AFFORDABILITY NOTE

Full planning application for a proposed battery energy storage site, substation compound, with associated infrastructure, fencing, access off Barleylands road, drainage and landscaping

Land at White's Farm, Barleylands Road, Basildon, SS15 4BG

On Behalf Of: Anglo ES White Farm Ltd

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Date: 11th May 2023

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1.0 INTRODUCTION

1.1 This Affordability Note has been prepared by Harris Lamb ("**HLPC**") on behalf of Anglo Renewables ("**the Applicant**") following a meeting with the Planning Officers on 24th March 2023.

1.2 The purpose of the note is to demonstrate how the application development could contribute to the affordability of energy.

2.0 FOSSIL FUELS

2.1 Whilst the UK is moving towards clean energy the Country is still very much reliant on fossil fuels and the war in Ukraine has exposed this, raising international prices for coal, oil and gas, which has had a direct impact on the UK energy market, raising domestic and commercial energy bills significantly.

2.2 The latest Government policy to address affordability Powering Up Britain – Energy Security Plan (4 April 2023) states:

> **"*The best way of protecting households and businesses is by lowering the costs of the energy we consume and reducing the volumes used. This means taking further steps on energy efficiency and building out a low-cost, low-carbon energy system which reduces our reliance on fossil fuels.*"**

2.3 This Policy builds on previous legislation and policy, including The Energy Act (2013) and the Energy Security Strategy (2022) which have committed the UK to low carbon energy production, to meet its own energy needs and in turn have increased control of the domestic energy market.

3.0 RENEWABLE ENERGY COSTS

3.1 Renewable energy generation has, for many years, been getting less and less expensive as technologies advance and increased scale means the sector can take advantage of macro economics as the roll out continues.

3.2 A report published by the International Renewable Energy Agency (13 July 2022) *Renewable Power Generation Costs in 2021*, demonstrated that almost two-thirds of 163 gigawatts (GW) of newly installed renewable power in 2021 had lower costs than the world's cheapest coal-fired option in the G20. IRENA estimates that, given the current high fossil fuel prices, the renewable power added in 2021 saves around USD 55 billion from global energy generation costs in 2022.

3.3 There is clearly an infinite amount of renewable 'free' energy to be harnessed and advances in technologies have meant we are now beyond the point where it is less expensive to capture renewable energy, than generate energy from fossil fuels.

4.0 BATTERY ENERGY STORAGE SITES (BESS)

4.1 BESS are integral to the UK's transition to renewable energy as the switch to renewable energy simply will not work in the UK without them. BESS are essential to manage variable energy sources and more BESS are required to facilitate further renewables on to the energy network.

4.2 Given that a BESS provides a way to harness excess renewable energy, it will allow the UK to store more cheaper, renewable energy.

4.3 As more renewables are added to the network, more electricity will be stored and not lost which should, in time, balance the UK energy market prices through the ability to capture 'free' energy and ensure the UK can secure its own energy needs.

5.0 NATIONAL GRID ESO CONSTRAINT PAYMENTS

5.1 Currently, National Grid ESO has contractual arrangements for constraint payments which, like many system operators across the world, are required to help keep the electricity network in balance at all times.

5.2 Balance is the key here. National Grid pays for both: energy generation and energy restriction - to reduce the risk of system failure from overheating or excess energy causing faults on the network. Without such payments to generators, the system would have to accommodate too much energy at times of high renewables output and low demand.

5.3 As an example, in January 2023 National Grid spent £99m to alleviate thermal constraints on the network including wind, nuclear and coal generators over January to prevent the grid from being overwhelmed.

5.4 Further, in December 2022 National Grid spent £82m to pay wind farm operators to turn off turbines to avoid network constraints.

5.5 As more and more renewable energy projects come online, the situation of having to pay for energy NOT to be generated will only increase. BESS provides an obvious solution to resolve this problem making more efficient use of energy generated.

5.6 The use of BESS to store excess energy reduces network operating costs, which in turn reduces the use of system charges which each bill payer contributes on their energy bill.

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6.0 SUMMARY

6.1 BESS will contribute to energy affordability by allowing:

- A move away from fossil fuels which are a more expensive way to generate energy.

- The UK to secure its own energy and reduce exposure to volatile international energy markets.

- The UK to use more of the renewable energy produced.

- National Grid ESO to reduce constraint payments to operators to NOT produce energy.