

APPLICATION CASE STUDY



DOC.NO. : AMTCS-9

POWER CONSUMPTION BY PRESENT METHOD OF THROTTLING FOR MOTOR-M1

CONSUMPTION	DAMPER POSITION OPENING
134 KW/HR	70%

POWER CONSUMPTION BY PRESENT METHOD OF THROTTLING FOR MOTOR-M2

CONSUMPTION	DAMPER POSITION OPENING
134 KW/HR	70%

POWER CONSUMPTION BY PRESENT METHOD OF THROTTLING FOR MOTOR-M3

CONSUMPTION	DAMPER POSITION OPENING
134 KW/HR	70%

ACTUAL POWER CONSUMPTION USING AC VARIABLE SPEED DRIVE & THROTTLING VALVE FULLY OPEN FOR MOTOR-M1

CONSUMPTION	THROTTLING VALVE OPENING
93 KW/HR	100%

NET POWER SAVING	:	134 KW - 93 KW = 41 KW/HR
MOTOR OPERATION	:	24 HRS/DAY
UNITS SAVING/DAY	:	984 KWH
UNITS SAVING / MONTH	:	29,520 KWH
UNITS SAVING / YEAR	:	2,95,200 KWH
TARRIF RATE RUPEES	:	US \$ 8333.33 / UNIT
ENERGY SAVING/MONTH	:	US \$ 2460 /- APPROX.
ENERGY SAVING/YEAR	:	US \$ 29520 /- APPROX.
INVESTMENT	:	US \$ 16666.66

ECONOMIC ANALYSIS : The total pressure generated by PUMP MOTORS in plant was excessive. By application of VFD and based upon specific pressure generation figures obtained from monitoring periods, the reduction in electricity consumption by 200HP PUMP MOTOR is estimated by 25400 kw/month.

The plant area is operational all times of the year and thus its electricity consumption forms part of the base demand of the infirmary. In considering financial savings, the higher cost components of the electricity tariff are therefore applicable.

Analysis of monitored data showed that average electrical kva demand of motor was reduced by VFD are estimated RS.12.5 LACS hence payback of the system is only 7 months.

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