Project no.:
019809

Project acronym:
NextGenBioWaste

Project title:
Innovative demonstrations for the next generation of biomass and waste combustion plants for energy recovery and renewable electricity production

Instrument : Integrated project
Thematic priority : SUSTEV-1.1.1 - Cost effective supply of renewable energies

Start date of project: 2006-02-24
Duration: 4 years

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Periodic Activity Report no. 1
Month 01-12

Publishable summary

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Project coordinator
SINTEF Energiforskning AS

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Dissemination Level		
PU	Public	x
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential , only for members of the consortium (including the Commission Services)	

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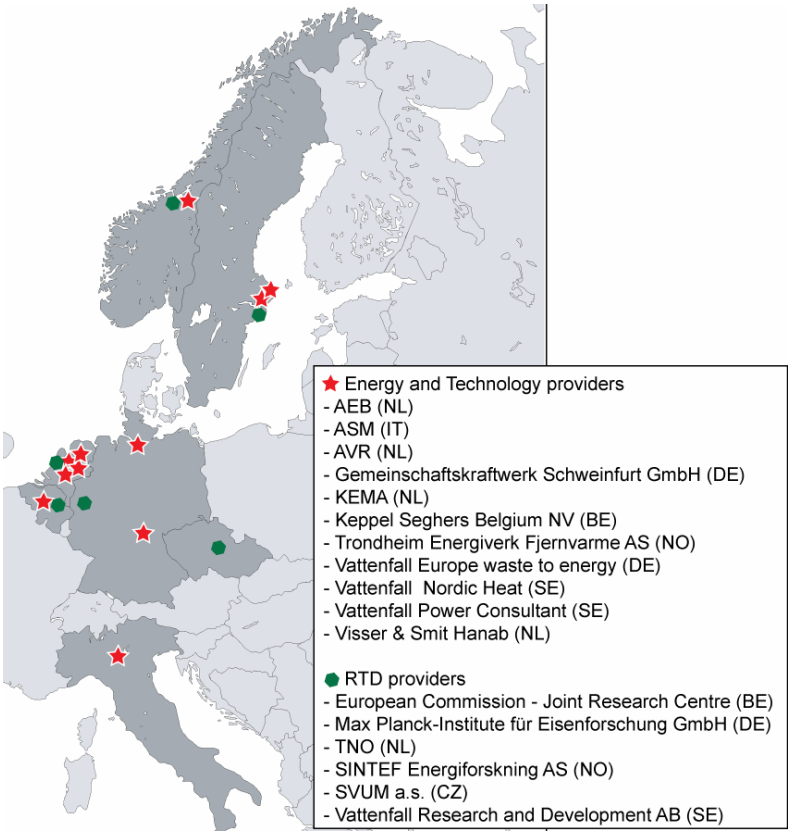
Abstract
This Periodic Activity Report no. 1 contains a Publishable executive summary of four pages.

PUBLISHABLE EXECUTIVE SUMMARY

The project

The NextGenBioWaste project is a four year integrated project within the EU sixth framework programme. The contractual start date is 2006-02-24 and hence the project will end in February 2010. The total budget is 29 million Euro and the contribution from the European Commission amounts to 11,5 million Euro.

17 legal entities have agreed to establish NextGenBioWaste. The consortium encompasses 8 European utility companies, 2 technology provider, 6 RTD providers, and 1 consultant/ engineering company, see Figure 1. The Co-ordinator SINTEF Energiforskning AS has on behalf of the consortium entered into a contract with the European Commission, Directorate-General for Energy and Transport, Directorate D – New and Renewable Energy Sources, Energy Efficiency & Innovation.



NextGenBioWaste is targeting to perform innovative demonstrations of improvements to energy recovery and renewable electricity production from waste materials and other commonly used biomass feedstocks.

NextGenBioWaste deals with waste and biomass feedstocks and covers the supply chain from fuel preparation, via conversion and residue handling, up to wholesale of energy. The overall objective of the NextGenBioWaste project is to improve the electric efficiency, reliability, performance and environmental compliance of waste and biomass combustion plants, which produce heat and electric power, and to reduce costs at a competitive level.

Figure 1: Partners in the NextGenBioWaste consortium.

