ABSTRACT

BUILDING A COMPETITIVE ADVANTAGE ON THE EUROPEAN ELECTRIC VEHICLE MARKET

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The countries of the European Union, EFTA and the United Kingdom are in the process of energy transformation, the main goal of which is to achieve climate neutrality in 2050, i.e. net zero greenhouse gas emissions. In November 2018, the European Commission (EC) presented a long-term vision of a competitive and climate neutral economy that is in line with the 2015 Paris Agreement goal of keeping the temperature rise well below 2°C and trying to bring it down to 1.5°C. In line with the climate and energy strategy outlined in this vision, the EU's commitment to reduce emissions by at least 40% by 2030 compared to 1990 is to be met.

In December 2019, Ursula von der Leyen, President of the European Commission, announced the assumptions of the European Green Deal (EGD) for the European Union (EU), which tighten greenhouse gas emission reduction targets in such a way that 2050 becomes realistic for achieving the assumed goal of neutrality climatic. In September 2020, the Commission presented a plan to increase, in a responsible manner, a reduction in CO_2 emissions of at least 55% compared to 1990 levels. To this end, the transformation of transport, which is responsible for 21% of greenhouse gas emissions in Europe. The EU is one of the three world markets (alongside China and the U.S.) in terms of passenger car production volume, with a share of over 21% in 2019, and therefore the transformation of the automotive industry and, consequently, the creation of a new electric vehicle market will have a significant impact on the functioning of this industry in the future.

Transport electrification, which is a key element of the industrial strategy, is also becoming a target for most vehicle manufacturers. In the process of electrification of the industry, an important issue is to adapt production to new technological solutions and to achieve a *break-even point* in the production costs of an electric vehicle in a short period compared to its traditional counterpart. As a result, vehicle manufacturers incur large investments in research

and development (R&D), mainly in the production of platforms and the construction of the rest of the vehicle components. Properly matching the platforms and placing the battery of the right size in it is critical for the entire structure, and consequently has an impact on reducing the total cost of the vehicle and increasing the one-time range of the electric vehicle. An important factor is an appropriately technologically advanced battery, which accounts for approx. 50% of the total cost of an electric vehicle.

The aim of this study is to demonstrate that Europe is able to create the right conditions for gaining a competitive advantage against other regions of the world - mainly China and the US - in the production of electric vehicles (EV), through consistently implemented support programs for the industry and by creating appropriate competitive conditions for the entire supply chain. One of the effects will be building a competitive advantage based on the structurally changed global battery supply chain.

The dissertation also emphasizes the fact that consumer behaviour and attitude is one of the key elements in the implementation of the electrification policy of the automotive industry in Europe. For this purpose, a study of consumer preferences in Poland was conducted and the obtained results were compared to other similar studies carried out in Western European countries. The research attempted to find an answer to the following questions: what is the respondents' attitude to an electric vehicle, will potential customers choose an electric vehicle when buying another car, and what factors will influence the decision? If they do not intend to buy, what fears influence their decision?

In the dissertation, the author presented an adapted diamond model of the competitive advantage of M.E. Porter for the European EV market, which was used to analyze the conditions for gaining a competitive advantage in this industry. The author of the study added the following factors to the classic model of M.E.Porter:

- climate change, global warming and air pollution are the key issues behind the implementation of the macroeconomic policies that underpin the emergence of a new EV market,
- the policy of individual EU governments on support for the development of EV markets in the form of subsidies, discounts and incentives for the purchase of EVs,
- the impact of multinational corporations and entering the market of new enterprises (mainly start-ups),
- lithium-ion battery industry closely related to the EV industry.

Based on the analysis of the an adapted diamond model of the competitive advantage of M.E. Porter, the author concluded that Europe would be able to achieve and create conditions for building its own competitive advantage in relation to other markets in the world, in particular China and the U.S. The creation of a regional European battery market with the local use of raw materials will allow producers of batteries and electric cars from EU countries to become independent from the supply of batteries, raw materials and components for their production from outside Europe. Thanks to this, it will be possible to create a competitive advantage against other markets in the world.

Keywords: electric vehicle market, Michael Porter's Diamond Model, European Green Deal, lithium-ion batteries, platforms for electric cars.