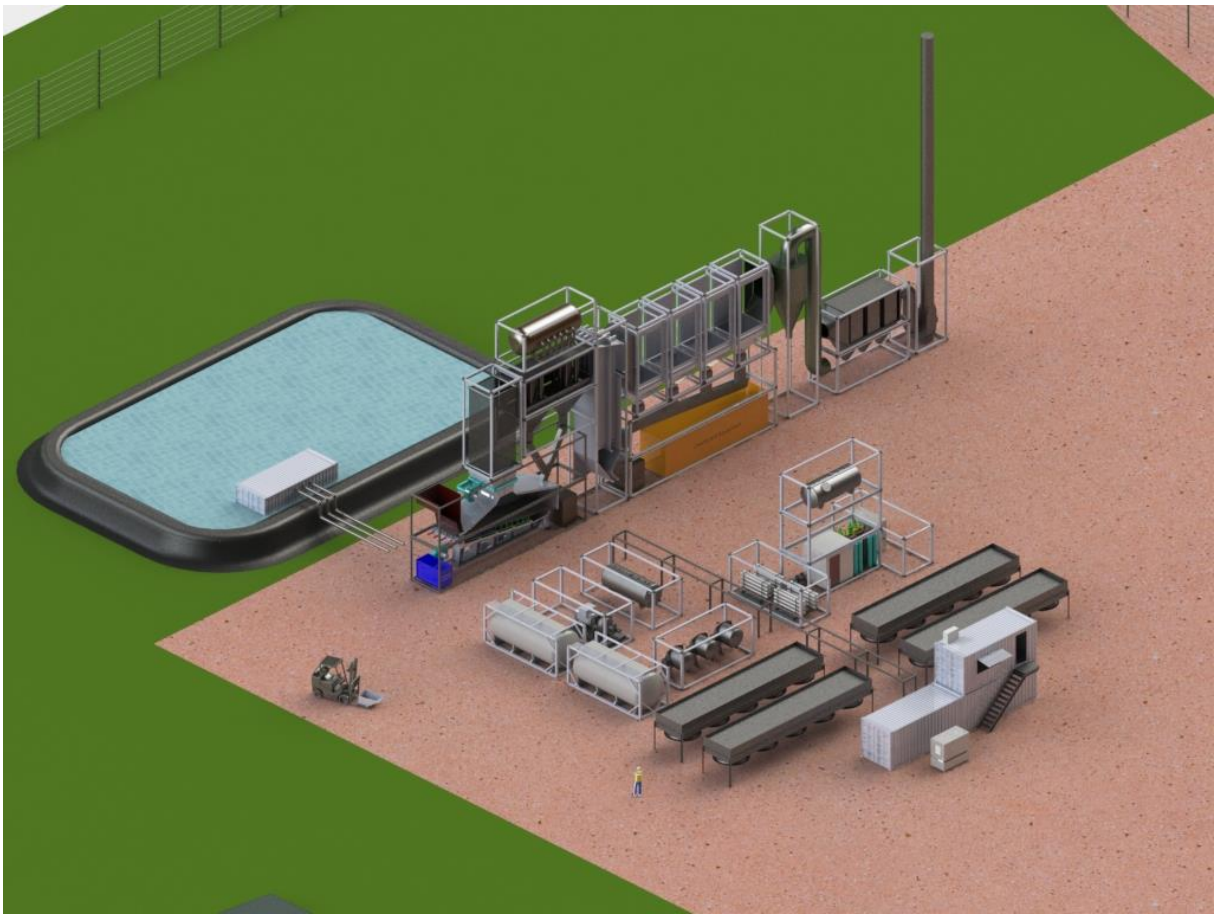
DutchPowerGroup
Get energised

Transferring local fuels into ELECTRICITY

Impact by innovation



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DutchPowerGroup has made it their mission to make a contribution to the decrease of emissions of greenhouse gasses (GHG) as a result of decaying waste streams across the globe. This process causes large amounts of greenhouse gasses such as e.g. methane, a gas that is around 30x as damaging to the ozone layer as CO2, into the atmosphere.

In order to achieve this, DutchPowerGroup develops, promotes and realizes renewable energy projects. In these projects, effective use of capital, agroforestry streams and other available feedstocks are combined with efficient, cutting edge, proven, Dutch incineration technology.

The energy production-balance of many countries is characterized by high dependency on fossil fuels and limited utilization of (bio)residual streams - including biomass and (agro)waste and even municipal household waste streams.

