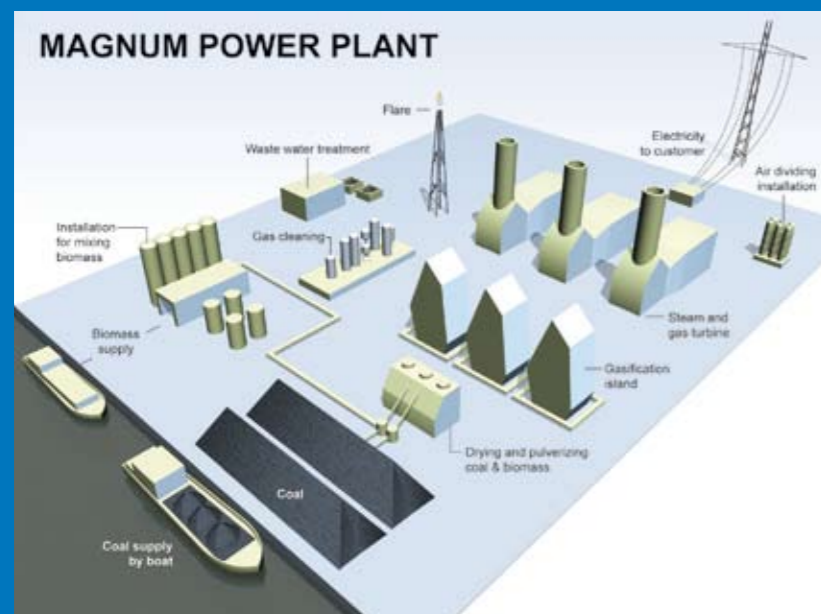




## Nuon Magnum

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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### Editorial staff

Roel Kettenis, Nuon Magnum  
 Katja Borleffs  
 Monique Schumans  
 Energy Sourcing Communicatie

If you have any questions or comments, you can send an e-mail to: [magnum.mc@nuon.com](mailto:magnum.mc@nuon.com)  
[www.nuon.com/magnum](http://www.nuon.com/magnum)

## A step closer large-scale capture and storage of CO<sub>2</sub>

The developments and collaborations relating to the capture, transport and storage of CO<sub>2</sub> are gradually becoming more concrete. On Friday 27 April Nuon, the ministry of VROM and the province of Groningen signed a declaration of intent that aims to result in the capture, transportation and storage of CO<sub>2</sub> on a large scale. The signing took place during the symposium 'Eemshaven & clean coal: transition to a sustainable future' which was organised by Nuon and the province of Groningen.

In the declaration VROM, Nuon and the province say that they will cooperate in realising CO<sub>2</sub> capture, transport and storage. VROM will create the right conditions in the form of legislation and regulations and Nuon will make the new Nuon Magnum power plant suitable for capturing CO<sub>2</sub>. The province of Groningen will cooperate in the project by bringing the parties together and supporting them. Ludo van Halderen, Chairman of the Management Board of Nuon,

Hans van der Vlist, secretary-general of the ministry of VROM and Queen's Commissioner Hans Alders signed the letter of intent.

During the European summit in Brussels in March of this year, Prime Minister Balkenende said that the Netherlands plan to become the leader in the field of clean coal technology and the underground storage of CO<sub>2</sub>. In Mid-April the cabinet made 80 million Euro for developing CO<sub>2</sub> capture and underground CO<sub>2</sub> storage. The realisation of the multi-fuel power plant Nuon Magnum in the Eemshaven fits in seamlessly with this ambition, all the more because the north of the Netherlands - the Energy Valley of North West Europe - is host to the necessary knowledge institutions and companies that can contribute to this. Furthermore, empty gas fields are available to store CO<sub>2</sub>. By signing the declaration of intent, an important step has been taken in the contribution to reducing CO<sub>2</sub> emissions in the Netherlands.



**"By signing the declaration of intent, an important step has been taken"**

## Successful symposium



The definitive choice of Eemshaven in the province of Groningen as the location for the multi-fuel power plant Nuon Magnum gives an impulse to the further development of both clean coal technology and the Eemshaven. On 27 April the province of Groningen and Nuon organised the symposium 'Eemshaven & clean coal: transition to a sustainable future'. The highlight of the symposium was the signing of the declaration of intent that will make CO<sub>2</sub> capture storage possible.

