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Ecologically Clean Biomass Power Station NIKKOM

Unique Cyclone technology
allows the extraction of more energy from the waste
than competitors

Layout revamped – Content by Nikkom

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1. Converting Waste into Energy and Products

INPUT

1. Refuse-derived fuel (RDF)
2. Sewage sediment
3. Animal waste/manure
4. Waste from wood industries
5. Waste from food industries
6. Agro biomass – plants waste
7. Industrial waste:
    1. Plastic
    2. PC Boards
    3. Railway Ties
    4. Tetra Pak

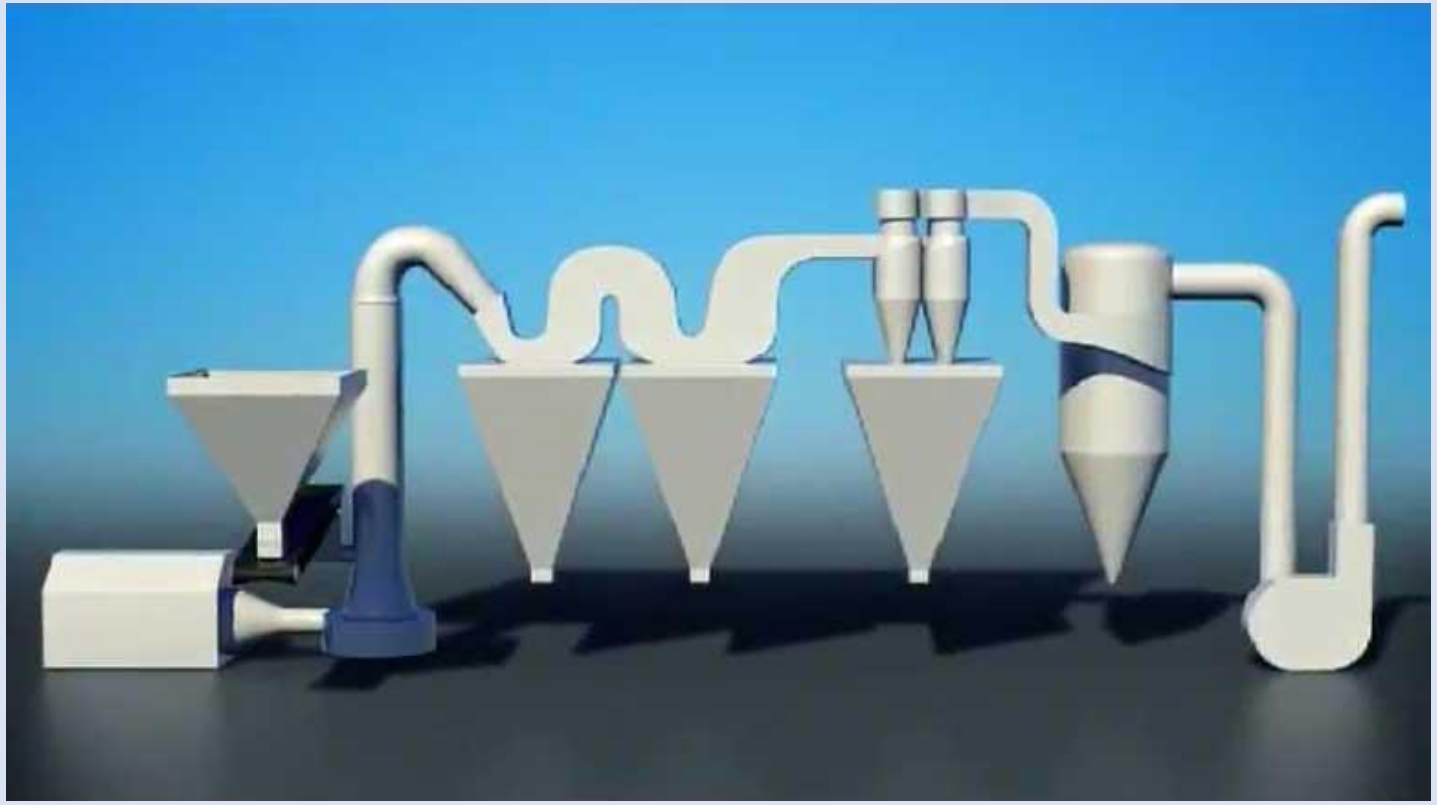
Biomass Power Station NIKKOM

OUTPUT

1. Fuel gas
2. Electricity
3. Heat
4. Cold
5. Pellets for heating in stoves/fireplaces
6. Granules as a soil fertiliser
7. Ashes – used for building materials

