

Team B4- Rose, Krish, Bruno and Adriana

Power for a Better Future - the UK

Current Status:

The United Kingdom is currently in a pivotal moment regarding its energy and climate initiative, marked by ambitious government policies and significant political debate. The British Labour party is pushing hard for a “Clean Power by 2030” agenda, aiming to fully decarbonize its electric grid. To achieve this goal, the government passes the Great British Energy Act in 2025, establishing a new energy company with 8.3 Billion GBP in funding directed towards electric grid investments.

The Conservative Party and Reform UK oppose this agenda on affordability grounds. Household energy costs remain high, placing financial pressure on British families. The opposition argues that the pace of decarbonization is economically unsustainable, and that affordability concerns must be prioritized.

The United Kingdom’s climate commitments are also grounded in international treaties and domestic agreements. These include the UNFCCC (1992), the foundational United Nations climate treaty that established the framework for climate negotiations. It also participated in the Kyoto Protocol, which set legally binding emission cuts for developed nations; however, it expired in 2020. It also ratified the Paris Agreement, the UK committed to keeping global warming below 2°C and preferably below 1.5°C. Domestically, the Climate Change Act of 2008 sets the 2050 net zero target into law.

Next, I’m going to talk to you about the Paris Agreement and the United Kingdom.

The UK wants to reduce pollution by 2050 to have cleaner air and healthier people. Green energy can create jobs and help the economy. Countries also need to work together through the United Nations to fight climate change.

Strength Analysis:

The UK's strengths in achieving net zero and meeting the objectives of the Paris Agreement stem from its four pillars: infrastructure, economy, policy, and social systems.

The Clean Power 2030 Action Plan envisages 95% of power generation from low-carbon sources, supported by the UK's unmatched offshore wind capacity. Additionally, Public electric vehicle charging facilities increased by 40% in just one year, with the costs of owning electric vehicles nearly equal to those of gasoline cars. Furthermore, the deployment of heat pumps surged by 56%, with an emissions reduction effect double that of previous installations as grid decarbonization advances.

The economic cost has fallen dramatically to 0.2% of UK GDP, down from earlier projections of 1%, due to plummeting costs of renewable energy production. The net-zero economy creates employment for more than a million people and generates £83 billion in annual revenue for the UK. Out of the £5.8 billion allocated in the National Wealth Fund, public funds have been invested to attract private investments into the industry, and offshore wind has become commercially feasible.

Nevertheless, policy may be the UK's greatest strength, having placed future governments under a legal obligation to achieve net zero emissions through the Climate Change Act 2008, which involves the Independent Committee on Climate Change. Through its Nationally Determined Contribution for 2035, the UK has committed itself to achieving an 81% cut across all its greenhouse gas emissions. This commitment places the UK among countries with some of the most ambitious emission-reduction targets in the world, covering all sectors and gases. Additionally, the Great British Energy Act 2025 was enacted to create a publicly owned energy company that the government can use to reach net zero more feasibly.

From a social perspective, emission reductions have already saved the National Health Service (NHS) £5 billion in London alone, with the NHS predicting that more than 1 million air pollution-related hospital admissions can be avoided by 2050. The net-zero job market is also expanding three times faster than the overall economy, meaning greater job security and options for UK residents. Furthermore, domestic renewable energy sources offer greater energy security, especially for lower-income neighborhoods that would otherwise be affected by rising fossil fuel prices.

Together, these assets make the UK one of the best nations on earth equipped to meet its climate goals. The biggest hurdle is not a lack of industry, but rather the pace of execution.

Obstacle Analysis:

Despite the United Kingdom's strong position in clean energy development, significant obstacles continue to limit the effective deployment of renewable energy at scale. While the UK has ambitious targets, including net zero emissions by 2050 and an 81% emissions reduction target by 2035, the main challenge lies in the gap between policy ambition and real-world implementation.

A major obstacle is infrastructure. The UK's energy system is still transitioning from a centralised, fossil fuel-based model to a more distributed renewable system. Although offshore wind capacity has expanded rapidly, the national grid has not been upgraded at the same pace. This has created bottlenecks in transmission, with delays in connecting renewable projects and limited capacity to efficiently move electricity from production sites to demand centres. In some cases, renewable energy is curtailed, meaning it is generated but cannot be fully used, reducing overall system efficiency.

Economic barriers also affect deployment. While renewable technologies have become more cost effective over time, the upfront costs of adoption remain high for households and small businesses. Technologies such as heat pumps or residential solar panels still require significant initial investment, which slows down widespread uptake. Combined with persistent energy price volatility since 2021, affordability concerns continue to shape consumer decisions and limit the speed of transition.

Policy related challenges further slow progress. Although the UK has strong legal frameworks such as the Climate Change Act, implementation is often constrained by slow and complex planning procedures. Renewable energy projects frequently face long approval timelines and grid connection delays, which reduces investor certainty and slows down infrastructure expansion. This creates a disconnect between long term climate policy and short term execution capacity.

Finally, social factors also influence deployment. Public resistance to certain projects, particularly onshore wind developments, can delay planning approval. In addition, the renewable energy sector faces a shortage of skilled workers, limiting the pace at which new infrastructure can be built, installed, and maintained.

Overall, the UK's clean energy transition is constrained not by a lack of ambition, but by structural barriers across infrastructure, economic conditions, policy implementation, and workforce capacity. These interconnected challenges highlight that accelerating deployment

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requires strengthening the systems that enable renewable energy to be delivered efficiently, not just increasing generation capacity.

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