

Electric Vehicle

The next Episode of Thai automotive Industry

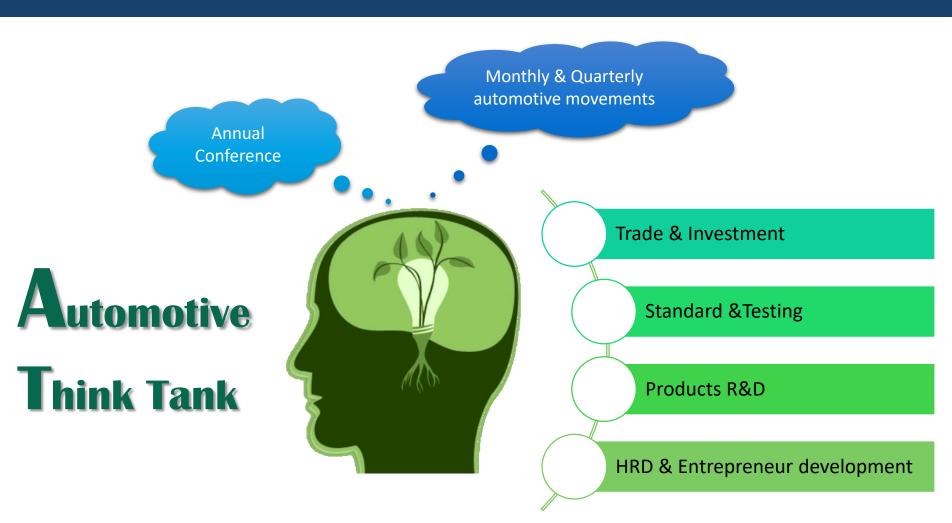
ยานยนต์ไฟฟ้า ก้าวต่อไปของอุตสาหกรรมยานยนต์ไทย

Presented by Industrial Research Division

นำเสนอโดย แผนกวิจัยอุตสาหกรรม



Next Generation Vehicle Research Center | ศูนย์วิจัยอุตสาหกรรมยานยนต์สมัยใหม่



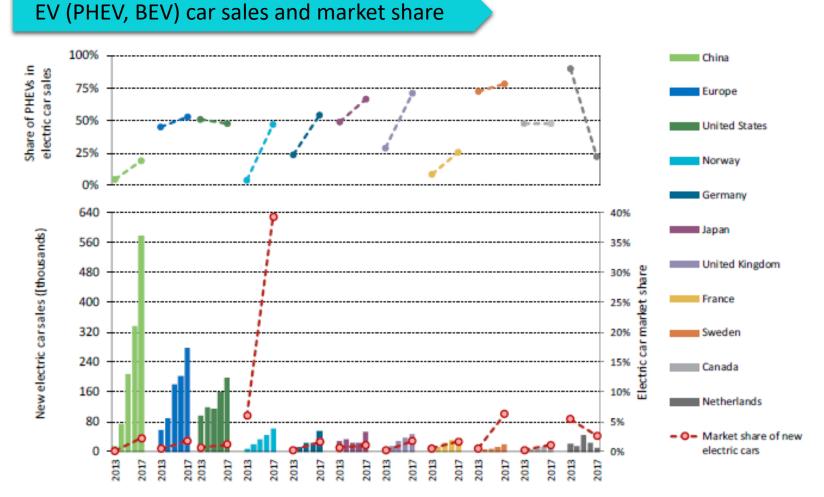


Impact of electric vehicle on Thai automotive supply chain



1. EV promoting policy in Selected countries

EV (DUEV DEV) som seles and manufact above





1. EV promoting policy in Selected countries (Continued)

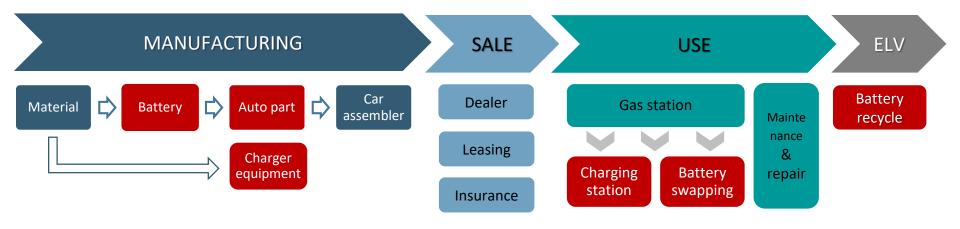
EV key policies

		Monetary measures	Non-monetary measures	
Demand	Vehicle	Tax exemptionsPurchasing price subsidy	Special privilege Ex. Special lane, toll fee exemption, EV parking lots	
	Charging	- Free of charge in charging costs	Charger installationMobile application and servicesCharging installation mandatory in new building	
Supply	R&D	R&D funds	R&D consortium	
	Human Resource Development		Vocational and Education curriculum	
	Manufacturing	Soft loan		
	Awareness		Pilot project& Pilot city	



