Asia-Pacific
Economic Cooperation

Advancing
Free Trade for Asia-Pacific
Prosperity

APEC Energy Working Group
A short Introduction

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APEC Energy Working Group (EWG)

Launched in 1990, the EWG helps further APEC goals to facilitate energy-related-trade and investment and seeks to maximize the energy sector's contribution to the region's economic and social well-being, while mitigating the environmental effects of energy supply and use.

The EWG meets formally twice a year to discuss developments and progress on energy policy issues; 54 meetings to date.

EWG and sub-fora

- Expert Group on Clean Fossil Energy (EGCFE)
- Expert Group on Energy Efficiency & Conservation (EGEEC)
- Expert Group on Energy Data & Analysis (EGEDA)
- Expert Group on New & Renewable Energy Technologies (EGNRET)
  - Low-Carbon Model Town Task Force (LCMT TF) (2010-)
  - Energy Resiliency Task Force (ERTF) (2015-)
  - Biofuels Task Force (BTF) (2005-2011)
  - Energy Trade and Investment Task Force (ETITF) (2009-2013)

➢ **Supported by two research bodies**

- Asia Pacific Energy Research Centre (APERC) (1996-)
- Asia Pacific Sustainable Energy Center (APSEC) (2015-)

Key Policy Goals and Initiatives/Activities

- Energy Intensity Reduction 45 % by 2035
- Renewable Energy Doubling by 2030
- Reform of Inefficient Fossil Fuel Subsidy
- Energy Security Initiative
  - Oil & Gas Security Initiative
  - Energy Resilience and Modernisation of Infrastructure
- Energy Smart Communities Initiative
  - Low Carbon Model Town
  - Knowledge Sharing Platform
- Green Energy Finance Initiative, LNG Trade Facilitation Initiative,…

42 projects on going in 2018

- Reducing Energy Intensity Goal: 8 projects
- Renewable Energy Doubling Goal: 9 projects
- Community-base low carbon development: 4 projects
- Improving energy resiliency: 2 projects
- Improving oil & gas security: 2 project
- Clean use of fossil fuels: 5 projects
- Promoting energy trade & investment: 5 project
- Planning for longer-term energy future & Others: 7 projects

Peer Reviews

- Peer Review on Energy Efficiency (PREE)
- Peer Review on Low Carbon Energy (PRLCE)
- Peer Review on Fossil Fuel Subsidy Reform
- Peer Review on Efficient Power (PREP)

Recent Transport-related activities

The Electric Vehicle and Hydrogen Technology Policy Workshop

- 21 November 2017 (part of EWG54 meeting)
- Wellington, New Zealand
- 170 participants (EWG Representatives + non-members)

ADENDA

- Electric Vehicle Trends and Potential Impact on Regional and National Energy systems
- Electric Vehicle Policy Best Practices: Case studies from APEC members (Australia, PR China, Japan, New Zealand, US)
- International Trends in Hydrogen
- New Zealand Developments in Hydrogen

