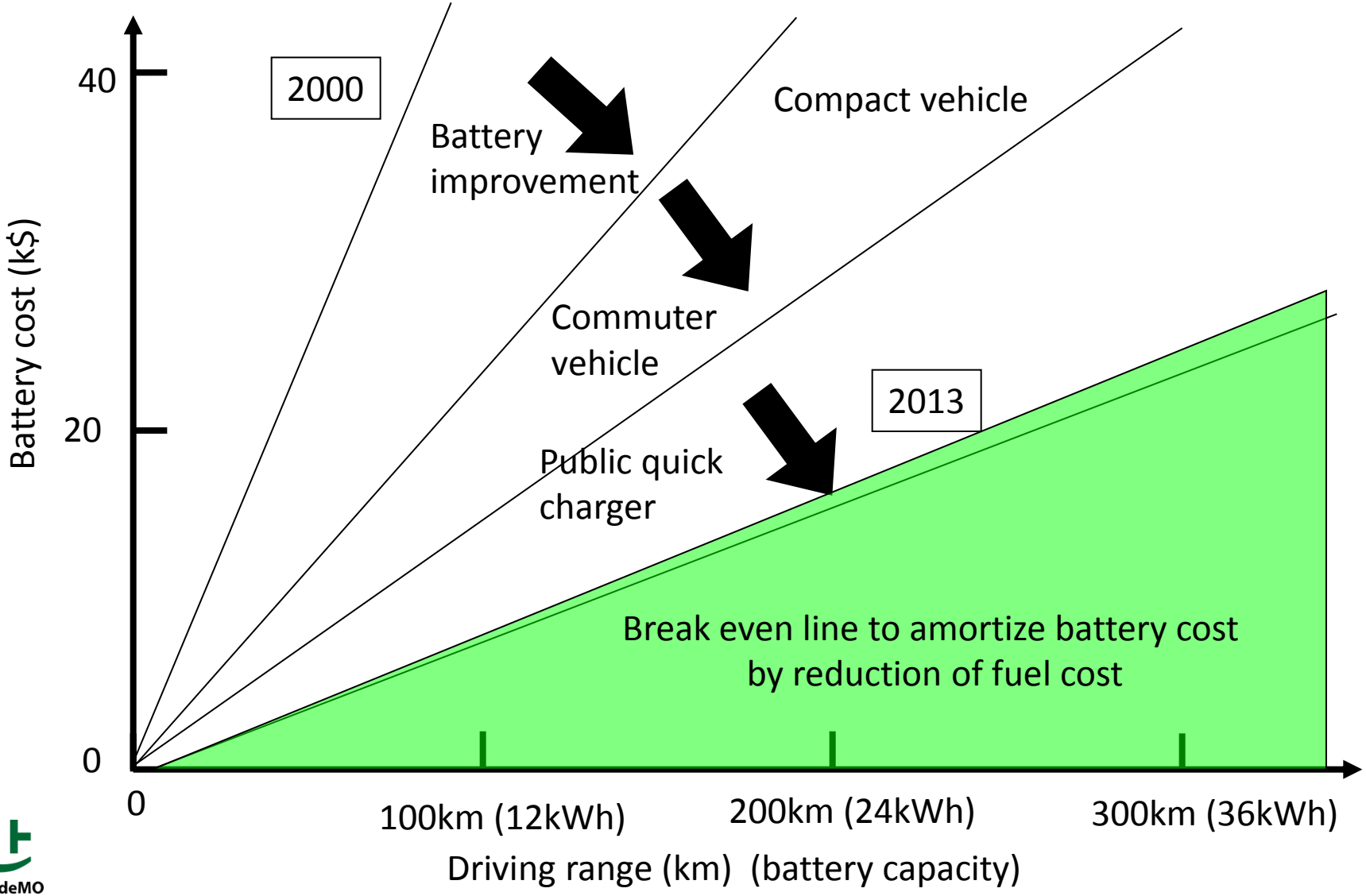
CHAdeMO European Anuual Conference

CHAdeMO Association

Feb 19, 2013

3 years ago: Can we approach the break even point for BEV?

