



**CHAdeMO**

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# CHAdeMO in Europe FY2015

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1 June 2016

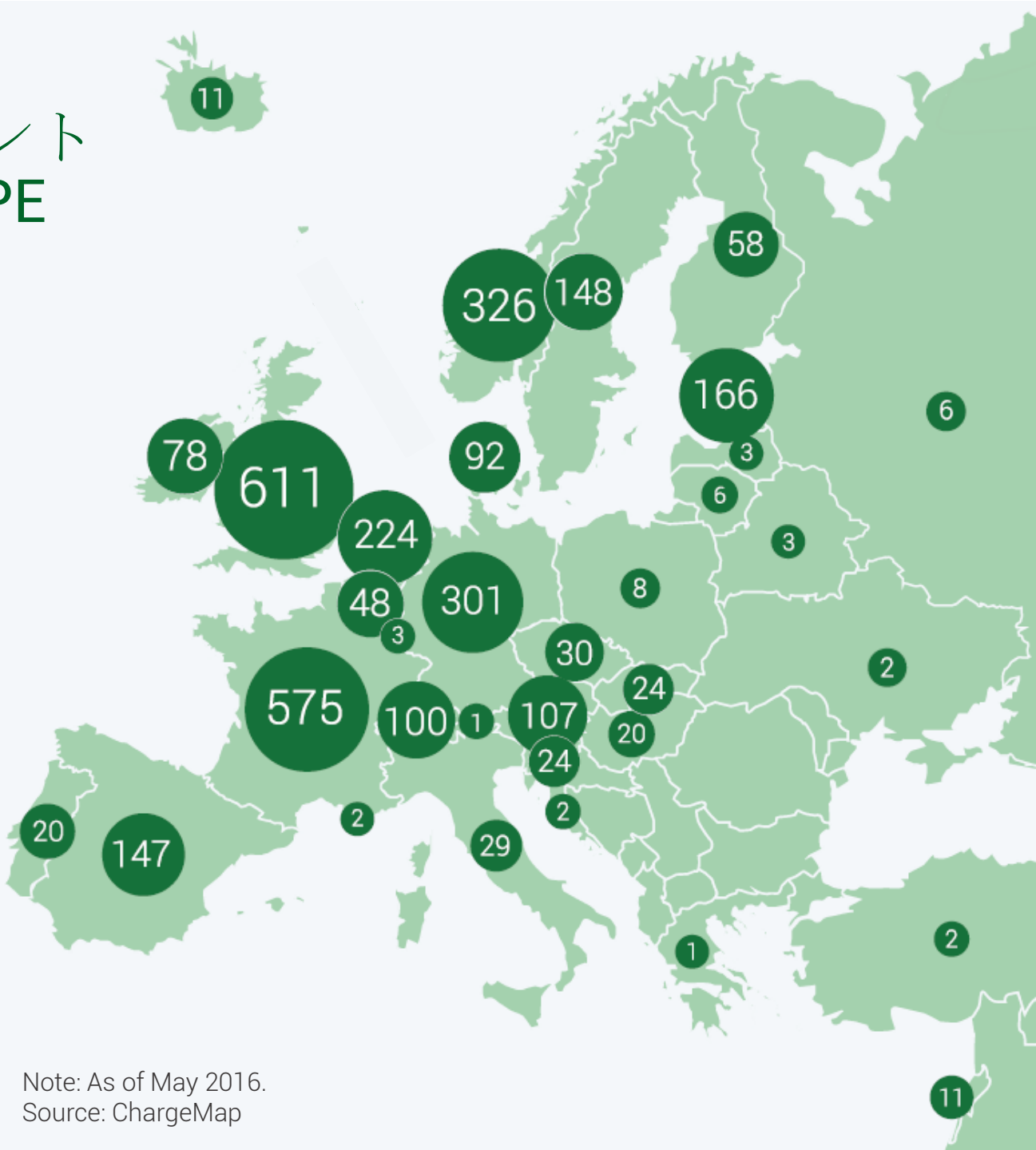
# PRESENTATION PLAN

- ヨーロッパの急速充電器
  - 最新統計
  - 充電器密度
  - マルチ充電器
  - 欧州連合事業
- 欧州事務所活動報告
  - 展示会
  - 会員総会
  - PR

