



EXETER  
CityFutures

ENERGY



# NET ZERO EXETER 2030 PLAN

# ENERGY

Energy is essential for our city. It provides heat for our homes, powers our transport and keeps our healthcare system running.

In a world where natural resources are finite, establishing an affordable, locally-generated green energy supply is vital to maintain our quality of life and to improve Exeter's energy security and resilience.

Rising energy prices, energy inefficient housing and low incomes have resulted in high levels of fuel poverty across the UK.

The health effects of living in a cold, poorly-ventilated home are well-established, ranging from cardiovascular and respiratory problems to depression. There is also evidence of wider social impacts<sup>1</sup>, such as social isolation, with some people having to make choices between heating their home or buying the food they need.

## Alignment to Ingredients for Future Placemaking [\[see page 10\]](#)

- Future Building Interfaces
- Future Building Typologies

Meeting Exeter's goals for '**Reduced Energy Consumption**', '**Access to Renewable Energy**' and '**Affordable Healthy Homes**' will require access to new renewable energy generation technologies, increased public and private investment, a strong and engaged community who want to make change, and a focus on both regulatory frameworks and innovative business models that can transform our local energy systems.

We will need to identify ways to improve the efficiency of new and existing homes while ensuring that we don't make them less affordable.

**31.8%** OF BUSINESSES WHO RESPONDED TO OUR SURVEY STATED THAT THEY WOULD LIKE SUPPORT TO IMPLEMENT PROGRAMMES OF ENERGY REDUCTION



## Reduced Energy Consumption



## Access to Renewable Energy



## Affordable Healthy Homes



<sup>1</sup> [www.gmjournals.co.uk/fuel-poverty-significant-cause-of-preventable-ill-health](http://www.gmjournals.co.uk/fuel-poverty-significant-cause-of-preventable-ill-health)

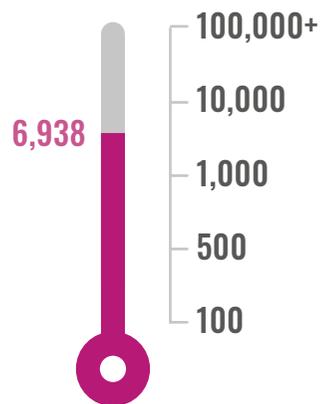
# PRIORITY ACTIONS

Encourage all organisations in Exeter (including schools) to commit to energy reduction measures, including demand reduction, upgrade of building insulation and heating.



## CARBON SAVING

TONNES PER YEAR



INDICATIVE COST / RESOURCE

£ 0

1

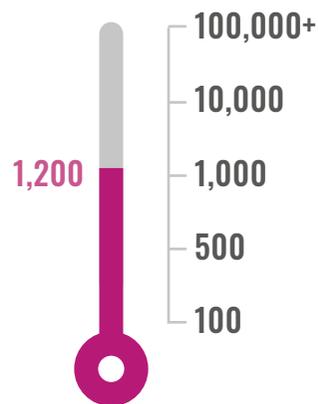


Refine local planning policy so that it requires the highest energy efficiency standards (e.g. passive) in all new domestic, industrial, commercial and public buildings.



## CARBON SAVING

TONNES PER YEAR



INDICATIVE COST / RESOURCE

£ > £100m

1

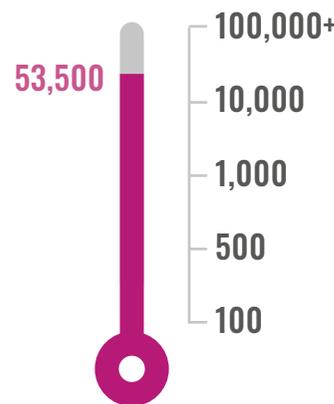


Ensure that 100% of electricity consumed by the city is generated from clean sources.



