

Novated Procurement: Saudi Aramco Experience

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Abstract

Saudi Arabian Oil Company (Saudi Aramco), the world's leading energy company, offers new thinking, new approaches, and new solutions for the future of energy. This short article provides insights into the novated procurement process and the experience of Saudi Aramco in using novated purchase orders to procure long lead materials and critical equipment for its mega projects. This paper also sheds some light on the Saudi Aramco's Capital Management System (CMS), the concept of novated procurement along with the main activities involved in the novated procurement, and concludes with key considerations, and risk mitigation.

Keywords: Novation; Procurement; Project; Process; Management; Strategy; Risk.

1. Introduction

Throughout its bright history as a leading producer of the energy and chemicals, Saudi Arabian Oil Company (Saudi Aramco) has managed to exceptionally drive global commerce and enhance the daily lives of people around the globe by continuing delivering an uninterrupted supply of energy to the world.

Saudi Aramco agility and resilience has not just built one of the world's largest integrated energy and chemicals companies but also to remarkably manage the procurement and the whole supply chain of its mega projects, which eventually creates value not only for Saudi Aramco and its customers, but also for its partners, and shareholders.

This article sheds some light on one aspect of the innovative procurement strategies, which is "Novation", and its application in Saudi Aramco mega projects. Novation is defined as a legal term by which a new procurement agreement is substituted for one that already exists, so that the previous obligation is considered discharged or the previous obligor released [1].

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From procurement and supply chain perspective, novation procurement strategy aims to discharge the original procurement agreement between two parties (the continuing party, which is the supplier and the outgoing party, which is in this case Saudi Aramco or one of its project proposal contractors) and substitute it with a new procurement agreement between the continuing party and a new party [the incoming party, which is the Engineering, Procurement and Construction (EPC) Contractor]. The incoming party must perform the contractual obligations (under the new procurement agreement) that were formerly owned by the outgoing party under the original procurement agreement.

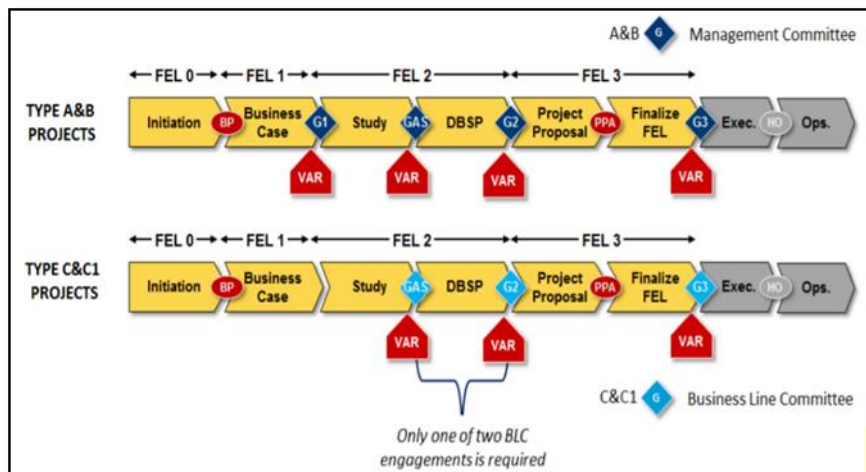
2. Saudi Aramco Capital Management System

To put this subject in perspective, it is worth taking a quick look at the Capital Management System (CMS), which has been adopted by Saudi Aramco for managing and controlling activities and decisions related to capital projects. The CMS covers the entire project development process from business planning, through project definition and execution to handover to operations.

The CMS introduces five Capital Management System Efficiency Enablers (CMSEEs), namely:

- Portfolio Execution Planning (PXP)
- Front End Loading
- Project Sponsor (PS), and Integrated Project Team (IPT)
- Value Assurance (VA)
- Target Setting (TS)

The Front-End Loading (FEL) process organizes the project lifecycle into different stages, phases, decision gates and checkpoints, each with specific objectives, defined activities, deliverables and decisions. The four stages are FEL 0, FEL 1, FEL 2, and FEL 3. The six phases are: Initiation, Business Case, Study, Design Scoping Paper (DBSP), Project Proposal and Finalize FEL. Based on the project characterization types, the number of FEL gates may be streamlined to effectively plan a given project. The six phases are mapped into the four stages as shown in Figure 1 below.



