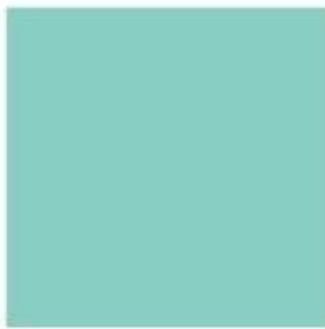




CHAdemo



2019 Activity Report

(1 April 2019 ~ 31 March 2020)



CHAdemo Association

President's address

First and foremost, I would like to thank all of our member companies and organisations, without whose continued support and engagement it would not have been possible for the Association to achieve its acclaimed results, including the publication of CHAdeMO as international standards, deployment of over 32,000 charge points in 86 countries and certification of more than 100 charger models, the fruit of CHAdeMO Association's strength of cross-sectorial collaboration.



Since its inception in 2010, throughout the last decade CHAdeMO Association has been leading the development of DC fast charging technology on a global scale, through which it has promoted e-mobility and consequently contributed to the reduction of GHG emissions from the transportation sector. Nonetheless, our journey towards the goal of accelerating the realisation of e-mobility globally through ensuring safe, affordable and timely charging to all EVs has only just begun. In 2019, many natural disasters, such as droughts, floods and cyclones, affected different parts of the world. In Japan, EVs' potential as an emergency power source was acknowledged in regions suffering from long-lasting power outages, thanks to our vehicle and charger manufacturer members' immediate assistance to the affected areas, through ensuring V2L power supply. As an increasing number of local governments are preparing business continuity plans (BCP), I would be delighted if CHAdeMO members could help in these efforts so that our technology could be part of plans to support countries and regions that are prone to natural catastrophes and help enhance their resilience and preparedness.

In terms of planned activities for FY2020, we will continue the work to complete the standard line-up for all categories of vehicles, ranging from ultra-compact to heavy-duty. The technical specifications for the development of the charging standard for light electric vehicles, including two-wheelers, are expected to be published in FY2020. For the ChaoJi protocol, being developed within the framework of Japan-China collaboration, the draft protocol has been agreed upon and we have entered the demonstration phase. Finally, there is a growing need for bi-directional charging functionality, the domain in which CHAdeMO is leading innovation, especially in some parts of Europe and the U.S.A., where the integration of renewable energy sources is advanced. The Association is hence pushing ahead with the globalisation of the specification, including the seamless

integration of CHAdeMO in smart grid communications.

For CHAdeMO Association, the most important value in its technical development work is the interest and convenience of the EV users around the world. Therefore, we are committed to continuing cooperation with China, Europe and the Americas, as well as with Asian countries, where the market will grow, and carrying out our activities based on a spirit of mutual understanding and respect.

Despite the severity of the situation the world is facing today due to COVID-19, we are convinced that we can overcome the difficulties with help from our members. Thank you in advance for your continued support for CHAdeMO.

Mr Takafumi Anegawa

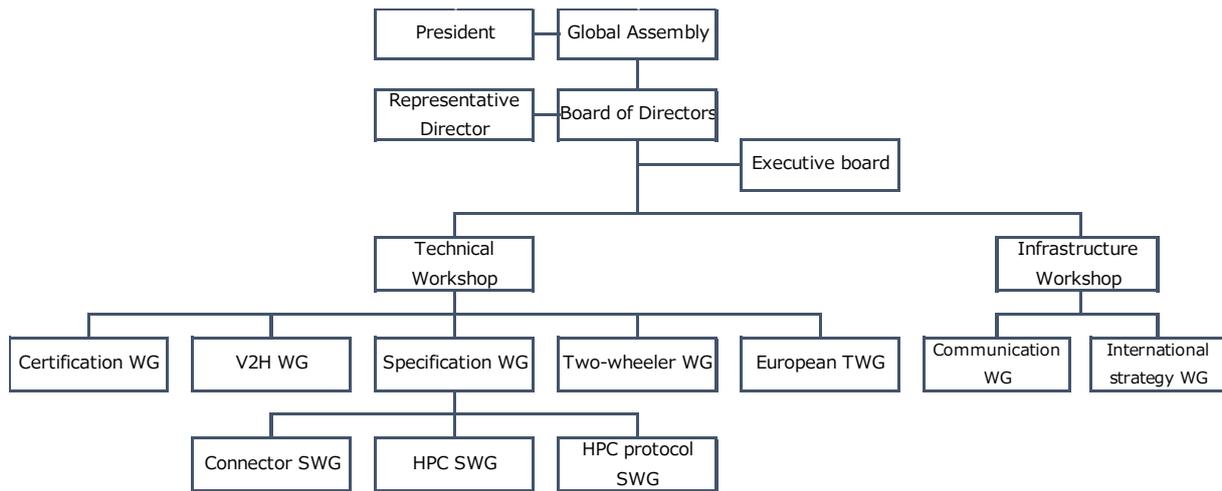
President

Technical Working Group (WG)

During FY2019, CHAdeMO's Technical WG activities were carried forward by 5 WGs and 4 small working groups, or SWGs. In terms of standards development, three projects ran in parallel: ChaoJi, the next-generation charging protocol, by the High Power Charging SWG; low-voltage standards for small vehicles and two-wheelers by the Two-Wheeler WG; and bi-directional charging applicable to the global market by the V2H WG. As per the base technology across all standards, charging cables and couplers are evaluated and developed by the Connector SWG, while the certification operation management and protocol certification technical support are provided by the Certification WG.

The Japan-China co-development of ChaoJi that started last year is advancing well. In July 2019, on the occasion of the third Japan-China Technical Exchange, the first International ChaoJi Technical Meeting was held in Tokyo, bringing together all project participants from both sides.

In addition, two ad-hoc WGs were set up to evaluate specific themes: the first was the Short-circuit Current ad-hoc WG that aimed to evaluate safety during a fault, which is an issue that cuts across the permanent WGs; the second was the HPC Protocol SWG to discuss the future communication protocol for ChaoJi. The results of this group's evaluation on functional requirements, backward compatibility and technical trends were reported at the Japan-China Technical Exchange meeting in March.



