



EV Infrastructure

Product Brochure



ABB EV charging

Mission statement – EV Infrastructure team

We offer AC and DC charging solutions for Electric Vehicles...

...from 3-600kW...



..with cloud connectivity..



...based on standards...



...using ABB technology...



...in all countries...



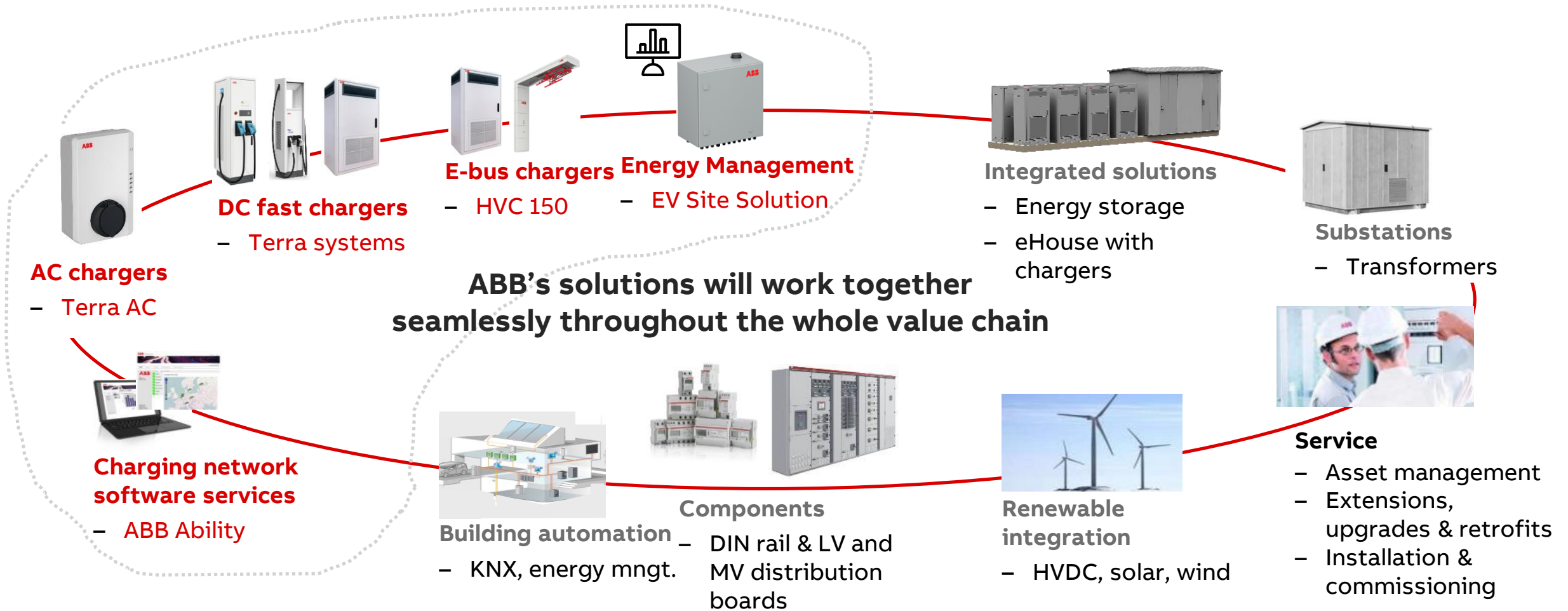
Present in
>80 countries

and ABB manufacturing.







ABB offers end-to-end solutions for the complete value chain

Your one-stop shop for e-mobility infrastructure







Public and commercial car charging – Use cases

Charging service should match charging application and demand

Public and commercial EV Charging			
AC destination	DC destination	DC Fast	DC High Power
3-22 kW	20-25 kW	50 to 150 kW	150 to 350 kW+
4-16 hours	1-3 hours	20-90 min	10-20 min
			
<ul style="list-style-type: none">– Office, workplace– Home– Multi family housing– Hotel and hospitality– Overnight fleet– Supplement at DC charging sites for PHEVs	<ul style="list-style-type: none">– Office, workplace– Hotel and hospitality– Parking structures– Dealerships– Urban fleets– Public or private campus– Sensitive grid applications	<ul style="list-style-type: none">– Retail, grocery, mall, big box, restaurant– High turnover parking– Convenience fueling stations– Highway truck stops and travel plazas– OEM R&D	<ul style="list-style-type: none">– Highway corridor travel– Metro ‘charge and go’– Highway rest stops– Petrol station area’s– City ring service stations– OEM R&D

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Terra AC	DC Wallbox 24	Terra 54, Terra 94, Terra 124, Terra 184	Terra HP

The Terra AC wallbox



The Terra AC wallbox provides tailored, intelligent and networked charging solutions for any business, home or location.



