# LOW CARBON HUB STRATEGIC PLAN 2024 to 2035



We are a social enterprise that's out to prove we can meet our energy needs in a way that's good for people and good for the planet



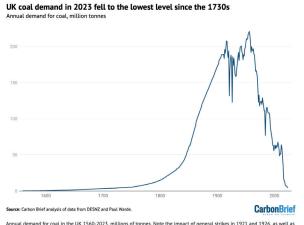
# CONTEXT

This 10-year strategic plan is written in a context where fossil-fuel use in the UK is diminishing and we have much better information than we have had before about what the transition to a zero-carbon energy system will look like, particularly at the Grid Edge where we all live and work.

It is this context that informs this strategy and will inform our business planning decisions over the next 10 years.

The days of fossil fuels in the UK are numbered:

- in 2023, the UK used less coal than we used in 1757;
- Didcot A coal-fired power station in Oxfordshire shut down in 2014;
- and the last coal-fired power station in the UK, Ratcliffeon-Soar, closed in September 2024. The UK built the first one 142 years ago and is the first advanced economy to move completely away from coal; and
- the Ukraine war has highlighted the vulnerability of the remaining gas in our fuel mix.



Annual demand for coal in the UK 1560-2023, millions of tonnes. Note the impact of general strikes in 1921 and 1926, as well as the miner's strike of 1984. Source: Carbon Brief analysis of data from DESNZ and Paul Warde. The shift to renewable energy is now well underway with a national policy commitment in place to decarbonise the electricity grid by 2035, and to decarbonise transport and heat by shifting those to electricity by 2050.

The Centre for Research into Energy Demand Solutions (CREDS) has finished its job to explore the feasibility of the energy system transition and has concluded that we can indeed have a high-welfare, low-energy society. Key conclusions from their research are:

- Overall energy use in the UK could be halved by 2050, whilst enhancing quality of life. This would reduce UK per capita energy use from its current level of 89 GJ/year (2.8kW) to 40GJ/year (1.3kW), which is well below the current global average of 55GJ/year (1.7kW), demonstrating the feasibility of a high-welfare, lowenergy society, with major implications for sustainable development locally.
- Energy use interacts with the wider energy system. Wind and solar energy are likely to dominate future energy supply, as they are now the cheapest electricity sources. Moving to zero-carbon systems will involve electricity from these sources replacing direct use of fossil fuels. This electrification, in particular through investment in electric vehicles and heat pumps, will enable a huge increase in energy efficiency – reducing final energy demand by up to 40% from this effect alone.
- 3. Without a stronger role for energy demand reduction, the electricity system needs to be four times the size that it is today. Substantial energy demand reduction will moderate the expansion of the electricity system to double its current size. This makes system expansion more achievable in the coming decades.

# **Foreword** Where we stand in 2024

The UK has said that it will decarbonise the electricity grid in the next 5-10 years. So the next 10 years will be the most important decade ever in the transition to a zero-carbon energy system that runs mostly on renewable electricity. The big push on decarbonising heat and transport will come after that, although we need to start rolling out the solutions now.

This is a huge challenge given the work necessary to increase the capacity of the Transmission System and the Distribution Network. The UK has a plan for the (national) Transmission System, but not yet for the (local) Distribution Networks. The scale of the challenge is only just being realised, especially for the high- and low-voltage networks (the Grid Edge), where we all live and work. If we transition heat and transport to electricity but do nothing about reducing and flexing demand, local distribution networks will have to grow their capacity by four times rather than by two. The skills and supply chain are not in place for this scale of change. Our main Distribution Network Operator (DNO), Scottish and Southern Electricity Networks (SSEN) says it wants to touch each part of its networks only once between now and 2050 so that it can plan the transition properly and at least cost to its customers.

The good news is that if we transition with the goal of being a low energy society, we will also be a high welfare one because our bills will be low, our houses will be healthy, we will be keeping fit by cycling and walking and we will even be making some income from trading energy and flexibility locally.

