

Helios solar farm project scope construction essay



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The purpose of this scope statement is to define, document, approve, and control the scope of a 100MW Solar Energy Plant Project of Phoenix Group. The appointed project team shall plan, execute, control, and close the project according to this document.

Overview of the project

Project Name: Helios Solar Farm

Nature: 100MW Photovoltaic Power Plant

Location: Greece

Time: 5 years after project initiation date

Cost: 400, 000, 000. 00 Euro

The renewable energy sector has experienced significant growth in recent years fuelled by EU energy policy, technological innovation, and rising fossil fuel prices. On April 25, 2007, the Hellenic Regulatory Energy Authority (REA) issued a National Program for the Development of Power Stations in Greece, which state that by the end of 2010, 21% of Electric Energy consumed must be from Renewable Energy sources as per commitments to EU Strategic Development. Encouraged by the policy and the continuous investment return and low operating risk nature of Solar Power Project, the Phoenix Group decide to establish a 100MW Photovoltaic Power Plant named “ Phoenix Solar Energy Plant” in Greece.

Project Scope

The Helios Solar Farm will be a ground-based very large scale photovoltaic power plant consisting of 10 inter-connected solar farms, each capable of producing 10 MW of electricity within a margin of 5%. Once completed, it shall cater for the electricity needs of over 1, 500, 000 solar panels which can annually generate 100, 000 MWh electricity to fulfill the needs of approx. 30, 000 family homes, and save around 50, 000 Tones CO2 per year.

Project Objectives

To design and to construct the Photovoltaic Power Plant.

To be profitable not only for the shareholders but also the final users.

To have efficient communication and organization through all the project development.

Dismantle the entire complex at the life cycle's end (35 years after construction).

Capitalize on any technological breakthroughs take place during the design/build and construction phase of the project within the fields of Architecture, Engineering, Sociology and Business.

The initial planning budget for this project is 400, 000, 000. 00 Euro

Project Requirements:

Provide Project Management services throughout the project's life-cycle.

Provide maintenance services for a period of 35 years after finishing construction.

Define business units for the performance of the project as logistics, purchasing, engineering, marketing, accounting and finance and so on.

Determine the policies for the project development as the foundation.

Acquire funding, sponsorships and strategic partnerships by means of Business Development.

Environment research.

To set up logistical routes to enhance effective and low cost material transportation.

Planning for overall the project such as materials, human resources, etc.

Quality controls.

Project Assumptions:

Stable long term investment return.

Improve quality of life.

World's biggest photovoltaic power plant.

Long term benefits for economy and environment.

Project Constraints:

A negative position in the public's mind as activism, monopolies, traditionalist ideology, corruption.

Mega Project scale.

A risk of snowball effect when small problem might occurred but without been detected because the magnitude of the project.

Lack of material or skilled labor.

Global economic situation.

Lack of sponsor and/or client commitment.

Supply Chain shortfalls.

Limited Logistics capacity of selected location.

Project Deliverables:

100MW Photovoltaic Power Plant delivered 5 years following Project Initiation.

Connection to main power grid.

To provide sustainable facilities according to Eco- friendly policies.

Conformance to relevant Standards, Codes of Practice (CoP), HAZMAT and Health and Safety guidelines.

Plant decommissioning at the end of the projected life cycle.

Provide Operation and Maintenance (O&M) Manuals.

Project Acceptance Criteria:

The Project will be delivered within the agreed time and budget

Everything has to be test and should fulfill the highest quality standards according to the established criteria.

Paperwork should be submitted at delivery time.

Periodical Auditing/Quality checks carried out in regular intervals throughout the Project.

Reports and status progress should be delivered in the team meetings.

Semi-independent operational status for each division to ensure flexibility.

Divisions should operate according to project needs and requirements but have to adhere to the following constraints:

Project Organization Structure

Project Management

Provide Project Services throughout the project's life cycle.

Conduct Risk Assessment on a quarterly basis.

Provide Time and Cost management services.

Implement QMS

Perform QA in accordance with implemented QMS.

Supply Chain Division

All tasks should be accomplished and performed according to the shipment policies and products specifications.

Freight quotes agreements and contracts should be specify at the beginning of the project for the project duration, price increases should be regulated with a matrix and % limits in order to overpass the budget.

Constant supervision and tracking transportation performance in order to avoid delayed material.

To hire a customs agencies in order to fulfill the import regulations and to prevent extra costs.

Warehouse forecast and cycle counts.

Customs and taxes verification completed before the imports.

Engineering

Design and Build according to current Eurocode Codes and Standards, amend if necessary.

Complete Pilot project prior to initiation of the Design Phase.

Provide full set of drawings.

Technical Specifications should adhere to current Eurocode Codes and Standards.

Use of ‘ green’ materials and techniques where applicable.

Risk analysis

Compile Health and Safety Manuals.

Provide decommission plan in compliance with current Hazmat Codes and Standards.

Human Resources

Personnel salaries should conform to current international treaties and regulations, with annual readjustments.

Roles and responsibility description documentation should have done before starting the project.

Detailed HRM will be performed by each Division semi-autonomously.

Detailed and clear Union agreements should be signed and documented before starting the construction or hiring according to current laws and regulations.

Conflict resolution always has to be guided by the established policies.

Business Development

Budgets and reports has to be accurate and be done by using the latest information and reliable data including external factors like tax rates, possible changes in taxes or any other variable covering a range of 12 to 15 years within reasonable forecasting capabilities..

Liaison duties following project initiation phase up to 3 years before completion to ensure political and public support, forming of strategic alliances/partnerships in inter-governmental and international organization level.

Perform a Feasibility Study prior to initiation of Design Phase.

