

Abstract

In this paper I scrutinize the charging behaviour of electric vehicles as well as the effect of competition between charging station providers on tariffs using data from a Swiss public charging station provider. I compute charging tariff elasticities using panel data methods and information on around 1,700 public charging stations located all over Switzerland and around 139,000 charging events for the time period 2019 to February 2022. Controlling for a number of station attributes such as the plug type, the power of the plug, the number of customers per station as well as for location, year, month and day fixed effects, the findings reveal that a 10% increase in prices per kWh reduces electricity demand per event by at least 0.8%. The equivalent increase in tariffs per minute reduces the duration of charging by around 2%. Furthermore, customers seem to misperceive complex tariff structures since their reaction is up to four times higher with respect to average charging event expenditure per kWh compared to marginal prices. Competition measured as the number of competitors within a pre-specified range or as the density of competitors has a negative effects on tariffs. For instance, one additional competitor within a range of 3km, reduces tariffs per minute by around 3%. The reaction with respect to tariffs per minute is considerably stronger than with respect to tariffs per kWh.