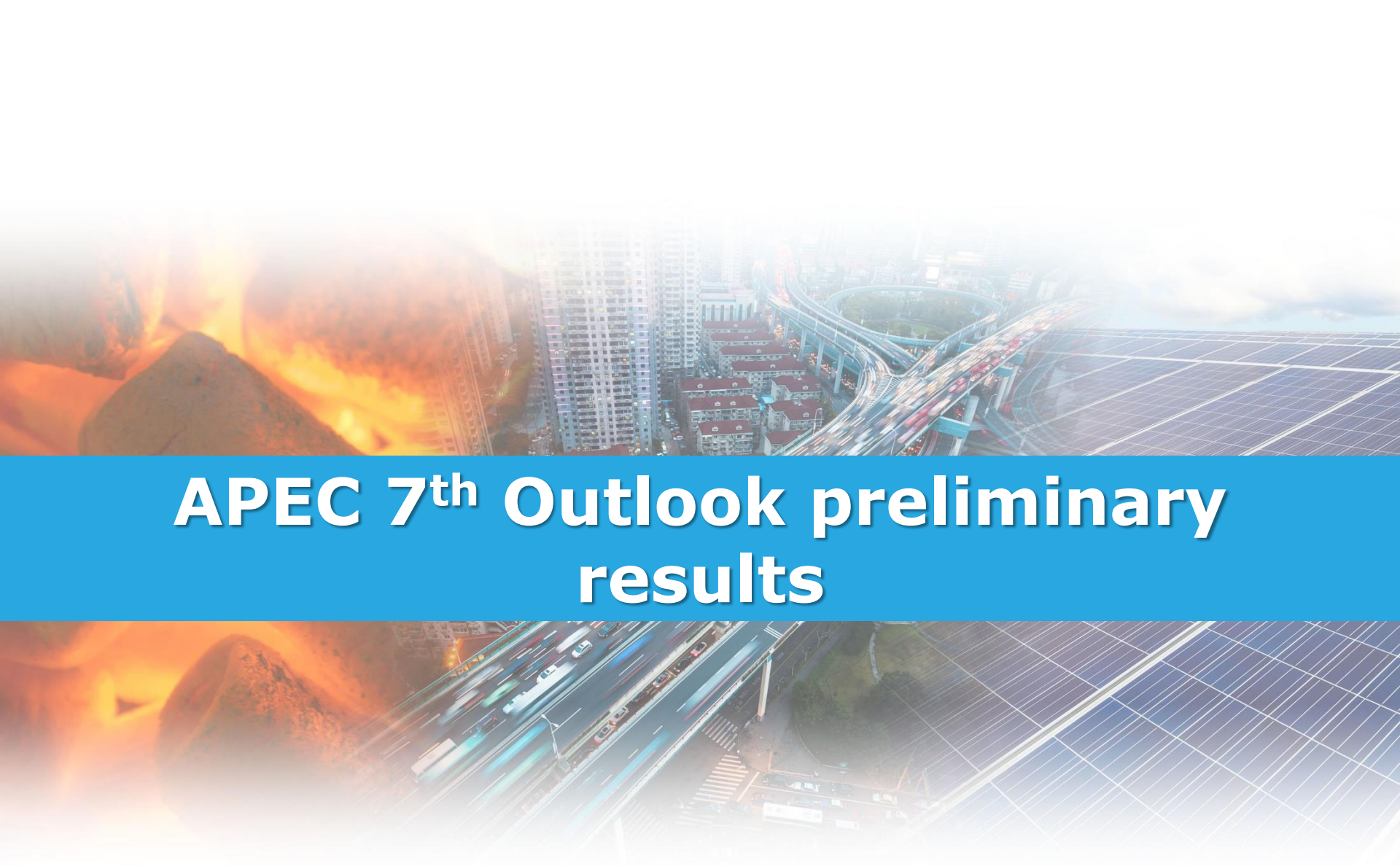
Recent Transport-related activities

Electromobility: Infrastructure and Workforce Development

- 1 & 2 February 2018
- Santiago, Chile

ADENDA

- Overview of Electromobility, Public Policy and APEC Initiatives
- Human Capital and Gender
- Technology and Infrastructure
- Closed session – APEC Representatives
  - Experiences: challenges and opportunities associated with the deployment of electric vehicles
  - Discussion: Best practices and conclusions



APEC 7th Outlook preliminary results

APERC
Asia Pacific Energy Research Centre

APERC's Outlook 7th Edition Includes 3 Scenarios

- Business-as-usual (BAU) scenario:

  The BAU scenario reflects current policies and trends within the APEC energy sector. In turn, it largely projects past trends into the future.

- APEC Target (TGT) scenario:

