



## IRELANDS SUSTAINABLE ENERGY CHALLENGES AND OPPORTUNITIES

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[www.seai.ie](http://www.seai.ie)



This revolution requires **fundamental change** across all aspects of society

**SEAI** at the heart of the revolution

- The widest consultation
- External & Internal

## DELIVERING OUR GOALS



## LIVING OUR VALUES

- Courageous
- Passionate
- Experts
- Trusted
- Innovative
- Collaborative

THROUGH OUR BEHAVIOURS

# Rapidly expanding mandate for SEAI

**Electricity**  
**70%** Electricity generated from renewable sources by 2030  
 Phase-out of coal and peat electricity generation  
 Homeowners to generate their own electricity and sell back to the grid under schemes for microgeneration

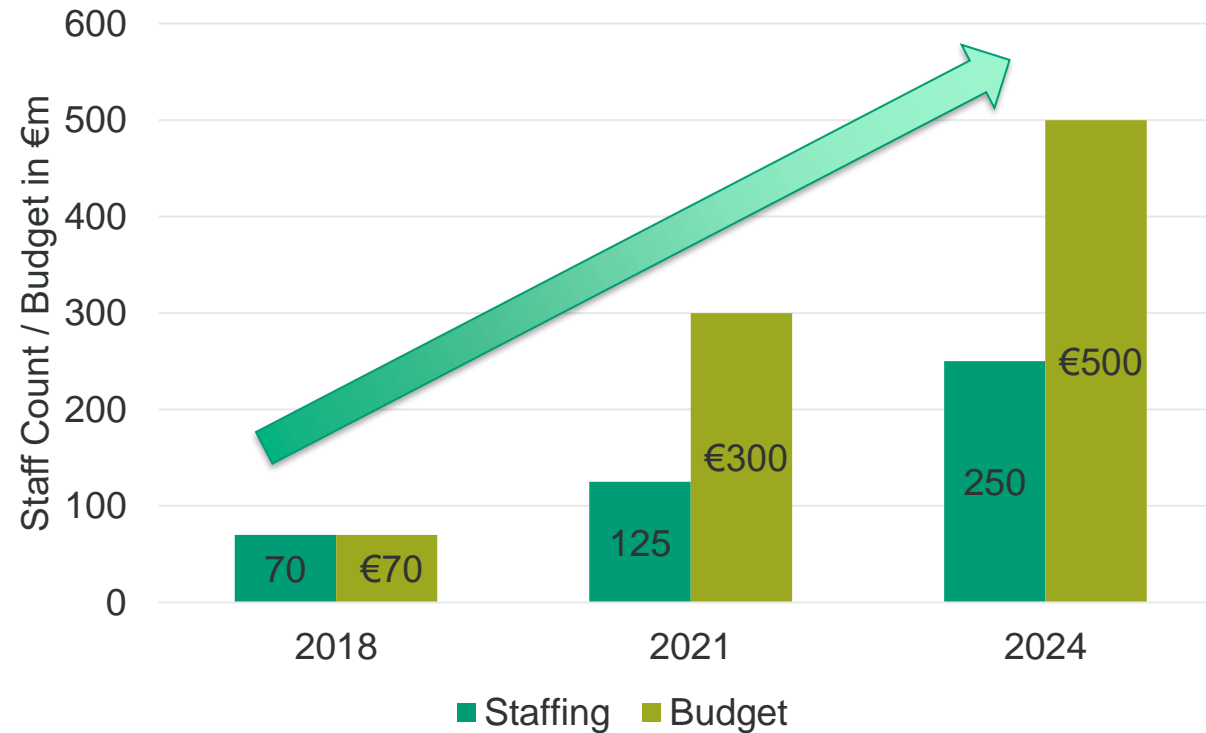
**Buildings**  
**500,000** existing homes to upgrade to 'B2' equivalent BER by 2030  
**600,000** heat pumps installed by 2030 (of which 200,000 will be in existing buildings)  
 New retrofitting delivery model, which will group retrofits together, leverage smart finance, and ensure easy pay-back methods

**Transport**  
 Increase the number of EVs by 2030 to circa **1 million**  
 Build EV charging network to stay ahead of demand  
 Expand our network of cycle routes and 'Park and Ride' facilities, helping ease congestion  
 No diesel-only purchases for public buses in our cities from 1 July 2019

