



nationalgrid

An introduction to community energy

Prina Sumaria, net zero project manager, Regen

8 November 2024

In this session we will explore...

- The changing energy system
- What community energy is
- A brief history of community energy
- Barriers to community energy
- Policies to support community energy
- The role of National Grid and Regen

► The changing energy system

Our electricity system is changing...

- There is a national **net zero target for 2050**
- The UK government has an ambition to have a **net zero power system by 2030**
- The UK's power generation was made up of almost **40% renewables** in 2022
- **Electrification** of heat and transport

Our homes and vehicles will increasingly be powered by electricity

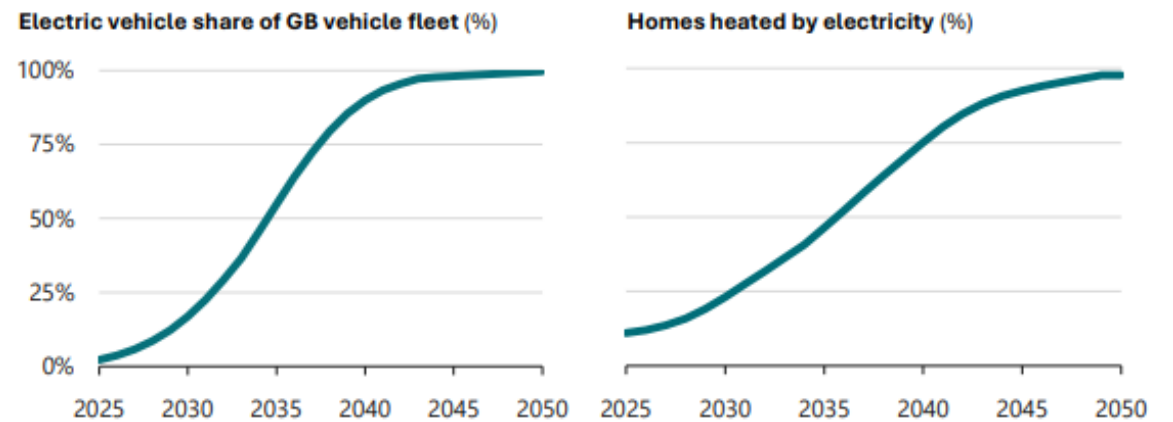
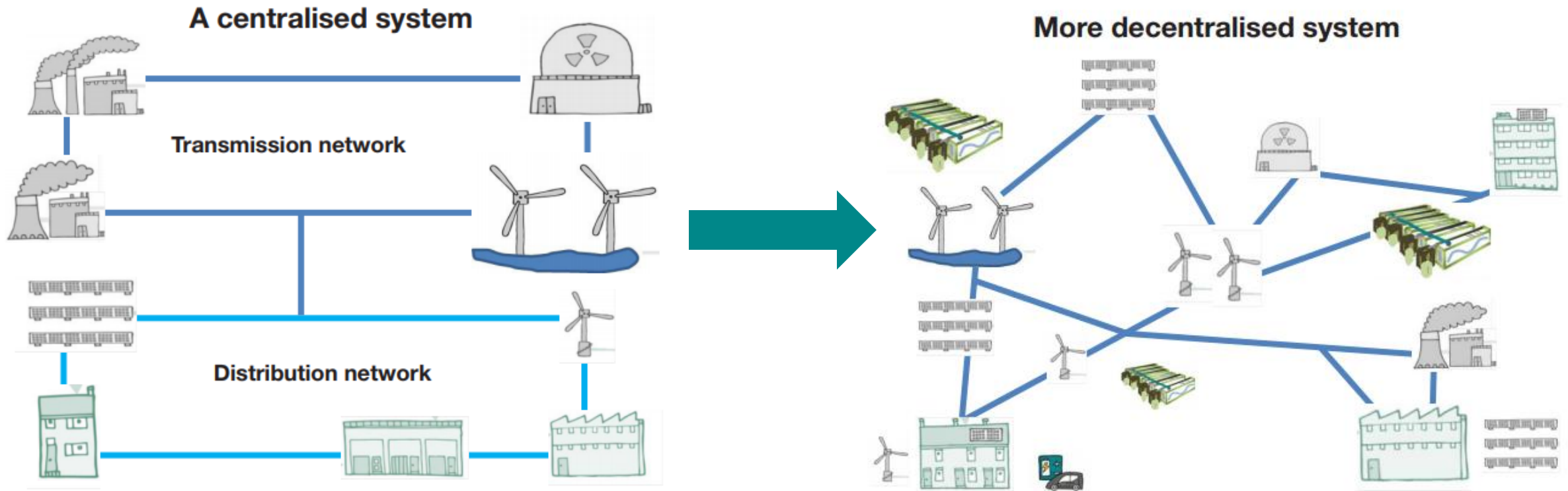