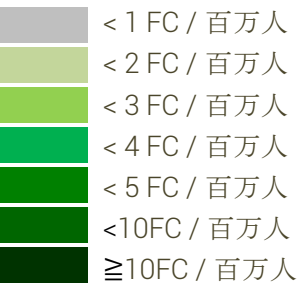


# ヨーロッパのチャデモ充電ポイント CHAdEMO CHARGERS IN EUROPE

3,178  
TOTAL



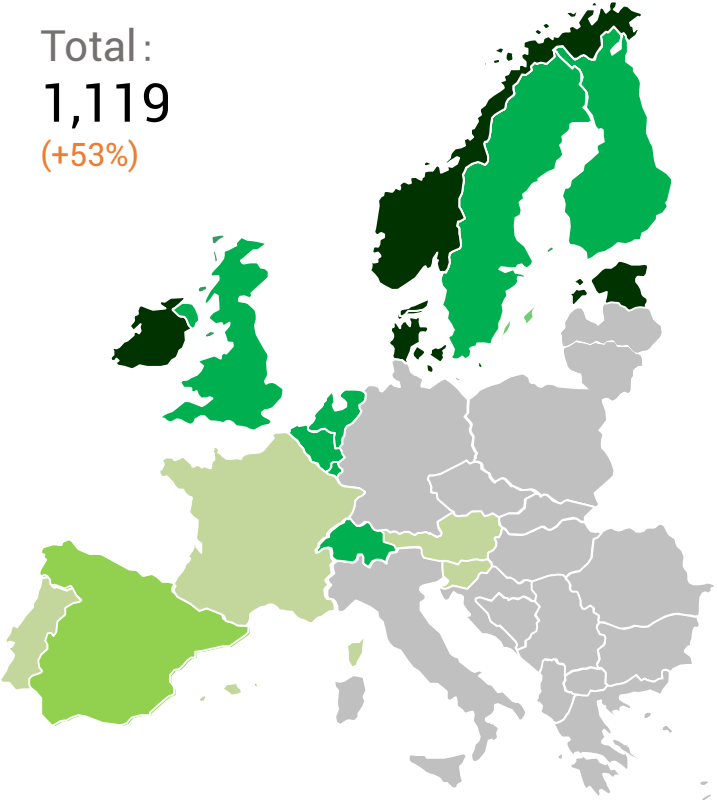
Note: As of May 2016.  
Source: ChargeMap



