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As an advisor to the petroleum minister of Saudi Arabia, I have been asked to start the Carbon Capture and Storage Project to significantly expand Saudi oil production capacity. In the following proposal of project management, I will outline the complete project.

Project Outline

Description of Project

Capturing and storing carbon has become an innovative approach reducing and recycling carbon emissions. However, this technology has largely remained an untouched area in the Saudi Arabia. The petroleum ministry of Saudi Arabia wants to expand its oil production capacity, so they understands that they have the capability to launch new technology to capture carbon in order to reduce the carbon emissions in its depleted reservoirs of oil. The ministry believes that by capturing carbon from key emitters, including refineries and industrial units, and transportation to storage spaces it can then be dropped into underground areas. As a result, the CO2 remains outside the environment and prevents the CO2 emissions, a main factor of global climate change. However, this can expand oil production capacity in underground oil reservoirs.

Project Scope

Firstly, stating scope of the project is an important step. However, the project plan needs to comprise a much more comprehensive scope than the charter. There is an extensive array of emerging technologies of carbon capture and storage being proposed across the world, involving new schemes of energy generation which can be flourishing for the industries related to oil and gas, early pioneers in the technological development of CCS (Rackley, 2009). However, few of these schemes can be logically considered appropriate for coal-based power generation plant.

Schedule Baseline and Work Breakdown Structure (WBS)

The second step will be discussion of the WBS and Schedule baseline. This discussion will address the use of WBS in managing the project's scope. The WBS facilitates with the work packages to be carried out for the project's completion, the work packages are defined by the WBS Dictionary, and the schedule baseline furnishes a reference point for handling project progress as it relates to timetable (Pratt, 2010). The schedule baseline and WBS will be developed in Microsoft Project.

Goals and Deliverables

This phase in the project is critical as it needs the development of a detailed description of the project to comprise goals, deliverables, assumptions, and constraints and develops the structure within which project function must be carried out. The basic goal of this project is to implement the technology of Carbon Capture and Storage (CCS). All the assumptions related to the project will be considered. In the end, this technology will expand the oil production of Saudi Arab and it can also reduce the CO2 waste.

Determine Available Resources

The resources of project management refer to all the items that are necessary to perform the project activities. In the effective implementation of CCS technology project to increase the oil production, the basic resources will be skilled people, proper equipments and tools, better facilities, time, sufficient budget, and much more. These all are the basic resources of the current project. All these resources will be computed and handled in effective and efficient manner. As a project manager, I generally will not have direct control of these resources, but will have to handle them through matrix management.

Planning Activities

The project manager implements the plan of project management and the detailed work plans. After that, time worked and tasks accomplished are tracked and assessed. All the activities of the project will be designed and planned according to the people skills and capabilities. Every activity will be closely monitored through proper documentation of the progress level. In this regard, progress report on the daily basis will also be maintained to enhance the overall project. The objective data will be tracked and reviewed by the following steps (Pratt, 2010):

- Gathering precise data
- Assessing the data with members of project team
- Comparing the gathered data against the detailed work plan to evaluate the overall progress of project both precisely and objectively.

Cost Management Plan

In this step, the project manager will clearly detail the cost management plan that defines how the project's costs will be managed throughout the lifecycle of project (King Abdullah Petroleum Studies, 2011). In this regard, the Cost management plan will find a responsible person to manage costs. It will identify the authorized person to approve changes to the project or its overall budget and the ways in which cost performance is quantitatively measured and reported.

Budgeting

	Pulverized coal	Integrated gasification combined cycle	
Natural gas combined cycle			
Without capture (reference plant)	0.03–0.05	0.04–0.05	0.04–0.06
With capture and geological storage	0.04–0.08	0.06–0.10	0.06–0.09
(Cost of capture and geological storage)	0.01–0.03	0.02–0.05	0.02–0.03
With capture and Enhanced oil recovery	0.04–0.07	0.05–0.08	0.04–0.08

All costs of the project refer to costs for power from recently built, larger-scale plants. Costs of natural gas combined cycle are based on the prices of natural gas that is 2.80–4.40 U.S dollars per GJ (LHV based). Costs of energy for PC and IGCC are based on the costs of bituminous coal 1.00–1.50 U.S dollars per GJ LHV. The costs are very reliant on the prices of fuel (which vary incessantly), besides other aspects like capital costs. Also note that for EOR, the savings are

larger for high oil rates. Present prices of oil and gas are considerably higher than the figures mentioned here.

The CCS's cost relies on the capturing and storing cost, which differs in accordance with the method employed. In saline formations or depleted fields, geological storage usually cost 0.50–8.00 U.S dollars per tonne of carbon injected, with extra 0.10–0.30 U.S. dollars for costs related to monitoring. When storage is fused with enhanced oil recovery to obtain extra oil, however, the storage could give net profits of 10–16 U.S. dollars per tonne of carbon injected. This would likely go against some of the consequence of the CO2 capture when the oil was flamed as fuel. Even considering this, as the mentioned figures reveal, the benefits do not outweigh the additional capturing costs.

Time Management and Schedule

Time management and scheduling is a vital stage in projects. Time management of a project is to plan all the activities of the project in time and to fly in order to meet the best initial commitments (King Abdullah Petroleum Studies, 2011). However, this project will take almost six months to complete. To do this, I will manage time and schedule through planning all the daily activities and decompose the broad strategic objectives into tangible and realistic results (deliverables) to organize time and follow its priorities every day.

Quality Management Plan

The project manager will discuss the approaches in which quality management will be employed to make sure that the deliverables for the project are in consistent with a formal standard of acceptance. The deliverables of the project will be outlined so as to provide a base and insight of the tasks and what work must be planned. The process of quality management refers to a process through which the firm completes the work to a formal acceptable standard.

Risk Management Plan

In this phase, the project manager will give a general description for the way taken to find and handle the risk factors related with the project. Risk is the product of the likelihood of occurring causes and the severity level of the effects (Pratt, 2010). Generally, in industrial plants the main reasons of various disasters are coped with technological. Put simply, requirement of materials,

tools and equipments, development of standards and methods, programs of training, etc. Therefore, the search for risk diminution concentrates on minimising likelihood of happening of the causes that activate the series that causes disastrous events and their effects. (Denstedt & Kirby, 2009)

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