



ASSESSMENT 1

ESSAY (PROJECT PLAN)

Module: Project Management
Module code: LCBB5005

Prepared by:

Mostapha Boulkheir (2114677)

Lecturer: Dr Anupam Mazumdar
University of Wales Trinity St David
February 2023 Term

Contents

Introduction	2
Core elements of the PMBOK - Hinkley Point C project	2
Project Cost Management	2
Project Time Management	3
Project Quality Management.....	4
Project Stakeholder Management	4
Project Risk Management.....	5
Conclusion.....	6
References	7

Introduction

In 2015, the British government gave the go-ahead for the new Hinkley Point C nuclear power station in Somerset, UK, is the most expensive infrastructure project currently in place in Europe, with a starting cost of £18 billion. The Hinkley Point C project was entrusted to the French firm EDF, with support from the British government and the Chinese company is China General Nuclear Power Corporation, which put up most of the funding. EDF stated at the start of the project that it would build the nuclear power plant within a maximum of ten years.

The success or failure of a project are the elements against which the outcome of a project must be assessed, in terms of whether it achieved its objectives.

When we talk about the success of a project, we usually refer to the fact that the object of the project (a product or a service) has been released to the 'customer' meeting all the requirements and standards set. From this simple and generic perspective, one can easily deduce the basic standards or fundamental elements that are important for the success of any project, some of which may be:

- Costs or Budget
- Time
- Quality
- Stakeholders
- Risk assessment

In the realisation of the Hinkley Point C project, it was seen that these elements were not evaluated as they should have been, leading this project down the road to failure. In this paper, we will evaluate some of the key elements of the PMBOK for the NPP project, where we will go to understand what and how it went wrong.

Core elements of the PMBOK - Hinkley Point C project

The Project Management Body of Knowledge (PMBOK) suggests areas of knowledge that are essential to effectively manage a project. Effective management of these can lead to project success and realisation. Considering the Hinkley Point C nuclear power plant construction project, let us look at the areas of cost, time, quality, stakeholders, and risk assessment.

Project Cost Management

An important aspect of project management in the project planning phase is the budget and a detailed and accurate calculation of all project costs (hence the importance of time, resources and thus the total project cost). Indeed, the application of an effective evaluation method in the planning phase is essential for the proper implementation of activities and achievement of the project objective (Lock, 2013).

In the case of the Hinkley Point C project, it presents itself as one of the most expensive infrastructure projects in recent years, as the final bill in 2015 predicted a cost of £18bn, with around a third of the funds coming from China General Nuclear Power Corporation, a partner in this venture with France's EDF, which will build and operate the plant, and which already has the existing reactor in charge. Additional capital of around 15 per cent, or £2.7 billion, has also been provided to cover any additional expenses (team, 2016).

As a cost planner, EDF had immediately issued an evaluation that seemed to be the right and consistent one.

Then immediately in July 2017, although the work was still only at the preparatory stage, the French company EDF made it clear in a statement that it had to revise its plans and informed today that the cost of the project was estimated at around £19.6 billion.

In the following years EDF continued to increase the cost of the project, where in 2022 it estimated the cost to be between £25bn and £26bn, almost £8bn more than the initial projected cost.

According to Naschert (2022), this continuous change in costs is due to the shortage and limitation of people, resources, and supply chains in recent years. In addition, the cost of materials and engineering has increased, as has the cost of certain activities such as maritime work.

Increasing costs is one of the factors that can lead to failure for a project. This can be associated when a project exceeds the initially set budget and can occur due to an unrealistic or poorly detailed budget discussed during the project planning phase (Lock, 2013). As in the case of Hinkley Point C, this continuous increase in costs will not go on indefinitely, during the first estimate of the project EDF estimated a risk of increase of 15% (£2.7 billion) but in 2022 it presented an increase of about 44% (£8 billion), this could be a determining factor for the failure of this construction.

Project Time Management

Time management is the management of time spent and progress made on project activities and tasks. Excellent time management requires the planning, scheduling, monitoring and control of all project activities to bring the project to successful completion (Lock, 2013).

In 2016, following the UK government's approval of the construction of the Hinkley Point C nuclear power plant, the French company EDF informed that the handover, the operational handover of the plant, would be at the end of 2025.

Then the company EDF in May 2022, following an inspection, stated that there could be further delays in the completion of construction, bringing the delivery date to 2027. Since construction of the new plant began, a delay of about 18 months in total is estimated (News, 2022).