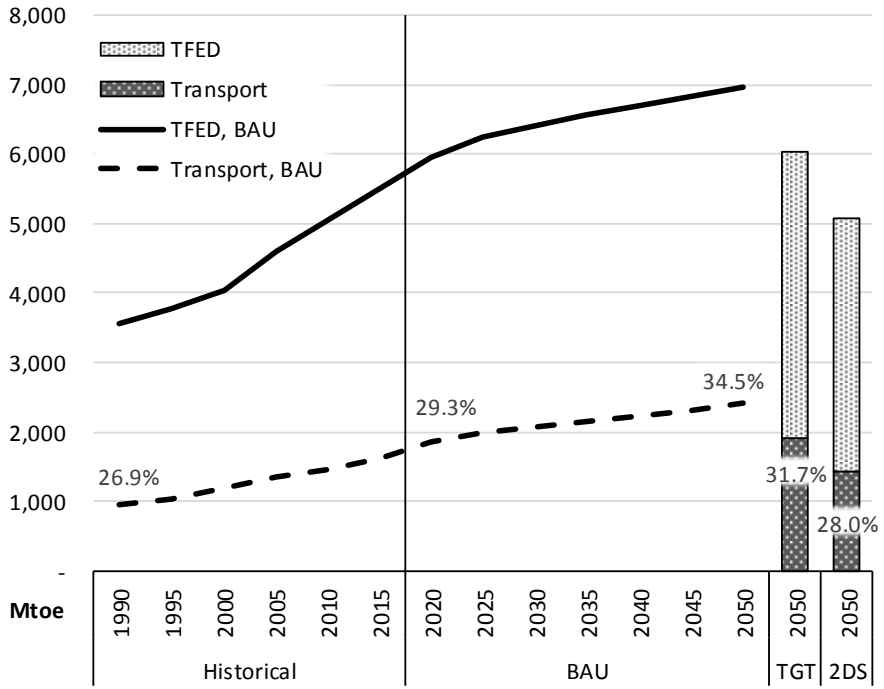
  The TGT scenario is driven by APEC's aspirational goals of reducing energy intensity while increasing the share of renewables.

- 2 Degree Scenario (2DS):

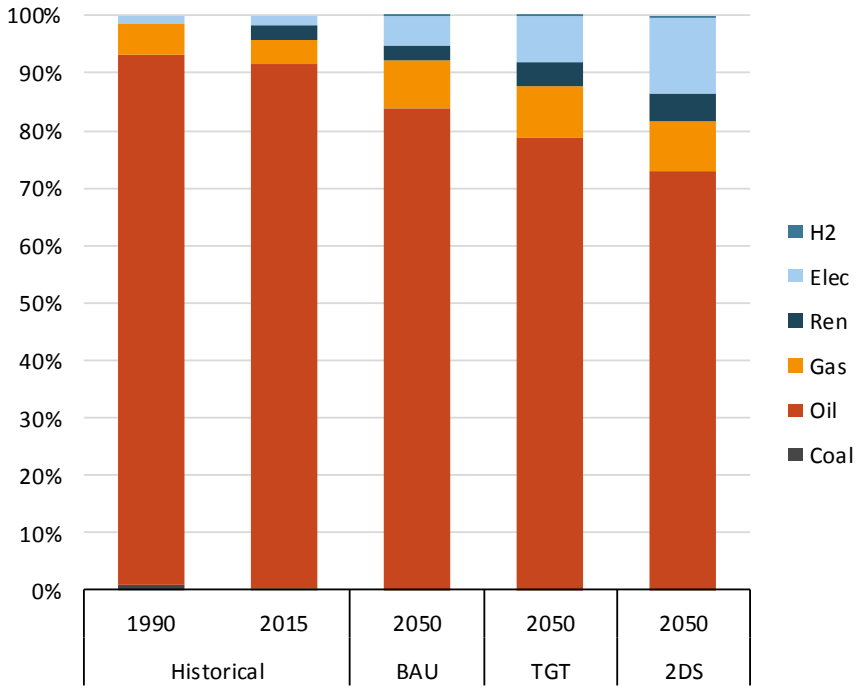
  The 2DS follows the carbon emissions reduction pathways included in the International Energy Agency's "Energy Technology Perspectives" publication.

