



SUSTAINABLE MOBILITY
1st Malaysian-German Sustainable Automotive Mobility
Conference

18 October 2011
Shangri-La Hotel, Kuala Lumpur

ELECTRIC VEHICLE ROADMAP
FOR MALAYSIA

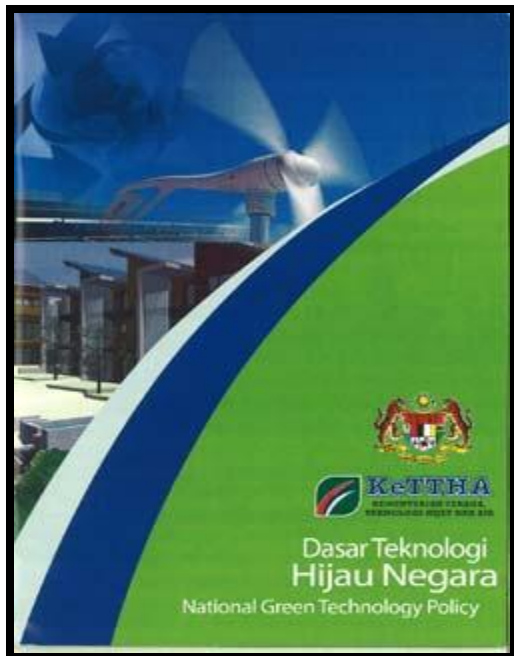
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National Green Technology Policy: Transportation is one of the main emphasized sector as it is the 2nd highest contributor in term of carbon emission.

National Automotive Policy : Promote Hybrid & Electric Vehicles and Development of Related Infrastructure.

: MEGTW was tasked to draw up a roadmap to develop the charging infrastructure for electric vehicles

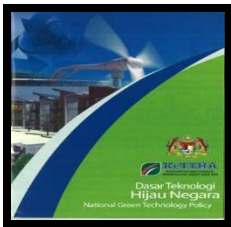




MALAYSIA : GREEN INITIATIVES



Malaysia Government has pledged to reduce greenhouse gases by 40% of year 2005 levels by the year 2020 during the UN Climate Change Summit, Copenhagen in 2009



- The Energy Sector
- The Built Environment
- Certification of Green products
- Financial Incentives.
- Transportation Sector



100% import and excise duties exemption for hybrid and electric cars from 1 Jan to 31 Dec 2013



Development of a Roadmap for the Deployment of EV for Malaysia

Considerations

- What are the strategies?
- Who will the players be?
- How is it going to be implemented?
- Where is it going to be implemented?
- When is it going to be implemented?



Development of a Roadmap for the Deployment of EV for Malaysia

POLICY

- Owner Guidelines and Incentives
 - Green Tax rebates (existing Green Policy) – Excise Duty Exemption
 - Tax incentives (e.g. Road tax waiver (100% for Austria, 50% for France), income tax rebates in USA, direct reduction of car price (based on carbon emission and battery capacity)
 - Dedicated Parking Space and Free Parking (Scandinavian countries)
 - Green Lane – Toll Free (Norway)
 - Financial assistance (0-Downpayment, low interest rate)
 - Personalized EV Registration number (EV 1 to EV 99999)
-) EV Manufacturer Guidelines
 - Registration Policy – Minister of transport and JPJ
 - Duty and Taxation Policies – Royal Customs Malaysia
 - Import / Export Policies – MIDA



Development of a Roadmap for the Deployment of EV for Malaysia

INFRASTRUCTURE

- Vehicles capable of accepting slow and rapid charging standard sockets (Proton)
- Need to conduct in-depth study on IEC, SAE, and CHAdeMO before making decision on which standard to adopt
- Determine charger requirements based on Malaysia power supply and user profile
- Develop method for deciding no. of chargers, location of chargers, type of chargers, and fit user profile
- Batteries
 - Leasing program
 - Roadmap for energy storage
 - Localising battery technology – investment in technology
 - Standards and tests for EV batteries (to ensure reliability and safety – image of EV!)
 - Battery subsidy
 - Battery management system



Development of a Roadmap for the Deployment of EV for Malaysia

MARKET DRIVERS

- High price is key market barrier. Need government support/incentives.
- Battery and ownership costs; charging infrastructure
- At this stage, RE-EV is best solution while waiting for the infrastructure and battery to be in place (Proton)
- Control ICE import ? Maybe. NO. If fuel prices increase then people will go to EV.
- Increasing of fuel prices
- Government EV quota – 10% of EV quota for every ICE vehicles produce/import
- Marketing should focus on right group of users

