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INTRODUCTION

Hinkley Point C in Somerset represents one of the most significant projects in the United Kingdom. The massive project, with costs exceeding 26 billion pounds, is a nuclear power plant intended to provide low-carbon electricity. The project is aim is to supply electric power to approximately 6 million homes and create numerous new employment opportunities, thereby fostering the island is economy to prosper (EDF, 2015).

In 2008, the British government decided to support Hinkley Point C (BBC, 2008), anticipating that the island would benefit from electricity generated by the new nuclear power plant by 2020. The plan could not be realized as initially projected due to numerous issues that caused delays in the project: the Covid-19 pandemic, unforeseen cost escalations, various investigations for state aid approval. The project was approved in 2016, and actual construction began a year later, in 2017, with the operational date extended to 2027 (NSE, 2023).

Drawing upon the technical elements of effective project management discussed in Assessment 1 (Budget, Schedule, Risk Factors, Quality, and Stakeholders), the essay shapes the debate around the question "Is Hinkley Point C in Somerset a failure or a real success?" We will highlight the lessons we can learn from the project, based on substantial justifications. We will describe what we aim to avoid repeating in other projects and critically analyze the situation of the Hinkley Point C project. Finally, we will structure the conclusions of the analysis and propose valid recommendations for a future project of similar magnitude.

Status of Hinkley Point C in 2023

In the previous project description, we outlined numerous project management errors related to the Hinkley Point C nuclear power plant, including:

- The allocated budget, which escalated significantly year by year, indicating poor financial strategy management and leading to the declaration of it as a "controversial investment" with costs projected to exceed 30 billion pounds (BBC, 2022).
- Significant delays in project completion. The PMBOK Guide emphasizes that an effective project must adhere to its schedule and that delays result in financial losses, reduced efficiency, and project instability. Time-related errors in the Hinkley Point C project stemmed from workforce shortages, various legal disputes, technical-engineering issues (whose resolution incurred high costs and time losses), as well as external events not under project management control: COVID-19, Brexit, the Ukraine War.
- Hinkley Point C demonstrated its commitment to quality each time it underwent verification, including materials, safety and security standards, or construction methods (Somerset Council, 2023). Quality is crucial in any project, especially one based on a nuclear power plant.

- History reveals that nuclear projects entail risks, and to mitigate them, experienced personnel must be engaged, and feasibility studies must be conducted. Risks should be identified from the project is outset to avoid them (PMBOK Guide, 2013). The community, skeptical and fearful, initiated protests due to concerns associated with the construction of the Hinkley Point C plants in Somerset (Global Nuclear Energy, 2023).
- Stakeholder conflicts led to increased costs, extended project timelines, and inefficient resource consumption. A harmonious understanding between the government and the community, aligned with a common goal, facilitates project evolution, as currently witnessed.

To thoroughly analyze the success or failure of the Hinkley Point C project, it is crucial to understand not only its foundational aspects as presented earlier, including both positive and negative aspects, but also the current status of the project. According to the latest publications from EDF regarding Hinkley Point C, the trajectory of the project seems to be heading towards success.

In May 2023, one of the warehouses in Somerset goes bankrupt, leaving employees without jobs. This is one of the first moments when the Hinkley Point C project achieves one of its intended objectives: employment creation. Furthermore, the project also launches 30,000 training courses to enhance skills (EDF, May 2023).

Following a successful late spring, the beginning of the summer in 2023 marks a significant event: the visit of Parliament member Sir Keir Starmer to Hinkley Point C. The Leader of the Labour Party stated, "nuclear - part of the future." Anticipating the success of Hinkley Point C and having confidence in the project is triumph, Sir Keir Starmer deems the construction of multiple nuclear power plants in the United Kingdom absolutely necessary. Reliable energy and reduced carbon emissions are viewed as methods to combat pollution (EDF, June 2023).