Transportation: an important demand sector, dominated by oil

Transport demand remains important



Oil products remain the key transportation fuel



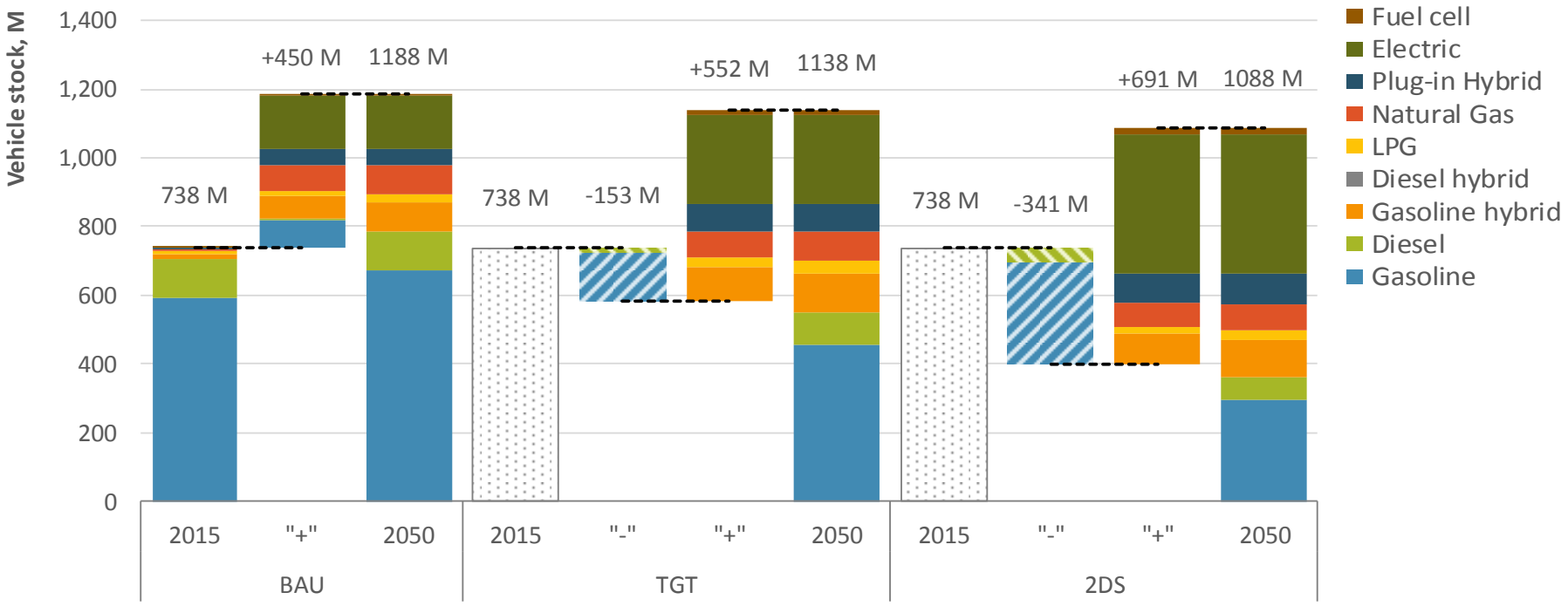
- *Since 1990 the share of transport increased from 27% to 29% in 2015;*
- *By 2050, transport is projected to account for 28%-34.5% in all scenarios.*

Source: IEA 2017, APERC 2018

- *In 2050, electricity reaches 5%-13% of transportation demand;*
- *Over 85% of electricity demand for transport is projected to come from China and US*

