

Federal EV Charging Infrastructure Funding

NEVI Program Selection Guide



ABB E-mobility is the global leader in EV infrastructure with the widest range of reliable charging technology, smartest connectivity for flexible business integration, and a scaled service organization that delivers high uptime for customers and users around the world. ABB has the technology and experience to enable successful NEVI deployment programs.

Infrastructure investment background

The 2021 Bipartisan Infrastructure Law (BIL) makes the single largest investment in electric transportation in US history – including historic investments in public charging infrastructure (\$7.5b).

The public charging infrastructure funding is broken down into three discrete programs: (1) \$5b for the National Electric Vehicle Infrastructure (NEVI) Program; (2) \$1.25b for the Rural and Disadvantaged Communities Grants Program; and (3) \$1.25b for the Highway Corridor Grant Program.

Each of these public charging infrastructure programs are administered by the Federal Highway Administration (FHWA). The BIL established the “Joint Office” between the US Department of Transportation (USDOT) and the US Department of Energy (USDOE) to help provide technical guidance and assistance to state and local governments who will implement EV charging programs.

ABB’s EV chargers will comply with the technical requirements of the USDOT and USDOE.

National EV Infrastructure (NEVI) Program

The NEVI program allocates \$5b over five years to all US States based on set “formulas” which are published by the FHWA. By September 30th, its expected that the USDOT will begin approving state implementation plans.

Preliminary requirements for each charging site

1. Minimum of 4 x 150 kW ports per location
2. Minimum power capacity of 600 kW per location
3. Charging ports must be CCS1
4. 97% uptime and maintained in compliance... with manufacturer requirements.

Technical requirements

1. Installation, Operations, and Maintenance
2. Connectivity and Payment
3. Accessibility

Note on technical requirements

The Joint Office recently issued proposed minimum standards and accepted comments until August 22nd. ABB will be prepared to meet the minimum standards, once they are finalized.

680,000

chargers sold globally including 30,000 DC fast chargers

88

countries with ABB E-mobility chargers installed

1000+

talented employees supporting our zero-emission future

13

years’ experience deploying EV charging technology

450

kW max power in a full range of products and use cases

NEVI program requirements

Preliminary site and technical scope



Minimum of 4 x 150 kW charging ports per location



Installation, operations and maintenance



Minimum power capacity of 600 kW per location



Connectivity and payments



Charging ports must be CCS1



Accessibility



97% uptime and maintained in compliance with manufacturer requirements

—
ABB E-mobility is working closely with all relevant agencies to ensure that ABB E-mobility chargers meet all NEVI Program technical standards and requirements



E-mobility charging solutions

Terra 184 all-in-one DC fast charger

The Terra 184 can deliver up to 180kW of power and is available in multiple configurations. The compact size makes it perfect for every public or fleet site, while its modularity allows for reliability and flexibility - including intelligent managed charging.

CONNECTED by cellular modem for 24/7 remote services, receiving updates over-the-air to support every new EV on the road - plus easy remote OCPP integration

COMPACT power modules to support increasing demand from more EVs with bigger batteries - in a very easy to service package

LCD touchscreen with high brightness and graphical visualization of the charging process

ROBUST all-weather powder-coated stainless steel enclosure

SAFETY enhanced by emergency stop push button to immediately stop charging operation

