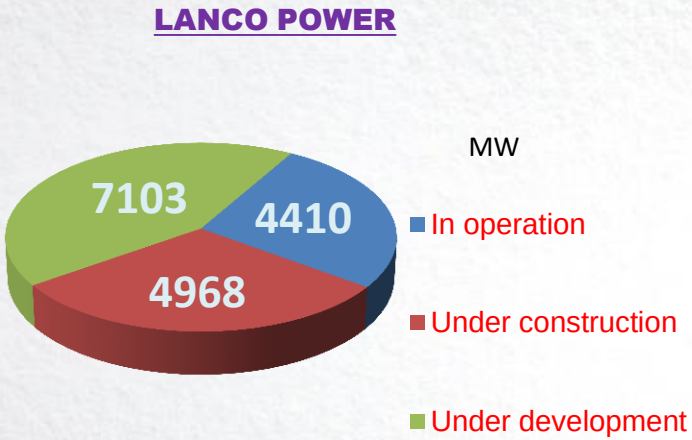
LANCO Kondapalli Power Plant

Lanco Kondapalli Power Limited

LANCO is among the top three power developers in private sector

LKPL is one of the largest IPPs in India.



A Snapshot of LKPL			
Installed Capacity	1466 MW		
Phases	Phase-1	Phase-2	Phase-3 *
	368 MW	366 MW	732 MW
Configuration	2 * (9E GT+ ST)	1 * (9FA GT+ ST)	2 *(9FA GT+ ST)
Fuel	Gas/Naphtha	Gas	Gas/Naphtha
Fuel source	ONGC/RIL/HPCL	RIL	RIL/HPCL
Watrer Source	Krishna River		
Transmission Lines	2X 220 kV	2X400 kV	-
Beneficiaries	Andhra Pradesh	All India	All India

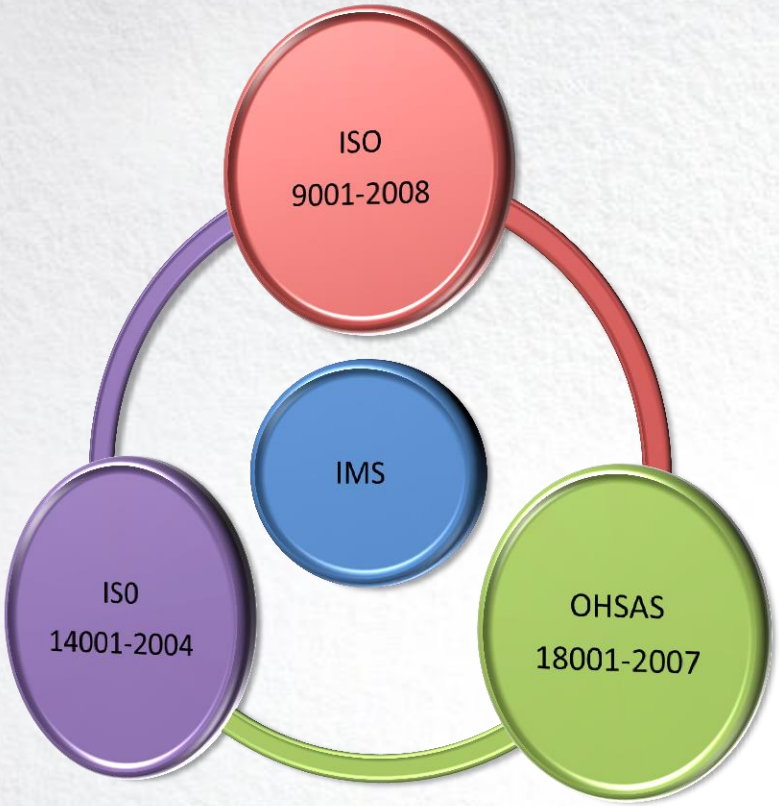
* Phase-3 under implementation

Lanco Kondapalli Power Limited

Success tools
Systematic approach towards improvements through standardization
Implementation of up rates in main equipments with Technology absorption
Prudent O&M practices
Energy management on frontline
Long term PPA with AP TRANSCO
Long term Maintenance contracts with OEMs
Partnership with MNCs Viz, M/s GENTING Malaysia,M/s Doosan Korea
Experience in Merchant Plant Operation and Energy trading

Lanco Kondapalli Power Limited

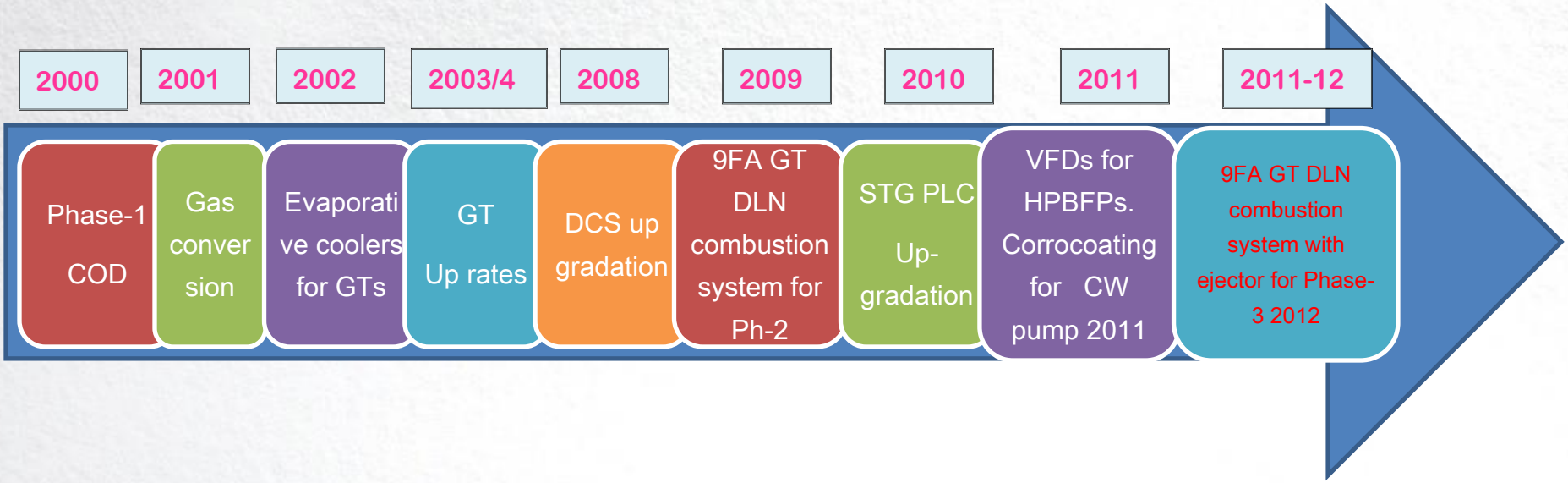
STANDARDIZATION



Under Implementation

Lanco Kondapalli Power Limited

Technology Absorption over the years



Lanco Kondapalli Power Limited

Technology Absorption

Fuel Conversion – Naphtha to Gas

GAIL Terminal at LKPL

- Low Generation Cost per unit.
- Longer life of Critical Parts.
- Maintenance factor reduced from 1.5 to 1.
- Reduced emissions.

Lanco Kondapalli Power Limited

Technology Absorption

Installation Of Evaporative Coolers

Evaporative cooler

- Evaporative cooler installed at GT inlet to cool the Inlet air temp.
- About 10^{o} C drop in air temp is achieved.
- For every 1 degree temp drop in compressor inlet, about 0.7 MW out put will increase in Gas Turbine

Lanco Kondapalli Power Limited

Technology Absorption

GT Up-rates: (2003-04)

Optimizing the cooling air flow to turbine and reducing the leakages leading to increase in 1 % GT output and 0.5% reduction in heat rate

Up-rates Includes Following Changes:

- 1st Stage Shroud cloth seals FS2Y
- Inner Barrel with Honey comb and brush Seals FS2V
- Number- 2 Bearing seals with upgraded Brush Holding seals FS2X
- Second stage nozzle / diaphragms with new brush seals installed in the diaphragms.

