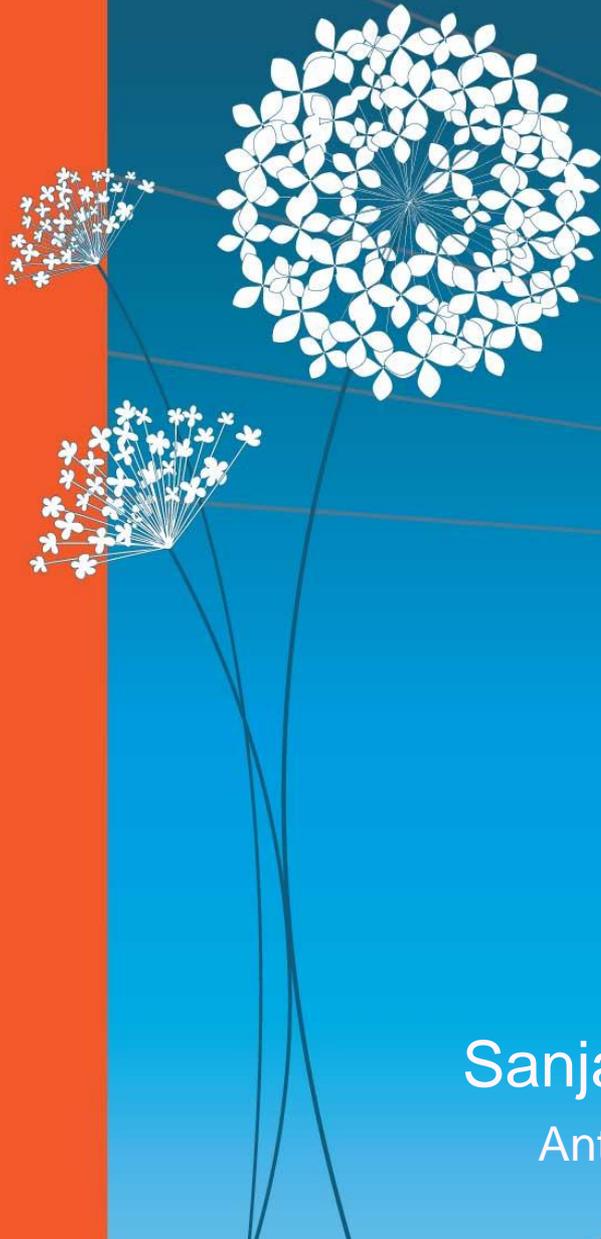




INFRABEL



UIC ENERGY EFFICIENCY DAYS 2014



*The Voice of Members:
Best practice in energy efficiency
from all over the world*

Sanjay Kumar, Indian Railways, India

Antwerpen, Belgium on 17th June, 2014

THE THIRD LARGEST RAILWAY NETWORK!

- 64,015 kms route Kms
- 12,000 Passenger Trains per day
- 7,000 Freight Trains per day
- 23 million passenger per day
- 2.65 million tons of freight traffic per day
- 1.34 million employee
- Annual revenue base of more than \$22 Billion



BALLOONING ENERGY DEMANDS!



Estimated traffic growth at 8-9 percent in the next decade.



The development of the Western and Eastern dedicated freight corridors.



Increase in electrified route from 20059 kms in 2010 to 33000 kms by year 2020.



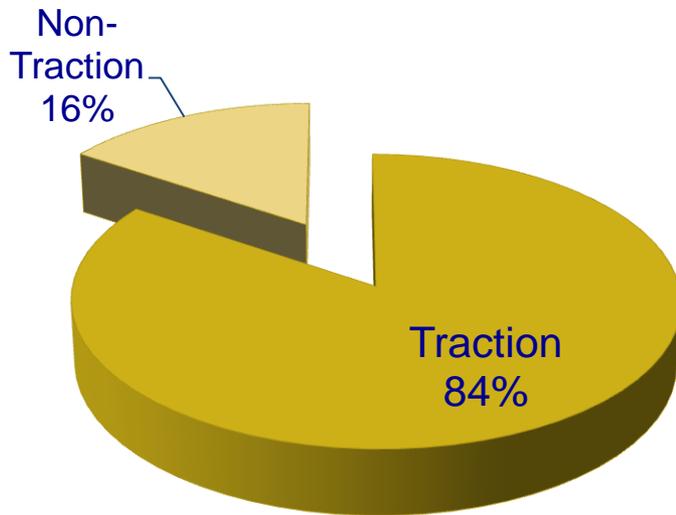
Increase in passenger KM at 10.8% per annum to 1,760.4 billion PKM by 2016-17.