## CARBON SAVING

TONNES PER YEAR



INDICATIVE COST / RESOURCE

£ £0

0

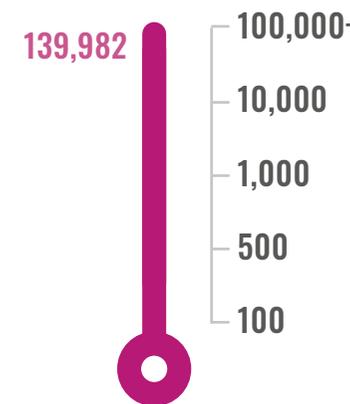


Conduct multi-authority strategic planning to exploit the maximum potential for renewable generation (solar, wind, geothermal).



## CARBON SAVING

TONNES PER YEAR



INDICATIVE COST / RESOURCE

£ > £50m

0.5



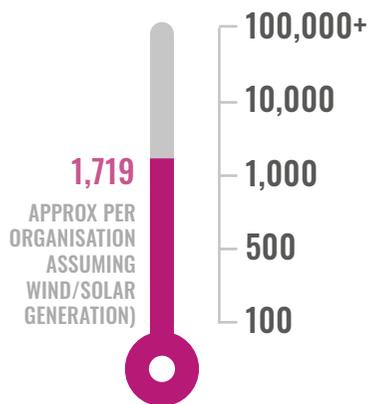
# PRIORITY ACTIONS

Transition public-sector buildings over to locally-generated renewable sources of energy (e.g. solar, district heat networks).



## CARBON SAVING

TONNES PER YEAR



INDICATIVE COST / RESOURCE

£ ~£5m

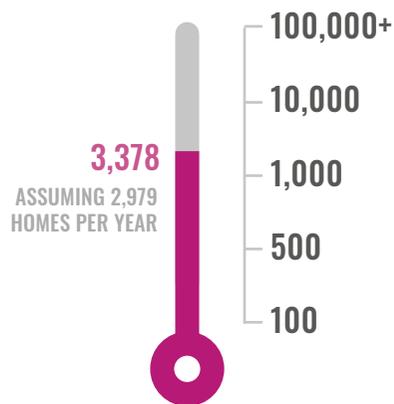


Enable retrofit of domestic homes across the city to achieve energy performance ratings of C+.



## CARBON SAVING

TONNES PER YEAR



INDICATIVE COST / RESOURCE

£ > £100m

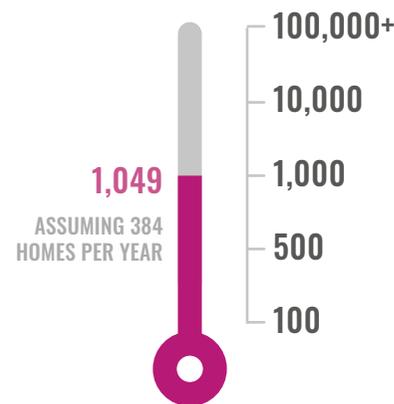


Retrofit council-owned properties using programmes such as EnergieSprong (or equivalent).



## CARBON SAVING

TONNES PER YEAR



INDICATIVE COST / RESOURCE

£ > £100m



Enforce private rental standards to ensure that all properties meet minimum energy performance ratings (A-E).



## CARBON SAVING

TONNES PER YEAR



INDICATIVE COST / RESOURCE

£ 0



# GOAL 1

## REDUCED ENERGY CONSUMPTION



Greater Exeter consumes 10TWh of energy every year – enough to make 368 trips to the moon or to drive around the Earth 1.5 million times.

This use is set to grow. Existing energy consumption patterns already cost our residents and businesses over £900m each year; a significant cost to many families and a particular burden to those in fuel poverty.

In a Net Zero Exeter, residents and businesses will have access to the right tools to measure and understand energy use in order to reduce consumption and increase energy efficiency.

