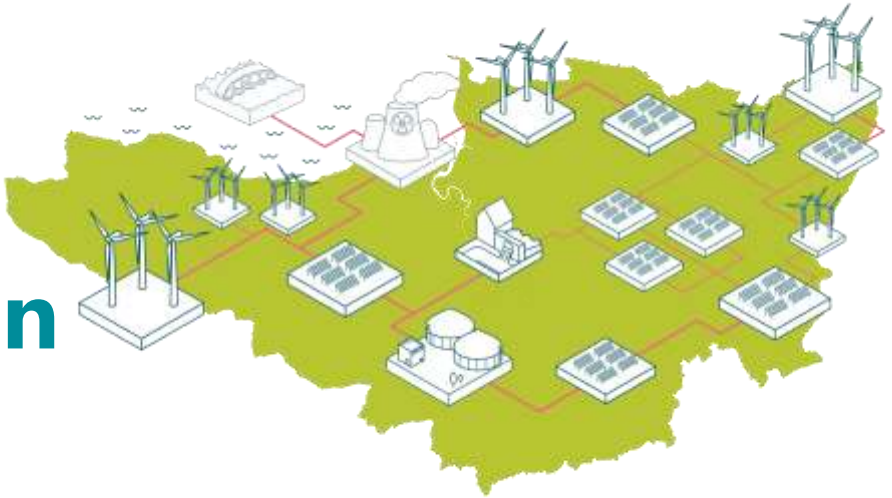
Somerset Energy Investment Plan



Rebecca Windemer, Planning and Communities Lead

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About Regen

An independent centre of energy expertise, with a mission to transform the energy system for a zero carbon future.

Experts

Pioneers

Convenors

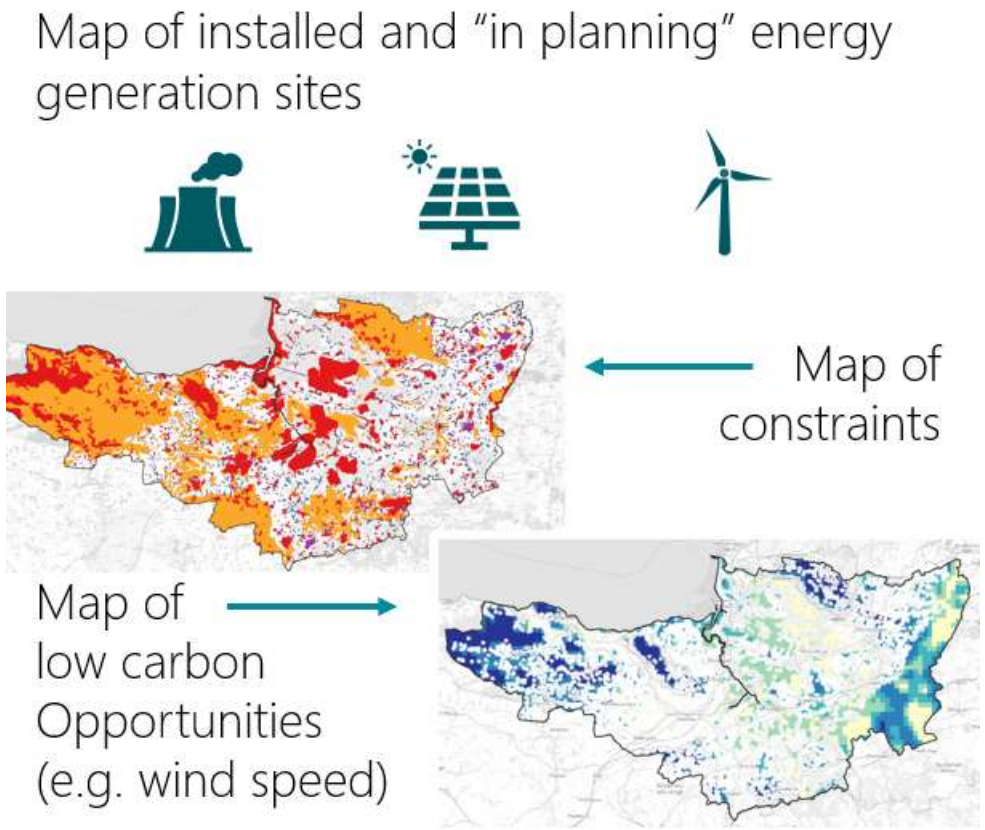
Method

1. **Resource mapping**

2. **Net Zero Pathway towards objectives outlined in Somerset Climate Emergency Strategy**