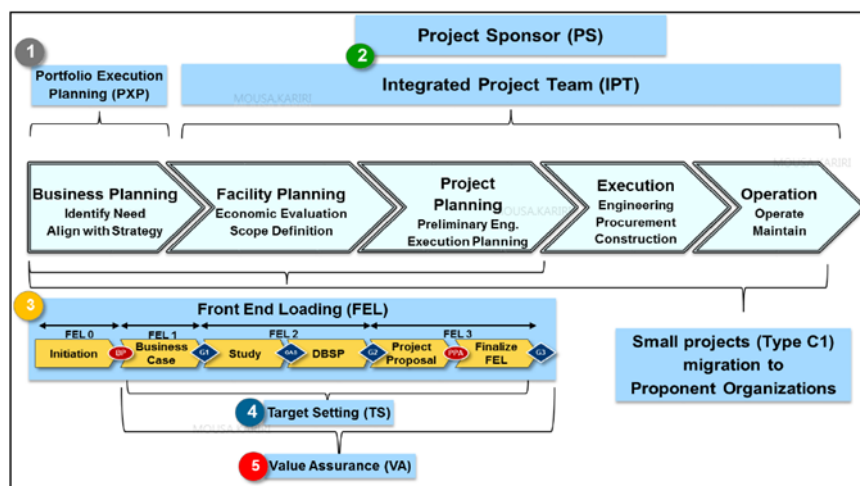


Figure 1: Capital Management System (CMS) FEL Process for Capital Projects [2]

3. Concept of Novated Procurement

The term novation is defined as the transfer and assignment of Buyer's rights, title, interest, duties and obligations under the purchase order (PO) to another party, in this case to the EPC Contractor, which in most cases is referred to as Lump Sum Turn Key (LSTK) Contractor.

The novation concept was adopted by Saudi Aramco in January 1996 for Shaybah Oil Field Development Program [3], and over the past few decades large amounts of equipment has been authorized to be novated by Saudi Aramco.

The application of novated procurement strategy is among the contributing factors that improved typical program schedule on average by 4 to 5 months, beginning with the development of the Shaybah Producing Facility, followed by a number of world class mega-projects such as Hawiyah and Haradh Gas Processing Complexes, Qatif Producing Facilities, Khursaniyah Oil & Gas Facilities, Wasit and Fadhili Gas Programs, Manifa Program, Sadara, Jazan Programs (Jazan Refinery & Terminal, and Integrated Gasification Combined Cycle Complex).

Equipment selected for novation is determined by schedule consideration for long lead items, or immediate need for detailed equipment's information, or constructability requirements in access restricted plots. Typical equipment considered for novation are engineered equipment such as Gas Compressors, Heat Exchangers, Combustion Gas Turbine Generators, High Voltage Electrical Equipment, Pressure Vessels, and Process Control Systems.

The novated purchase order is placed prior to funding authorizing to enable materials' supplier(s) to start engineering and shop drawings with an option for the equipment manufacturing after securing the appropriate approval. Novation procurement typically involves:

1. Company (Saudi Aramco or one of its affiliated Out-of-Kingdom Companies) or any of its Project

Management Contractors (PMC), or Project Proposal Contractors (PPC), or General Engineering Services Contractor (GES⁺) places POs for novation using special Terms and Conditions (Ts&Cs) for the novated purchase instrument; and

2. After contract award, the novated PO is transferred to successful EPC/LSTK Contractor.

Upon the formal acceptance of the Novation Agreement, the Supplier shall look solely to the EPC/LSTK Contractor for the performance of all of the Buyer's (Aramco or its PMC/PPC/GES⁺) obligations under the novated PO.