Through our involvement in Project LEO and the development work for LEO-N, Low Carbon Hub has become a thoughtleader on what is needed to transition the Grid Edge, working with an increasing number of our community shareholders. We want to scale- and speed-up this work, so that:

- We can help Distribution Network Operators (DNOs) to invest in their networks strategically and efficiently as we move to a zero-carbon energy system;
- We take 'least regret' paths to decarbonising the grid before we help to ramp up the transition to electric heat and transport after that;
- We can help everyone, but particularly low-income households and SMEs, to reduce their need for electricity (number of units rather than price of units); produce and store more units to meet their and others' needs; use and share electricity smartly to help balance at the national level and support efficient low voltage network development.

This is a huge development forward from where we were at start-up in 2011. Our aim then was ambitious: to help replace Didcot Power Station with renewable energy that would benefit local people. 12 years later and half of Didcot has gone, an 840MW solar farm is proposed at Botley West to help fill a third of the gap left by it in the Transmission System, and community energy in Oxfordshire together now powers over 14,000 homes.

We have become a local force to be reckoned with: as a business, we are now in the top 6% of businesses in Oxfordshire by turnover and produce a reliable net trading surplus to spend on community benefit. We have also shown nationally what is possible if long-lasting, trusted local partnerships develop between DNOs, Local Authorities and social enterprises that can provide consistent leadership.

We are very proud of our progress so far; we will need to be even better than we have been if we are to meet the challenge of the next 10 years. We hope all our community shareholders, investor shareholders and local partners will come along with us for the ride!



Bura thursday.

Barbara Hammond, MBE Chief Executive Officer of The Low Carbon Hub IPS Limited

## OUR VISION

The Low Carbon Hub is a social enterprise that's out to prove we can meet our energy needs in a way that's good for people and good for the planet.

#### By 2050...

....we want to be able to say:

- Oxfordshire's energy needs are met by clean, renewable sources: fossil fuel use has ended.
- No one lives in fuel poverty which means that no one has to choose between eating and heating anymore.
- Businesses are healthy, wealthy and more resilient thanks to efficient buildings, equipment and machinery.
- Households and businesses minimise their energy demand from the grid and everyone is benefiting from electricity tariffs that help to manage the network.
- With their highly controllable Low Carbon Technologies (LCTs), households and businesses can be members of community energy schemes that coordinate local use, storage and generation of electricity, trading surplus energy locally, to ensure their local energy system is resilient and financially self-sustaining.
- We achieved decarbonisation fast, and we are set up for future success, because we coordinated place-based, participative change, working in close partnership with local authorities and network operators.

This is what a high-welfare, low-energy society looks like to us.

#### Our Mission for the next 25 years

It is the Low Carbon Hub's job to ensure that we demonstrate how the 'high-welfare, low-energy society' can be achieved, in Oxfordshire and beyond. This means that:

- We will continue to grow our portfolio of renewable energy assets, so that we can grow our community benefit profit;
- Our profits will be used to help achieve the following benefits for Oxfordshire by 2050:
  - No households in Oxfordshire remain in fuel poverty because all fuel-poor households (currently c.23,000) have had a Whole House Plan and all the measures identified have been funded;
  - There are no households in Oxfordshire reliant on oil for heating because they are not connected to the gas grid (currently c. 57,000). All have had a Whole House Plan and all have electric heating installed;
  - All SME premises in Oxfordshire (currently c. 18,400) have had an energy assessment and all the measures identified have been funded;

- Smart retrofit: all households and SMEs have maximised their energy efficiency and installed highly controllable LCTs, so that:
  - demand from the Grid can be reduced to a minimum
  - all can benefit from supplier tariffs that help to manage electricity system loads
- Smart buildings can be members of Smart Community Energy Schemes that together provide reliable peak management behind the secondary substation and can trade surplus generation directly between themselves and local renewable energy assets.
- Our programmes and business models will provide channels for stakeholder investment, coordinating with capital providers to achieve smart retrofit targets.