One of the causes, as EDF points out, was the pandemic due to Covid 19, that during the various closures and restrictions the supply chains of resources and materials were severely restricted, while the costs of the same materials and many activities increased (Cann, 2020).

No one on the planet expected a pandemic, EDF not only communicated the delay, but also an increase in the budget due to these delays.

As Lock(2013) argues, project slippage can occur, but not necessarily. At the beginning of the project draft, if the key points of the project are clarified, the project plan is analysed and made clear, the objectives can be achieved without exceeding the predetermined timeframe. The effects of changing the project timeframe have consequences on the final product that can lead to the road to failure without a return.

Project Quality Management

Project quality management is the set of processes and activities that are performed within a project to ensure that the quality of deliverables and project performance are in accordance with the project's objectives and requirements (Burke, 2013).

As in the case of the Hinkley Point C nuclear power plant, there is a project complexity at the level of technical and scientific issues, here you also have many organisations involved and nuclear regulations that must be applied without any margin for error.

A few years after the start of construction of the nuclear power plant, the Office for Nuclear Regulation (ONR) carried out an inspection at and found documents that had been falsified for the project. ONR investigated the procurement systems of the company EDF, which was entrusted with the construction of the power plant. This led to the identification that there are areas where there are gaps and gaps in clarity (SMITH, 2017).

Furthermore, according to SMITH (2017) during an inspection in 2017, problems were also found with some foundation slabs. During this, problems were found with the quality of the concrete, where the French company EDF had to remove and rebuild this part of the plant again, adding costs to the initial budget.

Quality management of a project is a fundamental part of success, needing to track and have a very effective quality control method that leads to highlighting all the important areas of the project. In addition, project quality also leads to lasting success over time without hiccups or problems can arise (Burke, 2013).

Project Stakeholder Management

One of the first steps in project management is to identify all project stakeholders from the very beginning. This process must be repeated until the end of the project to ensure that all stakeholders have been identified.

Project Stakeholders are all individuals, groups or organisations who have an interest either directly or indirectly in the realisation of the project and its results. They can influence or be influenced by the project through the degree of their interests: not all stakeholders can have a positive impact on the project, some of them are disinterested or even against the initiation and realisation of the project (Burke, 2013).

For the Hinkley Point C nuclear power plant project, we have three types of investors/interested parties. The first is China General Nuclear Power Corporation (CGNP) which has invested about one third of the funds. The second, a partner of the first, is the French company EDF, which will build and

operate the plant, and which already has the existing reactor in charge. Last is the British government, which has provided capital for the construction, but once built, the nuclear power plant is expected to provide 7 per cent of the UK's energy needs (Energy, ND).

This aid from the government also comes because, in 2018, the French company EDF had debts of over EUR 37 billion and without substantial external support it would not have been able to take on the construction. This is also where CGNP's investment came in, which had to meet EDF's shortcomings. Another relevant factor is the agreement made by the British government, where through an agreement with EDF the power station will have a fixed price once in operation, which will guarantee an operating price of £92.50 per megawatt-hour (MWh) produced for a period of 35 years (group, 2021).

As seen, EDF, which is in charge of the important part, i.e. the construction, was not able to bear all the costs and had to ask for help from external parties. This leads to bringing together several entities for the realisation of the project. The risk in this case is that one of the parties changes the rules or withdraws from the project, this could lead to enormous damage to the project which could lead it down the road to bankruptcy (O'Neill, 2021).

Project Risk Management

A risk is any area of uncertainty that represents a threat or an opportunity for the project. Most of the attention required by risk management will be directed at avoiding or reducing the probability of events that could lead the project to failure. To manage the risks of a project, it is first necessary to identify them, assess their probability of occurrence and estimate the impact they might have. Risk identification and assessment is an integral part of project management to limit the level of imponderability (Lock, 2013).

A certain amount of risk is unavoidable in a project to achieve its objectives and to exploit any opportunities that may arise. Thus, proper management of a project aims to contain its exposure to risk by taking measures to reduce and, in some cases, eliminate the risk of not achieving the set objectives.

In the case of the Hinkley Point C project, an effective approach to risk analysis needs to consider the many factors, which influence the risks and impacts generated by nuclear installations and the way in which these risks are perceived.