4. Novation Process

The procurement process for novated critical and long lead materials starts with the development of initial Procurement Strategy and Material Procurement Plan (PS&MPP), during FEL 2 or Design Basis Scoping Paper (DBSP), and ends with signing the Novation PO between the following three (3) parties:

1. Buyer (Aramco or one of its PMC/PPC/GES⁺ Contractor),
2. Supplier, and
3. LSTK Contractor

And followed by releasing the fabrication part of the novated PO by the EPC/LSTK Contractor using Contractor's procurement procedures.

It should be noted that the initial PS&MPP is developed during DBSP phase and is one of FEL 2 deliverables. This document includes the initial list of Long Lead Items (LLIs). However, the final PS&MPP developed at the end of FEL 3 (Project Proposal) is really one of the last activities that capture different aspects of procurement including the already approved LLIs and their procurement status.

Saudi Aramco's direct novated PO is typically placed with the lowest-priced, In-Kingdom Total Value Add (IKTVA) compliant (*if applicable*) and technically acceptable bidder using Saudi Aramco standard PO placement formalities and novated PO Ts&Cs.

Upon the formal acceptance of the Novation Agreement, the new party to the novated PO, the EPC/LSTK Contractor, issued a duplicate PO in lieu of Saudi Aramco cancelled PO. After that the Supplier shall look solely to the EPC/LSTK Contractor for the performance of the entire Buyer's (Saudi Aramco) obligations under the novated PO.

5. Main Activities

The following diagram summarizes the main activities involved in the novation process:



<ul style="list-style-type: none"> > Procurement Strategy & Material Procurement Plan > Identification of critical long lead items > Identification of surplus and excess materials > Review and approval of Contractor's Procurement Procedures, and PO Terms & Conditions (Ts&Cs) > Develop Procurement Plan and submit to Saudi Aramco's Services Review Committee (SRC) for approval > Requisition created by Contractor or Company; it depending on who's handling the novation procurement 	<ul style="list-style-type: none"> > RFQ sent by Contractor or Company against approved Procurement plan and Bidders' List > Bids received; IKTVA and technical bids opened > IKTVA and technical bids evaluated in parallel > Commercial bids opened and evaluated for the technically acceptable, and IKTVA compliant bids 	<ul style="list-style-type: none"> > Develop award recommendation and submit to SRC for approval > PO placement and coordination > Novation of PO to EPC/LSTK Contractor at contract award > Follow up with contractor / supplier and monitor the PO execution > Expediting > Material delivery, pay supplier invoice, close PO file
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As shown in Figure 2 below, the novated procurement process for materials starts with the creation and approval of a procurement strategy during the DBSP phase, and ends with signing the tripartite novation agreement.

