

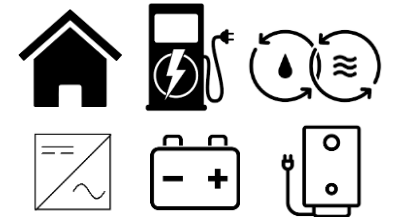
# The flexibility of residential EV chargers and Heatpumps



FLEXCON 2020 – 7 October 2020  
Jan Pellis



FAN's aim is to unlock and make maximum use of flexibility in the energy system. To safeguard that the future supply of sustainable energy will remain reliable, affordable and accessible.

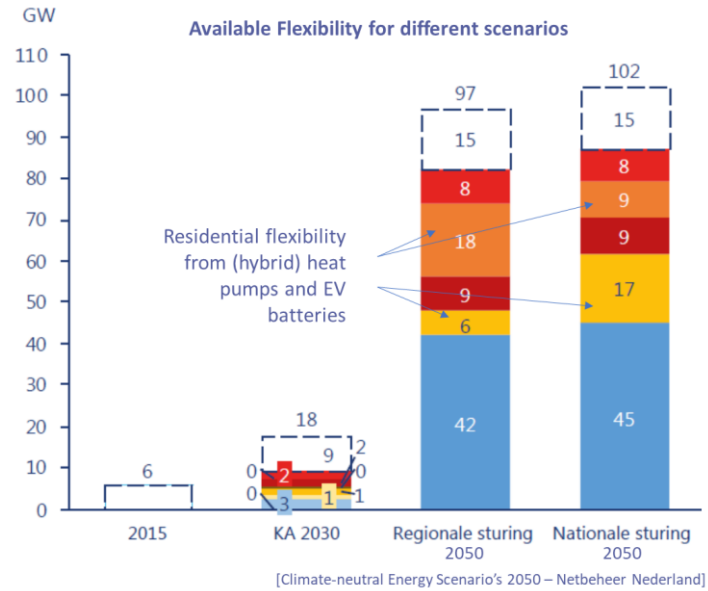


# Flexible power Alliance Network

- Establishing a European open standard: S2
- FLEXCON
- Partnerships
- Flex monitor

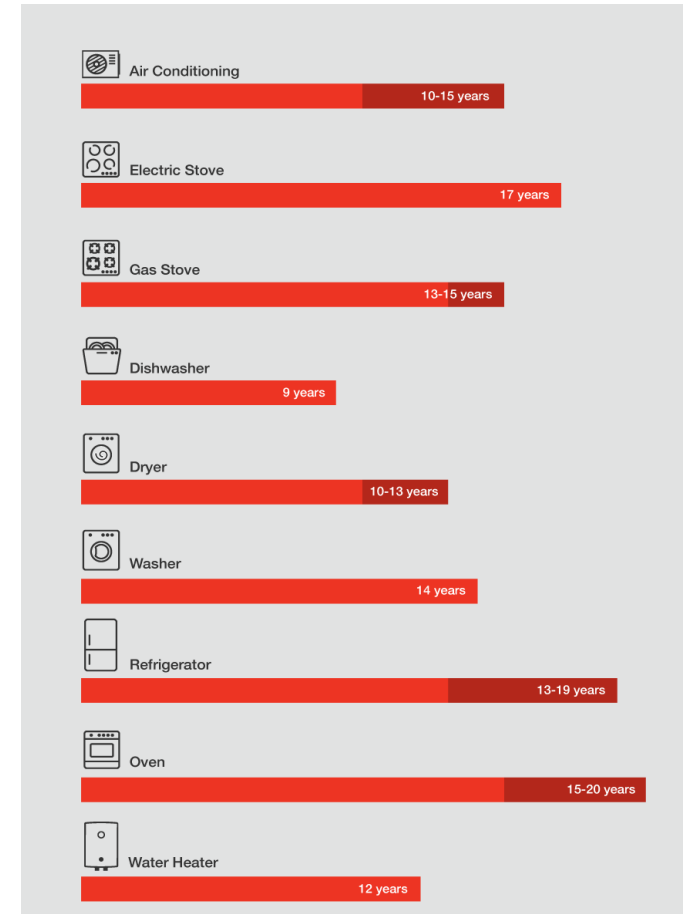


# Flex monitor



1. The demand for flexibility is growing - assets to meet the flex needs of the next decade are being purchased today
2. We are starting to rely on the future availability of flex, but will it be there when we need it?
3. FAN introduced Flex monitor and carried out first two market studies in 2019