# 充电器密度 Charger density evolution

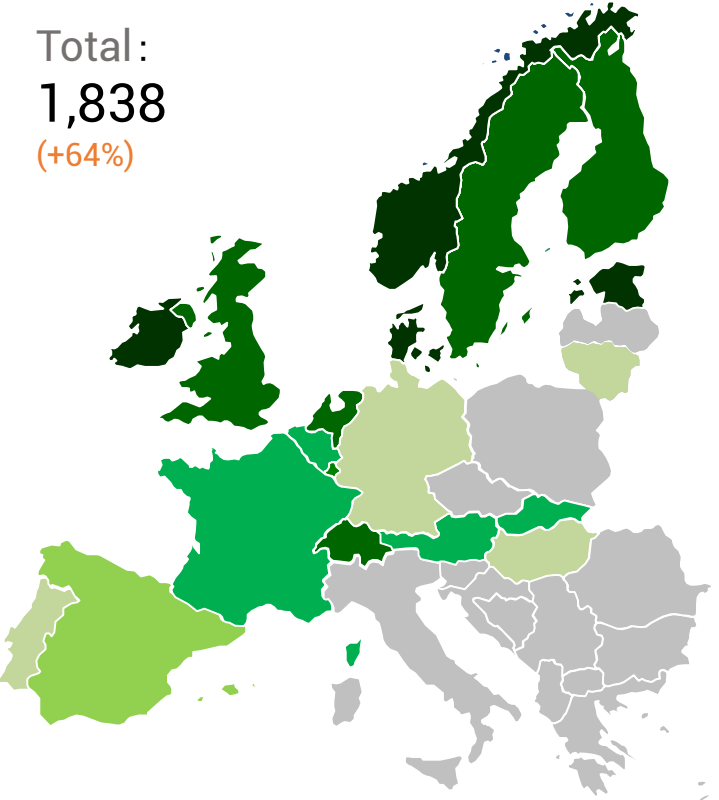
May 2014

Total:  
1,119  
(+53%)



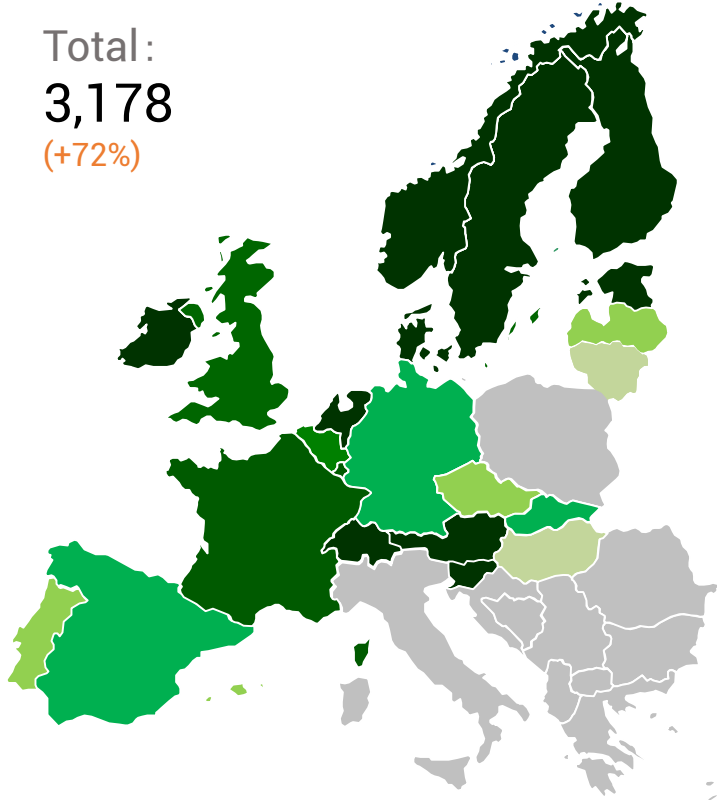
May 2015

Total:  
1,838  
(+64%)



