

# Welcome and Introduction

Thank you for taking the time to join us today. We are excited to share our proposal to locate up to two wind turbines on University land, near Treliever Cross, Mabe. Once you have looked at the information presented and had the opportunity to speak to the team, please fill out a feedback form before you leave.

## Background to our Penryn Campus

The University of Exeter brings the best of Cornwall to the world - and we bring our best to Cornwall. As a globally-renowned institution, we collaborate with local government and businesses to create jobs and deliver educational opportunities for the community. We are here to share our knowledge, collaborate on community projects and support initiatives that benefit everyone in Cornwall.

We are a passionate community of dedicated individuals with a wide range of specialist skills.

Our students and staff contribute to the local economy, and enrich the cultural and social fabric of the area. Together, we are making a positive difference locally and globally.

Currently supporting around 6,000 students, the campus - shared with Falmouth University - combines the latest academic research and residential facilities with an intimacy, energy and friendliness. The diversity of students' interests and backgrounds gives the campus a unique vibrancy.

Though we have one of the UK's smallest TEF Gold university campuses, we excel in tackling some of the world's biggest challenges

through our research, which informs our teaching. Students respond positively to how we do this; they report exceptionally high levels of satisfaction with academic staff, improved communication skills and confidence.

Issues related to the environment and sustainability underpin much of the campus's ethos; these themes recur throughout our degree programmes as well as in student societies, clubs and the running of the campus.

The campus is constantly developing, most recently the £12 million extension to the existing Science and Engineering Research Support

Facility (SERSF), which builds upon the £30 million investment in the Environment and Sustainability Institute (ESI). Cumulatively, these facilities put not only the University, but also Cornwall as a whole, at the forefront of research aiming to solve problems associated with environmental change.

Other recent additions include the Renewable Energy Engineering Facility (REEF) and a £1.2 million Masters Suite. A £4 million sports centre and nursery, and a prestigious Green Flag Award for our grounds, help make this campus a great place to study, work and live.

## Opportunity

In support of Cornwall Council's Environmental Growth Strategy, the University of Exeter is committed to leading meaningful action against the climate emergency and reaching its target to be Carbon Net Zero by 2030.

The proposed wind turbines could generate 5,712,400 kWh of clean electricity each year, offsetting 340 tonnes of greenhouse gas equivalent emissions each year for the lifetime of the project, expected to be at least 20 years. This proposal will provide the Penryn Campus with renewable electricity, reducing the amount of electricity that it obtains

from the grid. It will sit alongside a range of other actions, such as solar panels on building roofs to further supply electricity from clean and renewable sources for the Penryn Campus.

The proposal will contribute to Cornwall Council's target of 100% renewable electricity supply by 2030, alongside national targets to decarbonise the electricity system by 2035 and to become net zero by 2050. It will also contribute towards addressing the ecological emergency.





# Why Choose Wind Power?

Onshore wind energy is the lowest cost energy available in the UK and has a vital role to play in achieving national targets to decarbonise the electricity system by 2035 and to become net zero by 2050.

## Wind turbines:

- Reduce our reliance on fossil fuels
- Tackle climate change through the production of clean, renewable electricity
- Improve energy security by reducing imports
- Meet government targets to increase the production of renewable electricity
- Is supported by Cornwall Council policy and planning policy at the neighbourhood level
- Contributes towards further development of the green economy
- The site has a very good wind capacity factor (over 35%), that is the potential actual generation compared to its theoretical capacity
- Requires a relatively small area of land
- Is low impact, producing pollution free electricity

The whole life carbon footprint of wind power generation is:

**99% less than coal-fired power plants**

**98% less than natural gas**

**75% less than solar**





# Why Here?

The University of Exeter, Cornwall, is seeking to reduce the amount of electricity used on the Penryn Campus through a range of measures and to generate renewable electricity on campus through the provision of rooftop solar.

This, by itself, is insufficient to meet the electricity needs of the campus. The University has therefore been exploring how else it can generate its own renewable electricity. The campus is not a suitable location for wind turbines. The University owns the land at Higher Treliever. It has been identified as having suitable wind speeds for a small number of relatively small turbines.

The site is in relatively close proximity to Penryn Campus, enabling a cable to run from the wind turbines site to the campus, to provide renewable electricity direct to the campus. The site is close to existing renewable energy developments at Roskrow Barton with a quarry on the southern side of the A394 and pylons in the surrounding landscape.