Ethernet, WiFi and Bluetooth are in every charger. 4G with 3G fallback is available in some variants.



Authentication can be done with a smartphone, via the BT connection, with an RFID card or tag.



The charger will switch off when it detects that the car is taking more current than is allowed.



Integrated protections, including DC ground fault and overvoltage, protects both user and car.

Terra AC Wallbox

Features

Built-in safety

- Overcurrent
- Overvoltage and undervoltage
- Ground fault
- Surge protection
- PE (protective earth) continuity monitoring

Connectivity

- Ethernet RJ45
- Bluetooth
- Wifi
- 4G variants
- RS485/P1 for connection to energy meter
- OCPP1.6
- Authentication via the App or RFID
- Configuration via the App or ABB web portal

ABB Terra DC Wallbox 24 – 920V capable

Versions & Timing



This 920 V DC wallbox is available in the following configurations:

- Single outlet CCS1
- Single outlet CCS2
- Dual outlet CCS1 + CHAdeMO
- Dual outlet CCS2 + CHAdeMO

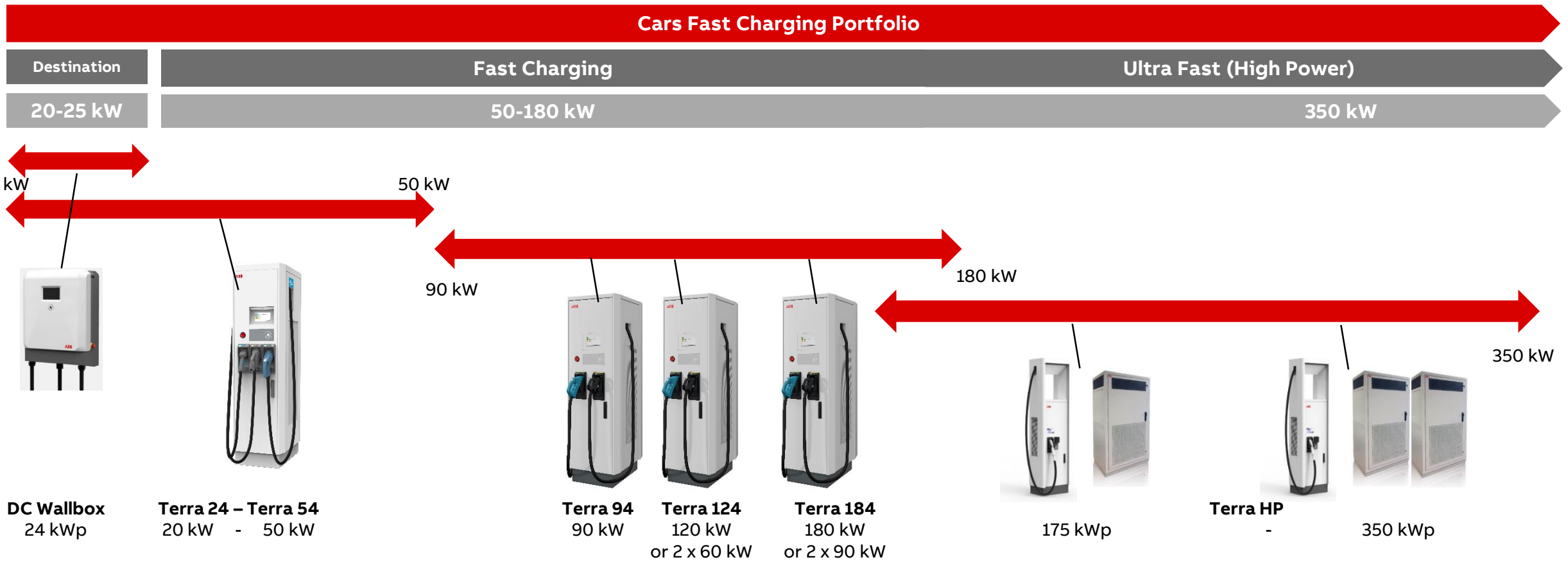
All variants with 3.5m and 7m cable

Availability can differ per country:

