The **Pyro-BAF technology** is a two-stage process generating an engine-suited fuel from biomass in combination with oil-containing waste materials for use in cogeneration units.

In a first process step the biomass is separated into biochar and pyrolysis gas by means of a pyrolysis unit. As the reaction occurs under controlled heating levels (450-500°C) it avoids the formation of tar and almost no pollutants are generated.

In a second step the resulting pyrolysis gas is fed into the BAF reactor where it reacts with a hot residue oil.

The resulting product gas is condensed into an oil component and a diesel-water component by two stages of cooling. Finally the remaining gas is cleaned in an electrostatic precipitator and directly converted into electrical energy in a combined heat and power unit.

The oil and the diesel are storable and will be used also as a CHP fuel as required.

The Pyro-BAF process offers several advantages over pure pyrolysis. On the one hand the pyrolysis gas is cleaned by the oil into which it is fed. On the other hand the gas also reacts with the oil and cracks it in substantially lower temperature ranges than would be possible without pyrolysis gas. This reaction creates a more stable, storable diesel component which also has a significantly higher energy content than pure pyrolysis oil. Optionally more gas or diesel can be produced in the BAF process depending on the feedstock and the temperature used in the BAF reactor. The feedstock for the BAF reactor may range from plastic waste (PE/PP) to oil residues, to bio oils.

The BAF technology makes it relatively easy to upgrade pyrolysis oils to a quality which can be used for decentralized energy production in combined heat and power units.
In addition the oils are storeable and thus can also be used for decentralized power generation during peak load times.