NextGenBioWaste has the following targets:

1. Increase the electrical efficiency for waste to energy plants from 22 to 30% (gross generated)
2. Double the lifetime of heat exchange components at existing steam temperatures
3. Increase the electrical efficiency for biomass combustion plants from 33 to 35%, while making the systems more cost-effective by the use of more low-grade fuels
4. Lower the fuel cost at least 1 mill. €/year for a 100 MWth biomass combustion plant while maintaining the two former targets
5. Enable technologies for upgrading of bottom ash, thus, enabling the utility companies to valorise from 70% of their bottom ashes for civil engineering purposes

NextGenBioWaste is organised as an integrated project (IP). The demonstration and RTD activities are structured in 4 sub-projects that respond to the objectives of the work programme:

- SP 1 Innovative fuel preparation and mixing
- SP 2 Conversion
- SP 3 Residue handling and use
- SP 4 Dissemination

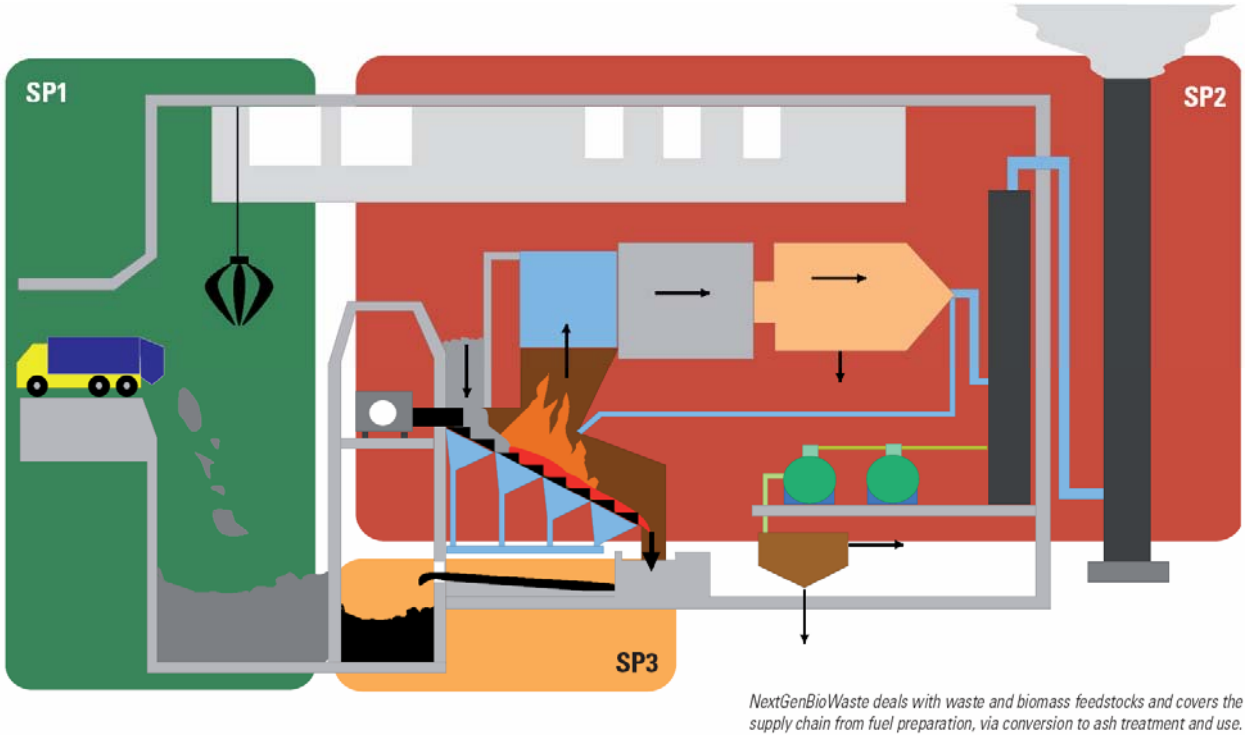


Figure 2: The different NextGenBioWaste subprojects deals with fuel preparation and mixing, conversion (including emissions) as well as handling and treatment of residues.

The work package breakdown is shown in Figure 3.

