



GRIVIX

we power e-mobility

Company profile

Who We Are

“...Global warming is an unfortunate reality our generation is living in. I am a father of two boys (5 and 8 years old) and if I want my children to continue living surrounded by the beautiful nature in Switzerland, I need to act now and contribute to fighting climate change. The global acceleration toward electrical vehicle use is an important pillar of the green energy transition and while considerable progress has been achieved in the automotive industry, it is still a way to go in making the global supply chain industry emission free including trucks, ships, and airplanes. That drives me and all employees at **GRIVIX** to continue developing cutting-edge technologies in autonomous megawatt charging for electric vehicles.

In following this passion, I was able to build significant professional experience in the field, starting from converting conventional into electric cars (Fiat 500 in 2011, Lotus Elise in 2012), moving into developing one of the first electrical 18 tonnes trucks (E-Force One in 2013) and finally transiting into new products development for the major automotive supplier in Switzerland – Huber+Suhner in 2014. In 2017 I led the first-time ever development and market launch of a cooled cable and connector (unique technology allowing faster charging).

In 2018 I decided to follow my passion as an entrepreneur and set up **GRIVIX**. Additionally, I support the local community services as a member of the board.”

GRIVIX is a Swiss-based company with a strong footprint in developing innovative technologies, running collaboration projects in the field of autonomous- and megawatt-charging that enables **GRIVIX** to offer exclusively a full spectrum of required technologies to implement infrastructure projects in heavy duty vehicles charging (including autonomous charging robot, AI powered vision recognition, megawatt-charging connectors & cables).



Marc-Andre Beck
CEO & Founder

Grivix provides the technology that allows charging EV trucks and busses not only fully autonomously, but also at a speed that is faster than filling with diesel!

What We Do

Mission: Through our strong R&D department and partners, we are creating the technology and products to enable a seamless and very fast electric charging experience for our customers in the automotive, marine, and aviation industries without any human interaction.

Vision: We are committed to contributing to the transition to sustainable, carbon-free, comfortable, and safe mobility.

The problem we are trying to solve

Nowadays, most of the goods are transported by trucks, ships, or planes. Due to the size and weight of these transport options, user-friendly and quick High-Power Charging is becoming the key to future supply chain stability.

To satisfy the market demand to charge electric heavy-duty vehicles within a reasonable time, a new solution for high-power charging is needed. A solution that can charge batteries with larger capacities at the same time or even faster and with better convenience than vehicles are being refilled with diesel now.

To give an answer to global challenges like CO₂ reduction and energy saving, the automotive industry has been accelerating the development and commercialization of electric vehicles (EV) in transportation/ logistic infrastructure.

Why is it important for the EU & Switzerland?

More than 70 countries including China, the United States, the European Union, and Switzerland have agreed to reach net zero by 2050. The EU's objective is to become the first climate-neutral continent by 2050.

In order to reach the target, there are multiple legislation frameworks and initiatives put in place. Including, the mandate from the parliament of the European Union that all new cars and vans from 2035 should be zero emissions.

To accelerate the transition to green logistics, a total of at least 150'000 new HPC charging points will be deployed (CCS, MCS) alone in the European Union.

Vehicles are getting more and more autonomous capabilities. Even though full autonomous capabilities are not yet available on the market and will possibly take another decade, partial self-driving capabilities in designated areas will become more common. E.g., valet parking, where a car is parking itself in a parking area; self-charging, where a car is looking for its optimal charging station. Think of getting out of the car in front of the restaurant and enjoying your evening, while your car is driving to the charging area, charging itself and then parking on the parking lot. When you come out of the restaurant, your car is already expecting you fully charged!

Our technologies...

1. Megawattcharging

Why to transit to new HPC

Out of some 225,000 public chargers currently available in the EU, only 25,000 are suitable for fast charging. In other words, a mere one in nine European charging points is a fast charger (with a capacity of more than 22kW). The remaining charging points (with a capacity of 22kW or less) include many common-or-garden, low-capacity power sockets.

