VGI Roadmap Update - CharIN

VGI Roadmap Update Workshop - Technology Needs Panel

Additional submitted attachment is included below.

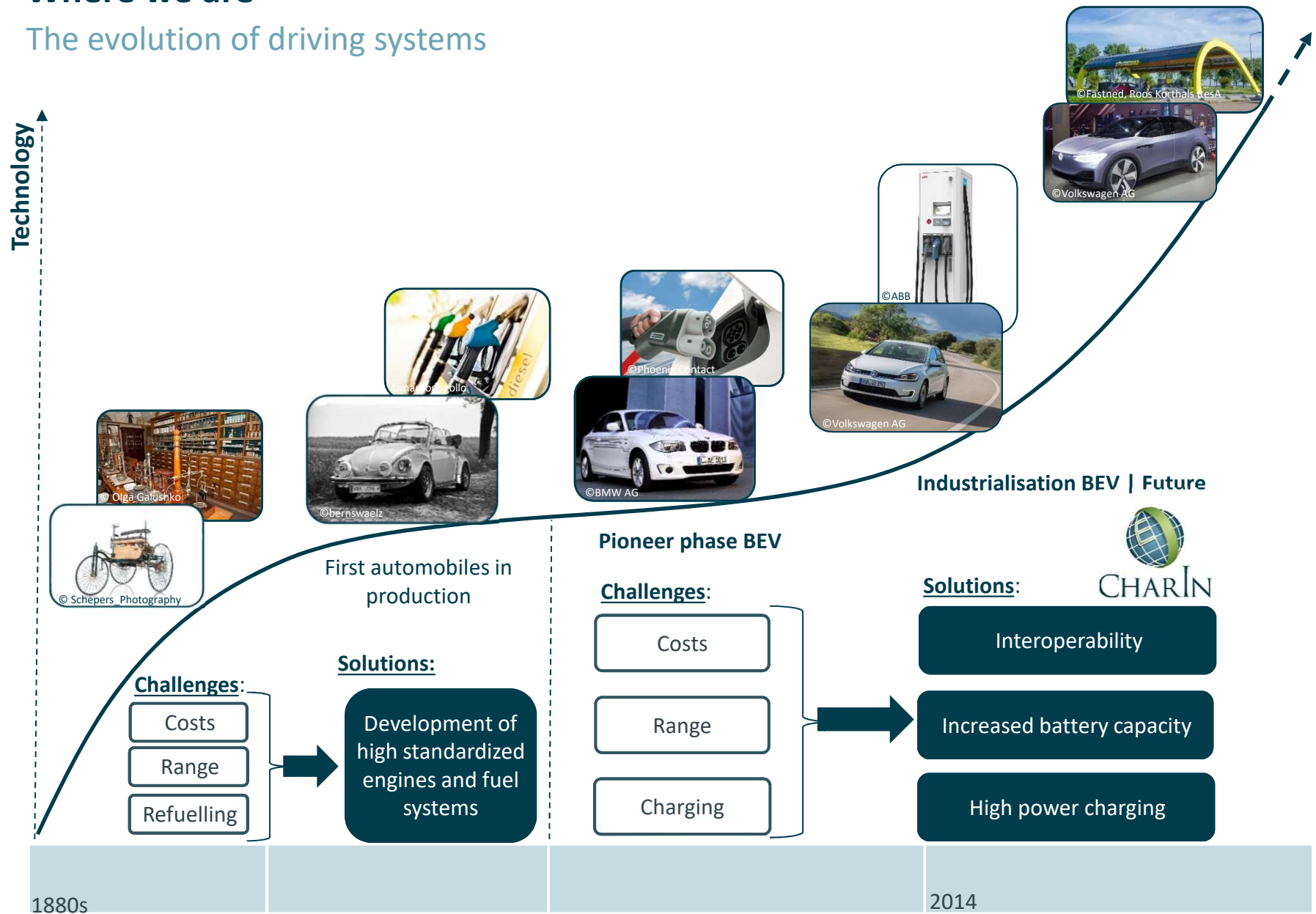# Fostering Global EV Adoption

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Where we are

The evolution of driving systems

Technology →

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©BMW AG

©ABB

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Industrialisation BEV | Future

