



EV Charging Patent Portfolio License Briefing*

*This presentation is for information purposes only.

Actual license agreements provide the only definitive and reliable statement of license terms.

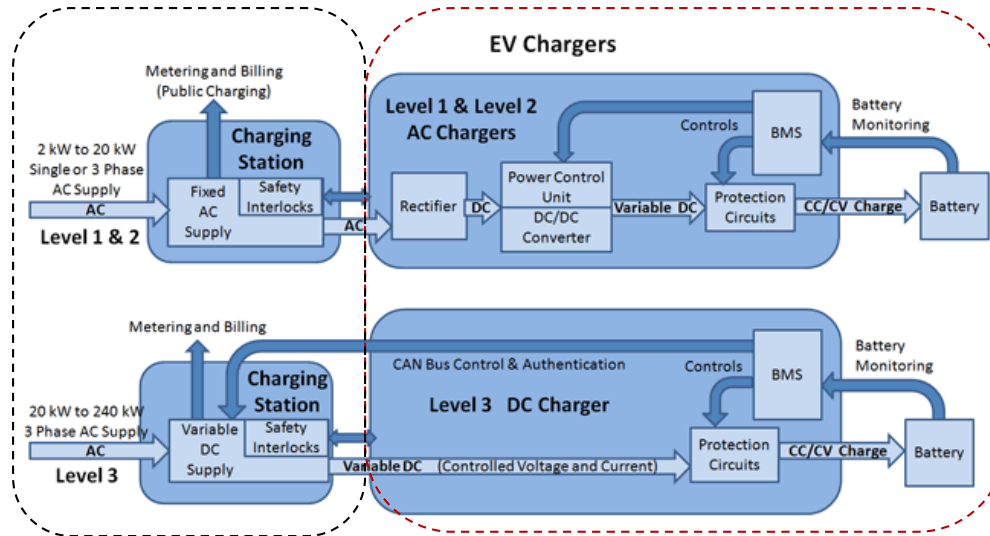
2/03/2020

Objective

- **Electric Vehicle (EV) adoption relies on the wide deployment of interoperable standards-based EV charging infrastructure**
- **The underlying technologies are the result of many inventions owned and developed by many parties**
- **Without easy, affordable access to these important technologies, EV charging suppliers face risk, uncertainty and potential for conflict that will delay market adoption**
- **In response to market demand for an efficient solution, MPEG LA offers users the one-stop convenience of licensing necessary patent rights from multiple patent holders in a single transaction as an alternative to negotiating separate licenses with individual patent owners**

EV Charging Illustration

EV Charging Station (EVSE) Side



Electric Vehicle (EV) Side

Components operate according to a variety of standards specifying requirements for conductive AC and DC charging, connection, communication and safety used in equipment that provides electric charging in and to electric vehicles (slide 4)

EV Charging Standard(s)

- One or more of the standards defined in or incorporated by:
 - A. Combined Charging System 1.0 Specification - CCS 1.0 (Version 1.2.7 (2017-01-26));
 - B. Bharat EV Charging Standards AIS-138 (Part 1 and Part 2);
 - C. CHAdeMO published as IEEE Standard 2030.1.1TM-2015;
 - D. The GB EV Charging Standards including GB 18487.1-2015, GB 20234.1-2015, GB 20234.2-2015, GB 20234.3-2015, GB 27930-2015, Q/GDW 397-2009, Q/GDW 398-2009, Q/GDW 399-2009, Q/GDW 400-2009 and GB/T 18384.3-2015; or
 - E. SAE J1772, IEC 62196-1:2014, IEC 62196-2:2011, IEC 62196-3:2014, IEC 60309, IEC 61851-1 Ed 2.0: 2010, IEC 61851-1 Ed 3.0: 2017, IEC 61851-21:2014, IEC 61851-21:2017, IEC 61851-22, IEC 61851-23:2014, IEC 61851-24:2014, ISO 15118-1:2013, ISO 15118-2:2014, ISO 15118-3:2015, DIN Spec 70121:2014-12, SAE J2847/2, ISO 6469-3, and ISO 17409:2013-09.

The foregoing standards to include all standards referenced to be used in their implementation-whether implemented independently or in combination.

Coverage

- Patents are essential to the EV Charging Standard (slide 4)
- Patents are evaluated for their essentiality by independent patent experts
- Worldwide coverage (including essential counterparts)
- Licensors include all essential patents

Coverage

- Patent List (Attachment 1) to the License is updated regularly
 - <https://www.mpegla.com/programs/ev-charging/patent-list/>
- Coverage from first use by Licensee
- New Licensors and essential patents may be added at no additional royalty during the current term

Current Patent Owners

- GE Hybrid Technologies, LLC
- Mitsubishi Heavy Industries, Ltd.
- Robert Bosch GmbH
- Siemens AG

License Grants and Royalties

- **EV-A - unit that includes EV Charging Equipment capable of receiving AC electric charging via wired connection(s) in a Road Electric Vehicle**
 - US \$20 per unit
- **EV-D - unit that includes EV Charging Equipment capable of receiving (1) DC or (2) DC and AC electric charging via wired connection(s) in a Road Electric Vehicle**
 - US \$50 per unit
- **AC EVSE - equipment capable of providing AC electric charging via wired connection(s) to an EV-A**
 - Type 1 - US \$5 per connection
 - Type 2 - US \$20 per connection
- **DC-A EVSE - equipment capable of providing (1) DC or (2) DC and AC electric charging via wired connection(s) to an EV-A and/or EV-D**
 - US \$50 per connection capable of providing only DC charging
 - US \$20 per connection capable of providing only AC charging
 - US \$50 per connection capable of providing both DC and AC charging where DC and AC charging cannot be provided simultaneously
- **Related Terms**
 - Royalties payable for products from January 1, 2019 forward
 - Includes right to make, use and sell

Term

- **Current term through December 31, 2023**
- **Renewable for successive 5-year periods for the life of any Portfolio patent on reasonable terms and conditions**
- **Rate Protection on Renewal – royalties will not increase by more than 20% at each renewal**

Other Important Provisions

- **Most Favorable royalty rates clause**
- **Licensee data is protected as confidential**
- **Grant-back on essential patents similar in scope to license grants**

