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Impact of electric vehicle charging on residential distribution networks: an Irish demonstration initiative

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This paper presents details of an electric vehicle impact assessment trial currently being undertaken in Dublin, Ireland. The trial involves three stages, each of which are described in this paper. The first stage investigated the potential impact from electric vehicle charging on the operating conditions of existing residential network. During the trial, electric vehicles were driven and charged by typical residential electricity customers. The data recorded during the trial details the charging patterns of the vehicles and the associated effects on the network. Stages 2 and 3 of the trial, which are currently ongoing, will involve examining basic control charging techniques and the effect of network reconfiguration respectively.

Keywords: Distribution, Impact, Electric Vehicle, Charging