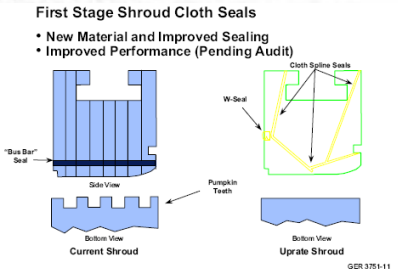


Figure 11. "Pumpkin-tooth" design vs. new shroud seal design

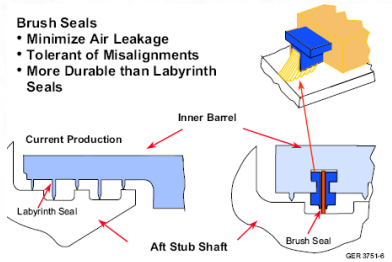


Figure 6. Typical brush seal element

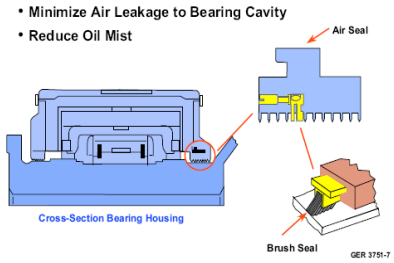


Figure 7. #2 bearing brush seal

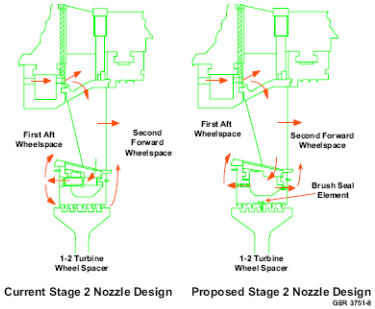


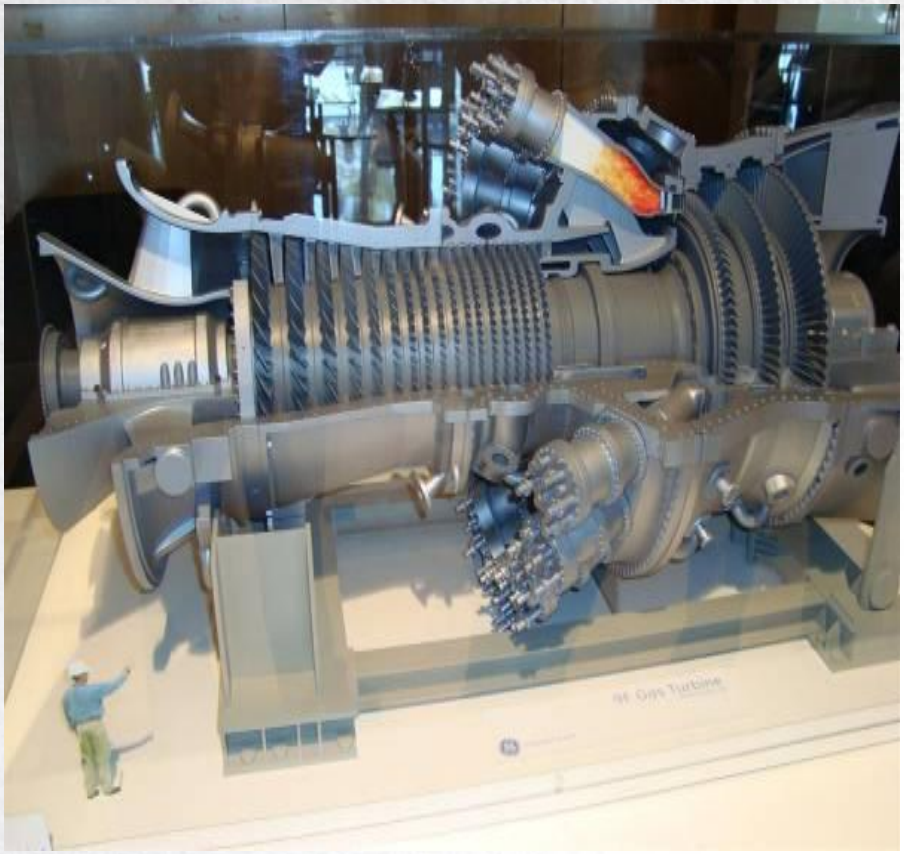
Figure 8. Stage 2 nozzle with a brush seal

Lanco Kondapalli Power Limited

Comparison between Phase-1 & Phase-2

	Phase-I	Phase-II
CAPACITY	368.144 MW	366 MW
CONFIGURATION	2 + 1	1 + 1
PLANT EFFICIENCY	48 %	55 %
PLANT Heat rate kcal/kwh(GCV)	1947	1745
NO x control	Water Injection Nox <75 PPM	DLN combustion Nox <25 PPM
GT	GE frame 9E	GE frame 9FA
HRSG	HANJUNG	THERMAX(Reheat)
STG	ALSTOM	HARBINE
DCS	SIEMENS	ABB
SWITCH YARD	220kV Outdoor	400kV GIS
GT firing temperature	1124 deg C	1337 deg C
Switch Yard	220kV Out door	400kV GIS
Generator cooling	Air	Hydrogen

Lanco Kondapalli Power Limited



9FA Gas Turbine

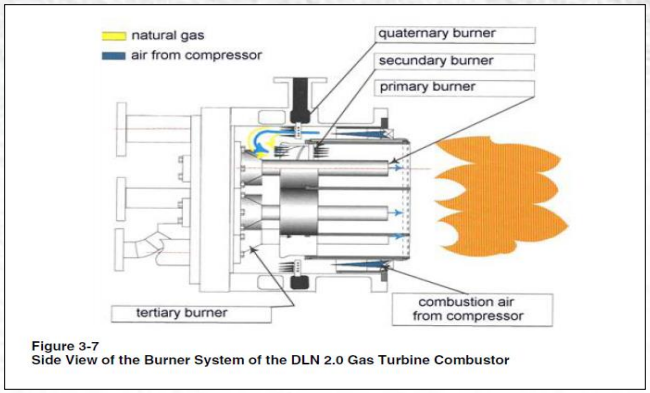
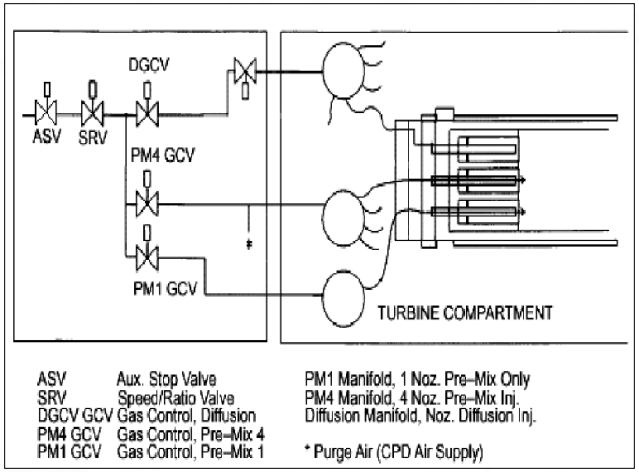


Figure 3-7
Side View of the Burner System of the DLN 2.0 Gas Turbine Combustor

DLN Combustor



Gas Fuel Circuit

Lanco Kondapalli Power Limited

Comparison between Phase-2 & Phase-3

	Phase 2	Phase 3
GT Capacity	236.8 MW @ 30 deg C and 50 Hz	241 MW @ 30 deg C and 50 Hz. (modification of extraction air supply to turbine nozzle cooling & reduction of stage 1 blade and shroud clearances reducing the leakage past the blade tip)
Diverter Damper	To switch over form Open cycle to closed cycle	No Diverter Damper
Fuel	NG	NG and Liquid Fuel
400 kV	Overhead conductors are used to connect GT/STG transformers and 400 kV GIS	The GT/STG transformers are connected to GIS with 400kV underground cable running in a culvert.
DM Plant	Conventional ION Exchange	RO Plant followed by Mixed bed

Lanco Kondapalli Power Limited

Technology Absorption

Phase-1 DCS (Distributed Control System) Up gradation:

Old system "Teleperm XP" Version V5.02.24 upgraded to "Teleperm XP" SPPA-T2000

- Graphics server reliability improved. Old Graphics server had frequent hanging
- Plant Performance calculations configured
- Fast parameter change on OT via ES-AS-communication
- Increased Data storage on SU- From one month historical data to 6 months historical data.
- Magneto optical disk (MOD) storage capacity increased from one week to two weeks.
- Alarm inhibition for individual alarms
- Suppression of frequently appearing alarms on ASD

Phase-1 Steam Turbine Control System (PLC) Up gradation:

ALSPA 8035 PLC is an obsolete system same was replaced with "CONTROSTEAM™V3"

During start-ups, machine used to trip several times and control system was not operator friendly .With the new control system steam turbine reliability increased and start up time is reduced.