- EU versions (Class B EMC): available
- US versions (FCC): available

DC Fast Charging

New DC charging portfolio



Terra 54 DC Fast Charger

The pillar of growth for smart, sustainable mobility

- A decade of experience in EV charging and with more than > 8.000 units sold
- Installations in 77 countries
- A single solution serving all electric vehicles
 - CCS connectors for American and EU cars
 - CHAdeMO connector for Japanese cars
 - AC Plug for early EV and hybrid cars
- Ready for the next generation of electric vehicle power trains, including trucks and vans, with up to 920V higher voltage charging

Time-tested

Global

Flexibility

Future-proof

Connectivity

Easy-to-use

Safety

Reliability



- 24/7/365 network monitoring by ABB for 99%+ uptime
- Remotely updated with latest features for the latest electric vehicles
- More than 75% of service cases are resolved remotely
- Serves all payment collection schemes
- Automatic customer authorization upon plug-in with Autocharge feature
- Touch-screen display with user-friendly flow and simplified visual of charge process
- Independently certified and 3rd party tested according to relevant electrical safety standards
- Redundant power modules ensures continued operation in the event of single component failure

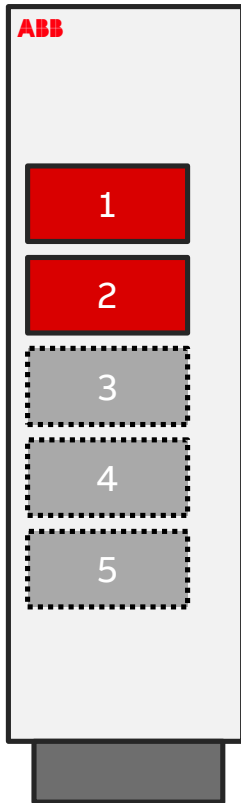
Terra EV Fast Charger

Power modules and upgradability

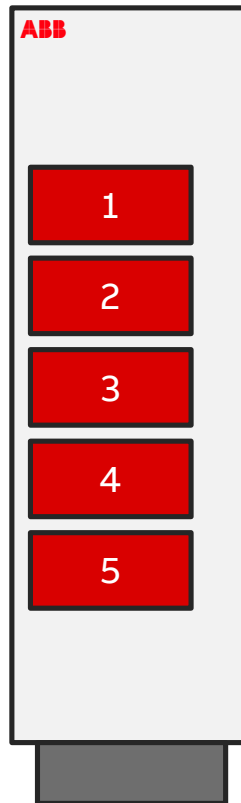
Installed power module

Slot available for upgrade

Terra 24

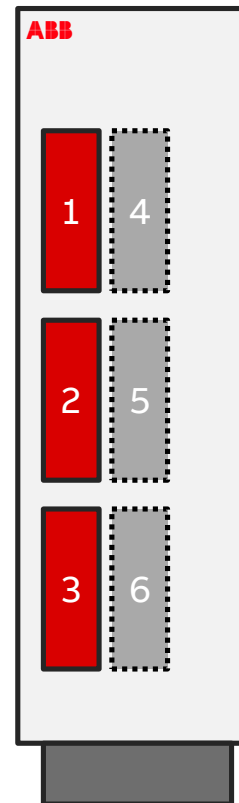


Terra 54

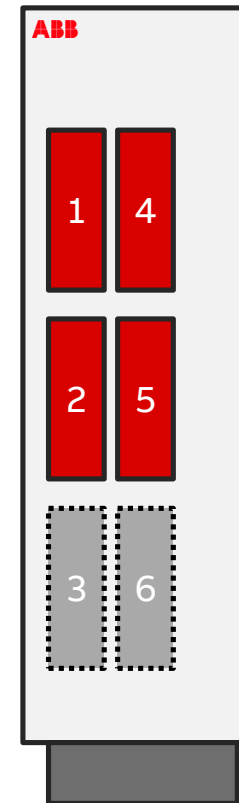


- Based on 2 (Terra 24) and 5 (Terra 54) 10 kw power modules
- Almost 10.000 chargers installed worldwide
- Terra 24 is upgradable to Terra 54
- Terra 54 is available also in High Voltage variant (150-920 Vdc)

