

**DELTA-EE**



# **EUROPE'S DECARBONISATION PATHWAY**

## **THE LESSONS FOR SLOVENIA**

**MARIA STAMOULI**  
**DELTA-EE**

# How will Europe meet net zero?

## Key solutions for decarbonising power, transport and heat

### Power



Phase out of fossil fuels i.e. coal



Large-scale rollout of renewables

### Transport



Diesel and petrol car sales phased out



Electric vehicles wider uptake



Alternative fuels i.e. hydrogen, green gas and electricity for HGVs.

### Heat



Reduce energy demand



Electrification



Hydrogen for on-gas properties

# How will Europe meet net zero?

## The challenges arising from decarbonisation

### Power



Phase out of fossil fuels i.e. coal



Large-scale rollout of renewables

### Transport



Diesel and petrol car sales phased out



Electric vehicles wider uptake



Alternative fuels i.e. hydrogen, green gas and electricity for HGVs.

### Heat



Reduce energy demand



Electrification



Hydrogen for on-gas properties



- Grow of electricity demand
- Intermittent renewable generation

Range anxiety in EV journeys.

The lower upfront cost of gas boilers make it hard for alternative technologies to compete.

# How will Europe meet net zero?

## Innovative solutions for power, transport and heat

### Power



- Grow of electricity demand
- Intermittent renewable generation



Growing need for **demand side flexibility** to manage distribution networks constrains instead of grid reinforcement.

### Transport

Range anxiety in EV journeys.



**Government funding** is a key driver for wider public charging deployment.

### Heat

The lower upfront cost of gas boilers make it hard for alternative technologies to compete.

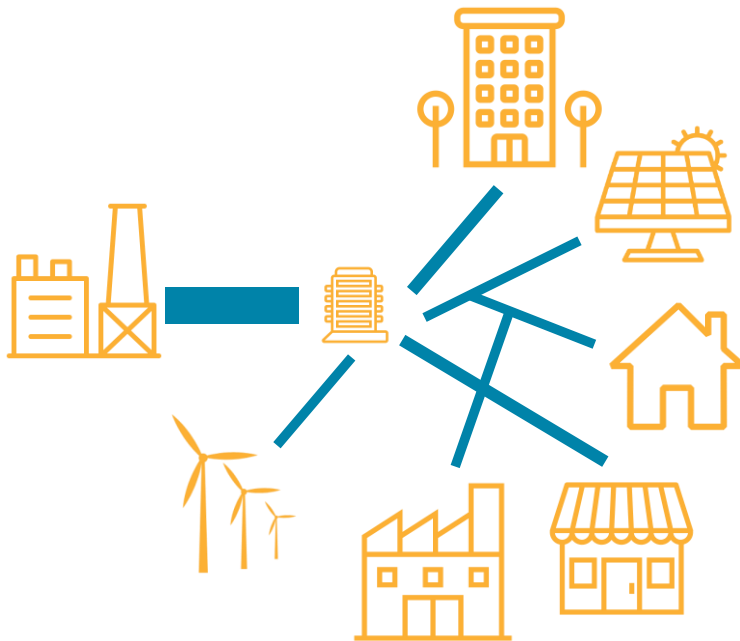


This creates opportunities for **Heat as a Service** business models that reduce the upfront costs for households.

# Why DSOs are turning to demand-side flexibility?

DSOs see flexibility as a useful, but not yet mission critical tool.

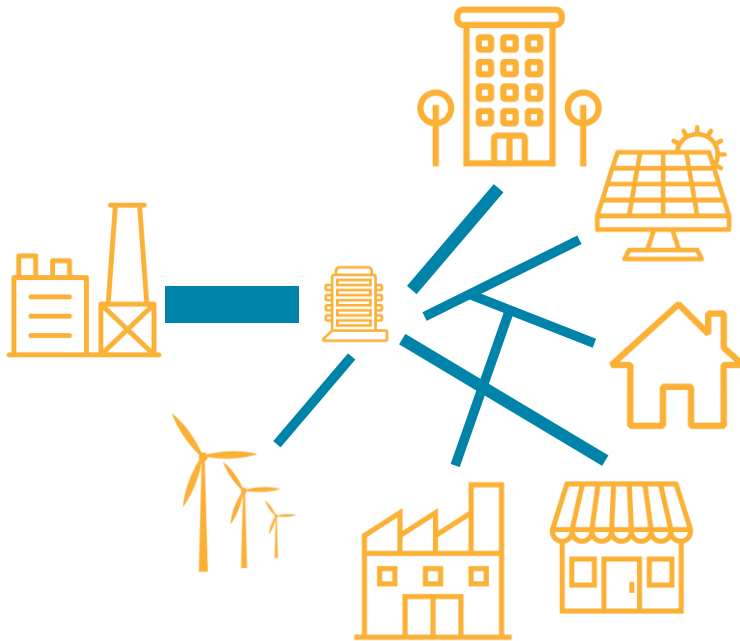
Distribution networks are becoming more complex...



