

INFRACHALLENGE 2021

EXECUTIVE SUMMARY - COMPANY: XPERT CONVERTERS, S.L.

Enabling resilient e-vehicle charging networks

INTRODUCTION

It is now commonly accepted that the world is not on track to meet progress towards the Paris Agreement on Climate Change. GHG emissions from transport in Europe increased in 2018 and 2019¹, generating 27% of all emissions.

E-vehicle sales will be rising as energy density of the batteries are getting better and prices are falling² (87% from 2010 to 2019). In the same way, maximum EV charging speeds are also rising.

Automakers are accelerating their EV strategies, and by 2022 there will be over 500 different models available globally. Investment in electrification is being the main driver to meet climate change. By the mid-2020s EVs reach up-front price parity – without subsidies – with internal combustion vehicles in most segments, and some analysis suggests that 90% of the world's vehicles could be electric by 2040³.

PROBLEM

International and national policies in place, a positive regulatory framework, public funds available, manufacturers on the move, technology ready with price reductions... everything seems to be ready for the take-off of the EV. But is this roadmap credible? Are we missing anything? YES! Do we have all the variables under control? Definitely not. E-vehicle sales are increasing 110% in the period 2017-19, but charging points grew by only 58 % in the same period of time⁴. So what about the charging infrastructure? Many users claim that they do not buy EVs because there are no charging points and, likewise, no more charging points are installed because no more EVs are sold.

What happens is that deploying an electric vehicle charging infrastructure is, with the current solution, a huge financial and time investment that involves either laying new wiring using existing pipes to meet the new power requirements, or breaking up the pavement of streets for the new wiring, filling the cities with trenches, causing traffic jams, inconvenience to neighbours and pedestrians, noise pollution, and contracting more electrical power.

SOLUTION

Xpert Converters is developing a technology capable of:

a) repowering the public lighting network by multiplying the installed power by up to x5, and thus being able to charge several electric vehicles at the same

¹ European Environment Agency

² Electric Vehicle Outlook 2020, BloombergNEF.

³ International Monetary Fund and Georgetown University (2017).

⁴European Automobile Manufacturers Association (2020).

time without interrupting the lighting service and without having to contract more power from the power company. And all this using the same wiring and transformers as the current installation.

b) Manage and store energy, without requesting power extensions, to be able to supply fast charging to electric vehicles at charging stations such as the current service stations and other points such as car parks and shopping centres. Similarly, costs would be reduced by not having to contract more power.

c) Charge batteries wirelessly, thus allowing the simultaneous charging of several vehicles at the same time, such as rental fleets, corporate vehicles, motorbikes, bicycles, drones, electric skateboards, etc.

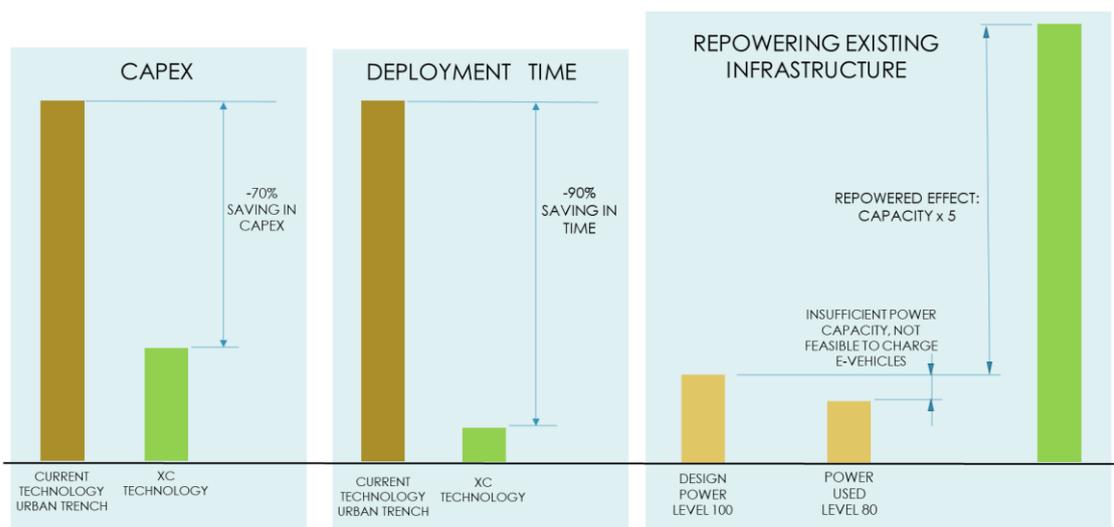
Our solution makes possible to maintain the existing asset worldwide (powerlines for more than 350 million streetlights) in a better way by offering a charging service, giving the infrastructure greater value, adapting the network to a new model and thus increasing its resilience.