–Yes, progress is surely taking place!



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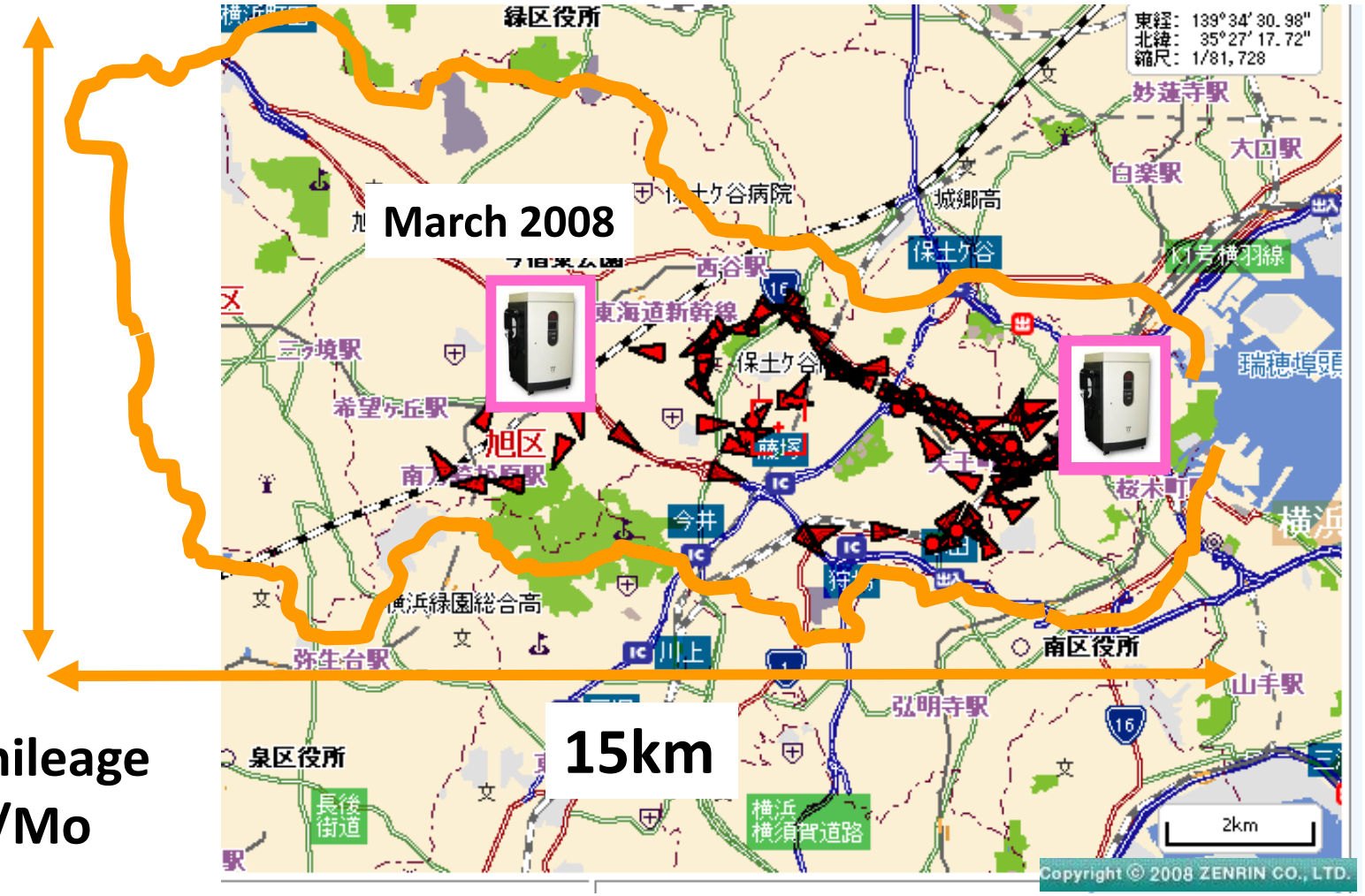
These 3 years: Correlation bet. # of chargers and BEVs
-If you build it, ……(Field of dreams)