Projected electricity demand is estimated to grow at about 9 percent

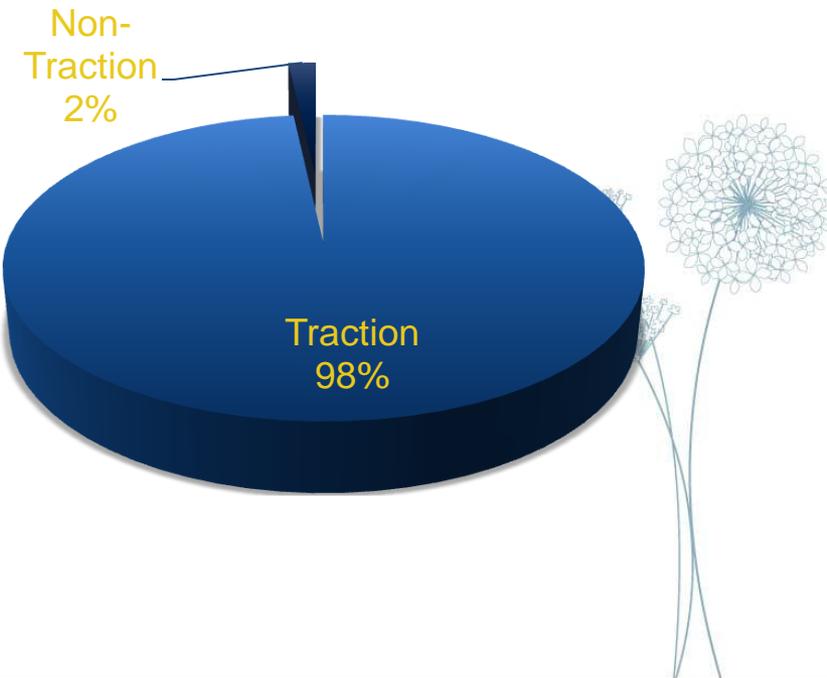
Energy Mix in Indian Railways

Electricity Consumption - 17 Billion Units

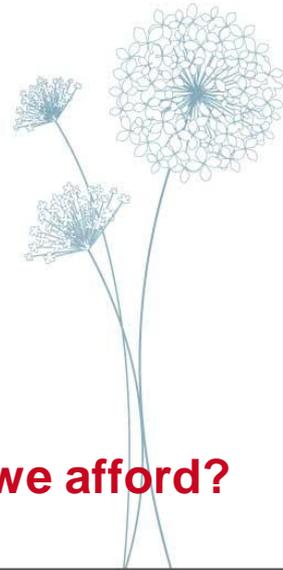
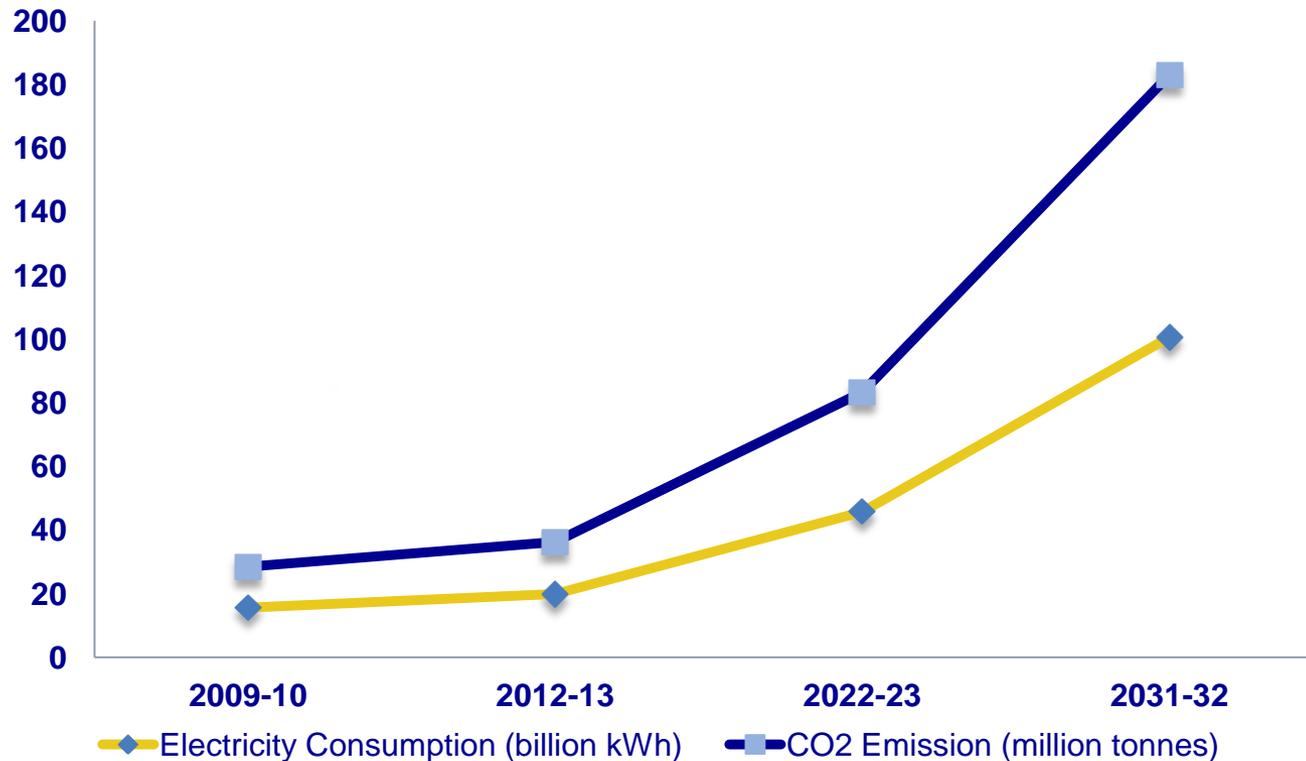
Fuel Consumption - 2567 Million liters



For Year 2012-13

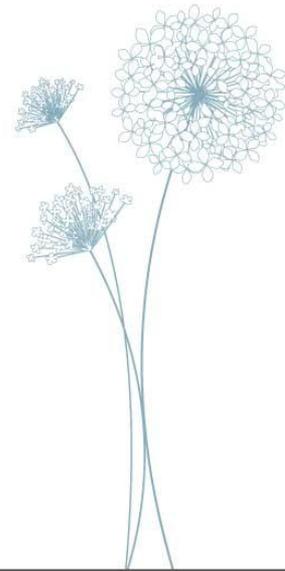


BAU Not an Option!



Energy is the second biggest component of working expenses – Can we afford?

POLICY FRAMEWORK



Traction Applications



- Shift to three-phase locomotives from conventional locomotives.
- Shift to IGBT based 3 - phase locomotive .
- Promote use of train-sets with regenerating braking features.
- Promote use of Head On Generation System for train lighting and air-conditioning load
- Electrification as a tool to reduce fuel consumption

Non-Traction Applications



- Web based monitoring of electricity consumption (www.railsaver.gov.in)
- Procurement of Energy Efficient luminaries
- Use of renewable energy in place of fuel in non-traction applications
- Provision of solar panel sheets on roof of sheds, workshops etc.
- Energy Management System for stations, buildings etc.



THANK YOU FOR LISTENING!