**Agriculture**  
 Deliver GHG emissions reduction identified by Teagasc by creating new, sustainable opportunities for family farms  
**8,000 ha** on average, of newly planted forest per year  
**40,000 ha** at least, of improved grasslands on drained organic soils per year

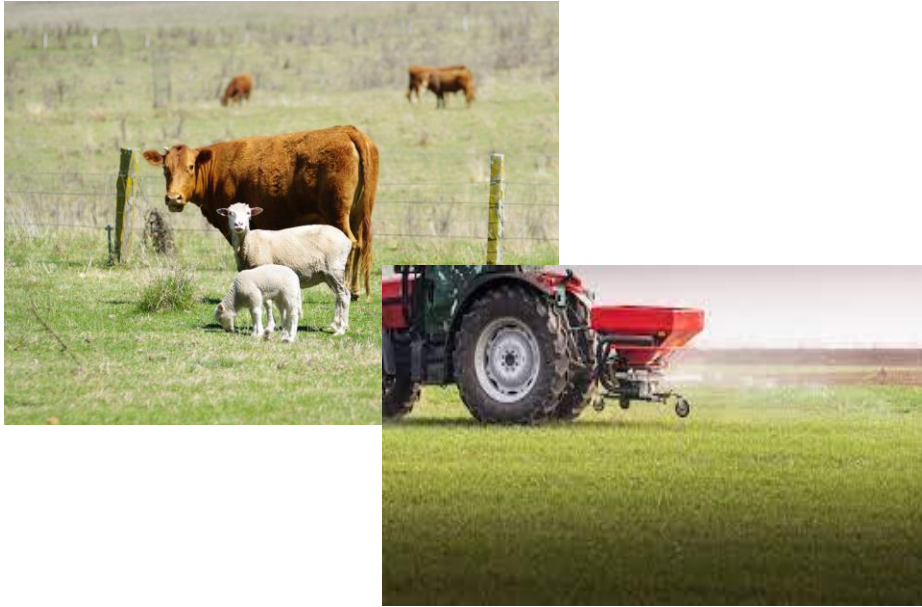
**Waste and the Circular Economy**  
 Reduce the percentage of municipal waste sent to landfill to **10%** by 2035  
 Reduce food waste by **50%** by 2030  
 By 2030: Recycle **70%** of packaging waste, Recycle **55%** of plastic packaging waste  
 Eliminate non-recyclable plastic and impose higher fees on the production of materials that are difficult to recycle  
 Ban specific single-use plastic convenience items including polystyrene food, cup, and drink containers