The project is progressing on the Bristol Channel, with the assistance of two ships that contribute to connecting Hinkley Point C is three cooling water tunnels to the six concrete intake head structures installed on the seabed the previous year (EDF, July 2023). Both vessels, Sea Challenger and Neptune, understand their roles and optimize the execution time of the work, improving working conditions. These two ships are the "helping hand" the project needed to expedite completion, fostering community confidence. Consequently, the EDF publication on August 11, 2023, highlights the positive impact that Hinkley Point C has on the economy and social mobility in the Somerset area. Employment opportunities have made the Somerset population increasingly youthful, with figures from the Heart of South West Local Enterprise Partnership (LEP) indicating a significant rise in the average population aged between 25 and 39 years. The Hinkley Point C project is aiding the region in achieving growth in workforce employment and funded enterprises (LEP, 2023).

Hinkley Point C: SUCCES or FAIL

Analyzing the success or failure of a project should start with understanding the underlying reason for its inception.

The primary reason behind the conception of the Hinkley Point C project was the efficient supply of low-carbon electricity. Electricity is vital to life, but human intervention and overuse of electrical energy have contributed to climate change through environmental pollution. With this in mind, the rationale behind developing the Hinkley Point C nuclear power plant is justified and brings benefits not only to the Somerset community but also to Europe.

Another motivation for Hinkley Point C was to create jobs to stimulate the United Kingdom economy. Both of these reasons, if achieved, through the successful completion of the project, would be considered a significant success for the UK is energy future.

While reduced carbon emissions help the climate, constructing a nuclear power plant has negative impacts on nature, which is why careful monitoring of Hinkley Point C is construction methods is essential. The project has adhered to quality standards and nuclear environmental, health, and safety regulations.

Figure 1: Hinkley Point C Sea Wall (Source: Constructing Excellence,2019)

Conformable Constructing Excellence (2019), the Hinkley Point C project disposed of “excavation arisings processed & recycled to be used as backfill behind the wall”. At the same time, the safety rules were kept, considering that “The working environment is one of the highest tidal ranges in the world, with 10-20mm of silt deposited by the tide over everything, twice a day” and “20% of the excavation contaminated with Hydrocarbons, which had to be captured before they entered the marine environment.” (Constructing Excellence,2019)

Although the construction of such a power plant brings numerous benefits, including job opportunities, economic prosperity, and enhancing the region's reputation, due to the risks associated with such a facility, panic ensued within the community initially.

A sense of unease was triggered by both the significantly exceeded budget and the extended timeline, causing panic, disillusionment, and casting doubt on the success of the Hinkley Point C project. The timeline overruns incurred costs, and these costs, in turn, led to project completion delays, with the two factors mutually influencing each other.

Despite the existence of errors, the project has made progress and has not been restricted either by the issues stemming from poor management or by external factors such as the COVID-19 pandemic.

The project progress is monitored, and accomplishments are compared to the original plans. The purpose of tracking progress is to determine if the project remains sensible and goal-effective, as well as cost-effective. Based on the forecast, a decision is made whether the project is viable and can proceed (Hedeman, 2009).

Effective collaboration among Project Management, the community, the workforce, the client, and the environment leads to genuine project success.

The controversies raised by the Hinkley Point C project due to timeline overruns and massive budget increases do not render the project a failure. Despite these challenges, they have generated lessons that will prove valuable for future energy projects. I believe that I can learn from the mistakes of Hinkley Point C, and overcoming these errors positions the project as a success for the future of energy in the United Kingdom.

Why is Hinkley Point C a success for the future of energy?

Hinkley Point C stands as a successful project for the future of the United Kingdom energy sector, surpassing its errors and achieving its initial objectives, including job creation, even prior to project completion.

The project is capacity to tolerate errors is a clear indication of Hinkley Point C is success for the future of UK energy. Moreover, its ability to sustain a budget significantly surpassing initial proposals serves as another testament to its achievement.

The United Kingdom will achieve energy security, benefit from a diversified energy mix, and become a provider of "gentler" energy for parts of Europe. The risk-free completion of this project underscores technological advancement. Following Hinkley Point C completion, the UK will play a pivotal role in the evolution of nuclear energy and possess the capability to develop more low-carbon emission energy-generating reactors.

