

- 3.2.3 The demand growth in Tamil Nadu is expected to be around 10 % per annum, and the Table 3.3 gives the projections for the Ninth and Tenth Five year plans.

Table 3.3

Description	Ninth Plan (End of 2001-2002)	Tenth Plan (End of 2006-2007)
Peak Demand (MW)	8060	12980
Energy Requirement (MU)	49704	79413

To meet with the above requirements the installed capacities, with considerable improvements in the PLF, need to be approximately around 12000 MW at the end of the ninth plan and about 19000 Mw at the end of the tenth plan. This is a huge investment and TNEB has proposed a number of new generation projects to meet with the above projected demand. However considering the many constraints on policies, resources, fuel availability etc., the demand on TNEB is of a very tall order. With only two years left in the ninth plan period and with our Country's track record of planning and implementation of the power projects, it is not clear how the required objective will be met. It may be seen from Table 3.1 that the percentage increase in the installed capacity between 1990 and 1994 and then between 1994 and 1998 is surprisingly coincident at around 12.5 %, giving an annual increase of about 3.1%. With the above strikingly real situation, the state is likely to continue with the power deficit situation for a long time to come. Under such a situation any capacity addition to the grid should be welcome. The bagasse based Cogeneration projects may not solve all our power problems, but will definitely contribute in easing the pressure on the grid to some extent, and therein lies the justification for the proposed project form the point of view of the grid.

3.3 Justification from the point of view of a clean sustainable development

- 3.3.1 Life is possible on earth because of the natural green house effect of the gases like water vapour, carbon-di-oxide, methane, nitrous oxide etc. These gases, called the Green House Gases (GHG), naturally present in the atmosphere holds a delicate balance between the heat energy received from the sun and the loss of the heat by re-radiation back to the space. These gases keep earth at about 60 Deg.F warmer than it otherwise would be. With out this effect life would not be possible on earth. With industrialization and population growth, the GHG emissions have consistently increased over the years. The result is that the atmospheric level of CO₂, the most important human derived GHG has increased from 280 ppm to 360 ppm over the last hundred years. The overall emissions of

the GHG are growing at about 1% per year. If the emissions increase unabated, and we proceed on a "business as usual" path, the CO₂ level in the next hundred years will reach more than 700 ppm, and will result serious climate change in the planet. The consequences are dreadful like, worsening health effects, rising sea levels, droughts and floods, disruption of water cycle and affecting crop yields and food supply.

- 3.3.2 Electric utilities contribute greatly to the emission of the GHG to the atmosphere. In India, nearly 65 % of installed power generation capacity is based on coal, and hence is one of the largest contributors of GHG emissions due to its high carbon content and low conversion efficiencies. This aspect of GHG emission in India is highly relevant as India is the sixth largest emitter of GHGs, contributing to 2 % of the global emissions.

More worrisome is that the rate of growth in the GHG emissions, in India, is more than double the world average at 4.6 % annually. Hence India will be an important player in global climate change in the decades to come. It is obvious that greater pressure will be brought on India, from the world community, to take every possible step to reduce the emission of the GHGs. The Indian society, the world community and the future generations have the right to a cleaner environment and even a small effort in reducing the emission of the GHGs is a positive step towards a better future.

- 3.3.3 The renewable energy projects and specifically the bagasse based cogeneration projects fit very well into our objective of achieving a clean sustainable development with out damage to the environment. All such projects deserve serious encouragement, and the Government and the State Electricity Boards should come forward to promote such projects. It is a social obligation and there should be no profit or loss accounting and the SEBs should accommodate the renewable energy projects even at the cost of backing down on their generations. Mostly the developers of such renewable energy projects are not endowed with huge financial resources, and the tariff for the purchase of the power generated through the renewable energy projects, should be attractive to encourage more developers.
- 3.3.4 As seen above the bagasse based Cogeneration projects play a vital role in containing the GHG additions to the atmosphere, and there is an urgent need to promote such projects as our contribution to a clean sustainable development of our society.

3.4 Justification as a future Business opportunity :

- 3.4.1 The necessity for the reduction in the emission levels of GHGs, presents a new market based technology transfer instrument called the Clean Development Mechanism (CDM) promising huge financial flows to the developing countries. There is a cap imposed on the GHG emission levels in developed countries, and the emission reduction target for the developed countries is five percent of the 1990 emission levels by the year 2012. The CDM evolved out of the Framework convention on the Climate change, helps the developed countries meet the set emission level targets. Under the CDM, a company from a developed country can invest in clean technology projects in developing countries, and later claim to have met its emission reduction targets. So the CDM works in two ways, one is that it provides new opportunities for the sustainable development in the developing countries and the second, it reduces local and global pollution problems and helps developed countries to achieve GHG reductions cost effectively.
- 3.4.2 There are a lot of issues involved like determination of the base line technology, ways of ensuring that there will be additionality in carbon savings over savings which would have happened any way, etc. and there are no rules in place yet. Nevertheless CDM presents a good business opportunity to the Indian Industries, and there is likely to be large capital coming into the country.
- 3.4.3 Considering the above business opportunity, and the likely business in carbon trading it is essential to go into the business of renewable energy based power generation and Cogeneration projects.