

**Are you
comfortable?**



What will a 700% increase in EVs do to the peak power demand?



Energiategollisuus
Finnish Energy

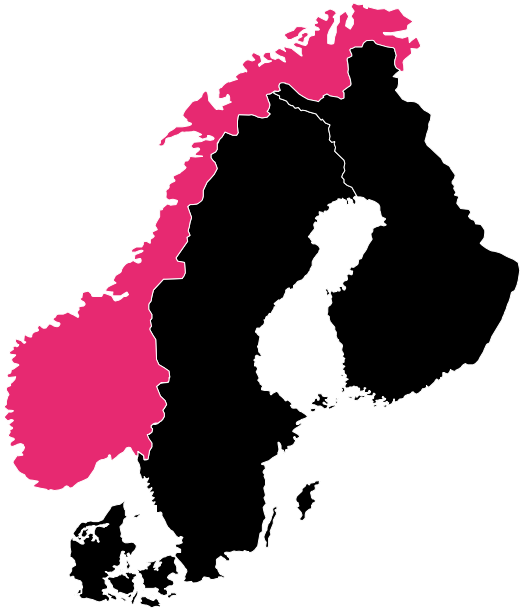
How can technology and policy influence the peak power demand?



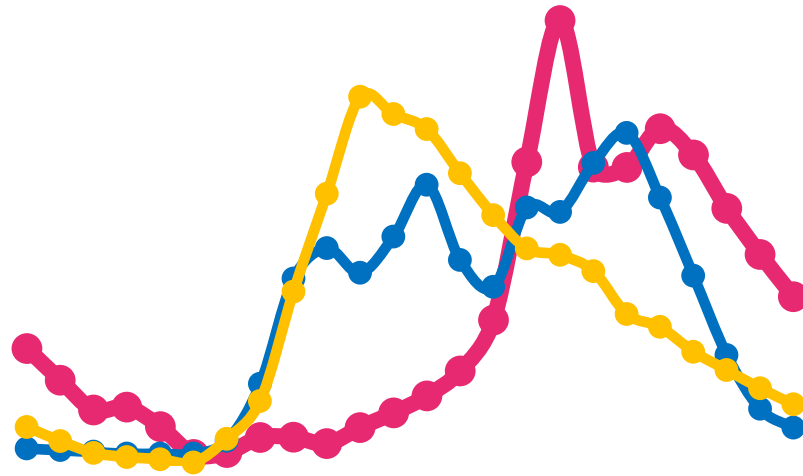
Energiategollisuus
Finnish Energy

Agenda

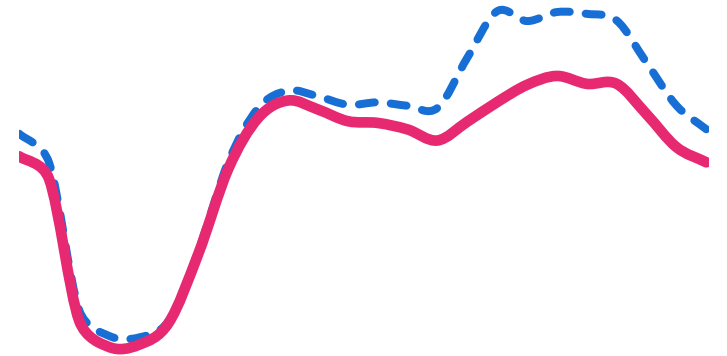
Case Study



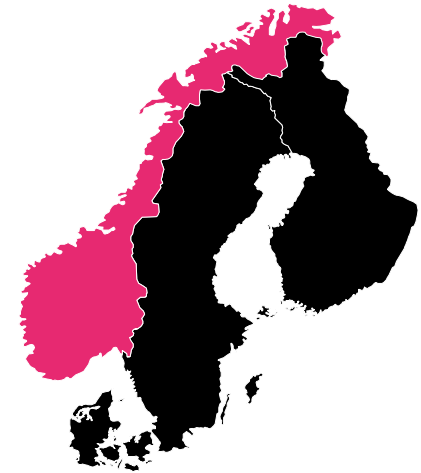
Model



Results



Case Study - Norway



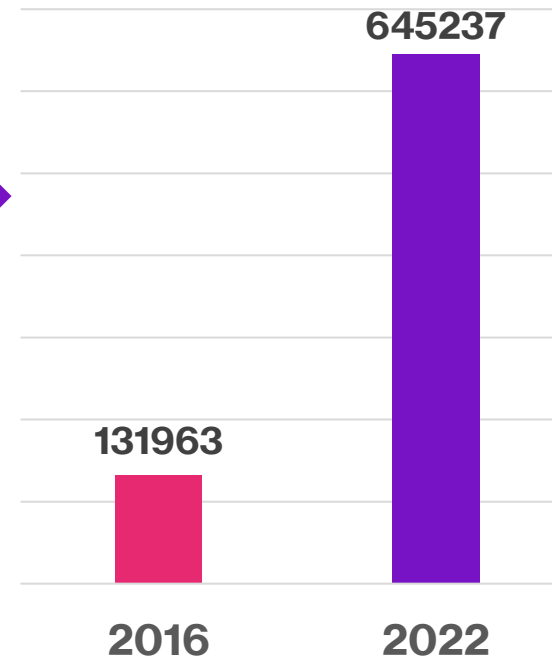
Geographic Location
Similar climatic conditions

