

1. Solid Waste Management Plant (SWMP)

1. First ever pilot project in Indian Railways commissioned on 11.03.16

2. Capacity to decompose daily 0.5 Ton biodegradable waste into Bio gas and Manure.

3. Cost is Rs. 42 Lakh including two years of operation & maintenance

4. Technology involves solid waste collection, segregation, digestion/bio-methanation & final disposal.

5. Biogas generated is utilized for cooking in running room kitchen and manure for nursery.

6. Technological patent is with M/S Green Brick Pvt Ltd

2. Water Recycling Plant (WRP) :

1. Commissioned at Jaipur on 30.06.16 at washing line, Jaipur.

2. 2nd such plant over NWR.

3. Capacity of plant is 0.5 MLD and cost is Rs 89 Lakh including five years of operation and maintenance cost.

4. Technology involves collection of water into main sump, sending by pipelines for settling, alum dosing, aeration, chlorination, two stage filtration and finally collection in treated water tank for reuse.

5. Efficiency of plant is approx 95 %

3. Bio- Toilet:

1. MOU between Rly with DRDO for joint technology development of bio-toilets.

2. Anaerobic inoculum bacterium in liquid form converts human faecal into gas (CO_2 & Methane) and water.

3. Cost of one bio-digester tank is Rs 95000/- and that of inoculum bacteria per tank is 10,000/-.

4. In NWR, total no. of bio-toilets is 2010 and target for fitment in 2016-17 is 4200.

4. Waste to Energy Plant :

1. M/S RITES is setting up under CSR at Jaipur station, Capacity is 5 Ton MSW.
2. The MSW received will be Segregated and after Bio-methanation shall be converted into electricity. 150 KWH unit of electricity per day generation can be obtained by this plant.
3. Plastic Waste shall be compacted before disposal.
4. Cost of work is Rs 91 Lakhs including operation and maintenance for 5 years. Plant is likely to be commissioned by march 2017. Executing agency is M/s PECMA, Delhi.

5. Bio Diesel:

1. 1.5% blending of bio diesel as per Rly Bd guidelines.
2. Bio diesel is a fuel comprising of mono-alkyl esters of long chain fatty acids derived from vegetable oils.
3. Advantage is renewable, environment friendly , domestically grown, and less toxic.
4. RCD JU, FI, HMH, ABR, BGKT are nominated for 5% blending of bio diesel.
5. Cost of bio diesel is approx. Rs 43/- per liter.

6. Solar DEMU:

1. Work of conversion of 50 DEMU coaches sanctioned with total cost of Rs 1.57 crore.
2. One rake of 6 DEMU coaches was turned out in Apr' 2016.
3. 12 panels, each of 20 mm thickness fitted on each coach rooftop. Output per panel is 300 watt thus generating 3.6 KW in most ideal condition.
4. Taking cost of HSD at Rs. 50/- per liter, approximate annual saving of Rs. 45 lakh also annual reduction of 239 tonnes of CO₂ emission.

7 .CNG DEMU:

- 1.These engines work on dual fuel, i.e. diesel and natural gas. Running between RE-ROK section.
- 2.Technology is based on "Fumigation" in which Natural gas enters the engine with normal combustion air. The control system maintains a proper balance of natural gas, diesel and air. About 20% substitution of diesel can be achieved by this method.
- 3.Use of CNG is not only economical but also leads to a lesser degree of wear and tear of engine parts.
- 4.Executed by IROAF along with Northern Railway in partnership with Cummins India Limited.

8. Solar at Jaipur station:

- 1.Rooftop solar plant commissioned at Jaipur station on 15/6/16.
- 2.Peak capacity of 500 KWP .The output of solar plant is about 2500 units per day and expected annual savings is Rs. 72 lakh per annum.
- 3.Cost is approx. 4 crore (including AMC for 3 years after warranty of 2 years) and payback period is about 5.5 years.
4. Executing agency is M/s Tata solar power system, Bangalore.

9.Windmill plant at Jaisalmer:

- 1.Work sanctioned in pink book 2015-16 and commissioned at Jaisalmer in Oct 2015 .
- 2.Capacity of 26 MW.
- 3.The executing agency is REMCL(JV with RITES).
- 4.Cost of plant is Rs 160 crore.