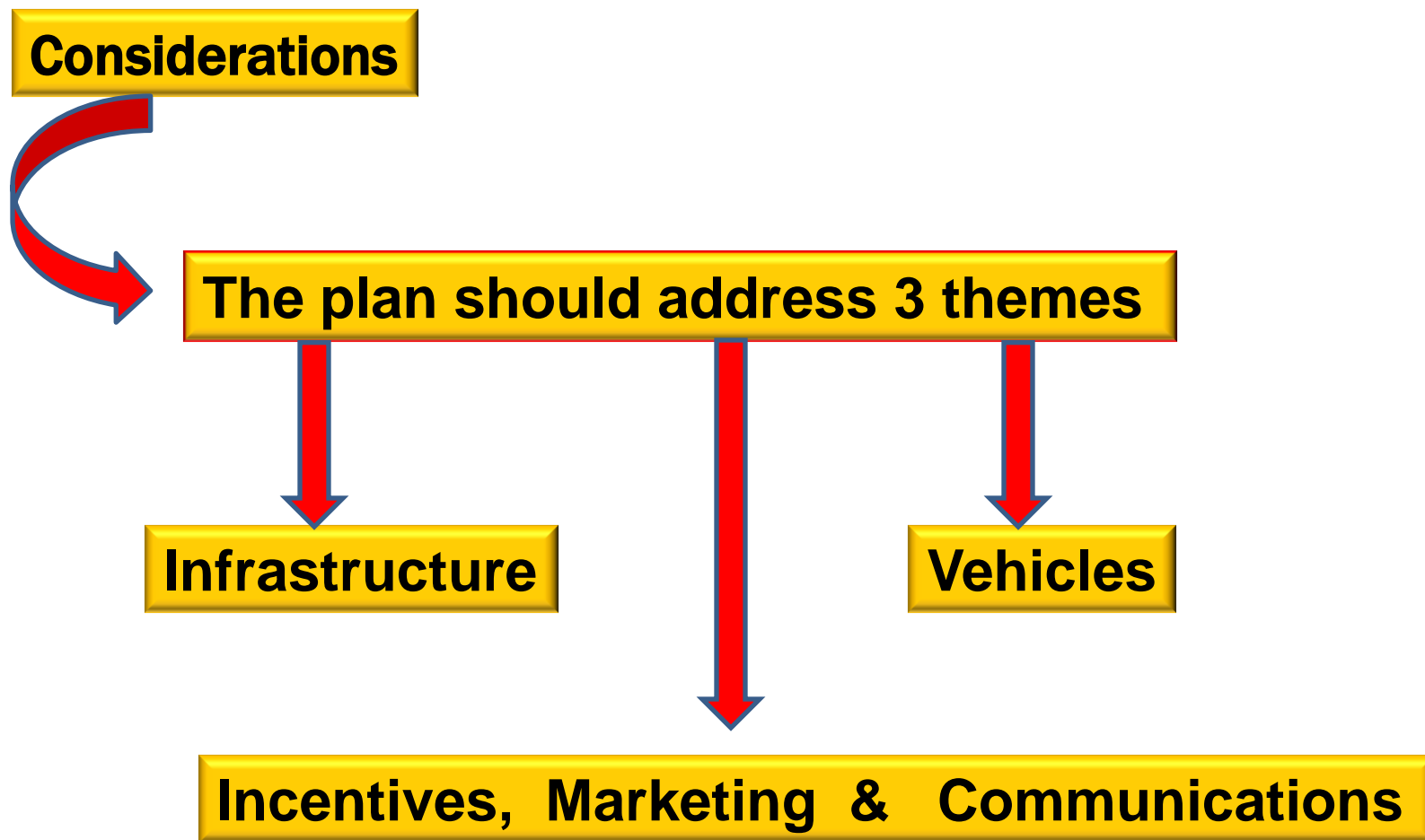


Development of a Roadmap for the Deployment of EV for Malaysia

MARKET DRIVERS

- Current customer intent is high thus should promote nationwide
- Right EV pricing vs ICE - Energy cost comparison is important
- Promote of personalize usage of EV rather than immediately jump into replacing ICE with EV
- Government Policies & Incentives
- Fleet Vehicle user (car rental)
- Long term policies on EV are require for investment of manufacturers to produce EV
- Decrease in EV and batteries prices.
- Congestion policies in Kuala Lumpur.- No ICE carriers in the city
- Force area usage of EV by government.
- Government to organize pilot EV project/test bed
- Tax – Need to establish tax mechanism which will benefit EV users

Development of a Roadmap for the Deployment of EV for Malaysia





Development of a Roadmap for the Deployment of EV for Malaysia

Methodology

Phase 1 : EV Infrastructure Roadmap – Basic List

Phase 2 : Pilot project

Phase 3 : EV Roadmap / Masterplan

Phase 4 : National Roll-Out



Strategic Action Plan for Deployment & Development of EV Masterplan

- 1. Formation of the EV Steering Committee**
- 2. Establishing Standards for Electric Vehicle Supply Equipment (Socket-to-Socket)**
- 3. Regulation for Governing EV Charging Infrastructure Provider**
- 4. Regulation Governing the Roadworthiness of Electric Vehicle**
- 5. Incentives for EV Charging Infrastructure Provider**
- 6. Incentives for EV Owners and Users**
- 7. Ensuring Grid, Supply and Utility Readiness**
- 8. Pilot Demonstration Projects**
- 9. Public Awareness and Education**
- 10. Research and Development into EV technology**