Similar Number of Plug-in Vehicles

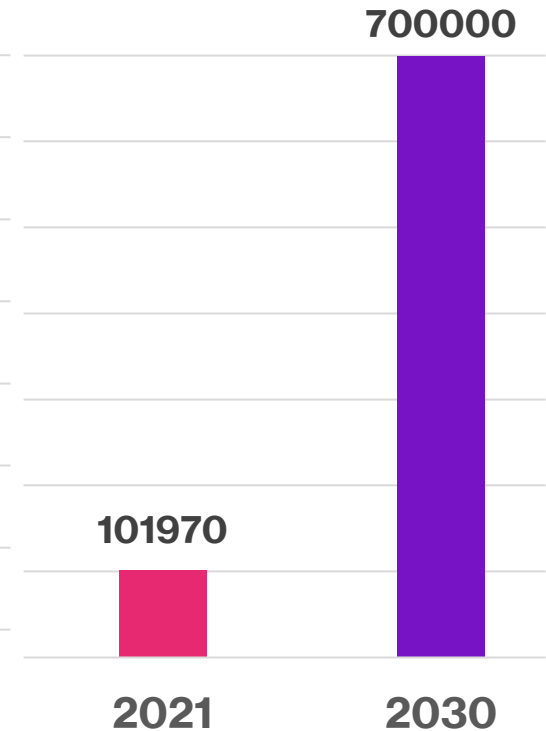
Population

Norway: 5.4 million
Finland: 5.54 million

Norways Plug-in Vehicles



Finnish Plug-in Vehicles

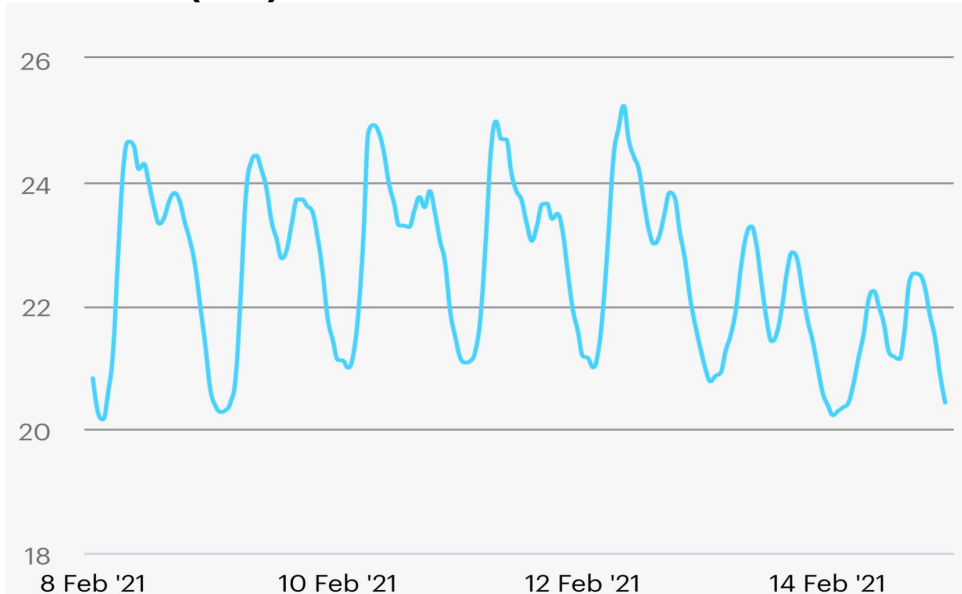


Case Study - Norway

Norway's peak power grew ~3% from 2016 to 2021

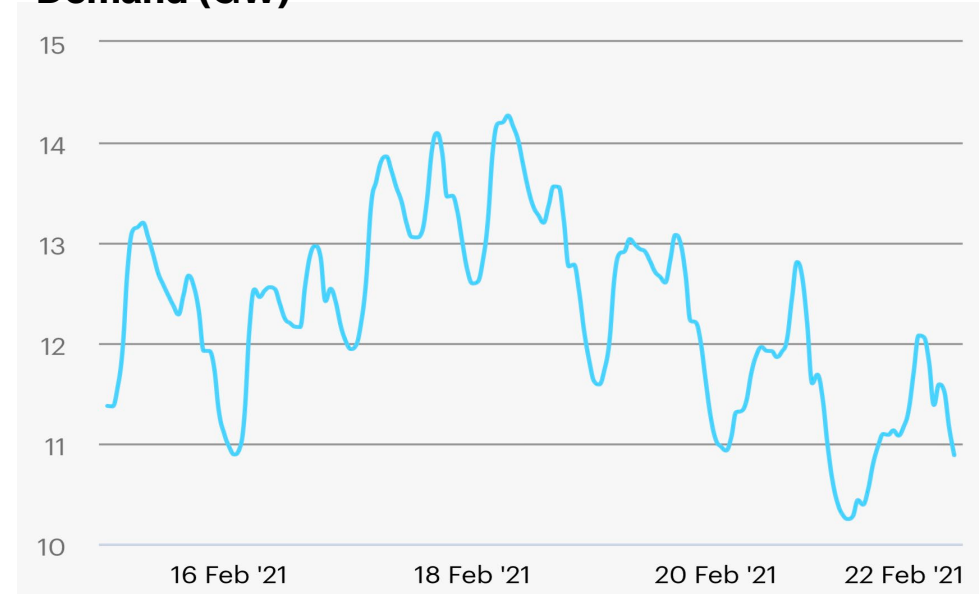
Norway 2021

Demand (GW)



Finland 2021

Demand (GW)



