CEBIT 2018 INFORMATION

From the lowly petrol pump to the Designer Charger

Munich, 11/06/2018 – In conjunction with Designworks, responsible for the visualization of the new charging stations and points making up the majority of its pan-European 350 kW High-Power Charging network, IONITY will be presenting a full-scale concept of its new charger as well as a virtual reality presentation of the IONITY charging experience from 11-15 June 2018: Visit us in Hall 25 „Future Mobility“, Stand B48.

The Story of the petrol pump

In all likelihood, it was one Edwin Drake who was the first person to commercially drill for oil when he developed his borehole in Pennsylvania USA in 1859. The previous year in the neighbouring state of Ohio had seen the first discovery of oil in North America. At the time, nobody was quite sure of the potential of this dark, treacle-like liquid – it would be a good few years before people talked of “black gold”.

A simple refining process converted the oil into petroleum, which was ideal for the humble lamps used at the time to convert night into day. Drake had no use for the other crude oil “by-products” including petrol, which were a result of the refining process. The development of vehicular transport of all kinds, whether restricted to railway tracks or able to roam freely, and able to convert energy from something other than coal, wood or even electricity would require years. Take for example the first ever automobile, Gustave Trouve’s Tricycle dating from 1881, which was powered by electricity. The first power grids date back to this period, which also explains the increasing popularity of the electric light bulb. Little by little, electricity increasingly became the preferred source of

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power for many applications. That said, crude oil remained a multi-faceted source of energy.

For petrol however, a new career beckoned as the fuel of choice for the increasing numbers of motorized carriages in the closing years of the nineteenth century. One of the first individuals to appreciate its enormous potential was John Davison Rockefeller. Even by modern criteria, his Standard Oil Company would still be one of the most valuable enterprises in existence today.

Fuel break after 50 kilometres

Meanwhile in Germany, Berta Benz had acquired a reputation for being both a forthright individual and a robust driver. She undertook the first long distance journey in a car equipped with a piston engine in 1888. That year also saw the introduction of the first four wheeled electric vehicle, the Flocken With its limited range and a performance barely more than walking speed for a gentle jaunt around town, it wasn't just electric vehicle fans who were amazed by Berta's combustion engine. Carl's wife drove the "Benz Patent Motorwagen" some 100 kilometres from Mannheim to Pforzheim on the spur of the moment – at the time a simply incredible distance. Halfway in a town called Wiesloch, she had to stop for fuel – the small tank was no range extender. Fuel stations had yet to be invented, so she bought petrol in bottles from the chemists. People began to realise that the car in general and more specifically one equipped with this shaking combustion engine was the future after petrol was officially recognised as a fuel in 1892. From then on, it could be purchased in chemists, pubs and colonial goods' stores and from 1900, mobile tankers. Pavement pumps became increasingly popular over the next few years. Sylvanus F. Browser is credited with the invention of the petrol pump with which it was possible to refuel much faster than charging electric cars. In addition, cars equipped with internal

combustion engines became increasingly more comfortable. Even turning piston engine over by means of a crank arm became unnecessary. Further impetus was lent to petrol engines by the advent of the First World War. It was soon obvious to all that greater distances were more easily accomplished in a car equipped with a petrol engine than any other form of transport other than rail. Nevertheless, the internal combustion only finally usurped (initially at least) the electric car in the nineteen-twenties - allegedly with the assistance of the self-same J.D. Rockefeller and his gigantic oil business.

1922: The first fuel stations

The first proper fuel stations in Germany opened in Berlin, Hamburg and Cologne in 1922 and the rapid development of automobiles combustion engines and the petrol pump went hand in hand. The first diesel truck was launched in 1923 and diesel fuel was increasingly available. Two years later, the Weimar republic could boast some 1,000 fuel stations. By 1936 it wasn't just motorway construction that was being encouraged by the authorities – in the Third Reich it was decreed that there should be a fuel station built every 25 kilometres to ensure that fuel was always readily available. By 1938 over 70 motorway fuel stations had been built – by then however that regime's priorities had changed. In total however, there were over 60,000 locations where people were able to buy fuel - an all-time high, which would never be repeated. During the Second World War, the few vehicles remaining in private ownership were converted to run on gas. Petrol and diesel were restricted to the military and basic supply vehicles until 1948 with distribution firmly in the hands of the Allied powers after the end of World War II.