CharIn

Pioneer phase BEV

First automobiles in production

Challenges:
- Costs
- Range
- Refuelling

Solutions:
Development of high standardized engines and fuel systems

Challenges:
- Costs
- Range
- Charging

Solutions:
- Interoperability
- Increased battery capacity
- High power charging

1880s

2014

CharIN Vision and Mission

The CharIN Vision: Developing and establishing the Combined Charging System (CCS) as *the* global standard for charging battery powered electric vehicles.
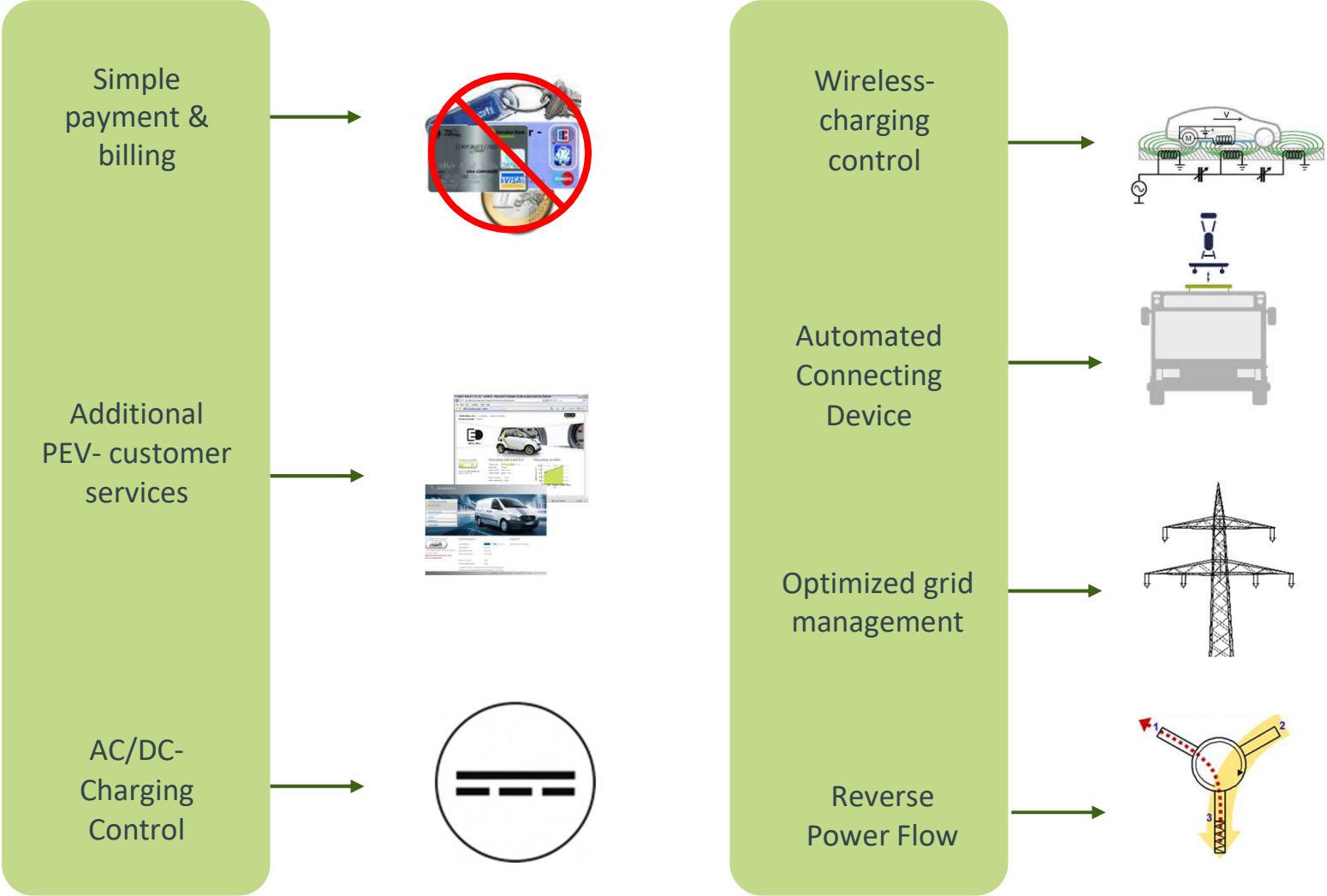
Our mission:

- Expanding the global network by integrating companies on each level of the defined value chain to support and promote CCS
- Drafting requirements to accelerate the evolution of charging related standards
- Defining a certification system for all manufacturers implementing CCS in their products

CCS (ISO/IEC 15118) based Vehicle and Grid Integration

Today's and future use-cases

Simple payment & billing

Additional PEV- customer services

AC/DC- Charging Control

Wireless- charging control

Automated Connecting Device

Optimized grid management

Reverse Power Flow

One communication solution for all charging needs

Wireless communication & extended smart grid support

CharIN
Global Presence

CharIN Head Quarter

Coordination Office Asia

Coordination Office Japan

CharIN North America Spokesperson

Coordination Office Korea

Coordination Office India

16 of the top 20 brands are represented in CharIN

155 members

CharIN association

Our members – currently **155** (total) **1/2**

Core Members

Start of membership: 2019

Core members: 88

CharIN association

Regular Members

Associated Members

Supporters of CharIN

Regular members: 65

Supporters of CharIN: 11

The 1st CharIN North America Conference
March 19th, 2018, Fremont, CA

- One-day conference with panel discussions, exhibition and networking reception

- 25 Speakers

- 125 Participants

- Exhibitors and sponsors: IEEE, ITT Cannon, IoTecha, Vector

- EVs on-site: Lucid Air, BMW i3, Energica motorbike, MB Smart (MBNA, Sumitomo, IoTecha ISO/IEC 15118 PnC live demo)

The 1st CharIN NA CCS and ISO/IEC 15118 Interop Event
September 10th - 13th , 2018, Detroit, MI

