

Some Classified Energy Saving Measures during 2006-07

Installation of Screw compressor with spiral valve technology

Before



Inefficient Old reciprocating air compressors
(2 nos.)

Motor power – 400 kw

Electrical Consumption – 14 lacs
kwh/annum

Operating Cost = Rs. 81.20 Lacs / Annum

After



Spiral valve

Energy efficient screw compressors with spiral
control valve technology

Compressor output modulation upto 40%

Motor power – 250 Kw

Electrical consumption-12 lacs
kwh/annum

Operating Cost = Rs. 71.15 Lacs/Annum

BENEFIT : Electrical Saving Rs.10.05 Lacs/annum



Energy efficient screw compressor for central air conditioning

Before



Reciprocating compressor for chiller at Central air conditioning for Administration building.
Power consumption-3.88 lacs kwh/annum

After



Energy efficient screw compressor chiller at central air conditioning for Administration building.
Power consumption-2.80 Lacs kwh/annum

BENEFITS : Electrical Saving in Rs. = 5.40 Lacs per Annum

Waste heat recovery at Heat treatment Furnace

Before



Conventional Electrical heaters
at post wash

•operating Cost Rs. 11.69 Lacs /annum

After



Waste heat recovery by installing heat exchanger at
chimney of exhaust flue gas.

•Operating Cost– Rs. 2.04 Lacs /annum

BENEFIT : Energy Saving Rs.9.65 Lacs / Annum



Energy efficient compact hydraulic power pack

Before



Conventional Hydraulic power pack
Power consumption-32223 kwh/annum

After



Installation of Energy efficient
compact hydraulic power packs
Power consumption-1223 kwh/annum

BENEFIT : Energy Saving Rs.1.55 Lacs / Annum



Super heat recovery from Air conditioning units – Engine PU

Before



- Conventional Electrical heaters
- Consumption = 102700 kwh /annum
- Operating Cost=Rs. 5.13 Lacs/annum

After



- Super heat recovery from AC unit
- Consumption = 2,700 kwh /annum
- Operating Cost=Rs. 0.13 Lacs/annum

BENEFITS : Electrical Saving-Rs. 5.00 Lacs / Annum

Variable frequency drive for paint booth in Axle PU

BEFORE

- Conventionally Speed control of Air Blowers with Mechanical Dampers
- Consumption=63800kwh /annum

AFTER



- Speed Control of Air Blowers with VFD
- Consumption = 37,800 kwh /annum
- Saving = 26,000 kwh/annum

BENEFITS Electrical Saving- Rs. 1.30 Lacs/annum

PNG instead of LPG for RX generator in Heat-Treatment

BEFORE

AFTER

LPG for RX gas generator
In Heat treatment.
Energy cost-Rs.30.60 Lacs/annum



PNG for RX gas generator
In Heat treatment.
Energy cost-Rs.22.60 Lacs/annum

BENEFITS Thermal Saving- Rs 8.00 Lacs/annum

Automatic Power Factor and Harmonic Controller

BEFORE

AFTER

Power Factor – 0.94

Maximum Demand :- 2012 KVA



Power Factor – Unity

Maximum Demand:- 1891 KVA

BENEFITS :- Reduction in Maximum Demand – Rs. 4.36 Lacs



Fanless Natural draft cooling tower

Before



Electric driven cooling tower
Energy cost- Rs. 3.60 Lacs/annum

After



Fanless natural draft cooling tower
Energy cost- Nil

BENEFITS Electrical Saving – Rs.3.60 lacs/annum

Reuse of Coolant Oil

BEFORE

Coolant:

80% water + 20% Oil

Cost of Coolant
Disposal: Rs.230/- per
drum of 200 Ltrs.

AFTER

Coolant for disposal is treated and 80% water recovered, recycled and reused.

Mixing of treated waste water with sewage and further treatment for land irrigation.