May 2016

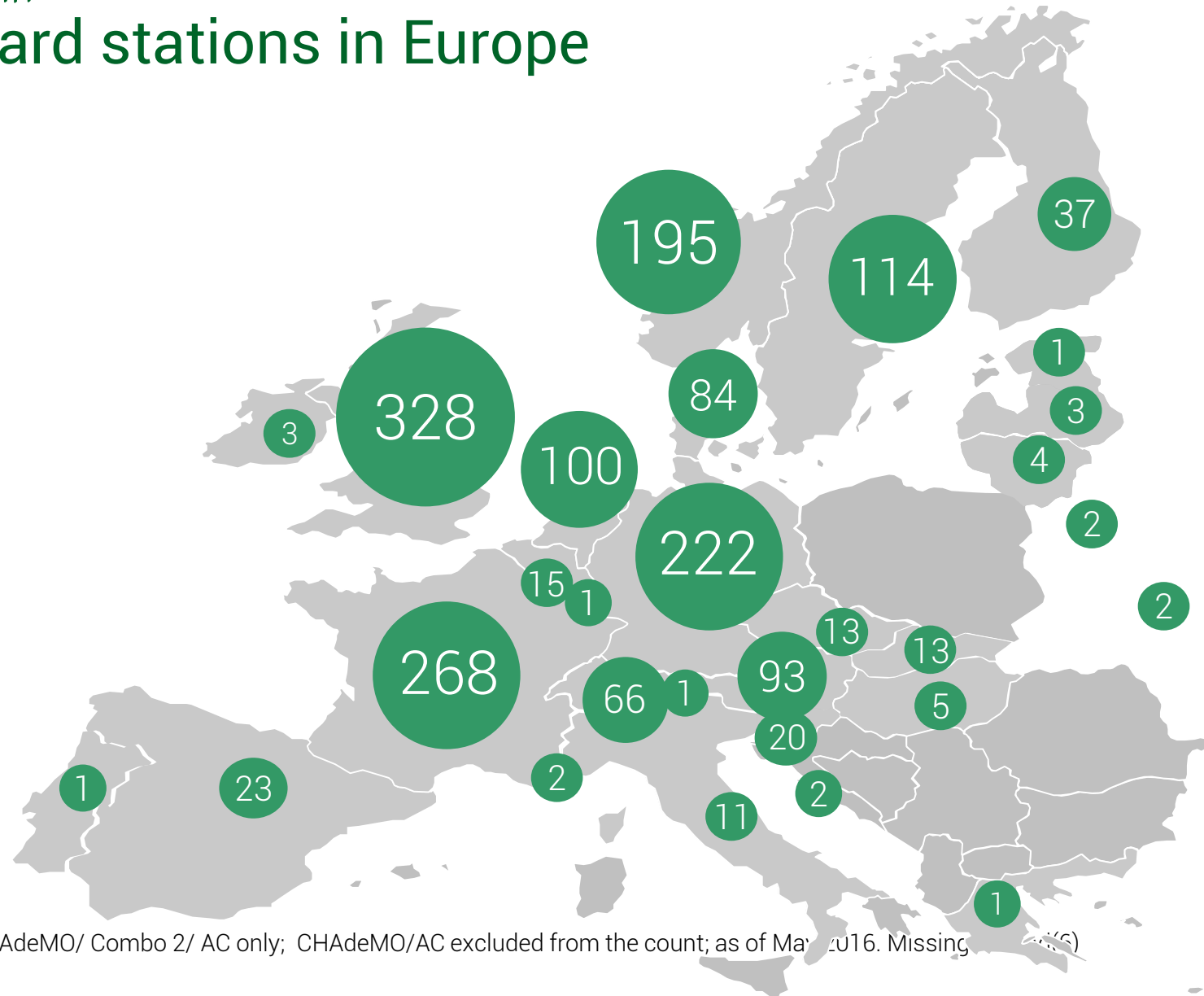
Total:  
3,178  
(+72%)



Note: Missing Iceland and Belarus from the map.

# マルチ充電器 Multi-standard stations in Europe

Total  
1,636



Note: CHAdemo/ Combo 2 and CHAdemo/ Combo 2/ AC only; CHAdemo/AC excluded from the count; as of March 2016. Missing data for (6)  
Source: ChargeMap

