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- 1 Combustion of mill strip waste.
- 2 Demonstration plant bulk material heat exchanger.

## PLANT AND PROCESS ASSESSMENT

### ANALYSIS OF TECHNOLOGY, ENERGY EFFICIENCY, ECONOMY AND ECOLOGY

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In the case of power generation plants for the thermal utilization of biomass, production residues and waste materials a number of factors decide on a successful realization and a safe and economic operation.

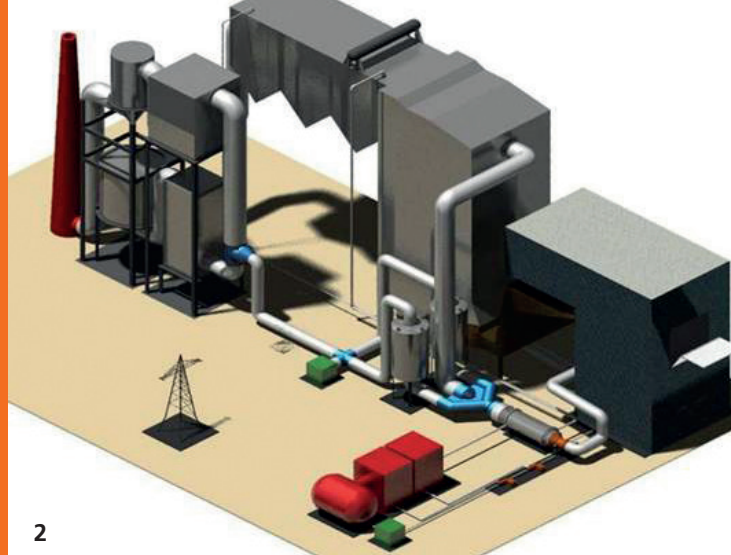
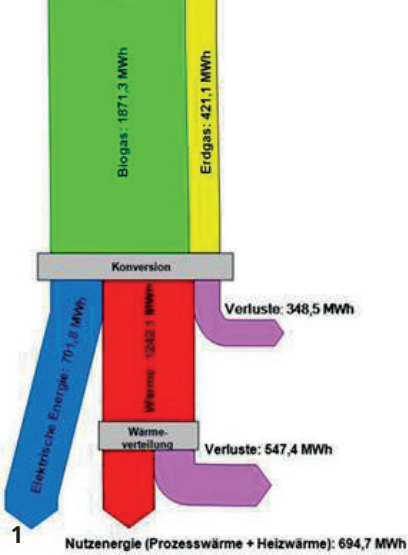
Fraunhofer UMSICHT can offer an independent consultation for planning, process development and assessment of existing plants. The scientific analyses comprise installation engineering, feedstock potentials, energetic balance, economic efficiency and environmental relevance, if necessary in the overall complex or for individual aspects. The service offer is added with the support when evaluating offers, the analysis and energetic optimization of production processes and energy plants as well as the technical measurement and validation of process data.

#### Keywords

- Independent consultation
- Feasibility studies
- Power generation plants
- Thermal processes
- Alternative biogenous fuels
- Thermal waste utilization
- Energy optimization
- Environmental audits
- Field campaigns

#### Target Groups

- Energy management
- Waste management
- Utility companies
- Municipalities
- Production plants
- Plant construction
- Environmental technology
- Sewage sludge utilization
- Approving authorities



1 Sankey diagram energy balance.

2 Concept decentralised waste incineration plant.

3 Plant for thermal sewage sludge utilization (sludge2energy®).

## Our service

- Independent consultancy services for plants and processes for the energetic use of biomass, residues and waste materials
- Feasibility studies on planned plants and process concepts
- Scientific examination of the overall complex including
  - Assessment of the technical implementation
  - Energy balances
  - Potential analyses for possible feedstocks
  - Environmental auditings
  - Economic feasibility
  - Legal and political framework conditions
- Assessment of energy generation plants and supply facilities
- Offer evaluation
- Examinations for the integration of renewable sources of energy
- Energetic optimization of plants and production processes
- Technical measurement support for recording process-relevant parameters and data evaluation
- Assessment of the emissions for fine dust and nanoparticles

## Your benefit

- A competent partner for research and development
- A long experience in the development and testing of energy generation plants for the thermal utilization of residues and waste materials
- Scientifically substantiated analysis of innovative plant and process concepts
- Support when introducing new products on the market
- Independent assessment of existing plants
- Competitive advantages due to optimized use of fuel and energy
- Provision of measurement techniques and data collection as a basis for energetic process optimization
- Creation of environmental auditings

## References

- Market study on the use of replacement fuels in a cement works
- Creation of an integrated biomass utilization concept for regenerative energy generation of a municipality
- Studies on the change of the heat supply of a paper mill, a printing plant respectively a brewery from fossil to regenerative fuels
- Study on the creation of hydrogen from biogenous feedstocks by means of thermochemical gasification
- Feasibility study for a decentralized gasification plant with CHP in the Bioenergy Region Achenal
- Assessment of the sewage sludge combustion plant of a waste management company
- Study on the optimization possibilities of the power demand in a production plant
- Feasibility study for a combined cycle power plant with compressed air reservoir for the compensation of fluctuating power input