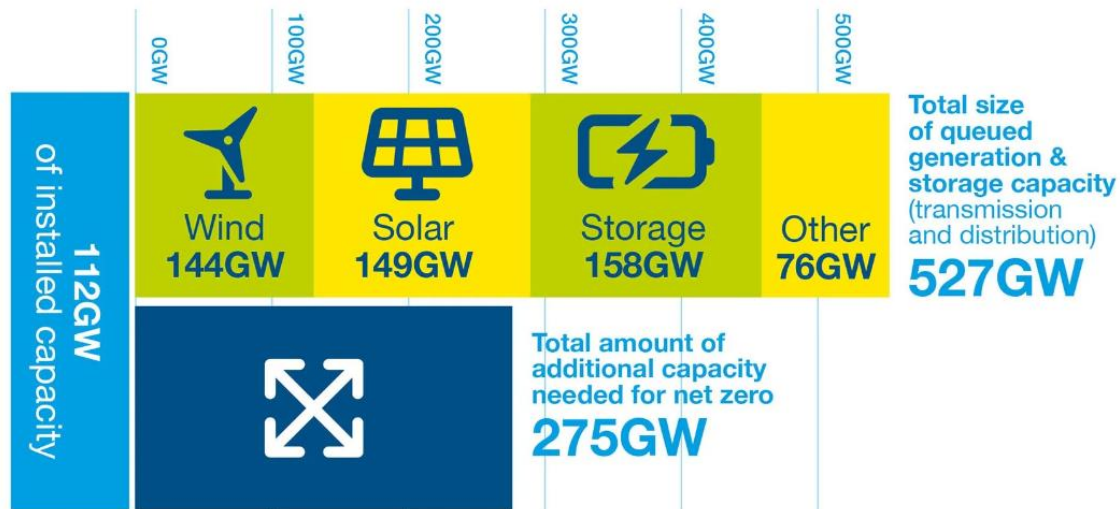
Figure 1: Electric vehicle and heat electrification uptake under ESO's Consumer Transformation Future Energy Scenario. Heat projection includes district heat.

What is decentralised energy?