Specification WG

As the revision work for CHAdeMO specification documents had terminated with the publication of CHAdeMO 2.0 during the last fiscal year, the WG worked on corrections of circuit requirements to adapt to the current status as well as aligning the protocol with the IEC standard, which led to the publication of version 2.0.1 in November.

High Power Charging SWG

The High-Power SWG continues its work on the ChaoJi co-development project with China. In addition to the monthly SWG meetings, the Team hosted five on-line meetings for the overseas members to keep them updated on the development.

The third Japan-China Technical Exchange meeting took place at the TEPCO Research Institute on 17-18 July. 41 participants from China and Japan discussed technical issues and observed demonstrations of electric vehicles, V2H systems and high-power charging. On 19 July, the first ChaoJi International Meeting was held in Tokyo with the IEC experts and other extended members. 60 participants from Europe and Asia exchanged ideas on the next steps in ChaoJi development and agreed to create three WGs to evaluate specific technical domains: WG1 on connectors and adapters, WG2 on system safety and WG3 on communications and backward compatibility. The creation of SWG1-1 on ACD (Automatic Connection Device) was later proposed and adopted by WG1.



EV demonstration at TEPCO Research Institute on 2019.7.18



First ChaoJi International Meeting on 2019.7.19

Along with the standards development, prototype models of liquid-cooled connectors, inlets and adapters were built in FY2019. The system evaluation tests for the interface were successfully conducted at UL's Kashima EMC Testing Laboratory during 3-7 February and a demonstration to share the results with CHAdeMO members was held on the last day.



ChaoJi charging demo @ UL Kashima 2020.2.6

HPC Protocol SWG

The HPC Protocol SWG was created to discuss the future communication protocol for the ChaoJi Standard. Chaired by Subaru, the SWG evaluated communication options from various perspectives, including functional requirements (use cases), performance, technology trends and compatibility with the current standard, through five meetings during the second half of the year. The Team, comprising 15 companies, selected in the end a communication protocol based on TCP/IP and proposed it, together with a transition plan from the current standard, at the Japan-China Technical Exchange meeting.

Connector SWG

The Connector SWG deals with the technical evaluation of cables and connectors, which are the basis of multiple related standards being developed by CHAdeMO. In FY2019, their modification proposal for the ChaoJi coupler, based on the mechanical strength test results, was adopted. The SWG also worked on the revision of relevant IEC standards and reported the evaluation results of the connector performance standard for two-wheelers, as well as those of the short-circuit current review.

V2H WG

In FY2019, CHAdeMO's V2H WG discussed the creation of V2H Guidelines and Certification Standards for global markets and launched an ad-hoc voluntary group to

evaluate vehicles which surpass the conventional short-circuit current standard value. Performance evaluation work for existing parts was completed thanks to strong collaboration among the parties concerned and a revised version will be published shortly.

Short-circuit Current Ad-hoc WG

CHAdeMO standard specifications prescribed the maximum short-circuit current at the vehicle inlet end to be 10kA for protection functions in the case of small-diameter cables. However, with the trend of increasing battery capacity, there are new vehicles that surpass this conventional value, which led to a proposal to evaluate the necessity of reviewing the safety standards currently in place and, should additional safety measures be needed, to assess whether revision of the interface specifications will be needed.

As an evaluation of this kind cuts across multiple permanent WGs, an ad-hoc voluntary WG to specifically focus on this matter was set up in September 2019. Chaired by Nissan, 18 companies across various industry sectors participated to re-evaluate the performance of existing parts and assess the validity of the new threshold. The WG expects to present its conclusions with verification test results at an early stage of FY2020.

Two-Wheeler WG

The Two-Wheeler WG works on the specifications for small electric vehicles and has met on a monthly basis since its creation in FY2018. The specification and testing documents should be published in FY2020. Development of the certification system is also planned for shortly after in order to facilitate the market launch and global deployment.

IEC Standardisation Activities

The IEC's revision work for DC charging standards started at TC69 MT5 in 2014, the year 61851-23/-24 were published. On top of the initial objective of setting the testing standards, new items were added, such as higher power charging, multi-connector charging requirements and bi-directional charging functionality, as seen in the past revisions of the CHAdeMO standard. The revised versions are expected to be published in 2020.

IEEE Standardisation Activities

In the United States, upon the publication of CHAdeMO-compliant DC charging standard IEEE 2030.1.1, a project aiming at creating an improved set of certification criteria that incorporate the CHAdeMO certification test was created and its Conformity Assessment Steering Committee (CASC) kicked off the work to integrate CHAdeMO's expanded functionalities (high-power charging, V2H).

Through the CASC activities, FY2019 saw the publication of TSS, Test Suite Specification ver. 1.0, which not only covers IEEE 2030.1.1-2015 but also the updated specifications up to 400A to cater to the high-power charging need in the market. The drafting work for the revision of IEEE 2030.1.1-2015 started in the second half of FY2019, in preparation for full-swing discussions in FY2020.

EVs in action for post-disaster recovery

In September 2019, Typhoon No. 15, the most powerful typhoon on record in the Kanto Region in Japan, inflicted extensive damage to various areas of Japan. In the Chiba Prefecture, which was in the typhoon’s path, blackouts continued for a long period of time in multiple dotted zones because both damage to the power system and traffic interruptions caused delays in the recovery work. In response to a request from TEPCO, CHAdeMO member companies Toyota, Nissan, Mitsubishi and Nichicon provided EVs, PHEVs and V2L devices, which supplied the needed power to help support the post-disaster recovery work and people’s daily lives at places like public facilities and nurseries.



Public Affairs and Communications

RJC Special Awards

CHAdeMO was selected as the 2020 Special Award laureate by the Automotive Researchers' and Journalists' Conference of Japan for its achievements in globally deploying charging infrastructure and for having proposed CHAdeMO, a Japanese protocol and the first mover in the industry, to be recognised as an international DC fast charging standard.

At the award ceremony, held in Tokyo on 16 December, CHAdeMO’s President, Mr Anegawa, and Secretary-General, Mr Yoshida, received the award together. The President expressed his gratitude to the jury for the award and to all the Association Members, both domestic and overseas, for the continued support they have provided over the last decade to realise the Association’s mission of advancing e-mobility by

promoting the deployment of EV charging infrastructure around the world. He also thanked journalists who had agreed that EV charging infrastructure should be eligible for the special award along with cars, which they typically present the award for.