# Why DSOs are turning to demand-side flexibility?

DSOs see flexibility as a useful, but not yet mission critical tool.

Distribution networks are becoming more complex...



Most DSOs see DSF as a short term alternative to traditional network reinforcement

## Key use cases:

To bridge a decision gap

A way to solve issues in the medium term while demand naturally falls

A way to try maximise asset lifetime

# DSO activity in demand-side flexibility across Europe

## UK is leading with Netherlands following

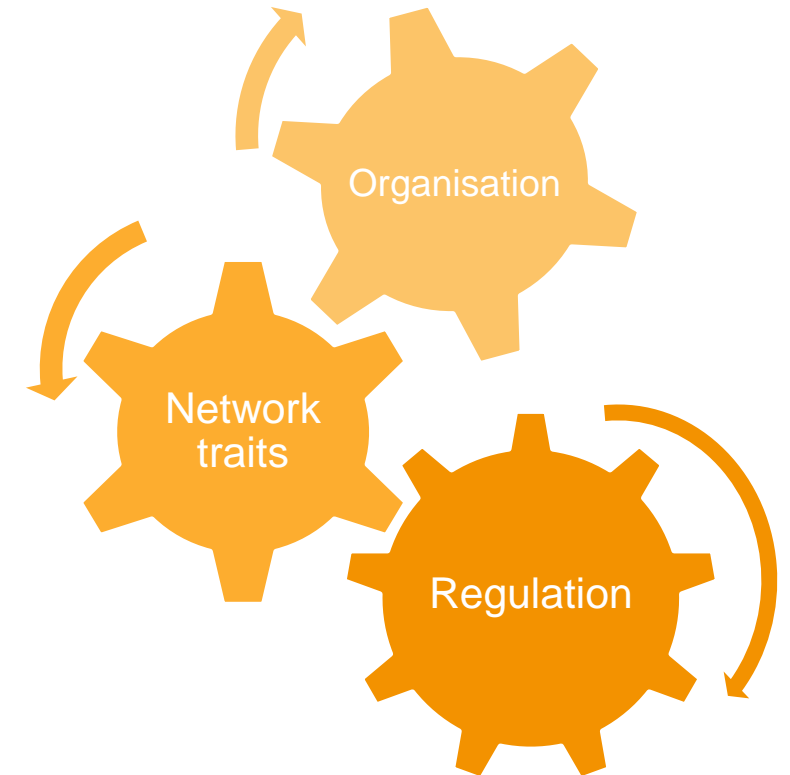
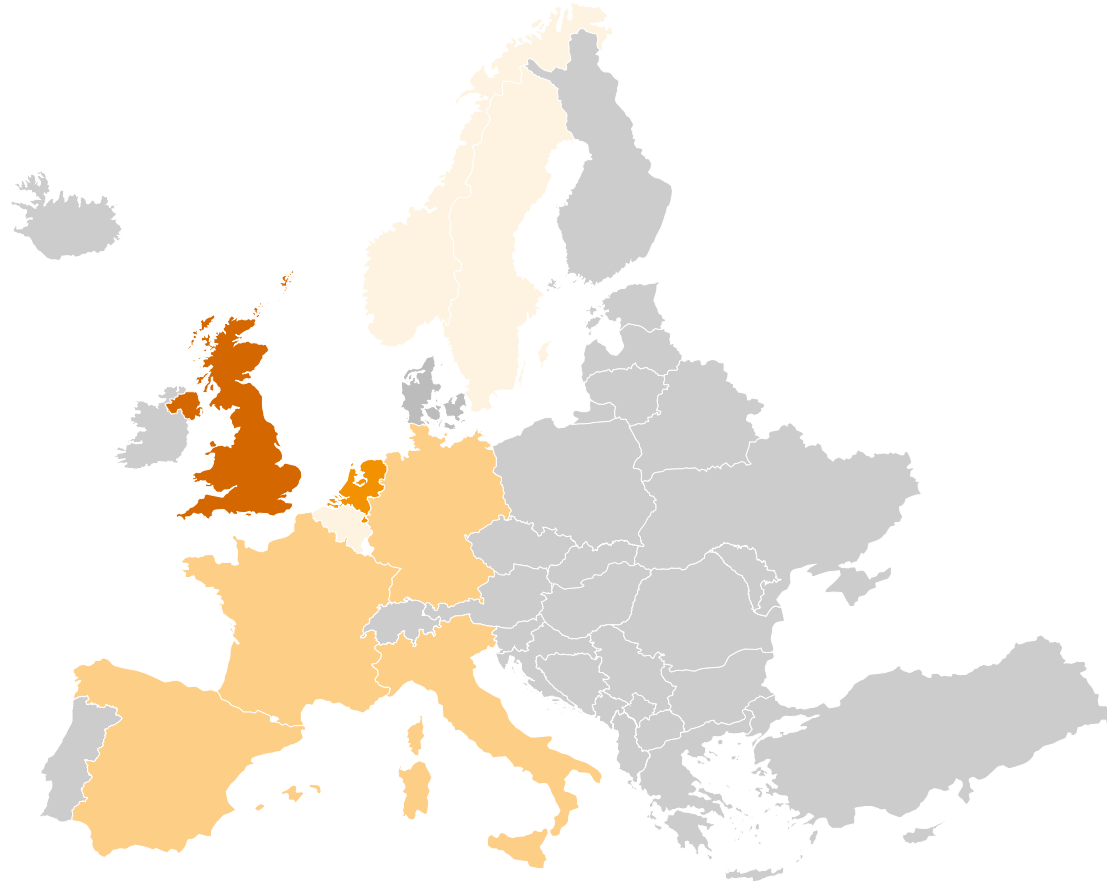
### Key:

■ Full Commercial procurement of DSF by DSOs.

■ Early stage commercial procurement of DSF / many live demonstrations underway.

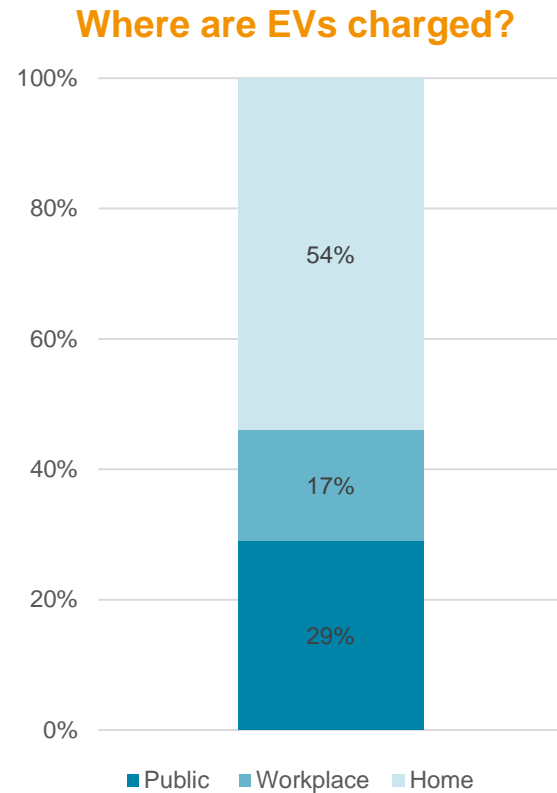
■ DSOs recognise the need to use DSF: some live trials and many paper-based studies.

■ Early days for DSF. Some of the DSOs are involved in early stage trial projects.