We see that by adopting modern methods for re-use of these readily available local fuel streams, less dependency on fossil fuels can be achieved, meanwhile offering a solution for waste streams that currently remain unprocessed causing pollution of groundwater, presenting a health hazard as well as generate GHG that have a dramatic effect on global warming.

DutchPowerGroup develops**,** designs, builds*,* operate (transfer) and maintain *DBO(T) M* mid-market assets which demonstrates technical feasibility as well as commercial viability.
How?

- Using available residual streams to the highest energetic value (such as e.g. wood and MSW);
- In the mid-market segment, thus servicing regional and/or off-grid users rather than the large operators.
- Relatively low investment with high environmental impact.
- Pairing optimal logistics with local power distribution.
- Offering additional spin of such as clean water, steam and or district heating availability.
- Supplying jobs, and job training.

DutchPowerGroup deploys technology focusing on operational efficiency within the context of the local setting. Operational project realization and hands-on development are key within DutchPowerGroup. Moreover, economic development is paired with technical development ensuring that in most cases a reasonable return on invested capital can be offered.

Chameleon:

DutchPowerGroup has developed and are able to deliver tailor-made W2E installations which are designed to combat a specific set of challenges, based on proven technology, able to handle a wide spectrum of residual waste streams, we named it …. **Cameleon**:

- The asset produces decentralized electrical energy, thermal energy but also potable water, process steam or hot water (0,9 MWe to 1,8 MWe, up to 10 MWth);

- The asset uses diverse locally sourced bio-energy & waste input as fuel. Given its size, only a limited input amount of fuels have to be transported to the production site;
- The installation is able to produce stable and continuous power due to utilization of proven technology with high operational efficiency;
- In order to guarantee the successful construction, implementation of new technologies and delivery of a robust installation, DutchPowerGroup has chosen to deliver the installation in standard containerized formats (modular system). As such, a fast, simple and economic erection is secured (possibility to execute complete FAT – before shipping);
- DutchPowerGroup delivers a "turnkey" problem solving solution including:
  - Customer specific installation design;
  - Build & Construction execution – including plant Start-up;
  - Project Economic Structuring & in some cases financing support;
  - Provision and implementation of O&M programs including training of local personnel;
  - Robust, simple and forgiving operation with basic automation level;
  - No extensive foundation needed;
  - Easy overhaul by exchange of standardized modules.

Technical context to Chameleon :

Possible fuels or mixtures

- Biomass, agricultural residues, municipal waste, bio-waste or a mixture;
- Envisioned caloric value of fuels 7 – 14 MJ/kg and moisture of 25-45%;
- Fuel quantity of 0.3 kg/sec to 1,6 kg/sec, depending on composition and caloric value of fuels.

Combustion- & Boiler Design parameters

- Hydraulically driven combustion grate with a maximum capacity up to 10 MWth;
- 4 draft water tube boiler at 40 Bara and 360 ℃ at Superheater outlet;
- SNCR DeNOx with ammonia injection;
- Steam capacity is, depending on capacity, kg steam/sec;
- Closed loop condensate and feedwater cycle in combination with deaerator.

Flue-gas cleaning plant fulfilling World Bank requirements

- Dry flue gas cleaning principle, consisting of:
  - Cyclones, for dust removal;
    - Flue gas reactor with additive dosing of lime and active coal;
    - Bag house filter;
    - Induced draft fan;
    - Emission analyzer and measurement;
    - Stack.

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Delivered 'Container sized' plant for Canada

Power Generation

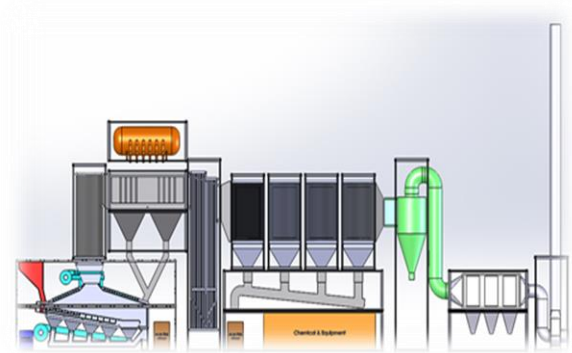
- Full condensing multi stage steam turbine with air cooled condenser;
- From 0.9 MWe to 1,8 MWe at 400V-50 Hz generator;
- Synchronization unit for connection with local grid;
- Low voltage distribution for own plant usage.

Auxiliaries

- Reverse Osmosis (RO) plant for water production;
- Motor Control Center (MCC) for power distribution;
- Centralized control room;
- Compressed air installation;
- Connecting pipe works.

Interested to find out what we can do for you ?

DutchPowerGroup B.V.



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