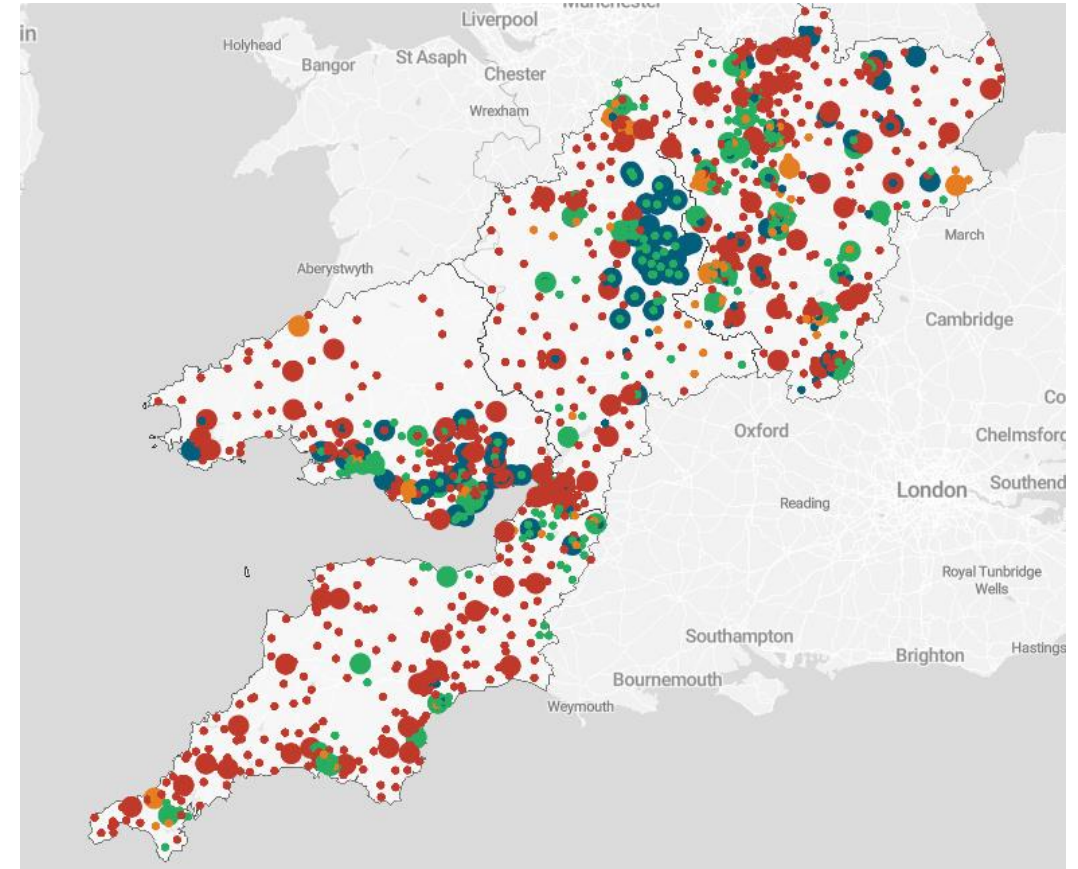


The grid is being put to the test

- Connecting to the grid is one of the biggest challenges for developers



Capacity needed by 2050 is per National Grid ESO's FES scenario 'leading the way' for 2050. All data shown above excludes demand.