### Related Plans and Policies:

- [Action Plan for an Energy Neutral Council](#)
- [Exeter City Council: Energy Strategy 2017 - 2022](#)
- [Exeter Local Plan](#)
- [Exeter Core Strategy: CP13 Decentralised Energy Networks and CP15 Sustainable Construction](#)

### DIRECT ACTIONS

- 1.2 Encourage all organisations in Exeter (including schools) to commit to energy reduction measures, including demand reduction, upgrade of building insulation and heating.
- 1.3 Refine local planning policy so that it requires the highest energy efficiency standards (e.g. passive) in all new domestic, industrial, commercial and public buildings.

### ENABLING ACTIONS

- 1.1 Implement “Smart energy technology” in all homes across Exeter, to support the efficient use of energy, particularly from sustainable sources, and support the elimination of fuel poverty.
- 1.4 Encourage upgrades to highest efficiency appliances.

### INDICATORS

- 1.5 Exeter has a strong set of demonstrators / case studies to show how commercial buildings and industrial processes can be more energy efficient.

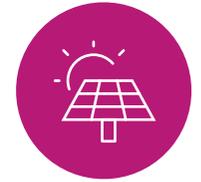
*“With so many people having to balance paying for food or having heating, having net zero homes will make such a difference to so many and having these homes will also reduce energy consumption and make the world better for all”*

Resident Voice



# GOAL 2

## ACCESS TO RENEWABLE ENERGY



Energy is essential to our city. It provides heat for our homes, powers our transport and keeps our healthcare system running. In a world where natural resources are limited, establishing an affordable, locally-generated green energy supply is vital to maintain our quality of life.

This must be supported by increased public and private investment, a strong and engaged community and a focus on regulatory frameworks and innovative business models that can transform our local energy systems.

In a Net Zero Exeter, all residents will have access to locally generated renewable sources of energy.

### Related Plans and Policies:

- [Exeter City Council: Energy Strategy 2017 - 2022](#)
- [Greater Exeter Strategic Plan - Evidence base: Low Carbon Study \(In development\)](#)
- [Exeter Local Plan](#)
- [Exeter Core Strategy: CP14 Renewable Energy](#)

### DIRECT ACTIONS

- 2.1** Ensure that 100% of electricity consumed by the city is generated from clean sources.
- 2.2** Conduct multi-authority strategic planning to exploit the maximum potential for renewable generation (solar, wind, geothermal).
- 2.7** Transition public-sector buildings over to locally generated renewable sources of energy (e.g. solar, district heat networks).

### ENABLING ACTIONS

- 2.3** Engage the public in identifying renewable energy solutions that are acceptable, and in the context of the energy choices available.
- 2.3** Deploy smart grid technology to realise the potential local benefits of regional generation.
- 2.5** Establish world-leading programmes of research and investment into enhanced renewable energy generation and storage; including solar, wind, marine and geothermal, energy storage technologies and improving efficiency of generation.
- 2.6** Ensure that data on sources of energy generation in the city is shared publicly, so consumers are better informed about the breakdown and source of their energy use.

### INDICATORS

No specific indicators have been identified for this goal at this stage.

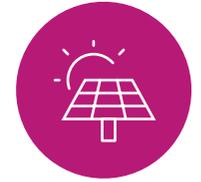
*"We need local energy for local people"*

Political Voice



# CASE STUDY

## EXETER CITY COUNCIL PROJECT ZERO



The use of solar PV to reduce energy consumption from the grid at source is a priority for the city council. Where roof space /structures allow, the energy team has ensured that solar PV technology is utilised on various venues across the city.

### Royal Albert Memorial Building

One building that proved to be a very challenging installation was the Royal Albert Memorial Museum (RAMM). The PV array is shaped by the roof, deemed to be structurally adequate and by planning consent restrictions applied to this Grade II Listed Building. In addition, extensive structural investigations became necessary due to the varied roof structures and existing renovation works. Solutions and innovative installation methods were found with the help of the install contractor SunGift Energy allowing the RAMM to benefit from a 26kW Solar PV array.

