



CLIENT NAME:
FIP West End Limited

PROJECT NAME:
Chalcroft Business Park

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INTRODUCTION

The UK is undergoing rapid change in the way in which energy is generated. Large scale, centralised fossil fuel and older nuclear power stations are being phased out and new smaller scale, decentralised renewable energy generation is taking its place. The last coal fired power stations are due to be phased out in the UK no later than 2024.

Accelerating the transition away from oil and gas depends critically on how quickly we can roll out new renewables. Whilst renewable energy production is increasing, the electricity demand is also increasing. However, energy supply from renewable resources is intermittent and less predictable, and when combined with changing consumption patterns, can introduce significant imbalance into the market. In this context, electricity storage plays a vital role.

Electricity storage, in simple terms, stores electricity for when it is most needed. It is an essential component of a net zero system as it can store electricity when abundant from renewable sources (e.g., when it is windy or sunny) for periods when it is scarce (i.e. when demand is higher). It can do this both to balance the system nationally and to manage constraints in local areas. It can also provide specific services to help maintain the resilience and stability of the grid, says the Government in the 'Transitioning to a net zero energy system Smart Systems and Flexibility Plan 2021'.

Energy storage has multiple benefits for the System Operator, consumers and the environment.

Two key benefits are:

- 1 - Energy storage enables the increased uptake of renewable energy by providing the required system stability to replace existing, carbon intensive fossil fuel plants. This reduces greenhouse gas emissions and is an important factor in addressing the UK's Net Zero target by 2050.
- 2 - Energy storage allows existing assets to work harder and avoid the need to extend the transmission network by building new overhead lines and other infrastructure (BEIS 'Statement on the Future of Electricity System Operation' 2017).

Electricity storage will need to increase significantly to support the decarbonisation of our electricity system, with as much capacity (GW) and volume (GWh) respectively from 2021 to 2050.

In light of current and projected energy needs, the planning proposals for Local Plan site WE2 will need to be delivered alongside new energy management infrastructure in order to add resilience to the Business Park's power supply, and to meet the Park's need for additional

power while supporting National Grid during times where the electricity network is under stress.

NATIONAL PLANNING - CONTEXT

The UK Government published the further revised National Planning Policy Framework (NPPF) in September 2023. This sets out the Government's planning policies for England and how these should be applied in the determination of planning proposals.

Paragraph 8c of the NPPF notes that a key part of achieving sustainable development is "mitigating and adapting to climate change, including moving to a low carbon economy". The Glossary to the NPPF defines 'renewable and low carbon energy' and expresses that "low carbon technologies are those that can help reduce emissions (compared to the conventional use of fossil fuels)", which therefore, includes battery storage developments.

Battery storage technology allows large amounts of electricity to be stored, including electricity generated by zero carbon/carbon neutral sources, supporting the country's transition to a low carbon economy.

Paragraph 152 states:

"The planning system should support the transition to a low carbon future in a changing climate" and support renewable and low carbon energy and associated infrastructure.

Paragraph 158 goes further in considering how best to meet the challenge of climate change. When determining planning applications for renewable and low carbon energy, local planning authorities should recognise the valuable contribution that small-scale projects can make and should approve applications if impacts are (or can be made) acceptable.

