

# SAUDI ARABIAN OIL COMPANY (Saudi Aramco)

## GENERAL INSTRUCTION MANUAL

ISSUING ORG. FINANCIAL ACCOUNTING DEPARTMENT

SUBJECT POST PROJECT APPRAISALS

GI NUMBER **APPROVED**  
**20.700**

ISSUE DATE 07/04/2017 REPLACES 06/06/2011

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### CONTENT

Post Project Appraisals (PPA) is Saudi Aramco's independent review process of capital projects, performed by the Controller's organization and mandated to evaluate the effectiveness of the project planning and execution in order to identify best practices, lessons learned, achievements and challenges for input to future projects.

This General Instruction (GI) describes the systematic approach, which shall be used to conduct PPA of Fixed Scope Capital Projects. PPA of Annual Appropriations, Master Appropriations, Joint Venture or Public Support projects shall also be conducted as per Management's discretion, however, due to unique nature of planning, approval, execution, controls and closure of these projects, the selection criteria and appraisal methodology will be objectively identified and established at the onset of their appraisal.

The approach to appraise Fixed Scope Capital Projects is described in five sections:

1. Introduction
2. Reference Documents
3. Responsibility
4. Methodology
5. Reporting

### 1.0 INTRODUCTION

The objective of PPA is to provide an independent assessment of capital projects based on their planning, execution and post completion operational performance. Toward that end, PPA will:

- 1.1 Identify lessons that would improve Saudi Aramco's
  - 1.1.1 Project planning
  - 1.1.2 Project execution and closeout
  - 1.1.3 Post facility completion performance while in operation
- 1.2 Determine
  - 1.2.1 The extent to which the original expectations, as explained in the approved Expenditure Requests (ERs), have actually been realized, as of the date of the appraisal
  - 1.2.2 Significant project achievements and shortcomings in meeting the approved expectations

### 2.0 REFERENCE DOCUMENTS

Following reference documents shall be applied to conduct PPA.

- Saudi Aramco Engineering Procedures
  - SAEP-12 *Project Execution Plan (PEP)*
  - SAEP-14 *Project Proposal (PP)*
  - SAEP-25 *Estimate Preparation Guidelines*

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SAEP-40 Value Assurance Process  
SAEP-42 Capital Projects Energy Efficiency Optimization  
SAEP-122 Project Records  
SAEP-329 Project Closeout Report  
SAEP-1020 Capital Program Planning  
SAEP-1350 Design Basis Scoping Paper (DBSP) Preparation and Revision Procedure

- Saudi Aramco General Instructions & Manuals  
GI 20.500 Expenditure Requests  
GI 20.520 Project Change Request  
GI 2.710 Mechanical Completion and Performance Acceptance of Facilities Supply Chain Manuals
- Accounting Instructions  
AI 201 Financial Closeout of Capital /Non-Capital Projects  
AI 203 Projects Accounting - Work Breakdown Structure (WBS)

### 3.0 RESPONSIBILITY

The Capital Programs Division (CPD) of Controller's organization shall be responsible for conducting and delivering an independent analysis to Management Committee (MC) in accordance with the process outlined in this GI. See section 5.0 for reporting deliverables.

CPD shall have the authority to:

- 3.1 Request temporary assistance (e.g., individuals with specialized skills) from other Saudi Aramco organizations, as required to effectively appraise the projects. These individuals shall not have participated in the planning, execution or operation of the project(s) being appraised.
- 3.2 If necessary, request temporary assistance from independent consultants, as required to effectively appraise individual projects, subject to approval from Finance Management. These consultants shall not have participated in the planning, execution or operation of the project(s) being appraised.

### 4.0 METHODOLOGY

#### 4.1 Project Selection Criteria

- 4.1.1 All Fixed Scope Capital Projects with an approved budget of \$10 million and greater that have been commissioned and in operation for at least twelve (12) months following the sign off of the Final Mechanical Completion Certificate (FMCC).
- 4.1.2 Annual and Master Appropriations that have achieved their original/planned completion date irrespective of the construction progress.

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### 4.2 Data Collection and Analysis

Data collection is the most important aspect of the process in order to conduct a balanced and accurate appraisal of projects. CPD shall utilize generally available tools to extract recorded data wherever possible, however, collaboration from the project stakeholders is a necessity. PPA process involves assessment of three major phases: planning, execution and operation. A representative for each phase of a project is required for full assessment. General guidelines are outlined below for data collection.

4.2.1 After projects selection, CPD shall request the Business Lines to nominate a single Point of Contact (POC) for each of the projects selected particularly from the Facilities Planning Department (Planning), Project Management (Execution) and the Proponents (Execution/Operations).

4.2.2 It is expected that the POCs shall be well versed and knowledgeable about the relevant project evolution, scope, execution and be able to provide required data and clarifications as described in 4.2.4.