Building Finnish Peak Power Model

Fixed data

Amount of Vehicles

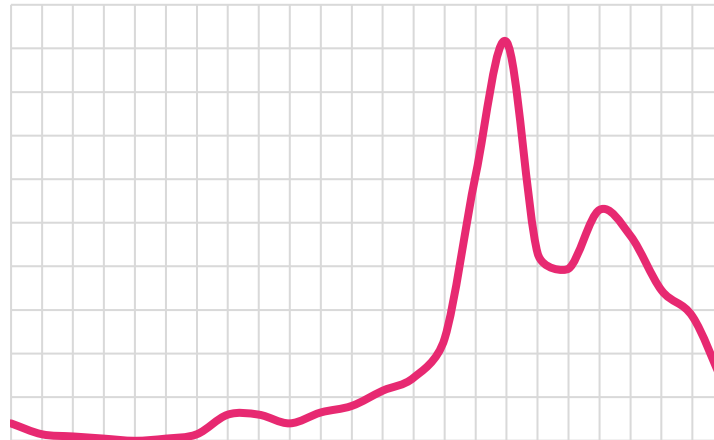
Energy consumption

Distance driven

Charging spilt

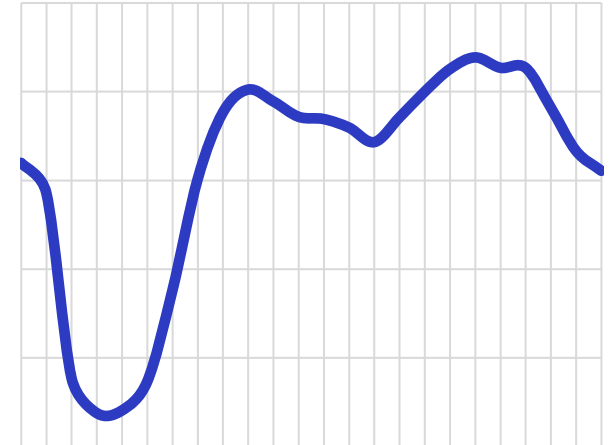
+

Consumer behaviour



+

Non-EV demand

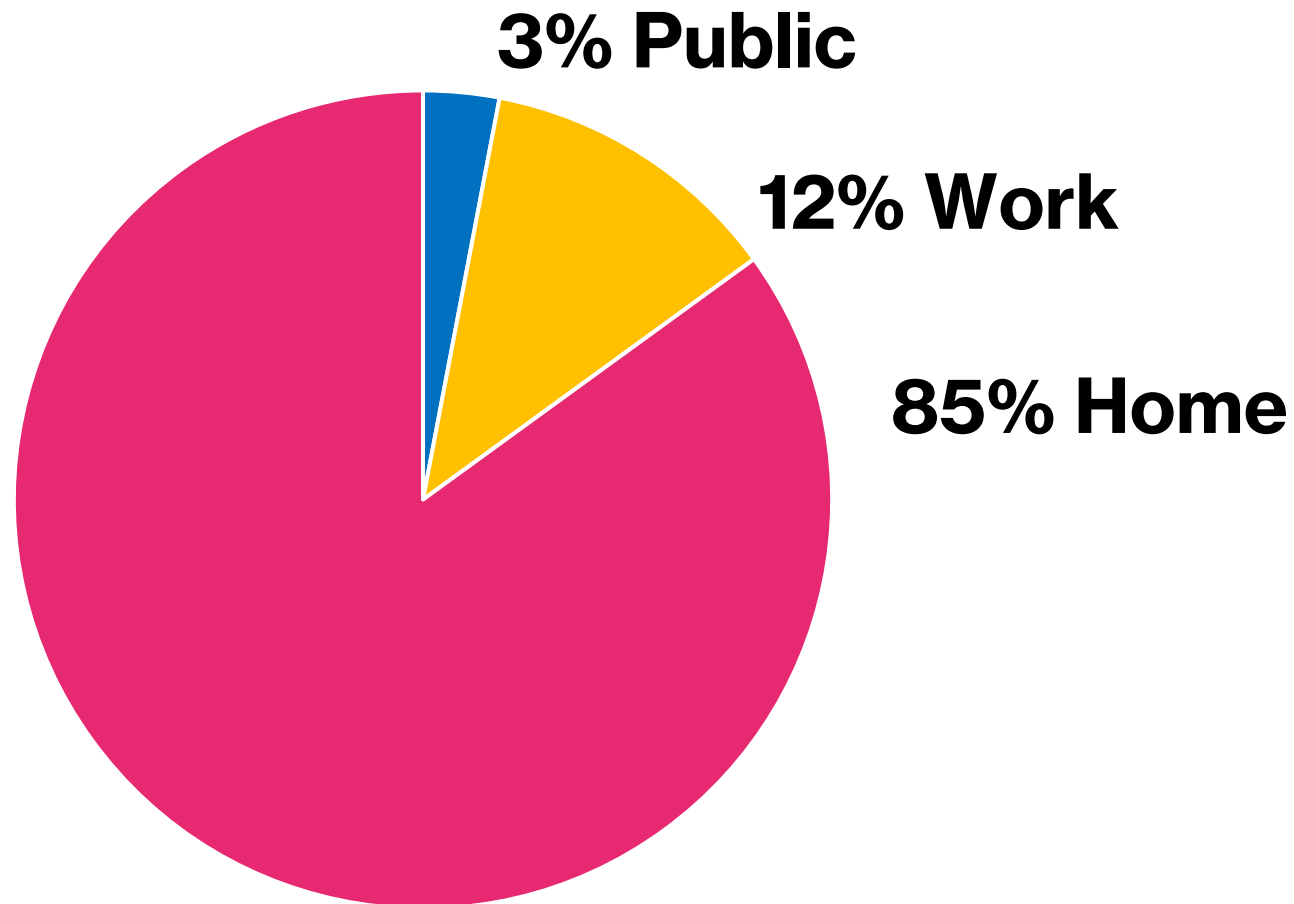


Models Fixed Data

-  1 Amount of Vehicles
-  2 Electricity Consumption of EVs
-  3 Driving Distance Per Day
-  4 Charging split