Our role is to partner with our Distribution Network Operators, Local Authorities, universities and major businesses to make sure the resources of skills, supply chain, knowledge, and funding are available to all communities and all individual householders and SMEs to achieve a highwelfare, low-energy, zero-carbon society in Oxfordshire.

#### **Our Values**

| Our approach:  | agile, pragmatic, practical, innovative,<br>creative, transparent, non-proprietorial,<br>convening, prepared to try and fail. |
|----------------|---|
| Our solutions: | equitable, viable, feasible and desirable.  |
| Our ethos:     | community-focused, inclusive, and collaborative.  |
| Our impact:    | maximises leverage; and is tangible, visible, lasting, replicable and scalable.   |

### **OUR PILLARS** FOR DELIVERY

#### Our business model

We make a community benefit profit from owning and operating our portfolio of renewable energy installations. In 2024 this is 23.9MW in size and the projected nominal value of the community benefit profit from today's portfolio is as shown in Table 1.

#### **Table 1: Community Benefit Profit**

This table shows the nominal value of community benefit created by our portfolio.

| IPS Group                       | 2035      | 2050      |
|---------------------------------|-----------|-----------|
| Total projected income          | £39 m     | c. £98 m  |
| Total projected ops expenditure | c. £8 m   | c. £18 m  |
| Cumulative cash after financing | c. £20 m  | c. £80 m  |
| Plus starting cash              | c. £2.2 m | c. £2.2 m |

We spend our community benefit profits on the things that are more difficult to deliver, particularly smart retrofit for households and businesses. The Pathways to a Zero-Carbon Oxfordshire (PaZCO) report and route map set out what needs to happen by 2030 for Oxfordshire to be on track for a zerocarbon energy system; the diagram opposite shows how far ahead we are with delivering renewables and how far behind with delivering retrofit and renewable heat. *See Table 2.* 

- 1. Renewables portfolio development and operation: developing our portfolio and then managing it to optimise performance is clearly central to our success in having impact on the equitable energy transition in Oxfordshire. We can achieve a lot with the portfolio as it currently stands, but we will need to grow it significantly if we are to work with our partners in Oxfordshire at the scale and speed we think is needed.
- 2. Building-scale demand reduction through smart retrofitting: we will work with partners to make high-quality smart retrofit easily available to all. Our community benefit will be focused on helping SMEs and those on low incomes to access these services.

We will develop partnerships with local authorities and key businesses so that funding gets to households and SMEs to help them implement the recommended measures in the right order and at the right time to fit with their a plans and to ensure that Grid capacity is well-managed. Current policy will lead to an inefficient transition because it focuses on the delivery of single measures, particularly heat pumps or EVs, with no

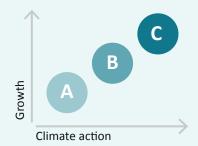
#### Table 2: Revisiting the 2014 scenarios

The PaZCO report looked at progress achieved against the scenarios from the 2014 Low Carbon Economy Report:

**Scenario** A: Low ambition for carbon reduction.

**Scenario B:** Moderate climate ambition with incremental housing / employment growth and some domestic retrofit.

**Scenario C**: Radical ambition for carbon reduction; high standards of energy efficiency for homes.



Cell colour represents which scenario best describes trajectory Oxfordshire is following.

| 2030 scenarios                   | А      | В          | С       |                |
|----------------------------------|--------|------------|---------|----------------|
| New homes                        | 37,000 | 50,000     | 100,000 |                |
| Homes retrofitted per year       | 40     | 400        | 4,000   |                |
| Share of EVs in new fleets       | 1%     | 10%        | 25%*    |                |
| Home EV<br>chargepoints          | 1,000  | 10,000     | 30,000  |                |
| Public fast EV chargepoints      | 10     | 100        | 300*    | stimate        |
| Renewable energy<br>supply (GWh) | 539    | 842        | 2052    | *underestimate |
| Renewable heat<br>supply (GWh)   | 63     | <b>458</b> | 2183    |                |

Our model is to make money in the 'easy' bits and channel it into the 'hard' bits: demand reduction, peak management, fuel poverty and SMEs. requirement for smartness or interoperability; we will work to develop packaged smart retrofits that bring fabric measures together with smart, interoperable appliances, generation and storage to provide lowdemand, high-welfare households and SME premises.