# 欧州連合のマルチ事業 The EU projects (TEN-T 2013-2015)

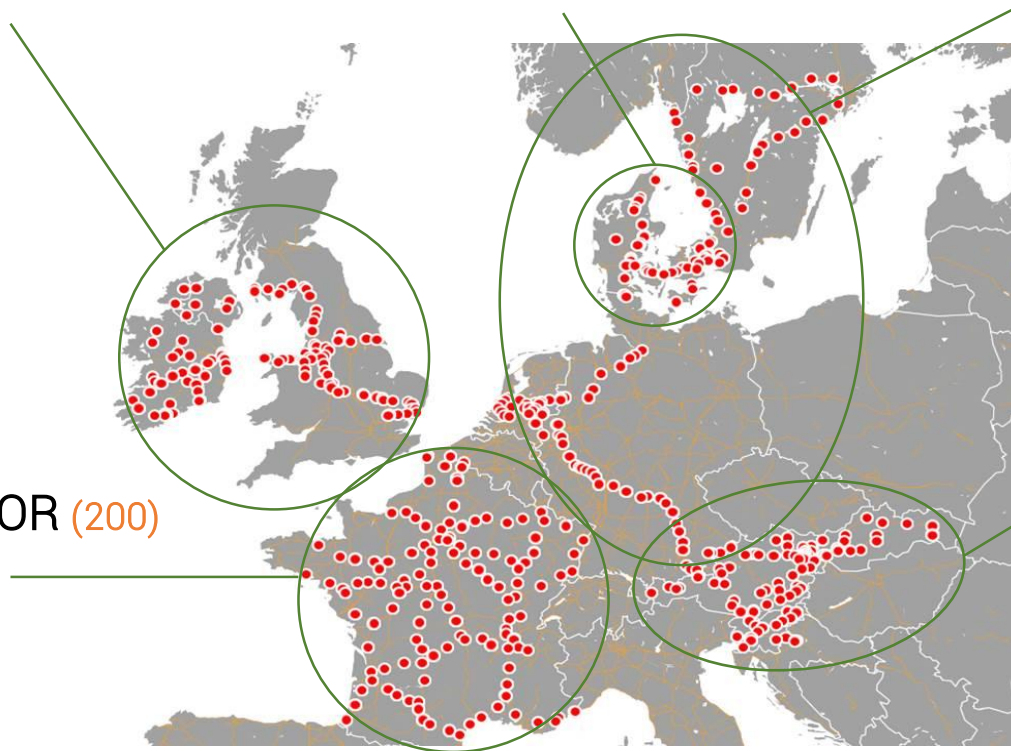
■ RCN (74)  
The UK, Ireland

■ Greening NEAR (53)  
Denmark

■ ELECTRIC (155)  
Sweden, Denmark,  
Germany, The Netherlands

■ CORRI-DOOR (200)  
France

■ CEGC (115)  
Austria, Slovakia, Slovenia,  
Germany, Croatia



Co-financed by the European Union  
Trans-European Transport Network (TEN-T)

欧州指令 Directive  
2014/94/EU  
(前文 Recital 33)

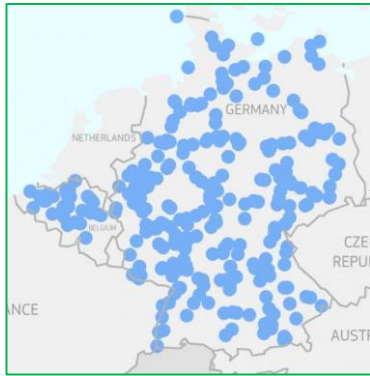
*Interface to charge electric vehicles could include several socket outlets or vehicle connectors as long as one of them complies with the technical specifications set out in this Directive, so as to allow multistandard recharging.*

Total  
multistandard  
chargers

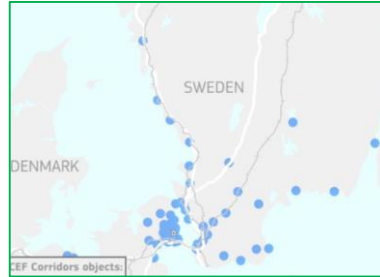
597

# 欧州連合のマルチ事業 The EU projects (CEF 2014-2017)

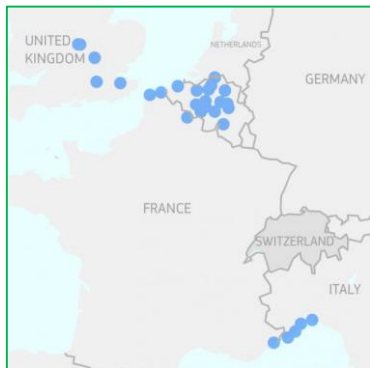
■ **FAST-E DE/BE (278)**  
*Belgium/Germany*