Environment friendly LPG forklift

Before

After



Diesel driven Forklift P4 Engine

Pollution Level :- 95 HSU




Environment Friendly LPG driven Forklift

Pollution Level :- 35 HSU

BENEFITS:- Reduction in Pollution Level by 60 HSU

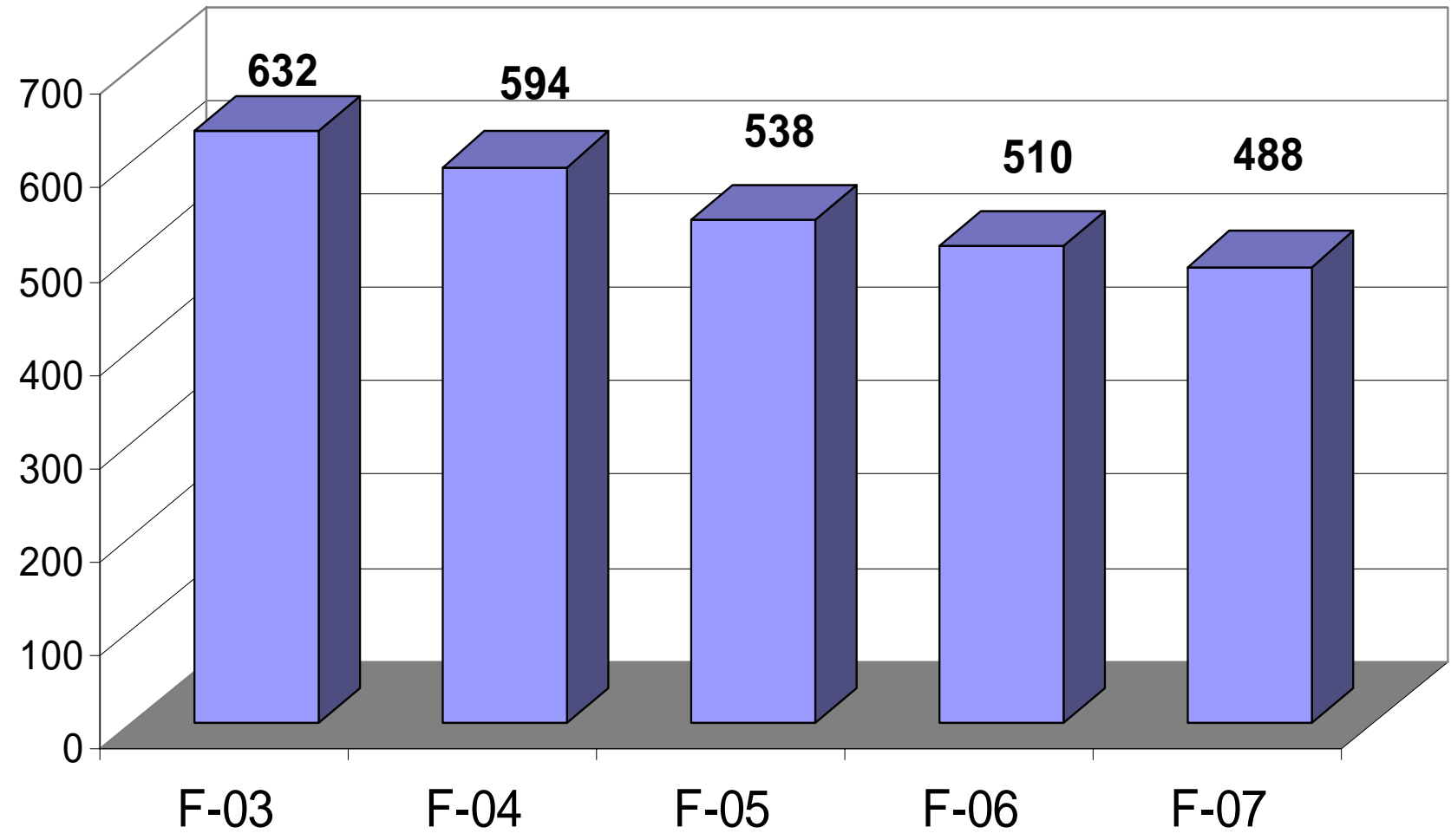
TURBINE AIR VENTILATION SYSTEM

Before	After
<p>Roof Extractor provided for ventilation purpose is normally operated by an electrical motor. Replaced by Turbine air ventilator which rotates on wind velocity.</p> <p><u>Before Installation :</u></p> <p>Roof Extractor : Electrical Consumption / Annum = 1.20 Lacs kWh</p>	 <p>TURBINE AIR VENTILATORS</p> <p>Turbine Air Ventilator: Electrical Consumption : Nil</p>
<p>Benefits Electrical Saving = Rs. 6. Lacs / Annum</p>	

Clean Development Mechanism (CDM)

No.of projects Identified	CER (Carbon Emission Reduction) in Tons	Carbon credits (Foreign exchange) Euro/annum
27	3623	54,347