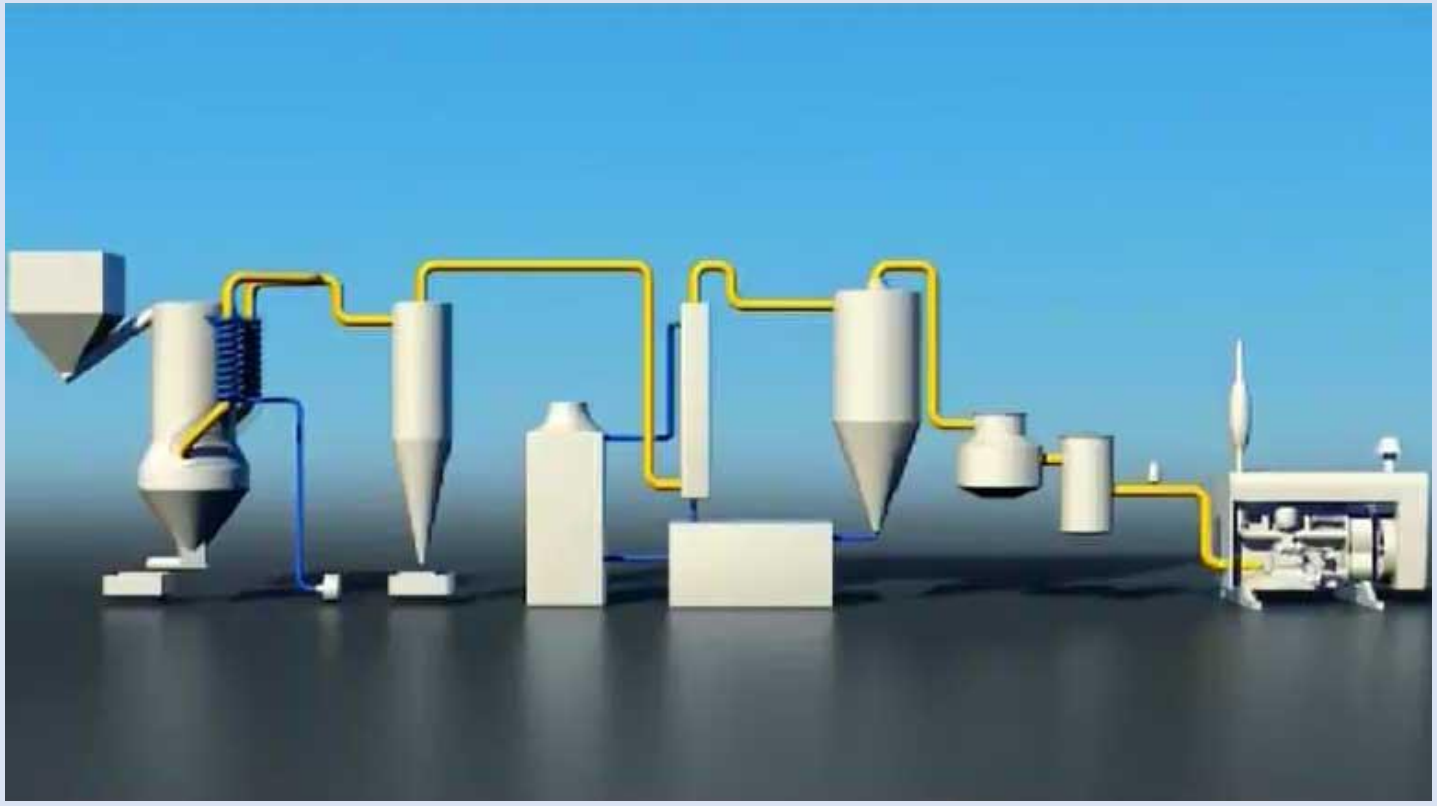
The Process

- Phase 1 – Preparation of theWaste



The Process

- Phase 2 – Converting the Waste into Gas, Electricity and Products



The Process

- Unique Cyclone technology extracts more energy from the Waste

2. NIKKOM Biomass **Power Station** - Model

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2. NIKKOM Biomass **Power Station** in Russia