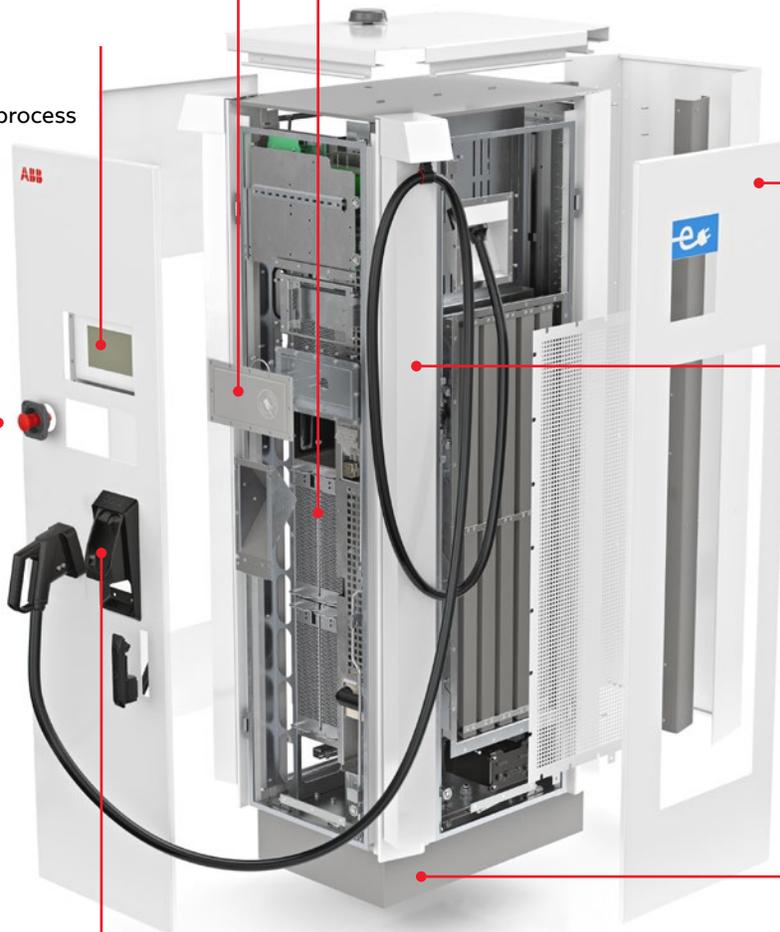
CONVENIENT and hassle-free reach for users – with retractable cable management option

OPEN STANDARDS
Interoperability tested and validated to be fully compatible with all CCS1 vehicles

HIGH CURRENT CCS
Connector option can deliver 400 A peak power and 300 A continuously

EASY installation design with fast remote commissioning and start-up

AUTOMATIC authentication capability via CCS connector in the vehicle thanks to easy OCPP integration and ISO 15118 functionality



—
Link to the Terra
“All in One” Product
Guide for detailed
information.

E-mobility charging solutions

Terra 184 all-in-one DC fast charger

Advanced, high power design

- A compact, all-in-one charger up to 180 kW
- Paralleled power modules with automatic fail-over offers high uptime through redundancy
- Delivers output power continuously and reliably over its lifetime
- Up to 920 VDC serving every EV
- Robust all-weather powder-coated stainless steel enclosure

Safety features

- UL certified
- High short circuit current rating
- EMC Class B certified for safest use at public-facing and residential-adjacent sites

User experience

- Interoperable connectors tested and validated with all EV makes
- Bright, daylight readable touchscreen display with graphic visualization of charging session
- Customizable user interface
- Reliable cable management system
- Integrated payment terminal
- RFID authorization modes
- Design enables ADA compliant installations

Connectivity features

- Always connected, enabling remote services, updates and upgrades
- ISO 15118 enabled
- Designed for quick installation and fast serviceability
- Pre-integrated with OCPP networks, payment platforms and energy management APIs



Terra 184 C
Single outlet CCS with
credit card reader



Terra 184 CJ
Dual outlet CCS
and CHAdeMO with
credit card reader

Terra 184 charging times

Vehicle type	Battery profile	Charging time (min)
 Light-duty	60 kWh BEV / 400 VDC	13
	80 kWh BEV / 400 VDC	17
	100 kWh BEV / 800 VDC	22
 Medium-duty	150 kWh BEV / 800 VDC	33
	200 kWh BEV / 800 VDC	44
 Heavy-duty	300 kWh BEV / 800 VDC	66

Charge times shown are based on vehicle battery management system (BMS) requesting charging power from 20% to 80% under mild environmental conditions. Data assumes vehicles capable of charging at rated power.



