Syzygy
Decarbonising real estate

Design and Access Statement to Support Planning Application

For

Proposed Solar Photovoltaic Installation

At

Siemens Energy Industrial Turbomachinery Ltd, Kirkton Drive, Pitmedden Industrial Estate, Dyce, Aberdeen AB21 0BG

hello@syzygyconsulting.eu
+44 (0) 203 964 2830
4-8 Whites Grounds
London SE1 3LA
syzygyconsulting.eu

Introduction

This planning, design and access statement has been prepared to accompany the planning application for the proposed 193 kWp Solar PV installation at Siemens Energy Industrial Turbomachinery Ltd, Kirkton Drive, Pitmedden Industrial Estate, Dyce, Aberdeen AB21 0BG.

Given the current climate crisis, it is crucial to consider the integration of renewable energies into local communities. Renewable energy technologies are clean sources energy that have a significantly decreased environmental impact, in comparison to conventional energy technologies.

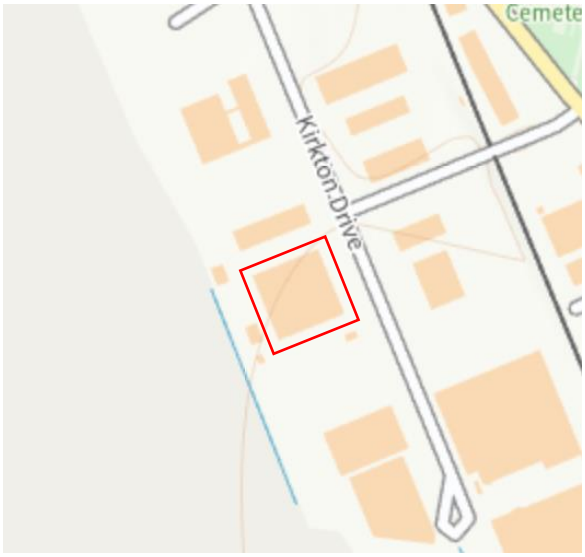
More specifically, in contrast to other sources of renewable energy, Solar PV provides a non-visually intrusive, commercially viable, solution to the issue we are facing.

The Site

The site is located in northwest Aberdeen and is accessed via Kirkton Drive, off of Pitmedden Road, to the east of the site. The unit links with Victoria Street (A947) to the south and Dyce Drive to the North.

This unit is located is the Pitmedden Industrial Estate, which contains a mix of industrial and warehouse uses. Southeast of the estate is a residential area, and to the west is Aberdeen Airport. On the opposite side of the airport and south of the Pitmedden Industrial Estate, there are other vast areas used mainly for industrial business.

The application site itself comprises the rooftop of the Siemens Unit.



The Site Boundary is outlined in red. The image above is not to scale.

The Solar Installation

The Siemens will purchase energy produced from the system, and any surplus will be exported to back to the grid through an export PPA or Smart Export Guarantee.

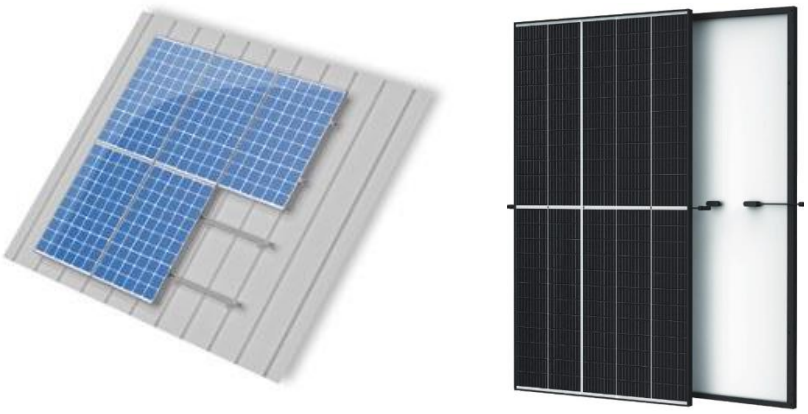
The client (Columbia Threadneedle) is seeking planning application in order to meet their underlying ESG objectives. By working with Siemens to reduce carbon emissions and improve the overall sustainability credentials of the asset and consider its futureproofing, it also acts as a positive externality to the wider environment. The solar generation is expected to offset approximately 49% of the site's total electricity usage – a significant contribution to the site becoming Net Carbon Zero.