Drive mileage
203km/Mo

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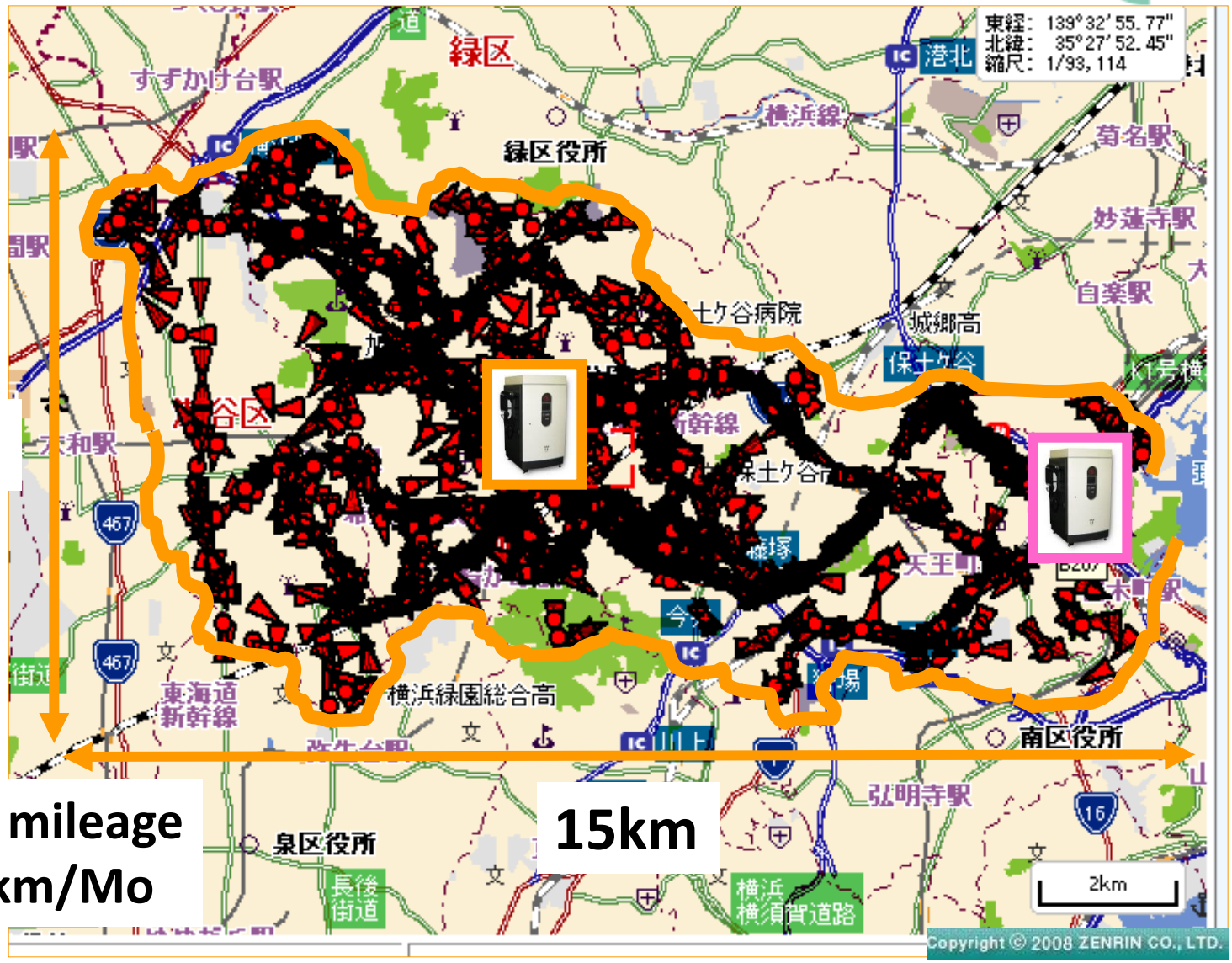
They will come – This hypothesis has been true!