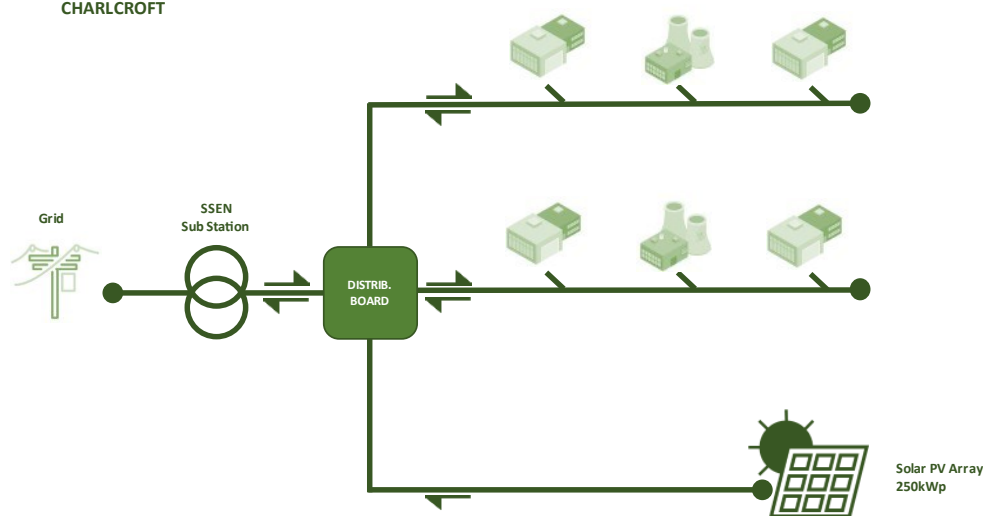
The policies of the NPPF are supported by a wide raft of national and international low carbon initiatives. These are reviewed in the Appendix to this Energy Management statement. The UK Built Environment is considered one of the less challenging sectors to achieve Net Zero and subsequently has been subject to policy changes targeting Net Zero. One of these policies is the Minimum Energy Efficiency Standards (MEES) which prescribes minimum EPC ratings for buildings. Currently the MEES Regulations only prescribe a minimum E rating for all Non-Domestic and Domestic properties. However the Government's [2019 consultation](#) on a future regulatory target for the Non-Domestic Private Rented Sector Regulations of EPC B by 2030 gained large support. As a result the [2020 Energy White Paper](#) concluded that the future trajectory for the non-domestic minimum energy efficiency standards (MEES) will be EPC B by 2030.

Chalcroft will face significant challenges to meet EPC B ratings, particularly for those buildings which require gas to be removed in lieu of electric heating. The EPC structure does provide a target rating of A+ for Net Zero, which means the buildings are a net provider of energy.

Recent simulations to achieve EPC A+ show at least 50% of the area of each new and existing unit's roof will need to be fitted with solar PV. However, the local grid into Chalcroft requires reinforcement before more renewables can be accepted. The carbon plan for the Park, which is still in development, suggests that Chalcroft will need to remove all fossil fuel based infrastructure, install further embedded generation (PV) and provide charging for electric vehicles.

The current power supply to Chalcroft Business Park is restricted. This is amply illustrated by a current refurbishment project involving two existing commercial units. To comply with current Building Regulations Part L, it will be necessary to install heat pumps and solar PV panels as part of the works. Once this project is completed however, the power supply infrastructure to the Park will have reached its maximum capacity, with no further capability to decarbonise the remaining properties. The local network is not able to offer further capacity until significant upgrades and reinforcement projects are completed by the DNO, which may take several years and may prove unaffordable for the property owners.