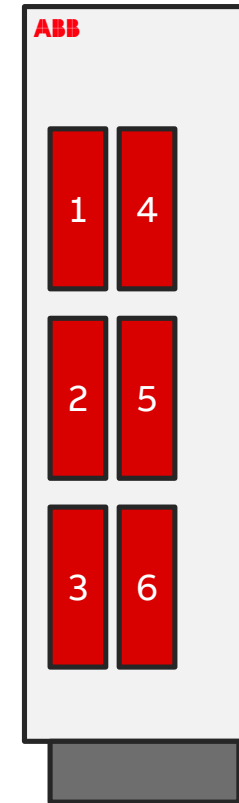
Terra 94



Terra 124



Terra 184



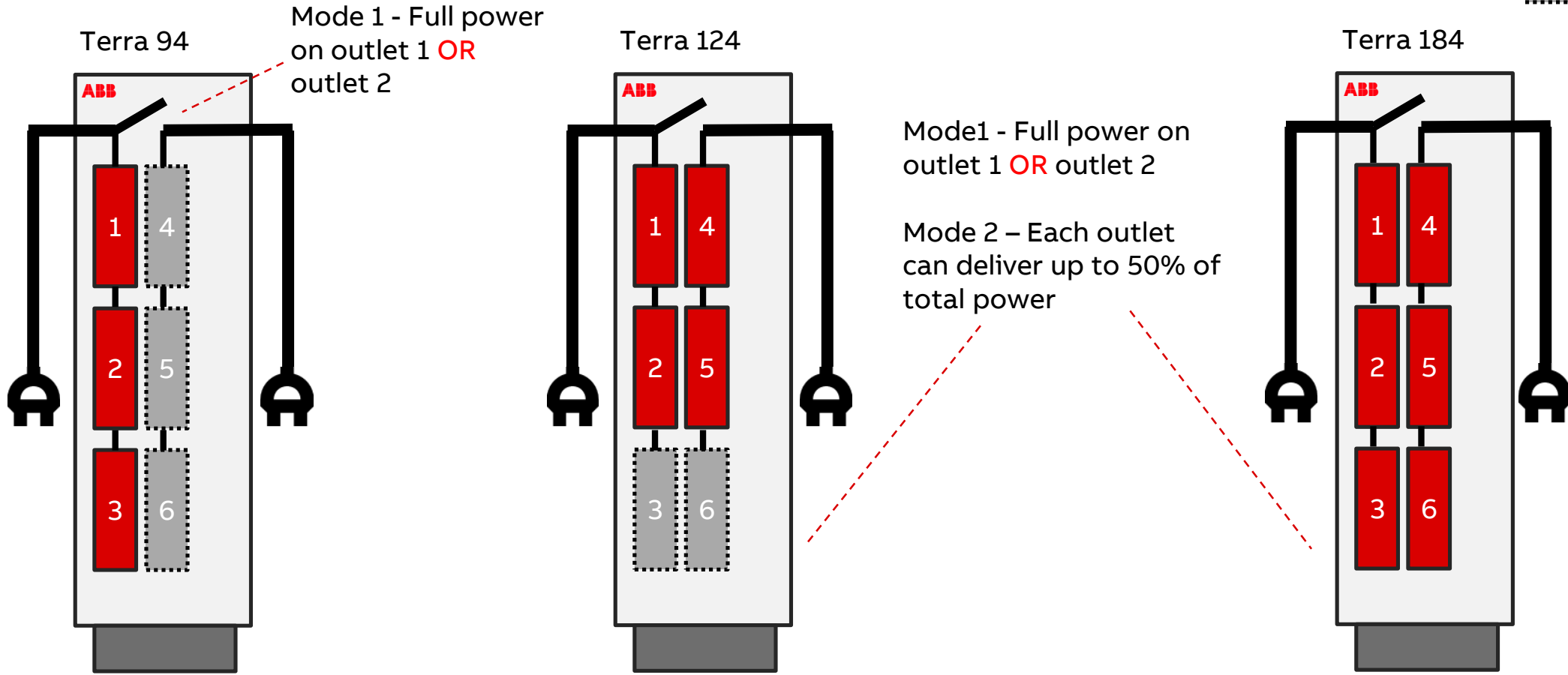
- Based on new 30 kw power modules
- Terra 94 and 124 upgradable to higher power rating, up to 180 kW
- Terra 54 cannot be upgraded to the new power modules due to different rating of the electrical components
- Terra 94-124-184 provide High Voltage capability (150-920 Vdc)