Member Meeting 2019

Marking 10 years since the foundation of CHAdeMO Association, the Constituent Members' meeting was organised at the Cerulean Tower Tokyu Hotel in Tokyo, on 30 May, and was attended by 255 participants representing 115 entities. The Members approved the handover of the presidency from Mr Shiga (Nissan) to Mr Anegawa (TEPCO Research Institute at Tokyo Electric Power Company Holdings). The former President, Mr Shiga, expressed his gratitude for the rapid progress made in the deployment of charging stations and the international standardisation of the CHAdeMO protocol.

Mr Ishikawa, Director of the Electric Vehicle and Advanced Technology Office of the Japanese Ministry of Economy, Trade and Industry (METI), gave the keynote lecture and presented the government's plan, which aims at preserving the competitiveness of the automotive industry. He also explained the expected structural changes surrounding vehicles in the coming years. Mr Anegawa then presented CHAdeMO's achievements for the last decade and the future perspectives.

Newly appointed board members were also introduced. Furthermore, the attendees appreciated the prototype of the ChaoJi connector and CHAdeMO products developed by 10 member companies, displayed at the venue.



Technical assistance in infrastructure development for Asian countries

Secretary-General, Mr Yoshida, presented CHAdeMO's activities at the World New Energy Vehicle Congress held in July at the island province of Hainan in China, the partner in the ongoing ChaoJi Project. This event was organised by China EV100, the most powerful organisation within the Chinese EV industry, and participants reported on V2X projects taking place across China and various new technology areas such as automated driving. As part of the Japanese delegation including METI and NEDO (New Energy and Industrial Technology Development Organization), Mr Hashimoto, the representative of CHAdeMO's India office, participated in the Japan-India Policy Dialogue on Automobiles. The Indian government values CHAdeMO's V2X technology as an effective solution which can ensure a stable energy supply and expressed its great interest in the ChaoJi project in terms of charger standard harmonisation. Furthermore, there are an increasing number of Indian companies join CHAdeMO.

Mr Horie, who is in charge of the CHAdeMO Communication Working Group, participated in the Japan-Indonesia Policy Dialogue on Automobiles held on 13 December. He gave a presentation explaining how CHAdeMO's V2X can be utilised as a solution for resilience against natural disasters and highlighted the importance of managing the electric power grid on a regional basis given Indonesia's geographical specificities as an island country. There are currently debates on the Public Charging Network Deployment Project in Indonesia and the Association, in collaboration with the Japanese government and the Japan Automobile Manufacturers Association (JAMA), continues its efforts to promote CHAdeMO.

German-Japanese bilateral discussion on next-gen chargers

Since 2016, the governments of Japan and Germany have been undertaking bilateral discussions on next-generation charging standards and CHAdeMO's Secretary General, Mr Yoshida, attended the meeting held in February 2020 in Frankfurt, Germany along with the governments and other industry representatives. The discussion focused on how to harmonise the existing standards in the future, while ensuring backward compatibility. Japan and Germany are currently drafting a memorandum in which they will agree to cooperate and collaborate for future harmonisation.

Special measures for the deployment of ultra-high-power chargers

A working group was established within Japan's Fire and Disaster Management Agency in July 2019. The Group is mandated to assess the safety level of CHAdeMO's ultra-fast chargers over 50kW and to define the special measures to be stipulated in the Fire Prevention Ordinance. On behalf of the Association, Mr Yoshida submitted to the Group technical data collected through the cooperation of the member charger manufacturers. The working group assessed the risks related to the higher power chargers, including models with built-in storage battery, and concluded to apply the same measures as for chargers up to 50kW, not creating specific measures for those over 50kW.

Press release:

<https://www.fdma.go.jp/pressrelease/#anchor--01> (Japanese only)

Report and the summary minutes:

https://www.fdma.go.jp/singi_kento/kento/post-46.html (Japanese only)

Infrastructure Workshops

The 33rd Infrastructure Workshop was held on 15 November at TEPCO's Electric Power Historical Museum in Yokohama. "E-Mobility Power", a charging service provider founded last August, presented its strategy of making an upfront investment as a countermeasure to address potential users' concerns and adding social value, such as BCP and renewable energy, to charging stations. In terms of technical development case studies, two presentations on electric buses and a report from the Two-Wheeler Working Group were delivered. The workshop perfectly embodied CHAdeMO's current strategic orientation, "standards for all categories of vehicles". All in all, the workshop was very fruitful with presentations covering 9 different themes and attracting 214 enthusiastic participants, who were highly engaged throughout the workshop.





CHAdEMO EU Office Report

Celebrating 10 years of in-market experience

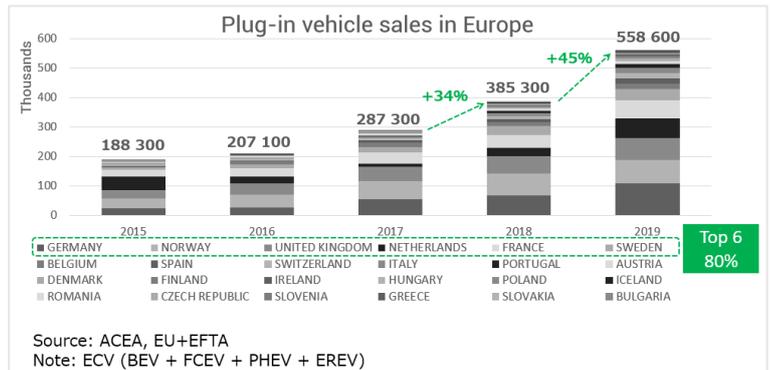
CHAdEMO Association Europe has started the celebration of a decade of serving EV drivers. During this milestone year, CHAdEMO EU PR focused on delivering the below key messages:

- Decade-long market trust and interoperability with impeccable track record in safety
- Continuing innovation with HPC & V2G
- Driving harmonisation through collaboration