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Types of Input Waste (Biomass)

1. Refuse-derived fuel (RDF)

2. Sewage sediment

3. Waste from wood industries

4. Animal waste/manure

5. Waste from food industries

6. Agro biomass – plants waste

Types of Input Waste (Industrial)

7-1. Plastics

7-2. PC Boards

7-3. Railway Ties

7-4. Tetra Pak

Types of Output Products

1. Gas

2. Electricity

3. Heat

4. Cold

5. Pellets

6. Granules as a soil fertiliser

7. Producing building materials from the ashes

3. Technical Parameters

- Output capacity – from 100 KWh to 5 MWh electricity
- From 1 kg dry biomass the power station generates
  - 2.5 m3 fuel gas
  - 1 KWh electricity
  - 2 to 2.8 KW heat energy
- 1 m3 fuel gas has between 1100 and 1400 kcal/m3
- Fully automated and non-stop 24/7 process.
- The Power Station uses only 10% from the energy it generates

4. Sources of Income

All Output Products Can be Sold

1. Gas
2. Electricity
3. Heat
4. Cold
5. Pellets used for heating in stoves/fireplaces.
6. Granules for fertilising the soil
7. Ashes for building materials (or manufacturing ourselves building materials and selling them)

Additional steady source of income: the local municipalities and companies pay the power station to receive their rubbish.

5. Advantages of Power Station NIKKOM

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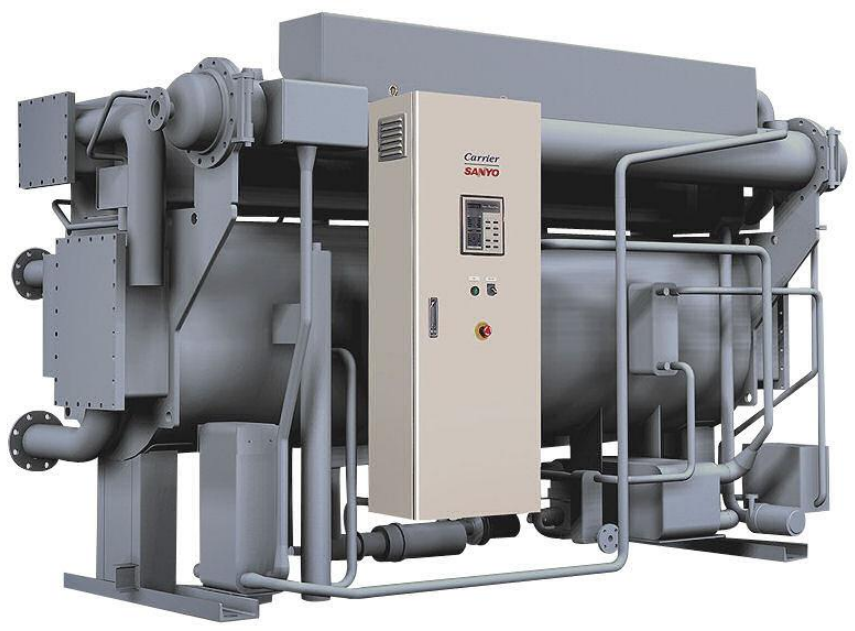
1. Ecologically clean technology. There is no waste in our technology.
2. The power station can burn mixed different types of input materials simultaneously.
3. Our technology allows expanding of the output power by simply adding new modules.
4. Fully automated non-stop 24/7 process.
5. Low maintenance cost.
6. The complex works without the need of external power supply.

6. Cost and Return on Investment

- It takes up to 12 months to manufacture and assemble the station.
- 1 MWh power station requires a plot of land with the size of 400-500 m2
- Construction costs – 2.2 to 2.5M EUR approx. depending on the country, cost of land, materials, included modules and labour.
- The Return On the Investment (ROI) can be achieved in 3.5 to 4 years.
  ROI per year = 25% to 28% approx.