Lanco Kondapalli Power Limited

Technology Absorption

DCS (Distributed Control System) Up gradation:

Old system "Teleperm XP" Version V5.02.24 upgraded to "Teleperm XP" SPPA-T2000

- Graphics server reliability improved. Old Graphics server had frequent hanging
- Plant Performance calculations configured
- Fast parameter change on OT via ES-AS-communication
- Increased Data storage on SU- From one month historical data to 6 months historical data.
- Magneto optical disk (MOD) storage capacity increased from one week to two weeks.
- Alarm inhibition for individual alarms
- Suppression of frequently appearing alarms on ASD

Steam Turbine Control System (PLC) Up gradation:

ALSPA 8035 PLC is an obsolete system same was replaced with "CONTROSTEAM™V3"

During start-ups, machine used to trip several times and control system was not operator friendly .With the new control system steam turbine reliability increased and start up time is reduced.

LANCO KONDAPALLI POWER LIMITED

PRUDENT O & M PRACTICES

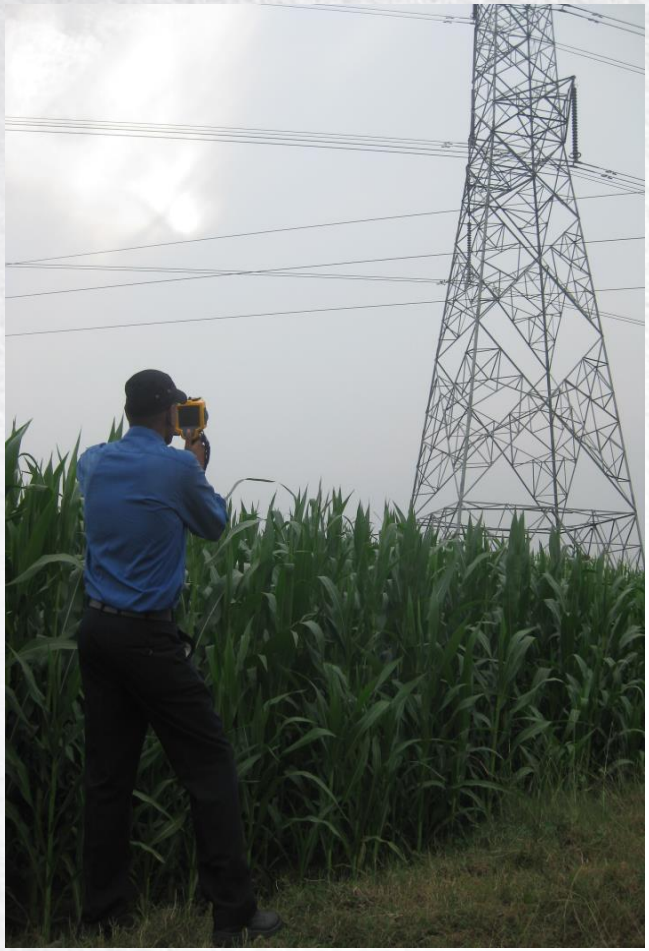
- Station Performance Monitoring (PLF,Heat Rate, APC) using ExceLANCE performance tool.
  - Optimum loading of the Gas turbines with the available Gas and Load scheduling
- Equipment performance monitoring (Gas turbine compressor fouling)
  - Periodic compressor Online wash.
  - Offline compressor wash based on compressor fouling.
- Optimum water Injection to maintain the NOx.
- Daily Water Consumption Monitoring.
- Bypass stack and Main stack temperature Monitoring.
- Standard Operating Procedures.
- LOTO PTW system
- Incident Analysis to identify the root cause and implementing corrective and preventive measures.

Lanco Kondapalli Power Limited

Prudent O & M Practices

- Preventive Maintenance.
- Predictive Maintenance (condition based maintenance).
  - ✓ Vibrations monitoring (with motor currents logging).
  - ✓ Valve passing test with Ultrasonic detector in water and steam circuits.
  - ✓ Lube Oil and Transformer oil Analysis.
  - ✓ Thermography for HRSG duct ,GT compartments, Switch yard.
- Plant Modification for plant performance and reliability improvement (149 modifications done).

CDT



Thermography

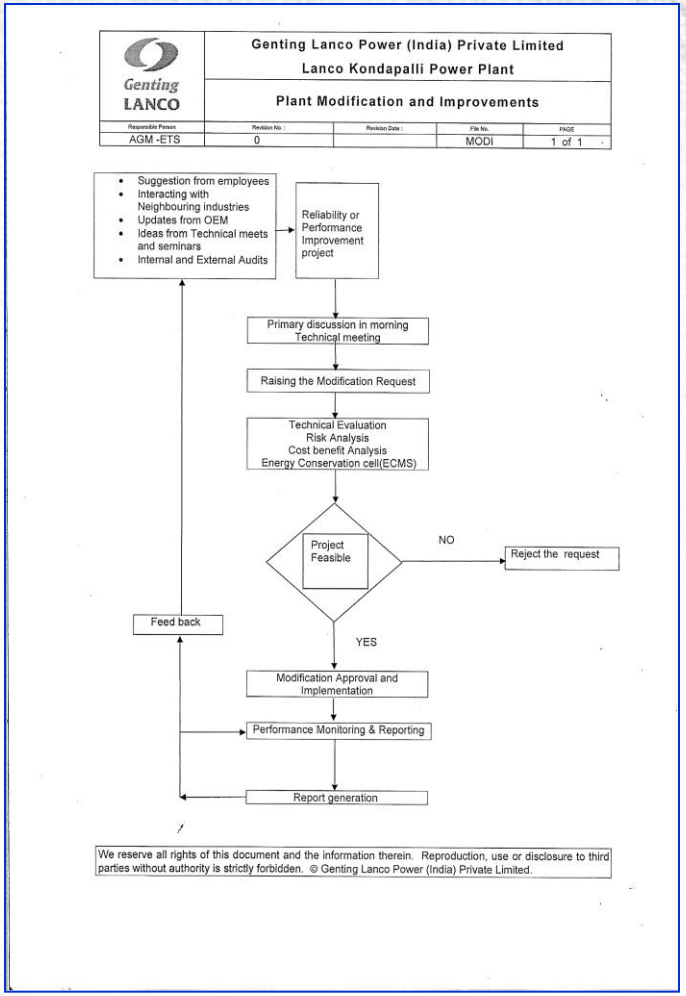
Condenser tube leak test

LANCO

Lanco Kondapalli Power Limited

Plant Modifications

Plant Modification Proposals	
No of Modification Proposals	210
Implimented	149
Reject/Hold	35
Under Implementation	26