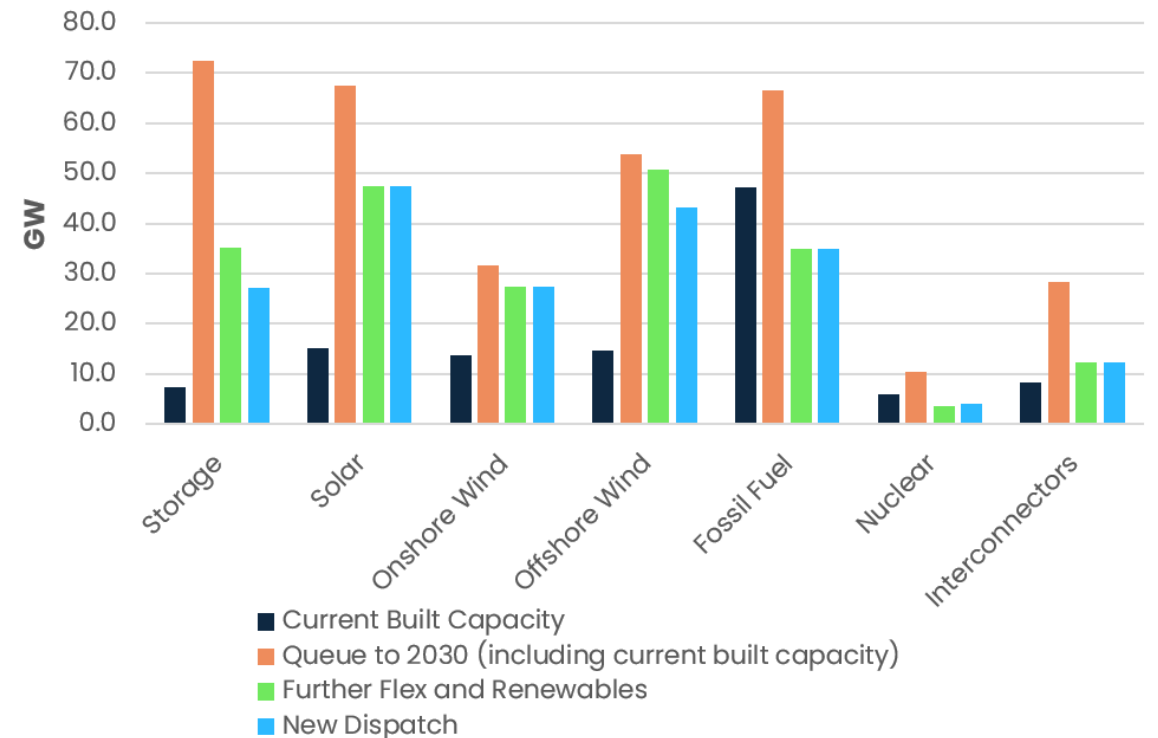


National Grid Electricity Distribution's capacity map is accessed [here](#).

Clean Power 2030 (CP30)

- The government has an ambition for Great Britain to be supplied with clean power by 2030.
- Clean power is defined as **under 5% of our power coming from gas** (compared to 30% today) and a carbon intensity below 50gCO₂/kWh
- National Energy System Operator (NESO) was commissioned to [provide independent advice on the pathway](#) to CP2030.

Queue to 2030 compared to CP30 targets



► Community energy

What is community energy?

Community energy organisations address climate change and fuel poverty challenges by...

- Taking on a diverse range of energy projects from new renewable generation to demand reduction.
- They often encourage more engaged energy citizens, greater local ownership of energy assets, and can better direct the benefits from the energy projects to where they are most needed.

Energy savings
advice

Fuel poverty
action

Energy
efficiency

Community-owned
Renewables

Low carbon
transport

Low carbon
heat

Energy storage and
flexibility

The beginnings of community energy in the UK



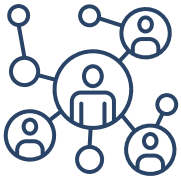
Wadebridge Renewable Energy Network's 100kW solar array which supplies renewable energy to Nanstallon sewage treatment works near Bodmin, Cornwall

- First UK community energy project in 1997 – Baywind Co-operative in Cumbria
- The community energy movement came largely from local people wanting to act on climate change – in Devon it grew out of the Transition Town movement and other local environmental groups
- Part of the broader decentralisation of the UK energy system – however, commercial developers often poor at engaging the local community
- Community energy provides a model for economic benefits of energy to be retained locally.

It's about more than profit



Community wealth builders



Convenors



Innovators



“By placing democratic control, shared benefits and active participation at the centre of project delivery, community energy could create the foundation for the significant infrastructural and cultural change we need to address the threat of climate change and energy insecurity.” – Pete Capener, 2014

Community energy in the UK 2023



RENEWABLE ENERGY GENERATION

TOTAL RENEWABLE ELECTRICITY CAPACITY

398 MW capacity

TOTAL RENEWABLE ELECTRICITY GENERATION

617 GWh produced in 2023

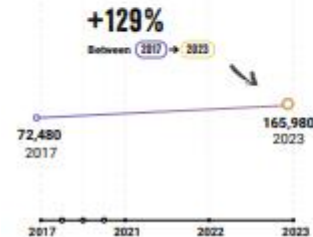
Equivalent to powering **228,530** domestic households