## Growth Trajectory of SEAI



# Climate Challenges

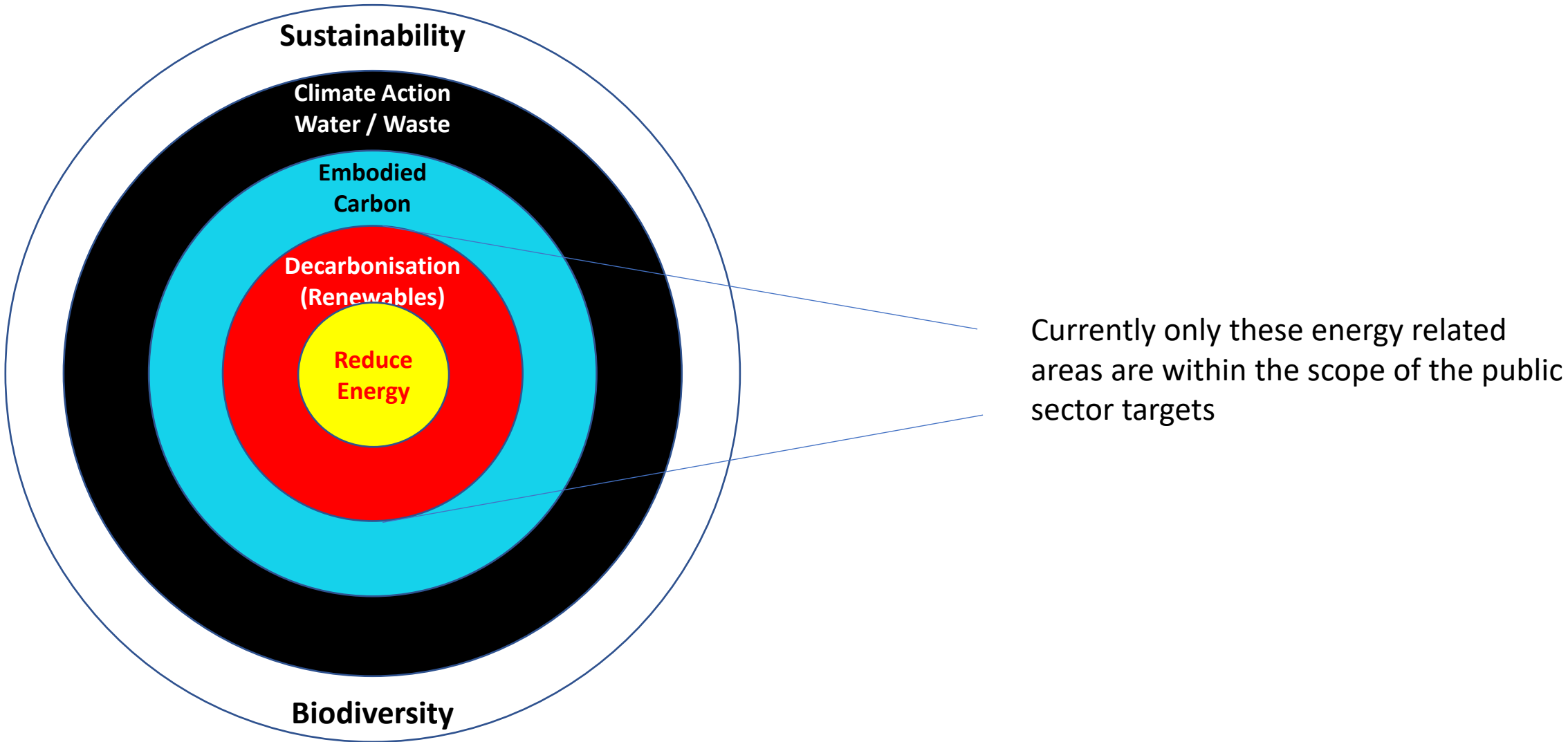
# GHG Emissions in Ireland - **The 3 Fs**



|   |     | Share of emissions | Reduction |
|---|-----|--------------------|-----------|
| <b>Farm Animals</b><br>(Methane)          | 2/3 | 38%                | (25%)     |
| <b>Fertiliser</b><br>(Nitrous Oxide)      | 1/3 |                    |           |
| <b>Fossil Fuels</b><br>(CO <sub>2</sub> ) |     | 60%                | (53%)     |