CHAdeMO represents 80 percent of pure EV globally

- Already 70,000 CHAdeMO compatible EVs on the road, and will continue to grow in the future.

Already Introduced


Nissan : LEAF


Peugeot: Partner


Citroen: C-ZERO


Mistubishi Motors : i-MiEV


Citroen: Berlingo


Mitsubishi Motors: Outlander PHEV


Mitsubishi Motors: MINICAB-MiEV


BD Otomotive: eTRAFIC


BD Otomotive : eKANGOO


Toyota: eQ


Peugeot: iON


Mazda: Demio EV


Subaru : Plug-in Stella


Protoscar: LAMPO2


THINK: City


Micro-Vett: Fiorino


BD Otomotiv : eScudo


BD Otomotiv : e-Fiorino


Mitsubishi Motors: MINICAB-MiEV (Truck)

To be Introduced


Nissan: eNV200


Nissan: Infiniti EV Sedan

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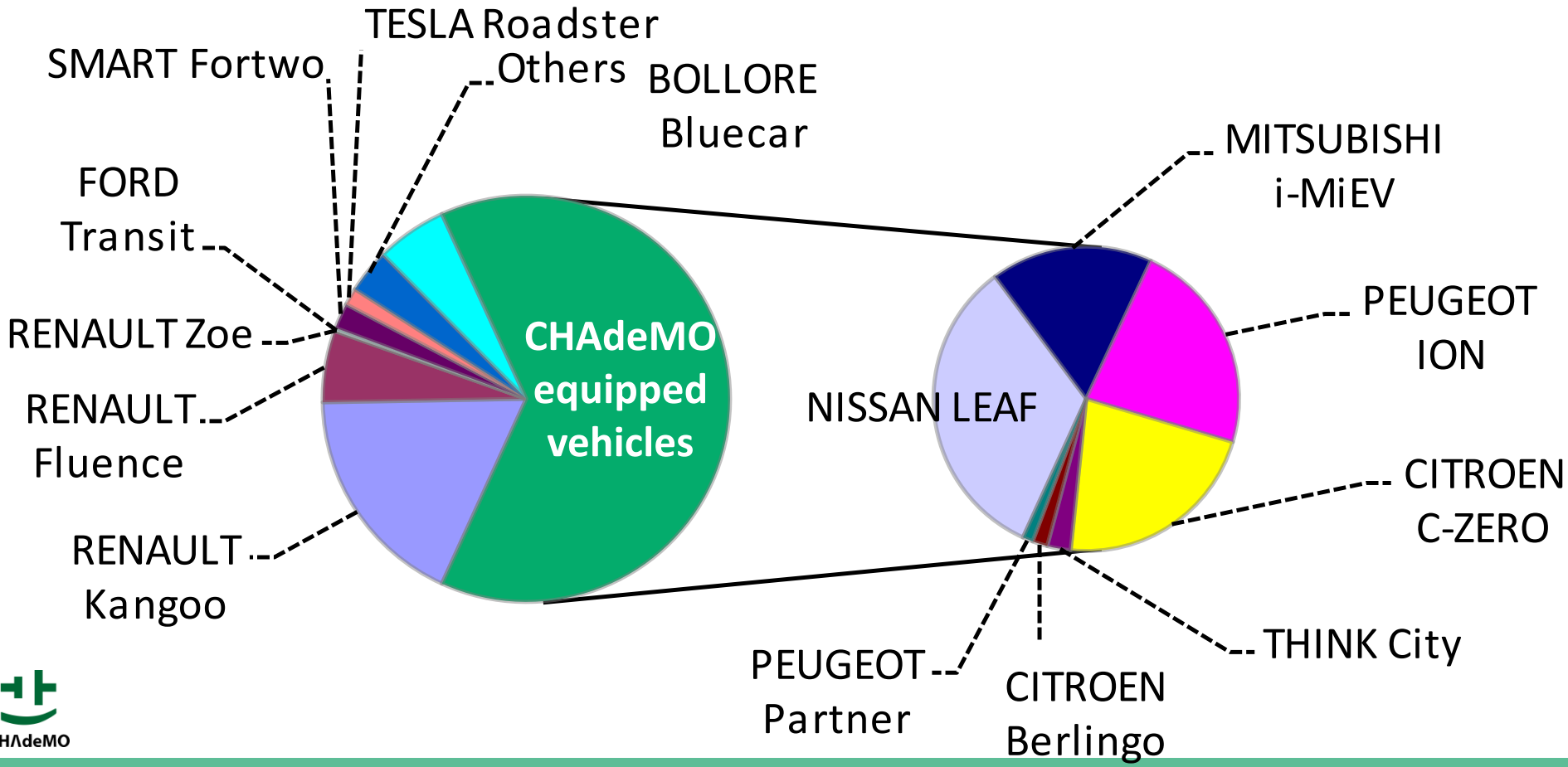
European EV market

