



# RAY VALLEY SOLAR



# A MESSAGE FROM OUR CEO

Dear Member,

We are thrilled to have successfully completed the construction of Ray Valley Solar the UK's largest community-owned solar park in Arncott, near Bicester in Oxfordshire.

## **The UK's largest community-owned solar park**

At 19.2 MW installed capacity, the solar park can generate 19.5 GWh of green electricity each year - enough to power over 6,000 homes - 1.5 GWh more than originally planned.

Its completion marks a significant step change in Low Carbon Hub's renewable energy portfolio, resulting in a five-fold increase in generation. As well as directly increasing Oxfordshire's green energy generation, thanks to our community-ownership model, Ray Valley Solar also significantly boosts our ability to provide a sustainable, long-term funding stream for carbon-cutting action on climate change across Oxfordshire.

## **Situated at the heart of Project LEO - the UK's most ambitious energy system innovation trial**

The project is also a key part of Project LEO (Local Energy Oxfordshire). This £40 million Innovate UK funded programme is building a broad range of reliable evidence of the technological, market and social conditions needed for a greener, more flexible and fair electricity system. Ray Valley Solar will sit at the heart of this innovative real-world trial, helping us to understand the role local energy can play in accelerating the transition to a zero carbon energy system. We're excited to see the outcome of these trials.

## **Supporting the transition to a smart and fair energy system**

As a social enterprise run for the benefit of the community, we want to help build an equitable, zero carbon energy system that has people at its heart. We believe local communities have a crucial role to play in that transition, creating an energy system that's fit for the future. We want to create opportunities for more communities to take an active role in our energy system - be that trading the energy they generate, or storing it at a local level for the benefit of all.

## **The power of collaboration**

We could not have achieved this milestone without the incredible support of our investor members, the many low carbon community groups who support our work and the collaborative partnership that forms Project LEO. The £3M investment raised through the Community Energy Fund not only provided key funding for the project, but also unlocked crucial grant funding, and enabled us to secure key loans to provide the long-term funding for the project.

As the slightly later than scheduled completion attests, it has not all been plain sailing to get the project from concept to energisation. The project team had to overcome a number of external challenges, from the pandemic to global supply chain issues, which makes the successful completion of the solar park even more cause for celebration. We can now look forward to forty years of community-owned generation powering community action on climate change.

The project also reminds us that progress is undoubtedly being made to change the way the UK energy system works - whilst we draw breath for a moment to celebrate, we also know there's so much more to be done, if we are to create an energy system that's good for people, and good for the planet. We're so grateful to our members for supporting us, and enabling us to continue with our mission. On behalf of everyone at Low Carbon Hub, thank you.

With warm wishes,



**Barbara Hammond**  
CEO, Low Carbon Hub



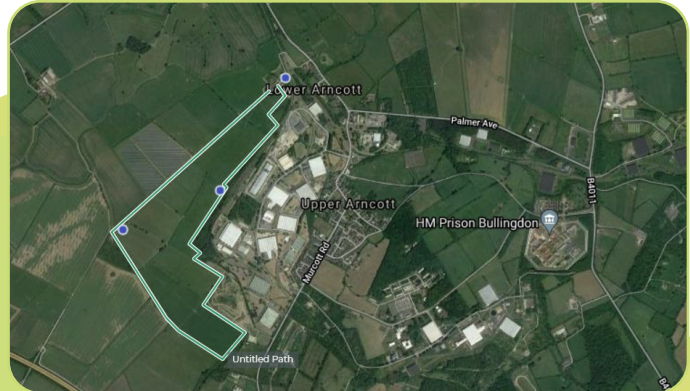


# ABOUT RAY VALLEY SOLAR

With 35,906 solar panels on its 95-acre site, Ray Valley Solar is the UK's largest community-owned solar park. The site design also allows for future development to include significant battery storage, which will enable the installation to do even more to support the transition to a zero-carbon energy system.

Oxfordshire's GHG emissions reduction target is 50% by 2030

We spend £1.5 billion on energy each year in Oxfordshire. Community-owned projects enable more of that spend to be kept in the local economy.



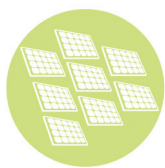
The 95-acre site situated in Arncott, near Bicester



“I think this project is a really good reason to be optimistic about the part ground mount solar can play in meeting our 2030 carbon targets.”

