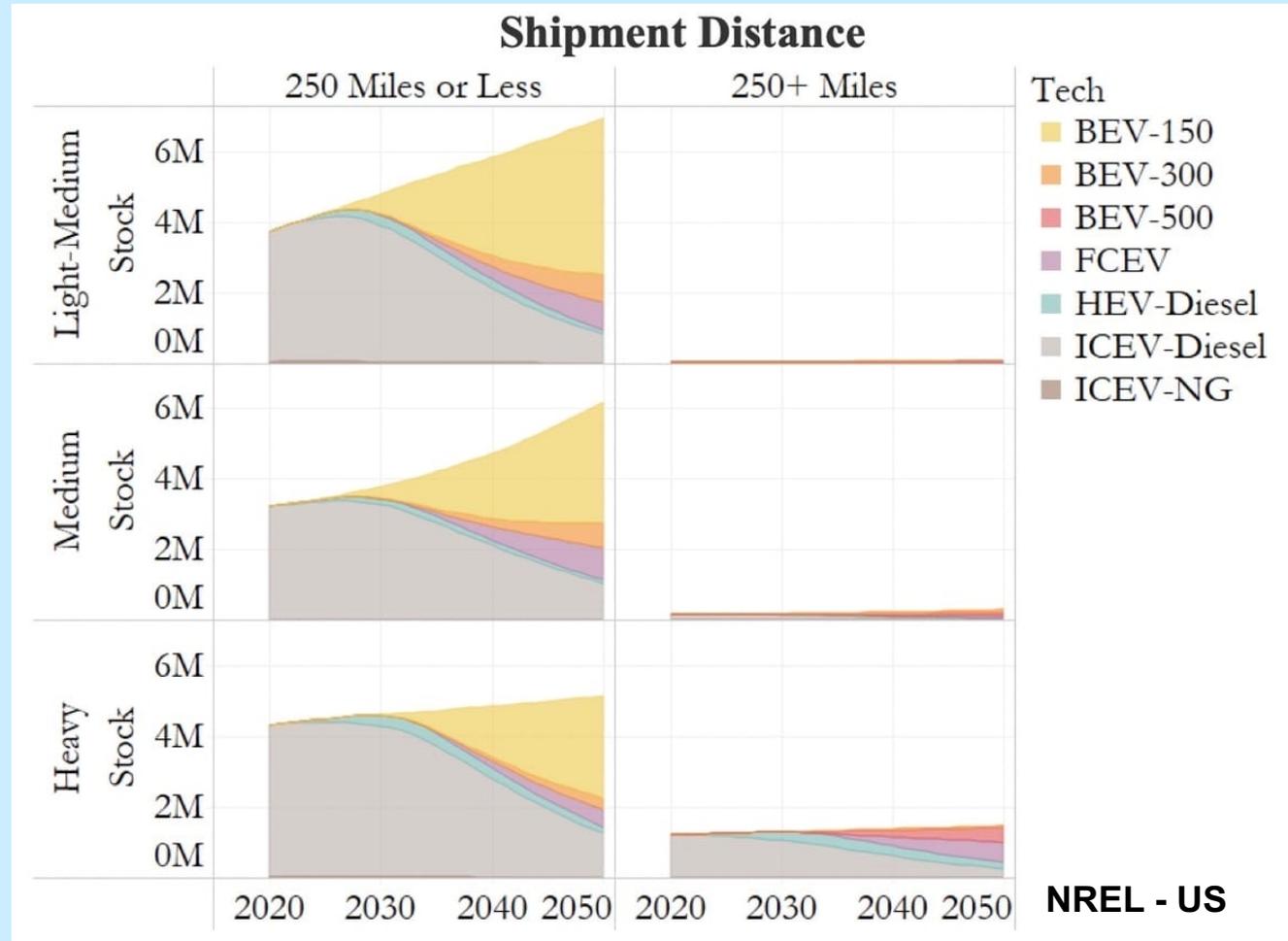


US Estimates:

Heavy Duty Truck EV's competitive in ~2030

Long Haul EV Truck competitive in ~2035

EV TRUCKS: Short Haul, Medium Trucks first



This projection shows that smaller and medium, short distance trucks will go electric first.