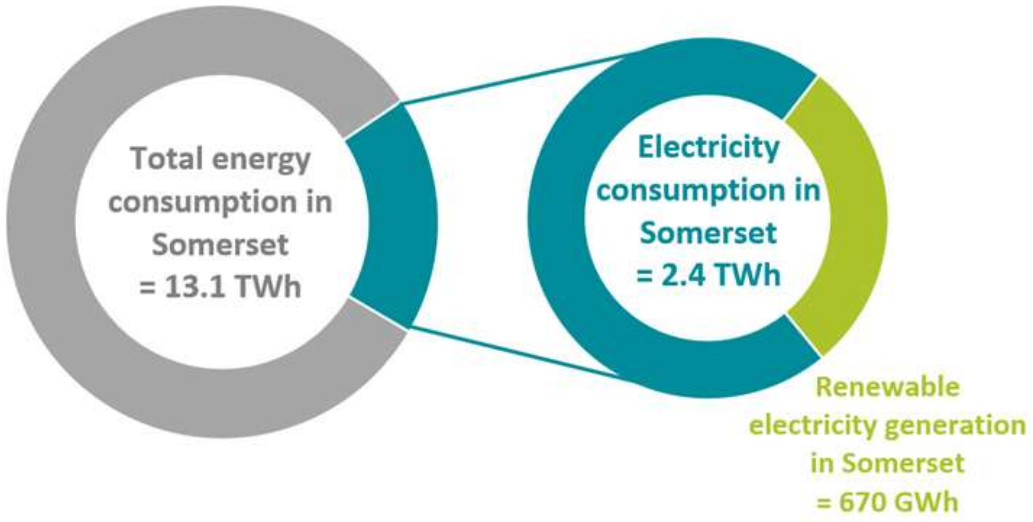
3. **Investment plan**

   Community energy organisations, private sector and other stakeholder engagement



Context

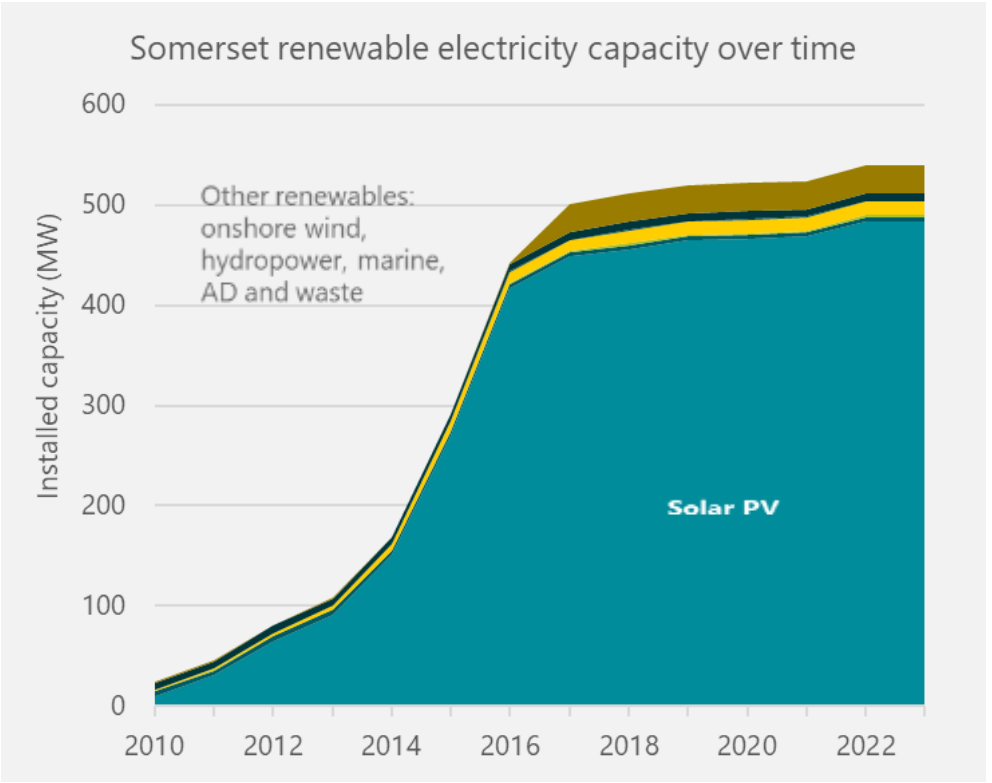
Renewable electricity generates the equivalent of 5% of Somerset's total annual energy consumption