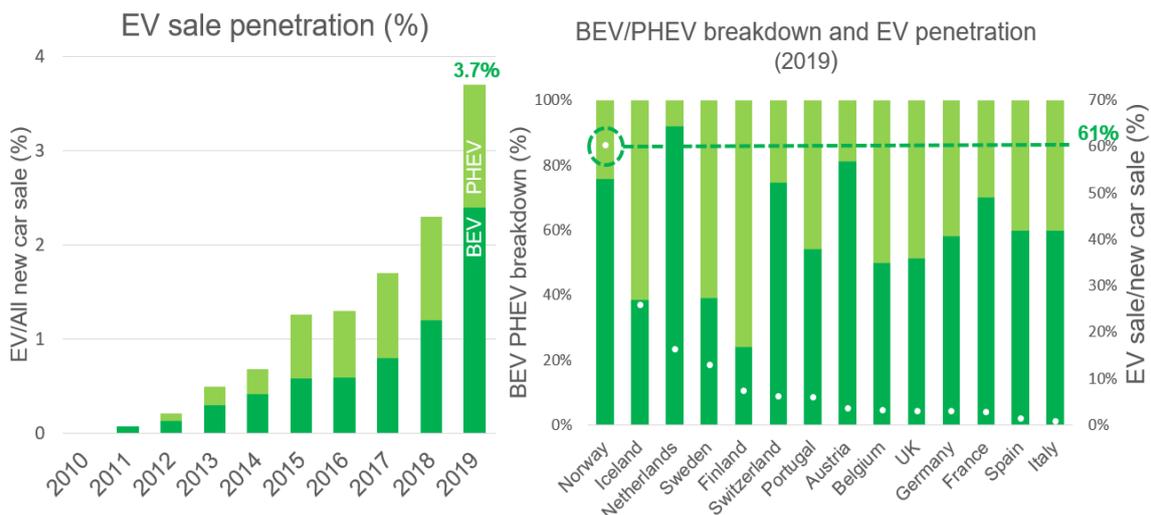


European EV market grows; penetration remains low

Plug-in car sales in Europe continued their growth in 2019, with a 45% increase from 2018. Germany finally surpassed Norway and became the new market leader. Four out of five plug-ins were sold in the top six markets in the single year of 2019, as well as in terms of EV stock.



The EV penetration rate over all the new car sales was 3.7%, with Norway an outlier with more than half of new cars sold being plug-in vehicles. While the overall penetration rate may seem low, Europe was second in this rate after China and was amongst the fastest growing plug-in markets in the world amidst stagnating global car (EV or other) sales.

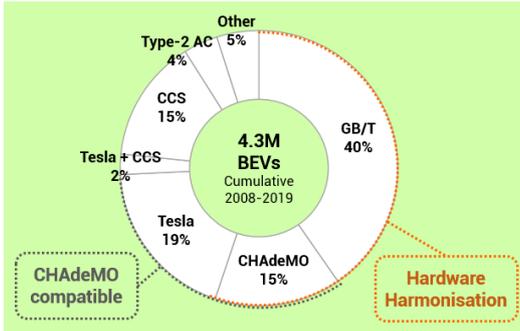


Source: EAFO (EU+UK + EFTA +Turkey); EU27 = 3.3% (1.9% BEV + 1.2% PHEV)

Almost 1 million vehicles in the world but BEV share declines

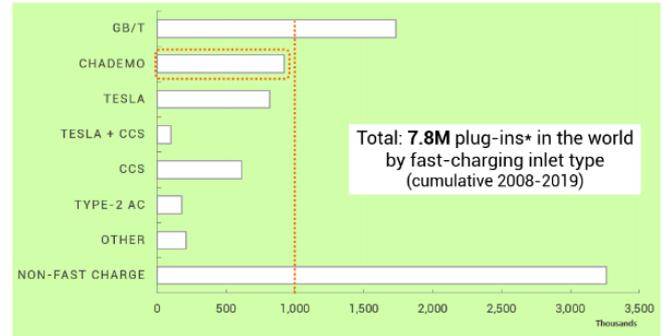
The number of plug-in vehicles (BEV + PHEV) equipped with a CHAdeMO port is drawing close to the 1-million mark across the world, second only to China's GB/T, although about half of the overall plug-in stock has no fast-charging port.

Global BEV share by fast-charging inlet type



Source: EV-Volumes.com
Note: excluding non-fast-chargeable BEVs (1.1m, 20% of all BEVs)

Global plug-in vehicles by inlet type

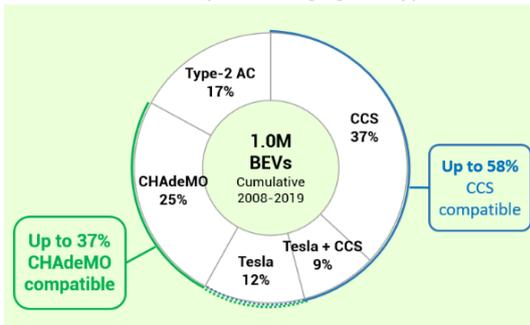


Source: EV-Volumes.com *BEV + PHEV, including LCV

Looking at the global fast-chargeable battery EV market (4.3 million BEVs), the largest EV fast-charging inlet share is GB/T (40%), followed by Tesla (19%), CCS (17%) (CCS1, CCS2, Tesla Model 3 in EU combined) and CHAdeMO (15%). With CHAdeMO-chargeable Tesla, 34% of the global fast-chargeable EVs are compatible with CHAdeMO. With the upcoming hardware harmonisation with GB/T, existing and upcoming CHAdeMO chargers (over 30,000 globally) will continue to provide service to many more EVs to come.

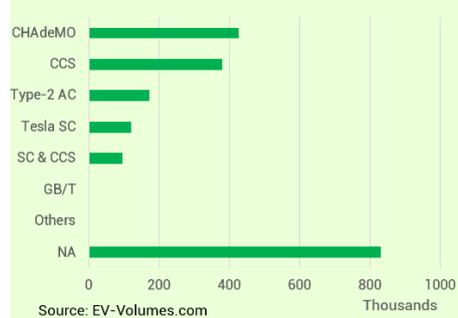
In Europe, the number of BEVs equipped with a CCS inlet surpassed that of CHAdeMO in 2019, bringing CHAdeMO's EU share for fast-chargeable BEVs down to 25%, but the number of plug-ins, including PHEVs, equipped with a CHAdeMO port remains strong, reaching close to 400k in Europe.

