MARKET ASSESSMENT OF E-MOBILITY IN HUNGARY

National Mobile Payment Plc.
INNOVATIVE SERVICES

1. Introduction

1.1. The concept of e-mobility

Electric mobility (e-mobility) is a way of transporting people and goods that uses **electric energy** for movement instead of conventional fossil fuels. However, this approach covers much more than merely the spread of electric cars: it represents a complex ecosystem that includes vehicles, infrastructure, energy production and consumer behaviour as well.

The concept carries the promise of **sustainability, environmental protection** and **technological innovation.** The aim of electric mobility is to reduce harmful emissions from transport, mitigate noise pollution in cities, and, in the long term, contribute to a more liveable, cleaner future. However, it is not sufficient merely to replace the vehicle fleet: the entire energy and transport system needs to be reconsidered and transformed.

The rise of electric mobility is not a sudden fad, but a long-term trend driven equally by global environmental objectives, economic considerations and technological breakthroughs.[1]

1.2. Objectives of the analysis

- Presentation of the situation in Hungary, the current state of e-mobility and its development opportunities
- Determining the market size and market potential of e-mobility
- Overview of the infrastructure required for electric driving
- Presentation of the current situation and future opportunities of market participants: car manufacturers, battery manufacturers, and charging station operators (applications)

Overall, we would like to obtain an answer as to what market share road transport using electric cars in Hungary may achieve in the coming years, taking into account the dynamic expansion of previous years and current trends. The analysis also focuses on determining the market size of the related services.

2. Executive summary

2.1. Types and characteristics of electric vehicles[2]

Electric mobility is not a homogeneous category; it includes a number of different types of vehicles that have different operating principles and areas of use. It is important to understand these differences in order to gain an accurate picture of the diversity and the potential of the technology.

Battery electric vehicles (BEV)

They operate exclusively with an electric motor, which is supplied with energy by a high-capacity battery pack. They have no internal combustion engines or exhaust systems, and they do not emit any harmful substances during operation.

Their advantages include zero local pollutant emissions, quiet operation and instant torque, which provides excellent acceleration. The range is continuously increasing as the technology develops, and today many models are capable ofcovering 400–600 kilometres on a single charge. a disadvantage may be the longer charging time compared to conventional refuelling, although the development of fast-charging networks is bringing significant progress in this area as well.

Plug-in hybrid electric vehicles (PHEV)

They represent a transitional solution between pure electric cars and conventional internal combustion engine cars. These vehicles have a smaller battery and an electric motor that enables battery electric drive over short distances (typically with a range of 30–80 km), as well as an internal combustion engine that comes into operation on longer journeys or when the battery is depleted.

They offer flexibility, as they may be operated battery electrically in urban environments and on longer journeys may run on petrol (or diesel). Their battery may also be charged from an external source, from the grid, which is where the term “plug-in” comes from. The disadvantage is that, due to their dual drive system, they are more complex, heavier and often more expensive than pure electric or conventional cars.

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