The Low Carbon Hub aim is to use our funding wisely, filling gaps, working at speed or in innovative ways. We will need to be nimble in making sure we, and our partners, are clear about the role our resources and funding can, and should, play.

**3. Grid Edge Coordination**: We developed a successful community-based approach to planning and delivery in Project LEO (Local Energy Oxfordshire) working with GreenTEA and West Oxfordshire District Council: the Community Action Plan for Zero-Carbon Energy (CAPZero). This needs to be extended to all 63 primary substation areas in Oxfordshire. *See maps 1.* 

We will work with all of our current network of 46 low carbon community groups and with all our local authorities to develop and steward the CAPZeros with a particular focus on eradicating fuel poverty and helping those not on the gas grid to making the transition to electric heating within a fully smart-retrofitted building. *See maps 2.* 

#### **National ambition**

Solutions to local and grid edge transition require speedy replication and scaling if the UK is to meet the legal targets enshrined in the Climate Change Act 2008. We will need to set aside funding and resource to make sure that we can play our full part in working with others to share knowledge, and in influencing government, Ofgem and the Climate Change Committee to promote a supportive policy agenda and regulatory environment.

Our local authority partners are already well-embedded in networks of local authorities where take-up of new approaches can be promoted. These include the Oxford-to-Cambridge Arc and the Fast Growth Cities Network.

Community energy businesses now number nearly 600 in the UK, with community energy sector organisations in each of the devolved nations helping to amplify their voice. We will work closely with Community Energy England to ensure that there is a clear national ambition set out for community energy businesses to share, disseminate and scale successful approaches to grid edge transition.

#### Local power plan

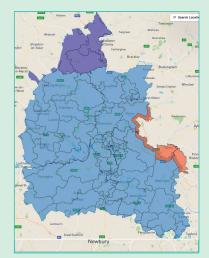
The Local Power Plan, part of the new GB Energy publiclyowned company to be set up by the new government, will put funding into new community energy projects. It will grant-fund local authorities to develop projects in low-income areas and low-cost loans into community energy projects owned by community energy businesses like the Low Carbon Hub. £5bn has been set aside to be spent on this plan during the expected 5 years of the new Parliament. Our current understanding is that this will start operating when GB Energy gets Royal Assent, likely to be in 2025. We expect this to be a game-changer in terms of support for community energy.



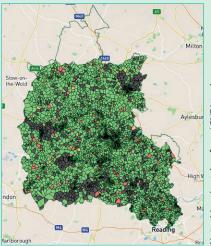
#### Maps 1: The electricity system in Oxfordshire



Oxfordshire's local authority boundaries. Oxfordshire has one, tier '1' local authority (Oxfordshire County Council) and five tier '2' local authorities (Oxford City Council and the four district councils: West Oxford, South, Vale and Cherwell).

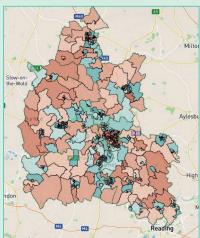


63 Primary substations in Oxfordshire (50 of which are SSEN).



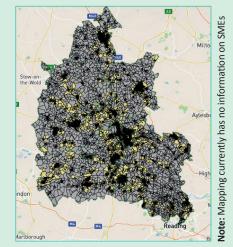
There are around 7,500 secondary substations. Note: The red colour indicates which substations are overloaded.

#### Maps 2: Fuel poverty and off-gas communities



There is a strong overlap between rural households in fuel poverty and those not connected to the gas grid because they rely on very expensive forms of heating, mainly oil-fired.

Fuel poverty 8% average (2021) c. 23,000.