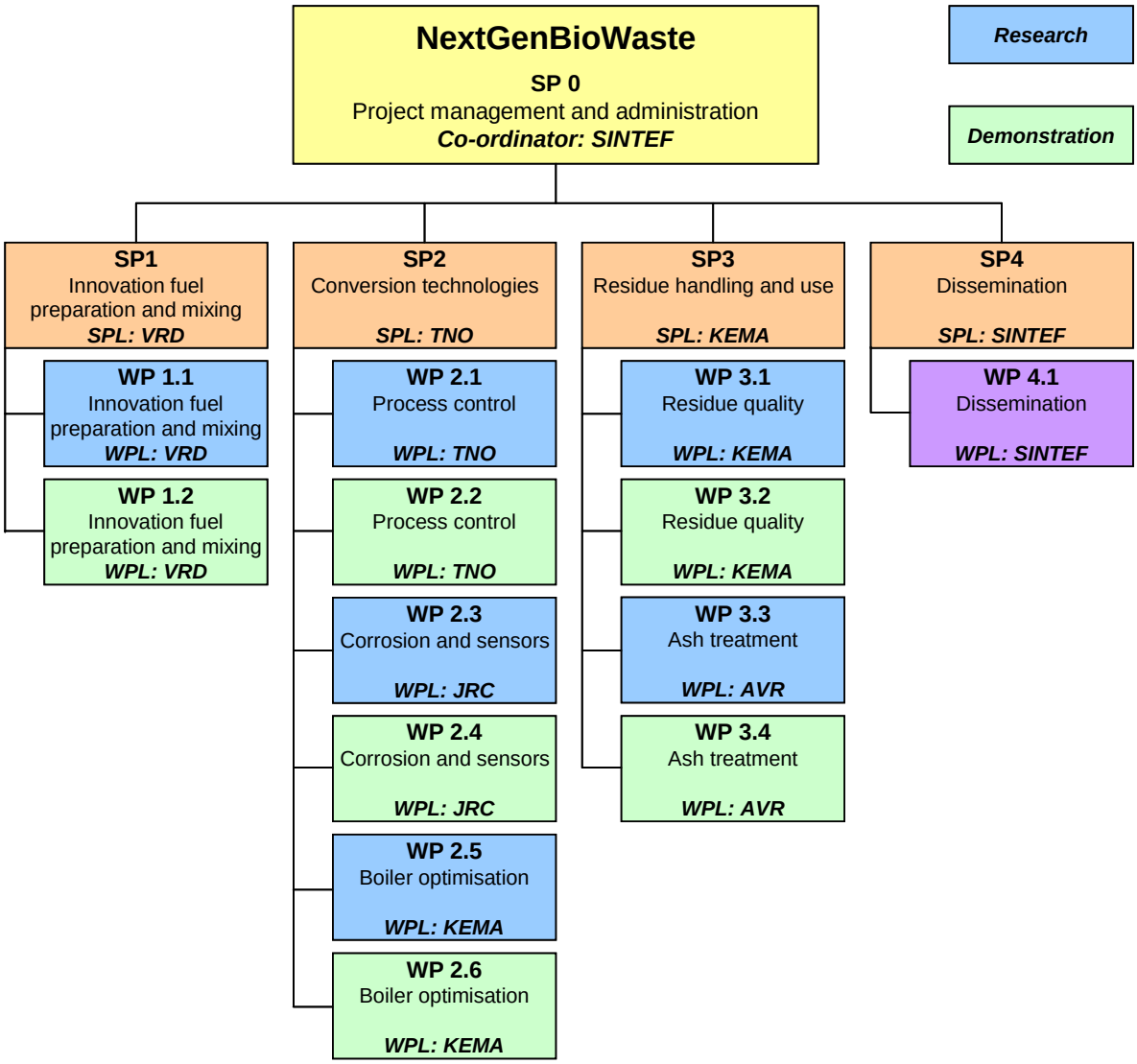


Figure 3: Work Breakdown structure.

NextGenBioWaste will, in compliance with the stated objectives of the work programme:

- Deliver results aimed at accelerating the market penetration of a new generation of biomass and waste combustion plants with particular emphasis on 2010 energy policy objectives.
- Consist mainly of integrated demonstration actions with a research component of approximately 20% as a support for the planning, understanding and further improvement of the demonstrated technologies.
- Demonstrate reduction in the costs associated with implementation of new technologies and demonstrate how the technological solutions can be integrated under full-scale operating conditions. NextGenBioWaste will perform several large-scale demonstrations of different innovative concepts for the energy supply chain.

Work performed and main results achieved during the first year of operation

As we are early in the project with duration 4 years there are not any major results by now. There is 80% demonstration activity in the project, and a significant part of these demonstrations of new technology is full scale on plants. During this first year investments has been done and building/retrofit started. The main results achieved during the first year are:

- The High Dust SCR Catalyst has been installed and operated for almost one year with encouraging results in terms of NOx reduction and pressure loss behaviour. Further tests are needed to verify the long term behaviour (WP2.6.2)

Use and dissemination of knowledge

The dissemination activities carried out during the first year have been targeting to enhance the publicity of the NextGenBioWaste project. As we are early in the project, these dissemination activities communicate mainly general project information, plans and expected results. Later in the project achieved results are expected to be the major contribution. The following dissemination actions have been carried out:

- The NextGenBioWaste website is established. The web-address is http://www.nextgenbiowaste.com.
- Dissemination material. A project brochure is produced, and a project presentation is made. Both are available from the website.
- Publications: During the first year 11 press clips, two popular science publication and 8 presentations are registered. All publications in English are available from the website.