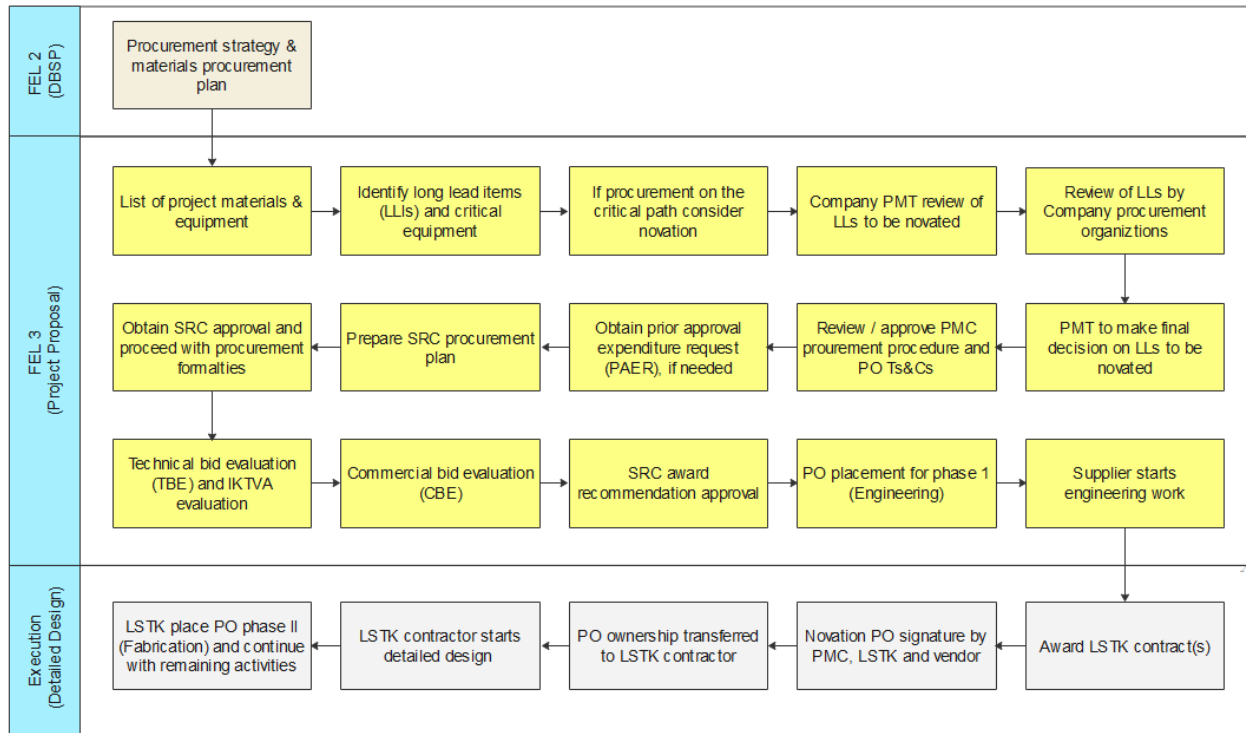


Figure 2: Process Map for Early Procurement Actions

The followings Figures provide sample for Early Procurement Review Checklist, and illustrate the different steps and stakeholders involved in the novated procurement process along with a high-level comparison between conventional and novated procurement cycle.

Item No.	Item Description	Input/Selection
Project Overview		
1.	Budget Items (BI) Value (\$)	
2.	Expenditure Request Approval (ERA) Date	Click here to enter a date.
3.	Expenditure Request Completion (ERC) Date	Click here to enter a date.
4.	Project Duration (months)	Choose an item.
5.	Applicability of Capital Management System (CMS)	Choose an item.
6.	Project Characterized as (A, B, C, or C1 Projects)	Choose an item.
Project Current Status		
7.	Funding Status	Choose an item.
8.	Prior Approval Expenditure Request (PAER)	Choose an item.
9.	Current Design Progress (%)	Choose an item.
10.	Procurement Strategy	Choose an item.
11.	Main Driver(s) for Novation	Choose an item.
Materials/Equipment Requirement		
12.	Material Description/Number	
13.	Material Type (9COM or 9CAT)	Choose an item.
14.	Is there any 9CAT Equivalent?	Choose an item.
15.	Material Estimated Value (\$)	__MM
16.	Material Lead Time (months)	Choose an item.
17.	Base of Lead Time Calculation	Choose an item.
18.	Total Duration (months)	
19.	Erection Duration (months)	

20.	Regulated Vendor List (RVL) Availability	Choose an item.
21.	Availability of Potential Bidders	Choose an item.
22.	PO Anticipated Award Date	Click here to enter a date.
23.	Saudi Aramco Inventory Checked	Choose an item.
24.	IKTVA Requirements/Local Content	Choose an item.
25.	Corporate Purchase Agreement (CPA) Applicability	Choose an item.
26.	Average Lead Time (based on historical records)	Choose an item.
Recommendation:		