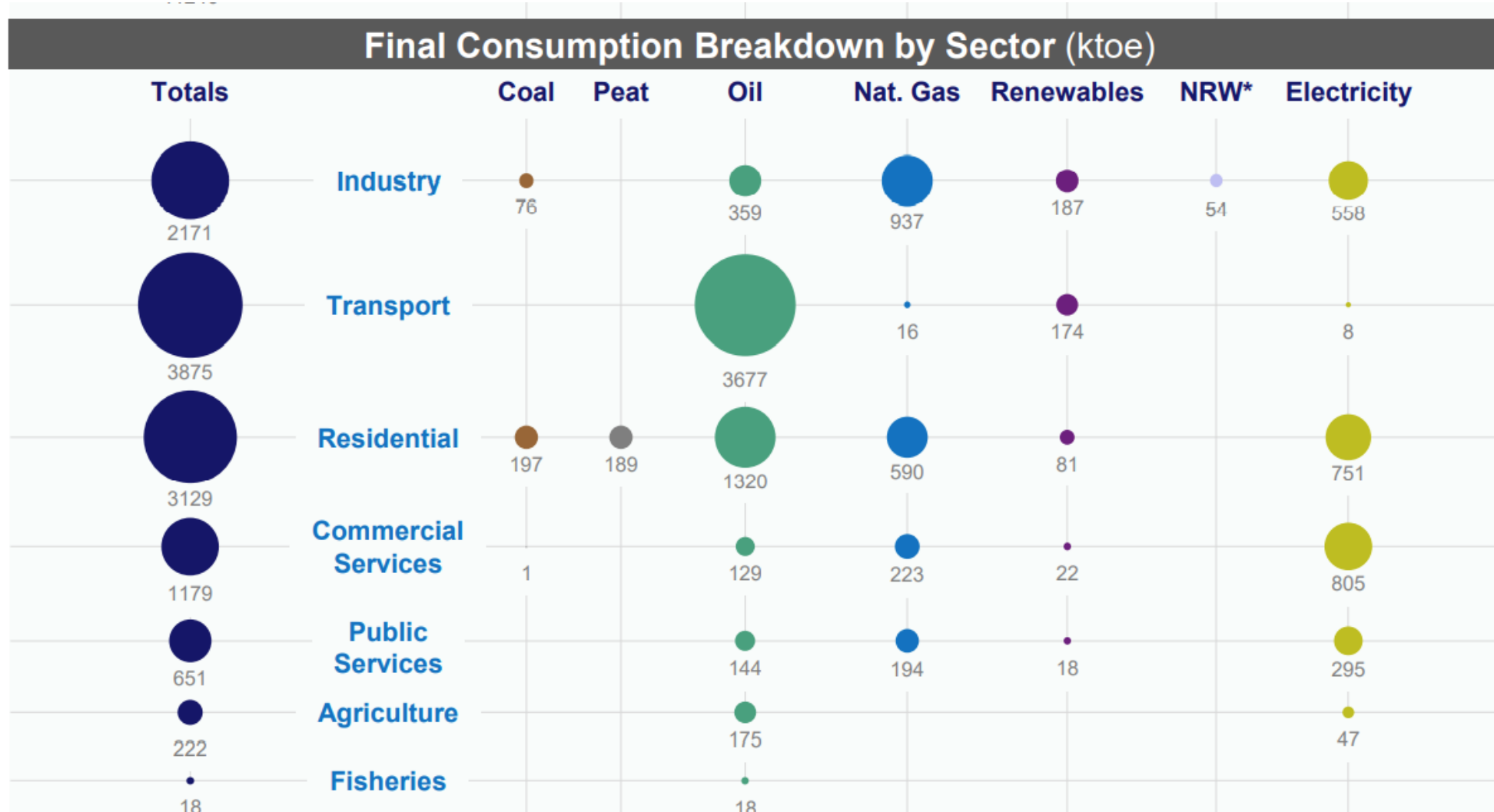


# Climate Confusion

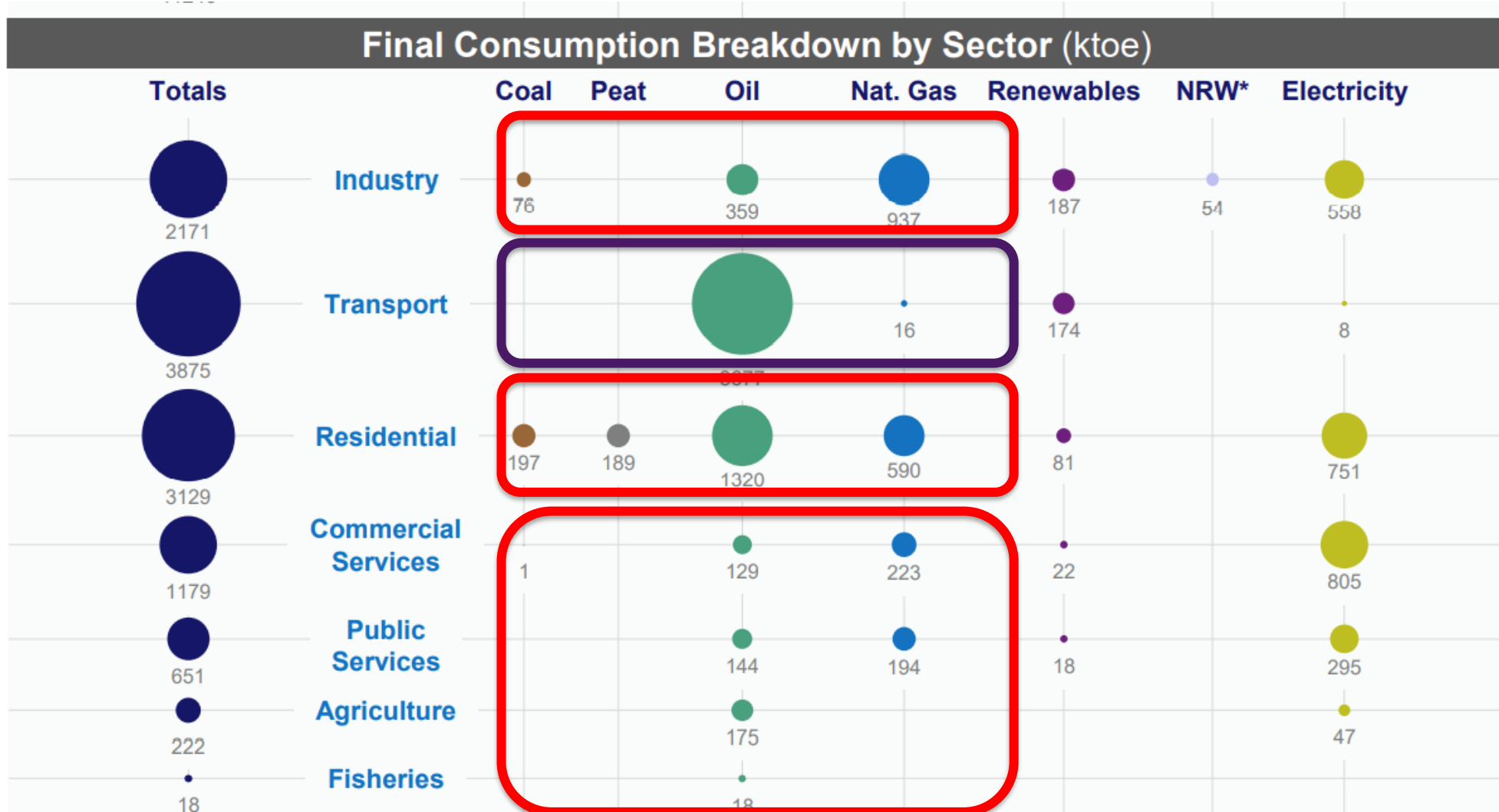


# The Sustainable Energy Bit!

# The National Energy Picture

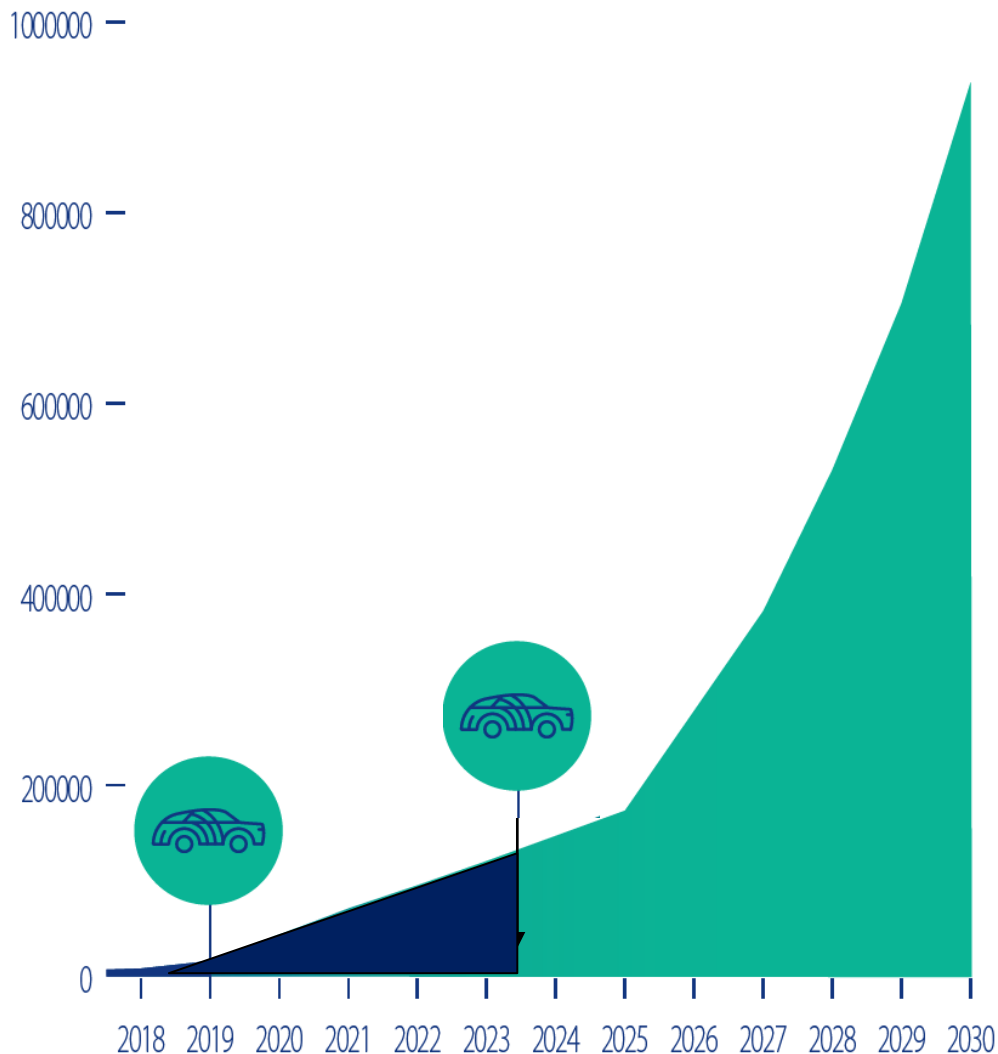


# “TRANSPORT & HEAT”



# The Sustainable Energy Opportunities

## EVPP - Motivation and behaviour



On track to target.