Lanco Kondapalli Power Limited

ENERGY MANAGEMENT

Lanco Kondapalli Power Limited

Energy Policy

LANCO
Always Inspiring

Lanco Kondapalli Power Limited

ENERGY POLICY

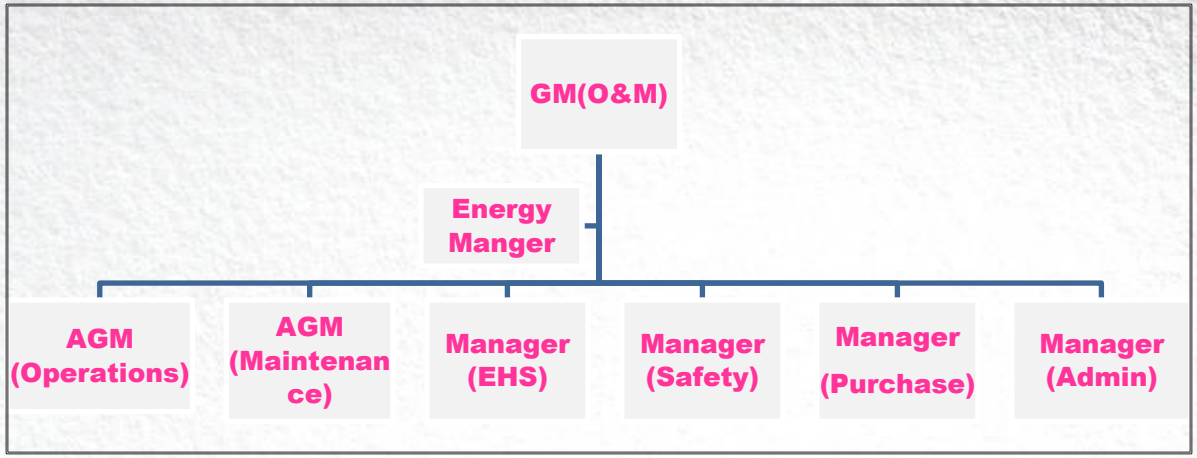
We, Lanco Kodapalli Power Limited, a 734 MW Combined Cycle Power Plant, are committed to optimally utilize energy, so as to make it environmentally sustainable for future generations.

We Plan to achieve this by:

- Managing efficiently the utilization of energy resources (like Natural Gas , RLNG, Naphtha, HSD) by following all prudent O & M practices.
- Adopting energy efficient technologies/equipment for all future expansions & acquisitions.
- Making energy conservation a mass movement with the involvement of all employees.
- Going beyond standards, wherever economically viable.
- Enrich our experience in energy conservation through exchange of ideas with other organizations.
- Closely monitoring and controlling the energy consumption utilizing effective energy management systems.
- Continually improve the performance by Carrying out regular energy audits and implementing the improvements suggested.

P.Panduranga Rao
Director & CEO

Energy Conservation Cell



Core Team

- Energy conservation measures are identified from the staff suggestions, external Audits, Vendors, and Competitors.
- Energy conservation projects in advanced stage are discussed in weekly production meeting and other projects under technical evaluation are discussed in energy conservation cell meeting monthly
- Regular post project Performance test are conducted to ensure the sustained energy savings .

