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Assessment 1

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Hinkley Point C Project: A Critical Evaluation

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1 Introduction

A nuclear power plant is being built in the United Kingdom. The project is named the Hinkley Point C project. This project is undertaken by the United Kingdom's government with environmental safety in mind. The government is expecting to reduce the country's carbon emissions. To meet this goal of carbon emissions reduction, the government is moving towards nuclear plants instead of the traditional generation of electricity. It is estimated that this project will produce enough electricity to power almost six million homes in the United Kingdom. This project is undertaken by the United Kingdom's government with environmental safety in mind. This essay will look into the initial planning and core elements of the project. By evaluating and looking into the core elements of the project, this study will attempt to find out various aspects of project planning. This essay will also look into factors responsible for various overruns and delays.

2 Overview of the Hinkley Point C Project

The government is constructing a nuclear power plant in England. It will assist the country in fighting climate change challenges by reducing carbon emissions. The nuclear power plant is known as the Hinkley Point C project. According to recent reports, England's carbon emissions have decreased recently. The country has had a 31% decline since 2001, notwithstanding the comparatively modest reduction rate. Almost 40 per cent of all carbon emissions are caused by using much fossil fuel to produce electricity. By the year 2050, the government wants to have net-zero emissions (Oldham, 2019). Projects like point c are a step in the right direction for lowering the nation's overall carbon emissions.

The United Kingdom built its last nuclear facility a long time ago. After almost 20 years, a new nuclear power plant is being constructed by the government. The main problem with this new plant is that it is expensive to build and run. Critics are being very vocal about the expensive project as it is reported that recently the budget for construction had been revised. Experts are saying that building nuclear power plants to generate clean energy and fight global climate change is not viable.

2.1 Background

In 2008, the Hinkley Point C project was originally mooted. The project was proposed and planned by the government. The government then engaged state-owned EDF Energy to complete this project quickly (Font, 2016). The China General Nuclear Power Group (CGN) is also an important partner working for completing and finishing construction projects of the power plant. Two EPR reactors are being built as part of the project, along with energy production. EPR reactors are the latest generation of nuclear power technology known for their efficiency and safety (Oldham, 2019).

2.2 Project Goals

Firstly through this project, the United Kingdom's government is going to provide electricity and reduce its carbon emissions in the power generation sector. It is estimated that the two EPR reactors will be able to provide electricity to around 6 million homes (Vance, 2015). Secondly, the project is going to create new jobs and boost the overall economy of the country. Reports suggest that the construction project will create around 25000 new jobs (Nunes, 2019). Additionally, the power plant will be in operation for around 60 years which will provide a long-term source of employment.

2.3 Project Challenges

The Hinkley Point C project has been criticized for its high cost since its proposal. Although initial estimates suggested that the project will cost around 16 billion pounds, research reports suggest that the cost has risen up to 25 billion pounds in 2021 (Adam, 2019).

Additionally, the project is seeing delays as well. Although initial plans suggested that the power plant will be operational by 2025, due to unexpected delays it is now estimated that the plant will not be operational before 2027 (Jones, 2017).

2.4 Project Evaluation

The nuclear power plant project was first investigated in 2018. The National Audit Office (NAO) examined the power plant and various elements of project planning (Nunes, 2019). According to the agency, this power plant construction project posed a significant risk. The biggest barriers were discovered to be a multitude of difficulties, including cost of building the plant, delays and several safety worries.

Additionally, a study also exposed that the British government is not doing enough to reduce the risks connected to the nuclear power plant project. According to many reports, the government is said to have had contingency planning and did not perform a cost-benefit analysis (Smith, 2017).

3 Core Elements of the Hinkley Point C Project

3.1 Budget Analysis

The Hinkley Point C nuclear power plant is a big endeavor. The power plant was anticipated to have an initial budget of 16 billion pounds (Adam, 2019). Despite these challenges and problems, the expenditure for this project has already grown to about £25–£26 billion (Smith, 2017). At the nuclear power plant facility, two enormous nuclear reactors are being constructed. The project had to increase its budget as globally a price rise is seen because of inflation and steeply growing cost of several components.

3.2 Time Analysis

The British government revealed intentions to construct nuclear power plant in 2008. For construction, EDF and China General Nuclear Power Corporation (CGN) were put in agreement. The government then gave its go-ahead in 2012. Construction for the power plant began in 2016 (Font, 2016). In 2021, the EDF announced that due to the COVID-19 pandemic, the completion date of the power plant will be postpacked to 2026 (Vance, 2015). In 2022, due to the increase in cost, it was announced that the completion of the project will be further delayed and the construction cost was also increased to 26 billion pounds.

When the Hinkley Point C project was first proposed it was estimated that the nuclear power plant will be operational in 2017 (Vance, 2015). However various factors such as labour shortages, reduced productivity of the workforce, various regulatory delays and weather-related interruptions have played the project from its beginning. It is now estimated that the project will not be finished before 2025. Recent reports also show that the nuclear power plant will not be operational until 2027 (Jones, 2017).

3.3 Quality Evaluation

The Hinkley Point C project has been subjected to a number of concerns regarding its quality evaluation. Factors such as the use of substandard materials as well as the poor workmanship of the contractors have been responsible for various delays and cost overruns. In 2019, EDF Energy, the main company responsible for the construction of the nuclear power plant, was fined £1.5 million for safety breach issues at the construction site (Oldham, 2019).

3.4 Stakeholders Engagement and Management

The stakeholders of the Hinkley Point C project are the government of the United Kingdom itself, companies such as EDF Energy and China General Nuclear Power Group who are building the plant, the local community, and the citizens of England (Jones, 2017).