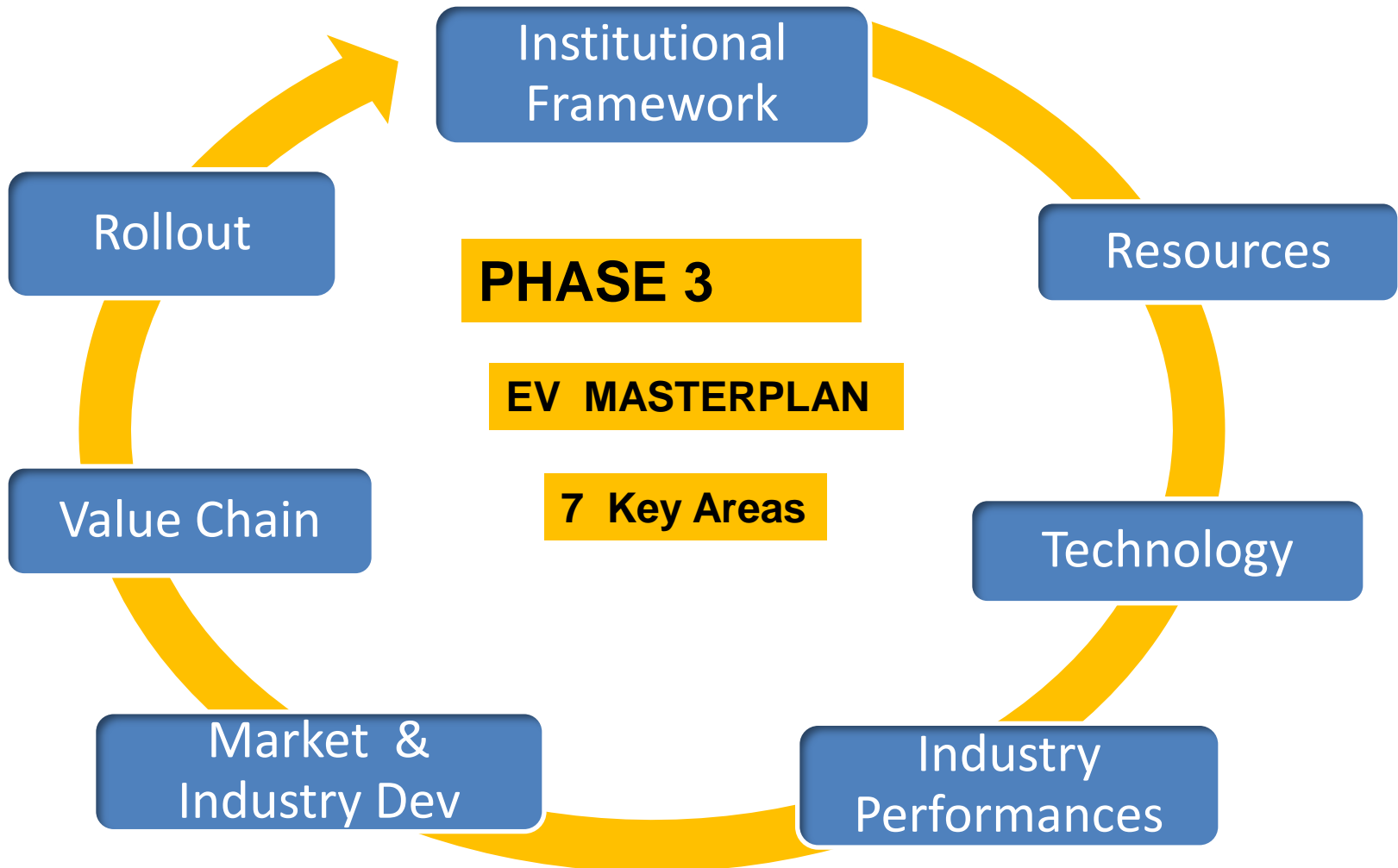
PHASE 2

Pilot Project : PROTON FTV Putrajaya & Cyberjaya

200 REEV Exora
50 EV Saga



Key Areas for Deployment & Development of EV Masterplan





Technology & Operation Challenges

- 1) Development & Operation of Charging Station Model:
Public vs. Private vs. Public-Private**
- 2) Charging Protocol & Standardisation:
IEC (European) vs. SAE (American) vs CHAdeMO (Japanese)**
- 3) Home Charging Mechanism:
Landed Properties vs. High Rise Building (Apartment, Condo)**
- 4) Incentives Target Groups:
Consumers vs. Manufacturers (OEMs)**
- 5) Locality of Public Charger
Potential Buyer Demographic vs. Charger Station**



THANK YOU
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Building the bridge



**“The effort is not in leaping the chasm,
but in constructing the bridge for those that follow”**
Isaac Newton