

Nuon Magnum Newsletter

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Phased construction

initially suited to natural gas but ready for coal gasification

The Management Board of Nuon has decided to construct the Nuon Magnum multi-fuel power plant in phases. Nuon chairman Ludo van Halderen: "We intend to start with the natural gas unit, which has a total capacity of 1,200 MW. This unit has been prepared for coal gasification, turning Nuon Magnum into a multi-fuel power plant." It is now up to Nuon's shareholders to approve the investments needed to realise the project.

The board decided in favour of a phased project in response to the enormous increase in construction costs. At this moment the construction sector and the market for process installations is overheating. Van Halderen, "Nuon remains committed to the reliable production of clean and affordable energy. We will therefore reach a decision about the construction of the coal gasification unit within the next two years, market conditions permitting".

The preparatory work for the new power plant has kept Nuon very busy over the past two years. Van Halderen: "It was decided

in July 2006 to construct the new plant in Eemshaven, which is not only easily accessible to fuel suppliers, but also allows the plant to be cooled using sea water. The decision was partly motivated by the excellent connection to the local electricity grid and the spacious location. By constructing this power plant, Nuon expects to safeguard the future supply of electricity to the Dutch market. It also allows the organisation to take the next step in the transition to new energy sources. Our intention is that Nuon Magnum will be operational in 2011."

Once operational, the power plant is expected to power approximately 2 million households. The use of gasification technology allows CO₂ to be captured prior to combustion, optimising the efficiency of the carbon capturing process. Van Halderen: "We plan to implement a CO₂ capture pilot at our Buggenum plant, which has used gasification technology for years. The experience gained can subsequently be used for the large-scale CO₂ capture at Nuon Magnum, once the gasification unit has been constructed."

"Nuon remains committed to the reliable production of clean and affordable energy"





Greenpeace takes to the streets to discourage coal use

On 5 July, Greenpeace dumped 20 tonnes of coal in front of Nuon's head office in Amsterdam. The objective: to persuade Nuon and other power companies in the Netherlands to refrain from using energy produced in coal-fired plants.

Greenpeace objects to the decision to construct four new coal-fired power plants in the Netherlands. Greenpeace has thus labelled the new Nuon plant in Eemshaven as being coal fired, which is incorrect. Nuon Magnum is by no means a regular coal-fired plant. Instead, it is a multi-fuel gasification plant which will, in the end, use three types of fuel: biomass, natural gas and coal.

In response to the protest, Nuon has let it be known that it shares Greenpeace's environmental concerns. However, in its capacity as a power company, it also has a public responsibility to its clients. While the production of sustainable energy is woven into Nuon's corporate fabric, the organisation also has a duty to supply affordable power in a reliable manner. As such, sustainable power generation is not enough. When it comes to energy, Nuon seeks a balance between affordability, reliability and sustainability. The Nuon Magnum concept looks to implement this balance by combining a highly efficient coal burning unit with natural gas and biomass (the latter on a large scale). The plant is also equipped for CO₂ capture.

Nuon Magnum allows CO₂ emissions to be reduced by 80% through the gasification of biomass and the capture of CO₂. As a consequence, the plant is exceptionally clean - it more than meets the latest emission standards, which are much stricter than those applied to existing plants.

Building site

A construction sign has been posted at the Nuon Magnum site for several months now. The sign is located on the sea barrier to the south of Oostlob and commands an excellent view of the Nuon site, which has been prepared for construction. During the early months of the year, the site was raised by an average of two metres, using sand that has meanwhile settled. Phase 2 of the project, involving the raising and levelling of the temporary site, was recently started, allowing the building contractors to start their work.

Nuon Magnum in harmony with ministerial standards

On 3 July of this year, Minister Cramer of environment (VROM) informed the Lower House that future coal fired power plants must meet the highest environmental standards. She aims at the introduction of clean coal-fired power plants with lower CO₂ emissions thanks to the capture and storage of CO₂ and using biomass as fuel.

The new policy introduced by the minister is in line with Nuon's objectives for the new Nuon Magnum plant in Eemshaven. Cramer: "Even though underground CO₂ storage technology is still in its infancy, I am convinced it will prove highly successful."