EXISTING POWER INFRASTRUCTURE
CHALCROFT

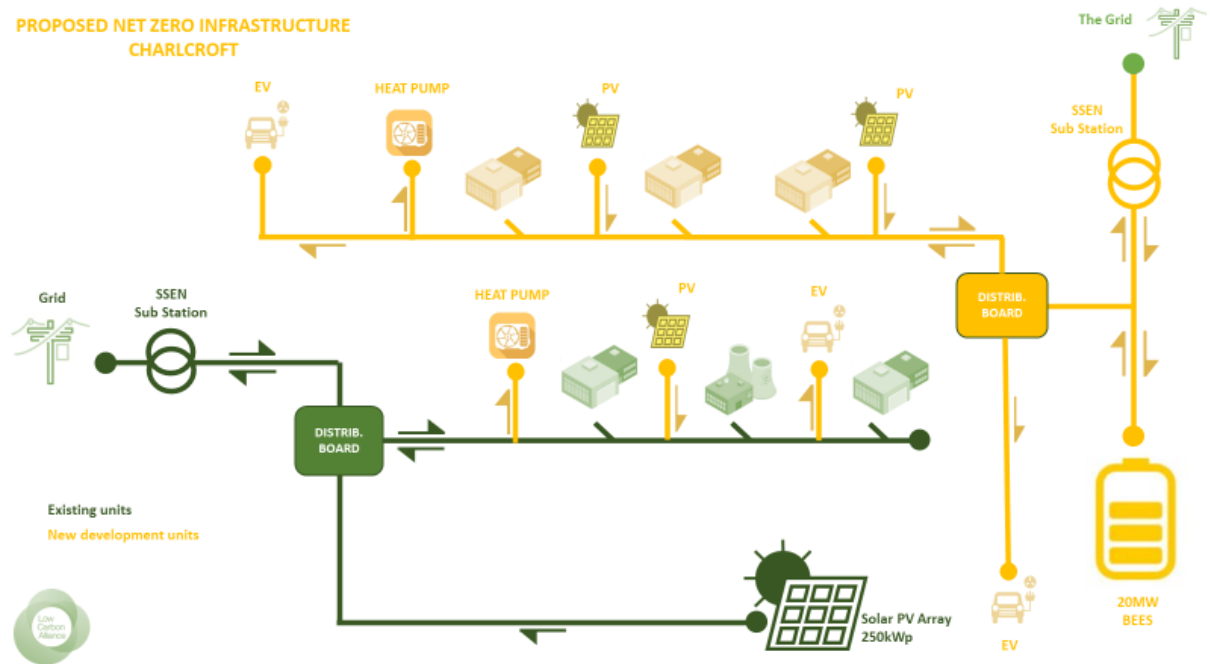


A battery energy storage system (BESS) is able to achieve significant grid connection cost savings, and early discussions with SSEN (Scottish and Southern Electricity Networks) and BESS developers indicate capacity is available within a cost range deemed acceptable by developers. This offers the opportunity to provide the much-needed additional power to decarbonise Chalcroft whilst also supporting future growth in UK Renewables.

The proposed 23 MW BESS will cover a small area of approximately 0.4 ha including an underutilised hardstanding area. It is designed to be capable of importing and exporting electricity from and into the grid network. The BESS will be the subject of a separate

application to be submitted following consultation with the Fire Service, in accordance with the latest national planning guidance on such facilities.

The new energy configuration is illustrated schematically below:



Crucially, this means that the proposals for Local Plan site WE2 will be able to incorporate renewable energy sources within the confines of existing grid infrastructure. Moreover, the future transition to a low carbon Business Park in the longer term is facilitated.

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A - Appendix - Energy Policy and Context

International Policy

International energy policy is based on the demand to tackle climate change and reduce carbon dioxide (CO₂) emissions and, therefore, is relevant to renewable energy development.

The United Nations Framework Convention on Climate Change (UNFCCC) implemented by the United Nations way back in 1992, determined a long-term objective to reduce greenhouse gases in the Atmosphere, to prevent anthropogenic interference with the climate system. Subsequently, the Kyoto Protocol was implemented in 1997.

National governments that signed up to the Kyoto Protocol are committed to reducing their greenhouse gas emissions.

Paris Agreement 2016

The Paris Agreement marks a major step in the development of the United Nations regime on tackling climate change. Its central objective is to boost global response to climate change, keep global temperatures rise low and strengthen efforts to support this. The Paris Agreement stresses the 'urgency of accelerating the implementation of the convention and its Kyoto Protocol' and within this, ensuring that the long-term temperature goals are met.

In line with Article 4 of the Paris Agreement, a Nationally Determined Contribution (NDC) was drawn up which commits the UK to reduce economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels.

European and UK national energy policies have been established from the Kyoto Protocol and the Paris Agreement requirements and will continue to be framed by emerging guidance and scientific information.

In December 2019, the European Commission published a communication called 'The European Deal'. It presented an initial roadmap of key policies and measures needed to achieve a few goals. The European Commission presented a proposal for a European Climate Law on March 2020 which included a net zero 2050 target, which was ratified by the UK Government.

