



**Asia-Pacific
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APEC Roadmap for Electric Vehicles

Purpose: Consideration
Submitted by: CTI Chair
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Draft APEC Roadmap for Electric Vehicles

Submitted by the United States

Introduction

In their Joint Declaration in November of 2014, APEC Trade and Foreign Ministers endorsed the APEC Actions to Promote Widespread Usage of Electric Vehicles, and instructed officials to draft a roadmap for Electric Vehicles in 2015. Leaders also welcomed these APEC Actions in their 2014 declaration that includes the instruction to discuss and draft an APEC Roadmap for Electric Vehicles.

In February 2015, CTI tasked the Automotive Dialogue to draft the Roadmap, in cooperation with the Energy Working Group and Transportation Working Group. The aim of this Roadmap is to facilitate the adoption and implementation of international standards pertaining to electric vehicles. These actions include:

1. Pursue technical coordination to support harmonized standards and regulatory approaches in the region for both electric vehicles and their parts, including interoperability between vehicles and their charging infrastructure, with a view to avoiding and reducing regulatory divergences and adoption of unique EV standards or regulations and taking into account work in existing international fora (for example, in the UNECE, ISO, and IEC, among others);
2. Undertake further regulatory cooperation and communication activities in APEC that include regulators, industries, international fora, and developers of international standards, to facilitate the achievement of the above action;
3. Actively participate to the greatest extent possible in the UNECE WP.29 1998 Agreement process to promote the development of Global Technical Regulations on EVs, in particular on electric vehicles safety and the environment;
4. Actively participate to the greatest extent possible in EV international standards development and harmonization efforts;
5. Identify technical areas where alignment could be achieved to facilitate trade and investment and enable accelerated EV deployment;
6. Work towards adoption of aligned approaches to electric vehicle charging and communications, which could include using interoperable charging connectors for electric vehicles in each APEC economy
7. Use international standards, where appropriate, as the basis for any new regulations pertaining to electric vehicles;
8. Draft in coordination with industry a list of priority international standards for promoting widespread usage of electric vehicles in the region;
9. Promote EV-specific first responder education and training efforts to ensure the safe and energy efficient operation of EVs;
10. Promote best practices in the EV's End-of-Life / Service Management including proper collection of used batteries to deter proliferation of toxic and hazardous wastes in developing countries.
11. Work to establish an APEC EV Interoperability and Research Center in cooperation with the established interoperability centers in the United States and Europe to further assist economies in promoting EV use, production, and trade, and to support greater global collaboration and partnerships among governments, industries, international fora, and developers of international

standards. This Center will draw from existing international resources and fora, and provide technical and market analysis and support for helping APEC economies achieve the following goals:

- Alignment of EVs, charging systems, infrastructure, and communications;
- Promotion of aligned vehicle-to-charging infrastructure connectivity and communication for electric vehicles in all APEC economies;
- Alignment of EV, battery, and interoperability test procedures and verification tools;
- Alignment of test procedures for energy consumption of EVs;
- Assisting economies in using renewable sources of energy for powering EVs; and
- Exchanging information on international EV initiatives, industry conferences, and regulatory best practices.

12. Thoroughly discuss and draft an APEC Roadmap for Electric Vehicles in 2015 to carry forward these actions.

Background

Electric vehicles, or EVs, and smart grid programs can be important components in the region's transition to low-carbon economies and reduced dependence on fossil fuels. Increasing use of EVs in APEC economies could help advance APEC Leaders' 2010 commitment to help "establish a low-carbon society in which we maintain economic growth while protecting the environment."

The international community is making a concerted effort to prevent technical differences from inhibiting intra-national and international cross-border travel and trade while also addressing the burgeoning needs of the electric vehicle market. Given that EVs are an emerging segment of the regional automotive industry, APEC's focus on EV standards offers a timely opportunity for advancing regulatory cooperation and preventing barriers to trade and investment from occurring. Economies such as the United States, the European Union, China, Japan, and Korea have held numerous exchanges on standards and technical regulations to find common ground, and work is underway in multilateral fora.

