

May 11, 2016

ABB EVCI Electric Vehicle Charging Infrastructure



DC charging versus AC charging





Follow the car through Europe: Which car, when? Which infrastructure is required, when?



Market update – 3 use cases for DC charging





Different business cases for charging infrastructure Each case will move to the next level in 2016-2020

Home & office charging



Metropolitan infrastructure



Highway infrastructure



E-bus infrastructure





Cumulative EV population estimate EU In 2020 most EV's on the road have < 50 kW capability





BEV Sales top 3 first 6 months of 2015



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Fast Charging Standards The power behind the standards

CCS (DC)	CHAdeMO (DC)	AC
Audi BMW Daimler Ford GM Porsche Volkswagen Renault?	Mitsubishi Nissan Kia Renault?	-Daimler -Renault

- Renault
 - Now on AC-charging 22 kW (Zoe)
 - Uncertain strategy on AC due to benefits and power of DC charging
- Daimler
 - Now on AC-charging 11/22 kW (Smart ED / B-Class)
 - Have indicated that they see DC (CCS) as the right solution in the future.



Product Development Roadmap EVCI Roadmap follows 3 main DC categories





Interoperability and Payment How to pay the service and energy?





Open industry standards are key to success ABB is working on global & EU standardization

Press release March 15 2016

Group of European electric bus manufacturers agrees on an open interface for charging

European bus manufacturers Irizar, Solaris, VDL and Volvo have agreed to ensure the interoperability of electric buses with charging infrastructure provided by ABB, Heliox and Siemens. The objective is to ensure an open interface between electric buses and charging infrastructure and to facilitate the introduction of electric bus systems in



ABB solutions for eBuses Product & solution offering







Market is ramping up: commercial roll out in 2016/2017 Example project: Luxembourg MDDI



Luxembourgh 2016

- MDDI
- 1 pilot line operated by Sales-Lentz
- Volvo Electric Hybrid
- 2 x 150kW ACS 2016
- 2 x 300kW ACS 2017
 - Intensive passenger
 operation
 - Operational 2016





Market is ramping up: commercial roll out in 2016/2017 Example project: TEC Namur



TEC Namur, Belgium

- SRWT/TEC
- 11 x Volvo Electric Hybrid
- 2 x ABB 150kW ACS
 - Transformers and Substations
- Intensive passenger
 operation
 - Operational 2016









Connectivity portfolio – leading in EV Charging industry

Web tools To quickly gain insight and manage a charger		API To integrate chargers with an IT system			Connection Solutions to improve connection performance & security		
Driver Care	Payment	Helios (Service)	OCPP API	Service API	D/R API	Multi Network SIM	VPN
Ideal solution to support a small sized charger network. Supportive tool for customer driver care centers for large commercial networks	Web tool to manage the device settings, check transaction status and create the mandatory revenue overview	Necessary tool for service engineers to provide support & maintenance	The industry standard API for access management and charge details	Providing technical status information of a charger	Demand/Response API for controlling the input power of the charger	Mobile connection that can make use of different mobile networks to reach the highest possible uptime. Available in EU on	To increase security of the connection to the customer/partner back-office
Used by CPO's	Required for the payment device	1 st line service engineers (ABB or external company)	To integrate chargers with a CPO's back- office system	To integrate chargers with a CPO's back- office system	To integrate chargers with an energy management system	CPO's operating a commercial network	IT departments that require VPN
Can be combined with all other products*	Only applicable for the payment device	Can be combined with all other products.	Available via the Internet or as local interface	Available via the Internet.	Available via the Internet.	Can be combined with all other products.	Available for Internet API's
* Access mngt of OCPP is leading				1			

Offering details available in the next slides



Global cooperation with Microsoft in Cloud platform Connectivity and Interoperability is a basic requirement





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