EV CONVERSIONS AND BUILDS

We are involved with several partners (Inventera, Eclimo, NTT) in performing EV Conversion and builds:

Classis Sports Cars

Tesla EV components

3-15 Ton Delivery Trucks

ZF components

200+ km range

100 units 2023

~80k USD

Post Malaysia

Malaysian EV

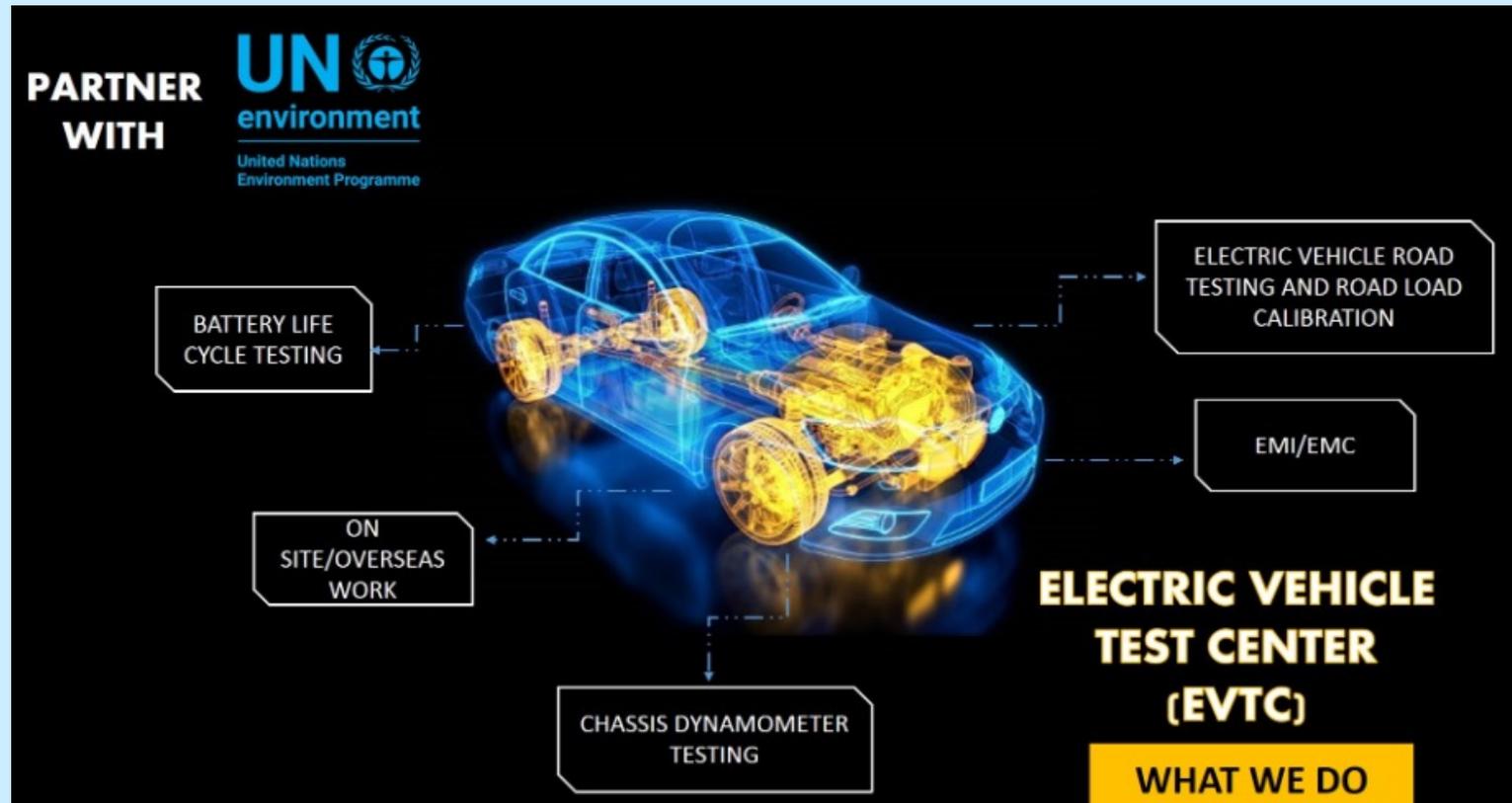
200+ km range

5000 units



EV STANDARDS DEVELOPMENT

We help develop EV VTA standards several partners:
SIRIM, Standards Malaysia
UNEP, De La Salle University



Including testing of EV's at our Malaysian Test Center

EV TEST EQUIPMENT

We supply EV test equipment (dynamometers Vehicle data loggers, EV Battery testers...) to a wide range of customers world-wide:

TORK, Napino, Pricol (India), Ampersand, University of Philippians, CSU, University of Kuala Lumpur...



CONCLUSIONS

I am optimistic about the long-term prospects for EV Trucks, but at current fuel prices we're realistically looking at 2020-2035 before a large fraction of the new vehicle fleet will be electric.

Smaller vehicles will transition to EV first

Many (most?) Vehicle will be made from a wide range of internationally sourced components.

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