# Why does public charging matter so much?

Over 190,000 public chargepoints deployed across Europe

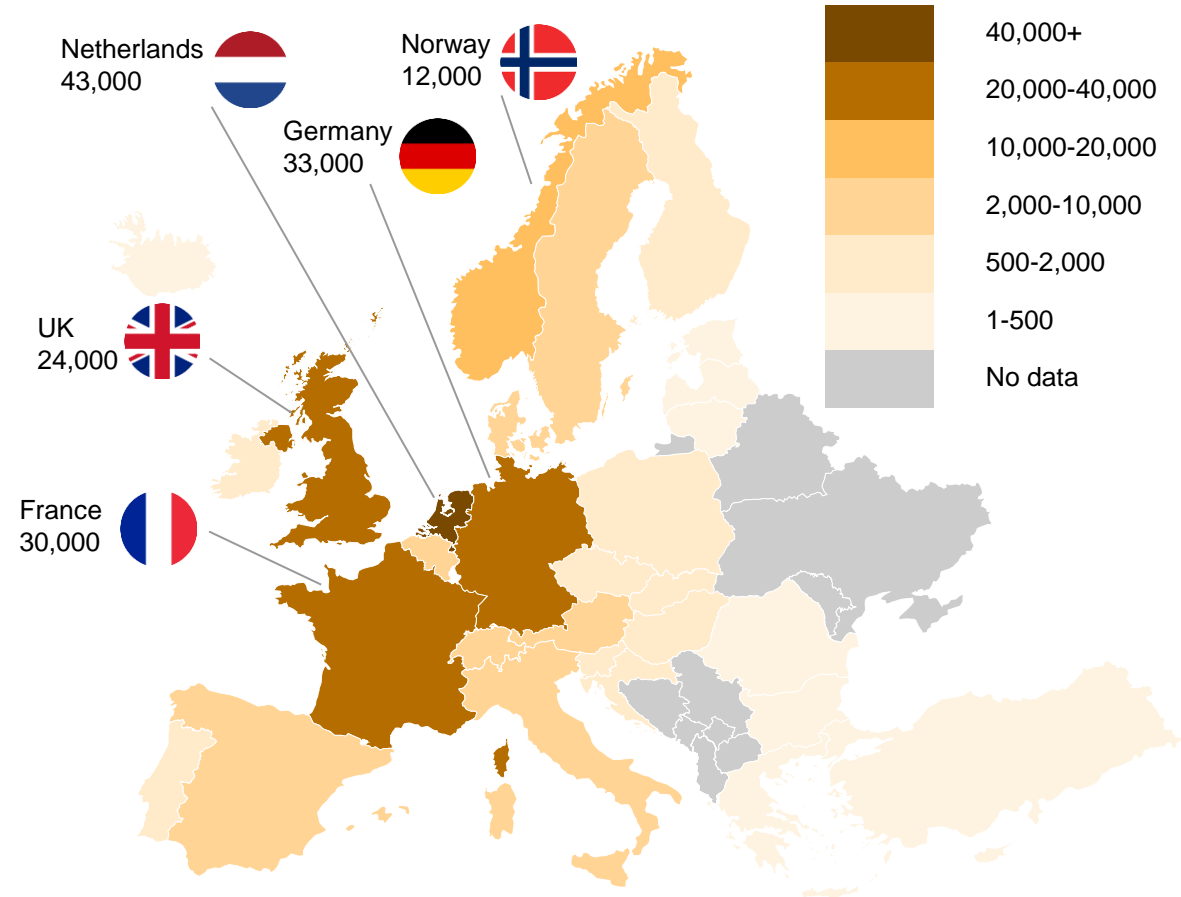
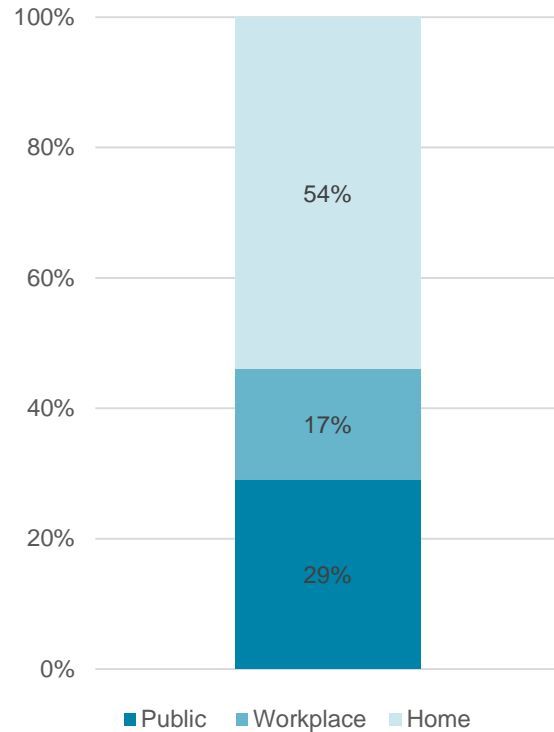




# Why does public charging matter so much?

Over 190,000 public chargepoints deployed across Europe

Where are EVs charged?