Renewable electricity generation in Somerset is equivalent to:

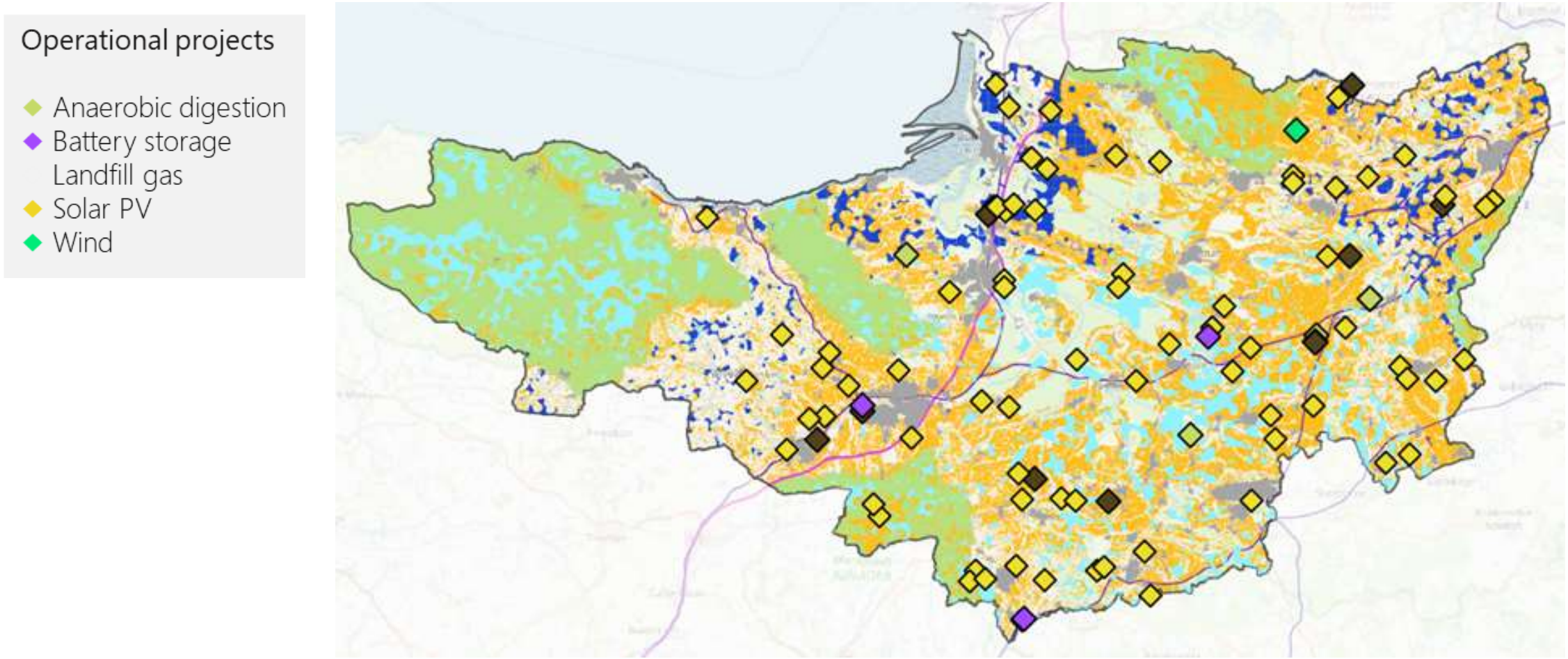
29% of Somerset's total electricity consumption

5% of Somerset's total energy consumption



Significant slowdown in deployment of new renewable energy projects since 2017, due to a combination of subsidy reductions and network constraint issues.