Off gas postcodes 19% of households c. 57,000.

### **Local Partners**

It is essential to the Low Carbon Hub's success that we reach out into our geographic and business communities, and that we work with the key organisations in Oxfordshire to maximise our impact on the transition to a zero-carbon energy system locally.

We currently have 46 low-carbon community groups in our network with whom we work in all areas of Oxfordshire. Map 3 shows the locations of our groups.

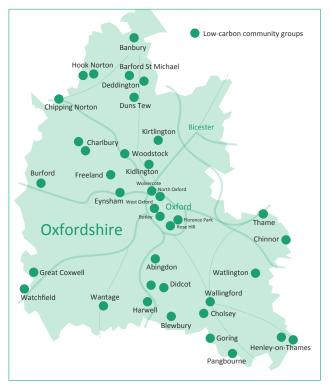
Our ambition for the next 10 years is to grow our network of community group members to at least 63, where we have one group for every primary substation area (PSA) in Oxfordshire. We want to work with these communities and their local authorities, as we are doing in West Oxfordshire, to develop and steward a Community Action Plan for Zero-Carbon Energy (CAPZero) in all 63 PSAs.

A particular focus for this strategy period will be to work with the relevant local authorities on systematic, and funded, approaches to fuel poverty, particularly in low-income areas; areas where there are high indices of multiple deprivation, and in areas that are off the gas grid. As a relatively affluent County, Oxfordshire has few large low-income areas but does have pockets of fuel poverty that are generally not picked up in top-down mapping exercises. We will focus on using new approaches to identifying these pockets of deprivation, so that we can focus our funding on these as well as the larger areas.

Innovation will remain important as we work with partners to develop reliable, speedy approaches to transitioning the Grid Edge—the low-voltage and high-voltage networks where we live and work. Key partners include our three Distribution Network Operators (SSEN, NGED, and UKPN), universities, and local businesses like Roadnight Taylor.

Beyond technological innovation, we need financial partners to bring in large funding to meet the PaZCO targets. Approaches include the FABI project, where large businesses 'inset' their carbon reduction targets by investing locally to support retrofitting in their supply chain and local businesses.

#### Map 3: Low Carbon Hub Community Group Network



### **10-YEAR STRATEGIC OUTCOMES** SCENARIOS FOR 2035

We operate in a sector of the economy that is strongly influenced by regulation and government policy, in addition to the normal economic cycle. In order to be flexible and responsive to changes in policy, we have identified three scenarios so as to better understand the possible outcomes, and to be able to set targets and track progress as we work at delivering our mission.

#### **Baseline**

Based on no new portfolio being developed, and so relies on existing income streams and forecast surpluses. In this case, we would focus our community benefit funds on developing our grid edge coordination services so as to identify and help domestic and SME demand reduction on a place-byplace basis.

#### Grow

Relies on successful partnership working that will help us both to increase the size of our portfolio, and thus our community benefit funding, while focusing our funds where they are most needed.

#### Stretch

Assumes a very helpful policy environment, including mandatory shared ownership of solar groundmount, the ability to trade energy directly, and consistent, welldesigned national policy for smart retrofitting and grid edge coordination.