TOTAL TONNES OF CARBON EMISSIONS SAVED

165,980 tCO₂ saved in 2023

equivalent emissions to 209,570 passenger round trips from London to New York*
*On average, a round-trip flight from London to New York emits approximately 792 kg of CO₂ per passenger



Our survey has evolved over time so not all the statistics were gathered in earlier years

FINANCE & INVESTMENT

TOTAL ORGANISATIONAL TURNOVER

£43.2 million turnover

TOTAL INVESTMENT SECURED

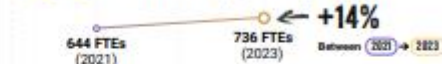
£24 million investment secured in 2023

£225 million investment secured since 2017

EMPLOYEES & VOLUNTEERS

TOTAL NUMBER OF JOBS IN THE SECTOR

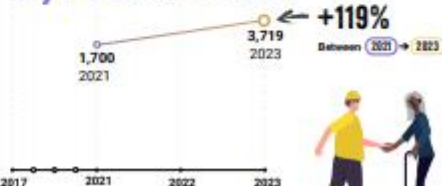
796 currently employed



102 new jobs created in 2023

TOTAL NUMBER OF VOLUNTEERS IN THE SECTOR

3,719 volunteers



LOCAL ECONOMY

FINANCIAL CONTRIBUTION TO LOCAL ECONOMY

£12.9 million contributed to local economies from organisational expenditure and community benefit funds

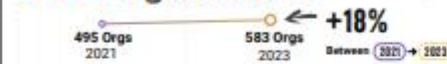
INVESTMENT RAISED FROM LOCAL COMMUNITIES

£6.4 million investment raised from communities in 2023

ORGANISATIONS

COMMUNITY ENERGY ORGANISATIONS IN THE SECTOR

583 organisations



123 organisations providing energy advice

111 organisations providing low carbon transport

319 organisations providing energy efficiency retrofit

TOTAL MEMBERS OF COMMUNITY ENERGY ORGANISATIONS

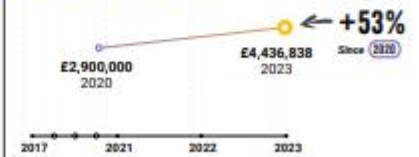
69,500 members



ENERGY EFFICIENCY & FUEL POVERTY

BILL SAVINGS FROM ENERGY EFFICIENCY & ADVICE

£4.4 million bill savings



£13.8 million saved since 2020

PIPELINE

CONTINUED SECTOR DIVERSIFICATION IN 2024

72 new energy advice and energy efficiency services



FORECAST FINANCES IN 2024

£157 million planned investment to be secured for renewable energy

STALLED RENEWABLE ENERGY

79 stalled projects with **270 MW** capacity that communities want to deliver



Produced by

Which policies have supported the growth of community energy?

Renewable
Obligation
Certificates (ROCs)
introduced in 2001

Feed-in Tariffs (FiTs)
introduced in 2010

Renewable Heat
Incentive (RHI)
introduced in 2011

- *Income for generators varies depending on cost of producing energy*
- *Generation and export tariff*
- *First five years – 2,300 community-owned renewable installations*

What are the barriers to community energy?

For generation projects:

- Cost and complexity of planning and connecting projects
- A lack of simple price support mechanisms
- A lack of access to finance and expertise
- More detail in consultation response [here](#)

For energy reduction projects:

- Short-term, piecemeal funding with different reporting requirements from funders
- Lack of grants for low-income households to enable measures
- Lack of supply chain and workforce for retrofitting homes

What policies could help community energy?

Planning

Lowering cost and complexity of planning projects

- Giving weight to community ownership in planning

Connecting

Ensuring that community energy can secure grid connections

- Designating community energy as needed in CP30 and grid connections reform

Financing

Greater, and more consistent funding

- For both demand and generation projects
- Feasibility and core resource
- Low-cost finance for developments

Selling

Simple price support mechanism

- Long term contracts at a level that recognises the wider social and economic benefit of community energy