- Workshop on September 10th
  - 100+ attendees
- The 9th CCS & ISO / IEC 15118 Testing Symposium September 11th + 12th
  - 8 EVs
  - 10 EVSEs
  - 3 Test Devices
- High-Power Charging for Commercial Vehicles Task Force meeting on September 13th 2018
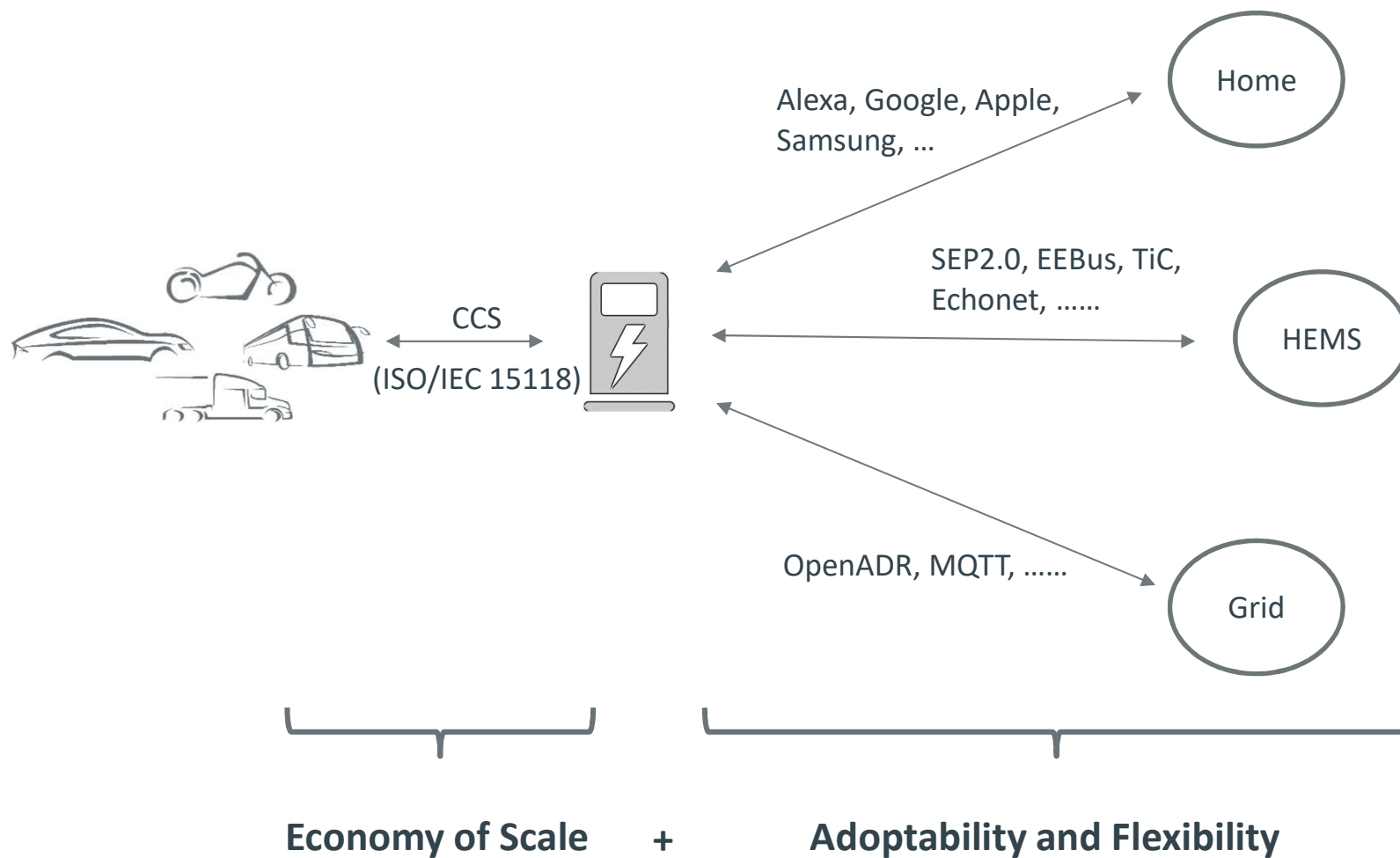 - 40+ participants

The path to a Global Interoperable Ecosystem

- It takes 4 to 6 years and nearly a $1B investment to bring a new vehicle to market

- CCS and ISO/IEC 15118 development has started nearly 10 years ago

- Many OEMs have embraced CCS with ISO/IEC 15118 for EV charging

Automaker	AC	DC	Wireless
BMW	ISO15118	ISO15118	ISO15118
Fiat Chrysler	SEP2.0	ISO15118	ISO15118
Ford	ISO15118	ISO15118	ISO15118
GM	No high level comms	DIN/ISO15118	Telematics
Honda	TBD	DIN/ISO15118	TBD
Lucid	ISO15118	ISO15118	-
Mercedes-Benz	ISO15118	ISO15118	ISO15118
Nissan	Telematics	ChaDeMo	TBD
Porsche	ISO15118	ISO15118	ISO15118
Audi	ISO15118	ISO15118	ISO15118
VW	ISO15118	ISO15118	ISO15118