- More than 35,000 EVs on the road in Europe (as of Dec. 2013)
- Out of which 65% are CHAdeMO equipped EVs.



Growth of CHAdeMO DC Fast chargers

Surpassing 2,000 milestone globally


GBR


Strasbourg, FRA


Stockholm, SWE


Dublin, IRL

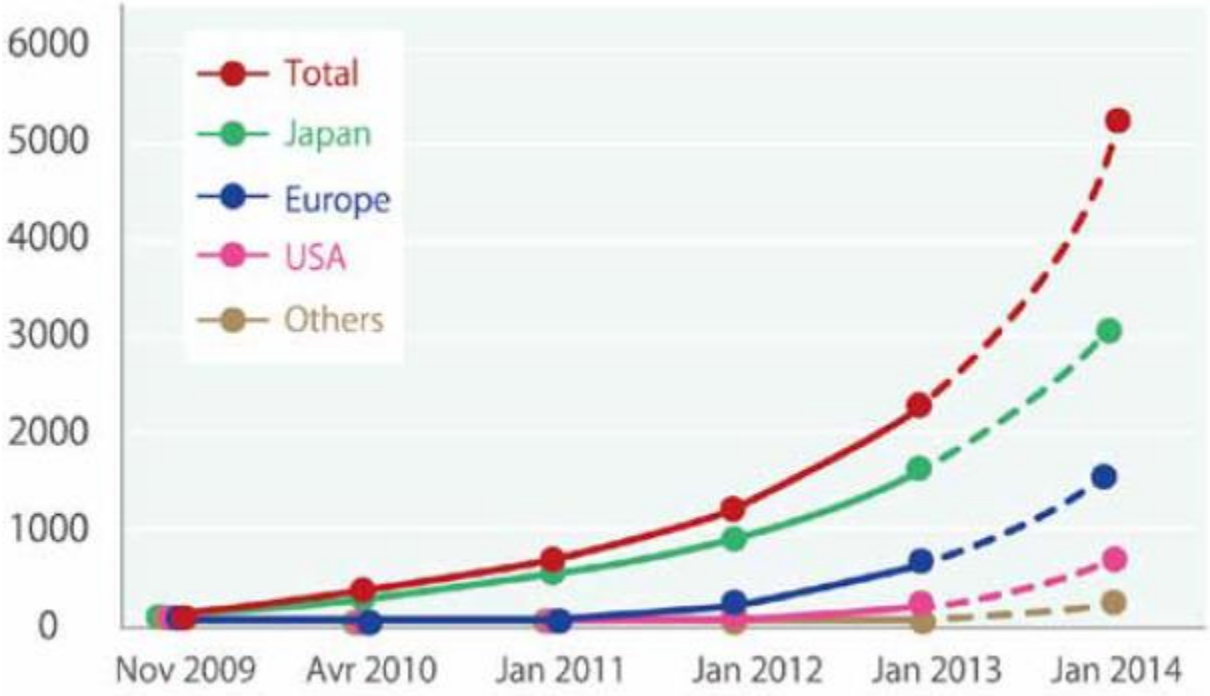

Barcelona, ESP


Lisbon, POR


Brussels, BEL


Oslo, NOR


Amsterdam, NED



- 2,364 CHAdeMO chargers world wide