# The Site and Its Surroundings

The site is approximately 700 metres west of the Treliever roundabout and 285 metres east of Higher Treliever Farm. The site is located north west of the Penryn Campus. Access is currently gained from the southern boundary, off the A394. The site comprises three agricultural fields which are currently used for research by academics at Penryn Campus. The boundaries of the fields are well vegetated with hedgerows and trees.

The site is grade 3a agricultural land and is located within flood zone 1.

Part of the site is designated as a Mineral Safeguarding Area for Aggregate, with Carnsew Quarry and Plant located south of the A394.

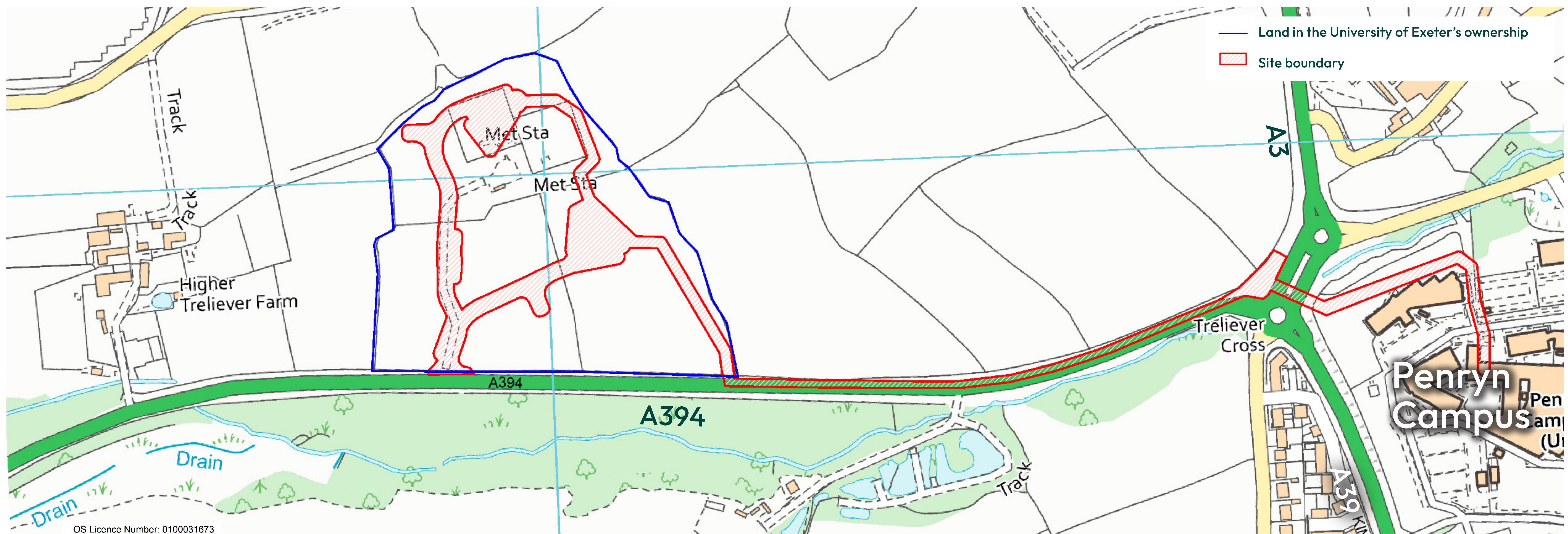
There are no public rights of way on site. There is a footpath to the west of the site, a further footpath north of Boswin Road and a number of bridleways south of the A394. There are further public rights of way in the surrounding area.

There are no heritage designations on site with the nearest statutorily designated site the grade II Carnsew Farmhouse including adjoining front garden wall 0.63km south of the site. There are other listed buildings further from the site with the Penryn Conservation Area located approximately 2.1km south east of the site. The nearest part of Cornwall and West Devon Mining Landscape World Heritage Site is approximately 2.2km to the north. To the north east of the site is the demolished structure

of Higher Treliever Farm, a medieval farmstead. Carnsew Quarry to the south has its origins as a post medieval quarry.

The site is not the subject of any landscape designations with Cornwall National Landscape to the west and south. There are Areas of Great Landscape Value to the north, west and south.