2. EVs and the impact on Thai automotive value chain

Thai automotive value chain





3. EV trends: Auto parts maker modification

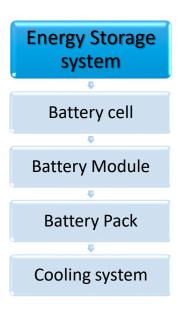
Process		Common	Transform			
			Motor	Battery	Lightweight	Internet of Things
Assembly		X	Х	Х	Х	
	Forging	Х	Х			
S	Machining	х	Х	X	х	
Metal process	Stamping	х	Х	X	Х	
al pro	Welding	x			X	
Meta	Casting	x			X	
_	Heat treatment	х	Х	Х	х	
	Surface treatment	х	Х	Х		
Painting & EDP		х				
Plastic process		х			Х	
Rubber process		Х			Х	
Textile process		Х			Х	
Electronic component fabrication						Х

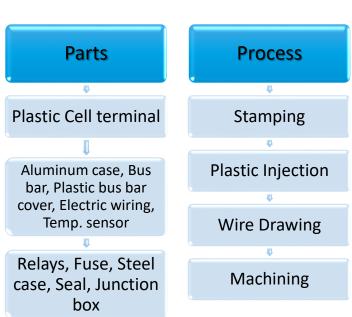


4. The rising opportunity of automotive transformation

Battery Pack





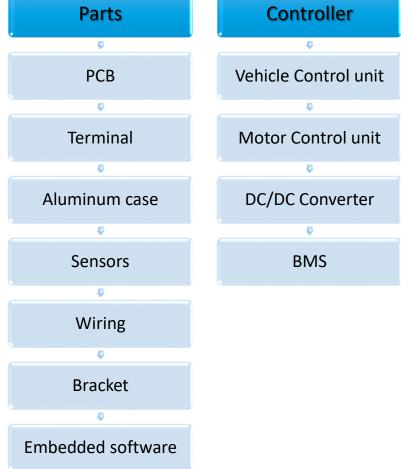




4. The rising opportunity of automotive transformation (continued)

Invertor and Connectors







4. The rising opportunity of automotive transformation (continued)

Electric Motor





Process Aluminum casting Forging Stator: Copper Winding, Electric terminal Wire drawing Extruding Cooling system

Traction motor

Transmission



5. Possibilities of EV policy implementations

Kick off

- 1. Set up EV national committee and assigns
- 2. EV knowledge distribution and make awareness
- 3. Domestic market creation (Monetary and Non-monetary measures)

Market ramp-up

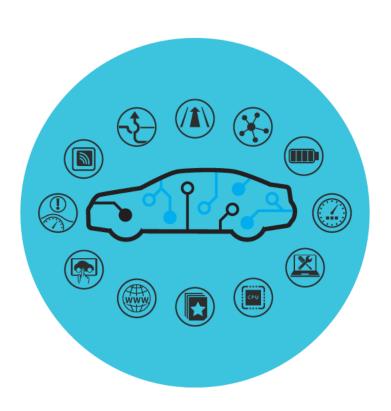
- 1. R&D consortium
- 2. FDI's technology transfer enforced by government policy to enhancing manufacturing competency for potential local suppliers
- 3. Helping manufacturers leaving the production network (soft landing)

Mass production

- 1. EV Testing and R&D national center establishment
- 2. Set up EV and power equipment standards and regulations



6. Next generation vehicle industry readiness roadmap



Vision and Master plan of National automotive Industry

Activities	Oct- Dec'18	Jan- Mar'19	Apr- Jun'19	Jul- Sep'19
Technology foresight	*	*		
Public hearing			*	
Master plan launched				*



CHANGE FOR GROWTH