The most significant stakeholder and the one with the most influence is the British government. The government is also in charge of overseeing the power plant's regulation and finances. Since the beginning and initial planning, key stakeholders are heavily influencing and supervising every stage (Riley, 2016). Concerns about safety and the environment related to the development and operation of this new nuclear power plant are also of importance.

3.5 Risk Assessment and Management

Several risks are present in this project. Increased cost of material is making the power plant expensive. Many new technical challenges are causing more delays. Recently, reports have been published that talk about the environmental and safety issues of nuclear power plants as well. Multiple delays have caused the project's cost to rise to approximately 26 billion pounds (Nunes, 2019). Additional delays will raise this cost and reduce the project's cost effectiveness. Another danger aspect is the nuclear power

plant's safety problems. Despite the project's use of cutting-edge nuclear technology, it is crucial to guarantee the safety of the power plants. The project has effects on the ecosystem as well. The plant's main output will be radioactive waste. The correct evaluation of the disposal of this radioactive waste is required. The nuclear power facility will also need a significant amount of water to cool its reactors. The country's water supply might become contaminated if this water is dumped. Another issue to consider is air pollution. Carbon dioxide and other greenhouse gases will be released by the power plant (Vance, 2015). It is crucial to accurately analyze the potential for air pollution even though it will be far less than traditional power plants.

4 Initial Project Plan and Overruns

The initial plan for the Hinkley Point C project was proposed with a number of assumptions in mind. Factors such as budgeting and funding, regulatory approvals, and minimization of technical difficulties were at the core of the timely completion of the project. Due to various problems, the project has been significantly delayed.

Safety assessments and risk management were done poorly during the initial planning. Since the initial project plan, the United Kingdom's government has also imposed additional safety requirements which have significantly slowed down the construction of the power plants (Thomas, 2016). The increase in budget has also played a role in the failure of initial project plans.

4.1 Complexity of the Project

In the Hinkley Point C project, two nuclear reactors are being constructed. This is a difficult endeavor with many obstacles. Due to a lack of cooperation amongst the contractors, a project of size has experienced substantial delays. Authorities participating with this project have also disregarded a number of safety requirements.

4.2 Rising Cost of Materials

Recently, inflation has become a rising concern all around the globe (Smith, 2017). Inflation is also making the cost of raw materials high. Because of this, the nuclear power plant being built is also facing uncertainties. The project had to increase its budget many times. This is making the critics question the viability of the project.

4.3 Poor Workmanship

EDF Energy and the China General Nuclear Power Group, respectively, built the nuclear power plant (Riley, 2016). These companies' failure to provide qualified employees has caused the project to be delayed. It was recently discovered that the nuclear project is not being completely assessed or tracked since they haven't fulfilled with several safety and regulatory criteria. According to the original project blueprints, skilled workers and contractors could build the power plants in a specific length of time. Due to these companies' failure to meet their goals, the power plant's completion has now been delayed until 2027 (Thomas, 2016).

4.4 Risk of Further Delays

According to current reports, the Hinkley Point C project is dealing with a great deal of uncertainty. Because of high cost, the price hike, the nuclear project had to go through budget overruns. Critics are now looking at the expense and as a result the project's viability has thus been called into doubt (Riley, 2016).

5 Recommendations

The United Kingdom's government proposed building its nuclear energy plant in order to cut carbon emissions. The global climate change and other environmental issues are being questioned in the energy sector (Nunes, 2019). However, because this project is expensive and has seen major cost overruns and delays owing to a number of causes, it is up to the government to devise the required solutions to guarantee the project's timely completion within a constrained budget.

The UK Government should carefully evaluate the contractors of the project and put further pressure on them to complete the project within the set time and budget. The two main contractors EDF Energy and China General Nuclear Power Group are known for their expertise (Marshall, 2013). However, it is evidence that these contractors are failing in this project due to their lack of proper contingency plans.

The government should work closely and propose regulatory solutions to deal with unexpected delays and cost overruns. The Government of the United Kingdom should also review various safety requirements and risk management of the Hinkley Point C project. By working with the project's developers and contractors, the government will be able to ensure proper funding as well as manage various risk factors associated with the timely completion of this project.

Reviewing the environmental factors associated with building and running nuclear power plants should also be a top priority for the government. As the Hinkley Point C project was put in place due to environmental concerns, the government should closely monitor further environmental issues which may arise in the future (Vance, 2015). Overall, as the Hinkley Point C project is a high-risk one, and it has faced various challenges and delays, it should be a top priority for the United Kingdom's government to mitigate the risk factors and ensure the success of this ambitious project.

6 Conclusion

The Hinkley Point C project is an important part of national budgeting and planning. This ambitious project by the United Kingdom's government is set to not only meet the energy demands of the country but also ensure environmental responsibilities are being met by the country. In the face of global climate change dilemmas, various countries are looking into alternative solutions for meeting their energy demands. Nuclear power plants are now being dubbed as a safe way to meet a country's energy demands. However, projects such as the Hinkley Point C project are proving to be difficult and costly. The Hinkley Point C project has matched various challenges and risk factors since its initial proposal. As this project has seen cost overruns and significant delays it is up to the Government of the United Kingdom to take responsibility for the timely completion of this project. The Government of the United Kingdom is the most powerful stakeholder in this project and has the highest authority. The government is also responsible for providing financial support and regulating the power plant. To ensure a secure supply of energy and create new jobs to boost the economy of the country, the United Kingdom's Government is strongly influencing and overseeing all aspects of the Hinkley Point C project. It is an important responsibility of the government to balance the various interests of itself and other stakeholders. The government should come up with regulatory solutions as well as carefully evaluate various risk factors. Putting pressure on the main contractors for the construction of the power plant should also be prioritised by the government. Ensuring timely completion of the Hinkley Point C project within a limited budget will not only prove the effectiveness of the government but also ensure a clean energy source for the people of the United Kingdom.

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