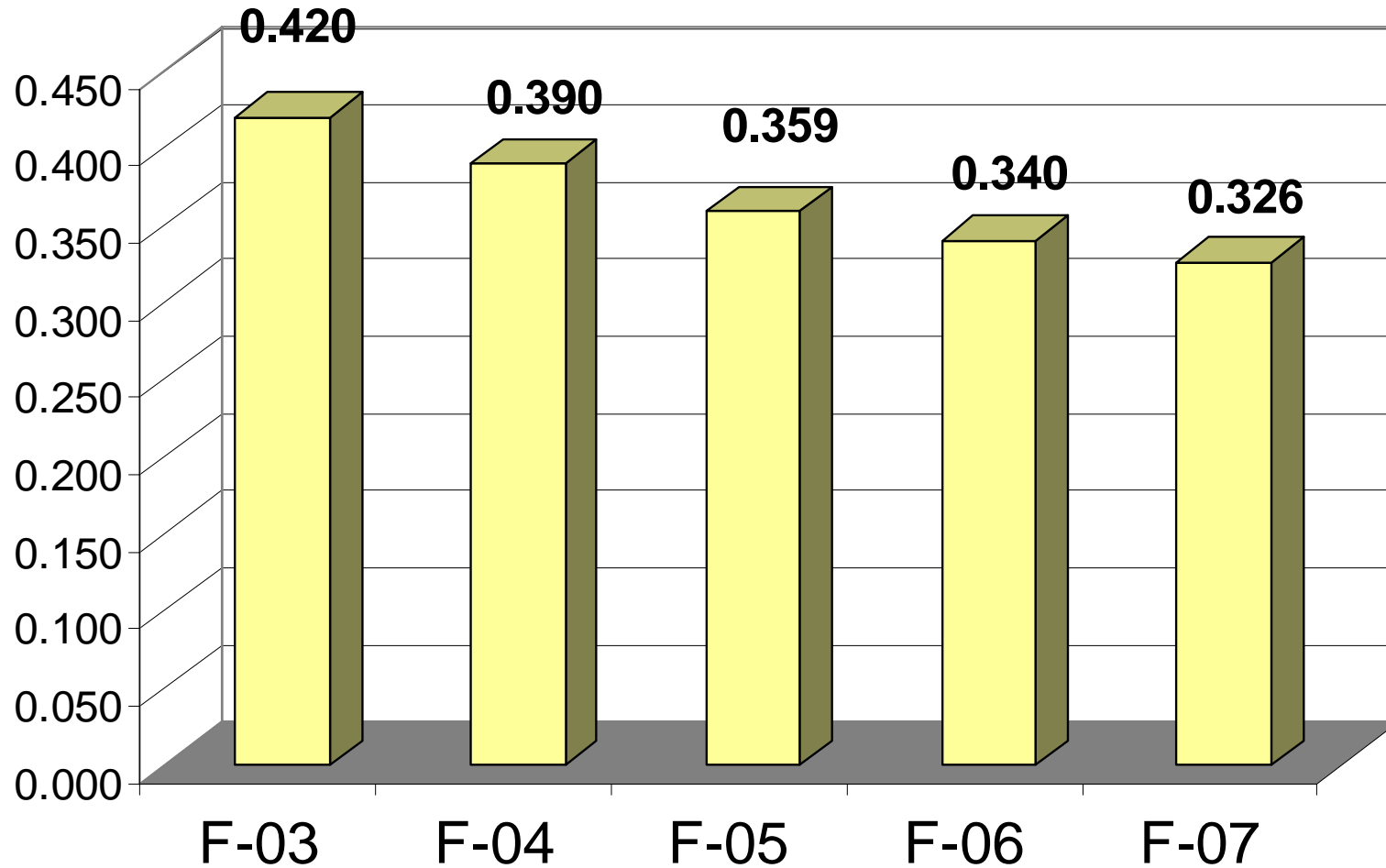
Electrical Consumption kwh/Eq Veh



Specific Gas Consumption

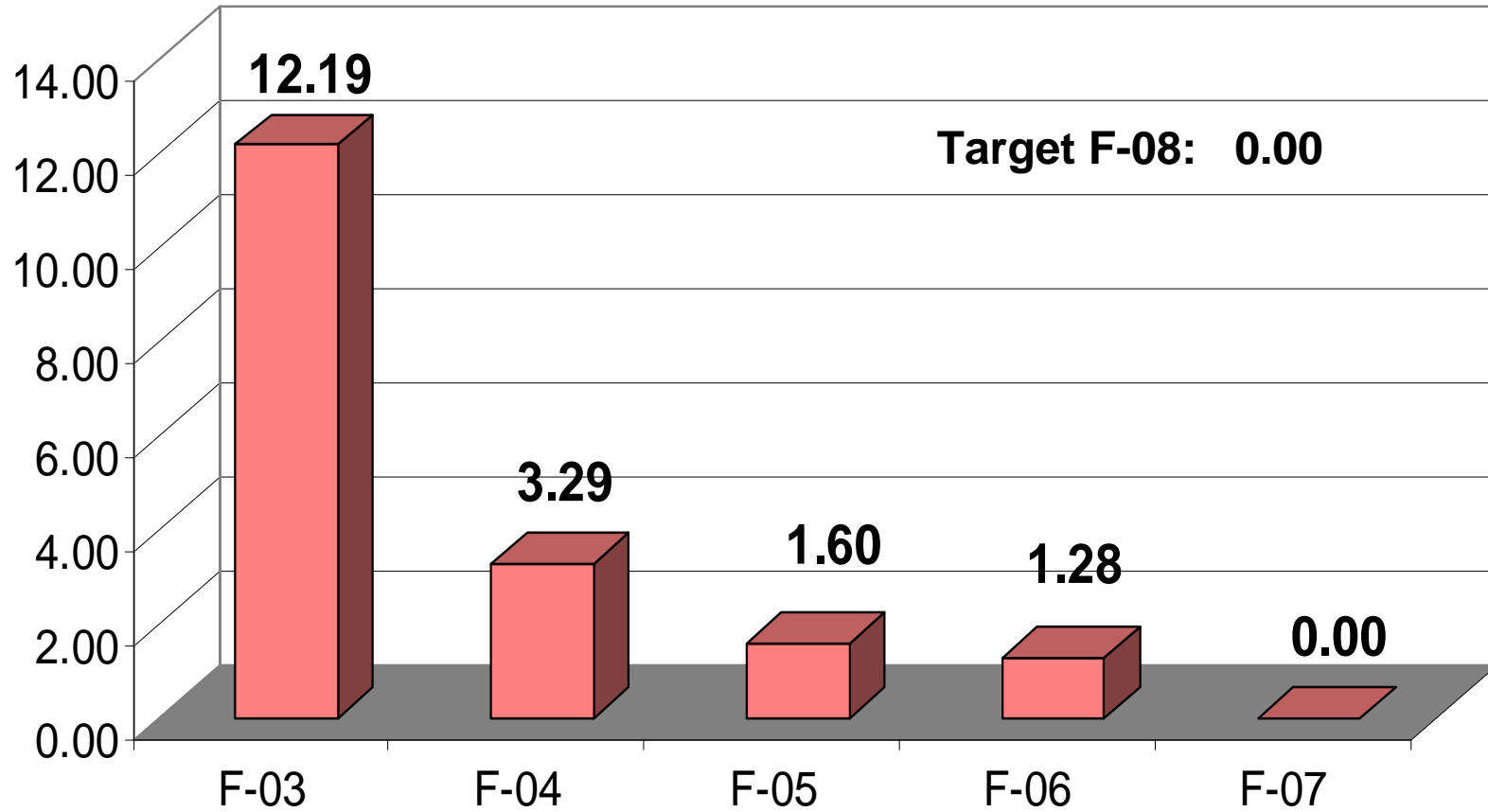