The site is located within an area that has been identified as suitable for wind energy development in the Cornwall Climate Emergency Development Plan Document and the Mabe Neighbourhood Plan. To the north of the site are two existing wind turbines at Roskrow Barton. A solar farm, split across a number of fields, is also located to the north of the site.





# Key Considerations

In preparing our emerging proposal, we have consulted with Cornwall Council to ensure all required studies are carried out. The planning application will include all the findings of this technical work. Below is a summary of the technical surveys:

## Biodiversity

Ecological surveys are being undertaken to ensure any potential impacts on local wildlife are mitigated in the design of the proposal.

A Biodiversity Management Plan will be prepared to demonstrate how the development will result in at least 10% biodiversity net gain on the site.

This could include, for example, strengthening existing hedgerows providing wildlife corridors, new tree planting and ponds to support invertebrates and other wildlife.

The Landscape and Ecological Management Plan will also set out how existing habitats will be managed and maximise opportunities to enhance habitats across the site, including the provision of additional tree canopy cover.



## Noise

Initial baseline noise monitoring has been undertaken, the results of which are under consideration. Where required, mitigation will be put in place to address any issues identified. This could include altering the operating mode or the fitting of

smart controls to de-rate (reduce power output) or curtail (switch off) the turbines at particular times of the day, and during particular wind speeds and wind direction, which may give rise to noise above ETSU (Energy Technology Support Unit) noise limits.

## Transport and Access

Access to the site for the construction traffic is under review and measures required to enable access using existing routes are being identified.

We are currently assessing two alternative transport routes between the A30 trunk road and the proposed development site access point, and the access options for use by abnormal load vehicles, delivering the wind turbine components.

Preferred route: Consisting of Route Section A and Route Section C. Using the A30, A390 and A394, is considered to be the preferable option as it is considered more suitable and will involve only limited disruption to existing street furniture comprising the temporary removal of two sets of traffic lights and one traffic island bollard in three locations. With further analysis and liaison with the highway and police authorities, it may also be possible to avoid these removals by passing the obstructions to the right side (i.e. by using the on-coming traffic lane).

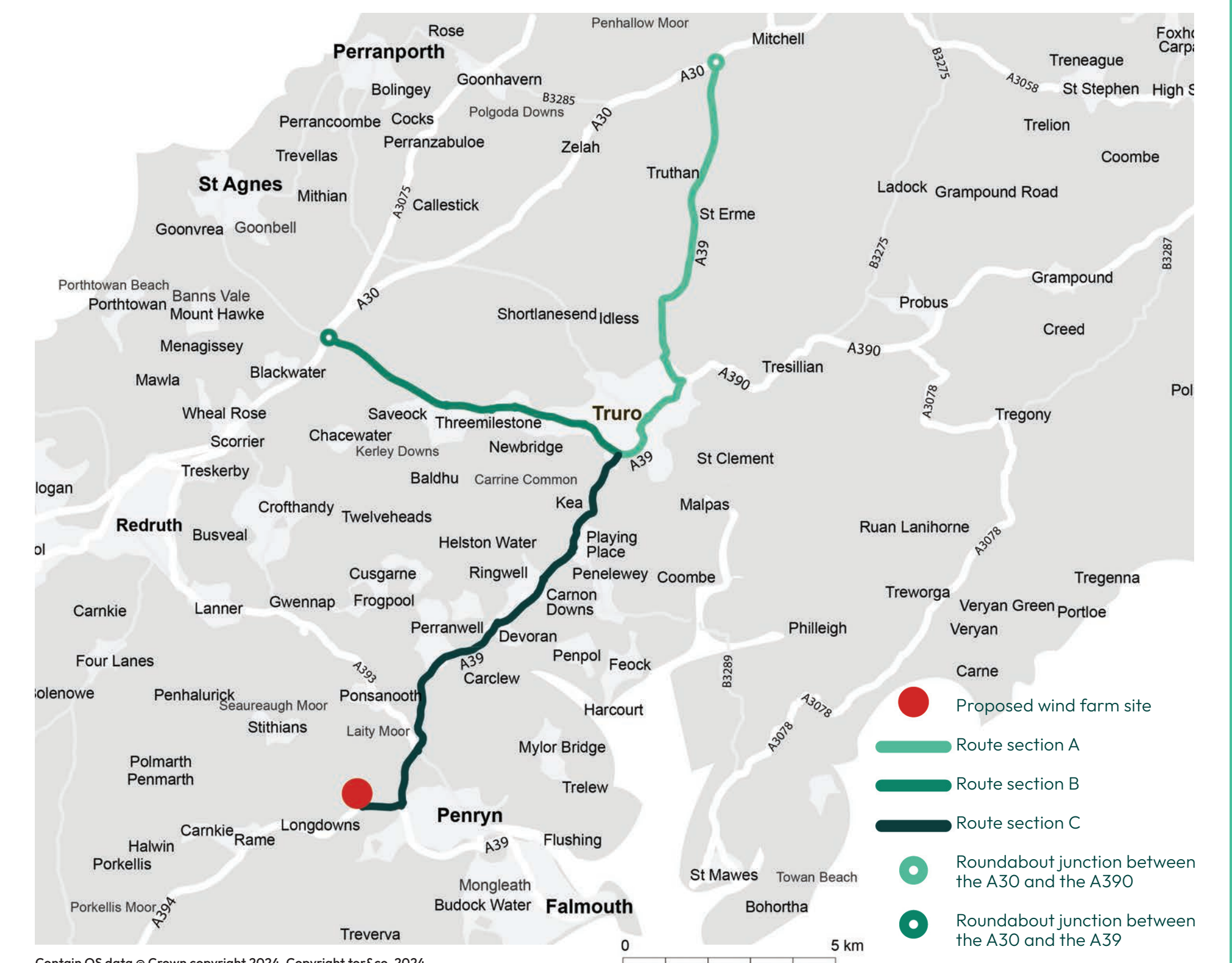
The preferred route can be summarised as follows:

Location	Distance to next	Direction of travel
From A30 junction with the A390 to the wind farm site entrance on the A394		
Head south-west on A30 towards Carland Cross		
At Carland Cross, take the 2nd exit onto A39	120 m	→
At the roundabout, take the 1st exit onto Newquay Rd/A39	8.2 km	→
Turn right onto Tregolls Rd/A39/A390	850 m	↘
At Trafalgar Roundabout, take the 3rd exit onto Morlaix Ave/A39	1.3 km	→
At the roundabout, take the 2nd exit and stay on Morlaix Ave/A39	400 m	→
At the roundabout, take the 1st exit onto Arch Hill/A39	1.1 km	→
At Carnon Downs Roundabout, take the 2nd exit and stay on A39	4.0 km	→
At the roundabout take the 2nd exit and stay on A39	1.7 km	→
At Treluswell Roundabout, take the 2nd exit and stay on A39	4.5 km	→
At the roundabout, take the 2nd exit and stay on A39	1.5 km	→
At Treliever Roundabout, take the 3rd exit onto A394	86 m	→
Arrive at the wind farm site entrance on the A394	approx. 750 m	→

The preferred delivery route has been assessed and is able to accommodate the delivery of the wind turbines and other associated infrastructure. Traffic management measures will be put in place to manage the safe delivery of all components.

It is estimated that there will be around on average 3 HGVs per day and 6 cars per day across the construction period (and 2 cranes) with construction traffic anticipated to peak in month two when there will be around 7 HGVs per day and 6 cars per day.

An outline Construction Traffic Management Plan will be submitted as part of the planning application, which will confirm the route to be used for the delivery of the turbines and associated infrastructure required, including the cable connection to Penryn Campus, together with other general construction traffic. It will also identify appropriate traffic management measures to minimise the impacts of construction on the local area, such as the use of banksmen and provision of signs warning of construction.



## Other environmental studies

Surveys and assessments are being undertaken by a team of specialist environmental and technical consultants. The results and findings will be detailed in supporting reports accompanying the planning application.