Description of Installation

The proposed installation is expected to have 482 panels, each rated at 400 Wp, deployable to a system size of 192.8 kWp. The solar PV panels will be North/South and East facing.

Proposed layout (not to scale). The design allows for 1.5m of space from the roof edges to ensure maintenance and safety regulations are met. Exclusion zones as identified by structural engineers have also been incorporated into the design.

The roof of the building is a trapezoidal roof which allows for mounting of the solar PV panels flat to the roof surface using different fixings. The panels would be arranged to align with the orientation of the roof of the unit. The panels will protrude a height of 70mm approx. from the roof – this includes the height of the panel and the mounting clamp. The unit is in a heavily industrial area, while the panels may be visible from ground-level, it is highly unlikely that they will be in the view of the general public. The roof is free from shading. The panels are designed to absorb sunlight to maximise electricity generation and have anti-reflective coating which results in the minimisation of any glint and glare from the panels. Thus, as a result there will next to no visual impact from the panels on any surrounding areas, which may be of concern due to the airport. Datasheets of a typical panel and mounting system are included in the application.



Solar PV Mounting Structure and PV Panel Example

The systems' inverters will likely be located inside the unit's plant room, or if these locations are not viable, at ground level.

During installation, a temporary compound will be in place including storage and personnel welfare. This will be located within the site boundary however its exact location will be determined by the construction contractors and the site management team.

Development Need Within the UK

The UK government has committed to cutting its greenhouse gas emissions to almost zero by 2050, as an attempt to mitigate severe environmental consequences in the future. A crucial means of doing this is the transition to renewable energy technologies.

As of March 2019, the UK saw a slight reduction in the amount of Solar PV installations as a result of the Feed-in Tariff (FiT) initiative coming to an end. The Feed-in Tariff was a government scheme, launching in 2010, which paid homeowners and businesses for generating renewable energy as an incentive to invest in solar projects.

However, with the Smart Export Guarantee being introduced soon afterwards in 2020, as well as the significant shift in attitudes towards sustainability, which is assisted by implemented policies and regulations, the UK's appetite for solar has restored itself and is continuously growing.

To put things into perspective, there is an estimated 250,000 hectares of South facing commercial roof space in the UK, and, if utilised, this could provide approximately 50% of the UK's electricity demand. This indicates the sheer capacity the UK has if investors were to maximise system sizes on commercial buildings, and the contribution this could make to reducing greenhouse gas emissions.

Development Need Within the Local Area

In line with the national outlook, there is also a recognised need for Solar PV array developments within the more local area to the site.

Environmental Case

Aberdeen's Council Climate Change Plan 2021-2025 states that they have the aim of being net zero by 2045, with a reduction in carbon emissions by 48% by 2025 and 75% by 2030, against their 2015/16 emissions as a baseline.

In 2019, Aberdeen City Council, the University of Aberdeen, Adaptation Scotland and 41 local organisation collaborated with one another to develop Aberdeen Adapts. This is a city-wide climate adaptation framework that was aims to increase awareness of the climate challenges facing Aberdeen and set the foundations for long term local partnership working on climate change.

In the 2022 Revision of the Aberdeen Adapts, the executive summary outlines that Aberdeen Adapts sits alongside Net Zero Aberdeen and that there is a need to reduce greenhouse gas emissions caused by energy demand in the city. Installing on-site renewable sources of energy like we are doing in this case are an extremely effective way of help the city meet its net zero targets.