According to Board Chairman Ludo van Halderen Nuon aims to take serious steps in the field of CO<sub>2</sub> capture. Among other things, this requires good legislation and regulations as well as collaboration with other parties in the chain. Hans van der Vlist, secretary-general of VROM, expects that in the long term power plants will even be compelled to capture CO<sub>2</sub>. This is why Van Halderen feels that it is essential that this should apply not only in the Netherlands but also in the whole of Europe. As Van der Vlist put it 'it works only if it has a broad support-base'.

Ron Wit of Natuur en Milieu is optimistic and concerned about the initiative. 'It's a matter for rejoicing that some people want to make an effort to ensure a cleaner environment. However, it isn't always clear how much the CO<sub>2</sub> emissions will actually be,' says Wit.

CO<sub>2</sub> was not the only topic on the agenda. The development of the Eemshaven as the energy port of Europe and the corresponding grid and capacity were also discussed. In his address, Hans Alders called on TenneT and the Minister of Economic Affairs to take quickly the investment decision, which in his eyes is inevitable in order to bring the grid capacity up to standard. "This will enable the opportunities available to be used and thereby realise an energy zone in the Netherlands Delta", says Alders.

The symposium took place in the old conference hall of the province of Groningen. Besides speeches and the signing of the declaration of intent, the attendees (more than 100 people) were able to take part in various workshops.



## Status of licences

A lot of progress has been made lately in the domain of licensing. The first licence has definitely been issued - the Keuront-heffing from the Noorderzijlvest Water Board, a licence to feed a duct through the dyke between the Nuon site and the Waddenzee. This duct is needed in order to install the cooling water outlet. In addition, a licence is obtained to install the cooling water outlet mechanism outside the dyke.

### *Wm and Wvo licences*

The MER committee has issued its recommendation, advising the province and Rijkswaterstaat that sufficient data is now available, or is on its way, to be able to take decisions about licence applications in the context of the Environmental Management Act (WM) and the Pollution of Surface Waters Act (WVO). The preliminary decisions include an obligation to investigate the presence of fish in the Wilhelminahaven and the

possible risk of fish getting sucked in along with the cooling water that goes to the power plant. The preliminary decisions for these licences are available for inspection from 24 May.

### *Zoning plan*

The forthcoming power plant does not fit entirely into the conditions of the current zoning plan, one of the reasons building heights. In this context the municipality of Eemsmond has started exemption proceedings to enable building to go ahead.

### *Nature and the environment*

In addition to the licences mentioned above, hard work is under way to obtain a licence in the context of the Nature Protection Act. This licensing procedure involves examining the influence of the construction and operation of the power plant on the nature in the surrounding area.



## Nuon contracts Uhde to build gasifiers

Nuon has contracted the German firm Uhde to design and build the coal and biomass gasification unit at Nuon Magnum. On Wednesday 28 March Alfred Hoffmann and Øystein Løseth, members of the Management Boards of Uhde and Nuon respectively, signed a contract for the first phase in Amsterdam.

After a thorough European public procurement and selection procedure, this renowned company from Dortmund was selected as the EPC contractor. Uhde will design and install the coal and biomass gasification section of the multi-fuel power plant. The power plant will comprise three identical coal/biomass gasification islands.

Uhde has now started the work, supported by Nuon Magnum engineering team members and staff of ABB Lummus PMC. The work for this phase has to be finished in a relatively short period of around four months.

Uhde is a well-known German company that specialises in technical constructions of industrial power plants. The company has extensive expertise in the field of gasification technology. For example, it built the substantial IGCC (integrated gasification combined cycle) power plant in Puertollano, Spain.

The public procurement procedure has already started for other important components of Nuon Magnum, the combined cycle units and the construction of the air separation plant for the gasification of (almost) pure oxygen. The tenders have now been received from suppliers and the first discussions have taken place.

## Raising the ground level

In recent weeks the final cubic metres of sand have been brought to the Nuon Magnum site to raise the ground level. In the coming months the site has time to 'settle'. Shortly before the building activities start, the site will be raised to the exact final height. By raising the level and with the help of the dykes around the Oostlob, the area of the Eemshaven where the Nuon Magnum power plant is being developed, the power plant will 'keep its feet dry'.



## Vacancies at Nuon Magnum

The design of Nuon Magnum is in full swing, not only on the technical side but also to set up the organisation. Nuon is currently busy acquiring new personnel. Vacancies for a process technologist and team leader production have been filled. The jobs of maintenance engineer and safety expert are still open. Further vacancies will arise after the final decision to build is taken.