  - Number doubled in 2012.
  - Double to > 4,000 in 2013.
- Dramatic growth of installation in Europe and the U.S. in one year
  - EUR: 158 to 601
  - US: 12 to 154

Source: CHAdeMO research based on each country's current plan for 2013

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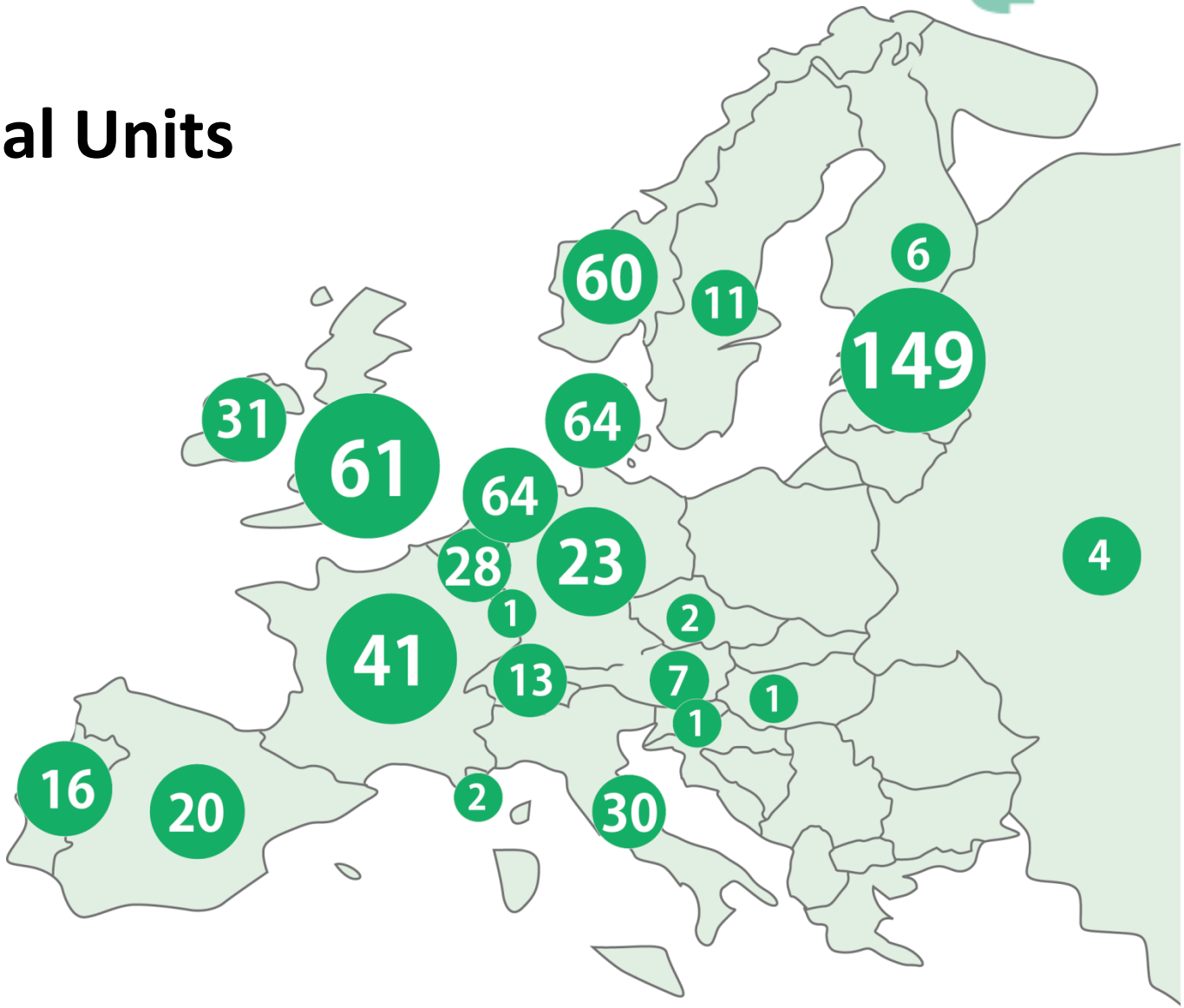
Today :
CHAdeMO Public DCFC Infrastructure in Europe