#### Table 3: Outcome, Indicator metrics

|  | Business areas                | Outcomes  | Indicator        | Baseline | Grow  | Stretch |
|--|-------------------------------|---|------------------|----------|-------|---------|
| operatio   | Renewables portfolio          | Revenue income  | £ pa             | £3m      | £12m  | £20m    |
|  | operations and<br>maintenance | Community benefit profit                                      | £ pa             | £2m      | £8m   | £14m    |
|  | maintenance                   | Performance   | GWh pa           | 25       | 95    | 168     |
|  | Renewables portfolio          | Portfolio size  | MW               | 23.8     | 90    | 160     |
|  | business development          | <ul> <li>rooftop solar</li> </ul>                             | MW               | 4.4      | 8     | 10      |
|  |                               | <ul> <li>groundmount solar</li> </ul>                         | MW               | 19.2     | 60    | 130     |
|  |                               | • hydro   | MW               | 0.4      | 0.4   | 0.4     |
|  |                               | <ul> <li>battery storage</li> </ul>                           | MW               | 0        | 20    | 20      |
|  |                               | <ul> <li>trading to local customers</li> </ul>                | GWh pa           | 0        | 9     | 16      |
|  |                               | <ul> <li>Flex trading business model<br/>developed</li> </ul> | £ pa             | 0        | 1     | tbc     |
| Social<br>purpose                                | Domestic demand reduction     | WHPs funded - fuel poor<br>households*                        | No. pa           | 2,300    | 5,700 | 5,700   |
| <ul> <li>demand<br/>reduction</li> </ul>         |                               | WHPs funded - oil dependent                                   | No. pa           |          |       |         |
| reduction  | SME demand reduction          | Energy assessments funded                                     | No. pa           | 1,840    | 1,840 | 1,840   |
|  |                               | Grant+match revolving fund                                    | £                | £1m      |       |         |
|  | Demand reduction funding      | Partnership funding - Hub share                               | £                |          | £4m   | £7m     |
|  |                               | Partnership funding enabled                                   | £                |          | £40m  | £70m    |
| Social<br>purpose -<br>Grid Edge<br>Coordination | Community action planning     | CAPZeros in place   | No.              | 1        | 63    | 63      |
|  |                               | CAPZero stewardship funding                                   | £ pa             | £75k     | £3m   | £3m     |
| Coordination                                     | SCES implementation**         | Partnership in place to roll out                              | no. MoU          | 0        | 9     | 15      |
|  |                               | Trial completed and rolling out                               | no. use<br>cases | 1        | 6     | 6       |

\* Whole House Plans

\*\* Smart Community Energy Schemes

See glossary at back of document for more details.

### 10-year goals

The quantification of our 10-year strategic goals is best expressed in terms of our existing 4P metrics: planet; people; prosperity; and perception. These metrics remain important ways of consistently reporting on our activities and reach to those who don't know us very well. We have slightly modified and simplified them, however, to take into account the new Outcome Indicator metrics set out in Table 3 above.

Please see our website for information about our performance to date: <u>www.lowcarbon.org/about/our-impact</u>

| 4P metric  | Outcomes                                  | Indicator   | Baseline | Grow   | Stretch |
|------------|---|-------------|----------|--------|---------|
| Planet     | Number of installations                   |             | 55       | 85     | 110     |
|            | Installed capacity                        | MW          | 23.9     | 90     | 160     |
|            | Annual generation                         | MWh pa      | 25       | 95     | 168     |
| Prosperity | Total equity investment                   | £m          | £10      | £30    | £70     |
|            | Third party financing                     | £m          | £6.4     | £19    | £45     |
|            | Total                                     | £m          | £16.4    | £49    | £115    |
|            | Interest to investors                     | Lifetime £m | £2.4     | £7.2   | £16.8   |
|            | Community benefit                         | Lifetime £m | £80      | £320   | £560    |
| People     | Investor members                          |             | 1,773    | 7,000  | 12,000  |
|            | Shareholdings                             |             | 2,200    | 8,800  | 15,400  |
|            | Community shareholders                    |             | 46       | 63     | 63      |
|            | Rooftop host organisations                |             | 45       | 90     | 100     |
|            | Formal partnerships: funding and delivery |             | 0        | 7      | 10      |
|            | Helpdesk*                                 |             |          |        |         |
|            | Network of supporters                     |             | 14,000   | 56,000 | 112,000 |
| Perception | Annual survey aggregate score             | %           | 98       |        |         |
|            | Issues raised responded to positively     | %           | 100      |        |         |

#### Table 4: Our 4P metrics and 10-year goals

\* Monitored annually according to need

### A framework for delivery

The next 10 years will be unpredictable in terms of policy, regulation, financial markets and global geopolitics; we need to be both flexible and dynamic in the ways we attempt to achieve our strategy. We will therefore set objectives for a rolling three-year period that are reviewed and adjusted each year. The Board will set the objectives and their budgets in March for the following financial year. These will be presented as the forward look to shareholders at each AGM in October along with the Annual Report and Accounts that set out our achievements in the previous financial year.

