

HIGHLIGHTS

The review covers the performance analysis of 428 coal / lignite based thermal units above 25 MW capacity of 105 thermal power stations aggregating 86,137 MW.

All India electricity generation in the country during 2010-11 has been 811.14 BU representing a growth rate of 5.56% as compared to the generation of 768.43 BU during 2009-10.

Thermal Generation stood at 665.01 BU representing a share of 69.9 % of total electricity generation in the country.

Coal/ Lignite based plants continued to have major contribution towards electricity generation with a major share of 84.47% of the total thermal generation in the country.

During 2010-11, the country witnessed good monsoon resulting increased output from hydro power plants along with drop in agriculture and domestic loads. Generation from Nuclear plants also increased on account of better availability of nuclear fuel. As a result of all these factors, the thermal generation got adversely affected.

Achievement in thermal generation in the country during 2010-11 was 96.26% of the target of 690.86 BU.

Achievement in thermal generation was mainly restricted due to coal shortages, receipt of poor quality/ wet coal, closer of some units in the Western Region due to acute raw water shortage in these areas during pre-monsoon season, closure of some vintage and less efficient units and low schedule from beneficiaries after increased hydro generation on account of good monsoon & increased nuclear generation.

Operating Availability of 83.85% was achieved during 2010-11 as against 85.10% achieved during 2009-10. Main reasons for lower operating availability were closer of some units in the Western Region due to acute raw water shortage in these areas during pre-monsoon season, closure of some vintage and less efficient units after commissioning of higher capacity plants and reserve shutdown of some thermal units due to low system demand.

7 thermal generating units had achieved plant operating availability more than 99% during 2010-11. 33 Thermal stations achieved the Operating Availability more than 90% during 2010-11.

Plant load factor (PLF) of thermal power stations at the national level, during 2010-11, reduced to 75.08% from 77.68% achieved during previous year. Had there been no loss of generation due to coal shortages, poor quality coal and inadequate schedules from the beneficiaries, the PLF would have been much better around 80%.

490-500 MW unit capacity group achieved the highest PLF of 83.58% among various capacity groups.

Plant load factor (PLF) of BHEL/BHEL make units (270 units aggregating to 61252 MW) registered the highest PLF of 77.41% among units of different makes.

Dahanu Thermal Power Station (2X250 MW) of M/s Reliance Infrastructure Ltd. in Maharashtra achieved the highest ever PLF of 101%.

PLF of 19 thermal power Stations aggregating to 21495 MW was above 90%. Among these 11 were from Central Sector Utility (NTPC), 5 were from Pvt. Utilities (Two from JSW Energy Ltd. and one each from Reliance Infra, CESC and JPL) and 3 were from State Sector Utilities (CSPGCL- 2, RRVUNL-1)

PLF of 31 thermal units aggregating to 8530 MW was 95% or more while PLF of 81 thermal units totaling 20832.5 MW were 90% or more.

PLFs of 40 number thermal units aggregating to 3939 MW were below 30%. 19 units aggregating to capacity 1690 MW did not contribute to electricity generation during the year.

Energy loss on account of planned maintenance was 5.83% as compared to 6.05% during 2009-10.

The average duration of boiler overhaul and capital maintenance was achieved as 27 days and 64 days respectively.

Average duration of boiler overhaul of private IPPs was lowest (15 days).

The loss of generation due to non-availability of thermal units due to forced outages during 2010-11 increased to 10.32% as compared to 8.85% during 2009-10 mainly on account of shutdown of units during summer season due to acute raw water shortage and receipt of low schedules from beneficiaries. Had there been no raw water shortage and low system demand, the forced outage would have been reduced to 8.72% from 10.32%.

62.33% of the total forced shut down were of duration up to 24 hours. 36.64% outages were of duration varying from 1 to 25 days and only 1.03% of shut downs were for more than 25 days.

Loss of generation due to planned maintenance of units was maximum (6150.89 MU) during September' 10. The loss of generation due to forced outages of units was also maximum (7750.24 MU) during September' 10.

Generation loss of 8.4 BU was reported due to coal shortage by the power utilities during 2010-11.

The gas based generation registered a growth rate 4.55%. The growth of generation from gas based plants was restricted on account of low schedules from the beneficiaries in view of the increased generation from hydro, nuclear and coal based plants.

Energy loss due to partial unavailability of the thermal generating units operating in the country during 2010-11 had increased to 9.33% of the maximum possible generation during the year in comparison to the 8.03% in 2009-10. Main reasons for increased energy loss on account of partial

unavailability of the thermal generating units were poor quality coal/wet coal, increased backing down of units, increased grid constraints and increased start-up/shut-down losses.

The energy loss on account of backing down of thermal units due to receipt of low schedules from beneficiaries have increased from 0.46% in 2009-10 to 0.81% during 2010-11 of the maximum possible generation during the year.

SINGRAULI STPS # 1 (200 MW) of NTPC had operated continuously for 332 days.

Two 500 MW capacity group units Ramagundem STPS #7 of NTPC Ltd. and Trombay TPS # 6 of Tata PCL had continuously operated for more than 300 days.

6 coal/lignite based thermal generating units (5 of NTPC, and one of Tata PCL) continuously operated for more than 300 days while 13 coal/ lignite based thermal generating units (9 of NTPC, and one each of Tata PCL, NLC, GSECL & Reliance Infrastructure Ltd.) operated continuously for more than 250 days.

30 coal/lignite based thermal generating units (NTPC-18, Neyveli Lignite Corporation-2, Tata PCL-4, RIL- 2 and one each of APGENCO, GSECL, JSWEL & WBPDC) operated continuously for more than 200 days.

The estimated loss of generation (corresponding to 90% PLF) due to shortage of gas/ receipt of low schedules from the beneficiaries was about 28.27 BU during 2010-11.

All India Specific coal consumption of thermal units at National level remained same (0.72 kg/kWh).

The All India average auxiliary power consumption by the thermal stations during 2010-11 increased to 8.49% as compared to 8.34% during 2009-10. Main reasons for increase in national average auxiliary consumptions are backing down of generation below their rated capacity of the thermal units and high auxiliary consumption by lignite based thermal units viz. Giral TPS, Jalipa Kapurdi TPS, Surat Lig. TPS, Neyveli TPS- I, Kutch LIG. TPS.

During 2010-11, Station Heat rate (SHR) in respect of 73 thermal power stations were analysed with respect to their Design Station Heat Rate. It was observed that SHR deviation in respect of 18 thermal power stations with respect to their Design Station Heat Rate were in the range of 0-5%. SHR deviation in respect of 34 thermal power stations with respect to their Design Station Heat Rate was in the range of 5-20%. SHR deviation in respect of 21 thermal power stations with respect to their Design Station Heat Rate was above 20%.