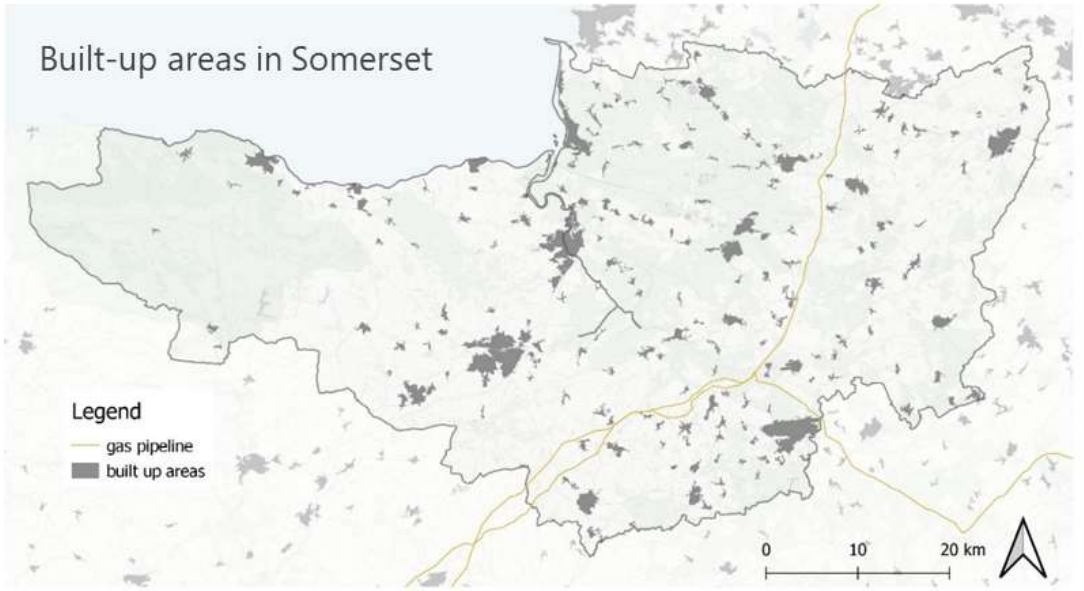
Renewable electricity generates the equivalent of 5% of Somerset's total annual energy consumption