- + Customer service improvement – Instant grant
- + Focus on BEV
- + Choice,
- + Range, Battery evolution
- + Price competition

= EV sales are 25% of new cars in 2023

# Smart Mobility

- **E-Mobility**
  - Move towards electric drive trains
  - Personal mobility
  - Congestion Solution + Environment Soln



- **CONSIDER**

- **E-Pedal Bikes:**
- **E-Scooters**
- **E-Motorbikes/Tricycles/Quadracycles/Scoot?**
  - Those which pay road tax = **SEAI Grant**
  - Exciting Quad/Tricycl opportunities



- **CITY TRENDS**

- **Mobility As A Service (MAAS)**



## Energy Effects

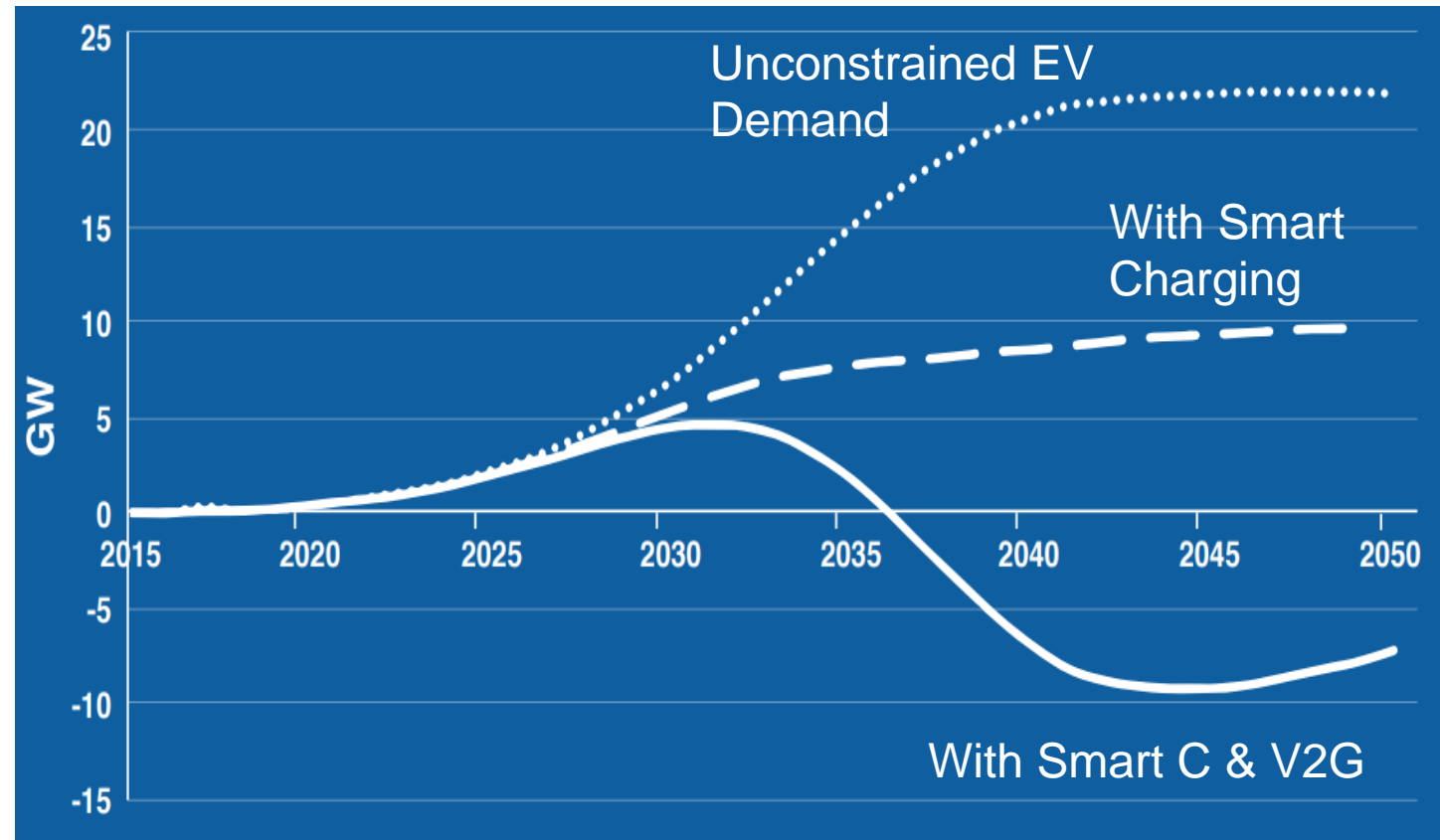
- 840,000 EVs will add 6% to demand
- EV demand has 34% seasonal variation
- 80% of charging at home