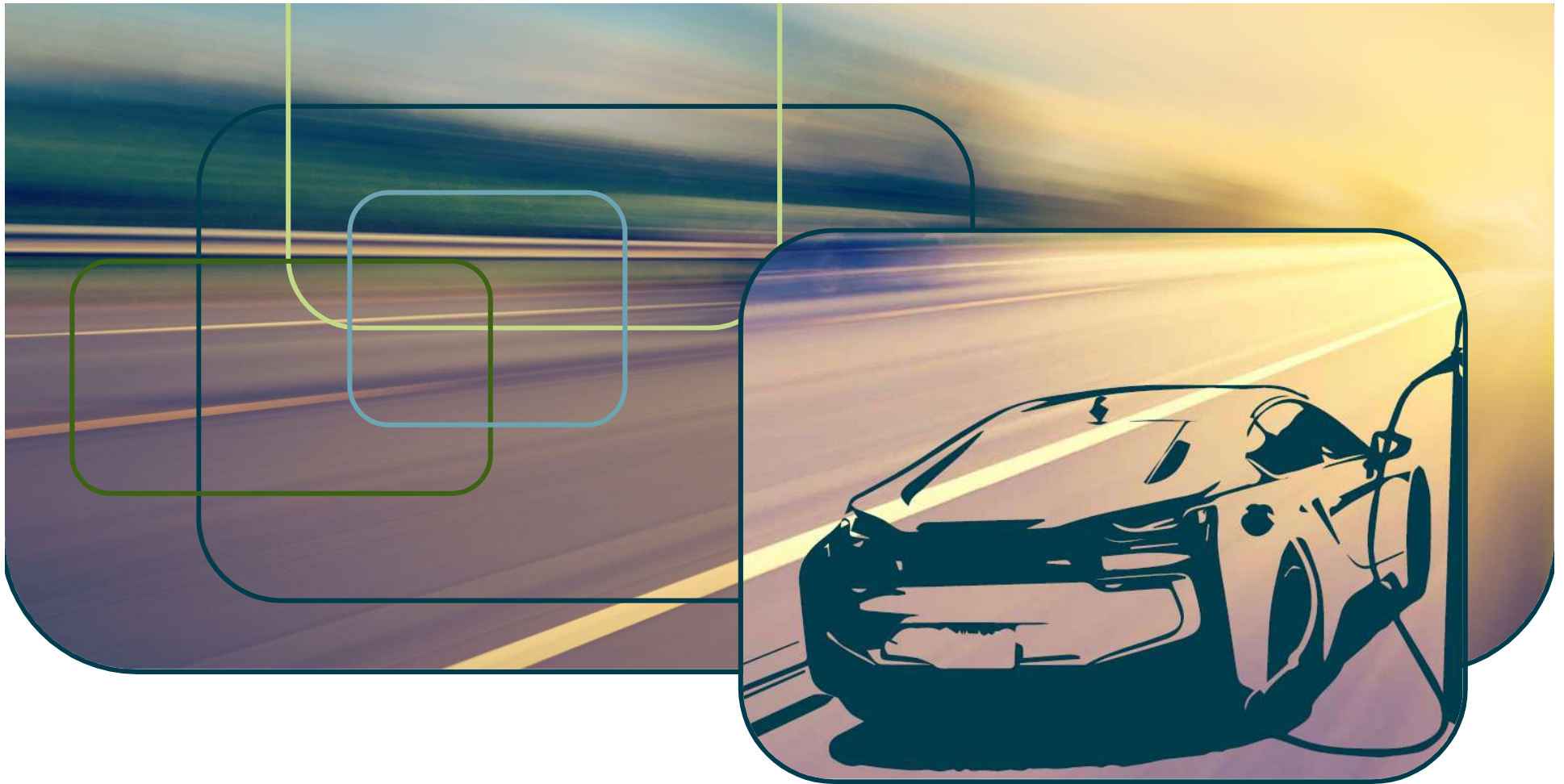Table 1: Overview of Automaker's short to medium term planning
Source: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442455245

What can we do together to accelerate the adoption?

1. Move the focus from the technology selection to market development

2. Promote Interoperability:

   - CharIN is working on organizing NA Interop Events – the Detroit event launched CharIN's ambitious plan to have East and West Coast events every year

   - The next step – let's build it together!

3. Develop EV-friendly Policy

   - What can we do foster the adoption?

4. Offer Consumer and Industry education

   - Seeing is believing – consumer education, industry education , etc.

**For more information, please visit our website at
www.charinev.org**

Thank you for your kind attention!