Bright future for electric vehicles, uncertain for gasoline

Vehicle Stock (except 2-wheelers) by powertrain technology, million vehicles

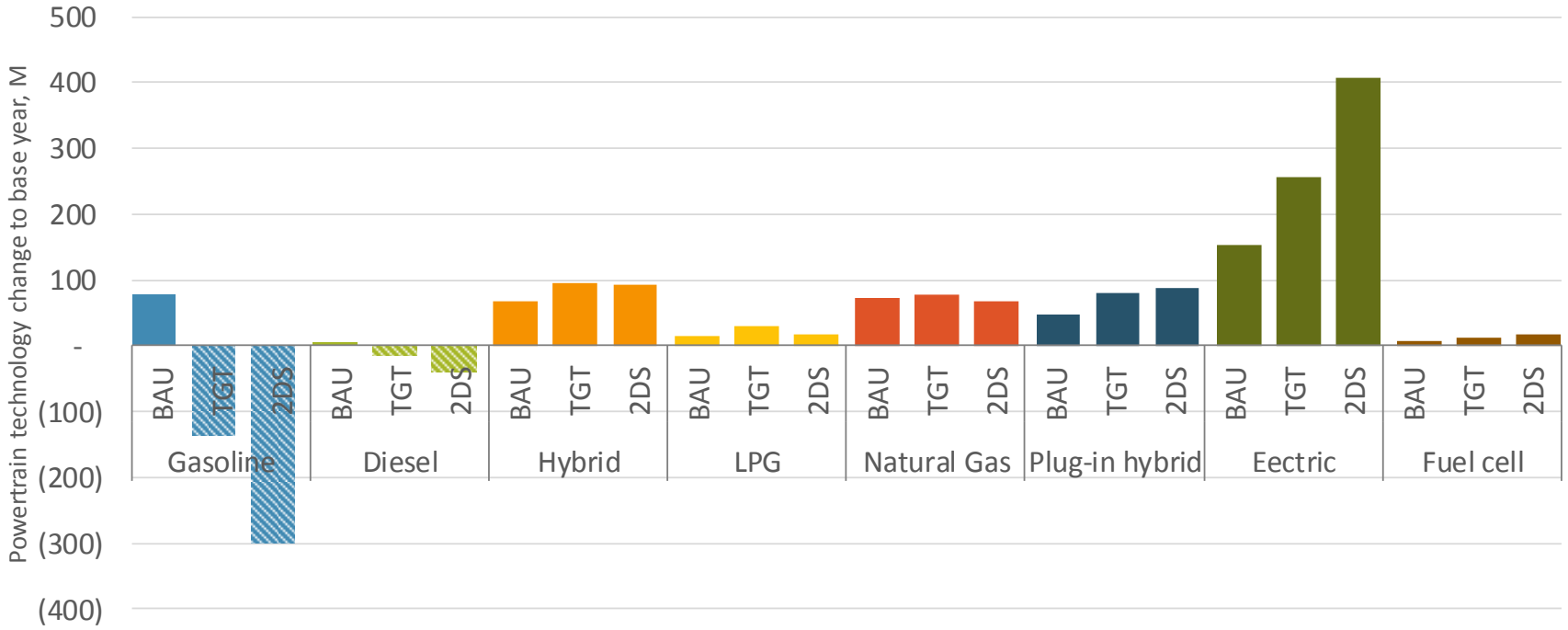


Gasoline vehicle stock increases in the BAU, but significantly decreases in both the TGT and 2DS scenarios.

