TECHNOLOGY FACTSHEET

BIOMASS RESIDUE BASED COGENERATION COMBINED HEAT AND POWER (CHP)[1]

1. **Sector/ Sub Sector:** rubber processing

2. **Introduction:** Energy requirement of the rubber processing factory can be provided by using saw dust. It is a waste material from saw mills which creates several negative environment issues.

3. **Technology Name: <u>Biomass residue based cogeneration combined heat and power (CHP</u>)**

4. **Technology Characteristics:** The average thermal requirement of the rubber processing factory studied is 1720 kW, and its average electrical power requirement is 1138 kW, giving a heat to power ration of about 1.5:1. The proposed combined heat and power (CHP) plant will run at a constant load of 2250 kW electricity (net); excess electricity will be fed into the national grid. Process stream will be available at a constant rate of 3375 kW. Steam in excess of the demand will be either wasted or used for preheating of combustion air or boiler feed water. The design capacity factor of the plant is 0.8, while overall efficiency is 34.5% (13.8% electric, 20.8% thermal)

5. **Country Specific Applicability:** It is applicable in Sri Lanka

6. **Status of the technology in the country and its future market potential: -**

7. **Barriers:** Lack of biomass feedstock supply assurance, lack of local expertise or know-how and skills, lack of awareness or information, lack of micro credit finance mechanisms

8. **Benefits:** Greenhouse gas (GHG) emissions could also be reduced by the equivalent of about 11,300 t CO_2 per year. The lower cost of energy from cogeneration systems could be key to the survival of local industrial plants in today's competitive environment.

9. **Operations: -**

10. **Costs:** The estimated cost of electricity delivered by the CHP plant is US$ 0.04/kWh and the estimated cost of thermal energy is US$ 0.019/kWh, both of which are lower than the corresponding cost of grid electricity at US$ 0.044/kWh and the cost of furnace oil-based thermal energy at US$ 0.021/kWh

11. **Reference:** "technologies for mitigation of greenhouse gas emissions: barriers and promotional approaches-Sri Lanka" Asian Regional Research Programme in Energy, Environment and Climate by Asia Institute of Technology

[1] **This fact sheet has been extracted from TNA Report – Mitigation for Sri Lanka. You can access the complete report from the TNA project website** http://tech-action.org/