Figure 3: Early Procurement Review Checklist

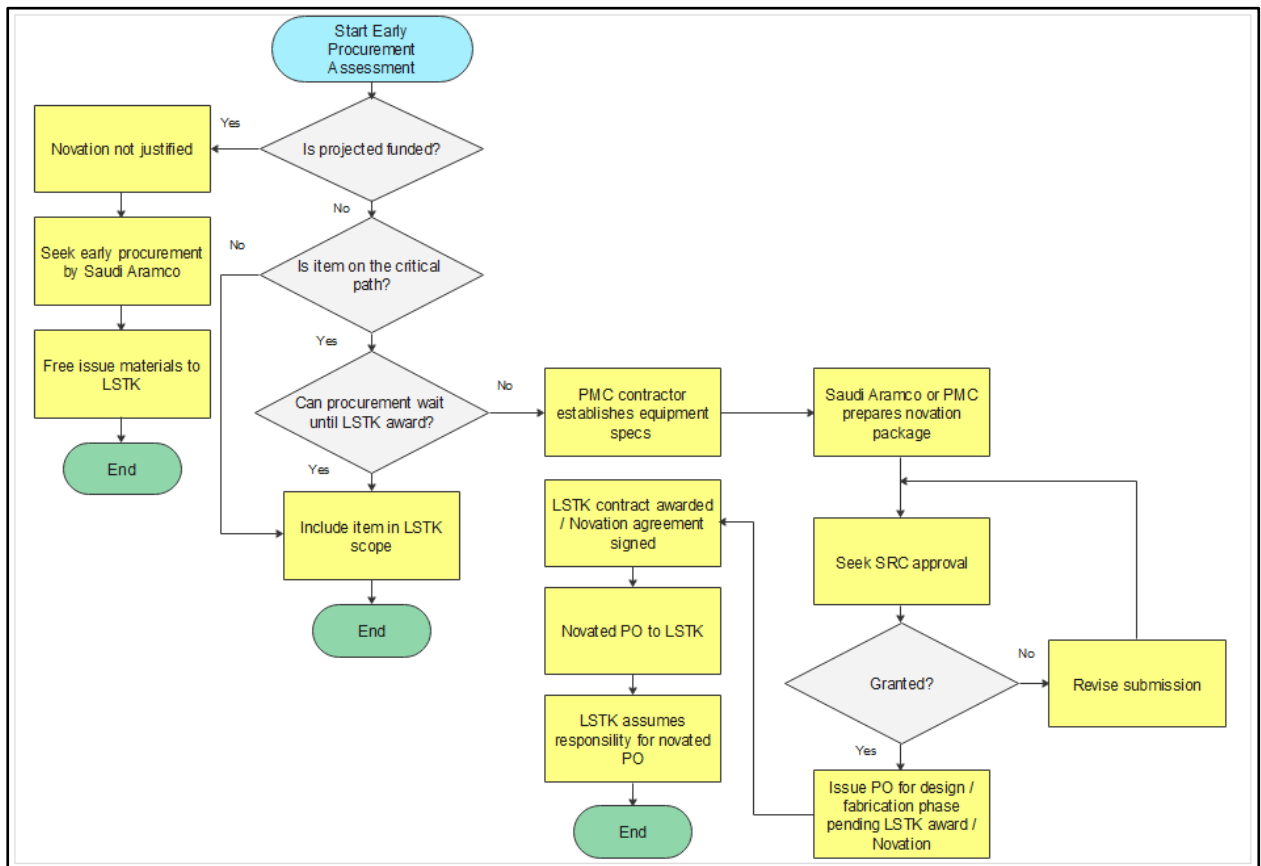


Figure 4: Early Procurement Process Flowchart

6. Conventional vs Novated Procurement Cycle

The novation process reduces the project schedule by removing those items from the project's critical path. The two Exhibits below depict the typical procurement cycle, and the procurement cycle after Novation. As can be

seen in Figure 6, the Novation process reduces the overall cycle time and the overall Program Schedule anywhere from 4 to 5 months or even more.