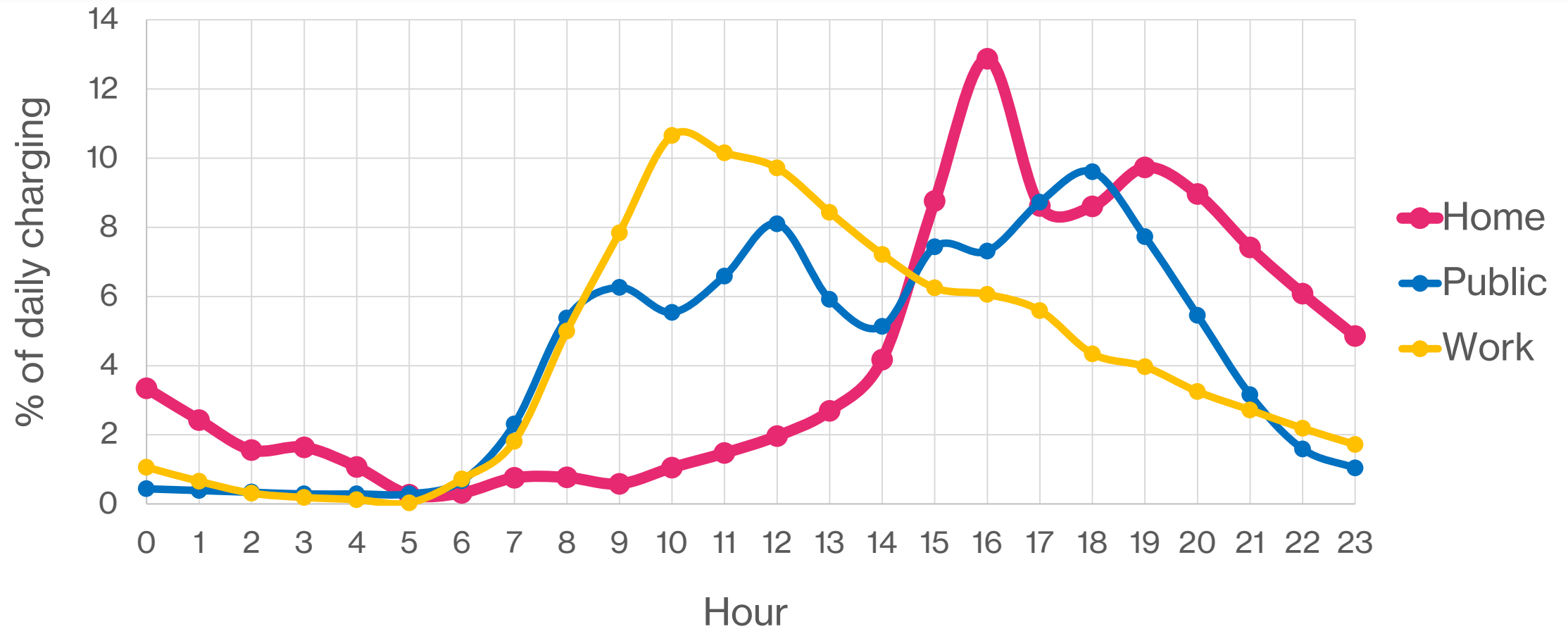
Consumer Behaviour

Where do people charge?