# Gas boilers still dominate the heat market in Europe

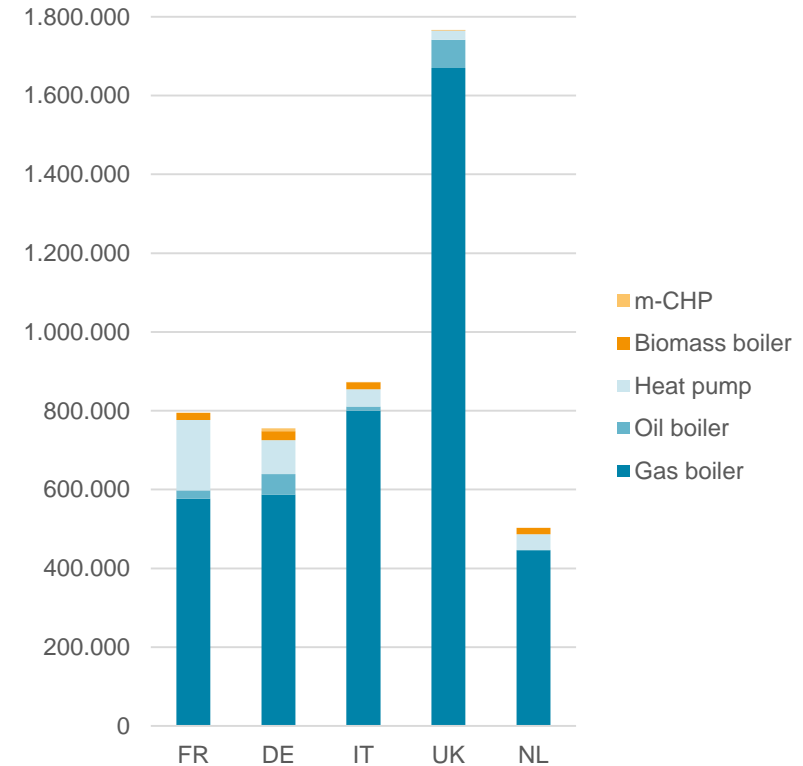
Policies and regulations are driving the uptake of alternative technologies



Gas boiler sales still far exceed sales of low carbon alternatives like heat pumps. In fact, 2019 was a record year for gas boiler sales in several European markets.

**For households considering replacing their heating appliance with a more efficient alternative, the difference in upfront costs is often one of the most important deciding factors.**

Annual individual heating systems sales



# What is heat as a service?

Paying for appliance and energy use

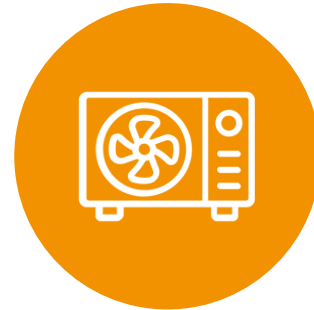


## THE HEATING EQUIPMENT

monthly payment rather than upfront  
through financing/rental agreement

# What is heat as a service?

## Paying for appliance and energy use



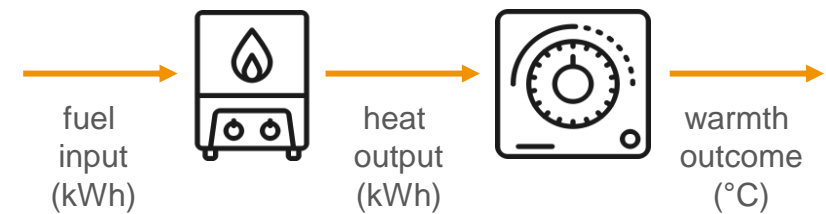
### THE HEATING EQUIPMENT

monthly payment rather than upfront through financing/rental agreement



### THE ENERGY USE

selling outcomes rather than inputs



# How will Europe meet net zero?

## Innovative solutions for power, transport and heat

### Power



- Grow of electricity demand
- Intermittent renewable generation



Growing need for **demand side flexibility** to manage distribution networks constrains instead of grid reinforcement.

### Transport

Range anxiety in EV journeys.



**Government funding** is a key driver for wider public charging deployment.

### Heat

The lower upfront cost of gas boilers make it hard for alternative technologies to compete.



This creates opportunities for **Heat as a Service** business models that reduce the upfront costs for households.

# About Delta-EE

Delta-EE enables organisations to develop the best strategies, business models and customer propositions for the energy transition.

## 'New Energy' Business Models

Identify and understand the alternative and new business models for the energy transition



### EVs & Electricity

Understand the opportunities and challenges from sector coupling between electricity and transport



### Flexibility & Energy Storage

Take advantage of the opportunities emerging from an active demand side



### Heat

How channel disruption, sector coupling and new technologies are changing the heat sector



### Distributed Power

Global market insight & expertise into the growing role of decentralised generation



### Digital Energy

Opportunities in the connected home market and how digitalisation is changing the energy customer relationship

Delta-EE provides...

Subscription Research Services

Consultancy

... to support people doing these jobs:



### Innovation & Planning

Identify & make choices



### Business Development

Design, develop and pilot new business models



### Commercialisation

Implement & launch



### Product Management

Grow & evolve

# Interested in learning more?

## Get in touch!

**Maria Stamouli – Analyst**

**+44 (0) 1223 781 608**

**[maria.stamouli@delta-ee.com](mailto:maria.stamouli@delta-ee.com)**