Specific Gas Consumption Mkcal/Eq Veh

Target F-08: 0.316



Specific LDO Consumption

Specific LDO Consumption



Specific Kerosene Consumption

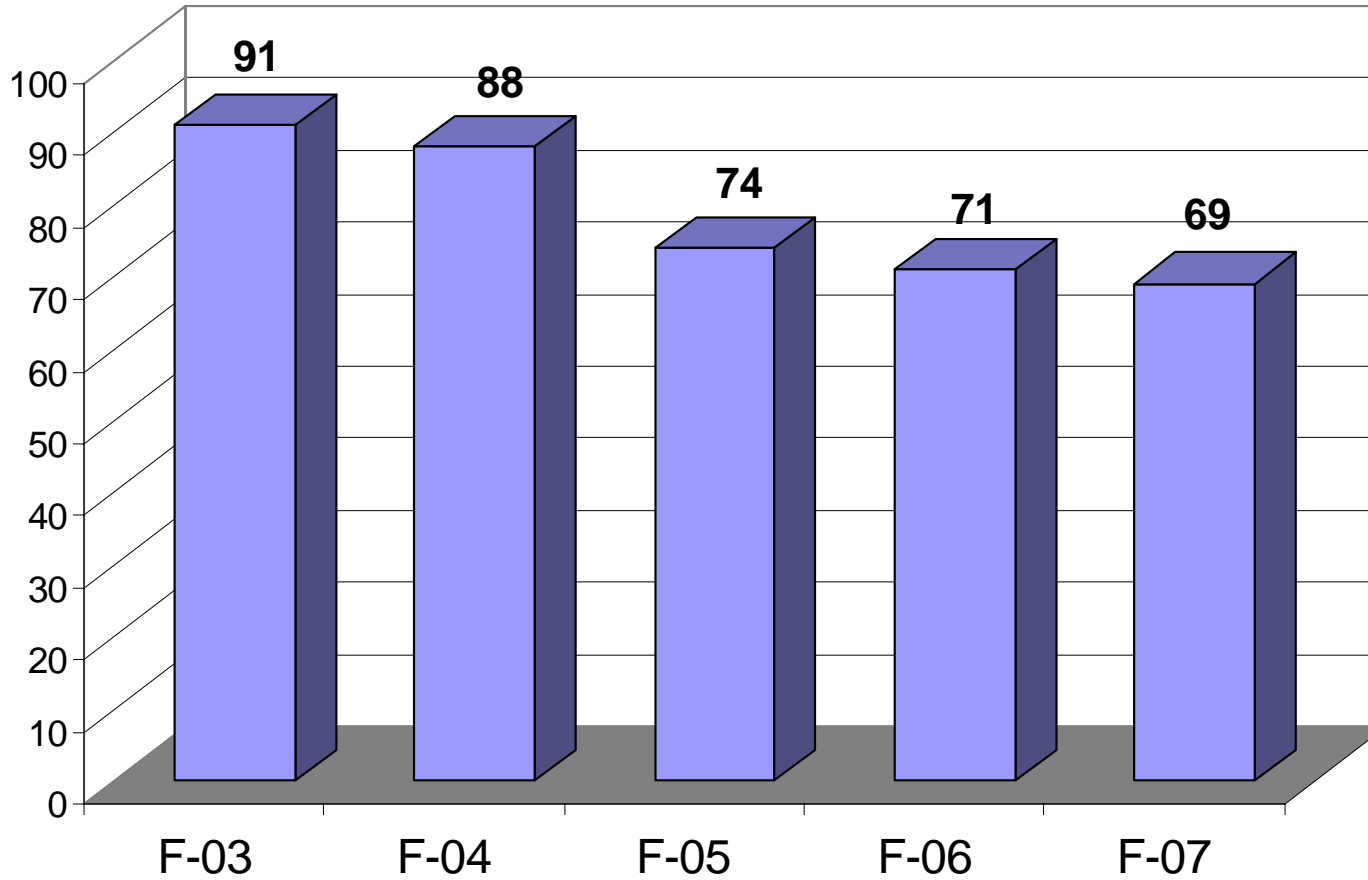
■ Kerosene Consumption : Litre / Eq.Vehicle