These include:

- Cultural Heritage
- Arboricultural survey
- Agricultural land classification
- Flood risk assessment and drainage strategy
- Shadow flicker
- Telecommunications/aviation/Ministry of Defence/Radar
- Minerals report
- Green infrastructure statement
- Public rights of way assessment



# Key Considerations

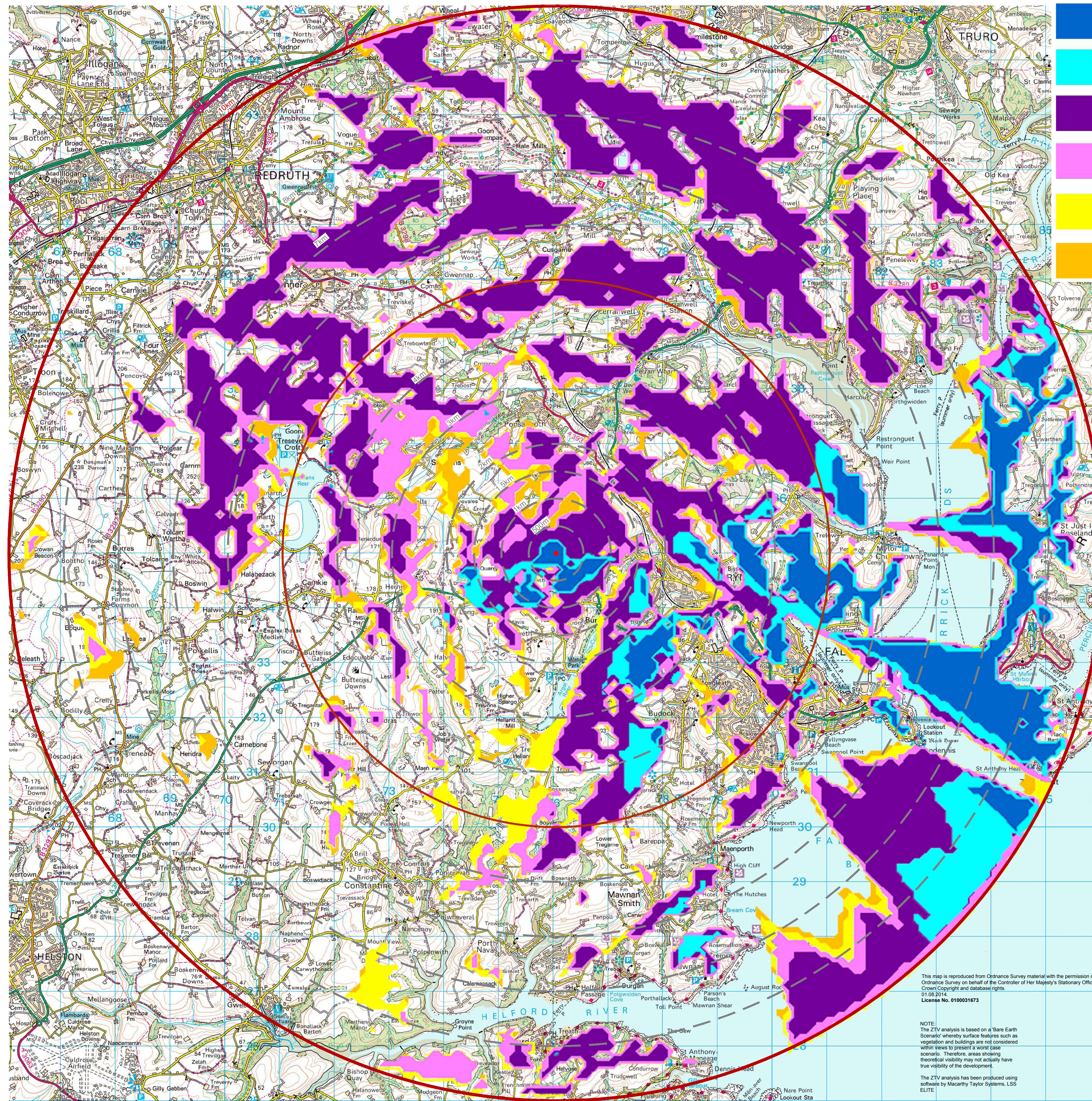
## Landscape and Visual

Work undertaken to date indicates that the turbines will be potentially visible from a range of locations. However, landform and existing vegetation will limit some potential views. Where the proposed turbines are visible they will be seen within the context of the existing wind turbines at Roskrow Barton and the adjacent solar farm, as well as other development in the surrounding area, including the many electricity pylons, the adjacent quarry, the main roads, and the development of Penryn Campus, all of which contribute to a developed, working, landscape. The proposed turbines will be located on lower ground than the existing turbines and being of a similar height will therefore sit lower in the landscape.

