



**A STUDY ON  
ISSUES IN MATERIALS MANAGEMENT  
IN  
MALAYSIA LNG SDN BHD**

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## **ABSTRACT**

Availability of materials and spares has been a fundamental part in the operations and maintenance activities of any production facility. Hence, when materials and spares are found not available for operation or maintenance use and this could jeopardize the smooth production of the facility, the issue can quickly escalate to become a management issue or sometime a boardroom issue.

The bottom line of materials management is to have the right materials available at the right time and the right place and in the right quantity. It is even added that the materials must be purchased at the right price!

In getting the right materials available at the right time and the right place, in the right quantity and at the right price, many processes and many parties are involved, both from within the organization as well as from outside the organization. It is a chain of processes, activities and communications and any break or delay in the chain will and can cause the ultimate aim being not met.

In MLNG, these processes are monitored or tracked using Average Processing Time (APT), Procurement Service Level (PSL) and Stock Outs (SO) – commonly referred to as Key Performance Indicators.

## CHAPTER 1: INTRODUCTION

### 1.1 Background

Materials play a major role in a production or operation process. Materials can either be used as direct inputs in the production process or as auxiliaries for the same process. As such materials can generally be categorized as raw materials, supplies, work in process, and finished products. Hence, in the industries, where delay in the completion of scheduled maintenance works or repair works caused by the lack or unavailability of materials, it make good business sense for companies to keep certain types of materials in their warehouses. Materials kept by companies, waiting to be used, are referred to as inventory.

Adam and Ebert (1999) defined inventory as 'stores of goods and stocks, including raw materials, work-in-process, finished products or supplies.' Inventory represents an investment because capital is required to procure and store the materials.

In the oil and gas business, Malaysia LNG Sdn Bhd (MLNG) is no exception in keeping inventory. However, its inventory is more on supplies that are mainly used for plant maintenance activities. Examples of the materials that are kept as inventory in MLNG are valves, pipes, fittings, flanges, gaskets, spare parts for compressors, turbines and pumps, lubricating oils, electrical and instrumentation components, chemicals and gases. The value and volume of inventory to be kept varies from industry to industry, and from firms to firms within the same industry. In PETRONAS Group of Companies, where MLNG is one of its subsidiary companies, it has been agreed among the Materials Managers that the total value of inventory to be kept is 2% of the Cumulative Plant Replacement Value (CPRV). In MLNG's context, as of October 2004 the total value of the inventory items is about 0.6% of the CPRV, which translates to be more or less RM115.8 million.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Introduction

In any production and operations management texts, the words materials and production have become synonymous. Without materials, production activities and processes cannot be carried out. Materials have become part and parcel of the production inputs, irrespective of whether the outcome of the production process is tangible goods or intangible services.

With that perspective in mind, this Literature Review will explore the facets and importance of materials services.

To start, we list some of the terms relevant to the subject as adopted from Kauffman (2002).

**Purchasing** – The process of buying: learning of the need, locating and selecting a supplier, negotiating price and other pertinent terms, and following up to ensure delivery.

**Procurement** – A somewhat broader terms (than purchasing) and includes purchasing, stores, traffic, receiving, incoming inspection, and salvage.

**Supply** – The identification, acquisition, access, positioning, and management of resources the organization needs or potentially needs, in the attainment of its strategic objectives.

**Materials management** – A coordinating function responsible for planning and controlling materials flow. Its objectives are as follows: Maximize the use of the firm's resources to provide the required level of customer service. One department is responsible for the flow of materials, from supplier through production to consumer.

## CHAPTER 3: RESEARCH METHODOLOGY

### 1.3 Source of Data

This research shall use two types of data as follows:

#### a. Secondary data

This data form the literature review of the study, which amongst others, highlight the framework and basis for the research. This data is used to give an insight of the past and current scenarios. The sources of this data are the statistics records on the department's key performance indicators, notes from past departmental brainstorming sessions, books, journals and Internet websites.

#### b. Primary Data

This data shall be gathered from both internal and external customers through questionnaires and interview. Internal customers refer to the company's staff while external customers are vendors supplying materials to the company.

This data shall be used to determine the factors affected the KPIs as stated in the objective of the study.

### 1.4 Research Design

This study will use a descriptive research method, as the need is more focus on determining the factors affecting the KPIs in question. And since this study is a once-off event to evaluate the issues at this point of time, a cross-sectional approach shall be employed.