We will conduct a mid-year review of our objectives and budgets each September and start the process for deciding them for the following year in November. In this way, the Board will maintain a continuous conversation with the Management Team that should allow us both to deal with shocks and take opportunities as they arise. Table 5 summarises this Shape of the Year.

The Management Team will manage delivery and performance using the Objectives, Key Results method. Annual Objectives will be broken down into Key Results for each 4-month period of the year with only the absolutely critical activities for the particular period included, so that we can achieve real focus on delivery and buy-in from the whole Team. More detail can be found in our Business Plan.

#### Table 5: Shape of the Year

| March     | Objectives and budgets agreed for the financial year starting 1 April |
|-----------|---|
| July      | Audit completed for Annual Report and Accounts                        |
| September | Mid-year review   |
| October   | Objectives for the current financial year presented to the AGM        |
|           | Annual Report for the previous financial year presented to the AGM    |
| November  | Next planning cycle begins  |
|           |   |

### **SUMMARY**

The diagram below summarises the Low Carbon Hub strategy to 2050. We aim to demonstrate how a high-welfare, lowenergy emissions-free society can be achieved, in Oxfordshire and beyond. To do this we will focus on SME and household retrofit to help eradicate fuel poverty and enable a lowenergy grid, and we will use our expertise to spur innovation at the "grid edge". These initiatives will contribute to the potential halving of the infrastructure cost of creating an all-electric economy. To fund this innovation we will continue to grow our renewables portfolio to create the necessary income, and we will do so in a way that demonstrates the benefits of community ownership.

All of this activity requires strong community relations and the development of effective delivery partnerships at the community level. This is a core strength of the Hub and we aim to build on it. We also recognise that many of the challenges in achieving our 2050 mission can only be solved at a national level and we will use our knowledge and experience to help improve regulation and policy where necessary.

#### Partnership Community benefit funds sufficient Solar PV **Renewables portfolio** to deliver social purpose **GB** Energy Community Benefit Commercial c. 23,000 households brought out of fuel poverty **Retrofit Strategy Domestic and SME** demand reduction c. 18,000 SME premises anchor SCES peak management **SME OxFutures Fund** Orderly, efficient transition of the HV and LV network nationally Local Area Energy **Grid Edge Coordination** Collaborative leadership via CAPZeros ensures fairness Planning SCES available for all £80m nominal community benefit by 2050 with current renewables portfolio

#### Just and Fair Hub: Benefits by 2050

### GLOSSARY

**Demand:** Your electricity 'demand' represents the rate at which electricity is being used (in kW) at any time or that is needed to run a particular appliance or piece of equipment.

**Demand response:** Adjusting electricity usage to help balance the grid. This can involve temporarily reducing or increasing demand based on supply conditions.

**Distributed generation:** Small-scale energy production located close to where it is used, reducing reliance on centralised power plants.

**Distribution network:** Infrastructure that delivers electricity from the transmission network to homes and businesses.

**Distribution network operator:** The company responsible for operating, maintaining, and upgrading the electricity distribution network.

**Distribution system operation:** The management of the distribution network to ensure efficient and reliable electricity delivery.

**Energy assessment:** An evaluation of a building's energy use to identify opportunities for efficiency improvements and cost savings.

**EV:** Electric vehicle, powered by electricity instead of fossil fuels.

**Flexibility service:** A system that allows energy users to increase or decrease consumption or generation to support grid stability.

**Fuel poverty:** When a household struggles to afford adequate heating due to low income and high energy costs.

**Generation:** The production of electricity, typically from power plants or renewable energy sources.

**Grid edge:** The part of the electricity network closest to end users, including local generation and consumption.

**GW, MW, kW:** Units of power measurement. GW (gigawatt), MW (megawatt), and kW (kilowatt) represent increasing orders of magnitude.