It is likely that views will generally either be channelled by and glimpsed through trees, or open and wide-reaching across landscapes with a similar mix of traditional working farmland and developed areas with frequent large-scale vertical elements. The proposed turbines will form a small part of the wider landscape in many views.



Existing Roskrow Barton wind farm



Zone of Theoretical Visibility

- Theoretical visibility of base of turbine (2m height). 1.5m (eye height) northern turbine. EWT DW52.
- Theoretical visibility of base of turbine (2m height). 1.5m (eye height) southern turbine. EWT DW54x.
- Theoretical visibility of hub height (hub and tower) of turbine (50m height). 1.5m (eye height) northern turbine. EWT DW52.
- Theoretical visibility of hub height (hub and tower) of turbine (50m height). 1.5m (eye height) southern turbine. EWT DW54x.
- Theoretical visibility of tip of turbine (76m height). 1.5m (eye height) northern turbine. EWT 52.
- Theoretical visibility of tip of turbine (77m height). 1.5m (eye height) southern turbine. EWT DW52.

Note: The hub is the part of a wind turbine that connects the blades to the main shaft.

- Development site reference. Central between proposed turbines.
- Study Area Boundary 10km
- Distance markers around site 500m- 1km



# Key Considerations

Landscape and Visual Views  
View 1: View from Manderley,  
Treliever Road, Mabe looking  
towards the site



University  
of Exeter  
Cornwall



Existing view



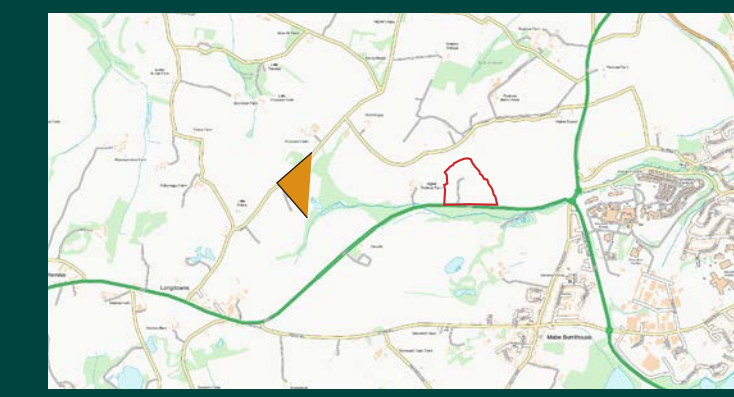
Proposed view - photomontage

Type 3 photomontage. Enlargement relative to FFS/50mm: 96%



# Key Considerations

Landscape and Visual Views  
View 2: View from Chywoon  
northern quarry access looking  
towards the site



University  
of Exeter  
Cornwall



Existing view



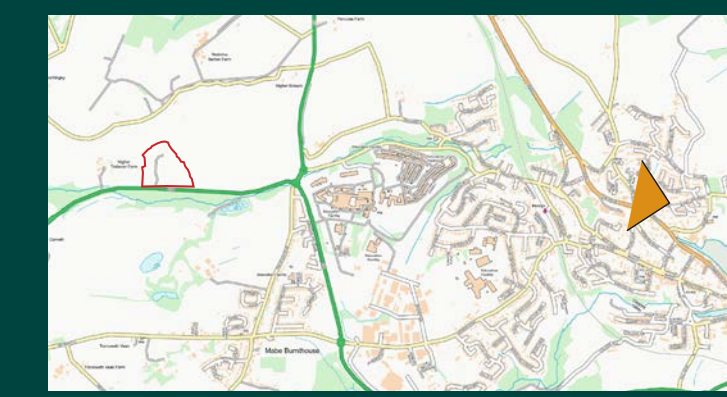
Proposed view - photomontage

Type 3 photomontage. Enlargement relative to FFS/50mm: 96%



# Key Considerations

Landscape and Visual Views  
View 3: View from Bohelland Road,  
St Gluvias (Penryn) looking towards  
the site