EU BEV share by fast-charging inlet type



Source: EV-Volumes.com
Note: excluding non-fast-chargeable BEVs (160k, 13% of all BEVs)

EU plug-ins by fast charge inlet type (cumulative 2008-2019)



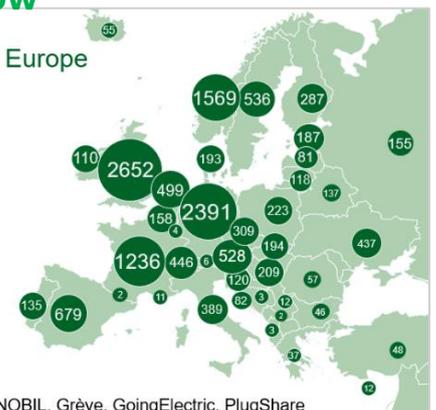
Source: EV-Volumes.com

CHAdeMO charge points reach 32K worldwide and 14K in Europe; CHAdeMO EU membership base continues to grow

DC fast charger installation continues its growth in Europe, home to the biggest number of CHAdeMO chargers in the world, although the COVID-19 situation has put a brutal stop to many projects during the first half of 2020. The Association's latest count shows over 14,000 European charge points and over 32,000 in the world.

CHAdeMO charge points in Europe

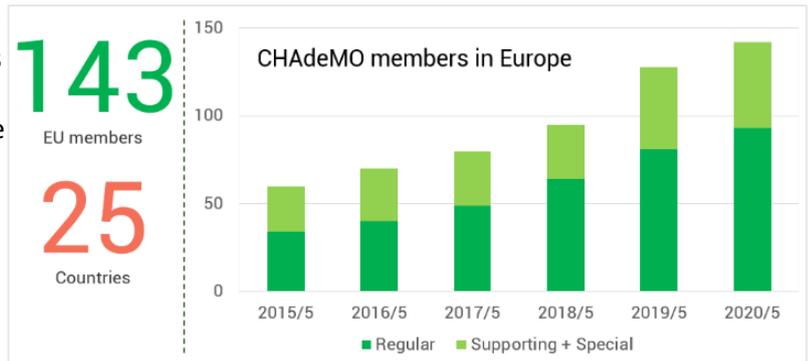
14 400
TOTAL



Note: as of April 2020
Source: ChargeMap, EAFO, Zap-Map, NOBIL, Grève, GoingElectric, PlugShare

In Europe, multi-standard chargers equipped with CHAdeMO and CCS Combo2 connectors are the de facto standard, although some ultra-fast charging stations choose to provide only CCS. According to the EAFO, some 500 more CCS charge points exist in EU + UK + EFTA + Turkey.

In terms of the number of CHAdeMO members in Europe, the membership base has more than doubled in the past 5 years and a steady double-digit growth continued this year.



Various CHAdeMO member meetings took place in Europe

European annual member meeting #10 (Lyon, 22 May)



Our 10th member meeting took place in Lyon during the EVS32 events and involved 80 participants from 43 member companies and organisations. Then President-candidate Takafumi Anegawa congratulated CHAdeMO members on their achievements in the past decade and shared his passion for electro-mobility. Dave Yoshida, Secretary General of CHAdeMO, presented the Association's strategy and activity plan for the coming year. Brice Fabry from Nissan Europe extended a warm welcome on behalf of CHAdeMO EU's Steering Committee. This year, Aoneng, Ekoenergetyka, E-Space, UIC and Wallbox participated in the new member pitch.



V2X workshop co-hosted with IEA TF28 (Lyon, 22 May)

The second part of this year's annual member meeting was a workshop on the progress of V2X, jointly hosted with [Task Force 28 of the IEA's HEV \(hybrid and electric vehicle\) technology collaboration programme](#).

Five companies and organisations presented emerging learnings from their demo projects and research analyses, as well as the development of V2G PCS. The state of play in the V2G-related standards was also presented, aligning and benefiting both CHAdeMO and IEA task force members.



EU Technical WG meetings (Lyon, 22 May; Munich, 17 October)

We were able to host two face-to-face technical meetings (on top of multiple other on-line meetings) this year, during EVS32 in Lyon and eMove360° in Munich.

In Lyon, Yasuhiko Yamagishi, Acting Chair of the CHAdeMO Technical WG, presented the progress status of CHAdeMO 3.0 and shared the activity plan for the new year.



In Munich, with the participation of Tomoya Imazu and Hidetoshi Kusumi on

behalf of the CHAdeMO Technical WG, further technical details on CHAdeMO 3.0 were reported, such as the coupler design, control pilot circuit specs, heat dissipation analysis, etc.



In both meetings, Uwe Likar reported on the progress of the plug-and-charge (PnC) task force activities, including a presentation on simulation results of 15118 over CAN communication.

■ **EU Plug-and-Charge (PnC) Task Force**

The EU Task Force on CHAdeMO PnC kicked off in January 2019 and met every other month until it came to the demonstration phase in the autumn. One of its projects terminated in 2020 and the team is to discuss its results and next steps. As this may no longer be a Europe-specific matter, the work of the EU PnC Task Force may merge with other communication-related activities as CHAdeMO/ChaoJI.

CHAdeMO joint stands at trade fairs attracted many in FY2019

This year, CHAdeMO EU hosted three joint booths: EVS32, Cenex-LCV2019 and eMove360°.

■ **EVS32 (Lyon, 19-22 May)**

Our stand in Lyon raised the bar yet again: the largest ever CHAdeMO stand at 81 sqm, with ten member companies co-exhibiting. Our stand stood in the middle of the exhibition hall and along the main alley, visible from all corners.



The half-cut Nissan Leaf attracted a great many visitors, members of the media and celebrities alike and we suspect it was likely one of the most popular attractions in the entire exhibition. Around the Leaf were various CHAdeMO products, including a high-power charger with the 200A production connector and a variety of V2G power conditioners accompanied by a V2G aggregation service provider, as well as providers of important components such as connector/cable assemblies and power modules.