### Livestock Centre

The 1.5MW array installed at the council's Livestock Centre has provided for a carbon positive building, one that generates 1.1GW per annum of renewable electricity. The equivalent

to powering 180 homes, with a carbon saving equal to the planting of 1600 trees. The solar array provides a 25-year income stream which has provided for a much-needed replacement roof. Supporting the local farming community by safeguarding the future of the busy livestock market and events venue. In addition, all leased shop units inside the building share the council's renewable electricity supply using a Power Purchase Agreement (PPA) providing a discounted green energy tariff.

### Quay Climbing Centre

The former City of Exeter Light and Power Station which served the city from 1903 is producing energy again, this time renewable energy from the sun. The building owned by Exeter City Council is leased to the Quay Climbing Centre. The Solar PV array installed by Exeter City Council was the first project involving a leased council property. The system includes 105 solar panels and generates 30,000kWh of energy per year. Electricity generated is sold to the leaseholder at a discounted price using a PPA. The Quay Climbing Centre benefits from reduced energy bills, with a green supply, reducing carbon produced by just under 16 tonnes per year.



# GOAL 3

## AFFORDABLE HEALTHY HOMES



Rising energy prices, energy inefficient housing and low incomes have resulted in high levels of fuel poverty across the UK. The adverse health effects of living in cold, poorly ventilated homes are well-established.

An energy-efficient home reduces waste energy and the demand for non-renewable energy resources. It may also offer financial savings and healthier living conditions through better ventilation and maintenance of moderate temperature. There are a range of energy-saving measures applicable to existing homes and new standards emerging for new builds.

In a Net Zero Exeter all residents will be able to live in an affordable home which is energy efficient and healthy; where fuel poverty is reduced.

### Related Plans and Policies:

- [Exeter Local Plan](#)
- [Affordable Housing Supplementary Planning Document](#)
- [Liveable Exeter Housing Delivery Programme](#)
- [Statement of Intent: Energy Company Obligation: Help to Heat](#)

### DIRECT ACTIONS

- 3.3** Enable retrofit of domestic homes across the city to achieve energy performance ratings of C+.
- 3.5** Retrofit council-owned properties using programmes such as EnergieSprong (or equivalent).
- 3.6** Enforce private rental standards to ensure that all properties meet minimum energy performance ratings (A-E).

### ENABLING ACTIONS

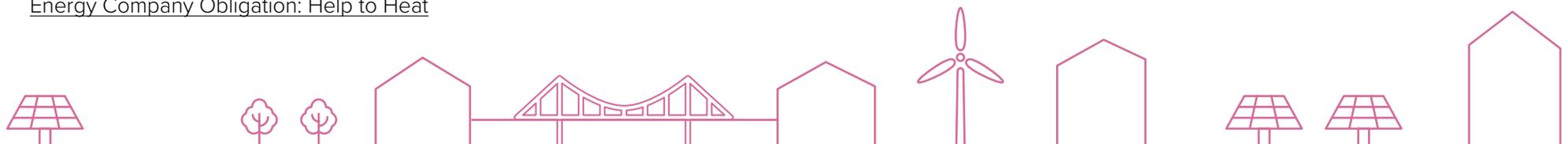
- 3.1** Increase provision of affordable, quality and sustainable housing in the city; enabling lower income families to live centrally and have easy access to employment and services.
- 3.2** Launch a Local Retraining Scheme for sustainable construction, enabling workers to adapt to the demand for skills such as retrofitting for energy efficiency purposes.
- 3.4** Update planning policies to support housing design features which create a healthy environment and promote wellbeing as standard.

### INDICATORS

- 3.7** Fuel poverty is eliminated in Exeter.
- 3.8** Domestic energy demand (and spend) has been reduced across the city.