The market potential for increased trade among APEC economies in electric vehicles over the next several years is promising, which would facilitate their widespread use. While still relatively new to market, highway capable plug-in vehicles have seen significant sales gains. Some researchers forecast plug-in sales to reach 3.8 million vehicles per year by 2020 with growth of nearly 40 percent annually, versus only 2 percent growth in the automotive sector as a whole (note: growth potential will heavily depend on charging infrastructure). Since manufacturers are adding many additional models to the market in the interim, it is possible for the segment to see significant growth along those lines. In the United States alone, the selection of available highway capable plug-in and electric models available for public sale grew roughly 400 percent in 2012, and manufacturers have announced new models due in the coming years. If divergent EV regulations arise in APEC economies, it could have a significant impact on trade and investment flows in the region, thereby limiting the acceleration of EV use in the region and slowing the transition to low-carbon economies.

2016-2017 Roadmap Activities to Realize the APEC Actions

To realize the APEC Actions on Electric Vehicles, a series of four workshops, beginning in 2016 and

lasting into 2017, will address each of the APEC Actions and consolidate undertakings, capacity building, and next steps – all to be presented to APEC Leaders in 2017 (with an interim report to CTI in 2016).

A key component of the workshops will be the active participation of experts from the Automotive Dialogue, the Energy Working Group, and the Transportation Working Group. These workshops will take into account ongoing "work in existing international fora" to avoid duplication and specifically points to WP.29, ISO, and IEC. Preliminary work and outcomes documents will be circulated to all three groups, with CTI acting as the final endorsing Committee before reporting to Senior Officials and beyond.

The workshops, will include:

Workshop 1: Background on EV operations in the APEC region. Inventory of regulations and standards used in the production and operation of EVs in the region, including a discussion of the benchmarking and gap assessment of standards and regulations. Discussion of the goals of the APEC Actions approved by Leaders in 2014, especially the reduction of regulatory divergence. Identification of technical areas where alignment could be achieved to facilitate trade and investment. (APEC Actions 1, 2, 5)

Workshop 2: Discussion of on-going international efforts to create Global Technical Regulations on EVs, including an update on the UNECE WP 29 1998 Agreement. Avenues toward developing international standards and harmonization, including as the basis for may new regulations pertaining to electric vehicles. Review how to work toward the adoption of aligned approaches to electric vehicle charging and communications. (APEC Actions 3, 4, 6, 7)

Workshop 3: APEC economies to discuss the establishment of an APEC Interoperability Center, with the goal of proposing the creation of the APEC Interoperability Center for endorsement by CTI. Outline key technical areas of interest, exchange information on existing interoperability centers (including at Argonne National Laboratory and the European Commission's Joint Research Centre) and identify opportunities for collaboration. (APEC Action 11)

Workshop 4: Discussion, in coordination with industry, of a list of priority standards for promoting widespread usage of electric vehicles in the region, work which was substantially advanced during the 2014 China host-year. In a second session, this workshop could address EV-specific first responder education and training efforts in support of the safe and energy efficient operation of EVs. (APEC Actions 8, 9)

Timeline

2015

AD2 – Endorse APEC Roadmap for Electric Vehicles

CTI 3 – Endorse the APEC Roadmap for Electric Vehicles

Prior to AMM – circulate Concept Notes for the 2016 APEC EV Workshops

Prior to AMM – Circulate for information the APEC Roadmap to the AD, EWG and TPTWG, including plans for the upcoming workshops.

CTI 1, 2016 – Hold first workshop

CTI 3, 2016 – Hold second workshop

CSOM, 2016 – Interim report on progress made to CTI

CTI 1, 2017 – Hold third workshop

CTI 2, 2017 – Hold fourth workshop

CTI 3 – Draft outcomes report circulated for endorsement

CSOM – Final draft report submitted to SOMs, Roadmap complete