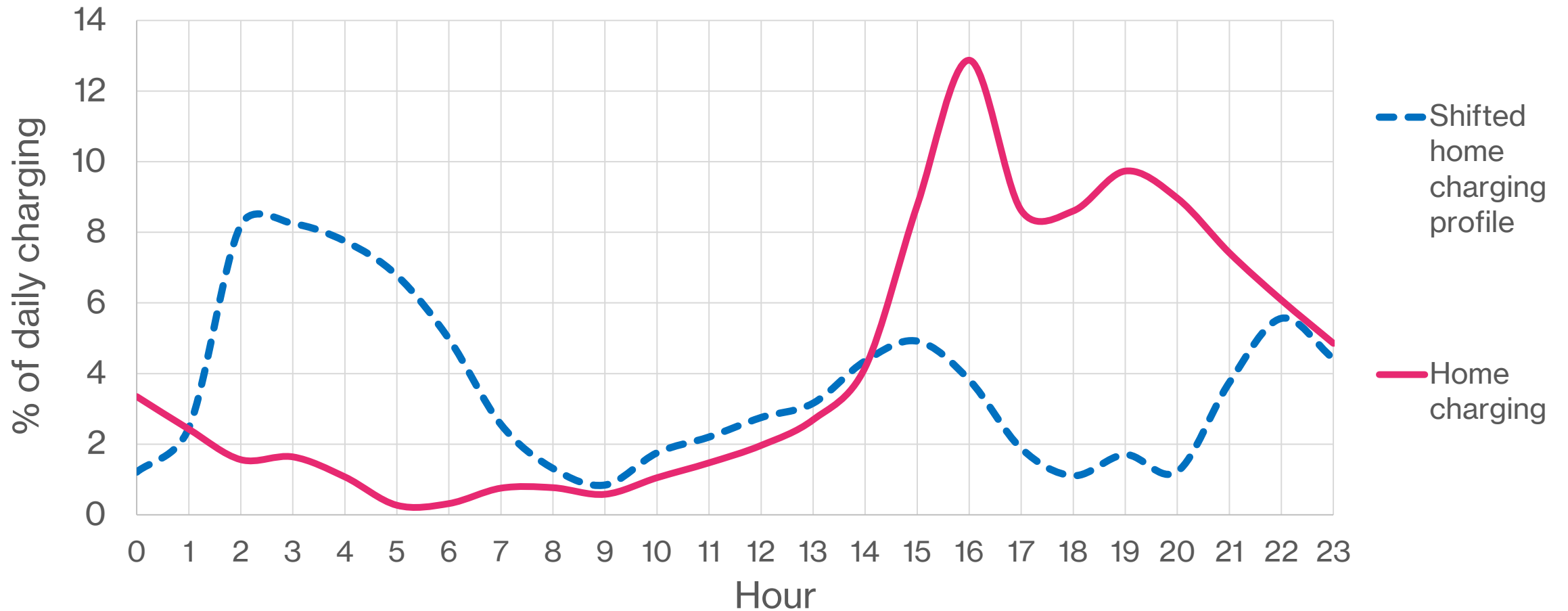


Charging Profiles

