

Case study Electric fast chargers in Gothenburg, Sweden

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One of the EV solutions developed by ABB is the DC 50 kW Terra 54 fast-charging station, which provides charging on the go for the most common battery sizes within 30 to 45 minutes. The ABB Terra uses open standards to enable connectivity, remote monitoring and remote assistance functions via an ABB Ability[™] solution, reliably connecting public EV charging stations to the power grid. Around 13,000 ABB fast chargers have now been sold in more than 80 countries, making ABB a global leader in DC fast-charging technologies.

ABB's Terra HP 350 kW next-generation fast chargers provide a more powerful solution, capable of adding 200 kilometers of range to an electric car in just eight minutes. ABB has already installed 200 of these units for Electrify America, the largest EV infrastructure project to date in the United States. In many other countries, including Germany, Switzerland and Iceland, ABB is the key technology supplier for sustainable mobility infrastructure.

ABB has also been selected as the main technology partner and supplier of fast-charging systems by IONITY, a consortium of major automakers that has opened 202 fast-charging stations across 18 European countries since 2018. Fastned, a Dutch startup that aims to create a European network of 1,000 fast-charging stations, also uses the Terra series of fast chargers, which run on the ABB Ability[™] Connected Services Platform. This platform employs Microsoft Azure's cloud services to enhance uptime, scalability and speed of development, as well as to provide real-time remote support services.

For mass transit, ABB offers solutions for the electrification of buses. And for the electrification of railways, ABB supports sustainable mobility with power and automation technologies for customers ranging from train manufacturers to rail operators. We design, engineer and commission solutions to deliver safe, reliable and cost-effective rail freight and passenger transportation solutions. Our product offering includes traction transformers, motors and converters to move vehicles quickly and reliably. This includes leading integrated and collaborative digital solutions with ABB Ability[™].

To further enhance our portfolio of EV charging solutions, ABB has invested some \$10 million in a new e-mobility research and development facility in Delft, Netherlands, which opened mid-2019. The center focuses on EV charger interoperability and also incorporates large testing areas to accelerate the development of charging solutions for the rapidly growing electric bus segment.

Sustainable infrastructure

ABB contributes directly to the achievement of SDG 9 by developing advanced products, solutions and services that are changing the way facilities and systems deliver essential services to towns, cities and industries.

Since infrastructure comprises the foundation of any properly functioning city, we believe our SDG 9-related products, solutions and services are vital to the success of smart city initiatives. Indeed, ABB technology and leadership are behind many of the major projects that keep our cities and nations running. In cities around the world, ABB's sensors and systems provide real-time information and control for utilities and transport systems, enabling them to save energy, reduce losses of water and power and enhance management processes. And ABB's measuring and detection technology enables city managers to closely monitor and react to dangerous spikes in emissions. The efficient and reliable distribution of renewable power is critical to any sustainable city and will be a prerequisite for industrial facilities in the future. ABB technology is perfectly suited to this application, as evidenced by our latest installation in Brazil. There, Enel Green Power chose our ABB Ability[™]-powered digital substation to deliver emission-free solar power from the São Gonçalo solar photovoltaic plant to Brazil's 500 kV transmission network. This solution will eliminate 600,000 tons of carbon emissions a year and make Brazil's grid stronger, greener and smarter.

In the city of Västerås, Sweden, ABB Ability™ digital solutions and expertise are being applied to good purpose in close cooperation with Microsoft. There, ABB is working in partnership with Swedish energy company Mälarenergi. Mälarenergi operates a broad range of essential services for the city of 150,000, including hydropower plants, the local power grid, a waste-to-energy plant, heating and cooling networks, water and wastewater treatment plants, a water distribution network and a fiberoptic network. For the management of all of these core functions, they rely on ABB Ability™ Collaborative Operations to make more information about these services available faster.

In Vietnam, Ho Chi Minh City's local utility, SAWACO, uses the ABB Ability[™] Symphony[®] Plus supervisory control and data acquisition system (SCADA), reducing water leakage from 30 percent to 10 percent while supporting long-term growth. The smart collection of digital data offers realtime insights into the water network's status, enabling quality improvement of its drinking water and better living conditions for millions of people in the Vietnamese city.

Hospitals are also categorized as fundamental infrastructure assets, and ABB is at the forefront

of efforts to empower them with smart technologies. The healthcare sector is now being challenged to keep pace with advances in the diagnosis and treatment of disease while coping with an aging population, increasing costs and a growing worldwide shortage of medical staff. In response, in 2019 we opened the first ABB global healthcare research hub, on the Texas Medical Center campus in Houston, Texas. The goal is to develop robots for repetitive, delicate and mundane processes, leaving highly skilled medical and laboratory staff free to take on more valuable roles, and ultimately treat more patients.

At the research hub, we will use our experience in industrial and collaborative robotics to create flexible automation solutions for healthcare. Cutting-edge robotics have the potential to reduce the number of manual procedures performed by medical staff, improve the accuracy of laboratory work and enhance patient satisfaction and safety. The hub will feature a number of concept technologies, including a mobile YuMi® robot, which will be designed to assist with laboratory and hospital logistical tasks. Additional YuMi® robots could be used for centrifuge tending and test tube handling systems, while an IRB 1200 robot may be used to

Innovative industry

ABB is developing advanced products, solutions and services that are radically reshaping the production landscape by making smart and sustainable factories of the future possible. Our portfolio enables manufacturers to respond to the increasing pressure for shorter product design cycles, the rise of mass customization, and increased environmental, safety and compliance regulations. Case study Energy savings enabled by intelligent motion solutions

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