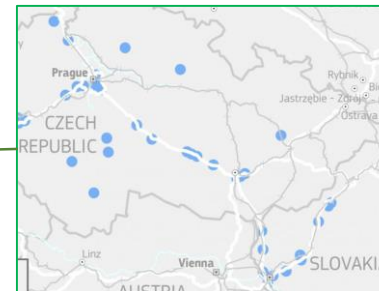
■ **MECOR (120)**  
*Denmark/Sweden*



■ **GREAT (65)**  
*Denmark/Sweden/Germany*



■ **UNITE-E (38)**  
*France/Belgium/Italy/ UK*



■ **FAST-E CZ/SK (29)**  
*Czech Republic/Slovakia*

Total  
multistandard  
chargers

530

# チャデモ共同展示 Mobilitec / Hannover Messe

- ハノーバーHannover, April 2015
- Biggest ever stand 過去最大(85m<sup>2</sup>)
- 9社の共同出展 co-exhibitors





# eCarTec

- ミュンヘン Munich, October 2015
- 80m2 / 9 co-exhibitors
- 2EVs 3 multistandard chargers 2 V2XPCS 1 connector 1 BMS



# 欧州会員総会 Member Meeting 2015:10/20 @ Munich



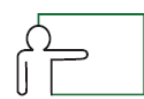
34

Participants AM



54

Participants PM



11

Presentations



4.3

Overall  
satisfaction\*

\*Note: Not at all satisfied = 1, Extremely satisfied = 5. 93% rated 4 or 5 for overall satisfaction.

Sample: 22

# NEW BROCHURE

## CHAdEMO ASSOCIATION & PROTOCOL In a nutshell

### Who we are

We are an e-mobility collaboration platform around CHAdEMO DC charging protocol. As an ecosystem of companies offering CHAdEMO-related products and services we

### What we do

- WE DEVELOP THE PROTOCOL** adapting it to the market needs and our members' requests.
- WE CERTIFY CHARGERS** ensuring compatibility between the infrastructure and the EVs.
- WE PROMOTE FAST CHARGERS** by actively disseminating their benefits and data through various communication channels.

### Protocol

Protocol currently enabling EV charging with power capability of 150kW in preparation. It follows 4 principles:



**SMART READY**  
CHAdEMO is Smart ready through bidirectional charging capability. Also compatible with local or smart functions and charging.

**EASE OF APPLICATION**  
The protocol works with CAN communication, making its integration with the rest of the car that easy and reliable.

**UNIFORMITY**  
CHAdEMO connector is identical across the globe and is a standard plug that can be with or without an AC connector. It saves costs for EV makers and enables crosscontinental EV travels.

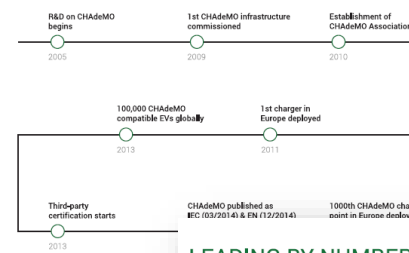


# CHAdEMO

ASSOCIATION & PROTOCOL

MAY 2016

## DECADE LONG ELECTRIC JOURNEY and planning for higher power



## LEADING BY NUMBERS

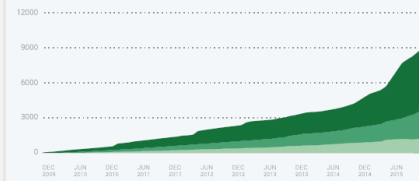
**1** The largest global installation base

CHAdEMO equipped chargers are the most popular EV fast charging infrastructure choice in the world.

