Energy
Superhub
Oxford

# Case Study

## Activities and worksheets

## KS3/KS4

UK Research and Innovation
pivot power EDF renewables
Oxford City Council
University of Oxford
Habitat Energy
Invinity Energy Systems
Kensa Contracting

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# Worksheet - Activities

**Activity 1:** Debate

*"heat pump uptake is currently low, and installation can be costly"*

- Imagine you are **presenting at a planning meeting** held by Greenville City Council who have recently declared a climate emergency.
- Choose **one** of the two roles below

| | | |
|---|---|---|
| 1. Local councillor working to promote schemes like ESO | Age: 40<br>Occupation: *Teacher*<br>Memberships: *Friends of the Earth, Historic England*<br><br>*Lives with partner and two children* | *Campaigns for action on climate change. Encouraged pupils to engage with School Strike for Climate. Has recently bought and restored a derelict Georgian building in the city centre.* |
| 2. Resident and chair of 'Conservation of Historic Greenville' | Age: 79<br>Occupation: *Retired architect*<br>Memberships: *National Trust, Historic England*<br><br>*Married, adult children live aboard, no grandchildren* | *Interested in sustainable energy but concerned about the aesthetic and physical impact of such a project. Is also currently lobbying the council to invest in restoration projects around the city.* |

Using information given in the **ESO case study** and from linked resources, create a **coherent argument** for **or** against the roll out of a similar ground source heat pump installation scheme in Greenville (population 150,000).

Further source links:

Article on ESO heat pumps

GSHP pros and cons

**Tip!**
*Whilst the role you choose will have genuine and valid reasons for their point of view, it is always important to engage with and address conflicting views and suggest resolutions.*

Please use the following page for notes and planning

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# Worksheets - Activities

| Outline your argument for or against GSHP scheme |
| --- |
| |
| **Key reasons behind argument for or against** |
| |
| **Address possible conflicting views** |
| |
| **Sum up the benefits** |
| |

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# Worksheet - Activities

**Activity 2:** Research and present

Using information given in the **ESO case study** and from linked resources, **research** the project strategies for **either** transport **or** power, and prepare a **short (3-5 min) presentation,** outlining their **benefits to the community.**

| Notes |
| --- |
| |
| **Strategy** |
| |
| **Costs** |
| |
| **Benefits** |
| |

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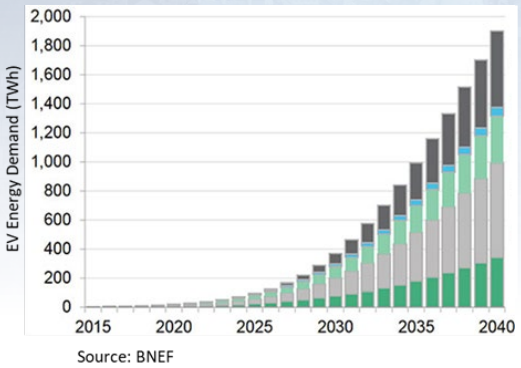
# Worksheet - Questions

1. Describe the **trend** shown in **FIGURE 1**.
(2 marks)

**FIGURE 1**



Source: BNEF

2. Outline **ONE OR MORE** likely impacts of increased dependence on renewable energy sources.
(3 marks)

3. Discuss the advantages of an **agile electricity tariff** when used in conjunction with a smart meter. Use the ESO case study and your own understanding.
(6 marks)

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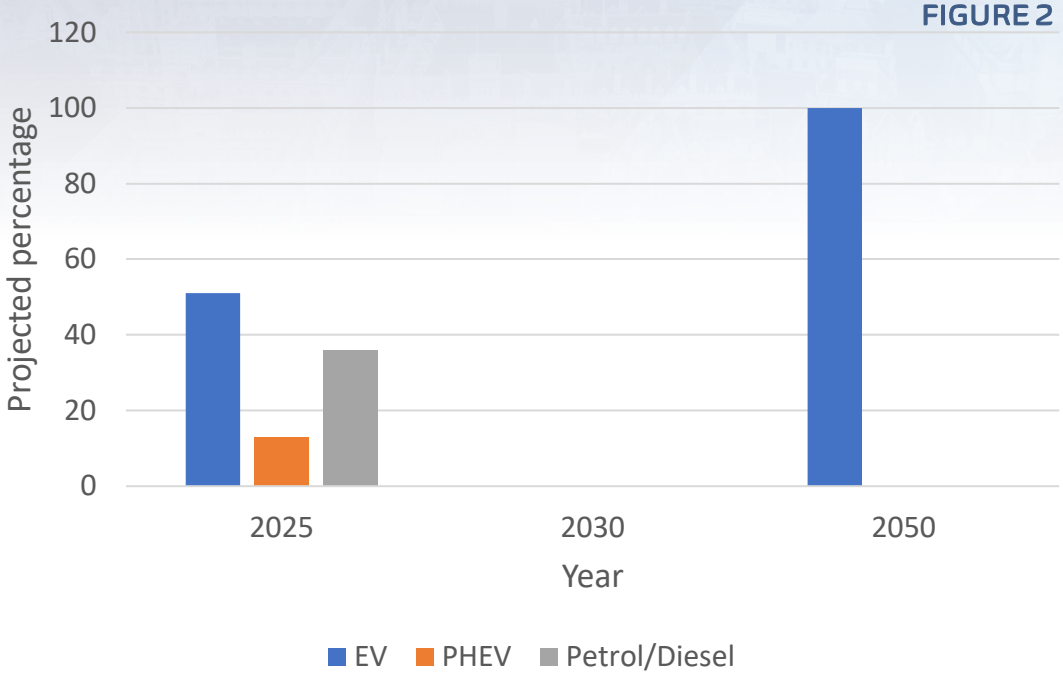
# Worksheet - Questions

3. Study **FIGURE 2** below, a graph showing the **projected shift to electric vehicles in Oxford** figures taken from Oxford City Council Climate Emergency strategy Support 09/2019

**FIGURE 2**




a) Complete **FIGURE 2** using the data in the following table. [2 marks]

| Year | EV | PHEV | Petrol/Diesel |
|---|---|---|---|
| 2025 | 51% | 13% | 36% |
| 2030 | 76% | 14% | 10% |
| 2050 | 100% | 0% | 0% |

b) Calculate the **difference between** the 2025 percentage of PHEV and petrol/diesel and the 2030 percentage of PHEV and petrol/diesel.

[1 mark]

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# Worksheet - Questions

4. Using the **ESO case study**, evaluate the potential effects of the project on the target of **decarbonisation**. (9 marks)