## Average product life



# 2019 FAN Flex Monitor – scope and methodology

By Delta EE

## Scope 2019

### - Residential EV chargers

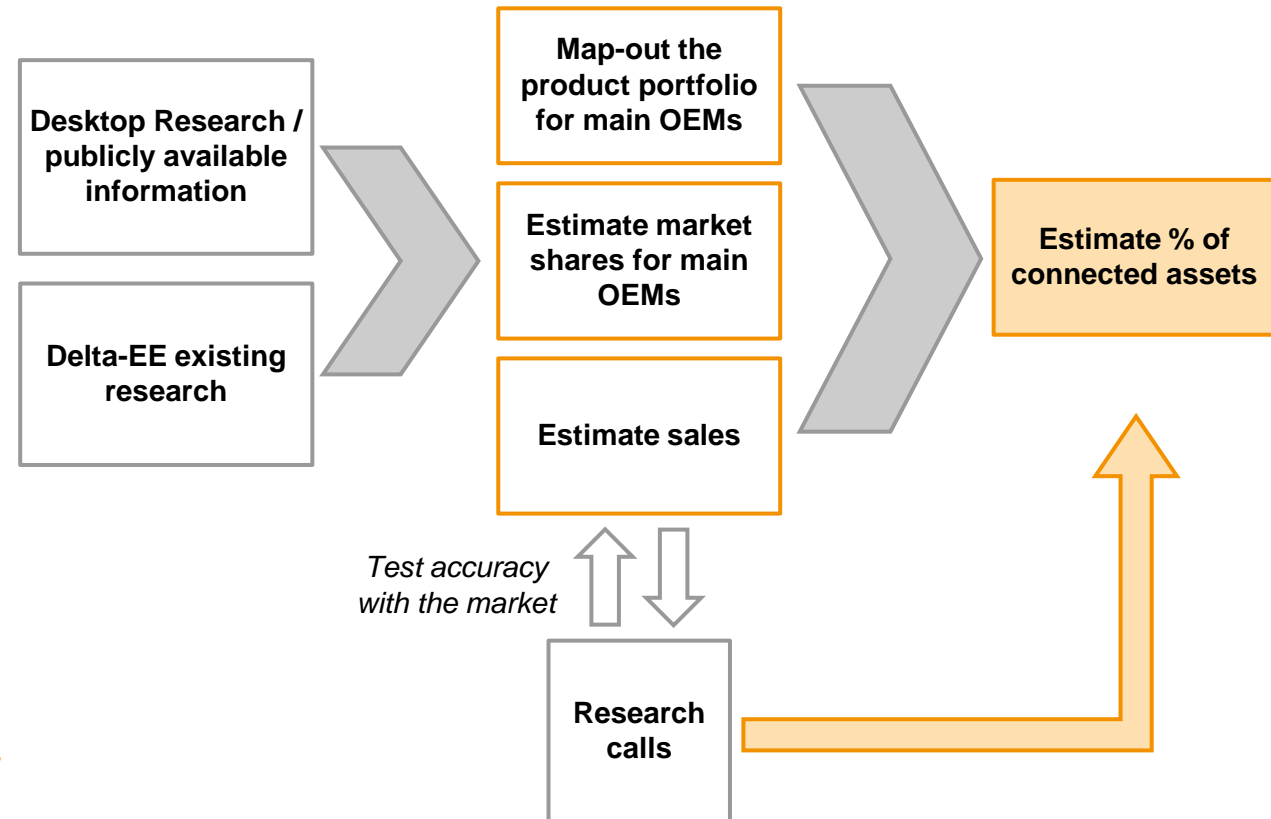