**Heat pump:** A device that transfers heat from outside to inside a building (or vice versa) for heating or cooling.

**Insetting:** The practice of reducing emissions within a company's own supply chain or local area rather than through offsetting.

**Nominal value:** The face value of something, not adjusted for inflation or other factors.

**Peak management:** The practice of reducing or shifting energy demand during periods of high electricity use.

**Primary substation:** A major point in the electricity network where voltage is reduced for distribution to smaller substations.

Secondary substation: A smaller substation that further reduces voltage for distribution to homes and businesses.

**Smart grid:** An electricity network that uses digital technology to monitor and manage energy flow efficiently.

**Smart community energy scheme:** A system that enables a community to produce, store, and share energy locally using smart technology.

**Smart retrofit:** The use of advanced technologies to improve the energy efficiency of buildings through upgrades and modernisations.

**SME:** Small and medium-sized enterprises, typically businesses with fewer than 250 employees.

**Transmission network:** The high-voltage system that carries electricity over long distances from power stations to distribution networks.

**Voltage:** The measure of electrical potential difference, typically associated with the force that drives electric current.

Whole House Plan: A professional service that assesses a home's energy-saving potential, helping owners plan and budget for improvements.

## **ABOUT US**

#### **Track record**

Low Carbon Hub has been working hard since its inception to create an energy system that's good for people, and good for the planet.

For over a decade we've been at the heart of a growing partnership of people and organisations working together for a low carbon future. This includes the partners who host our community-owned rooftop solar arrays, our network of 46 low-carbon community groups, our delivery partners, and our network of supporters and followers who champion and amplify what we do.

Our investor members have so far entrusted over £10m to us to fund the installation of renewable energy projects. We're proud that all financial surplus from our electricity generation is reinvested in further carbon cutting projects – last year we achieved the milestone of over £1m of our own community benefit funds invested in low carbon projects. We help organisations cut their energy use, fund green innovation and back further community energy projects. We make every pound work hard to bring our vision of the future energy system to life.

We use our income to leverage additional grants, loans and funding, so we can move faster towards the decentralised energy system we envision for the future – providing electricity, heat and a clean transport system, all powered by renewables.

We're committed to accelerating the transition to a net-zero energy system. Join us: www.lowcarbonhub.org

#### Our journey so far...

**2011** Low Carbon Hub was established as a spin-out from West Oxford Community Renewables supported by Oxford City Council through its Local Carbon Frameworks funding. Low Carbon Oxford North were partners in the project and developed their successful rooftop solar project at Cherwell School as a result.

**2013** We installed our first rooftop solar projects in Eynsham working closely with local low-carbon community group GreenTEA. We also put out our first community energy share offer to raise funds for our solar panels on the roof of Oxford Bus Company.

**2014-2016** We worked with Oxford City Council and Oxfordshire County Council to put rooftop solar on schools and businesses across the county as part of the OxFutures project funded by Intelligent Energy Europe.

**2016** We raised community investment into Sandford Hydro, the largest community-owned hydro on the Thames.

**2017 to 2023** We partnered with our local authorities and universities on what was to become 'OxFutures 2', a European Regional Development Fund project offering energy efficiency and innovation support to businesses. During this time we also developed the Cosy Homes Oxfordshire and Energy Solutions Oxfordshire services supported by innovation funding from government.

**2023** We completed our first ever groundmount solar project, Ray Valley Solar

**2019 to 2024** We worked with SSEN and our local partners on Project LEO (Local Energy Oxfordshire) and then LEO-N (Local Energy Oxfordshire and the Neighbourhood scale).

This has led to a significant step change in thinking about the importance of the grid edge and the communities that live and work there if we are to make a successful zero carbon energy transition. This transition will now be our strategic focus between now and 2050 with our community benefit programmes increasingly geared towards it.













Our policies and processes Find out more about how we work on our website: www.lowcarbonhub.org







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