Terra EV Fast Charger

Power modules layout Terra 94, Terra 124 and Terra 184


Installed power module

Slot available for upgrade



Highway and metropolitan segment

Terra 184(HC); CE-approved 180 kW Multi-standard chargers – Input: 3x 400V, configurations

Terra 184 C DC Charger	Terra 184 CJ DC Charger	Terra 184 CC DC Charger	Terra 184HC CJ DC Charger	Terra 184HC CC DC Charger	Terra 184 CJT DC+AC Charger	Terra 184 CCT DC+AC Charger
180kW DC CCS-2 (200 A)	180kW DC CCS-2 (200A) 180kW DC CHAdeMO (200A)	180kW DC CCS-2 (200A) 180kW DC CCS-2 (200A)	180kW DC CCS-2 (300A) 180kW DC CHAdeMO (200A) (picture is with 200A CCS-2)	180kW DC CCS-2 (300A) 180kW DC CCS-2 (300A) (picture is with 200A CCS-2)	180kW DC CCS-2 (200A) 180kW DC CHAdeMO (200A) 22kW AC (picture is of T54 CJT)	180kW DC CCS-2 (200A) 180kW DC CCS-2 (200A) 22kW AC (picture is of T54 CJT)
						
Available	Available	Available	Expected: Q3 2020	Expected: Q3 2020	Expected: Q4 2020	Expected: Q4 2020

Highway and metropolitan segment

Terra 124; CE-approved 120 kW Multi-standard chargers – Input: 3x 400V, configurations

Terra 124 C DC Charger

120kW DC CCS-2 (200 A)



Available

Terra 124 CJ DC Charger

120kW DC CCS-2 (200A)
120kW DC CHAdeMO (200A)



Available

Terra 124 CC DC Charger

120kW DC CCS-2 (200A)
120kW DC CCS-2 (200A)



Available

Terra 124HC CC DC Charger

120kW DC CCS-2 (300A)
120kW DC CCS-2 (300A)
(picture is with 200A cables)



Expected: Q4 2020

Terra 124 CJT DC+AC Charger

120kW DC CCS-2 (200A)
120kW DC CHAdeMO (200A)
22kW AC
(picture is of T54 CJT)



Expected: Q4 2020

Terra 124 CCT DC+AC Charger

120kW DC CCS-2 (200A)
120kW DC CCS-2 (200A)
22kW AC
(picture is of T54 CJT)



Expected: Q4 2020

Highway and metropolitan segment

Terra 94; CE-approved 90 kW Multi-standard chargers – Input: 3x 400V, configurations

Terra 94 C DC Charger

90kW DC CCS-2 (200 A)



Available

Terra 94 CJ DC Charger

90kW DC CCS-2 (200A)
90kW DC CHAdeMO (200A)



Available

Terra 94 CC DC Charger

90kW DC CCS-2 (200A)
90kW DC CCS-2 (200A)



Available

Terra 94 CJT DC+AC Charger

90kW DC CCS-2 (200A)
90kW DC CHAdeMO (200A)
22kW AC
(picture is of T54 CJT)



Expected: Q4 2020

Terra 94 CCT DC+AC Charger

90kW DC CCS-2 (200A)
90kW DC CCS-2 (200A)
22kW AC
(picture is of T54 CJT)



Expected: Q4 2020

Highway and metropolitan segment

Terra 54(HV): CE-approved 50 kW Multi-standard chargers – Input: 3x 400V, some possible configurations:

Terra 54(HV) C DC Charger

50kW DC CCS-2



Available

Terra 54(HV) CJ DC Charger

50kW DC CCS-2
50kW DC CHAdeMO



Available

Terra 54(HV) CT DC+AC Charger

50kW DC CCS-2
22kW AC



Available

Terra 54(HV) CG DC+AC Charger

50kW DC CCS-2
22kW AC (also in 43kW AC)