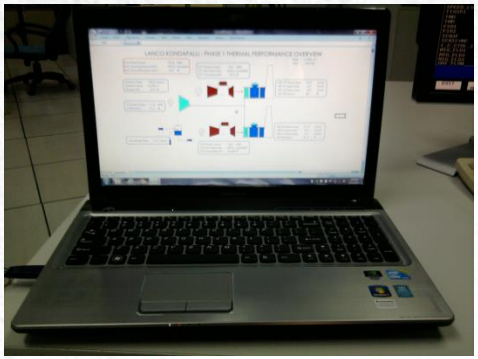
LANCO

Lanco Kondapalli Power Limited

Performance Tools

Phase-1

- **ExceLANCE By M/s Patsimo**

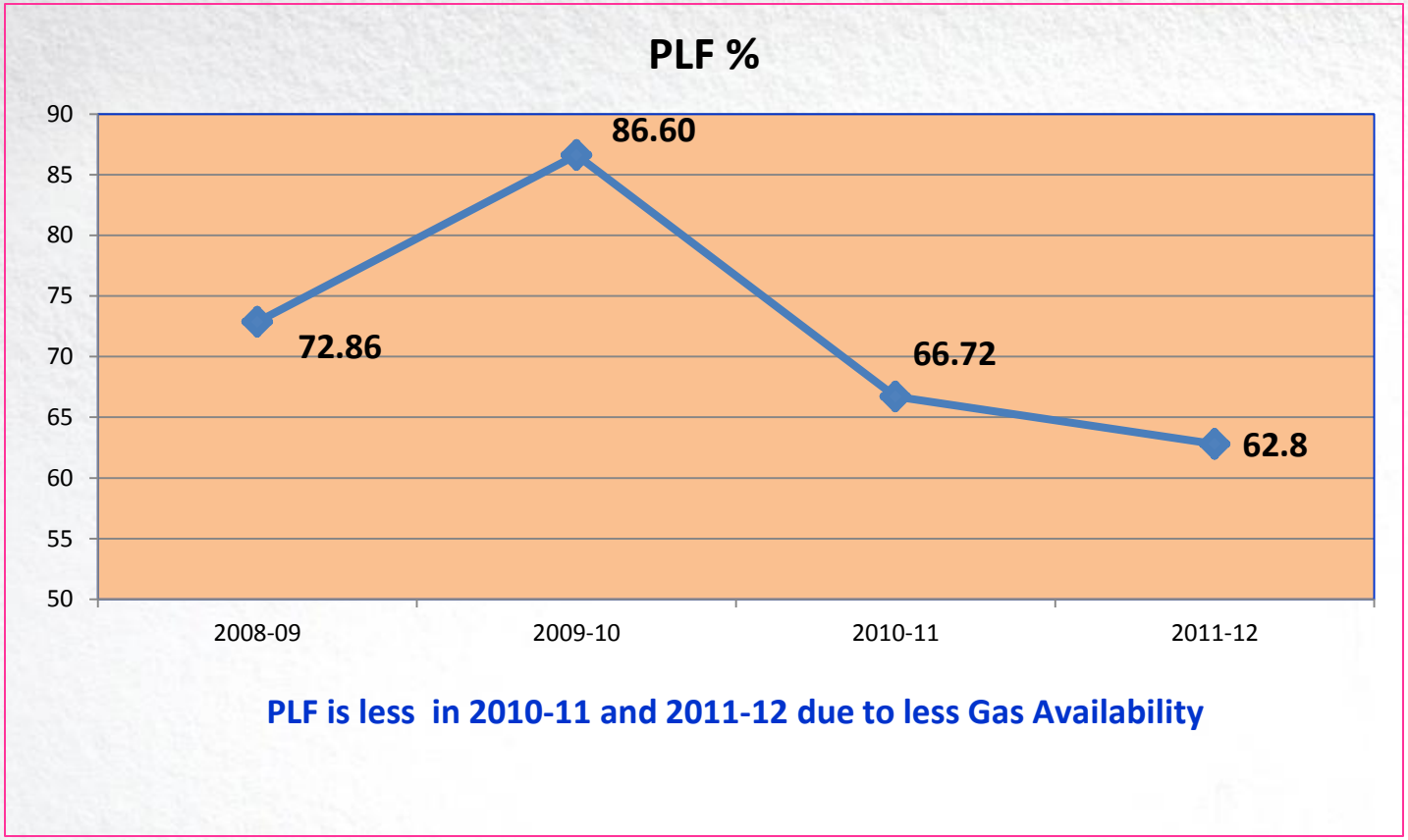


Phase-2

- **PGIM -Power Generation Information Manager**

Lanco Kondapalli Power Limited

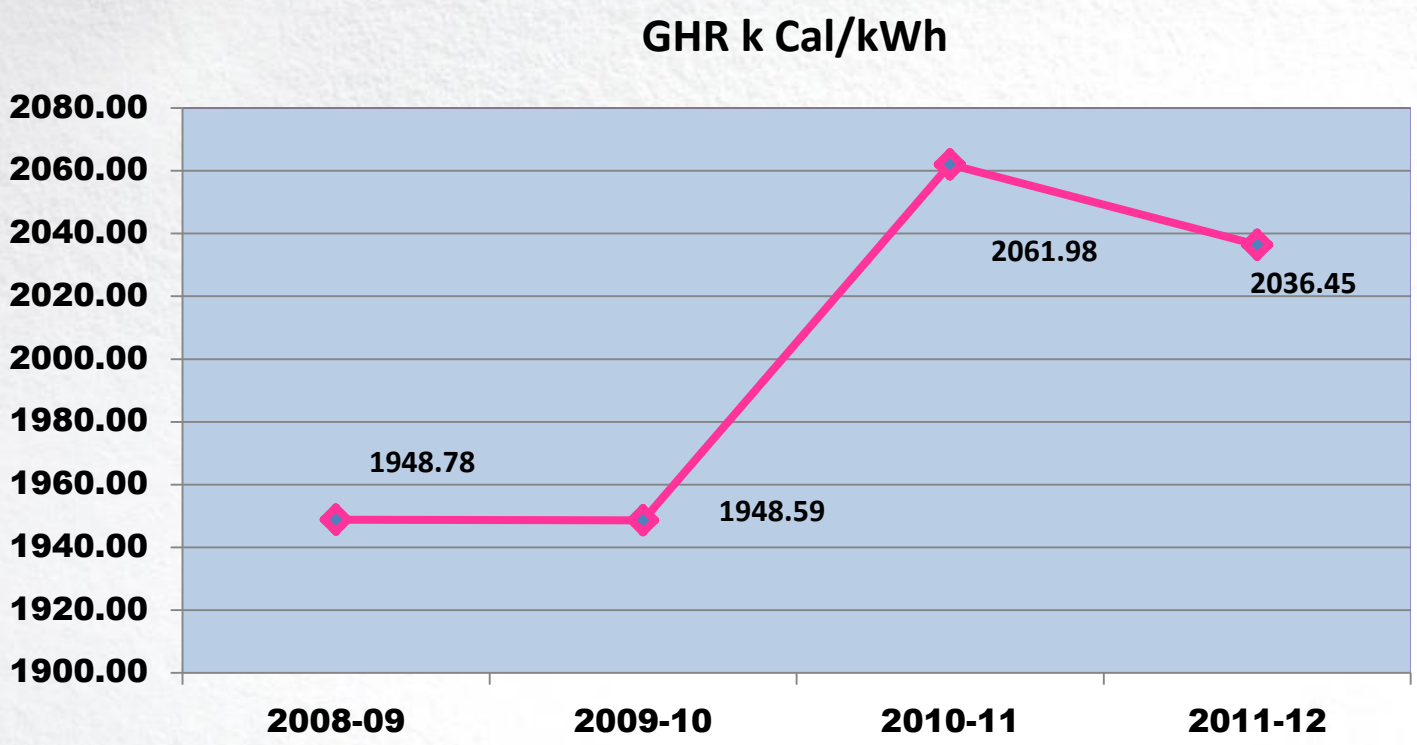
Plant Performance – PLF%



PLF is less in 2010-11 and 2011-12 due to less Gas Availability

Lanco Kondapalli Power Limited

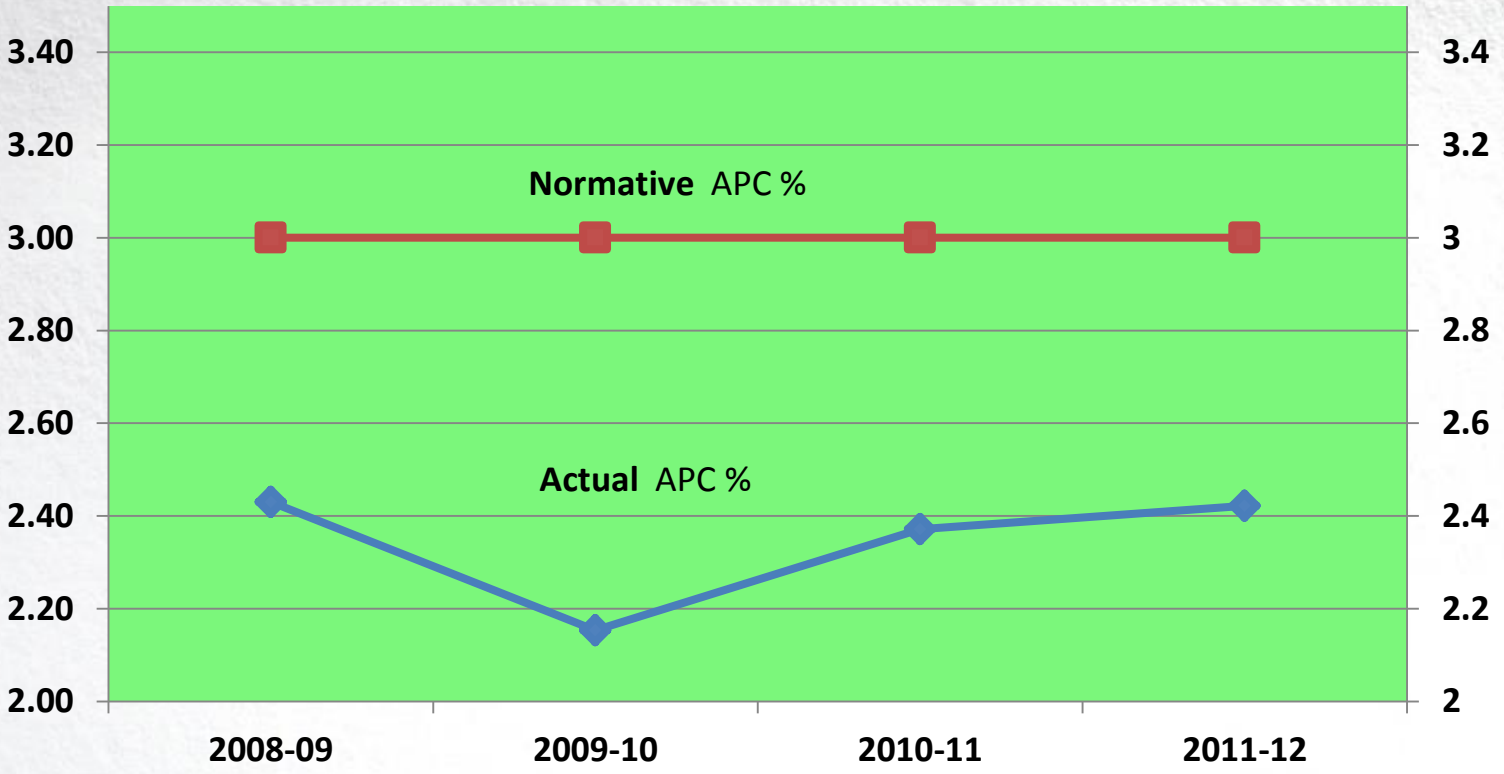
Plant Performance – Gross Heat Rate



Heat Rate increased during 2010-11 and 2011-12 due to Lower PLF because of less gas availability.