Additionally, the 2020 Vision & Prospectus for Aberdeen notes that one of the two key elements for their integrated future energy is the "electric future, which depends upon a significant increase in renewable energy generation".

Projects like the one presented in this case are going to be key in helping the city and the council reach their climate goals.

Economic Case

Moreover, given the current spike in energy prices there is an even stronger economic case for renewable energies. Installing Solar PV will protect Siemens against the volatilities of the energy market by having a capped electricity rate, linked to CPIH, to ensure that they will never be paying more for the solar energy than the market grid energy rate.

Construction

The construction period of the proposed development is anticipated to last for approximately 3 months. Please see below for an outlined description of each stage of works:

- Site Set-up – 1-2 weeks
- Construction – 6-8 weeks
- Commissioning / Site Clean-up – 1 week

The Construction work will include:

- Arranging the site to prepare for the commencement of works
- Arrival of materials/machinery
- Installation of materials (panels/inverters/cables)
- Connection to the national grid/commissioning of the project
- Restoration of the site to remove the construction compound and any materials/machinery no longer needed

A site management plan will be developed with the contractor and site personnel to organise the work in a way that limits disruption to the normal operation of the site. This plan will identify the location of the Site Compound, specify the staffing levels of the project at each stage, agree access for installation staff and clarify the access route for delivery vehicles upon reaching the Site.

Traffic and Transport

During the construction period, heavy goods vehicles (HGV) movements will be required to deliver materials and equipment to the staging area. It is estimated that 5 HGV visits will be required over the 6-week construction period, plus cars and vans belonging to construction personnel. Any deliveries would be staggered to prevent congestion and idling vehicles and to minimize disruption to normal site activities.

Delivery of the components shall be made directly to the development site. Due to the sites existing use as a shopping centre requiring large deliveries, it is considered that the road

infrastructure will be suitable to support the vehicles using the local road network during the construction of the project. A traffic management plan will also be developed in close conjunction with the contractors (once appointed) and the site management team to limit disruption.

Operation

The operational lifespan of solar PV systems is 25 years. At a point after this time when the system degradation has made it no longer worthwhile, the equipment will either be replaced or removed. In year 13, it is recommended that the inverters are replaced. Throughout the systems lifespan, Syzygy Consulting will be responsible for the asset management on behalf of Columbia Threadneedle. A third-party contractor will be appointed for the maintenance and upkeep of the PV installation.

Decommissioning

When the system is decommissioned, all equipment will be recycled as much as possible via the PV cycle scheme. This is anticipated to take approximately 1-2 months.

Landscape

The unit is in Pitmedden Industrial Estate, which is surrounded by green land to the North and a largely residential area to the south. On its eastern side runs the River Don and on its west is Aberdeen International Airport. This unit is well in the middle of the park and not near the residential area, limiting the risk of the project causing any visual impact to residential areas. Other units in the Pitmedden Industrial Park also have solar PV systems installed, in line with the local councils' effort to encourage renewable technologies.

Ecology and Biodiversity

There are no significantly sized designated woodland areas within a close proximity of the site. As a result, there is unlikely to be any impact on the local ecology and diversity of the surrounding area.

Heritage

There are no designated heritage assets near the site that may affect the planning application assessment.

Noise

There are no residential zones within a ~570m radius of the centre of the site of the proposed installation. Moreover, solar PV systems are not inherently noisy. Generally, the only noise associated with them is the blurred humming noise of the inverter equipment. Therefore, the likelihood of the system causing any sound issues to residents is negligible.

Conclusion

The proposed installation has been designed in a means to limit the visual impact to the surrounding area as much as possible, by installing the panels flat to the roof so there is minimal height projection, whilst also considering the greater need for PV technologies to be deployed across the UK and local area.

We hope that this design and access statement has provided the planning department with sufficient information regarding the development. However, in the case where additional information may be required, we would be happy to discuss the proposal with the planning authority and assist them with any concerns they may have.