Source: APERC analysis

PHEVs and EVs provide largest additions

Drivetrain technology stock change (2015-2050), millions

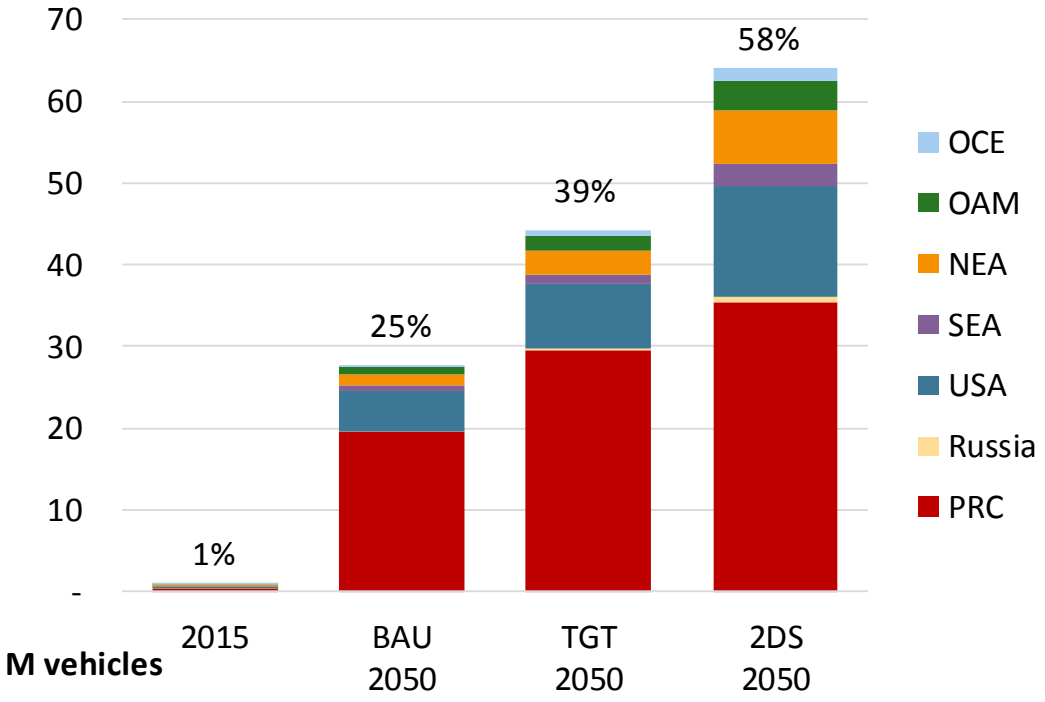


PHEVs and BEVs have largest number of additions in all scenarios, reaching 17%-46% of total stock in 2050.

Source: APERC analysis

In 2050, APEC's Vehicles are More Diverse

APEC's Regional plug-in hybrids, battery and fuel-cell EVs markets



- ***EVs represent 25%-58% of vehicle market (excl. 2-wheelers) in 2050.***
- ***China accounts for over 50% of this market in all scenarios***

Source: APERC analysis

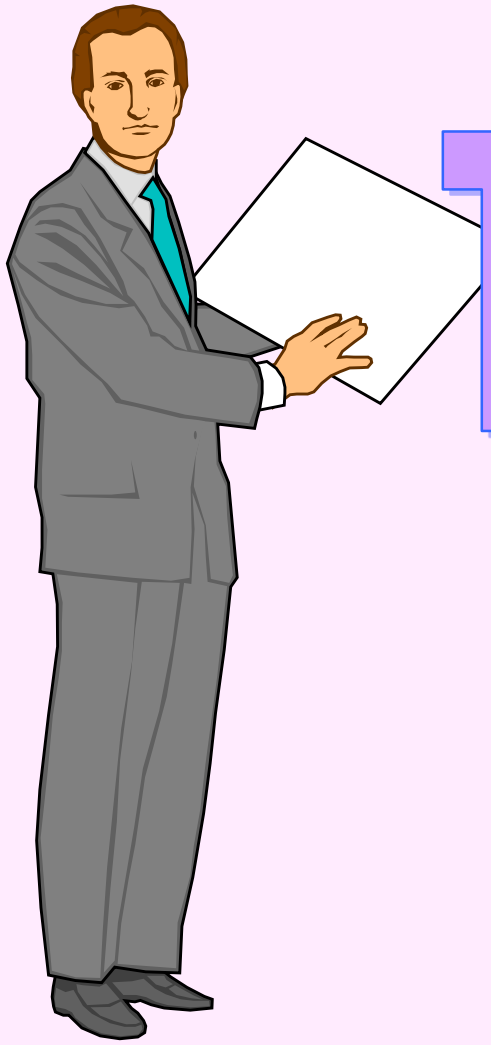
Note: percentages indicate the share of total road vehicle market in that year for the scenario;

***PRC** = People's Republic of China, **USA** = United States of America, **NEA = Other north-east Asia** includes Hong Kong, China; Japan and Korea; **OCE = Oceania** includes Australia; New Zealand; Papua New Guinea; **SEA = South-East Asia** includes Brunei Darussalam; Indonesia; Malaysia; The Philippines; Thailand and Viet Nam; **OAM = Other Americas** include Canada; Chile; Mexico and Peru.*

APERC is estimating the effect of large EV fleets on energy systems

- APERC is quantifying the impact of scenarios on refueling infrastructure
  - *Preliminary analysis shows that high penetrations of BEVs and PHEVs could bring substantial refueling/charging infrastructure CAPEX savings in APEC*
- APERC is analyzing the effects of EV charging on the electricity system
  - *Internal work is underway to quantify the impacts of EV charging on electricity daily load fluctuations,*
  - *Key purpose is to understand the value of demand response to a time-dependent EV charging price.*
- APERC and IEEJ are launching a joint project on challenges and barriers of BEV and FCEV deployment, which would quantify the:
  - *CO_2 reduction for the whole energy chain,*
  - *impact of demand response and vehicle-to-grid (V2G),*
  - *impacts on the electricity and fuels supply system.*

*Note: **IEEJ** is the Institute of Energy Economics, Japan*



Thank You