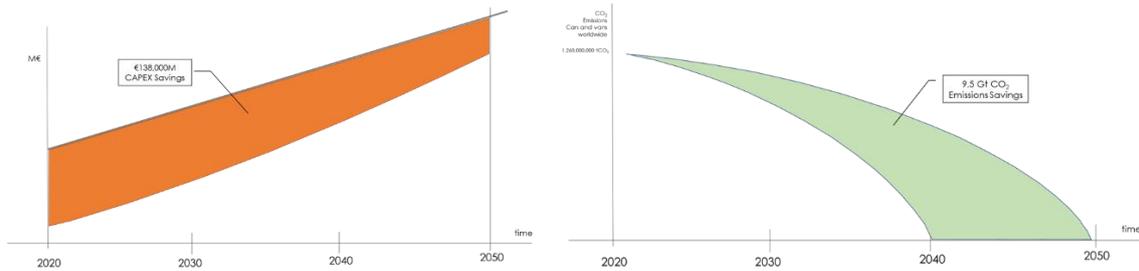
UNIQUE SELLING PROPOSITION

From an internet search and industry feedback Xpert Converters proposal appears to be unique. Xpert Converters brings to the market the technology that will allow to expand sustainable mobility worldwide facing simultaneously, in the short term, the two main challenges of the sustainable mobility industry: drastic reduction in CAPEX and deployment time.

BENEFITS

In this way the deployment of charging points can be accelerated with a 70% cost reduction, and reducing installation time and emissions by 90%. This means a reduction in overall CAPEX of €138 bn, and a 10-year reduction in deployment time, reaching a savings of 9,5 GtCO₂ in 2040.





Our technology would act as a catalyst to deploy charging networks around the world efficiently, in the right timeframe, and make sustainable mobility a real model as soon as possible, allowing a quick decarbonisation to meet reductions of CO₂ emissions around the world. This will affect and benefit to society as a whole, both to the most advanced countries and, above all, to the emerging economy countries.

BUSINESS MODEL

The business model of Xpert Converters is to be a technology provider, i.e. to make a new technology technically and commercially viable by acting as the inventor of the technology and as the first link in the chain. Our products will be our IPR and know-how that will be commercialize through reference designs and prototypes to OEMs (Original Equipment Manufacturers) under a partnership and licensing agreement.

Therefore, our growth strategy and worldwide presence is guaranteed through our partner/licensee channel, and not directly from us. This guarantees the scalability of the product worldwide.

SUSTAINABLE STRATEGY

Every week, 1 million people move to cities to live in search of better opportunities. This fact means that the world's population is increasingly concentrated in cities (80%), and challenges such as sustainable mobility cannot be delayed any longer. Mobility has an impact, not only on the economy, but above all on the health and environment of the entire urban environment.

Xpert Converters contributes with its technology to the rapid deployment of electric vehicle charging infrastructure, enabling the reduction of CO₂ emissions and aligning with the following Sustainable Development Goals:

- N° 9 Industry, Innovation and Infrastructure, promoting innovation in the industrial sector and in the existing infrastructure sector.
- N° 11 Sustainable Cities and Communities, facilitating and catalysing sustainable mobility in urban and regional settings.