Noteworthy is Hinkley Point C is estimated minimum lifespan of 60 years, ensuring energy supply in the UK for six more decades. After the project is operational and begins delivering low-carbon emission energy, it could serve as a basis for spawning other ventures across multiple industries.

As previously detailed, the Hinkley Point C project has yielded social benefits, rejuvenating the Somerset region population due to the numerous job opportunities it offers and will continue to provide post-completion. Another indicator of success is the endorsement by leader Sir Keir Starmer, who expresses confidence in the project and supports the future development of nuclear power plants.

The ultimate justification for Hinkley Point C is success in shaping the United Kingdom is energy future lies in its demonstration that a low-carbon emission energy source is the energy mix. When achieved with risk mitigation, Europe need not fear.

Lessons Learned from Hinkley Point C

The Hinkley Point C project serves as a lesson for project management and for nuclear power projects aimed at providing low-carbon electricity. It exemplifies the lesson of tolerance—tolerance for time, budget, and risks in achieving a successful project (Hedeman, 2009).

The Hinkley Point C project offers significant lessons for project management, the global nuclear industry, and the worldwide energy sector. The project evolution stands as the lesson to be learned.

Among the lessons to be gleaned is the anticipation of issues that are external to the project or industry. Hinkley Point C faced unforeseen events: the COVID-19 pandemic, the disruption caused by Brexit, and the threat of conflict emanating from Eastern Europe (the Ukraine-Russia war). It is crucial for project creation to factor in external elements that could impact workforce, budget, and timeline.

An essential lesson for the electricity industry pertains to quality standards. Hinkley Point C demonstrated robust quality control.

The errors of the Hinkley Point C project serve as lessons for future projects across industries. Miscalculations in the project budget and the lack of cost control are risks that could have led to the ultimate failure of the project. Hinkley Point C benefited from governmental support, and the project is strong objective of providing low-carbon electricity propelled it forward.

Another error of the Hinkley Point C project is the overrun of deadlines, causing confusion, imbalance, and budget escalations. The project timeline was established distinctly; however, permit delays, unforeseen events, and a shortage of skilled personnel led to substantial delays. The lesson to be learned is for future projects to have calendars that account for the emergence of external events.

Conclusion

The analysis aimed at a critical evaluation, seeking to determine with robust justifications whether the Hinkley Point C project constitutes a failure or success for the future of energy in the United Kingdom.

As mentionated, I have demonstrated that the project epitomizes the essence of success. Despite encountering unfavorable, unforeseen external events and grappling with errors, the Hinkley Point C project has effectively managed and transcended these unfavorable situations, showcasing its

worthiness of support. It stands as a costly, long-term endeavor that is poised to deliver manifold benefits.

To propel the energy success in the United Kingdom to greater heights, several recommendations should be taken into account.

Recommendations

In order for future projects within the nuclear industry to achieve success, I can provide several robust recommendations, drawing from the lessons learned from Hinkley Point C.

The primary recommendation would involve a meticulous analysis of the errors encountered in Hinkley Point C, as well as in other international projects within the nuclear industry, such as the Chernobyl disaster, the opening of Europe is largest reactor at Olkiluoto 3 in Finland, the Fukushima-Daiichi nuclear accident, among others.

Firstly, I recommend an improved budget estimation and a more effective and precise cost control approach. For forthcoming projects, I propose implementing an efficient strategy for anticipating potential budget overruns. Additionally, it is essential to consider from the project is outset that external factors could impact both the budget and the deadlines.

Secondly, I suggest a continuous projection of the project status to facilitate informed decisions regarding its success.

Lastly, to ensure feasibility, the project manager must successfully assemble a significant number of capable individuals who collectively propose ideas aligned with the project's objectives. As Simon also says (2018), "that for a group to perform as a team there needs to be a focus on objectives and also processes in place whereby individuals can learn and grow as a result of their experience. It is the leader's role to facilitate the transition from group to team. The leader of any project has a direct and significant impact on team performance."(Starting out in project management,2018,p.46)

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