

**Cost Reduction at Petrochemical industry
by
Material Management Techniques**

Abstract

In this project, it was observed that there was financial loss to the company due to fluctuation in Raw Material price. Therefore Suppliers were also facing the same issue while procuring the Raw Material required by them. There was a possibility of avoiding this price hike by making advance payment to the customers based on the trend observed in the price hike for Raw Materials.

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Abbreviations

IATF – International Automotive Task Force

MRP – Material Requirement Planning

ERP – Enterprise Resource Planning

VMI – Vendor Managed Inventory

SLA – Service Level Agreement

JIT – Just in Time

RM – Raw Material

FG – Finished Goods

Reduce Inventory Cost due to Fluctuation in Price

1. Problem Statement

Financial Loss due to fluctuation of Raw Material Price

2. Suggestions

1. Creating a policy to stabilise input cost. The policy is that advance payment should be made to our Raw Material vendors.
2. As per contract customer is bound to pay price hike to the company and NPL is also bound to pay price hike to the vendors.
3. As per the data of previous years it is noticed that there is price hike during the 2nd and 4th quarter of the financial year. Helping our vendors by paying advance will not only help in reducing buying cost of raw material but will also help in developing better relations with our vendors.

3. Calculation

The data below shows that the price hike is seen in the months of August, September, October and November.

Month	C080MA	52GB002	52GB003	B56003	PE
FG	Buckets	Barrels	Drums	Smlcntr	IBC
April'21	128.16	117.36	112.26	110.15	94.91
May'21	123.16	110.86	105.76	103.65	83.88
Jun'21	113.66	102.86	97.76	95.65	78.87
July'21	100.67	100.85	95.75	93.66	81.46
Aug'21	116.17	104.86	99.75	97.66	81.22
Sept'21	118.17	106.85	101.75	99.66	81.86
Oct'21	121.74	108.94	103.84	101.74	92.89
Nov'21	131.75	116.44	111.34	109.24	94.73
Dec'21	125.75	113.44	108.34	106.24	93.47
Jan'22	117.74	111.44	106.34	104.24	90.30
Feb'22	121.74	113.44	108.34	106.24	
March'22	131.24	119.94	114.84	112.74	
March'22 II	134.24	123.94	118.84	116.74	

Figure 1 Monthly Raw Material Cost

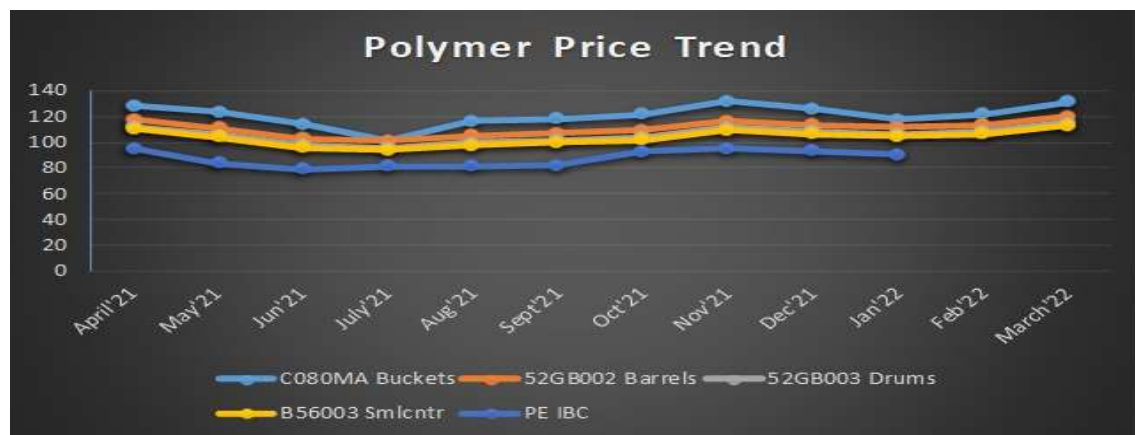


Figure 2 Polymer Price Trend

Eg.

- A) If advance payment is made to the supplier in the month of July for 1000 buckets at the rate of Rs100.

Total Payment to be made - Rs100000

Adding 2% interest on Rs100000 that is borrowed from the bank- Rs102000

Total payment done - Rs102000

- B) If bought at the price of August without advance payment for 1000 buckets at the rate of Rs116 per bucket.

Total Payment to be made - Rs116000

Even after paying the interest of 2% for 1000 buckets the company save Rs14000.

As there is increase in Raw Material Cost finished Goods cost will also increase. NPL customers will pay higher for the FG but our Raw Material cost is the same as it was 2 months ago. Due to this there will be an increase in Profit after saving Rs14000 on the Raw Material cost and selling the FG as per the price hike to the customers.

4. Benefits

1. Raw Material Cost is reduced.
2. Profit on FG sold increases.
3. Relation and bond with the supplier becomes stronger.
4. Supplier will deliver on time and quality products as the movement of suppliers' money also increases. This eventually helps the supplier in increasing its sales and also the standard of the company.

Before Policy Acceptance

		Quantity	Before	Total Payment done
Cost (in Rupees) for one unit	Bucket	100000	131.75	13175000
	Barrels	15000	116.44	1746600
	Drums	30000	111.34	3340200
	Small Container	90000	109.24	9831600

After Policy Approval

		Quantity	After policy acceptance				Profit %
			RM Cost	Total Raw Material cost	Interest paid on Advance amount paid	Total Payment done	
Cost (in Rupees) for one unit	Bucket	100000	100.67	10067000	1208040	11275040	14.421
	Barrels	15000	100.85	1512750	181530	1694280	2.996
	Drums	30000	95.75	2872500	344700	3217200	3.682
	Small Container	90000	93.66	8429400	1011528	9440928	3.974

Conclusion

Multiple solutions were provided after analysing the MRP data and considering the need of the company to improve the Material Management System.

Material management is an important management tool which is very useful in getting the right quality & right quantity of supplies at right time. It helps in inventory control as well as in adopting sound methods of condemnation & disposal, and therefore improves the efficiency of the organization. This helped the Organization in saving Inventory holding Cost, solving space utilisation problems and in the overall development of the Organization.

Stronger bonds were created between the vendor and the organization as advance payments were done to them. This not only helped the vendors in increasing their capacity but also helped the organization in earning more profit as well as saving during the fluctuation of prices.