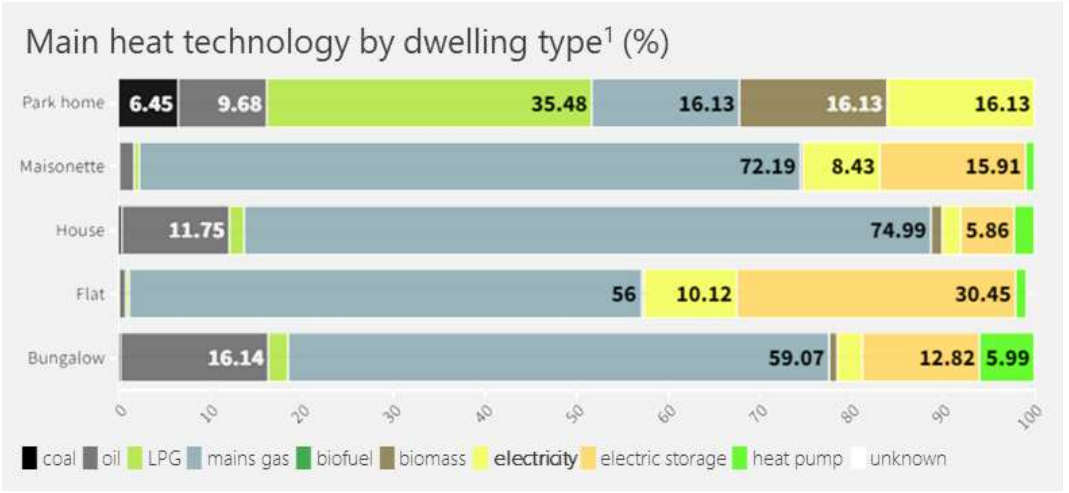


74 MW of renewable installations in Somerset are owned by local businesses and c. 17 MW by community energy groups.

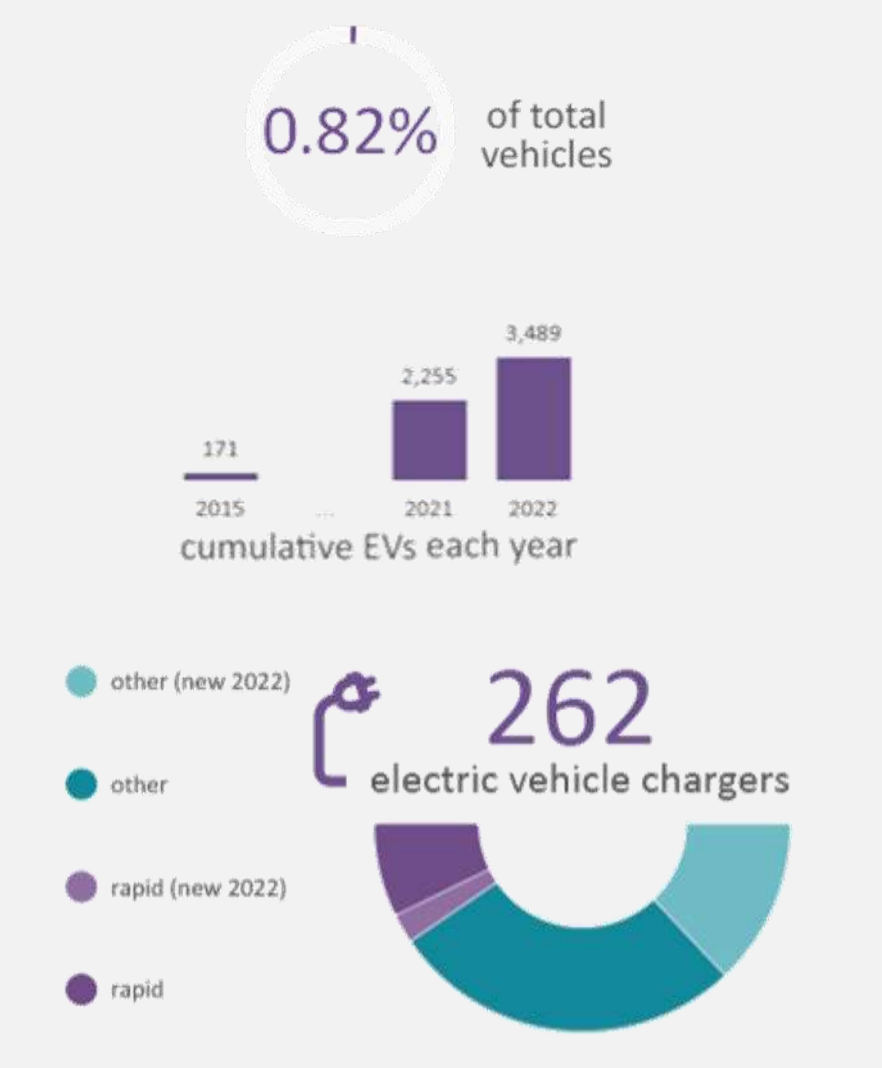
Somerset has more homes off-gas than the South West and national average

- Mains gas: 71% of all household heating
- Oil, liquified petroleum gas (LPG) and coal: 12%
- Electric heating: 15%
- Approximately 7,300 domestic heat pumps in Somerset in 2023