Tom Heel, Business Development Director, Low Carbon Hub

## Ray Valley Solar Fact File



**35,906**  
Solar Panels



**6,000**  
Typical Households Powered



**£13 MILLION**  
Lifetime Community Benefit Funding



**19.5 GWH**  
Generated Each Year



**4,000**  
Tonnes of CO<sub>2</sub> Savings Annually

# TIMELINE

## 2020

September

We acquire the project rights to connect to the electricity grid.

December

We select ENGIE Fabricom as a contractor for the build.

## 2021

January

The final design is signed off.

February

We complete our loan agreement with Triodos bank. The final design and construction contract is signed.

March

Our share raise reaches the £3 million target in record time.

April

We take a 40 year lease on the land.

May

Construction is started on site.

October

The construction of PV frames (mounting structure) is completed.

## 2022

January

Final PV panels arrive on site.

February

Oxford City Council provided funding of nearly £4.1m to Ray Valley Solar in the form of a low interest loan.

June

Connection to the national electricity grid. Installation is commissioned and starts generating!





# INNOVATION

Project LEO – Local Energy Oxfordshire – is running trials in Oxfordshire to build a broad range of reliable evidence of the technological, market and social conditions needed for a greener, more flexible, and fair electricity system.

As part of **Project LEO**, we are developing a virtual power plant in Oxfordshire. We need to significantly increase the amount of renewable energy generation we have available to connect to it. Ray Valley Solar will provide an important anchor for the trial and thereby enable us to:

Run trials to test the system and demonstrate the potential a smart and co-ordinated use of local generation, storage, and demand has in decarbonising the energy system as a whole

Test innovative local long-term Power Purchase Agreements (PPAs) that would harness local power consumption to make community-owned energy projects financially viable without the need for subsidies such as the Feed-in Tariff

Create replicable business models for community energy projects at this scale

Future-proof the project with significant potential for battery storage on site

In our post-subsidy world, we urgently need these business models to unlock other projects. Our participation in Project LEO enables us to make use of grant funding to help establish viable new business models. These in turn can help reinvigorate the community energy community, and help local energy generation and flexibility services accelerate the transition to a zero carbon energy system.

# HOW WAS IT FUNDED?

The project was paid for with a combination of equity, loans, and grant funding; a loan from Triodos Bank and grant funding through the Innovate UK *Prospering from the Energy Revolution* programme. Our ability to secure both the grant funding and loans was reliant on us providing our own funding, which is why capital raised through the Community Energy Fund was so important to the success of the project. Following the share offer, project costs increased due to aspects of the Brexit Agreement which could not have been anticipated and global components shortages.

We have however been able to build on our long-established relationship with Oxford City Council to replace their £2.3m short-term construction funding of the project with a long-term loan of just under £4.1m. This partnership will last for 23 years and is a fantastic demonstration of the confidence in our model, the partnership of institutional and community equity funding and in locally owned renewables. We are looking forward to exploring future opportunities for project partnerships with our local institutions.

“The City Council has a decade-long relationship to Low Carbon Hub and we’re thrilled to help fund their 48th renewable energy project. This Council has chosen to invest in Low Carbon Hub so much for so long because we believe in community-owned clean energy. Other councils have set up a municipal energy company, but we will continue to support clean energy because we want to keep energy spend locally, reduce our carbon footprint, and generate millions in community benefit through people-powered energy.”

Previous Councillor Tom Hayes/ Cabinet Member for Green Transport and Zero Carbon Oxford



The Innovate UK grant funding means that we can use the Low Carbon Hub’s generation assets to participate in the innovative Project LEO trials described previously without putting our members’ investment or our long-term community benefit at risk.

## Why were there changes to the schedule?

The initial plan was to construct the site over summer 2021 and to be commissioned in the late summer or early autumn. The modules were not dispatched by the manufacturer to schedule in May 2021 and that unfortunately resulted in them being caught up in the well-documented global shipping issues that resulted from the combined impacts of severe typhoons in the South China Sea, Covid 19 and Brexit. Some modules were routed overland to try and reduce the impacts of this but they did not all arrive on site until late January 2022.

Subsequent delays have been as a result of resource availability in both the sub-contractors delivering the electrical engineering side of the project and in the network operator SSEN. Our experience has been consistent with the supply chain ‘perfect storm’ that has been affecting many industries in the aftermath of Covid and Brexit.