University  
of Exeter  
Cornwall



Existing view



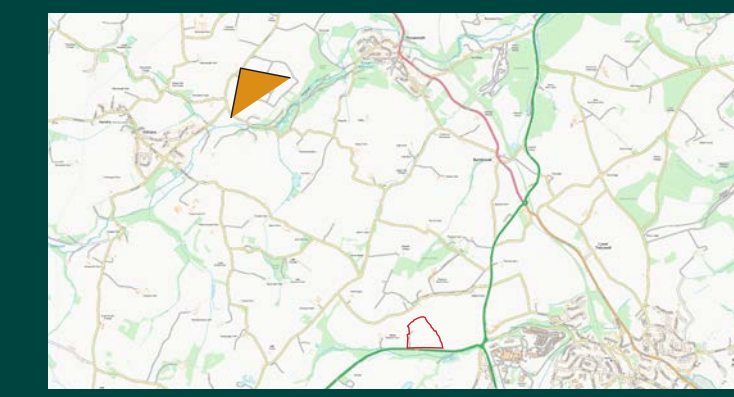
Proposed view - photomontage

Type 3 photomontage. Enlargement relative to FFS/50mm: 96%



# Key Considerations

Landscape and Visual Views  
**View 4: Stithians Showground, Tubbons Hill looking towards the site**



University of Exeter Cornwall



Existing view



Proposed view - photomontage



# The Emerging Proposal

The proposal comprises the installation of up to two wind turbines, which will be 76m to blade tip and have a hub\* height (hub and tower) of 50m. The wind turbines will be sited towards the eastern edge of the University land. Each turbine will be 900kw in capacity, providing up to 1.8MW of renewable electricity in total.

In addition to the wind turbines, a substation, crane pads and laydown areas will be provided.

The site will be accessed from the A394, most likely from the existing access, which will be improved to facilitate the delivery of the wind turbines. Where possible, the existing internal access track will be used, extended to the location of the wind turbines, with a layby provided within the site. The existing track is likely to require improvement to accommodate construction of the wind turbines.

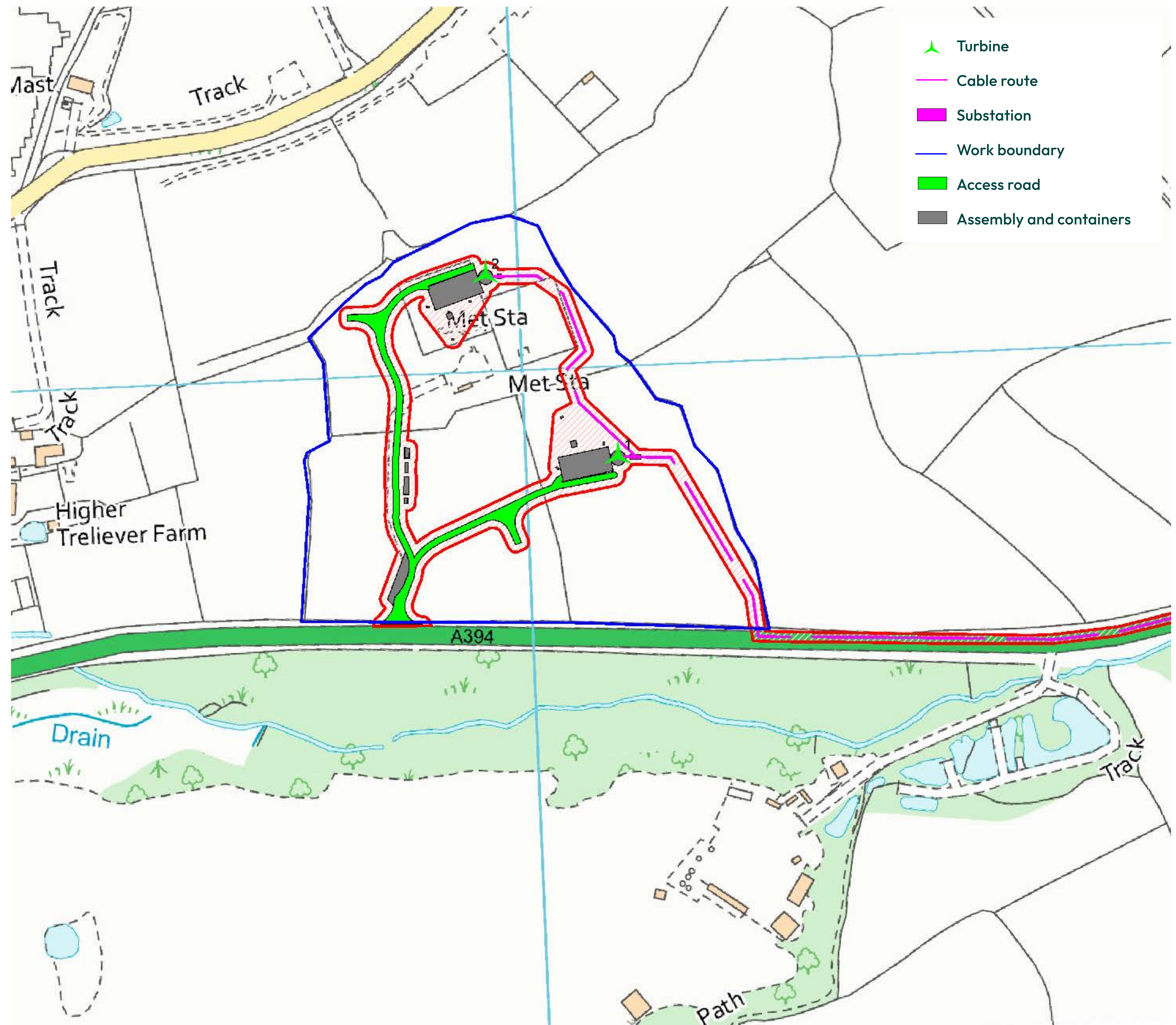
A new cable route will connect the wind turbines to Penryn Campus. The cable is currently anticipated to be routed along the A394, crossing the road at the Treliever roundabout and entering the campus in the vicinity of the Tremough Innovation Centre. The cable will be connected to existing electrical infrastructure within the campus. Discussions are underway to route the cable through fields rather than along the road, significantly reducing road works and disruption.