Lanco Kondapalli Power Limited

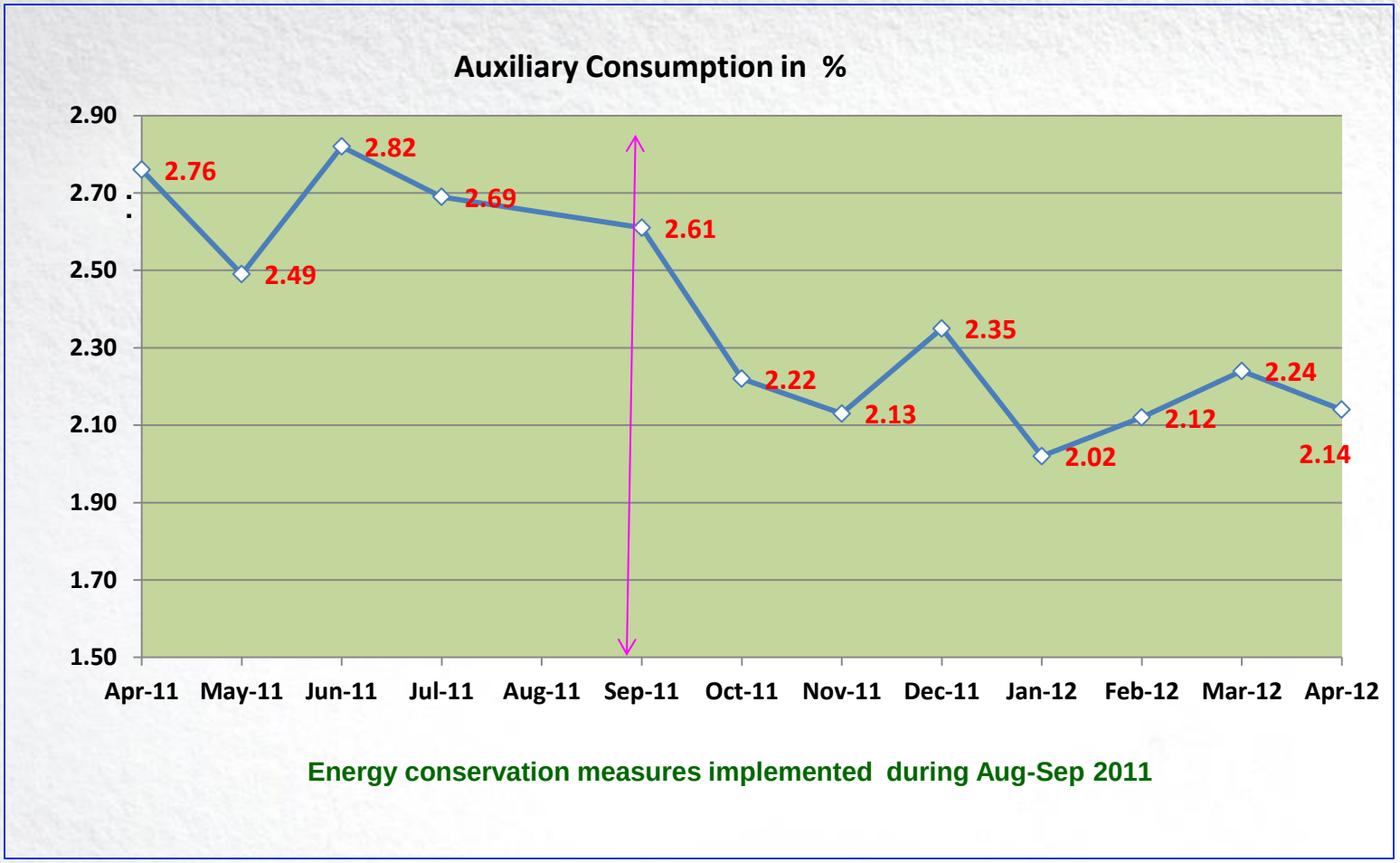
PLANT PERFORMANCE – APC %



PLF is 86.6 % in 2009-10.Had the plant operates at same PLF, APC would be 1.97%

Lanco Kondapalli Power Limited

Plant Performance – Aux Cons % (2011-12)



Lanco Kondapalli Power Limited

Bench Marking (PAT Base Line Data)

Station	Installed capacity(MW)	Heat rate (Net gen & GCV) Kcal/kWhr
LKPL	368	2007
NTPC Plants		
Faridabad	430	2001 (Higher rating Machines)
Kayam kulam	350	1994 (Naphtha Fuel)
Dadri	817	2037
Kawas	645	2070
Gandhar	648	2075
Anta	413	2091
Auriya	652	2190
Other Plants		
Pragathi power station, Delhi	350	2068
Spectrum Power Generation Ltd., East Godavari	217	2123
Reliance Samalkot Thermal Power Station	220	2106
GVK Power, Jegurupadu	217	2058

Source: PAT Notification

Lanco Kondapalli Power Limited

Energy Conservation Measures

S No.	System	Equipment	Process Improvement	Resulted Savings in Annual MU	CO2 Emissions (Tonnes/year)	Investment Made in Rs Million
Implementations During 2009-10						
1	Boiler Feed water pumps	Control System	Logic modification for one BFP operation during 1 GT Operation	0.56	260.512	Nil
2	HRSG	Economiser drain valves	Passing valves identified and replaced	0.682	316.36	0.40
Implementations During 2010-11						
1	Cooling Tower	PVC media	13 cells PVC media replaced	16.96	7889.79	10
2	Plant Lighting	Tube lights	Replacement of Fluorescent lamps chokes with electronic chokes and 36 watts tubes	0.005	2.326	0.018

Lanco Kondapalli Power Limited

Energy Conservation Measures

S No.	System	Equipment	Process Improvement	Resulted Savings in Annual MU	CO2 Emissions (Tonnes/year)	Investment Made in Rs Million
Implementations During 2011-12						
1	Boiler feed water System	Boiler Feed Water Pumps	VFDs installation for Boiler Feed water pumps (2 N0s)	3.618	1683.1	15
2	ACW System	Vacuum Pump	ACW for seal water cooling in PHE	1.608	748.0	0.05
3	Power block Building	Ventilation	Replacement of Air washer units with Turbo ventilators	0.27072	125.9	0.085
4	Cooling Tower	CT Fan Blades	Energy efficient Fan blades installation (Two fans)	0.2183664	101.4	0.409
5	Cooling water System	MCW pumps	Corro coating for one pump internals	0.18492	86.1	0.45
6	Lighting	Switch Yard lighting	Energy saver installed	0.01606	7.5	0.082
			Total	**5.92282**	**2752**	

Lanco Kondapalli Power Limited

Energy Conservation Measures

S No.	System	Equipment	Process Improvement	Resulted Savings in Annual MU	CO2 Emissions (Tonnes/year)	Investment Made in Rs Million
Implementations During 2011-12….. Contd						
7	Gas Turbines	Inlet Air filters	Filter elements Replacement	37.7	17538	8
8	Boiler Feed water pumps	Recirculation valve	Passing Valve assembly replaced	0.1706	79.36	1.2
9	Service water	Urinal flush	Needle valves replaced with push type valves	0.0012	0.5582	0.0072
			Total	**43.794**	**20290**	**25.28**

Other Measures to Improve Performance & Reliability

S.No	Improvement	Investment Rs Million
1	ExceLANCE Performance tool	1.4
2	Switch yard insulators hot line wash carried out	0.25

Lanco Kondapalli Power Limited

Approach

- SULZER make 3x 50% HPBFPs Feed to both HRSGs HP and IP sections
- CGL make1.5MW motor (motor speed 2975rpm at 50Hz) transmits power to the BFP through a Gearbox (2960/3600)
- HP Drum level Control valve is provided at the outlet of the economizer
- At Full load, HPFW header pressure maintains at 144kg/Cm^2, whereas Drum pressure maintains at 95bar.
- Pressure drop across the economizer is about 13kg/Cm^2 at full load, which means that the pressure drop across the Feed Control Valve is 36kg/Cm^2. Energy saving is possible by reducing the throttling loss.

