COMPANY   **: M/s MAHINDRA AND MAHINDRA LTD NASIK.**

PROBLEM REPORTED **: Heat leakages through top coat oven to be blocked and energy saving to be achieved.**

SOLUTION SUGGESTED : UGAM INSULMIX H R T I 600 SYSTEM to be applied to interior of oven tunnels for repelling I R radiations inside the oven.

ENERGY SAVING REPORT OF UGAM INSULMIX COATING.

1. **Location** : Applied to interior of side walls of Top Coat Oven.
2. **Applied on** : 1 to 5 June 2008.
3. **Application area** : 1700 sq. ft. out of 3000. sq. ft. as sample application for studying energy saving.
4. **Parameters available** :
    a. L P G consumption for Top coat oven and Sealer Coat oven together from March 2008 to July 2008.
    b. No. of Vehicles produced during these months.
    c. Working in Number of hours of only Top Coat Oven for these months.

5. **Parameters Not available** :
    a. Separate consumption of only Top Coat Oven for these months.
    b. Working hours of only sealer coat oven.
    c. No. of vehicles passed through sealer coat oven.
    d. L P G required only to fire the oven till achieving required temperature to pass first vehicle through before and after application.
    e. Requirement of LPG for maintaining temperature of oven for one hour without passing any vehicle, before and after application.
6. **Working of Energy Saving** : Due to non-availability of various factors mentioned above, the theoretical calculation of energy and its saving was not possible. Hence we decided to study the saving statistically. The data provided by you is as follows.
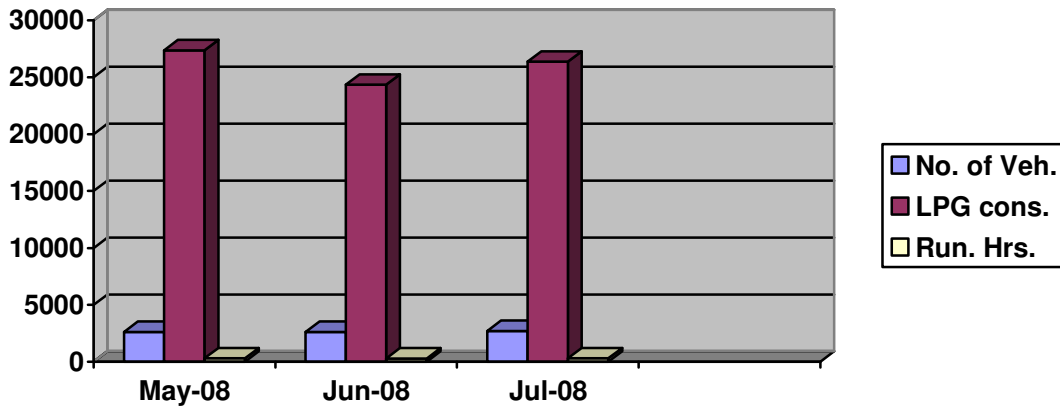
LPG CONSUMPTION COMPARISON

ITEM	2007JUNE	2007JULY	2008march	2008april	2008may	2008JUNE	2008JULY
		BEFORE APPLICATION.				**AFTER APPLICATION.**	
NO. OF VEHICLES	3458	3783	3131	1711	2619	2612	2693
LPG CONSUMPTION	29200.2	28549.92	27274.4	13900.02	27362.79	24340.53	26363.8
RUNNING IN HRS.			322.7	192.7	303.25	293.05	295.75
PER VEHICLE	8.4442452	7.5468993	8.7110827	8.123916	10.4478	9.3187328	9.7897512
VEH/HR			9.7025101	8.879087	8.636439	8.9131548	9.1056636

7. The data provided for the month of JUNE 2007 and JULY 2007 did not contain running hours of the oven. Hence, that could not be considered for comparison.

8. The data in the month of March and April also was having too much variation in terms of number of vehicles and running in hours as compared to MAY, JUNE AND JULY. Hence we considered this data as follows.
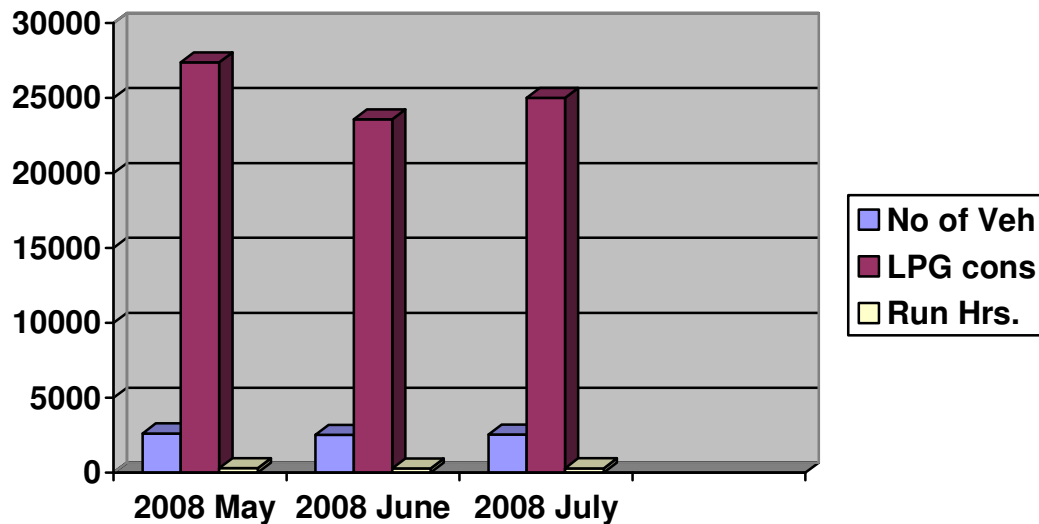
LPG CONSUMPTION COMPARISON