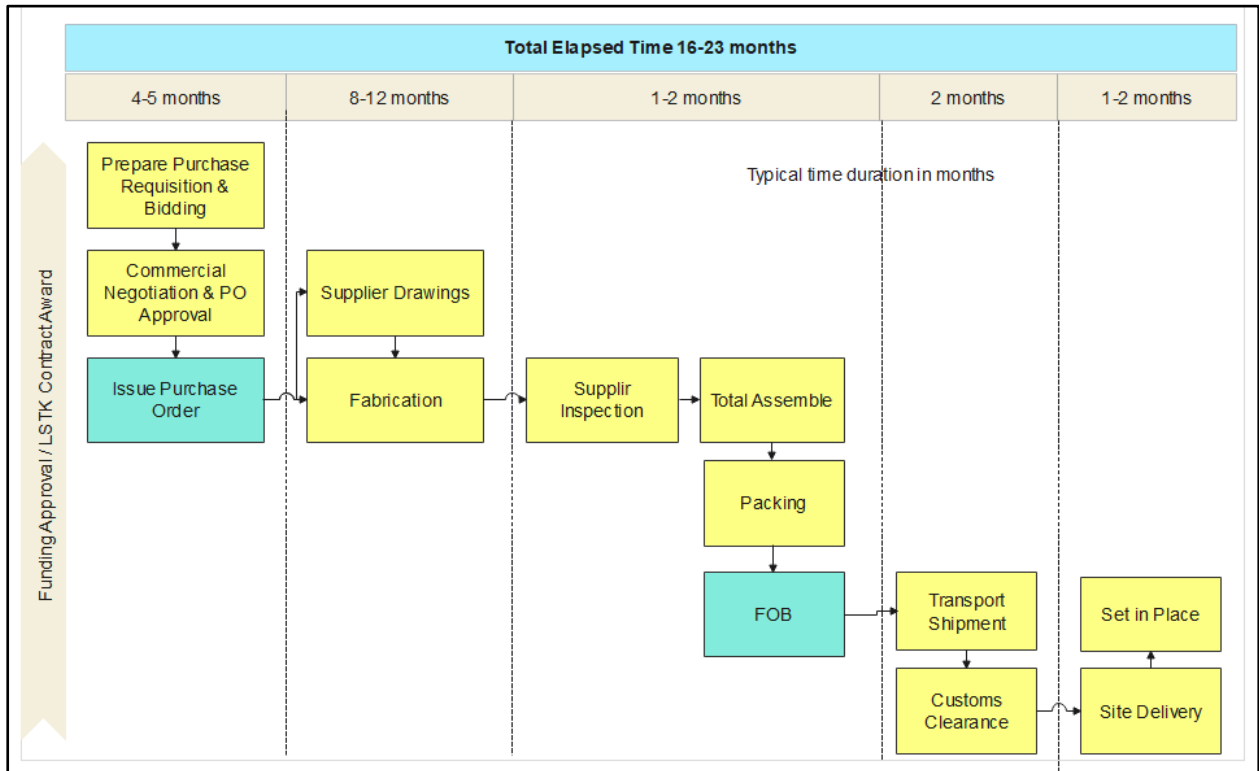


Figure 5: Conventional Procurement Cycle

The process begins with the preparation of a purchase requisition followed by bidding cycle, issuance of PO's, approval of supplier drawings, equipment fabrication, inspection, assembly, packing, transport, custom clearance, delivery, and installation at the site.

For a typical long lead engineered equipment, the overall cycle time could be anywhere from 16 to 23 months depending upon the type and the complexity of the equipment. This process is relatively long, and as such it is essential to shorten the duration for the individual activities or look for alternatives, which could expedite the procurement cycle by possibly placing the PO's for the critical long lead equipment prior to funding and/or LSTK Contract award to optimize the overall schedule.