■ **Cenex-LCV2019 (Millbrook, 4-5 September)**

We also marked two firsts in the Autumn: our very first participation in the largest EV-related event in the U.K., Cenex-LCV, and our first ‘co-exhibition’ with another organisation, this time with Innovate UK, an innovation agency that funds an extensive array of V2G projects. Despite being on a modestly-sized (12.5 sqm) part of the joint stand,



we were well-positioned between the entrance and the conference halls and probably the very first stand fully dedicated to V2G with so many products - five CHAdeMO V2G PCS and a power module - on display.

■ **eMove360° (Munich, 15-17 October)**

At this year's eMove360°, we hosted a compact 48-sqm stand with nine members from seven countries: Belgium, China, France, Japan, Netherlands, Portugal and Spain. Products displayed included V2G power conditioners, ultra-high to medium-high power CHAdeMO chargers and power modules. The half-cut Leaf saw great interest once again, but another item that attracted many connoisseurs' attention was the CHAdeMO 2.0 liquid-cooling cable-connector assembly, presented for the first time.



PR/communication efforts continue

Key CHAdeMO members were solicited for a variety of public speaking opportunities until the COVID-19 repercussions caused the cancellation of many such events.

■ **Conference presentations**



At **EVS32** in Lyon, the plenary panel, titled “E-Mobility Outlook, from local implementation to international coordination”, welcomed Takafumi Anegawa as a speaker amongst ministers and other high-ranking officials. Mr Anegawa explained how collaboration is at the core of CHAdeMO and emphasised the importance of inter-sectorial collaboration.

Tomoko Blech, CHAdeMO EU Secretary General, also presented her article “DC V2X systems: advantages and evolution” in the EVS32 conference, in which she compared the AC/DC V2X, and presented recent V2X product development trends and the related standardisation status (the presentation is [available on the website](#)).



Ms Blech was earlier in the year invited to present twice in Stuttgart: at **Vektor e-mobility engineering day** in April, in which she talked about the CHAdeMO R&D roadmap, including high-power charging, PnC and harmonisation, and at a Pre-Conference Workshop of the **Electric & Hybrid Vehicle Technology Expo Europe** in May, where she was one of the presenters on V2G standards, technical challenges and infrastructure.



In October in Munich, Tomoya Imazu spoke again at the **eMove360 charging and energy conference**, where he presented [the roadmap for CHAdeMO and its harmonisation with China's GB/T](#).



- **Contribution to international organisations: speaking opportunities and report reviews**

CHAdEMO contributes to and collaborates with international organisations whenever possible. In November 2019, Naotaka Shibata, Director of CHAdEMO Europe, was invited to speak at **the Global e-Mobility Forum** hosted by the COP24 presidency, Poland. At the “Standardization in e-Mobility” roundtable, Mr Shibata presented CHAdEMO and spoke of the importance of collaboration and interoperability, while guaranteeing healthy market competition, in the fight against climate change.



In February 2020, Dave Yoshida, Secretary General, participated in **the Expert Workshop on heavy-duty electric vehicle charging standards**, organised by the International Transport Forum (ITF) at the OECD. In this workshop, Mr Yoshida explained the importance of harmonisation for accelerating the transition to a low carbon transport system around the world, as well as the necessity of ensuring backward compatibility to avoid wasting any existing EVs or EV charging infrastructure.

CHAdEMO’s participation in **the Global EV Outlook**, published by the IEA, continued in 2019. Our close collaboration with the IEA-HEV’s Task Force 28 in co-hosting the V2G workshop, as well as co-organising a V2G stand with Innovate UK, are some examples of our contribution to electro-mobility through international collaboration.

Activities in FY 2019

	2019 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2020 Jan	Feb	Mar	
Board of Directors	★	★					★		★			★	
Steering committie				★							★		
General Assembly		★(5/22) European member meeting						★(10/17)European technical meeting					
		★(5/30) General Assembly											
Technical Workshop				★Sino-Jpn technical Mtg #3 (7/17-18) ★International Chaoji meeting(7/19)					★Standard SpecificationVer2.0.1 issue(11/11) ★3.0Specification draft2 issue(12/26)		★Chaoji Test&Demo @UL Kajima(2/6) ★Test Spec, Amd Ver2.0.1 issue(2/14)	★Sino-Jpn technical Mtg#4 (3/3) ★3.0 Specification FD issue(3/23)	
Infrastructure Workshop							★(11/15) #33@Yokohama						
International standardization			★TC69/JWG11(6/19-21)			★SyCSE(9/12)							
			★TC69/MT5(7/23-26)		★TC69/MT5(9/19-19)								
			★IEC63119(8/26-28)		★TC69(10/21-23)								
Certification test	★ECOLOGICAL(V2H)		★SIGNET EV	★Nichicon(V2H) ★IKS(V2H) ★Toyota Industries(★GS Yuasa(V2H) ★ASTRAGAM	★Enel X(V2H) ★MAGNUM CAP(V2H) ★Shindengen ★Applied Micro Electronics(V2H)	★Indra Renewable Technologies(V2H) ★IKS(V2H) ★Nichicon		★SIGNET EV			★Takaoka Toko		
FD High power Safety Measures Study Group				★1st Mtg(7/30)					★2nd Mtg(12/26)			★3rd Mtg(3/18)	
PR activity, etc.	★National Next-gen mobility strategy(4/8) ★E-Mobility Asia@Bankok(4/25)	★Technplogy NEXT@Tokyo(5/30) ★Messe Düsseldorf Seminar(6/5)		★World New Energy Vehicle Congress@Hainan(7/1-3)			★Smart Grid EXPO(9/26)	★Korean battery industry Seminar (10/18) ★Japan-India policy dialogue@delhi (10/22)	★RJC Car of thr year			★Battery Japan(2/26)	
	★e-mobility engineering day (4/6) ★Electric & Hybrid tech conf (5/6) ★EVS32 (5/19-21)			★IID19 Bangkok(9/4) ★Cenex LCV (9/4-5)		★COP24 Partnership for e-Mobility (11/21)	★Electric Vehicles Indonesia Forum(11/27)		★ICEF Forum (10/10)	★DG MOVE visit (1/13)		★OECD ITF Expert Workshop(2/17)	
							★eMove360 Expo & Conference(10/15-17)						