Charging an electric car using one of these 200,000 low-tech power outlets can take as long as an entire night. By contrast, using a high-capacity fast charger can reduce this to 20 minutes. Fast chargers, however, still only count for a fraction (11%) of Europe's infrastructure network.

MCS Vehicle Charging Inlet*

- MCS Level 3 Vehicle Charging Inlet 3'000 A+
Needs to be connected to the internal cooling system (water glykol) according to IEC PT 63379, not certified
 - MCS Level 2 Vehicle Charging Inlet 1'000 A
with locking, not cooled, according to IEC PT 63379, not certified
- *Ongoing development. To be used for testing purposes only.*

Cooled Cable


Grivix has long lasting knowledge in laying out concepts (consulting) for cooled cables (incl. cooling unit, fluid, cable and connector) and also developing full systems (development, analysis, prototype production, setting up operations).

Consulting

Support for the development of a proprietary cooled cable and connector to transfer high currents.

Training at CharIn

Grivix is regularly giving classes at CharIn Academy. Please contact us for the next dates.



Megawattcharging

The future of heavy-duty electric vehicles

The electric energy transfer is now faster than filling up Diesel.

14,4 MW	4,3 MW	5 MW
Charging Power Diesel (@ 23 l)	Charging Power Diesel (tank-to-wheel 30%)	Charging Power MCS: 4000 A * 1250 V

Thanks to the patented cooling technology & inlet design of GRIVIX, electric energy transfer is now faster than filling up Diesel/Gasoline

Our technologies...

2. Autonomous Charging

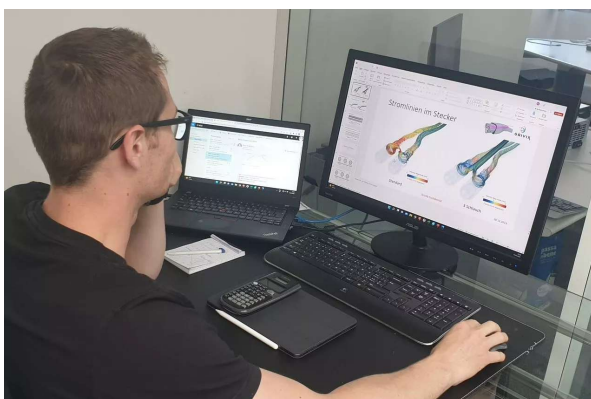
Vehicle side



In collaboration with VDL-ETS and Rocsys we developed and tested an automatic charging flap (integrated with our UWB positioning and HMI). The flap is in continuous operation with a customer to identify issues in robustness, water tightness and reliability. The HMI has been developed to display status information about the robot and giving parking guidance. The HMD and the automatic charging flap can be integrated standard compliant according to SAE J1939 or using a proprietary CAN-Bus protocol. Communication and positioning is standard compliant according to IEC TS 61851-27.

Our automatic charging flap in conjunction with our infrastructure positioning module can guide and position (according to IEC TS 61851-27) a vehicle to come into reach of the robot. This helps the driver or the driverless car to stop at the right position to enable an automatic plugin process without errors.

Infrastructure side



We support our customers with our software stack to detect and guide a vehicle to the charging spot until its parked using our positioning device and then give the coordinates and distance of the CCS or MCS Vehicle Charging Inlet through our AI powered vision recognition software.

Our software may be used to support the full robot charging process.

Our technologies...

3. R&D Collaboration Projects



In collaboration with various partners (industry & academia) we implement R&D product development including following and more:

- CAD development
- Analysis (FEM, CFD)
- Fast prototyping (3D print)
- Setting up small series production
- Sourcing (evaluate suppliers, order small series)
- Setting up operations (full production line)
- We are aware of IATF 16949 (not certified).

Who are our customers

- Bus manufacturers and manufacturers of specialized vehicles have an immediate need because they want the driver to stay in the vehicle during a charging process due to convenience or safety reasons (mining, ports, airports) and those vehicles are operating often in defined, not public areas.
- Truck and car manufacturers are testing autonomous capabilities now, but serial implementation will not happen before 2025.
- Drones
- Airplanes

**Contact us to integrate/ license our technology and
to explore collaboration opportunities!**