

FACTSHEET MONTEVIDEO



Demonstration City | Montevideo - Uruguay

Montevideo, the capital city of Uruguay, has a population of 1.3 million, more than 30% of the country's population. Uruguay's GDP per capita is US\$16.245, which is amongst the highest in the region. In 2014, its per capita CO2 emissions were 2 tonnes. Uruguay has undergone a structural transformation of its electricity system, as such more than 90% of the electricity generated now comes from renewable sources. Transportation is the sector with the second highest energy consumption in Uruguay and is the main consumer of petroleum derivatives and the largest emitter of CO2 (MIEM n.d). This can be explained by the fact that 82% of the motorised trips are completed in private vehicles with an average annual growth of the light-duty vehicle fleet of 7%.

Cost-efficient and smart charging solutions

The planned demo action consists of assisting with the construction of a high-capacity bus depot to charge the existing and planned e-buses overnight, taking advantage of the electricity oversupply and a reduced electricity price at night. Once the demo action starts, there will already be 30 e-buses running in Montevideo and the bidding process for the next 40 will have started. The high-capacity bus depot will integrate efficient and cost-effective smart charging solutions compliant with Combined Charging Standard (CCS) and Open Charge Point Protocol (OCPP).

This will allow charging of up to 3 buses with 1 charger, i.e., 3 compact boxes powered by one charge cabinet that will charge 3 buses sequentially (up to 150 kW per bus) with all buses being charged within 6 hours. The main advantage of implementing this type of equipment is that the required grid connection is smaller, reducing initial investments and operational costs. The depot will serve a double purpose, as during daytime 10 E-taxis (provided by city/taxi) will have access to 15-30 minutes charges in the multi-standard 50 kW fast charging stations provided (ABB). Moreover, the possibility of installing opportunity fast chargers in the most travelled streets for buses to charge for 3-6 minutes on-route will be explored. These solutions can easily be integrated in existing operations by installing inverted pantographs and chargers at terminals and intermediate stops. Finally, a real-time platform for reliable and secure operation of electrical power networks, ranging from generation, transmission and distribution to e-buses will be developed to improve the system management. IDIADA will support the charging standardization.



Activities

- Support to the integration of multi-standard fast chargers in the high capacity depot
- Investigation of feasibility of installing opportunity chargers along bus routes
- A real-time platform for reliable and secure operation of electrical power networks, ranging from generation, transmission and distribution to e-buses will be developed



Fact and figures

- Over 90% of the electricity generated in Uruguay comes from renewable sources
- Fifty-five percent (55%) of the fuel combustion-related GHGs in Uruguay are from the transport sector
- The light-duty vehicle fleet in the country has been growing at 7% in the recent past

Demonstration actions and support teams			
	E-taxis	Multi-standard 50 kw fast charging for e-taxis	Bus and taxi charging integration
	Business model for e-BRT systems	Fast charging Charging standardisation	SOL+ MaaS App
	E-buses	Fast-charging	Charging operations management