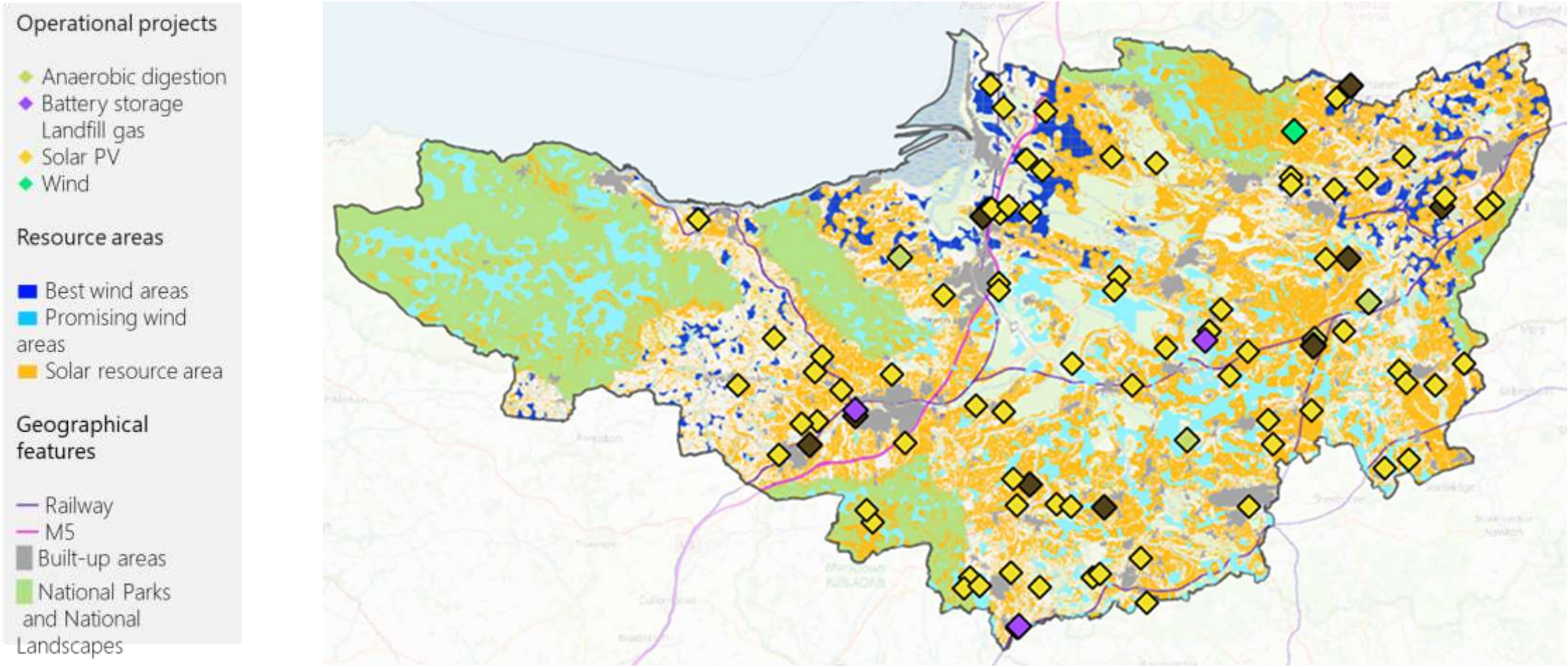


Slow progress in EVs, which make up less than 1% of all road vehicles

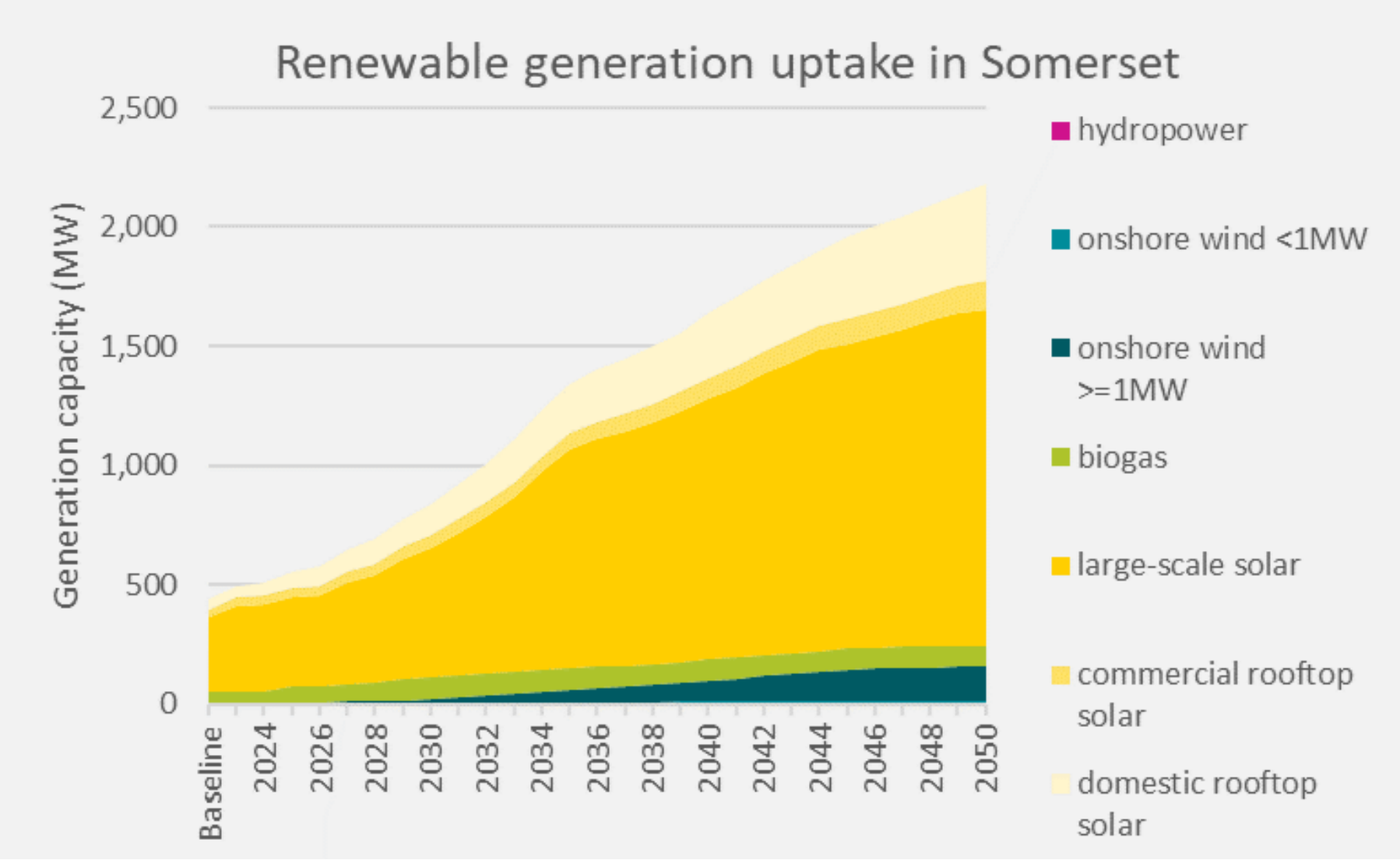


Key findings

Resource potential



The equivalent of 45% of Somerset's 2050 electricity demand could be met by local renewables



- 5x increase in Solar PV capacity resulting in 0.8% of Somerset's land area occupied by ground-mounted solar PV and 34% of domestic rooftops with solar panels
- Onshore wind would need to increase from just over 2 MW to 154 MW
- 90 MW of other technologies.

Somerset's Net Zero Pathway summary

Key elements	Net zero target areas
Energy demand	Heat decarbonisation • Retrofit • Significant heat pump installation Electric vehicles • Somerset needs over 90% of road vehicles to be electric by 2040 • Alongside an increase in public transport use and active travel
Energy generation	Renewable generation • The equivalent of 45% of Somerset's 2050 electricity demand could be met by local renewables • Generating the equivalent of 100% of 2050 electricity demand from local resources would be very challenging
Energy system	Energy storage • The Net Zero Pathway includes 247 MW of battery storage, around half of this from domestic batteries.

The role of communities

Supporting community energy

- Developing a **peer support network**, enabling organisations to share learning and develop joint projects (e.g. in Devon).
- Offering **seed financing or feasibility funding** for community groups to initiate new projects and offering council staff time to support project development (e.g. in Plymouth).
- Developing **planning policy** that provides support to community-led schemes, as Cornwall Council has through its Climate Emergency DPD. Offering low-cost early engagement on new planning applications for community schemes.
- **Coordinating links** between community energy organisations and other stakeholders.
- Working with communities to **pilot innovative approaches**, such as microgrid development or Demand Side Response trials.
- **Virtual Power Purchase Agreements.**

Decarbonisation of the Council's own estate

Recommendation: Developing generation and storage sites on council land in partnership with local organisations and community groups.

