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Experience “Energiewende” and digitalisation right now and save money at the same time. **BMW Digital Charging Service optimises charging and integrates electric vehicles into the energy market.**

Munich. The global challenge of innovative mobility concepts and technologies is closely interwoven with sustainable energy. BMW i is expanding its engagement in electric mobility with the new BMW Digital Charging Service (DCS), the intelligent service for predictive, convenient, cost-effective and green power-optimised charging. Thanks to this product, BMW i is a pioneer in connecting vehicles with the energy world and the first automobile manufacturer to offer customers a system that intelligently incorporates charging into everyday life and the electricity market and furthermore helps to considerably reduce charging costs.

Numerous wind parks and the widespread distribution of solar energy systems on public and private buildings are a visible indication of the worldwide paradigm change in the production of electricity. Photovoltaic systems in particular facilitate emission-free production of electricity for use in the home. If the electricity produced with one's own solar system, or an excess supply of wind power in the power grid is used specifically for charging electric car batteries, this will further enhance the sustainability of this drive type. The Digital Charging Service optimises charging technology. As a result, the cost of energy required to charge a vehicle can be reduced substantially. Moreover, in cooperation with selected energy partners, special electricity rates will be offered in conjunction with the service in future. Thanks to intelligent charging, hard cash will flow back to the accounts of BMW customers. In conjunction with the new BMW i Wallbox Connect, self-generated electricity from the domestic photovoltaic system can be perfectly integrated into the process of charging electric cars or plug-in hybrid models.

This unique charging service is initially available for BMW i and BMW iPerformance vehicles. In a later phase, it will be extended to the electric vehicles of all brands. Germany and the Netherlands will be the pilot markets as from the spring of 2017.

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BMW Digital Charging Service: Combined e-mobility and digitalisation.

As a forerunner in the field of electric mobility and under the label 360° ELECTRIC, BMW i was early in supplementing the range of innovative vehicle concepts with intelligent products and services that render using these vehicles even simpler and more convenient. BMW is now defining the next stage of intelligent and inter-connected charging and is the first manufacturer to bring to market a holistic product designed for intelligent charging services. In doing so, the BMW Group is yet again underpinning its pioneering role in the field of electric mobility and digitalisation.

The BMW Digital Charging Service offers intelligent functions that render the process of charging a vehicle both more comfortable and efficient, whilst ensuring a smooth integration of the charging services into the customer's everyday life. The BMW Digital Charging Service is both simple and convenient to use. After the customer has registered with the BMW charging portal using his or her ConnectedDrive access and performed a one-time configuration of DCS, he or she will be provided with a display of detailed information in the personal customer area of the charging portal. This will show, for example, the connected vehicles and wallboxes, charging plans as well as the results of optimisation.

After activation, the service carries out the charging process fully independently and autonomously. Intelligent charging logics automatically analyse the customer's electricity rate during the charging period, finds the most favourable time frames and energy sources, flexibly synchronises charging process time, whilst ensuring that the vehicle is fully charged and already air conditioned at the desired departure time.

Cost efficiency and optimised use of renewable energies.

The BMW Digital Charging Service plans the charging process and not only exploits potentials for cost savings, but also incorporates renewable energies into the charging process. The service calculates cost-optimised time frames for the charging process, starting it automatically at the right time. Alone through the choice of the ideal charging time frames, for instance when favourable night rates are available, individual market-related electricity costs can be reduced

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considerably. In conjunction with the use of renewable energies, the personal CO₂ footprint becomes even smaller.

The BMW Digital Charging Service is based on two core functions: Tariff and solar optimised vehicle charging – with some functions in combination with the new BMW i Wallbox Connect.

In the case of tariff-optimised charging, the BMW Digital Charging Service aligns the charging plan to the customer's electricity tariff. Cost-efficiency of the charging process is improved and the vehicle is automatically charged at the lowest electricity rates. In doing so, the system distinguishes between tariffs at which the electricity rate can vary dynamically during the course of the day and tariffs that contain fixed times for maximum and minimum rates, e.g. cheaper off-peak times.

In selected markets, the BMW Group cooperates with innovative energy providers, so that BMW customers are even able to receive cost reimbursements through intelligent charging with the BMW Digital Charging Service. In 2017, the BMW Group will be launching this innovative partner offering in the Netherlands together with the energy providers ENECO and Jedlix. BMW will successively introduce this innovative product module in further countries.

In the case of solar-optimised charging, the BMW Digital Charging Service is aligned to the domestic photovoltaic system. DCS predicts the solar power based on the weather-forecast and the output of the installed photovoltaic system specified by the customer. The charging plan is established according to the currently available and predicted, locally generated solar energy. In this way, the amount of electricity not consumed at the time of being generated in the home can also be used for cost-efficient charging of the electric vehicle. The vehicle is automatically charged in optimum combination with the self-generated solar power.

Therefore, thanks to DCS, the vehicle is incorporated to the best possible extent into its environment, fully automatically charged and aligned to the customer's individual energy concept. During optimisation, the BMW Digital Charging

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Service constantly ensures that the vehicle is fully charged and ready to leave at the desired time of departure.

Convenient and proactive.

The BMW Digital Charging Service also allows in the charging plan for the desired air conditioning of the vehicle. When the vehicle is connected to the power supply, the BMW Digital Charging Service includes this in pre-planning and ensures that the vehicle is air conditioned at the desired departure time. By pre-heating the battery storage unit at low outside temperatures, it is possible to obtain an operation status that not only guarantees best possible performance and range, but also optimises the service life of the battery.

