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D2.4: New services combining user needs and cost-effective system operation, flexibility solution, and network evolution

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1. Executive Summary

Deliverable 2.4 focuses on creating innovative business models that connect user needs with new opportunities offered by Vehicle-to-Grid (V2G) technology. As electric vehicles become more common across Europe and more people adopt EVs, this part of the project pretends to tackle an important challenge: how to match user-centric mobility services with the cost-effective exploitation of the energy system. The main aim is to promote energy flexibility, strengthen grid resilience, and integrate different sectors, all while providing real benefits to everyone involved in the V2G ecosystem.

To get there, a mix of tools were employed, including a detailed questionnaire, one-on-one interviews with partners, a thorough comparison of Vehicle-to-Everything (V2X) business models around the world, and gathering user needs from earlier reports and academic studies. This teamwork led to the design of a shared platform where car makers and energy providers can exchange real-time data, creating mutual benefits.

The platform, which was created together with project partners, using the Business Model Canvas approach, tackles two main barriers to V2G: first, the lack of real-time data sharing between EVs and grid operators, and second, limited vehicle participation in energy markets because of forecasting and coordination difficulties. By allowing the exchange of data like battery status, planned charging needs, grid conditions, and energetic pricing, the platform opens new value streams for car makers, grid managers, charging station operators, and users. It also improves the user experience through features like smart charging, energy price predictions, and battery health updates.

Keywords: V2G, V2X, user needs, business models, energy system.