SOME FACTS ON RAILWAY ELECTRIFICATION

- **Every electric locomotive of 4.5 MW (6000 HP) deprives 15000 households of their electricity needs. 14.7% villages in the country are yet to get electricity.**
- **Every Electric locomotive of 4.5 MW introduces 4500 highly inefficient small generating sets, which cause more pollution and consume six times more fuel than a diesel locomotive.**
- **World's modern and advances economies like USA and Canada have less than 1% electrification against IR's 41.7%.**
- **All profit-making Railways of the world are having predominately diesel traction while all loss making Railways are predominantly electric traction Railways.**
- **Diesel loco hauled passenger trains are 41% cheaper than electric hauled trains.**
- **Electric traction requires huge capital investment of Rs. 63 crores per loco in Overhead Wires, Transmission Lines, Power Plants as against only Rs. 3 crores on Diesel traction.**
- **Energy Bill of Railways for the year 1998-99 was more than Rs. 2800 crores for hauling about 60% freight traffic and 50% passenger traffic against fuel bill of about Rs. 1500 crores for the balance BG traffic.**
- **As per Executive Directors' Committee set up by the Board in 1996, the Break even level is 49.72 Gross Million Tonnes (GMT) per annum. Sections currently being electrified have 5-10 GMT of traffic density.**
- **For the price of 100 energy units (kilowatt hour), one could buy 10.9 litres of HSD in 1963 against 41.2 litres in 1999. This amounts to a 16 times hike in diesel prices while electricity prices have gone up by 60 times in the same period.**
- **Gujral Committee of 1990 recommended 214 kilometers of electrification per year. Current rate is 2.33 times.**
- **Electrification projects are being justified based on inflated ROR (Rate of return) worked out on the basis of wrong assumptions – benefits are overstated and costs understated.**
- **As per Railway Board's norms, projects with a minimum ROR of 14% should be undertaken (Railways are borrowing money through IRFC at about 17-18%). Electrification projects such as Ludhiana – Amritsar and Patna-Gaya which are now being undertaken are having RORs of only 4% and 6% respectively even as per the calculations made by the Central Organization for Railway Electrification taking wrong data. The actual RORs calculated on the basis of correct figures for expenditure as well as benefits turn out to be highly negative. In the case of Ludhiana-Amritsar electrification project, Planning Commission had also commented that such projects are likely to eat into the national wealth rather than generate additional wealth.**

- **No post-complexion evaluation of benefits ever done on any of the electrification projects. World Bank report of 1995 concluded that the rate of return on two of the busiest sections of IR i.e. Vijaywada-Balharshah and Jhansi-Itarsi was only 2% and 9% as against the projections of 41% and 23% respectively.**
- **53% of the total price of HSD goes to Government Exchequer in the form of various levies – Customs / Excise, Cess etc.**
- **If the losses of SEBs are amortized, the cost of energy to the consumer including Railways will be much higher.**
- **Indian Railways are losing Rs. 1900 crores per year on account of electrification Rs. 600 crores per year as running losses (due to higher operating costs on electric traction as compared to diesel traction) besides Rs. 1300 crores per year as the interest on capital cost of electrification.**
- **Unviable electrification is resulting in crippling of railway fiancés. The operating ratio (expenditure divided by earnings) for Indian Railways which was 82.5% in 1995-96 has deteriorated to 98.8% for 2000-01 (as budgeted) even while Railways will be deferring their dividend payment to the Central Government during this year. In case divided is paid, operating ratio would be beyond 100.**
- **When electrification projects have ceased to be justified based on breakeven level of traffic of 49.7 GMT as well as 14% ROR, other reasons are being given to undertake these projects. For instance, electrification of Ludhiana-Amritsar section is sought to be justified for security reasons. The truth is that the overhead wire as well as other traction installations such as substations etc. are highly vulnerable to attacks by terrorists. Similarly, electrification of Patna-Gaya section is ostensibly being done to cater for suburban passenger traffic. This section, which is a single line section, hardly has any traffic and carries only five pairs of passenger trains everyday and just one goods train in a day. Diesel traction, in any case, is cheaper for passenger services.**
- **Contrary to popular perception electric traction is more polluting than diesel traction. The "green house" gases emission in case of power generation from coal is 26% higher than that for a diesel locomotive for the same amount of power generated (UNDP Study). Considering the transmission losses associated with the distribution of power, electric traction is about 65% more polluting as compared to diesel traction.**
- **Generation of 1 MW of power requires 10 tonnes of coal everyday. Since coal in India has an ash content of 40%, this results in generation of 4 tonnes of coal ash everyday. Thus, one electric locomotive requiring 4.5 MW of power is responsible for generating of 18 tonnes of coal ash everyday.**