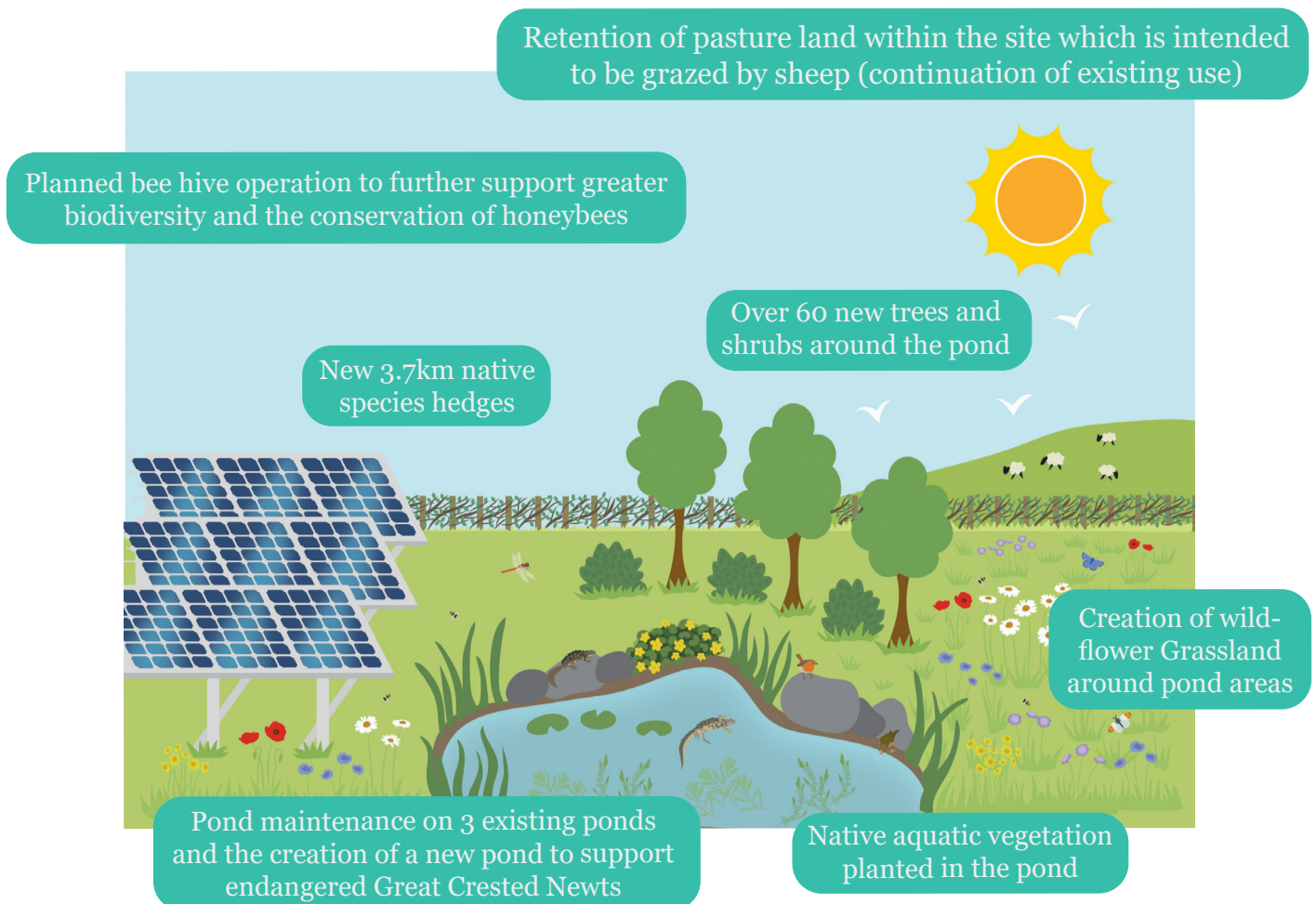


# BIODIVERSITY ON SITE

As well as generating clean electricity, the project will bring ecological benefits too, providing habitats for a range of species, including, reptiles, amphibians, mammals and other small animals.

According to University of Oxford researchers, solar could meet 20% of global energy needs by 2027. If ground mount is an inevitable part of the renewable transition, then at Low Carbon Hub we want to ensure that these installations are designed, delivered, and managed in a way that benefits the local community and environment.

One of the main goals is to enhance the habitat connectivity of the site once established and provide additional habitat for a range of species, including, reptiles, amphibians, mammals and other small animals. Measures include:



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Would you like to receive details of our community share offers, energy updates and news, and updates on community benefit projects? Sign up to our Low Carbon Hub newsletter on our website: [www.lowcarbonhub.org](http://www.lowcarbonhub.org)

# Sign up to keep up to date with our news

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