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Publicity campaign strongly oriented into the positive positioning.

Contra-marketing plan in order to fight negative public opinion.

Initial Work Breakdown Structure

Politic statement

Purpose

Provide guidance for planning and handling negotiations with land owners and authorities in concern of Helios Solar Farm project.

Scope

This statement provides guidance for purchasing/leasing land, communication with public authority.

Land Purchasing/Leasing Policy

All activities involve purchasing and/or leasing of land during the project life cycle shall be reported to the project Management Board and must be conducted in accordance with the following procedure:

- I. An application and a report containing the complete details of the land (location, environment, legal owner, value, term of use, applicable laws or regulations, and etc.) must be filed and submitted to the Management Board by the Project Manager.

- II. If the application is approved by the Management Board, the board will grant an operating budget as state in the application to the Project Team, and will have authority to make expenditures within that budget. The project manager will be charged with the responsibility of preparing and executing

legal agreement with land owner(s), and ensuring appraisal of land selected in terms of cost and suitability.

III. The Management Board has right to deny an application, and the denied application shall not be submitted again.

IV. While dealing and negotiating with the landowner and any relevant third party, the project team shall bear in mind the matter of confidentiality of the project.

Public Communication Policy

While communicating with any public authority, the project team shall keep in mind that:

I. All external communication shall be documented.

II. Communication shall be effective and efficient.

III. Develop sustaining effective relationships with authorities.

IV. Promote company image and reputation.

V. All communications that may influence the project must be reported to the Project Manager.

Environment statements

Purpose: State the environmental objectives of the Helios Solar Farm Project.

Scope:

This statement provides a guidance to manage the environment throughout the Project Life Cycle. .

Environmental Policy:

- I. The Project Manager shall educate, train and motivate staff to conduct their activities in an environmentally responsible manner.
- II. All activities in the project shall conform to most international environmental regulations and standards.
- III. Conduct an environmental impact assessment of each project phase, and act accordingly.

Quality Policy

Phoenix Group is committed to uphold the following quality statements:

Achieve or exceed customer expectations.

Maintain and expand employee competencies.

Strive for constant improvement.

Take all necessary steps to achieve project goals.

Probable quality issues during the course of the project

Quality involves everyone and all activities in the projects, any mistake or constrain can affect the whole project quality. Examples of lack of quality are:

- Lack of skilled labor.

- Mistake in management process.
- Low quality material.
- Delay in product delivery.
- Customer requirement not fulfilled.
- Installation shortfalls
- Capacity limits of harbor in selected location.

Cause-and-effect Diagram

Quality criteria of the project

Customer Satisfaction:

Customer and stakeholders requirements are fulfilled.

Product and service quality data collection processes are well established.

Business planning criteria:

The project planning process is well established.

All plans are reviewed regularly for progress and corrective actions taken when necessary.

The business planning process includes managing the linkage to other areas of the value delivery chain.

The vision and planned strategic are achieved.

Business results are achieved as a result of good business planning.

Management criteria:

Project objectives, goals and schedules are clearly defined.

There is a good data collection, analysis and understanding of root cause.

Alternative solutions are reviewed and results have been achieved.

Reviews are standardized and future plans are made.

Key processes or activities are monitored and controlled.

The key processes or activities are managed systematically.

The project performance method has routinely been improved and documented

Employee development criteria:

Project and quality team are well managed.

Employee training programs are implemented and sustained.

Employees are empowered to make decisions and proposals.

Quality audits system

Follow the instruction of ISO 10011-1 Standard for Planning and Performing Quality Audits, we suggest similar project in the future shall follow the procedures listed below to perform the quality audit to improve its quality:

Prepare an audit plan, this should be prepared by the audit manager and approved by the customer before the audit begins. “ The plan will define the objectives and scope of the audit, explain how long each phase of the audit

will take, specify where and when the audit will be carried out. It will also introduce the lead auditor and his team members, identify the quality elements, the groups and areas that will be audited, list the documents and records that will be studied and the people who are responsible for quality and whose areas and functions will be audited. The plan has to explain when meetings will be held with auditee's senior management, and clarify who will get the final audit report and when it will be ready." (ISO 10011-1)

Perform the audit plan. This step starts with having an open meeting with the auditee's senior management to introduce the audit team and the audit plan, confirm that the auditee is ready to support the audit process. Then, the auditors have to Prepare audit working papers, such as quality management checklists and forms for record observations and collect evidence. The evidence can be collected by interviewing personnel, reading documents, reviewing manuals, studying records, reading reports, scanning files, analyzing data, observing activities and examining conditions. Evidence shall be confirmed by more objective means. Clues can be found through investigate evidences; the auditors must study the evidence and document their observations; key nonconformities which are supported by the evidence and cross-referenced to the standards that are being violated must be listed. Auditors must draw conclusions about how well the quality system is applying its policies and achieving its objectives, and discuss evidence, observations, conclusions, recommendations, and nonconformities with senior managers of auditee before they prepare a final audit report. (ISO 10011-1)

Prepare the final audit report. The audit report should be dated and signed by the lead auditor. This report should include the detailed audit plan, a review of the collected evidence, a discussion of the conclusions that were drawn, a list of the nonconformities that were identified, a judgment about how well the quality system complies with all quality system requirements, and an assessment of the quality system's ability to achieve

quality objectives and apply the quality system policy. The final report shall be sent to the client by lead auditor, and the client should send it to the auditee. (ISO 10011-1)

The final step is to take remedial actions to correct or prevent nonconformities; and a follow-up audits should be scheduled in order to verify that corrective and preventive actions were taken. (ISO 10011-1)