During the Lower House debate, the minister again emphasised the need to use coal as a fuel: "Although gas is less harmful to the environment, current reserves are running out. As we are unable to meet our energy needs on the basis of wind and solar power alone, we will have to rely on coal as well."

The use of emission rights limits the amount of CO₂ that power plants are able to emit. Emission rights are based on national environmental objectives, which call for a 30% reduction in CO₂ emissions. This forces operators to introduce measures such as CO₂ capture and the use of biomass fuel. The Nuon Magnum plant therefore meets with Cramer's objectives.



Nuon ontwikkelt hier de
Nuon Magnum
multi-fuel
elektriciteitscentrale
1.200 MW



Local residents visit Nuon Magnum

Contractors update

Combined Cycle Unit

The European tender process, which was started in Q3 2006, has meanwhile been completed and Nuon is in the final stages of negotiation. We expect to award a sub-contract shortly, allowing some of the work to be started. As the construction market is currently overheated, it is important that Nuon reserve capacity for the fitting of gas and steam turbines. We expect to sign the final contract by the end of the year.

Gasification unit and gas purification

Uhde, the German engineering firm, has worked out the gasification unit in further detail over the past few months. The company has also prepared a cost estimate on the basis of the latest engineering specifications.

Partly on the basis of this estimate, Nuon has decided in favour of phased construction. This gives us more time to deliberate our contracting strategy, and allows us to fine tune the component specifications. It also enables us to reassess several contract deliverables that may exert upward pressure on prices.

Apart from moving forward with the gasification units, the details of the Air Separation Unit (ASU) as well as the transportation (supply) of coal and biomass will be worked out.



Last August, residents of Oudeschip, a village near Eemshaven, visited the Willem-Alexander power plant in Buggenum (province of Limburg). The visit was organised to prepare residents for the construction of the Nuon Magnum plant in Eemshaven (province of Groningen). Residents are not pleased with the arrival of a power plant near Oudeschip. They were received by Ton Duijn (Cluster Manager Nuon Magnum) and Hans Pastoors (permit specialist).

“It was an open and respectful meeting. I met many residents at the Nuon Magnum information meeting. It was during this meeting, which was held on 7 June, that we decided to invite local residents to visit the Buggenum plant”, explains Hans Pastoors. Buggenum is a smaller version of Nuon Magnum. The plant generates electricity using gasification technology, and is widely recognised as the best performing power plant of its kind. Ton Duijn: “The meeting was organised to provide residents of Oudeschip with information about Nuon Magnum. We felt that a visit to the Buggenum plant was the best way to show them what to expect”.

The visit did not cause residents to change their opinion about Nuon Magnum. Ton Duijn: “It is important we had a dialogue, and that we agreed on staying in contact. From our perspective, that’s a major step forward.”

Labour market and training

To make sure that the Nuon Magnum plant is operational on schedule, we need to recruit sufficiently qualified staff in time. This is why we established the Nuon Magnum Staffing project team, which is currently working on a recruitment campaign. The campaign is scheduled to start as soon the investment has been approved. Likewise, the training plan, which reflects the phased construction of the plant, is currently being worked out. Many of the employees who will operate the Nuon Magnum plant will receive training at the Willem-Alexander power plant in Buggenum. Here, they will learn all they need to know - including hands-on experience - about gasification technology. Needless to say, the temporary accommodation of employees at the Buggenum plant calls for coordination. The following positions have been filled: Plant Manager, Process Technology Engineer, Team Leader - Production and Maintenance Engineer. Additional job vacancies will arise as soon as the investment has been approved.

Additional information is available via www.nuon.com/magnum/opensollicitatie



Nuon Magnum

Nuon is developing a new power plant that is expected to start commercial operation in 2011. The new power plant will be based on gasification technology and will be able to generate electricity from coal, gas and biomass, so it can be used flexibly in terms of fuel. In addition, based on the experience at the Willem-Alexander plant in Buggenum, coal gasification is a clean alternative. With a capacity of 1200 megawatts, Nuon Magnum will provide electricity for more than two million households.



Colophon

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