In 2021, the UK hosted the COP26 Climate Change Conference in Glasgow which made further ratifications to the Paris Agreement. At this meeting, it was acknowledged that the impacts of letting temperatures rise beyond 1.5°C will be devastating. The COP26 was crucial, as the world acknowledged that the cost of inaction far outweighs the cost of action. The Glasgow Climate Pact accelerates the policy aims and puts in place the underpinning rules and systems. At the Conference, more than 100 countries, including the UK, pledged their reduction of overall emissions of methane by 30% by 2030, compared with 2020 levels. China and the USA also released a joint statement that included the US's commitment to reach 100% renewable electricity

by 2035 and China to “phase down” coal in the second half of this decade. The UK has followed the USA’s commitment for electricity to come from clean energy sources by 2035.

In 2022, the COP27 climate summit in Egypt concluded with a historic advance to help vulnerable countries deal with losses and damages from the impacts of climate change.

National Legislation and Guidance

International and European policies commit the UK to reducing its impact on climate change and increasing the supply of energy from renewable and low carbon sources. These commitments are reflected in existing national policies and need to be translated into local policies and action.

Planning has a significant role to play in meeting these commitments by understanding the local potential for renewable and low carbon technologies, identifying suitable locations for renewable and low-carbon energy production and supporting infrastructure, and delivering renewable energy developments.

UK Renewable Energy Strategy (2009)

This document was published in July 2009 by DECC (Department for Energy and Climate Change) and the strategy sets out how the UK would radically increase the use of renewables including meeting the legally binding target to ensure 15% of energy was from renewable sources by 2020 and to capture the significant employment and investment opportunities the renewable sector could create.

Renewable Energy Roadmap (2013)

The Renewable Energy Roadmap, first published in 2011 sets out how the UK will reach the goal of generating 15% of UK energy use from renewables by 2020. It presented a framework and set of actions for the delivery of renewable energy deployment.

Clean Growth Strategy (2017)

The Clean Growth Strategy sets out comprehensive policies and proposals that aim to accelerate the pace of “clean growth” i.e., growing national income while cutting greenhouse gas emissions.

Achieving clean growth, while ensuring an affordable energy supply for businesses and consumers, is at the heart of the UK’s Industrial Strategy.

To meet these objectives the UK will nurture low carbon technologies, processes and systems that are as cheap as possible. The Government places great emphasis on securing increased investment across the energy systems whilst minimising as much as possible, the public costs.

In ‘Delivering Smarter, More Efficient Energy’:

“The Government, Ofgem and industry will implement the 29 actions set out in the Smart Systems and Flexibility Plan published on 24 July. These will enable technologies such as energy storage and demand side response to compete effectively within the

energy market, help integrate more low carbon generation such as solar into our energy system, and deliver secure, smart appliances and smart tariffs to allow consumers to benefit from using energy at times when it is cheaper. Innovations and other steps to increase flexibility could unlock up to £40 billion in energy cost savings up to 2050.”

The Clean Growth Strategy: Leading the Way to a Low Carbon Future (2018)

The Clean Growth Strategy sets out a comprehensive set of policies and proposals that aim to accelerate the pace of clean growth. This Strategy sets out the policies that keep the UK on track to meet the carbon budgets.

Climate Change Act 2008 (2050 Target Amendment) Order 2019

The principal Act in relation to climate is the Climate Change Act 2008. The Act introduced a legally binding target to reduce the UK's GHG emissions to at least 80% below 1990 levels by 2050 and in June 2019, the Government passed an order to amend the 2050 carbon emissions target in the Climate Change Act 2008 to Zero Net Carbon (i.e. 100% below 1990 levels). This new target will essentially end the UK's contribution to climate change by 2050.

The Sixth Carbon Budget (2020)

The Climate Change Act, passed in 2008, committed the UK to reducing greenhouse gas emissions by at least 80% by 2050 when compared to 1990 levels, through a process of setting 5 year caps on greenhouse gas emissions termed 'Carbon Budgets'.

The UK has already met, and overachieved, its first (2008-2012) and second (2013-2017) carbon budgets and is on track to meet the third (2018-2022). In order to meet the fourth and fifth carbon budgets (covering the periods of 2023-2027 and 2028-2032) the Government will need to drive a significant acceleration in the pace of decarbonisation.