4.2.3 CPD may also include other relevant departments for clarifications related to the projects.

4.2.4 The data required from the POCs to conduct PPA includes but not limited to:

- Business Case development
- Design Basis Scoping Paper (DBSP)
- Economic Models and narratives
- Controllable Cost breakdown including Manpower
- Energy System Assessment Study (ESAS)
- Value Assurance (VA) Review Reports
- Project Execution Plan (PEP)
- Contracting Plan, bidding and evaluation strategies for contracts and Change Orders (COs) with logs
- Project Proposal (PP) and Detailed Design (DD) packages or selected documents
- Root Cause Analysis (RCA) or Assessment Reports of any major issues
- Project Completion Schedule (PCS)
- Partial and Final Mechanical Completion Certificates (MCC), Performance Acceptance Certificate (PAC) and details of performance issues
- Exception Items List
- Project Closeout Reports
- Production or Throughput Data and any other data to evaluate the utilization of the facilities and opportunity costs of project delays, for example, crude burning in power plants or trucking etc.

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4.2.5 CPD shall conduct interviews with the POCs and site visits where required.

4.2.6 The POCs and CPD members shall work as a team for a common goal of completing the analysis accurately and in timely manner.

### 4.3 Assessment Criteria

The assessment of the projects shall be performed based on performance indicators which are grouped into three main categories, Project Planning, Execution Effectiveness and Benefits Realization, as explained below:

#### 4.3.1 Project Planning

Project Planning is the most important phase in a project as it is critical to a project's success. A well thought-out DBSP and Project Proposal will provide a clear direction to the success of the project. The following will be the focus while assessing the project planning phase:

##### 4.3.1.1 Scope

The evolution of the business case, justification and development of scope of work to achieve the objective shall be evaluated from the review of DBSP and the Project Proposal. In addition, the steps taken to optimize the scope in anticipation of reduction of cost and schedule without compromising operational performance shall be the focal point of the scope assessment.

#### 4.3.2 Execution Effectiveness

Execution Effectiveness category includes performance of Cost, Schedule and Post MCC.

##### 4.3.2.1 Cost

The actual costs shall be compared with the original ER estimate and any adjustments through subsequent actions. The deviation from  $\pm 10\%$  range and reasons for deviation shall be recorded and any lesson learned shall be identified.

##### 4.3.2.2 Schedule

The project shall be considered on-time or ahead of schedule when the actual Expenditure Request Completion (ERC) date is on or before the planned ERC date as given in the original ER brief. The deviation from this criteria and reasons for deviation shall be recorded and any lesson learned shall be identified.

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### 4.3.2.3 Post MCC/Financial Closeout Phase

The reasons for delays in signing PAC and project closeout including performance deficiencies and critical exception items shall be recorded and any lessons learned shall be identified.

### 4.3.3 Benefits Realization

Benefits Realization category includes project Objective Achievement, Utilization of assets delivered by the project and incurring Controllable Cost/Manpower during operation.

#### 4.3.3.1 Objective Achievement

The capability of the installed facility to meet the design specifications and throughput will be compared with the business objective(s) of the project as stated in the ER briefs. Any shortcomings in meeting these objectives shall be recorded and lessons learned shall be identified. In addition, the economic impact will also be assessed.

#### 4.3.3.2 Asset Utilization

The overall utilization of the installed facility since start-up will be assessed. The limitations, including deficiencies, demand and supply constraints or unavailability of feed (oil, gas or refined products), in achieving the planned utilization of the facility as stated in the ER brief(s) shall be recorded and lessons learned shall be identified. Planned utilization of the assets is considered 100% unless otherwise stated in the ER brief.

#### 4.3.3.3 Controllable Cost and Manpower

The actual Controllable Cost and Manpower to operate the installed facility will be compared with the projections as stipulated in the ER briefs. Any variances between actuals and estimates shall be recorded and analyzed to identify the root cause of deviation.

## 5.0 REPORTING

- 5.1 The PPA will be conducted semi-annually, or as directed by MC or Finance management, and the results of the findings will be presented to the MC after completion of each appraisal cycle. The dates for these presentations shall be incorporated in the corporate calendar. It is mandatory for project key stakeholders and Sponsors to attend MC meeting.
- 5.2 The findings will be shared with project key stakeholders including senior management of the related Business Lines before MC presentations.
- 5.3 The PPA presentations shall summarize the Lessons Learned from the assessments, with the intent of highlighting significant achievements and challenges in achieving the objectives of the project from the stand point of planning, execution and operations of the installed facilities.

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- 5.4 CPD shall issue a detailed report of findings after each review to the Corporate Management and stakeholders within two weeks of receipt of official minutes of meeting and action items of MC presentation.
- 5.5 Special studies may be conducted and reports or presentations may be prepared on an ad hoc basis as directed by the MC.

**Approved By:**

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Manager, Financial Accounting  
Department

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