### - (Hybrid) Heat pumps



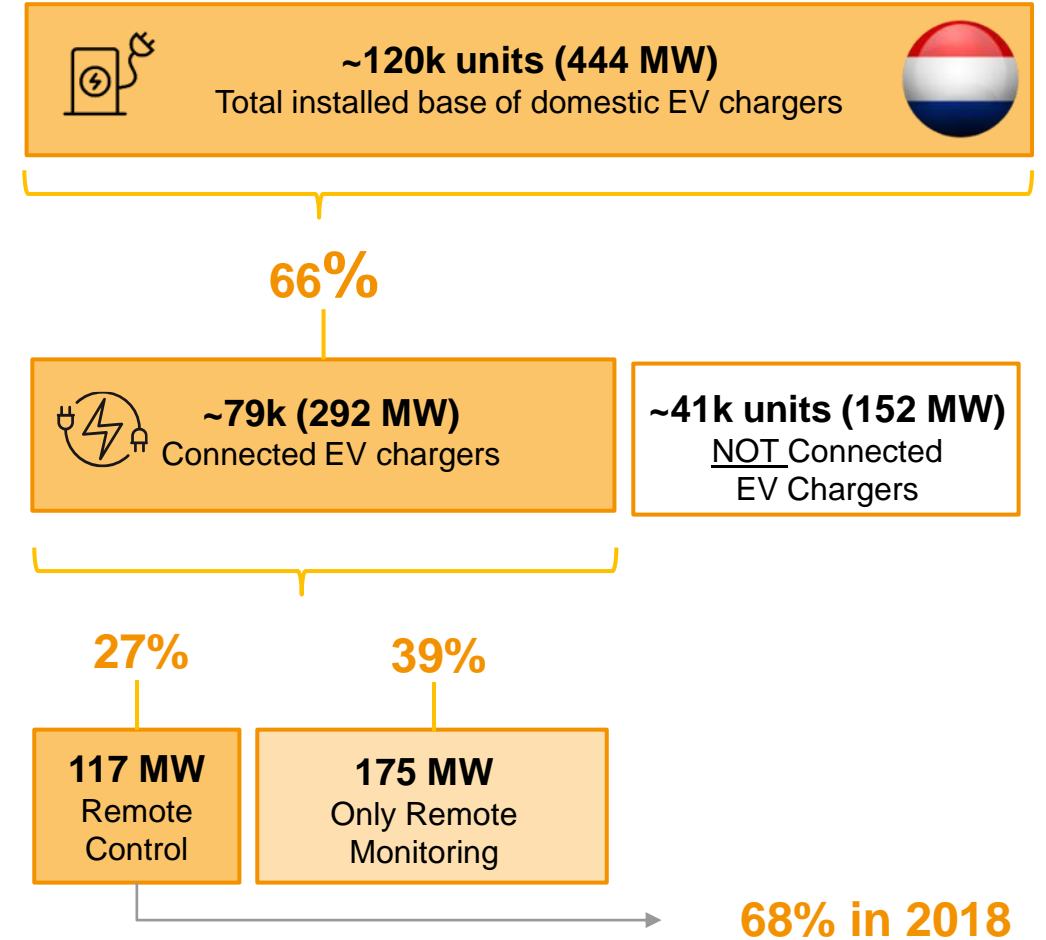
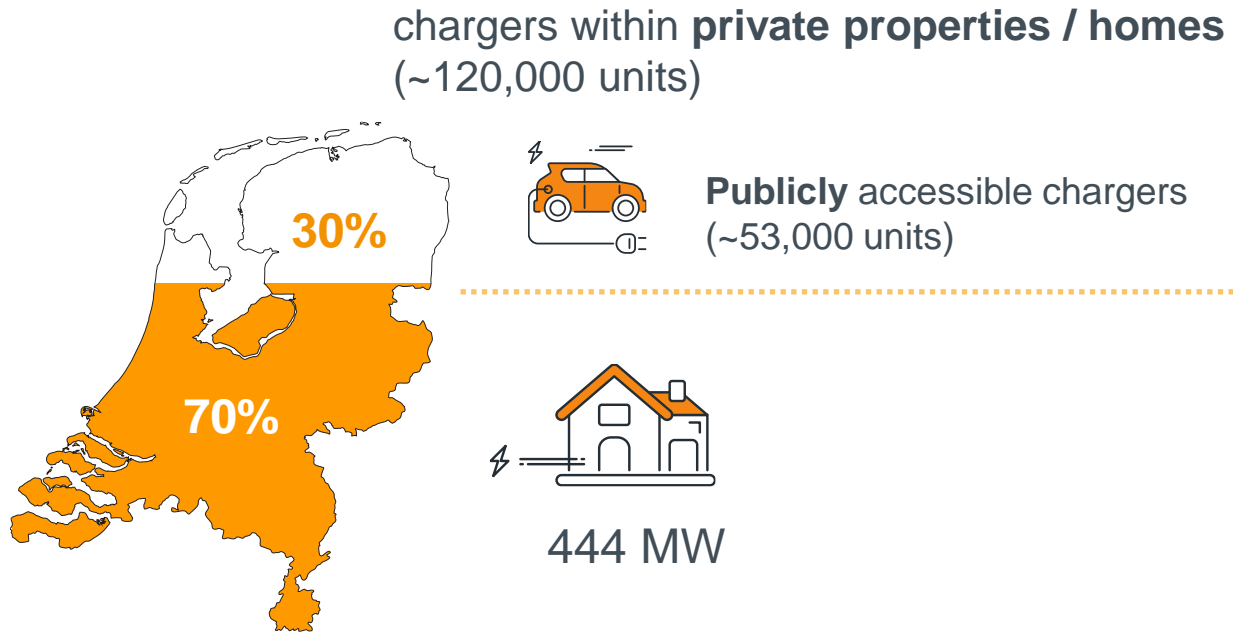
- <https://flexible-energy.eu/flex-monitor/>

