


Status report on thermal gasification of biomass and waste 2019

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Annex 6**Other gasification technology – Non operational, historical (project cancelled before 2012), cancelled, stopped while under construction, deconstructed, idle, on hold**

	Owner	Project name	Country	Page
	NUON/Vattenfall	Wood co-gasification in IGCC	NL	2
	RWE Essent	Wood gasifier Geertruidenberg	NL	3

Project name	Wood co-gasification in IGCC
Project owner	NUON/Vattenfall
Status	Non operational (shut down)
Start up	2006
Country	The Netherlands
City	Buggenum
Type	TRL 9 Commercial
Technology	Other gasification technology (cofiring)
Raw Material	Biomass coal blends
Output 1 Name	Power (electricity)
Output 1 Capacity	30 MWel in 253 MWel coal plant
Partners	NUON/Vattenfall
Technology Brief	<p>NUON operates a 253 MWe coal gasification plant in Buggenum (the former Demcolec Power station). It is an Integrated Gasification Combined Cycle plant (IGCC) with Shell entrained flow gasification technology and Siemens gas turbine. After several successful biomass co-gasification trials with biomass input up to 30 wt%, the plant has been modified to co-gasify 30 wt% wood on a continuous basis. New biomass storage and feedings systems were put into operation in spring 2006. Since 2007, the plant has been operated with approximately 10% (energy) biomass. In 2011, activities were started to increase the co-firing share to 50% or more. In 2013 it was decided to close down the installation, due to low energy prices and relatively high cost of operation of the plant.</p>
Additional Information	<p>www.nuon.com http://www.nuon.com/company/core-business/energy-generation/power-stations/buggenum/</p>
Contact	Not known
	

Project name	Wood gasifier Geertruidenberg
Project owner	RWE Essent
Status	idle
Start up	2005
Country	Netherlands
City	Geertruidenberg
Type	TRL 9 Commercial
Technology	Other gasification technology
Raw Material	Waste wood, RDF
Input Capacity	150.000 t/y
Output Name	Power (electricity)
Output Capacity	34 MWeI
Technology Brief	<p>At the Amer Power Station in Geertruidenberg, a CFB gasifier plant has been constructed to produce gas as fuel for the Amer-9 600 MWe pulverized coal power plant, which is operated as large CHP plant. The project originally was to be started in 2000. The 83 MWth gasifier is to convert about 150,000 t/y demolition wood, replacing 70,000 t/y of coal. The gasifier is a low-pressure Lurgi CFB operating at 750 - 850°C. Originally, the raw gas was to be cleaned from particles, ammonia, and tars before entering the coal boiler. This has been modified to the much simpler system where the raw gas is partially cooled to approximately 450°C and particulate reduction by cyclones. During commissioning, practical problems mostly related to the fuel supply system. After modifications and successful trials in 2005, the gasifier had to be stopped. In the Dutch interpretation of the European WID (Waste Incineration Directive), the complete coal-fired plant was identified in December 2005 as waste incinerator because of the demolition wood fired gasifier. This situation has been solved November 2006 by allowing wood gas on the national "white list" of clean biomass fuels under certain conditions related to the concentration of 9 heavy metals. The gasifier typically operates 5000 h per year.</p>
Additional Information	www.essent.nl
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