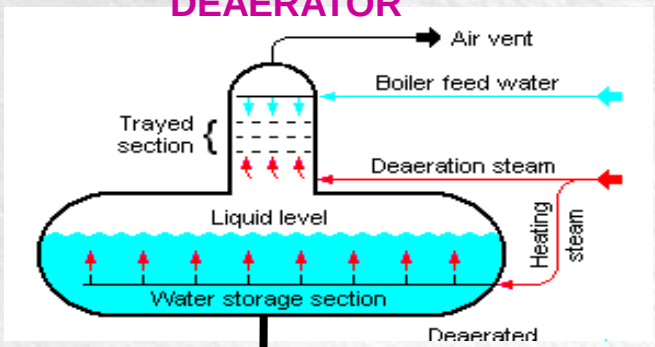
Various Options

1. VFD
2. Fluid coupling
3. Impeller trimming
4. Gear box replacing
5. Stage blanketing

VFD is chosen for its flexibility feature

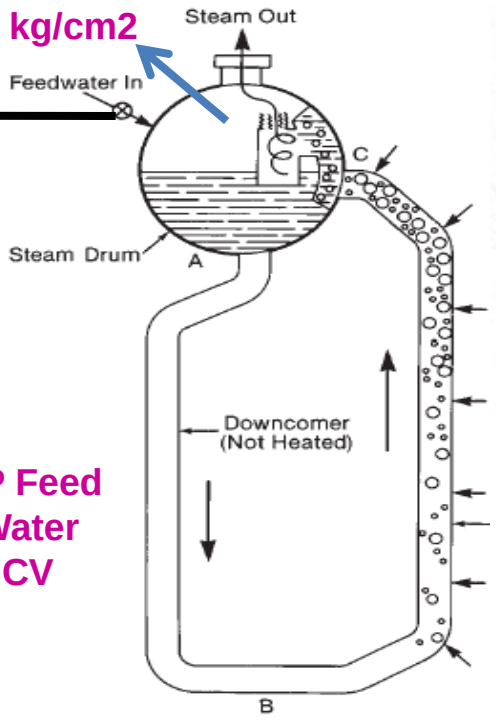
Lanco Kondapalli Power Limited

DEAERATOR



HP Steam Drum

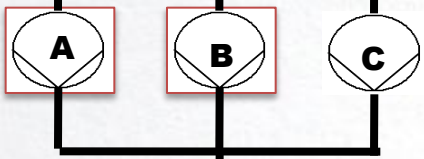
Pr: 95 kg/cm2



ΔP =36 kg/cm2

ΔP Gauge

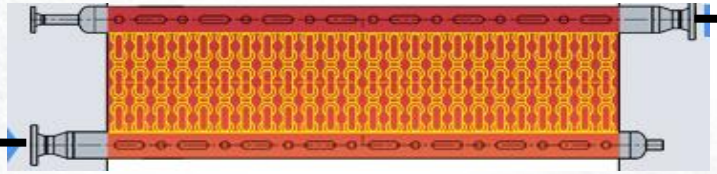
HP Feed Water CV



HP Boiler Feed Pumps

Pr:144 kg/cm2

Pr:131 kg/cm2



HP Economizer

Lanco Kondapalli Power Limited

Data Before & After Installing VFD

Function	Before	After	Units
Motor Current	120	95	Amps
Control Valve Opening	65	90	%
Feed Water Flow / HRSG	195	195	M^3/hr
Discharge Header Pr	144	120	Kg/cm^2
Power Consumption	1160	960	kW

VFD details

Model HARVEST-A06.6/180.
Rating 1600KW/6.6 KV.180 Amp with cell bypass facility and rated for 45^0C.Harvest make MV Drive bypass panel

Energy Savings

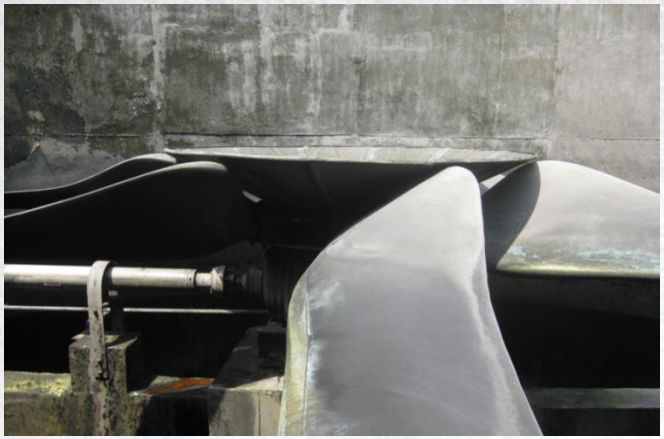
Station Load	Reduction In Speed	Energy Saving (kW)
Base Load	8 %	200 kW
75% Load	10%	250 kW
60% Load	12%	300 kW

Pay Back Period

Project Executed	August 2011
Investment in Rs million	15
Annual savings in million Units	3.618
Annual savings in Rs Million	12.663
Payback period in Months	14.21

Lanco Kondapalli Power Limited

Cooling Tower Fans Encon Blades



Original Blades

New Blades

LKPL is having 13 nos. cooling tower ID fans .Hot water from condenser is circulated through the cooling tower where the water gets cooled on evaporation principal.

2 nos fans blades were replaced with FRP ENCON blades .Total weight of the fan blades assembly got reduced by 25% and blades shape also changed to airfoil to improve the discharge air flow.

Performance test was carried out after replacement to measure the discharge air flow and energy consumption. Resulted energy savings for 2 fans:27.16 KWh

Lanco Kondapalli Power Limited

VACUUM PUMP SEAL WATER

Return water from Vacuum pumps is cooled in Plate Heat Exchanger and pumped to vacuum pumps for sealing purpose through recirculation pump.

Circulating cooling water is used in the PHE for cooling the seal water.

The CCW temperature is usually more than 38^0C.

ACW (Auxiliary cooling water) is provided in place of CCW to improve the vacuum pump efficiency.ACW water temp is in the order of 32 to 35^0C

Condenser vacuum has improved by 3 milli bar and Steam turbine output improved by 200kW

Lanco Kondapalli Power Limited

Cooling Water Pump Internal Corrocoating

Fluglide coating (Corrocoating) done for one of CW pump internals to improve pump efficiency through reduction in Hydraulic frictional losses, which results in reduction in power consumption & protection against corrosion & erosion.

After corrocoating of MCW pump-2, its performance and energy consumption was measured. Resulted Energy saving : 23KWH.

Various Steps in Corrocoat

1. Grit blasting.
2. Coat applied for inner of discharge header, Bowl ,Bell mouth ,inner and outer for the two column pipes and impeller.
3. Dynamic balancing.
4. DFT and spark test .

Lanco Kondapalli Power Limited

Future Energy Conservation Projects IN LINE

S No.	Equipment	Process Improvement	Energy Saving in MU	Proposed Investment in Rs Million
1	Cooling Tower	Energy efficient Fan blades installation (4 fans)	0.41808	0.8
2	GT CCW	FRP blades for GT fin fan (1 no. on trial basis)	0.0402	0.05
2	MCW pumps	Corrocoating for pump internals (2 pumps)	0.18492	0.9
3	DM plant	VFD for DM feed pump	0.03504	0.23
4	DM plant	VFD for DM water transfer pump	0.067452	0.18
5	DM plant	Service water pump Replacement with energy efficient pump	0.14016	0.3
6	Plant Lighting	Energy saver Installation.	0.146	0.52
7	Plant Lighting	Replacing existing lamps with energy efficient T5 lamps in phased manner.(100 in CCR)	0.011388	0.05
8	BFP- Phase-2	VFD installation	2.814	10
9	CEP for Phase-2	VFD installation	0.9198	0.75
10	Clarified water pump	Modification for Clarified water pump auto operation based on filter water storage tank level	0.073	0.01
11	Phase-2 Chlorination system	Providing Instrument Air to Phase-2 Chlorination system (service air compressor will be stopped)	0.1206	0.1

Lanco Kondapalli Power Limited

Non Conventional Energy

Air Washer unit

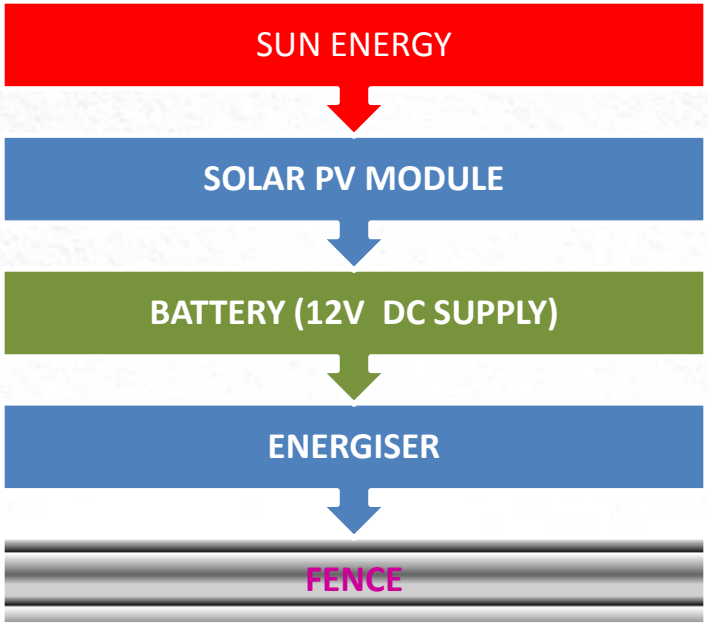
Wind driven Turbo Ventilators

Major equipment like 2 nos. Gas Turbines and one Steam Turbine are located in power block. Originally 4 nos. Air washer units containing blower and circulation pump are installed for cooling and ventilation of power block.13 No's of Eco ventilators were installed on the power block roof to create natural ventilation. Power block temperatures were measured after eco ventilators installation and found normal. By stopping the air washer units , the resulted savings are 65 kW per hour.CO_2 reduction by 125 T/year.