The Sixth Carbon Budget, required under the Climate Change Act, provides ministers with advice on the volume of greenhouse gases the UK can emit during the period 2033-2037.

The Sixth Carbon Budget can be met through four key steps:

1: 'Take up of low-carbon solutions: People and businesses will choose to adopt low-carbon solutions, as high carbon options are progressively phased out. By the early 2030s, all new cars and vans and all boiler replacements in homes and other buildings are low-carbon – largely electric. By 2040 all new trucks are low carbon. UK industry shifts to using renewable electricity or hydrogen instead of fossil fuels, or captures its carbon emissions, storing them safely under the sea.'

2: 'Expansion of low-carbon energy supplies: UK electricity production is zero carbon by 2035. Offshore wind becomes the backbone of the whole UK energy system, growing from the Prime Minister's promised 40GW in 2030 to 100GW or more by 2050. New uses for this clean electricity are found in transport, heating, and industry, pushing up electricity demand by half over the next 15 years, and doubling or even trebling demand by 2050. Low-carbon hydrogen scales-up to be almost as large, in 2050, as electricity production is today. Hydrogen is used as a shipping and transport fuel and in industry, and potentially in some buildings, as a replacement for natural gas for heating.'

3: 'Reducing demand for carbon-intensive activities: The UK wastes fewer resources and reduces its reliance on high-carbon goods. Buildings lose less energy through a national programme to improve insulation across the UK. Diets change, reducing our consumption of high-carbon meat and dairy products by 20% by 2030, with further reductions in later years. There are fewer car miles travelled and demand for flights grows more slowly. These changes bring striking positive benefits for health and well-being.'

4: 'Land and greenhouse gas removals: There is a transformation in agriculture and the use of farmland while maintaining the same levels of food per head produced today. By 2035, 460,000 hectares of new mixed woodland are planted to remove CO₂ and deliver wider environmental benefits. 260,000 hectares of farmland shift to producing energy crops. Woodland rises from 13% of UK land today to 15% by 2035 and 18% by 2050. Peatlands are widely restored and managed sustainably.'

Energy White Paper (2020)

The Energy White Paper, published in December 2020, outlined a strategy to transform the energy system, tackling emissions while continuing to ensure secure and reliable supply and affordable bills for households and businesses.

In 1990, electricity generation accounted for 25% of UK emissions. In 2018, it has only dropped to 15%. About 30 years ago, fossil fuels provided nearly 80% of the electricity supply. Today the country gets over half its power from low carbon technologies (As reported in the Energy Trends - March 2023). UK energy policy is one of the main drivers of this change.

The use of renewables is heavily supported in the Energy White Paper.

Net Zero Strategy: Build Back Greener (2021)

The UK Government published a strategy setting out the pathway to achieve a net zero economy by 2050, whilst also focusing on substantial near-future reductions in UK-wide GHG emissions, and ensuring that the legally binding 4th, 5th and 6th carbon budgets set under the Climate Change Act are met.

Chapter 3 Reducing Emissions across the Economy (Prioritising critical system enablers - 25) states that:

“The deployment of smart technologies and flexibility will underpin our energy security and the transition to net zero. Flexibility from technologies such as energy storage, smart and bidirectional charging of electric vehicles, flexible heating systems, and interconnection could save up to £10 billion per year by 2050 by reducing the amount of generation and network needed to decarbonise. These technologies offset the need for more expensive capital investment in traditional infrastructure, as well as help optimise how efficiently the system operates by better integrating intermittent renewables into the system and reducing peak demand.”

Government’s Net Zero Strategy (2022)

The Government’s ‘Net Zero Strategy’ commits the UK to be powered entirely by clean electricity by 2035, subject to the security of supply. In order to meet this target a key component is the deployment of new flexibility measures, including energy storage, to help smooth out power supply and future price spikes.

Carbon Budget Delivery Plan (2023)

The Carbon Budget Delivery Plan provides the detail, setting out the current package of proposals and policies prepared by the Secretary of State (as of March 2023) to enable the delivery of Carbon Budgets 4, 5 and 6. The proposals and policies reach far into the future, setting out the Government’s plans to the end of Carbon Budget 6 in 2037. This means that, whilst maintaining focus on delivering the proposals and policies, the package represents one of many routes to full decarbonisation of the UK economy by 2050.