**“This is vital, everyone needs a healthy, Affordable, Safe Home”**

Resident Voice



# TIMELINE: NET ZERO EXETER 2030



## 1. REDUCED ENERGY CONSUMPTION

- 1.1** Smart energy technology” shall be in all homes in Exeter, supporting the efficient use of energy, particularly from sustainable sources, and supporting the elimination of fuel poverty.
- 1.2** All organisations in Exeter (including schools) shall have committed to energy reduction measures, including demand reduction, upgrade of building insulation and heating.
- 1.3** Local planning policy shall require the highest energy efficiency standards (e.g. passive) in all new domestic, industrial, commercial and public buildings.
- 1.4** Exeter shall have developed mechanisms which encourage upgrades to highest efficiency appliances.
- 1.5** Exeter shall have a strong set of demonstrators / case studies that act as examples of how commercial buildings and industrial processes can be more energy efficient.

Short Term 2020 - 2022	Medium Term 2023 - 2026	Long Term 2027 - 2030
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		1.1
1.2		
1.3		
1.4	1.4	
1.5	1.5	1.5



## 2. ACCESS TO RENEWABLE ENERGY

- 2.1** 100% of electricity consumed by the city shall be generated from clean sources.
- 2.2** Exeter shall be engaged in multi-authority strategic planning to exploit the maximum potential for renewable generation (solar, wind, geothermal).
- 2.3** Exeter shall have engaged the public in identifying renewable energy solutions that are acceptable in the context of the energy choices available.
- 2.4** Exeter shall have deployed smart grid technology to realise the potential local benefits of regional generation.
- 2.5** Exeter shall have world-leading programmes of research and investment into enhanced renewable energy generation and storage; including solar, wind, marine and geothermal, energy storage technologies and improving efficiency of generation.
- 2.6** Data on sources of energy generation in the city shall be shared publicly, so consumers are better informed about the source of their energy use.
- 2.7** Public sector buildings shall use locally generated renewable sources of energy; e.g. solar, district heat networks.

Short Term 2020 - 2022	Medium Term 2023 - 2026	Long Term 2027 - 2030
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	2.1	
2.2	2.2	2.2
2.3		
		2.4
2.5		
2.6		
	2.7	

# TIMELINE: NET ZERO EXETER 2030



## 3. AFFORDABLE HEALTHY HOMES

- 3.1** The provision of affordable, quality and sustainable housing in the city, shall have increased; enabling lower income families to live centrally and have easy access to employment and services.
- 3.2** Exeter shall have launched a Local Retraining Scheme for sustainable construction, enabling workers to adapt to the demand for skills such as retrofitting for energy efficiency purposes.
- 3.3** All domestic homes in Exeter shall achieve energy performance ratings of C+ following completion of a widespread programme of retrofit to reduce energy demand and costs.
- 3.4** Exeter planning policy shall support housing design features which create a healthy environment and promote wellbeing as standard.
- 3.5** A programme of domestic retrofit to the highest efficiency standards has been delivered across council owned properties using programme such as EnergieSprong (or equivalent).
- 3.6** Private rental standards shall meet minimum energy performance ratings (A-E).
- 3.7** Fuel poverty shall have been eliminated in Exeter.
- 3.8** Domestic energy demand (and spend) has been reduced across the city.