Power level

- 180 kW DC fast charging
- High current cable option for 400 A peak charging



Charging standards

- CCS-only
- CCS+CHAdeMO



Cables & management

- Long cable length
- Reliable cable management system



User access & payment

- OCPP integration
- Credit card reader
- ISO 15118



Connectivity & services

- Interoperability validation
- 24/7 remote services
- Service level agreements

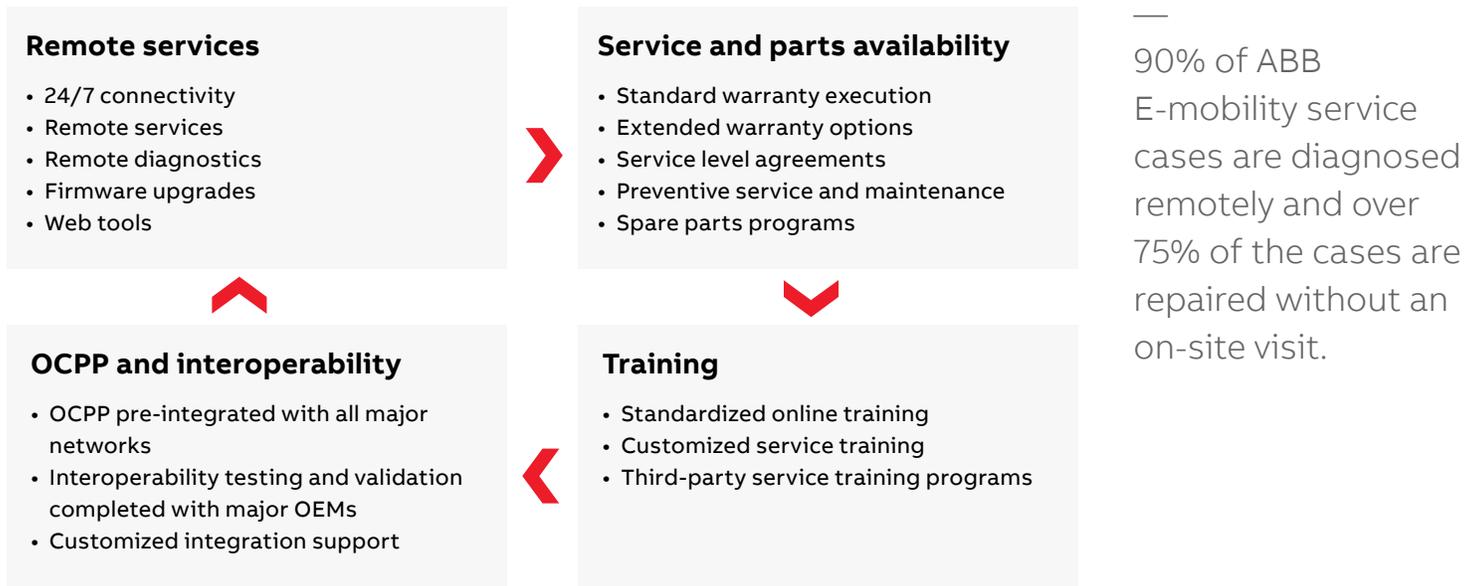


Link to the Terra "All in One" Data Sheet for detailed information.

Service and maintenance

Supported by smart connectivity and field services

Charging infrastructure must always operate with the highest utilization and lowest downtime. ABB E-mobility's connectivity and services meet that demand, incorporating more than a decade of experience and thousands of fast chargers deployed across the globe.



Services support life-cycle uptime

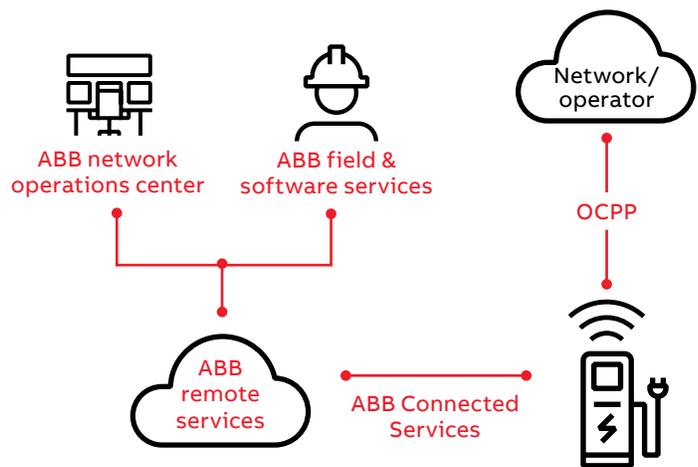
Operational excellence starts with reliable chargers designed to withstand heavy operation under rugged conditions. ABB E-mobility's DC fast chargers are not only reliable, they are the easiest in the market to service, with 24/7 connectivity for remote diagnostics, and accessible designs that expedite maintenance and field service.

Network communications

ABB E-mobility is integrated with every major charging network around the world for Open Charge Point Protocol (OCPP) support. ABB chargers can be operated using a direct OCPP connection while linking to ABB's advanced diagnostics and firmware update services for additional intelligence, technical support as well as reduced maintenance.

With OCPP, ABB E-mobility can support a broad set of messages with a wide range of functionality, making it easy to connect to a back-end system for processing payments and managing charging session data.