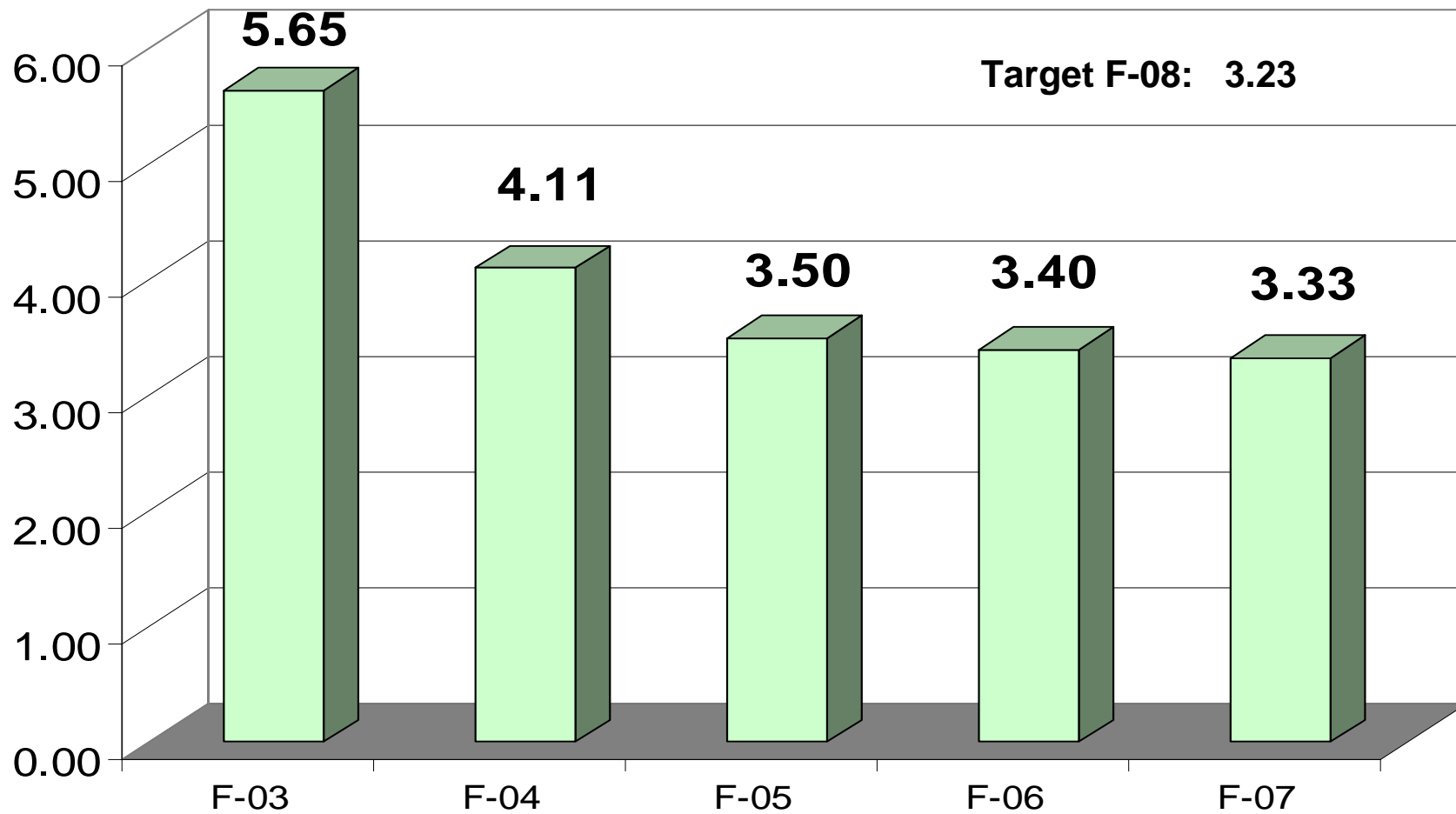
Specific Compressor Electrical Consumption