**50** COUNTRIES ON 5 CONTINENTS HAVE CHAdEMO CHARGERS

**11500** CHAdEMO CHARGE POINTS ARE AVAILABLE TO EV DRIVERS GLOBALLY

### CHAdEMO charge point evolution



## STANDARDISED AND CERTIFIED A European and international standard

Confirming its global relevance, CHAdEMO has been published as various international standards by IEC, CENELEC (Europe) and IEEE (US).



The European Union recognises the importance of CHAdEMO by explicitly endorsing multi-standard chargers in its directive on the deployment of alternative fuels infrastructure.

Interface to charge electric vehicles could include several socket outlets or vehicle connectors as long as one of them complies with the technical specifications set out in this Directive, so as to allow multistandard recharging.

Renal 33, Directive 2014/94/EU

### Unique DC charging certification system

One of its kind dedicated to DC charging for EVs, the impartial and transparent process enables any company to build, certify and sell CHAdEMO devices. CHAdEMO certified means the charger conforms to the highest safety standards mandated by CHAdEMO and is fully compatible with all CHAdEMO EVs.

**220** CHARGER MODELS HAVE BEEN CERTIFIED TO DATE

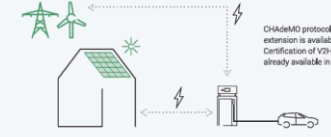


**5** THIRD PARTY CERTIFICATION BODIES ARE AUTHORISED TO CERTIFY CHAdEMO CHARGERS



**V2H/L** 1ST IN THE WORLD CERTIFICATION OF DC "VEHICLE TO HOME" AND "VEHICLE TO LOAD" DEVICES

## SPECIAL FOCUS Vehicle to X (V2X) already a reality at CHAdEMO



CHAdEMO protocol detailing V2X extension is available to Members. Certification of V2X/L chargers is already available in Japan.

A crucial element for a switch to renewables, V2X technology enables using EVs as both vehicles and portable batteries. With V2X devices, EVs can store energy from home PV panels to use later or feed to the grid and help balance the energy supply, all the while providing financial benefits to the EV owner. Currently, CHAdEMO EVs are the only mass-produced and marketed cars capable of V2X.

Gridwide revenue from V2G frequency regulation will grow from less than \$500,000 annually in 2013 to \$195.7 million by 2022.

Navistar Research

### CHAdEMO V2X products



**ALL** TOP DC CHARGER MANUFACTURERS ARE CHAdEMO MEMBERS

83



**50** COMPANIES PRODUCE CHAdEMO CHARGERS

83



First generation CHAdEMO chargers hit global roads in 2010. Since then, the portfolio of certified chargers increased to 220. All leading charger manufacturers as well as a broad range of SMEs providing fast charging infrastructure are our members, testimony to the Association's reach and global recognition.

### CHAdEMO chargers



And more...



Note: new brochure can be downloaded/viewed from: [http://www.chademo.com/wp/wp-content/uploads/2016/04/brochure\\_04.2016.compressed.pdf](http://www.chademo.com/wp/wp-content/uploads/2016/04/brochure_04.2016.compressed.pdf)

# PR/COMMUNICATION



Powered


**NEWSLETTER #3**  
July 2015

Dear CHAdEMO member,

Summer is finally here and, with all the e-mobility events that are happening in June, we can really feel the heat! You will actually see it in the newsletter - we prepared a lot of important updates and news for you. Without further delay, in this 3rd issue of CHAdEMO Europe 2015 newsletter we talk about:



**CHAdEMO numbers continue to grow**

While still a niche, fast charging market continues to grow - and a last year's over 100% growth of CHAdEMO charge points globally, from 3,740 to 8,549, is a testimony to that. Europe has just reached 1838, i.e. a 50% growth compared to 2014, Japan almost doubled its fast charging infrastructure reaching 5418 last month and the US saw 400 new chargers being added to their count since June 2014.

**Interview**

CHAdEMO's representative **Tomoko Diech** interviewed on **Electricrive.com**, a leading e-mobility industry news provider, has interviewed Tomoko Diech, CHAdEMO's European representative, during Hannover Messe. Watch the video to find out what she has to say about the infrastructure developments in Europe and Germany!