OCPP enablement backed by smart services



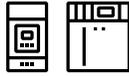
Connected Services

ABB E-mobility connectivity solutions link EV chargers to back-end systems as well as remote service tools. Connected services are essential to networked charging, upholding warranty and optimizing operational lifetime.

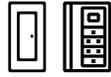
ABB brings the full solution from grid to charger



Grid



Switchgear



Switchboards



Smart breakers



Chargers



EVs



1,000+ sites

EV charging locations electrified by ABB across the U.S.



Partnership

ABB partners with multiple U.S. charging operators



100+ years

Experience building electric gear in the U.S.



All 50 states

Deep experience with utilities in all 50 states and D.C.



Adaptable

Easy customization of equipment for each EV install or utility



Buy America option for NEVI program



ReliaGear™ SB Switchboards

- ABB switchboards safely and reliably distribute power at EV charging sites
- For small to large charging sites, rated 600A-6000A
- Connect multiple energy sources simultaneously – utility, battery energy storage, microgrid, solar, etc.
- Footprints as small as 40" wide by 30" deep
- Future proof – option for expansion
- Additional convenience power outlets
- NEMA 3R rated for outdoor use and weather protection
- All openings covered by brass pest screen
- Sloped roof built for water dispersion and heat mitigation/venting – extending life of equipment
- Fully rated up to 6,500 feet (2000m) above sea level
- Integrated surge protective device – can be remotely monitored and easy to replace if a surge event occurs
- Internal cabinet lighting
- Fast and easy installation, including multiple-section switchboards

SACE® Emax 2 and SACE® Tmax® XT Breakers

- ABB breakers are the intelligence inside switchboards, maximizing ease of use, integration and connectivity
- World-class breaker technology – compact, advanced capability, high quality, connects to networks or other IoT devices
- Highly capable – no need to purchase additional relays or other external devices
- Remote monitoring both main breaker and feeder data
- Option to remotely control or reset circuit breakers if needed – saving cost and time for service
- Fast install – Spring-loaded plug-in connectors allow ABB breakers to be installed/replaced in less than 20 seconds
- Option to upgrade with software updates



Meets or exceeds applicable UL/NEC codes

Ask our experts

A decade of experience to support best practices



Charging technology selection support

- Choosing the right charging solution for any site
- Optimizing real estate with charger footprint
- Hardware and software standards and interoperability
- Relevant safety standards and certifications
- Optimal cable lengths and cable management
- High current cable options
- Modular power architectures
- High voltage charging needs for trucks, buses and high performance EVs
- Charger housing and performance (stainless steel v. aluminum or plastic)



Operations and maintenance planning

- Meeting “up time” requirements
- How to enhance reliability
- Remote monitoring, diagnosis, and repair
- Field service teams to complete repairs
- Spare part inventory
- Service level agreements
- Extended warranties



Business enablement

- Connectivity and remote monitoring
- Customization and branding options
- OCPP network integration
- Authentication and payment options
- ISO 15118 Plug & Charge implementation



Deployment requirements and best practices

- Deployment requirements and best practices
- Impacts of harsh environments and high altitudes
- Future-proof site planning
- Installation guidance and best practices
- Training needs for scaled deployments
- ADA compliance and accessibility
- Electromagnetic compatibility and FCC requirements
- EnergyStar compliance
- DC metering and accuracy requirements



SUPERIOR CHARGERS

The highest quality and widest range of charging technology

- High quality: components, materials and designs in the widest power range
- Field tested: Built on more than decade of experience in all conditions and use cases
- Safety first: Third party certifications; company-wide health, safety and sustainability mandates.



SMARTEST SERVICES

The most flexible provider of smart, networked and remotely serviced chargers

- Business model enablement, technology integration teams and 24/7 connectivity
- High uptime: Remote and field service support team for maximum charger availability
- Future-proof: Always up to date with latest standards and software



RELIABLE PARTNER

Vast experience designing and deploying EV charging technology

- Project and service excellence: Dedicated teams to support charger deployment and maintenance
- Human talent: unrivalled engineering and service organization
- Committed: Electrifying transportation for more than a decade

—
ABB E-mobility has the technology and experience to enable successful NEVI programs.

—
ABB E-mobility Inc.
950 W Elliott Road, Suite 101
Tempe, AZ, 85284
United States
Phone: 800-435-7365
E-mail: US-evci@abb.com

e-mobility.abb.com

—
We reserve the right to make technical changes or modify the contents of this document without prior notice. We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB. Copyright© 2022 ABB. All rights reserved.