



## Project Summary

### ADVANCED INTEGRATED WASTE MANAGEMENT AND WIE DEMONSTRATION

#### LAHTISTREAMS

**Action Line:** Cost-effective supply of renewable energies

**Contract Type:** Integrated projects

**Activity area:** Biomass

#### Coordinator:

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#### Project details

|                             |                   |                               |
|-----------------------------|-------------------|-------------------------------|
| <b>Reference:</b>           | BioEn/518338/2005 | <b>Start Date:</b> 01/06/2006 |
| <b>Status:</b>              | Execution         | <b>End Date:</b> 01/06/2010   |
| <b>Project Cost (€):</b>    | 23.460.000        | <b>Duration (months):</b> 48  |
| <b>Project Funding (€):</b> | 8.680.000         |                               |

#### Summary

The EU Directives set ambitious targets for increasing bioenergy for large scale RES- and CHP production. Urban and Industrial waste, forest and agricultural biomass represent equal additional volumes for Europe. Today more than 340 waste to energy WtE plants are in operation in Europe and till 2010 new 165 WtE plants are needed in order to meet the demands set by EU Landfill Directive. The dominating technology is MSW incineration, where the power production efficiency is low (20-25 %). Material recycling rate will remain low and can hardly meet the ambitious recycling targets.

New and innovative integrated material and energy recovery concepts will be demonstrated. For high efficiency power generation, high quality solid recovered fuels (SRF) will be introduced to an innovative gasification power plant producing 42 MWe electricity and 100 MW district heat with overall efficiency as high as 88 %. From urban commercial and industrial waste (CIW) the target for recycling is 40 wt-% and energy recovery 35 - 40 %. The target for integrated material and energy recovery will be up to 100 % higher than the present practices in many European member states, like in Finland, UK and new member states.

The innovative SRF gasification power plant will be demonstrated by Lahti Energia Oy, Finland. The technology has been demonstrated for clean solid biomass in co-gasification with coal power production in Finland, Austria and Neherlands. The novelty of this IP-proposal is the dedicated hot gas cleaning and gas boiler with high value steam cycle, which enables the overall power production efficiency > 35 % in condensed mode and meeting the WID limits. This will produce 40 % more electricity/ton SRF compared to the state of the art, mixed waste fired grate boilers. The IP-proposal will demonstrate innovations in the whole waste management chain, with focus on SRF production and high efficiency power production by 10 parties in 5 countries.



## Partners

|   |                                    |    |
|---|------------------------------------|----|
| 1 | Lahti Energia Oy                   | FI |
| 2 | Valtion teknillinen tutkimuskeskus | FI |
| 3 | Lassila & Tikanoja plc             | FI |
| 4 | HLC Group                          | PT |
| 5 | ENERGI E2 A/S                      | DK |
| 6 | Forschungszentrum Karlsruhe GmbH   | DE |