Available

Terra 54(HV) CJT DC+AC Charger

50kW DC CCS-2
50kW DC CHAdeMO
22kW AC



Available

Terra 54(HV) CJG DC+AC Charger

50kW DC CCS-2
50kW DC CHAdeMO
22kW AC



Available

Terra 54(HV) CJG DC+AC Charger

50kW DC CCS-2
50kW DC CHAdeMO
43kW AC



Available

ABB High Power Charging

Charge Post

- Single version
 - CCS: 500 A / 920 V capability, liquid cooled cable
- Multi standard version
 - CCS: 500 A / 920 V capability, liquid cooled cable
 - CHAdeMO: 200 A (optional 125 A) / 500 V capability
 - 7" (optional 15") touch screen
- Programmable RGB LED strips + white LED top light
- Customer replaceable top insert
- Operating temperature: -35 °C ... +55 °C
- IP 54 cabinet can be placed outdoors
- Vandalism proof, aluminum, resistant against heavy snow & rain

Payment solutions

- Creditcard terminals for EU & USA & RoW
- RFID (Mifare, Calypso, etc.)
- PIN code access



Power Cabinet

- 160 kW nominal/ 175 kW peak power per cabinet
- 375 A max. output per single cabinet
- 150 – 920 V_{DC} output voltage range
- Operating temperature: -35 °C ... +55 °C
- IP 54 cabinet can be placed outdoors
- Vandalism proof, stainless steel, resistant against heavy snow & rain
- Galvanic isolation included in cabinet
- Power module redundancy & automatic failover mechanism

Remote management & diagnostics

- Works with all ABB cloud connected services

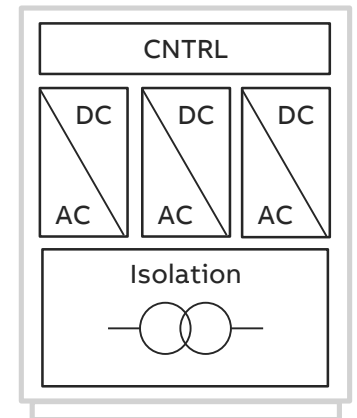


ABB High power charging 2018-2025

Towards 15 minute charging – 400 km/ 250 Mi driving

Terra 54



Terra HP – 1 cabinet



Terra HP – 2 cabinets



3½x more power

50 kW → 175 kW_p

7x more power

350 kW_p

3x higher current

125 A → 375 A

4x higher current

500 A



Dynamic DC:
patented by ABB

Power expansion

1 cabinet expansion



2 cabinet expansion



Charge post versions (CE)

Standard charge post with 7" display and optional 15" display, standard cable length 3.2m (for CCS and CHAdeMO)

Standard versions with 7" touch screen display



- 500 A CCS liquid cooled (also 3.8m)



