Frequency regulation is procured by transmission system operators (TSOs) to ensure stable and reliable operation of power systems. In the Nordic energy region, frequency-controlled normal operation reserve (FNR) is one of the services that require fast-response. Electric vehicles (EVs) with vehicle to grid (V2G) capability may be considered an FNR provider in a future renewable-based power system. This paper presents results from the first commercial V2G hub in the Nordic area using the EV fleet of Frederiksberg Forsyning. The results are achieved by participating in the Danish frequency regulation market, and provide an analysis of the EV fleet operational data. Additionally, an analysis on practical issues that may result from realistic implementation of frequency regulation, such as delays, measurement errors and physical equipment constraints is given. These issues must be taken into account when developing new strategies for providing frequency services with EVs in a future scenario. Results show that a set of EVs operating in aggregated mode is able to support the grid while satisfying the primary goal of the EV fleet, i.e. transportation of fleet customers.

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