607 Total Units



Turkey = 1

Israel = 1

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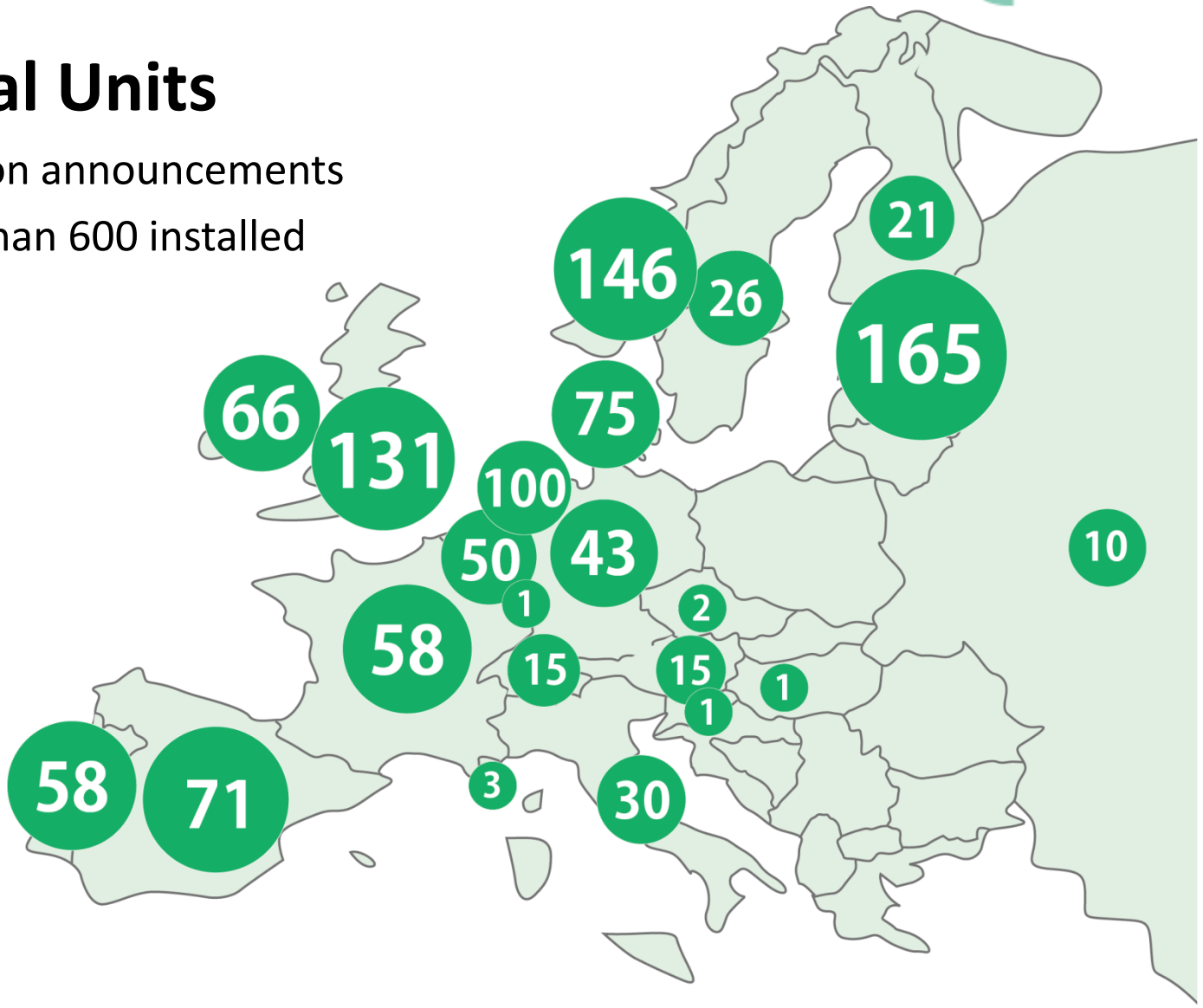
Future :
Public DCFC Infrastructure in Europe (mid 2013)

