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DEFINING THE SOCIAL-ECONOMICAL DIMENSION OF ELECTRIC VEHICLE PEAK CHARGING SHIFTING IN LATVIA

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Abstract – Public charging points (PubCP) are often more powerful than private charging points, such as home chargers. PubCP charging behaviour is embedded in a social context where on one side is the PubCP infrastructure that promises to be accessible and always deliver the promised power while on the other side, there is a growing concern about these charge points adding additional strain to the electrical grid in peak hours. This study investigates the social and economic factors influencing electric vehicle (EV) charging behaviour in Latvia, focusing on shifting peak charging demand to alleviate grid stress. Through a mixedmethods approach, including surveys of more than 200 EV users and interviews with key stakeholders (main charging point operators, municipality representatives, and government officials), this research aims to: 1) identify current EV charging patterns and peak usage times; 2) understand user preferences and constraints; and 3) explore potential demand-side management (DSM) strategies to encourage off-peak charging. Findings reveal significant potential for shifting peak demand through targeted interventions, such as time-of-use pricing, smart charging technologies, and tailored incentive programs. This research provides valuable insights for policymakers and stakeholders in developing effective strategies to integrate EVs into the Latvian electricity grid while ensuring grid stability and promoting sustainable transportation.

Keywords – *Automotive industry; battery electric vehicles; behavior change; charging behavior; demand shift; expert interviews; public charging points*