

Conference on  
**Balance of Plant Systems**

**Market Developments, Requirements  
Opportunities and Challenges**

**May 22-23, 2012**

**Recap of Day 1**

# Industry Perspective

## Issues and Way Ahead

- Nearly three-fourths of the projects are delayed due to non-readiness of BoP projects.
  - CHP/AHP are key areas of concerns
- Much attention is devoted to BTG because plant performance parameters are associated with these equipments and systems.
- A key challenge is to find good in-house engineering and system integration capability. This is because of the predominant practice of standalone or individual packages.
- Multiple package model varies from 25 packages to around 120 packages seen in recent projects. This route is more suitable for larger players such as NTPC where there is in-house capability to manage integration.
  - NTPC has opted for EPC contract in recent project on an experimental basis.
- The power sector should adopt the western model of single-source end-to-end delivery model in BoP. Multiple package route is not suitable in the current capacity addition phase involving tighter project implementation schedules.
- Chinese competition has been mainly concentrated in the BTG equipment segment. BoP equipments have been sourced from Indian suppliers, though select developers have recently placed BoP orders from China.
  - Key systems such as CHP/AHP are generally country-specific, and they should be sourced from local suppliers instead of overseas

# Developer Perspective

## Multiple package Vs. EPC contracts

- Split packages have to contend with issues of quality, standards, schedules, etc
- Major challenges in design, interface and on-site supervision of projects
- NTPC recently ventured in EPC contract

## BoP project delays

- Vendors' delivery schedule often doesn't match that of the developers
- 60-70 per cent delays due to civil works. There is lack of inputs for civil projects.
- BoP agencies often have a centralised decision making process, affecting project development

## Key issues and suggestions

- The focus on least cost leads to compromise on designs, quality, standards, etc. Thus technology adoption and innovation not accorded a high priority
- BoP upgradation is important for utilities after performance appraisal due to merit order despatch.
- Standardisation can save time and resources in engineering and project execution processes.

# Contracting/Procurement Issues

## Procurement Models

- Complete BoP on EPC basis
- General Civil Works + Balance BoP
- GCW + M-BoP + E-BoP(including C&I)
- GCW + M-BoP + E-BoP + I-BoP
- Multiple Packages

## Key trends

- Each option has its own merits and demerits
- Contracting strategies are more often organisation-specific
- Competitive environment in the industry has ramifications on the particular choice of procurement
- Standardisation and bulk ordering are key measures for enabling efficiencies in future project
- Utilities are likely to find merit in rationalisation of number of packages
- Policy efforts through CEA and MoP could ensure development of capable vendors
- Capacity augmentation will be necessitated as upcoming capacities will be based on supercritical technologies

# Air Handling Systems

## Ventilation Systems

- Fresh filtered air supply system – 15 air changes per hour
- Exhaust ventilation system – 20 air changes per hour
- Centrifugal fan – for fresh filtered system. Axial flow fan for system capacity up to 5,000 m<sup>3</sup>/hour

## Performance

- No major problems noticed
- Water quality was an issue.
  - DM water was used for chilled water
- Fine ash accumulation in cooling coil fins

## Expectations from manufacturers

- Adherence to specifications by contractors after project is awarded
- Develop equipment categories based on renewable energy
- Wind turbine ventilators

# Coal and Ash Handling Plants

## Supplier issues

- Limited numbers and bunching of orders
- Core competency in civil works
- Shortage of skilled manpower and project capabilities
- Fabrication works execution
- Steel procurement/availability of fronts
- Skewed cash flow strategies
- Interface issues with main plant and vendors

## Technology developments

- Wagon shifters and pushers – for reducing space requirements in outhaul side of wagon tippler complex and to reduce unloading time
- Wagon tipplers - meet the latest requirements of RDSO G-33 specification, which has come into force from 1st December 2010
- Stacker reclaimer bucket wheel and slew drives – to increase efficiencies over electro-mechanical drives, lower maintenance and reduce overall machine weight

## Manufacturing capacities

- No clear trend is observed in expansion in manufacturing capacity of the industry
- Players are generally sticking to their core areas