According to Energymedia (2016), during the implementation of the Hinkley Point C project, it conducted a risk assessment, using 5 experts, to examine all risks and how they can be avoided and, above all, how to bring them all under control. EDF's assessment identified some important risks, where these need to be more identified and must be controlled to further reduce their possibility. In addition, other risks may be encountered during the project where one must be prepared to deal with them for the success of the construction.

When you know what the potential risks of each project are, you can define reasonable project goals and allow the project process to succeed without any problems (Burke, 2013). Some of the risks may be:

The risk associated with costs occurs when a project exceeds the initially established budget and can arise due to an unrealistic or poorly detailed budget discussed in the planning phase of the project. This is a clear example of the Hinkley Point C project where its budget is continually increasing as we have seen in the section on costs where it can lead to failure if this risk is not assessed well.

Time factor risk, also known as project schedule risk, is related to those activities in a project that take longer than expected. Delaying deadlines could affect other aspects such as the budget, delivery date or overall performance. This was also discussed in the section on timelines, where a continuous shifting of the construction end date of the Hinkley Point C site was highlighted.

In order to try to assess these risks, one must already proceed from the planning stage to assess all risks and try to control them to have a successful project without hitches that may lead to failure.

Conclusion

As seen above, the situation of the Hinkley Point C project is critical. There are many factors that determine the success of a project that are not satisfactory.

The construction time is getting longer, every time there is a revision to the project there are always time increases.

Failure to adhere to the agreed timetable also leads to an increase in costs. In addition to the fact that costs also continue to rise due to other factors, such as the cost of labour and raw materials. Quality as seen has also been affected, leading to increased time and costs.

All these factors indicate that the project does not have a solid management basis and has not had a proper initial evaluation. The continuous increase in time, but above all in costs, does not have a good influence on the project. The costs for a project are limited, once you can no longer cover those costs the project is doomed to fail completely.

The following project is on the road to failure, right now the only solution is to act and try to re-plan the design processes and try to find the best solution to achieve success. This will obviously have to be done by reviewing many fundamental factors of the project.

References

- Burke, R. (2013). *Project management : planning and control techniques*. Chichester, West Sussex : John Wiley & Sons Inc.
- Cann, N. (2020, 10 01). *Coronavirus update from Hinkley Point C – 19 October*. Retrieved 04 06, 2023, from edf energy: <https://www.edfenergy.com/energy/nuclear-new-build-projects/hinkley-point-c/news-views/coronavirus-update-19-october>
- Energy, N. (ND, ND ND). *Hinkley Point C Nuclear Power Station*. Retrieved from NS Energy: <https://www.nsenergybusiness.com/projects/hinkley-point-c-nuclear-power-station-uk/>
- group, H. P. (2021). *The implications of Hinkley Point C: independent report*. Welsh: Hinkley Point C stakeholder reference group.
- Lock, D. (2013). *Project Management*. London: Routledge.
doi:<https://doi.org/10.4324/9781315245911>
- media, H. P. (2016, 03 12). *Press release: Hinkley Point C risk review*. Retrieved 04 06, 2023, from Edf Energy: <https://www.edfenergy.com/energy/nuclear-new-build-projects/hinkley-point-c/news-views/risk-review>
- Naschert, C. (2022). *EDF adds £3B to Hinkley Point C costs, points to materials cost inflation*. Charlottesville: SNL Financial LC. Retrieved from <https://www.proquest.com/wire-feeds/edf-adds-£3b-hinkley-point-c-costs-points/docview/2671449021/se-2?accountid=130472>
- News, W. N. (2022, 05 20). *EDF revises Hinkley Point C schedule and costs*. Retrieved 04 06, 2020, from World Nuclear News: <https://www.world-nuclear-news.org/Articles/EDF-revises-Hinkley-Point-C-schedule-and-costs>
- O'Neill, R. (2021, 03 16). *Concerns enormous nuclear development could have 'adverse impact' on Severn estuary wildlife*. Retrieved 04 06, 2023, from Wales Online: <https://www.walesonline.co.uk/news/wales-news/hinkley-c-nuclear-severn-estuary-20165575>
- SMITH, C. (2017, 10 16). *Concrete quality issues impact Hinkley*. Retrieved 04 06, 2026, from Ge Plus: <https://www.geplus.co.uk/news/concrete-quality-issues-impact-hinkley-16-10-2017/>
- team, H. P. (2016, 05 16). *Hinkley Point C project cost*. Retrieved 04 05, 2023, from edf energy: <https://www.edfenergy.com/energy/nuclear-new-build-projects/hinkley-point-c/news-views/cost-clarification>