**Events**

**Last chance! Join CHAdEMO booth at eCarTec Munich 2015, 20-23 October 2015**

Once again we are exhibiting at eCarTec, the biggest e-mobility faire in Europe. With 5 charger and 1 connector manufacturers and 2 car manufacturers we have secured an **80sqm booth** which is as big as our booth at Hannover Messe this year. Our booth will be in a very attractive location, along the main

**Information**



**29/02/2016**  
**CHAdEMO PUBLISHED AS IEEE STANDARD**



CHAdEMO, the most widely deployed DC fast charging protocol in the world and already an IEC/EN standard, has gained another formal recognition last month as it was published as IEEE Standard 2030.1.1TM-2016, following the draft approval by the IEEE Standards Association Board in September 2015.

With an active portfolio of nearly 1,800 standards and projects under development, IEEE Standards Association is a leading developer of industry standards in a broad range of technologies, not just in the automotive sector.

IEEE Standard 2030.1.1TM-2016 is provided to assist developers for the reason of necessary interoperability and defines requirements for the designs of electric vehicles (EV) and DC fast chargers that promote efficient and rapid charging between EVs and chargers. The standard specifies the collaborative actions between EVs and fast chargers, referencing relevant international specifications including SAE Combo.

More concretely, Annex A of IEEE Standard 2030.1.1TM-2016 contains CHAdEMO specifications up to version 1.0.1, Amendment 1. This annex A gives detailed specifications for charging station and vehicle manufacturers, which conform to Annex AA of IEC 61851-23 and Annex A of IEC 61851-24. The detailed specifications include design and performance requirements not found in the IEC standards.

CHAdEMO as IEC standard was published in 2014, following which CENELEC, the European standardization organization, recognized CHAdEMO as EN standard the same year. This latest publication marks another milestone in CHAdEMO's standardisation effort, which has been one of the pillars of the work of the Association.

"We are delighted to have received an official recognition by IEEE, the world's largest technical professional association," Dave Yoshida, CHAdEMO Association's Secretary General, said. "With this US-based standard, CHAdEMO is now endorsed in the biggest EV market in the world, following the EN standards for Europe and the JIS standards for Japan. CHAdEMO shall continue to support EV expansion from the infrastructure side, in close collaboration with our Members and other e-mobility stakeholders."

Headquartered in the U.S.A., IEEE (Institute of Electrical and Electronics Engineers) is the technical professional association "dedicated to advancing technology for the benefit of humankind." IEEE Standards Association is the globally recognized standards-setting body within IEEE, which develops consensus standards through an open process that engages industry and brings together a broad community.

For more information, please contact: CHAdEMO Association Europe, [www.chademmo.com/en](http://www.chademmo.com/en)

**CHAdEMO ver.1.0 Certified Chargers**

1.0 chargers are certified interoperability, safety and quality based on CHAdEMO standard specification.






NIPPON STEEL & SUMIKIN TEXENG   
 ABB(Switzerland)   
 Shindengen Electric   
 Kyuden Technosystems Corporation

**10.000 CHAdEMO CHARGE POINTS** IN NUMBERS




**65%**

OF ALL DC FAST CHARGE POINTS FOR EVs IN THE WORLD ARE CHAdEMO

**50**

COUNTRIES ON 5 CONTINENTS HAVE CHAdEMO CHARGERS

**CHAdEMO BY CONTINENT**

1400    2755    5974

**CHAdEMO CERTIFICATION**

**50**

MANUFACTURERS PRODUCE CERTIFIED CHARGERS

**220**

CHARGER MODELS HAVE BEEN CERTIFIED SO FAR

**EVs BY FAST CHARGING INLET GLOBALLY**

**50%**

CHAdEMO

**13%** TESLA

**7%** CCS

**9%** OTHER FC

**21%** NO FAST CHARGE

386,000

2010-2014