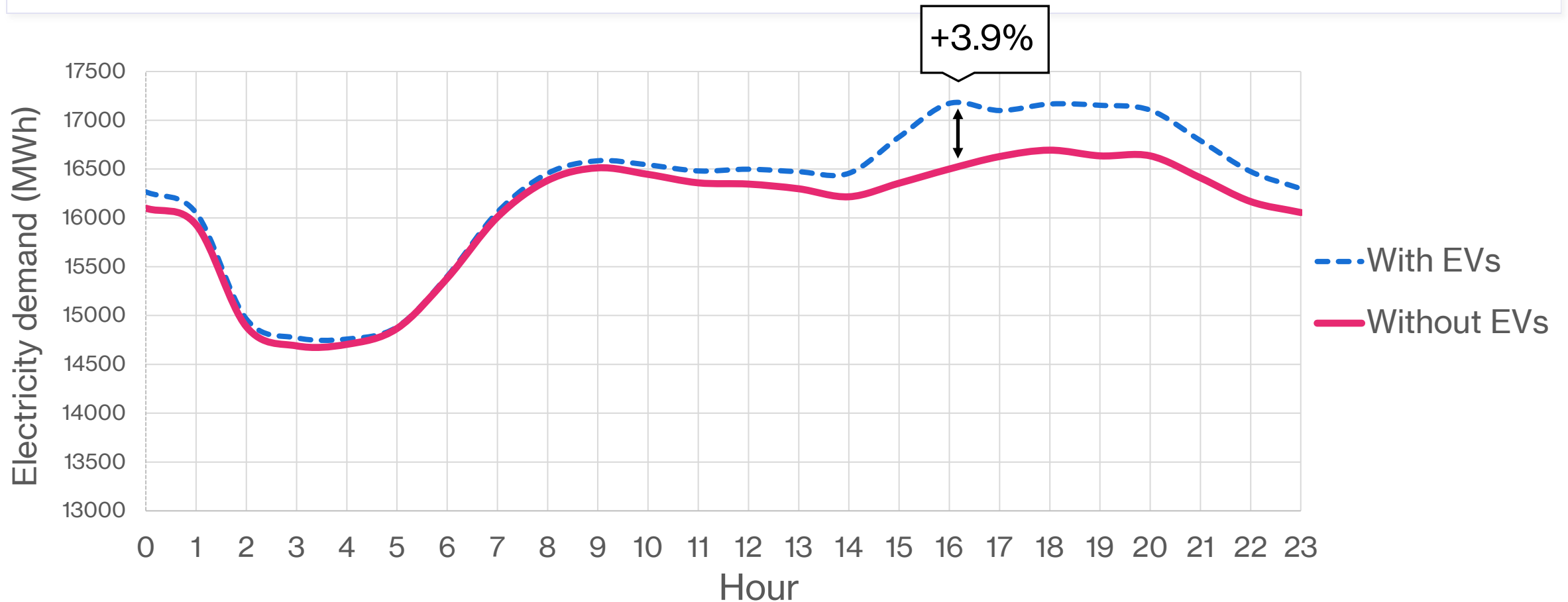
When do people charge?