Board meetings/WG

Board of Directors / Steering committie

	date	Main Agenda
13th B Of D	19-Apr	Financial statement, ChaoJi Action plan
Constituent Meml	27-May	2019 Action plan, Director appointment
92nd SC	5-Jul	Action plan(ChaoJi, North America)
14th B Of D	30-Aug	Supplementary budget, NA Action plan
93rd SC	4-Oct	ChaoJi Action plan, Patent measures
15th B Of D	1-Nov	NA Action plan, AFID measures
94th SC	20-Dec	Public relations activity plan
16th B Of D	31-Jan	FY2020 budget,
95th SC	6-Mar	2019 Action plan, Director appointment

Boad members : TEPCO, Nissan, Mitsubishi motors, Toyota, Subaru, HONDA, HITACHI, Panasonic, Dave Yoshida(secretary)

European SC meetings

date	Main Agenda
17-Apr	Communication strategy, AFID, EVS32
10-Jul	STF/AFID,spring event report, autumn event planning
29-Aug	STF/AFID, autumn events
4-Oct	STF/AFID, autumn events
19-Nov	STF/AFID, autumn event report, DGMOVE meeting plan
3-Feb	DG MOVE meeting, 2020 SC, key messaes

SC members : ABB, ESBecars, Idiada, Mitsubishi, Nissan
 Observers: Enel/Endesa, PSA

Infrastructure Workshop

Date	Particip ant	Main agenda	Presenter
33rd 15-Nov	214	Greetings	President Takafumi Anegawa
		V2X system integrating stationary battery equipment	DAIHEN ELECTRIC SYSTEM Corporation
		Nichicon Tribriid System	NICHICON CORPORATION
		Rated 200A CHAdeMO cable Assembly	Sumitomo Electric Industries
		HPC charging system development	Marubeni Corporation
		Light electric vehicle WG Activity report	Yamaha Motor Powered Products
		Usage situation and problems of QC on highways	Japan Charge Network
		CHAdeMO Association Activity report	CHAdeMO secretary
34th		(Postponement)	

Specification WG

	date	Main Agenda
39th	25-Apr	ver.2.0.1 review, 30kA Short-circuit current
40th	11-Jul	ver.2.0.1 review, 30kA Short-circuit current
Email deliberation	1-Aug	2.0.1 Draft review
41st	18-Oct	ver.2.0.1 comment review, Test specification
	11-Nov	Publicaioin of Specification 2.0.1
42nd	15-Jan	2.0.1 Amd revision IEC MT5 feedback
	14-Feb	Publicaioin of Test Specification 2.0.1 Amd

WG members :

TEPCO(chair), Nissan, Mitsubishi motors, Toyota, Subaru, Honda, Suzuki motors, Mazda, Isuzu, Tesla, Takaoka Toko, Nichicon, Hasetec, HITACHI, Takasago, NS-Texteng, YAZAKI, Sumitomo Electric Industries, Shindengen, Kikusui, Denso TEN, Vector Japan, UL Japan, TUV Rheinland Japan, Hyundai motors, Yamaha

International High power charging SWG

	date	Main Agenda
1st	9-Jul	Introduction of ChaoJi
2nd	11-Sep	Sino-Jpn Mtg #3 report
3rd	16-Jan	CHAdEMO3.0 draft2 Review
4th	25-Feb	CHAdEMO3.0 draft2 Review
5th	31-Mar	CHAdEMO3.0 draft2 Review

SWG members :

Nissan(chair), Mitsubishi motors, Toyota, Honda, Isuzu, Yazaki, Fujikura, Sumitomo Electric Industries, Japan Aviation Electronics, Shindengen, NS-Texteng, Nichicon, Hasetec, UL Japan, TUV Rheinland Japan, TEPCO, SUBARU, HYUNDAI MOTOR JAPAN, Jaguar Land Rover Japan, Takaoka Toko, ABB Japan, TE Japan, Toshiba

High power charging SWG

	date	Main Agenda
8th	3-Apr	Action plan
WebEx#6	11-Apr	Connector strength test
9th	13-May	Deliberation of 3.0specs
WebEx#7	29-May	Adaptor evaluation
10th	13-Jun	Deliberation of 3.0specs
11th	11-Jul	Deliberation of 3.0specs
Sino-Jpn Mtg #3	17,18-Jul	project report, demonstration
12th	7-Aug	ACD, next-gen protocol
WebEx#8	21-Aug	Connector strength test report
13th	9-Sep	Control pilot circuit
WebEx#9	25-Sep	Coupler specification
14th	29-Oct	Report of prototype development
15th	2-Dec	International ChaoJi TWS report
16th	14-Jan	ChadeMO ver3.0 draft review
DEMO	3-7-Feb	System test/demonstration @UL Kajima
17th	21-Feb	ChadeMO ver3.0 comment review
Sino-Jpn Mtg #4	3-Mar	Intl ChaoJi SWG report
18th	25-Mar	ChadeMO ver3.0 draft review

SWG members :

Nissan(chair), Mitsubishi motors, Toyota, Honda, Isuzu, Yazaki, Fujikura, Sumitomo Electric Industries, JAE, Shindengen, NS-Texteng, Nichicon, Hasetec, UL Japan, TUV Rheinland Japan, TEPCO, SUBARU, HYUNDAI MOTOR JAPAN, Jaguar Land Rover Japan, Takaoka Toko, ABB Japan, Toshiba

International ChaoJi meeting / SWG

	date	Main Agenda
1st	19-Jul	Technical discussion, Roadmap
SWG2#1	22-Aug	Control pilot circuit, GFD specs
SWG1#1	23-Aug	Connector strength test
SWG1#2	25-Sep	Connector strength test report, Modify2 study
SWG2#2	30-Sep	Safety requirements
SWG1#3	30-Oct	Connector strength test report, Modify2 study
SWG2#3	5-Nov	Safety requirements
SWG1-1#1	8-Nov	General procedure, marking/sensing
SWG1#4	27-Nov	Modify2 evaluation
SWG1-1#2	28-Nov	General procedure, marking/sensing
SWG2#4	5-Dec	Short-circuit current, Y capacitor
SWG1#5	16-Jan	Modify2 evaluation report
SWG1-1#3	17-Jan	Inlet requirements
SWG2#5	21-Jan	Control pilot circuit backward compatibility
SWG1-1#4	14-Feb	Inlet requirements
SWG2#6	2-Mar	CCS backward compatibility
SWG1#6	2-Mar	Modify2 strength test report
SWG1-1#5	12-Mar	LED marker