- The Council has substantial land holdings which have been assessed for solar and wind opportunities. Ten sites have been identified as having considerable potential for solar or wind development.

- The Council also owns a wide range of other energy using assets, from leisure centres, to car parks and vehicle depots. These sites could incorporate energy efficiency measures and small-scale renewables. Some sites could also act as anchor loads for district heat networks.

Comprehensive retrofit support programmes are needed for every segment of the market

- The Council should build on existing work with community energy organisations and local providers to extend support for the ‘self-funding’ market.

- Community energy organisations and other local bodies are often very effective in acting as trusted sources of advice and information for householders on energy issues.

Net Zero Heat Village Trial: a local community approach to exploring net zero in rural areas

Recommendation: The Council should work in partnership with community energy organisations to develop a Net Zero Heat Village trial.

- Working with a local community, a Net Zero Heat Village trial could take a community-based approach to planning and installing measures to deliver net zero in a specific village.

- Technologies might include batteries, renewable generation on rooftops and nearby land assets, heat pumps, energy efficiency measures, heat networks, flexibility services and waste heat.

- The Council should actively engage with community energy organisations across Somerset on their ambitions for decarbonising heat.

EV and rural transport options

Recommendation: The Council should work in partnership with transport providers and communities to develop innovative approaches to rural public transport.

- Some services like Westlink, which operates in the West of England area offer on-demand bus services where demand is too low for routes to run regularly on a fixed timetable.

- Community-based solutions also exist, such as Wivey Link, which uses five vehicles driven by volunteers and offers pre-bookable personal transport in the Wiveliscombe area, with concessions for bus pass holders.

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