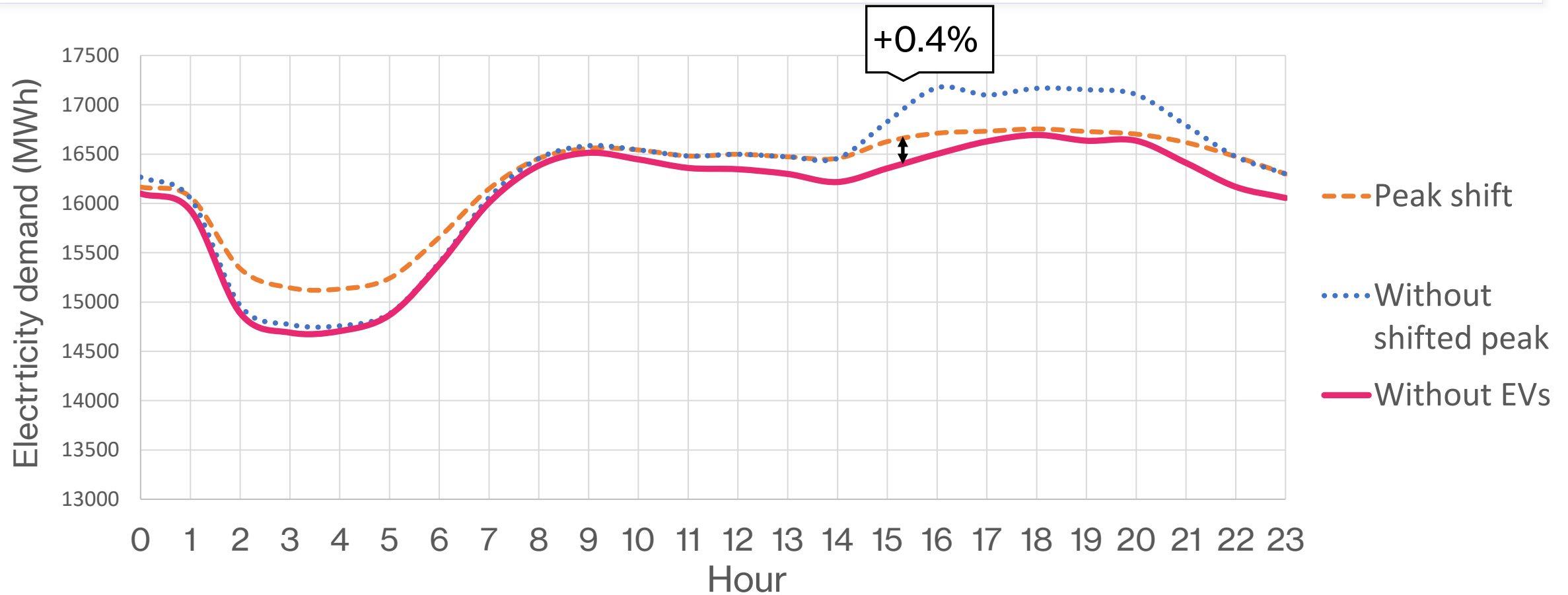
Shifted Home Charging Scenario



Electricity Demand on Peak Day in 2030



Shifted Peak





Should you be concerned?

Increase in Peak Power Demand :

- Current Situation – 3.9%
 - Shifted Peak – 0.4%
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