## Power Effect of EVs:

- Unconstrained => Peak +20%
- With Smart Charging => P +10%
- **Vehicle to Grid (V2G) => P -8%!!**

## Future Path

- V2G offers savings of €600 p.a.
- EV load aggregation & trading must be facilitated
- Smart Home electrical energy footprinting regulations should be developed by CRU/DSO

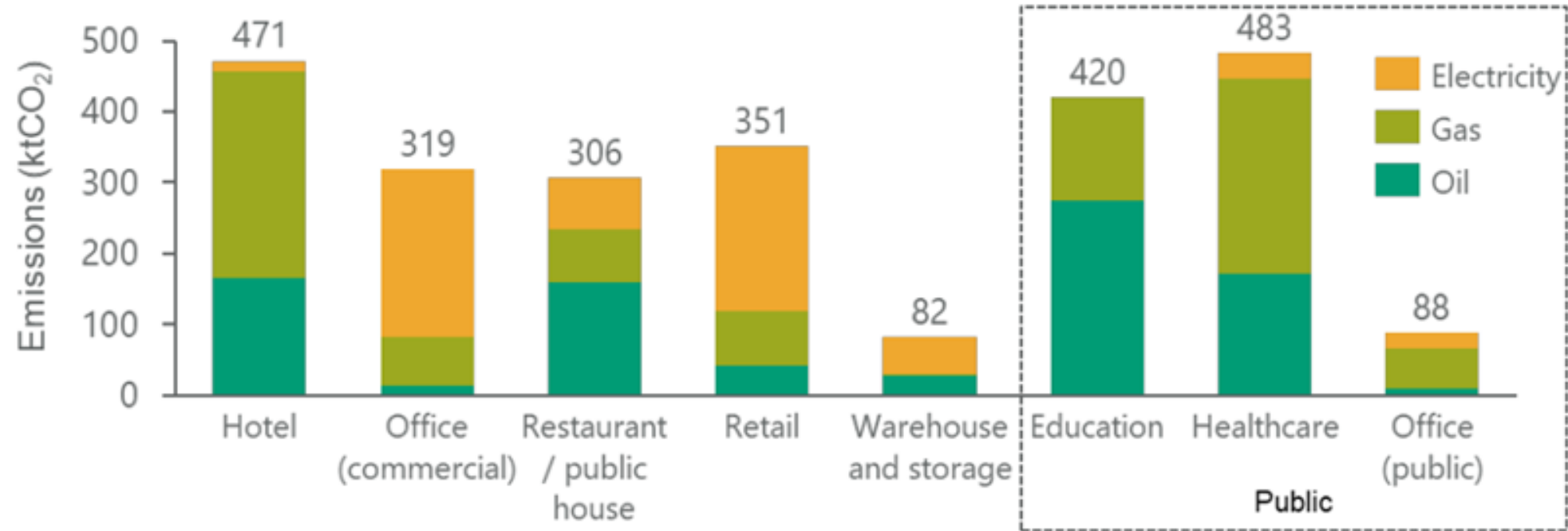


## Net Impact on Winter Peak Power Demand of EVs in UK

Source: "Future Energy Scenarios 2020", July 2020, National Grid ESO

# Commercial and Public Sector - Opportunities

**Figure 25: Total annual emissions from fuel consumption for heating in commercial and public buildings, by building type and main heating system (ktCO<sub>2</sub>)**