By the end of the nineteen-sixties there were around 45.000 fuel stations in West Germany. Fuel was largely imported from the USA and the Arab World. Fuel rationing was introduced in 1973. That year, Egypt and Syria

attacked Israel on the Israeli public holiday Yom Kippur and it wasn't long before the effects of the conflict were being felt across the globe. As part of their support of Egypt, the Arabian oil suppliers simply stopped production. The USA was unable to make up the shortfall and it was immediately apparent to the world how dependent it was on the black gold. It is hard to forget the images of car queues at fuel stations for a few paltry litres of petrol.

By the mid seventies, a new form of petrol had been introduced to the US market – this was lead-free. As lead was deemed to be unhealthy, it was also banned in fuel in Germany from the mid–eighties. At the time, there were over 270 fuel stations directly located on German motorways. A joy indeed for those drivers who regularly drove long distances, as they were not forced to leave the Autobahn to hunt for a fuel station. Since then the total number of fuel stations in Germany has continued to drop and according to statistics released in 2018, the figure currently hovers around 14, 000.

Filling up with fossil fuels is already passé

A number of fuel station operators have recognised the winds of change and along with petroleum, diesel, and CNG products, they have also begun to provide for the increasing number of electric vehicles. The German Ministry of Transport and Digital Infrastructure (BMVI) estimates there will be around 15.000 chargers in Germany by 2020. The current figure is some 9.500 . Approximately 8.000 of those are capable of providing 22kW with around 1.300 offering 50kW for longer journeys.

And this is exactly where IONITY comes in. The Munich-based joint venture, a brainchild of the BMW, Daimler, Ford and Volkswagen Group's Audi and Porsche divisions, is at the forefront of the race to develop a new range of hyper modern chargers. 50kW chargers do a good job but as far

as IONITY is concerned they are not good enough. The company set itself the following target: Build 400 high performance charging stations by 2020 utilising the CCS combined charging system plug and offering 350kW and this across Europe in 25 countries. 340 stations will be located in the EU, with around 100 in Germany. In future, all IONITY design chargers will utilise the autonomous plug and charge technology. It will be speedy, simple and super clean. And while we are on the subject of clean, in Germany for example, IONITY sources its energy from green power provider Polarstern.

An IONITY station every 120 kilometres

Up to six chargers are the norm at an IONITY charging park, which is typically located directly adjacent to the motorway, on average about 120 kilometres from the next IONITY charging station.

„IONITY has made the long distance journey scenario its own" according to CEO Dr. Michael Hajesch, "Our chargers bring the advantages of electromobility to the trunk routes of Europe. This new generation of electric vehicles only needs 15 minutes for a range of 300 kilometres. In the time it takes to enjoy a cappuccino, this stylish fast charger can fill up your car."

And as COO Marcus Groll adds, "The next generation of electric vehicles available from the end of 2018 will positively influence the way in which charging infrastructure develops. When the number of charging sessions or the number of electric vehicles in the market achieves a certain volume, the market will not be able to avoid using 350kW chargers on the long distance routes. This is where IONITY is building its four hundred stations. Our customers can be on their way far more quickly as they will spend less time queuing to charge. Depending on vehicle capacity, IONITY customers can charge up to 400 kilometres in 20 minutes.

Business trips and holiday will become more stress free and cleaner than ever before. The future of charging has already arrived."

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About IONITY
IONITY is headquartered in Munich and was founded in 2017; it is a joint venture of the BMW Group, Daimler AG, Ford Motor Company and the Volkswagen Group with Audi and Porsche. The goal of the joint venture is to build an extensive and reliable High-Power-Charging network (HPC) for electric vehicles in Europe to secure comfortable long-distance travel. IONITY has attractive national and international locations through its strong cooperation partners. IONITY is an internationally registered trademark. www.ionity.eu
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