1045 Total Units

- Based on announcements
- More than 600 installed



Turkey = 1

Israel = 1

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EU-based manufacturers of CHAdeMO charging points

- 11 companies are producing CHAdeMO chargers in Europe.
- Already installed in 19 EU countries. (excluding Norway, Russia, Turkey)

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EU-based operators of CHAdeMO charging points

■ 40+ companies are operating CHAdeMO chargers in Europe.

Country	Total number of CHAdeMO outputs	Charging operators
PRT	16	Mobi-E
ESP	18	Endesa, Mobega, IBIL
FRA	46	Total (Save Project), Delek France, Compagnie National du Rhone, Region Alsace (Sodetrel)
BEL	23	Total, Solar Future
NDL	53	Essent, BP, Nuon, The New Motion, Total, ANWB
GBR	48	Chargemaster, Charge Your Car, ESB Northern Ireland, Ecotricity
IRL	30	ESB
DEU	22	RWE, E-ON
CHE—not in EU	11	Groupe-e (RWE), EKZ, ENI
AUT	7	Vorarlberger Kraftwerke AG, Vibrate Project
DNK	51	Clever
NOR—not in EU	56	Ishavskraft, Eidsiva Energi, EV Power, Lyse Energi, Statoil, Skedsmo Parking, Grønn Kontakt, Hordaland municipalities, Fortum
SWE	10	Goteborg public fleet (Gatubolaget), H-O Enterprise, Green Highway
FIN	5	Fortum
EST	133	KredEX
Others	12	CEZ, Mol oil stations, Electro Maribor, etc.
TOTAL	**541**	

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CHAdeMO vehicles start local production

- Nissan Leaf built in Sunderland, U.K.
  - Initial production 50,000 units a year

- PSA LDV Berlingo and Partner (May 2013)
  - Investment on integration of new LDV line in Vigo, Spain, along with a battery assembly plant
  - Production level of 50,000 units

CHAdeMO and CCS in one station in 2013

- More than 80% of the quick charging components can be shared
- Many European charger manufacturers have started to offer CHAdeMO and CCS dual charger with sales from 2013.
  - ABB (Holland/Switzerland), Efacec (Portugal), GH-E (Spain), Siemens (Germany), SGTE (France), DBT (France), etc.

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CHAdeMO position on standardization

- Existing charging infrastructure should be fully utilized in Europe to support the more than 20,000 CHAdeMO equipped EV owners on the road today.
- Quick charging standards should be adopted based on a market driven approach.
- Multi-standard chargers will start to be available in the market from 2013.
- Europe can leverage significant investment already made in the members states to be able to build a quicker and strong zero-emissions transportation network as outlined in Clean Power for Transport directive.

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