Specific Compressor Electrical Consumption

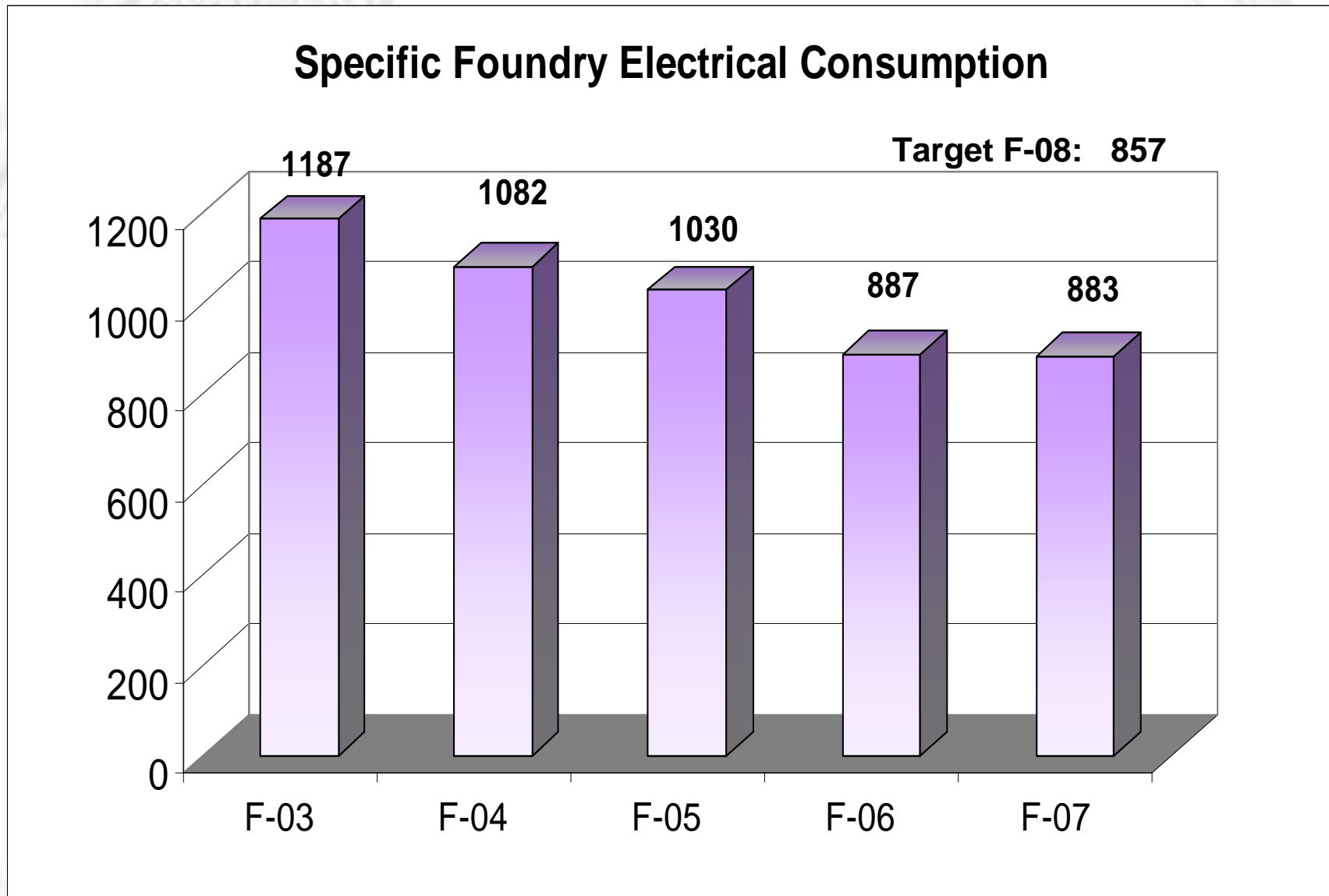
Target F-08 : 67



Water Consumption KL/Eq Vehicle



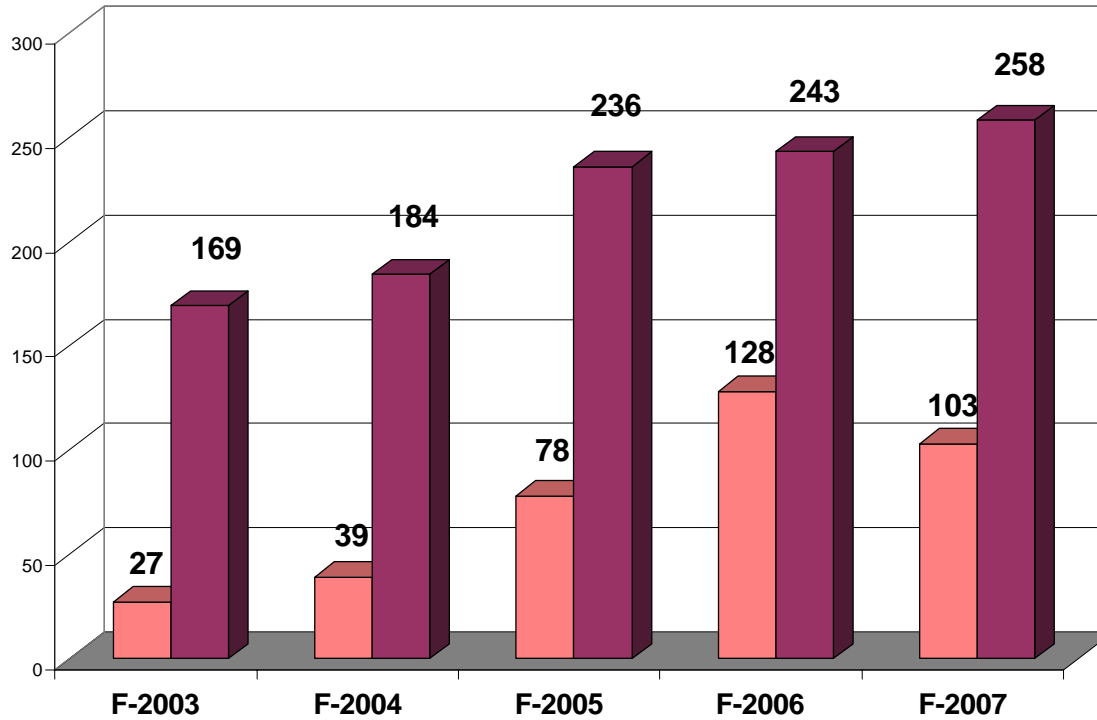
Specific Foundry Electrical Consumption



Energy Saving And Investment

ELECTRICAL SAVING AND INVESTMENT MADE

Investment in Rs. Lacs Saving in Rs. Lacs



Total Cumulative Saving V/s Investment : F-03 to F07