## Methodology

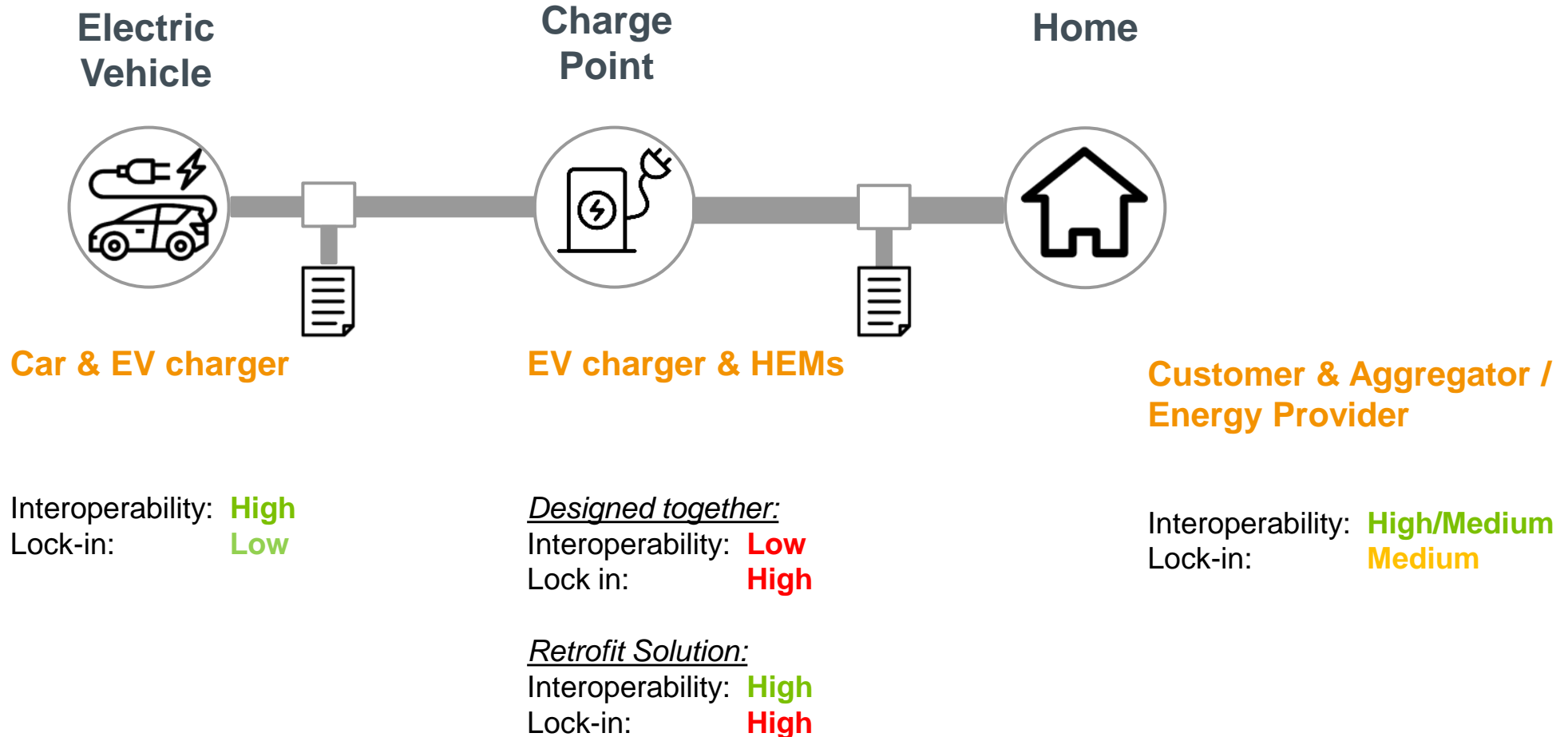


# Residential EV chargers - market size and key findings

## Dutch residential market until and including 2018

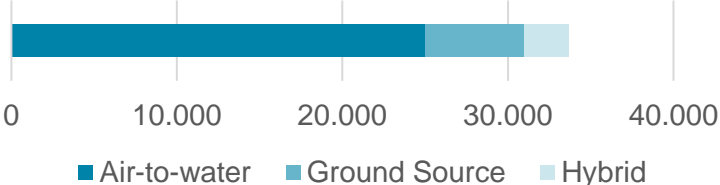


# Residential EV chargers - interoperability & lock-in



# (Hybrid) Heat pumps – market size (2018) and key findings

Heat pump sales in 2018 (Nr of units)\*



**⚡ The equivalent electrical capacity of these installations is approximately 135MW.**

**~ 135 MW**  
 New heat pump capacity in 2018

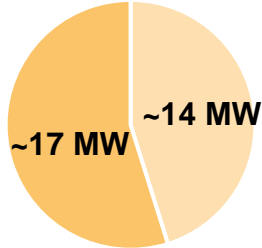
23 %

77 %

**~ 31 MW**  
 Connected heat pumps

**~ 104 MW**  
NOT Connected heat pumps

Breakdown of connected heat pumps (MW)



- Directly connected heat pumps
- Indirectly connected heat pumps

# (Hybrid) Heat pumps – challenges in use for flexibility

## Difficulty to create a single platform to address the heat pump market

- Variety of protocols
- Fragmentation of the HP market in NL

## Customer engagement

- Willingness to hand over control
- Comfort

## Heat pump manufacturer have concerns

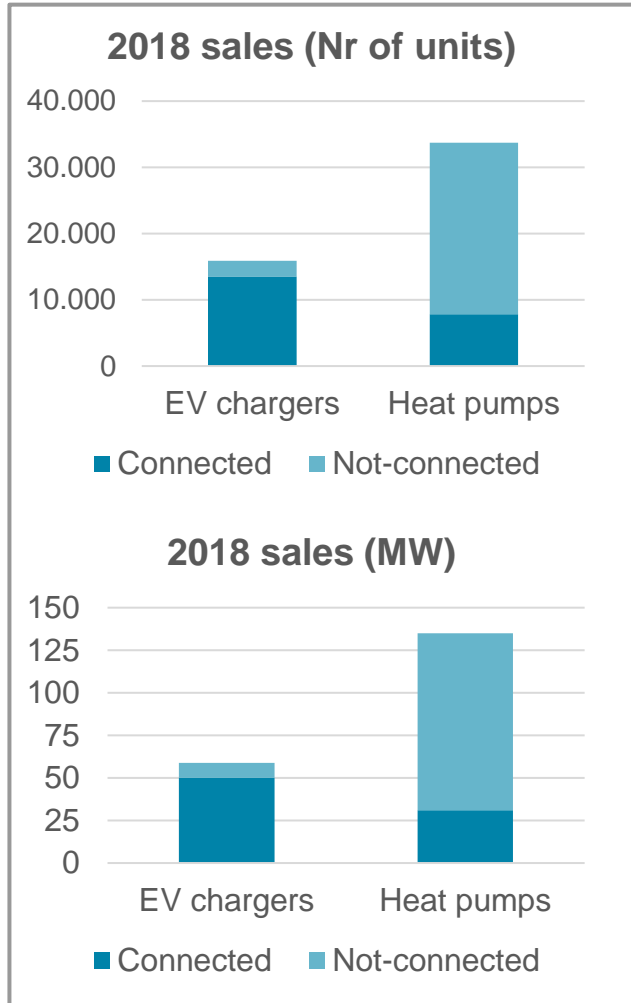
- Lifetime impact on HP



OEM awareness / openness to the use of heat pumps for flexibility services



# Summary Flex monitor



EV market presents a larger annual connected capacity  
EV charging ecosystem “smarter” than heat pumps

Main concerns and challenges

- Connectivity (hybrid) heat pumps
- Interoperability of the connection of devices to HEMS

***There is work to be done to meet future flexibility needs and enable residential customers to contribute to and take advantage of the flexibility use cases in the future electricity system.***

# FAN next steps

- European standard for energy flexibility protocol – CENELEC S2
- Dutch climate agreement action on establishment of flexibility interface
  - FAN together with FME and NVDE
- Focus 2021 on (hybrid) heat pumps:
  - increase acceptance and application of an interoperable energy flexibility interface
  - grow insight into enablers for flexibility business case for (hybrid) heat pumps
- Flex monitor 2020-2021 topics: PV inverters and Home Energy Management Systems



Join FAN: <https://flexible-energy.eu/>