Furthermore, the system creates an overview of the preceding charging processes, which provides information on the amount of charged electricity in kilowatt hours (kWh), costs and savings as well as the percentage of solar electric power. It is also possible to export all data pertaining to the charging process.

The BMW Digital Charging Service is an integral part of the ConnectedDrive Services and freely accessible for the first year. After that, DCS can be extended at the ConnectedDrive Store. The offer will be initially available in Germany and the Netherlands from 2017. France, Italy, the UK and the USA will follow shortly after; the BMW Digital Charging Service is expected to be available in China and Japan from 2018.

The new BMW i Wallboxes: Convenient charging at home.

Since the summer of 2016, BMW has offered the new second-generation BMW i Wallbox for convenient and fast charging in the garage at home or in the private parking space. Thanks to further developed charging electronics, it is now able to handle not only single-phase charging currents, but also three-phase, 11 kWh charging currents. Furthermore, the new generation of the BMW i Wallbox is also prepared for possible future requirements and charging capacities of up to 22 kWh. With the BMW i Wallbox Plus and the BMW i Wallbox

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Connect there are now two further charging stations with enhanced features and even greater user convenience.

Versatile and upgradeable: The new BMW i Wallbox Plus.

In addition to all BMW i Wallbox functions, the new BMW i Wallbox Plus also features integrated authentication via RFID chip (Radio Frequency Identification). Therefore, it is able to automatically identify the vehicles of several users and correctly assign the data of each charging process to each respective vehicle. Active load management controls the ideal time for the charging process by adapting the charging current to the electricity currently required in the home. The new BMW i Wallbox Plus can also be upgraded to the BMW i Wallbox Connect with an external power meter and equipped with an optional communication module in the form of a plug-in network card.

Integrated and connected: The new BMW i Wallbox Connect.

With the communication module fitted as standard, the new BMW i Wallbox Connect already features a factory-set WiFi connection without the need for additional end devices. In addition to all functions already offered by the BMW i Wallbox Plus, the new top-of-the-range model is therefore also able to make use of the innovative BMW Digital Charging Service. Furthermore, it is not only possible to record the amount of electricity generated via the BMW i Wallbox Connect separately for each vehicle but also, in conjunction with the BMW Digital Charging Service, to export the data following the charging process, which is, for example, essential for recording fleet customers' charging costs for expenses claims or accounting.

Flexible installation in the garage or carport.

In principle, all BMW i and BMW iPerformance automobiles can be charged with tariff-optimised electricity via the BMW Digital Charging Service using a standard charging cable at any conventional domestic power outlet. Charging the vehicle's high-voltage battery is significantly faster using a BMW i Wallbox Connect, which also offers the possibility of solar optimisation. The latest generation of BMW i Wallboxes differs from its predecessor not only technically but also optically: Thanks to the clearly visible, flatter and more compact design, the space required by the BMW i Wallbox has decreased by 40 percent. It offers better



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performance than its predecessor and is able to charge the battery of a BMW i3 (33 kWh/94 Ah) to 80 percent of its capacity in around three hours. If only alternating current with a maximum of 7.4 kWh is available, the charging process takes around four hours. With a length of 5.00 to 7.60 metres, the new charging cable integrated into BMW i Wallboxes also offers greater flexibility in the choice of an installation site in the garage, carport or in underground car parks, allowing the cable to be connected to the car simply and conveniently. As soon as the vehicle and the charging cable are connected, the system is ready for the charging process, which starts automatically and is controlled by the Digital Charging Service.

Before and after purchase: Competence from one single provider.

The BMW i Installation Service is responsible for connecting the BMW i Wallbox Connect. With an online pre-check customers themselves can simply test online whether their home is suitable for the installation of a BMW i Wallbox. After this, the BMW Installation Service checks the electrical systems in the home and installs the desired BMW i Wallbox. Moreover, BMW i also offers solutions for the supply of sustainably generated electricity. Therefore, BMW i provides a comprehensive service from one single source – also after purchase.

About BMW i and BMW iPerformance

BMW i is a brand of the BMW Group, playing the role of an incubator for networked mobility services, visionary vehicle concepts and a new understanding of premium that is strongly defined by sustainability. BMW i is represented in 54 countries with the BMW i3 (electric car for use in metropolitan regions) and the BMW i8 (plug-in hybrid sports car) and BMW iPerformance automobiles (all BMW plug-in hybrids). BMW i also encompasses DriveNow (car sharing), ReachNow (CarSharing 2.0), ChargeNow (easy access to the world's largest charging point network), ParkNow (simple location, reservation and payment of parking spaces), the venture capital company BMW i Ventures (investment in start-up enterprises with a focus on urban mobility), BMW Energy (services around energy optimisation) and the Centre of Competence for Urban Mobility (consulting for cities).



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The BMW Group

With its three brands BMW, MINI and Rolls-Royce, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. As a global company, the BMW Group operates 31 production and assembly facilities in 14 countries and has a global sales network in more than 140 countries.

In 2015, the BMW Group sold approximately 2.247 million cars and nearly 137,000 motorcycles worldwide. The profit before tax for the financial year 2015 was approximately € 9.22 billion on revenues amounting to € 92.18 billion. As of 31 December 2015, the BMW Group had a workforce of 122,244 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

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