Landscape and ecological mitigation measures will be put in place, either on site or off site to address the anticipated impacts of the proposal, including the provision of additional tree canopy cover to meet Cornwall Council policy

requirements and biodiversity net gain to address the requirements of the Environment Act 2021 and Cornwall Council policy requirements.

As part of the proposal, we aim to provide an overall biodiversity net gain across the site of greater than 10%. We aim to do this by providing a Green Infrastructure Plan which maintains and protects the existing Cornish hedges as wildlife corridors, minimises breakages in the hedgerow, and utilises existing openings. The site offers plenty of space to allow new tree planting where it will not affect the wind pattern, and retention of all the major trees on site in line with the 15% tree canopy requirement. In accordance with the invasive species control plan and the nearby agricultural fields, the biodiversity net gain plans will consider planting plans that are complimentary to neighbouring land use and mitigate the growth of ragwort, dock, thistle and other plants where the seed may negatively affect nearby hay fields.

Construction is currently anticipated to take approximately six months. During this time a temporary construction compound will be provided on site. Construction work is expected to take place Monday to Friday and Saturday mornings.



Proposed layout

\*The hub is the part of a wind turbine that connects the blades to the main shaft.



# Benefits of the Proposal

## The proposed wind turbines will give rise to the following benefits:

Generate 1.8MW of renewable electricity contributing to national and local targets.

Potential to generate up to 5,712,400 kWh of clean electricity each year, offsetting 340 tonnes of greenhouse gas equivalent emissions each year for the lifetime of the project, expected to be at least 20 years.

Contribute towards the energy security of the University and make a small contribution to wider energy security.

Provision of at least 10% biodiversity net gain, helping to address the ecological emergency.

Provision of a 15% gain in tree canopy across the site, helping to address climate change and the ecological emergency.

## Local Community Benefits

Should the proposal receive planning permission, the University of Exeter will offer a community benefit fund for the lifetime of the project.

To oversee the distribution of the fund, the University of Exeter proposes to establish a Local Grant Committee with Mabe Parish Council.

Over the lifespan of the project, the Community Benefit Fund will constitute a significant ongoing financial investment to local causes.



## Next steps

Thank you for attending our engagement event for the proposed wind turbines at Treliever Cross. We hope you found it useful and informative.

The planning application is expected to be submitted to Cornwall Council in the coming months and will be available to view on the Council's website and subject to consultation with the local community.

A copy of this presentation will be made available on the University of Exeter's website.

Please do fill in the comments form to provide the University's team with feedback on the proposal. Comments can also be submitted online at:

[www.exeter.ac.uk/penrynwindturbine](http://www.exeter.ac.uk/penrynwindturbine)