Lanco Kondapalli Power Limited

Non Conventional Energy

Solar Fencing



Fence height	:	1.2M,
Length	:	5KM
Battery	:	12 V, 65AH
Investment	:	18.5 lakh rupees
Annual savings	:	157.68kw
CO2 emissions avoided	:	73.37Ton per year

Lanco Kondapalli Power Limited

MAJOR CHALLENGES

Availability of Fuel

Serious concern with drastic reduction in Gas output from KG D-6

	Installed capacity MW	PLF in last month Dec 12	% Gas availability in last month Dec 12
Phase 1	**368**	**46%**	**47%**
Phase 2	**366**	**15 %**	**13%**
Phase 3	**732**	**Commissioning not completed due to Gas unavailability**	

- Plants established with latest technologies to operate with best heat rate, thermal efficiency @ 55 % and NOx emissions < 25 ppm
- Pay backs of various energy saving projects not realized fully due to low load operation

Lanco Kondapalli Power Limited

PAT Poster Display on 4th July 2012 at New Delhi

ENERGY IS LIFE
BEE
CONSERVE IT
BUREAU OF ENERGY EFFICIENCY
MINISTRY OF POWER, GOVERNMENT OF INDIA

LANCO
Always Inspiring

LANCO KONDAPALLI POWER LIMITED
IDA, Kondapalli
Ibrahimpatnam (Mandal)
Krishna District, Andhra Pradesh
PIN – 521 228

EXPLORE, ADOPT, ACHIEVE AND TRADE

LANCO KONDAPALLI POWER LIMITED EXPLORES AND ABSORBS THE ENERGY CONSERVATION TECHNOLOGIES

LANCO KONDAPALLI POWER LIMITED (LKPL) explores the energy conservation techniques and adopts the suitable one to reduce the auxiliary consumption .So that more power can be exported to state grid. LKPL is implementing prudent Operation & Maintenance practices to obtain high Availability & Reliability and eco friendly methods for power generation.

In the view of PAT compliance LKPL has implemented the following

Energy conservation measures implemented in the year 2011-12 :

1. Variable frequency drives installation for Boiler feed water pumps (2 Nos.)
2. Auxiliary cooling water given to Vacuum pump seal water cooler in place of CCW
3. Turbo ventilators installation for power block building
4. Cooling tower fan blades replacement with Encon blades (2 Nos.)
5. Corrocoat application for Main cooling water pump
6. Energy saver installation for switch yard lighting

Performance Management Tool :

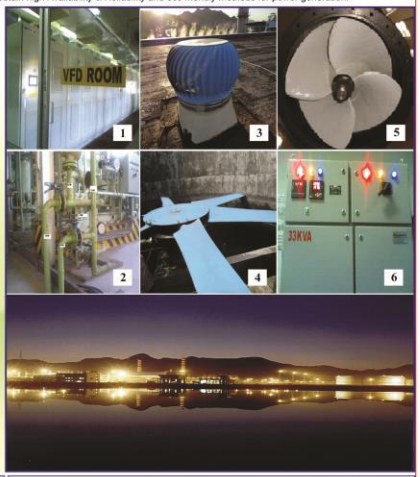
ExceLANCE is an offline Performance Analysis and Simulation system that can be used to accurately calculate the current performance of all major equipment in a power plant.

- Predicts the performance (e.g. Power output, Heat Rate and other process data) at various ambient conditions.
- Optimization module helps in operating the plant at optimum efficiency with available fuel and given load by Load dispatch center.
- Calculates the Gas turbine compressor degradation and suggests offline wash

MCDT (Machine Condition Diagnosis Technology) :

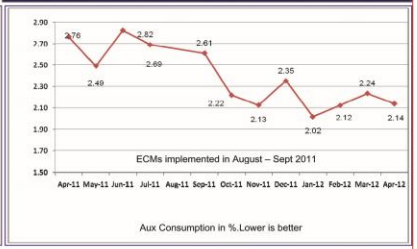
MCDT is to identify the statuses of machinery up to the present and predict and forecast the causes of abnormality or failure and an effect in the future to find out necessary measures LKPL is equipped with latest machine diagnosis equipment such as Vibration Analyzer SKF **Micro log CMVA 60**, Thermal Imager IR fusion Technology FLUKE TI32, Ultra sonic leak detector **CTRL UL101,** and Power Analyzer Fluke 1735 and portable Ultrasonic flow meter Fluxus F601 for machine diagnosis and taking necessary actions.

- HPBFP and LPBFP ARVs passing identified and replaced
- Boiler economizer circuit valves passing detected and valves replaced
- Switchyard insulators hot line wash carried out



Energy Savings Achieved (2011-12)

Energy Conservation Measures	Energy savings KWH (hourly basis)
1a) VFD installation for HPBFP-A	225
1b) VFD installation for HPBFP-B	225
2) Auxiliary cooling water given to Vacuum pump seal water cooler to improve the pump performance (resulted additional generation)	200
3) Power block air washer units replacement with 13 Nos. Roof Turbo ventilators	65
4) MCW Pump-B internals corrocoat application	23
5a) CT Fan -2 blades replacement with Encon blades	14.95
5b) CT Fan - 9 blades replacement with Encon blades	12.21
6) Energy Saver installation for switch yard lighting (11 hours in a day)	4



Contact details :

S. Sundaramoorthy
General Manager (Operations)
sundar.s@lancogroup.com, Phone: 0866 2872802

LANCO

Lanco Kondapalli Power Limited

Awards 2010 - 2012

S. No	Award Achieved	Year
1	Certification of commendation ,CII southern region excellence award in Environment ,Health and safety	2010
2	Energy Conservation Award ,APPC	2010
3	8th National Award for Excellence in Water Management-2011 organized by CII.	2011
4	CII Excellence award in Environment, Health &Safety (for best EHS practices)	2011
5	Greentech Safety Award - 2012 in the golden category for the plants priority to workplace health and safety.	2012
6	Golden Peacock Award (Environment Management - 2012).	2012
7	CII Energy Efficient Unit Award	2012
8	Appreciation for effective energy saving measures from NEDCAP 2012	2012

ENERGY IS LIFE

BEE

CONSERVE IT

Bureau of Energy Efficiency
New Delhi

NREDCAP

New & Renewable Energy Development Corporation of A.P. Ltd.

5-8-207/2, Pisgah Complex,Hotel Yatrik Compound, Nampally, Hyderabad - 500 001.
Tel : 040 - 23201121, 23202262, 23202391, 23203376
Fax : 040 23201666 E-mail : nedcap@ap.nic.in

In appreciation of the achievements

in Energy Conservation in the

Small & Medium Scale Industry

Sector

for the year

2011 - 12

Government of Andhra Pradesh

is pleased to award the

Appreciation

Prize to

M/s.LANCO Kondapalli Power Limited
Krishna Dist.

Vice Chairman & Managing Director

Appreciation from NEDCAP for 2012

ENERGY IS LIFE

BEE

CONSERVE IT

Bureau of Energy Efficiency
New Delhi

NREDCAP

GOVERNMENT OF ANDHRA PRADESH

सत्यमेव जयते

New & Renewable Energy Development Corporation of A.P. Ltd.

5-8-207/2, Pisgah Complex,Hotel Yatrik Compound, Nampally, Hyderabad - 500 001.
Tel : 040 - 23201121, 23202262, 23202391, 23203376
Fax : 040 23201666 E-mail : nedcap@ap.nic.in

In appreciation of the achievements

in Energy Conservation in the

Managers & Energy Auditors Working in the Industry

Sector

for the year

2011 - 12

Government of Andhra Pradesh

is pleased to award the

First

Prize to

Sri Ch. Anka Rao

LANCO Kondapalli Power Ltd. Krishna Dt.

Vice Chairman & Managing Director

Save Energy for the Benefit of Self and Nation