- 500 A CCS liquid cooled (also 3.8m)
- 200 A CHAdeMO

Versions with 15" touch screen display

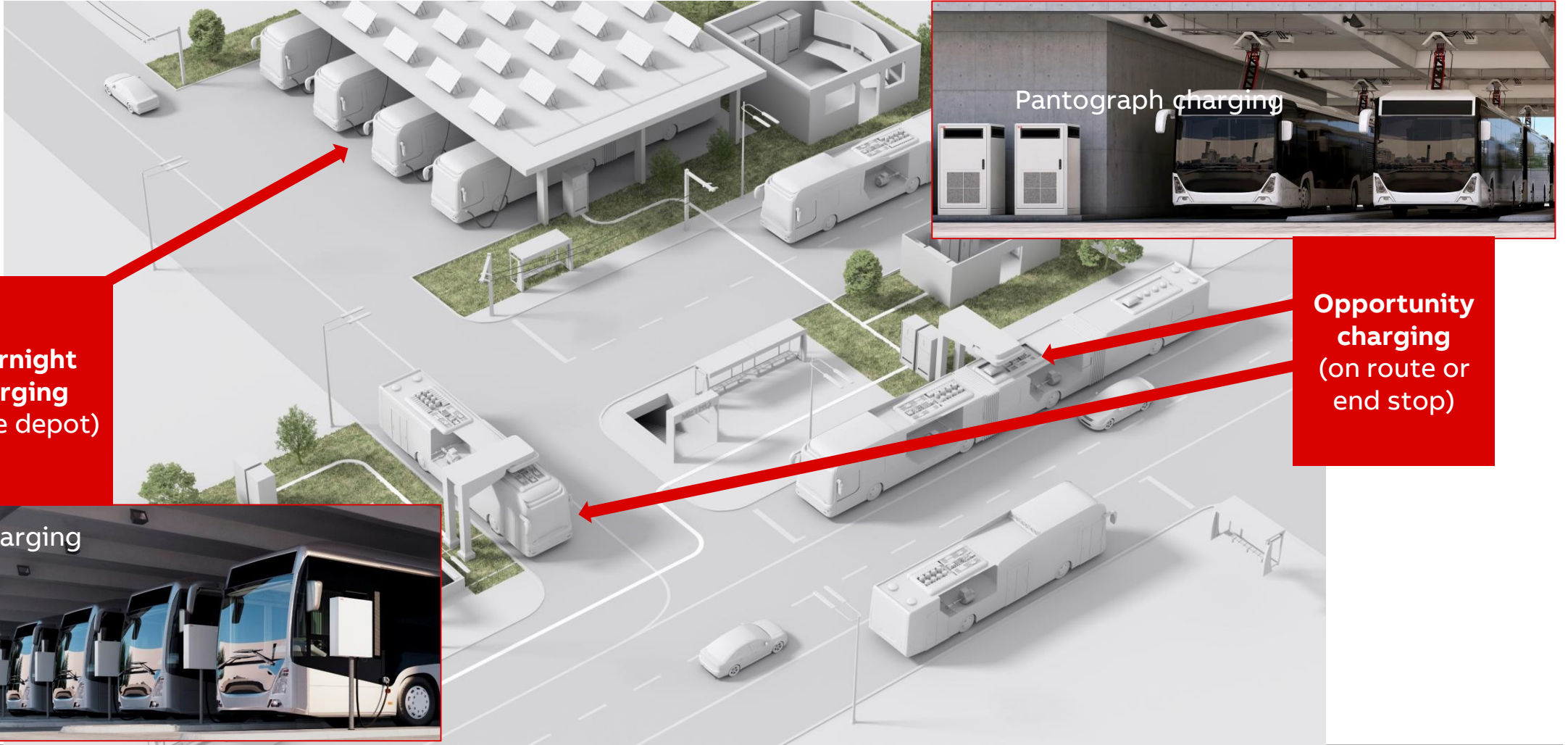


- 500 A CCS liquid cooled (also 3.8m)



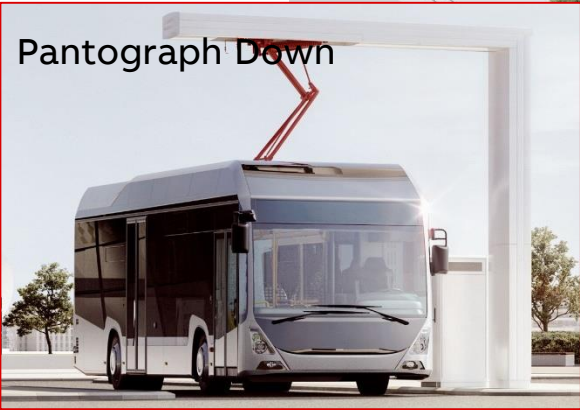
- 500 A CCS liquid cooled (also 3.8m)
- 200 A CHAdeMO

eBus charging landscape



Electric bus charging landscape



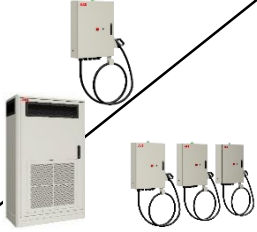
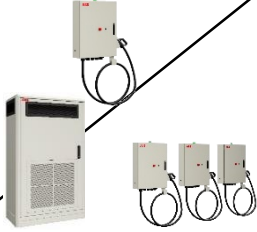