# The toolbox for 2030

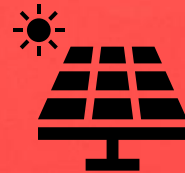


Energy Efficiency

Up to 2020



Electrification



Renewable  
Elec



Biomass



Grid

CPPA

Onsite



Biogas

H<sub>2</sub>

Hydrogen

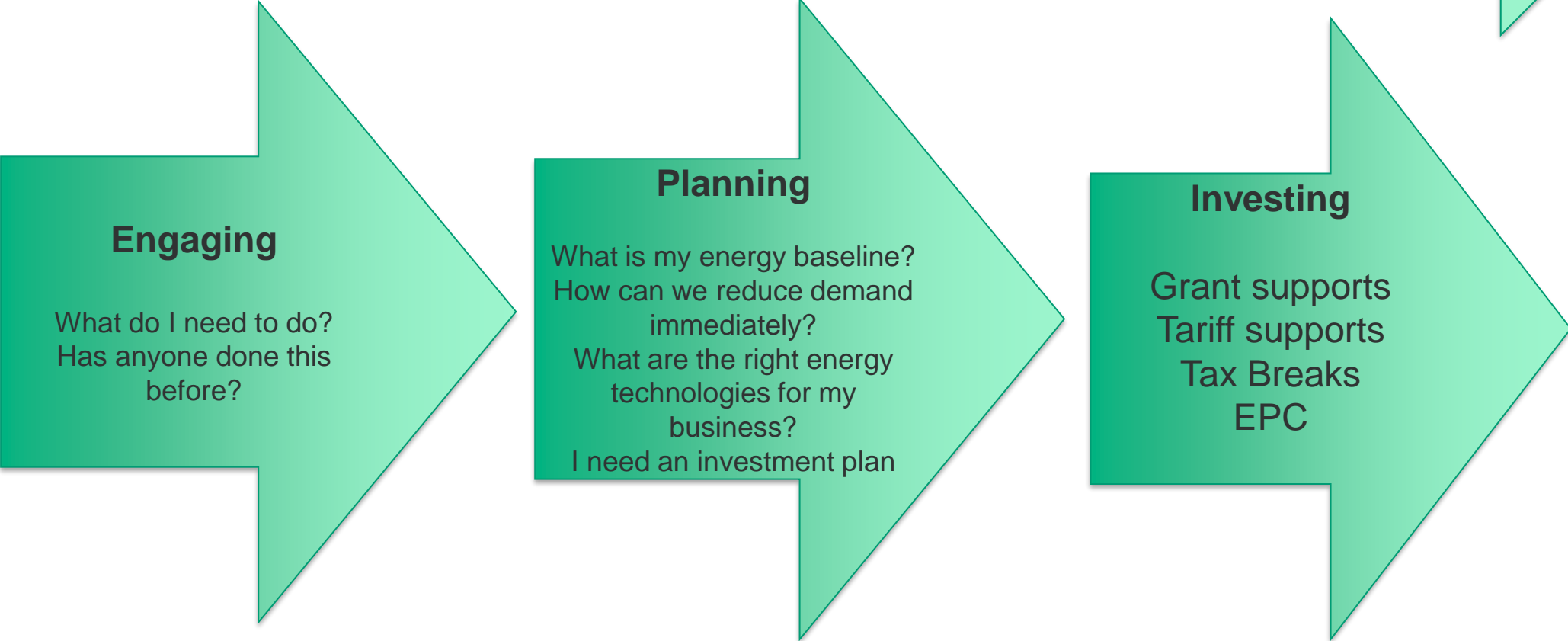


Other Options

Develop Rapidly for  
post 2030



# Non Domestic Decarbonisation Journey



# Business Grants

Single measures

Non-Domestic Microgen

Non-Domestic Retrofit

Renewable Heat Upgrades

SSRH – Heat Pump and Fabric

SSRH – Biomass / Biogas

Deep / Exemplar Upgrades

EXEED

Community Energy Upgrades

Community Energy Grants

# Thank you