ChaoJi Meeting ChaoJi participants: 60 people CEC, CHAdeMO HPC-SWG, VW, Scame, ITT cannon, Huber, Phoenix, KTL, Tritium, Lithium Balance, TCS

HPC protocol SWG

	date	Main Agenda
1st	22-Nov	Action plan
2nd	25-Dec	Intl ChaoJi SWG3 report, Use Case
3rd	17-Jan	Communication protocol evaluation, Use Case
4th	14-Feb	Communication protocol evaluation, Action plan
5th	13-Mar	Sino-Jpn Mtg #4 report, Action plan

SWG members :

SUBARU(chair), Nissan, TUV Rheinland Japan, Shindengen, Panasonic, Chroma Japan, Suzuki motors, Tesla Japan, TEPCO, Keysight technologies, Isuzu, Vector Japan, Denso Ten, Mitsubishi Electric, Deleta Electronics

Certification WG

	date	Main Agenda
16th	7-Mar	Cerficiation Test Guideline revision

WG members :

Nissan(chair, secretary), Mitsubishi motors, UL Japan, TUV Rheinland Japan, IDIADA, JET, TUV Sud Japan, Toyo corporation, Chroma Japan, TEPCO, Digital process, Yamaha

V2H WG

	date	Main Agenda
49th	22-Apr	V2.2 review
50th	25-Jul	V2.2 review, Test specs2.0.1 Global edition review
51st	28-Aug	V2.2 review, Test specs2.0.1 Global edition review
52nd	25-Sep	Guideline2.2 review
53rd	15-Oct	Guideline2.2 review
	17-Oct	Self declarlation2.0.1 revision
54th	6-Nov	Guideline2.2 review
55th	26-Nov	Guideline2.2 review
56th	23-Dec	Guideline2.2 review
57th	4-Feb	Guideline2.2 review
58th	26-Feb	Guideline2.2 review
59th	11-Mar	Guideline2.2 review

WG members :
 Nissan(chair), Mitsubishi motors, Toyota, Honda, Hitachi, Mitsubishi Electric, Takasago, Nichicon, Hasetec, YAZAKI, Sumitomo Electric Industries, Toyota Industries, Panasonic, Sharp, TSUBAKIMOTO CHAIN, TEPCO, Takaoka Toko, UL Japan, TUV Rheinland Japan, JET, Idiada, DIGITAL PROCESS

Short-circuit current Ad Hoc WG

	date	Main Agenda
#1	2-Sep	Organize issues
#2	26-Sep	Investigation report, examination of measures
#3	18-Oct	Fuse selection, revision plan
#4	7-Nov	Revision plan
#5	26-Nov	Revision plan, Performance judgment
(#5.1)	28-Nov	Examination policy review
(#5.2)	17-Jan	Energization characteristics survey report
(#5.3)	26-Feb	Simulation result report

WG members :
 Nissan(chair), Mitsubishi motors, Toyota, Honda, Hitachi, Mitsubishi Electric, Takasago, Nichicon, Hasetec, YAZAKI, Sumitomo Electric Industries, Toyota Industries, Panasonic, Sharp, TSUBAKIMOTO CHAIN, TEPCO, Takaoka Toko, UL Japan, TUV Rheinland Japan, JET, DIGITAL PROCESS, DAITO Communication(Observer)

Connector SWG

	date	Main Agenda
Review(e-mail)	15-May	IEC62196-3-1 Draft DTS comment
Review(e-mail)	11-Jun	IEC62893-4-1CD comment
Review(e-mail)	20-Aug	IEC62893-4-1CD comment
Review(e-mail)	15-Oct	Connector Performance confirmation for two wheeler
Review(e-mail)	1-Nov	IEC62893-4-1CD comment review
Review(e-mail)	8-Nov	Energization characteristics survey
Review(e-mail)	5-Dec	Energization characteristics study
Review(e-mail)	14-Feb	Connector Performance confirmation for ChaoJi

Connector SWG members :
 Yazaki (chair), Fujikura, Sumitomo Electric Industries, Japan Aviation Electronics, 2(FURUKAWA ELECTRIC

Two-wheeler WG

	date	Main Agenda
6th	9-Apr	Draft specification review
7th	14-May	Draft specification review
8th	11-Jun	Draft specification review
9th	9-Jul	Draft specification review
10th	7-Aug	Draft specification review
11th	10-Sep	Draft specification review
12th	8-Oct	Draft specification review
13th	16-Nov	Draft specification review
14th	17-Dec	Draft specification review, Connector test plan
15th	14-Jan	Draft specification review, Connector test plan
16th	18-Feb	Draft specification review, Connector test plan
17th	10-Mar	Draft specification review, Connector test plan

WG members :

Yamaha (chair), TEPCO, Honda, Suzuki motors, Subaru, Takaoka Toko, Nichicon, Shindengen, Kikusui, Sumitomo Electric Industries, TUV Rheinland Japan, Chroma Japan, ADIVA, ASTI, Keysight technologies, UL Japan, JET, Digital process (as of end of march 2019)

European Tech WG

date	Main Agenda
21-May	PnC
22-May	CHAdMO3.0/ChaoJi general updates, FY2019 activities, PnC
17-Oct	CHAdMO3.0/ChaoJi final details, PnC, liquid-cooled connector

WG participants:

PnC Task Force: ABB, BP, Delta Electronics, Fortum Plugsurfing, Jaguar Land Rover, Mitsubishi Motor R&D Europe, Nissan, Nuvve, PSA, Subaru Corporation, Shell/the New Motion, Tritium, Vector Informatik, Wallbox

Overall: 43 companies