Pantograph Down



Pantograph Up



HVC Product portfolio

	24kW	50kW	100kW	150kW	300kW	450kW	600kW
Connector							
	DC-Wallbox	Terra 54HV	HVC 100C 1-3 depot box	HVC 150C 1-3 depot box			
Pantograph Down							
				HVC 150PD kit / HVC 150PD	HVC 300PD	HVC 450PD	HVC 600PD
Pantograph Up							
		Terra 54HV PU	HVC 100PU-S / HVC 100PU	HVC 150PU-S / HVC 150PU	HVC 300PU	HVC 450PU	HVC 600PU

Run a successful and profitable business with connected ABB chargers



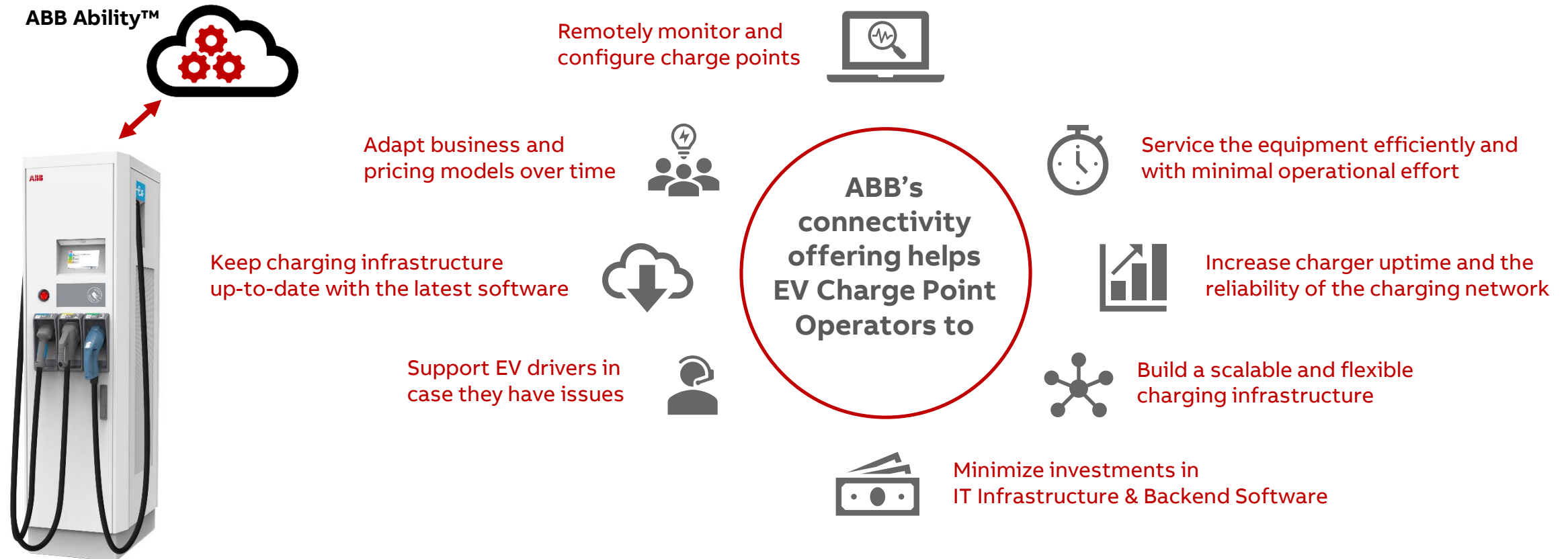
Connectivity is needed to:

1. Monitor and operate a network of chargers
2. Get paid for charge sessions
3. Help EV-drivers in case of questions
4. Maintain and service chargers at the lowest cost

Reliable 24/7 connectivity is fundamental for the commercial operation of a network of chargers!

Connected Services are required to successfully run a commercial charger network

The ABB Ability platform: years of experience and thousands of connected EV chargers



Reliable 24/7 connectivity is fundamental for the commercial operation of a network of chargers!

Positioning connected services

Electric cars



DAIMLER



RENAULT

Charging infrastructure

CCS
CHAdeMO
GB
AC



Connected Services



ABB Ability™

Solutions to run a charger network



NTT DATA

GRIDPOINT



has-to-be
eMobility

chargecloud

pod POINT



MOBI.E
MOBILIDADE ELÉCTRICA

greenlots®



ABB does **not** have exclusive cooperation with any of the solutions



It is all about making your business work
We are looking forward to empowering you!

ABB