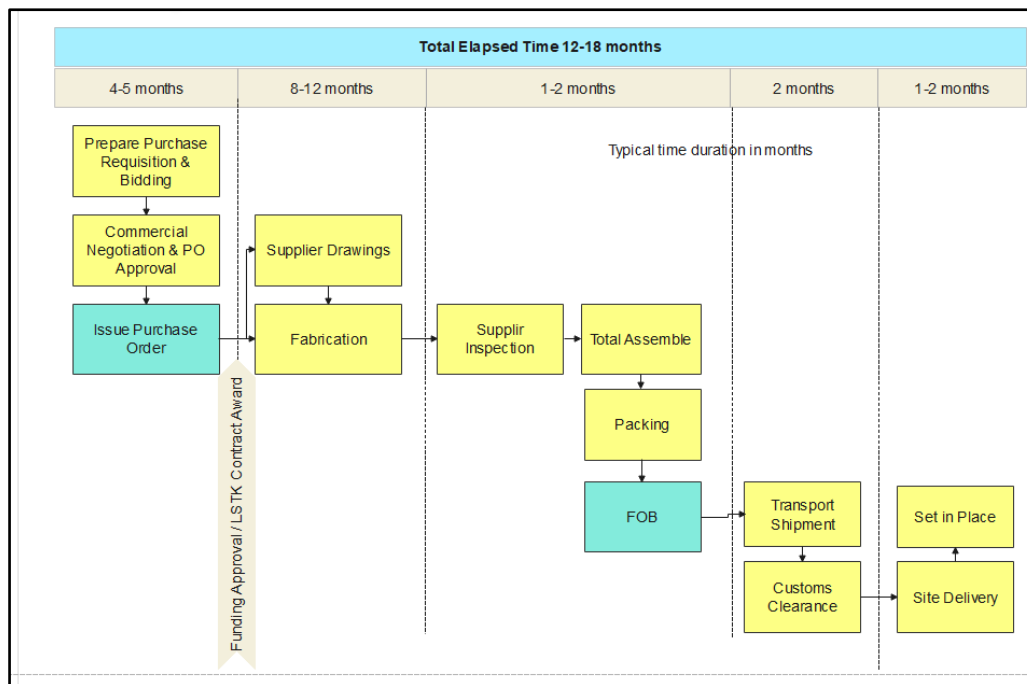


Figure 6: Procurement Cycle after Novation

Identification of the critical long lead equipment is an integral part of the front-end planning. Early in the preliminary engineering phase of the project i.e. prior to funding approval and EPC (LSTK) Contract award, an aggressive master schedule is developed from which key long lead material and equipment are identified.

7. Considerations for Novated Procurement

The primary considerations for novation include:

- The site need date,
- The need date for supplier data, and
- The constructability.

It is worth noting that even though there may be some float in the equipment delivery dates, novation procurement may be required to meet engineering's need for some technical details, such as foundation drawings and utility requirements. The late receipt of such technical details will impact the engineering progress with respect to issuance of Issued for Construction (IFC) drawings.

Another reason for novation procurement could be constructability, where space limitation and sequence of erection could be a factor, for example, adding additional module to existing facilities.

8. Risk Mitigation

Novated materials procurement is not risk free. One of the immediate risks associated with novated procurement is the cost of abandoned engineering in case the project is deferred or cancelled. The committed cost for

engineering activities ranges from 5% to 10% of the novated purchase order value. There is also the chance of scope gap between supply chain entities, additional costs of transferring the risk to contractors, problems with warranty issues, and lack of full cooperation from suppliers. However, drawing from past experience with material novation, a sound strategy could be developed for managing the novated material purchase order(s) which encompasses all of the lessons learned and best practices in procuring, installing, testing, transporting, clearing materials from customs, and delivering equipment to project site ahead of schedule.

9. Conclusion

This article provides insights into the novated procurement process and the experience of Saudi Aramco in using this procurement technique to procure long lead materials and critical equipment for its world class mega projects. This paper also sheds some light on the Saudi Aramco Capital Management System (CMS), the concept of novated procurement along with the main activities involved in the novated procurement, and concludes with key considerations, and risk mitigation. It is worth noting that as an essential aspect of successful business, procurement function comes with a number of complex tasks and responsibilities, as well as effective strategies, which include but not limited to identification of buying needs, negotiation, supplier selection, and management of the whole procurement and supply chain activities. The point where novation procures desirable and better outcomes for Saudi Aramco mega projects depends on various factors among them are: project scale and type, time constraints, and principal's expectations. In an effort to create a more resilient procurement and supply chain management for its businesses, Saudi Aramco has developed many ambitious plans, and put a number of pioneering initiatives into effect such as reallocating resources from transactional focus to value adding; embracing digital transformation; leveraging analytics-based decision making; and re-skilling its procurement function through enhancing the skills sets of procurement professionals, investing in talent development, increasing team's business acumen, building analytics skills, and creating a talent retention plan to remain ahead of its competition. Moreover, Saudi Aramco's active contributions across the whole value chain have helped develop an energetic energy sector in the Kingdom of Saudi Arabia while creating stability and opportunity across the entire world.

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