Short Term  
2020 - 2022

Medium Term  
2023 - 2026

Long Term  
2027 - 2030

3.2

3.4

3.6

3.1

3.1

3.3

3.5

3.7

3.8

# WHAT EXETER CITY COUNCIL CAN DO

## ENERGY

- Continue to reduce energy used by the council estate [1.2]
- Use influence, officer knowledge and role in Exeter City Futures CIC to encourage all organisations in Exeter to commit to energy reduction measures [1.2]
- Promote Exeter as a city that is leading the way in achieving net-zero carbon; showcasing a strong set of demonstrators / case studies as well as companies and social organisations who are responding to the net-zero plan [1.5, 12.6]
- Align all statutory and non-statutory plans, policies and guidance (including the Local Plan and planning policies) with the ambitions of achieving net-zero carbon emissions and the actions set out in the Net Zero Exeter 2030 Plan. Ensure all Council decisions are informed by an analysis of whether they would help or hinder the delivery of the Net Zero Exeter 2030 Plan [1.3, 4.3, 7.7, 9.1, 9.2, 9.3, 12.5]
- Refine local planning policy to require the highest energy efficiency standards (e.g. passive) in all new domestic, industrial, commercial and public buildings [1.3]
- Transition council-owned buildings to use locally generated renewable sources of energy (e.g. solar, district heat networks) and in the interim change to renewable energy tariffs for all council buildings [2.1, 2.7]
- Ensure sites for renewable generation are identified in the Exeter Local Plan and the Greater Exeter Strategic Plan [2.2]
- Review decision-making processes to ensure the voices of all citizens (including the most vulnerable) are heard in developing solutions to becoming a carbon-neutral city [2.3, 10.4]
- Assign an officer to work with local developers, construction firms and education centres to develop and launch a Local Retraining Scheme for sustainable construction. Identify funding sources e.g. from the private sector, LEP, government [3.2]
- Consider options for the council to work alongside the private sector to encourage / enable owners of privately-owned properties to retrofit their homes to increase energy efficiency and reduce energy demand [3.3]
- Launch a programme of domestic retrofit for council-owned properties using programme such as EnergieSprong (or equivalent) [3.5]
- Enforce minimum energy-efficiency standards in the private rented sector [3.6]

# WHAT ORGANISATIONS CAN DO

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We understand that there are many different types and sizes of organisations in Exeter and that not all of the below actions can be achieved by every organisation. Many factors limit an organisation's ability to make change, for example if a building is controlled by a landlord.

However, this list is presented to help organisations consider, in light of their own circumstances, what role they might play in the city's collective effort to become carbon-neutral.

We are acutely aware that the COVID-19 pandemic has delivered a sudden blow to businesses, and many are struggling with loss of income and dealing with the rapid transition to remote-working arrangements. We present these actions sensitively so that when the nation, and the city of Exeter, can return to some sense of normality, we can take the learnings from our current challenging situation and turn them into positive action.

## ENERGY

- Commit to energy reduction measures, including demand reduction, upgrade of building insulation and heating [1.2]
  - Ensure that all new commercial buildings are of the highest energy-efficiency standards (e.g. Passivhaus) [1.3]
  - Upgrade to highest efficiency appliances [1.4]
  - Share case studies of energy reduction / renewable generation with the city, via Exeter City Futures' City Showcase to support Exeter as a leading net-zero city [1.5, 1.6]
  - Invest in programmes of research into enhanced renewable energy generation and storage [2.5]
  - Switch to renewable energy tariffs and investigate options for on-site renewable energy generation and storage [2.1,2.7]
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# WHAT INDIVIDUALS CAN DO

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We look to the government and the local authority for action, but tackling climate change is everyone's responsibility. Here are many things that individuals can do to play a role in the city's carbon ambition, because together small changes can make a huge impact. This isn't intended to be an instruction list but instead a response to regular questions we are asked around what individuals can do to help.

As with the list for businesses, we know that not everyone is able to do all the things we outline here, especially given the impact that COVID-19 is having on our lives. These present steps that can be considered and actioned if and when able to.

## ENERGY

- Use a smart meter to help understand energy use in your home and make choices about reducing demand [\[1.1\]](#)
- When changing appliances, upgrade to the most energy efficient option that is within your budget [\[1.4\]](#)
- Switch to a renewable energy tariff, if able to do so [\[2.1\]](#)
- Consider installing domestic renewable generation and storage systems, e.g. solar [\[2.1, 2.2\]](#)
- Demand that energy providers give better information on the sources of energy so as to be better informed about the source of your energy use [\[2.6\]](#)
- Improve the insulation in your home [\[3.3\]](#)



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