The world is expected to change between now and the end of Carbon Budget 6, so it is anticipated that the package of proposals and policies will need to evolve to adapt to changing circumstances, new evidence, to utilise technological developments and address emerging challenges. This will maximise opportunities to drive growth, jobs and investment across the UK whilst reducing emissions.

Draft National Policy Statements for Energy (2023)

The Energy National Policy Statements (NPS) set out the Government’s policy for the delivery of energy infrastructure and provide the legal framework for planning decisions. They were first designated and published in 2011.

A review of the NPS was announced in the 2020 Energy White Paper: Powering our Net Zero Future. This review was to ensure the NPSs were brought up to date to reflect the policies set out in the white paper.

Public consultation on the revised NPSs EN1 to EN5 was held in 2021, and the Department for Energy Security and Net Zero has published a government response.

An ongoing consultation was seeking views on the revised energy National Policy Statements and the consultation closed on 25th May 2023.

Any emerging draft NPSs (or those designated but not yet having an effect) are potentially capable of being important and relevant considerations in the decision-making process.

Covering renewables, carbon capture and hydrogen, oil and gas pipelines and electricity networks, the updates are expected to speed up the planning process so that low-carbon generation can be brought forward at the right time and in the right places, whilst protecting and enhancing the environment on land and sea and ensuring local views are taken into account.

Draft National Policy Statement for Energy (EN-1) (March 2023)

The Overarching National Policy Statement for Energy (EN-1) is part of a suite of NPSs issued by the Secretary of State for Energy and Climate Change. It sets out the Government's policy for the delivery of major energy infrastructure. However, in England, this NPS, in combination with any relevant technology specific NPSs, may be a material consideration in decision-making on applications that fall under the Town and Country Planning Act 1990 (as amended).

Paragraph 3.3.25 of the draft of EN-1 recognises that storage has a key role to play in achieving net zero providing flexibility to the energy system so that high volumes of low carbon power, heat and transport can be integrated.

Paragraphs 3.3.26 and 3.3.27 also state that storage is needed to reduce the costs of the electricity system and increase reliability by storing surplus electricity in times of low demand to provide electricity when demand is higher.

'Storage can provide various services, locally and at the national level. These include maximising the usable output from intermittent low carbon generation (e.g. solar and wind), reducing the total amount of generation capacity needed on the system; providing a range of balancing services to the NETSO and Distribution Network Operators (DNOs) to help operate the system; and reducing constraints on the networks, helping to defer or avoid the need for costly network upgrades as demand increases.'

The National Policy Statement portrays how the energy sector can help deliver the Government's climate change objectives by clearly emphasising the need for new low carbon energy infrastructure to contribute to climate change mitigation.

Draft National Policy Statement for Renewable Energy Infrastructure (EN-3)

EN-3, also published in July 2011, sets out the national policy for renewable energy projects. EN-3 should be read in conjunction with EN-1. Similar to EN-1, EN-3 lays out the importance of renewable energy in achieving the Government's targets for renewable energy generation.

Electricity storage is considered generation development under the Planning Act 2008 and a renewable and low carbon energy associated infrastructure. As such, it follows that increases in the deployment of renewable energy to achieve Net Zero will need to be mirrored by increases in renewable and low carbon energy associated infrastructure, such as the Proposed Development.

Draft EN-3 sets out in Paragraph 2.1.2 that:

'Electricity generation from renewable sources of energy is an essential element of the transition to net zero. Our analysis suggests that demand for electricity is likely to increase significantly over the coming years and could more than double by 2050. This could require a fourfold increase in low carbon electricity generation, with most of this likely to come from renewables.'

It is clear from a review of draft NPS EN-1 and EN-3 that significant new balancing services will need to come forward through the planning system to ensure energy security and to support low carbon electricity generation. As such, the approach proposed at Chalcroft Business Park is considered consistent with the aims of draft NPS EN-1 and EN-3 in this respect.