ITEM	2008may	2008JUNE	2008JULY
	BEFORE APPLICATION.	**AFTER APPLICATION.**	
NO. OF VEHICLES	2619	2612	2693
LPG CONSUMPTION	27362.79	24340.53	26363.8
RUNNING IN HRS.	303.25	293.05	295.75
PER VEHICLE	10.4478	9.3187328	9.7897512
VEH/HR	8.636439	8.9131548	9.1056636

9. Now since there are three variables namely No. of vehicles per hour, LPG consumption and Running hours; it becomes necessary that we convert two variables to constant in the data for keeping the third variable for comparison.

10. Hence by converting the vehicle per hour ratio same for three months (e.g. for may it is 8.636439 and for June it is 8.9131548. now by dividing figure of may by that of June and multiplying it with no of vehicles of June we will get the figure of no of vehicles for June. Similarly, for July and for LPG consumption figures are calculated.)

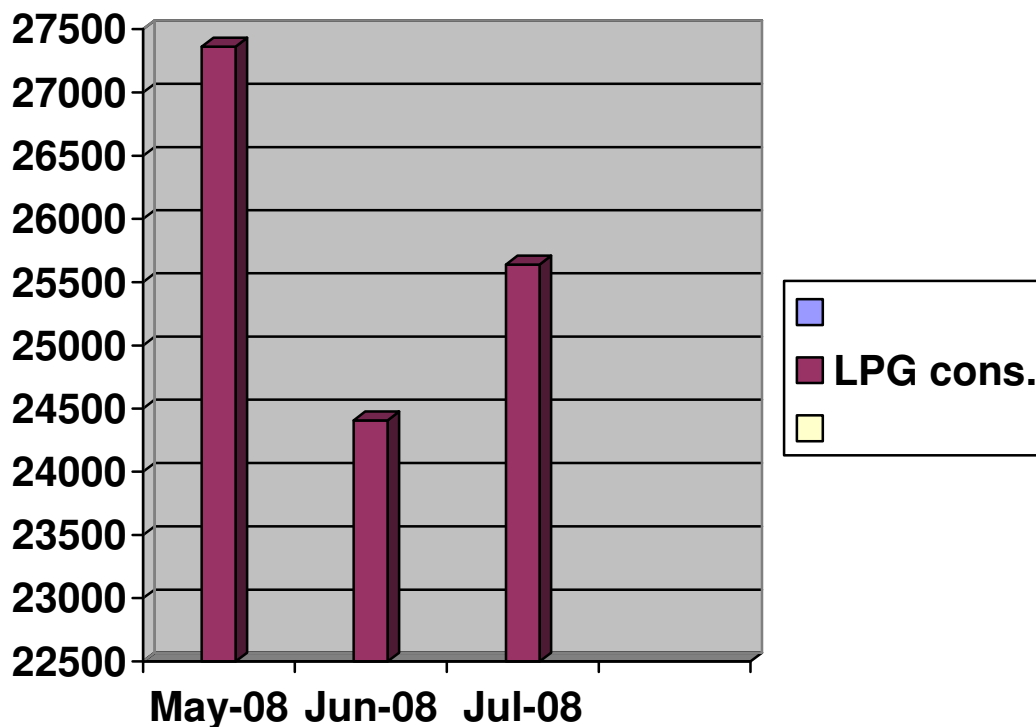| LPG CONSUMPTION COMPARISON			
	BEFORE APPLICATION.	AFTER APPLICATION.	
ITEM	2008may	2008JUNE	2008JULY
NO. OF VEHICLES	2619	2530.9083	2554.2267
LPG CONSUMPTION	27362.79	23584.858	25005.244
RUNNING IN HRS.	303.25	293.05	295.75
PER VEHICLE	10.4478	9.3187328	9.7897512
VEH/HR	8.636439	8.6364386	8.6364386

11. Now by converting the data similarly for keeping the running hours same for all three months in consideration the data will be as follows.

LPG CONSUMPTION COMPARISON			
	BEFORE APPLICATION.	AFTER APPLICATION.	
ITEM	2008may	2008JUNE	2008JULY
NO. OF VEHICLES	2619	2619	2619
LPG CONSUMPTION	27362.79	24405.761	25639.358
RUNNING IN HRS.	303.25	303.25	303.25

PER VEHICLE	10.4478	9.3187328	9.7897512
VEH/HR	8.636439	8.6364386	8.6364386

12. Now since the number of vehicles and running hours are same in all three months we can compare the LPG consumption.

    a. In the month of **June 2008 the saving of LPG is 2957.0289 kg.** i. e **10.81%**

    b. In the month of **July 2008 the saving of LPG is 1723.43159 kg**. i. e. **6.30% and total savings for two months is 4680.460kg.**

    c. **We are proud to prove the savings beyond 5 % in both months as promised by us.**

THE TOTAL SAVINGS IN RUPEES FOR TWO MONTHS, @ 42.00 PER KG LPG COST IS 1,96,579/32 (ONE LAC NINETY SIX THOUSAND FIVE HUNDRED SEVENTY NINE ONLY)