7. Additional Modules
- Generation of Cold

- With an additional module, the Heat generated by the power station can be converted into Cold.
- The Cold can be used for industrial and domestic purposes – freezers, air conditioners, etc.



Plastic into Fuel

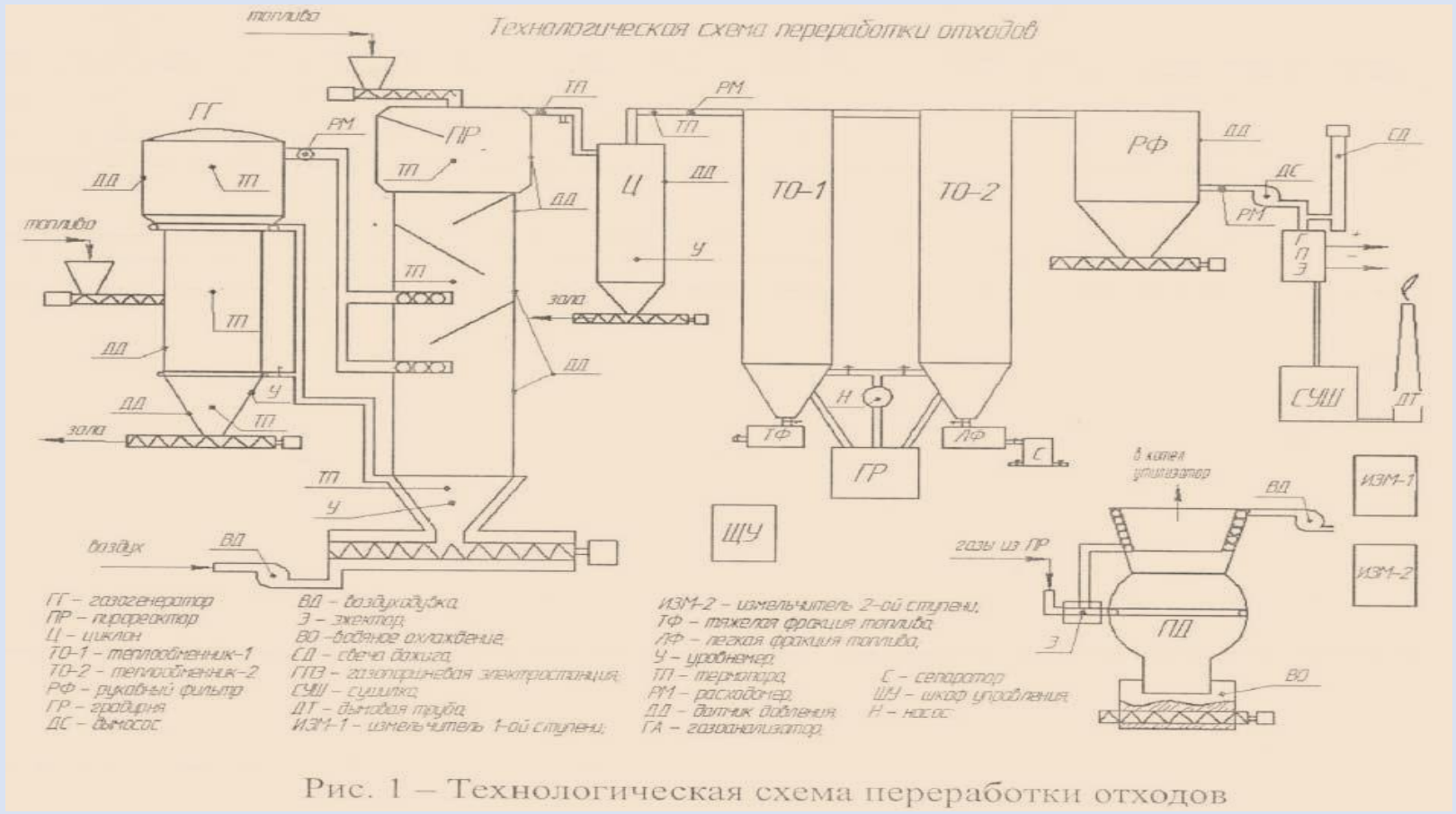
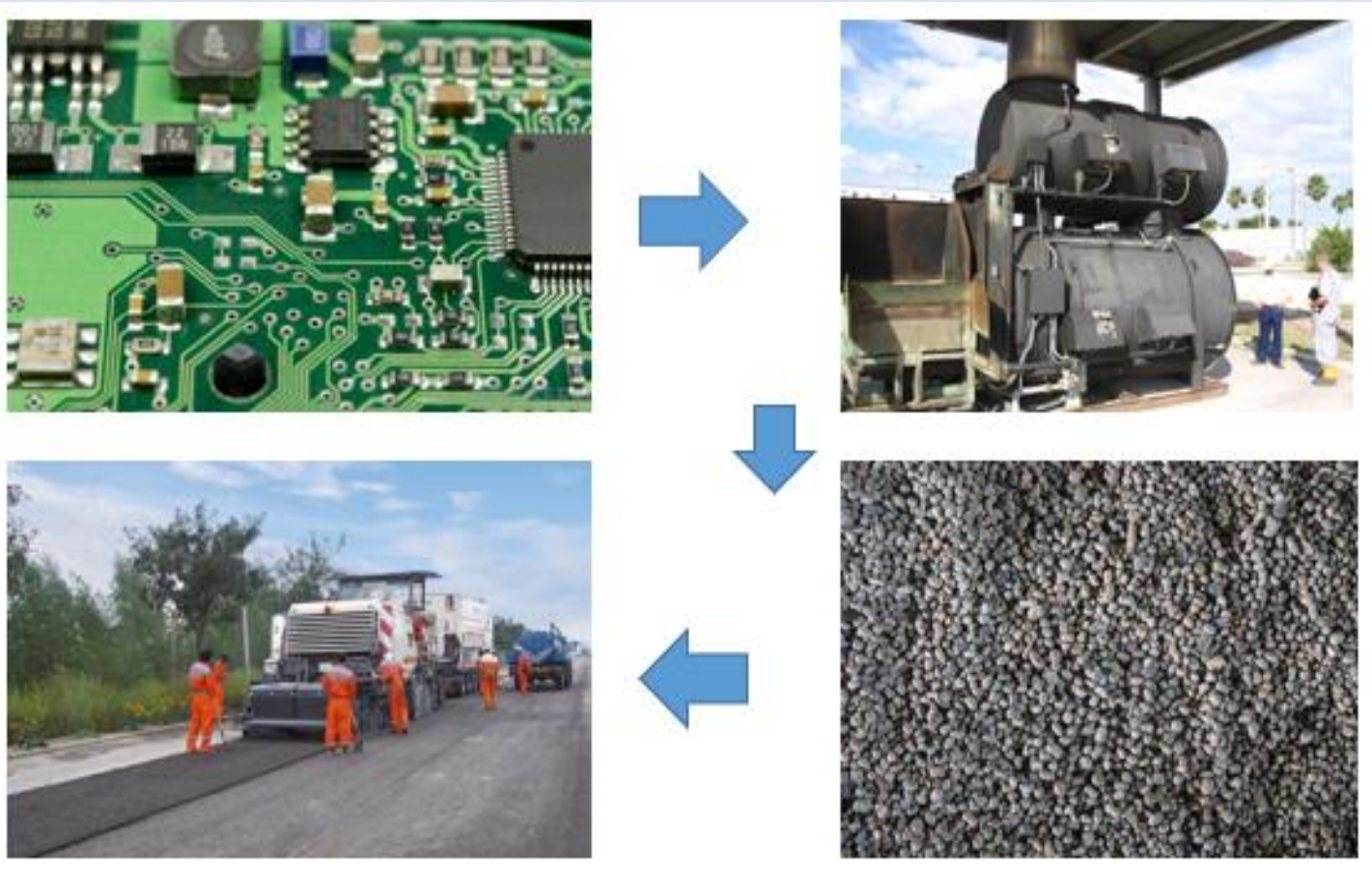


Рис. 1 – Технологическая схема переработки отходов

Recycling of PC Boards into Building Materials



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Questions & Answers

Thank you for your interest