

# **NETS – Danish Participation**

JNr. 33033-0345

## **FINAL REPORT**

December 2008

Date : 20th December 2008  
Project : 30.5453.01

Elaborated : Silke Alsen, Grontmij | Carl Bro / Christian Theel, Baltic Sea Solutions  
Controlled : Stig Hirsbak, Grontmij | Carl Bro  
Approved : Stig Hirsbak, Grontmij | Carl Bro

<b>CONTENT</b>	<b>PAGE</b>
<b>1 ABSTRACT</b>	<b>3</b>
1.1 Danish abstract	3
1.2 English abstract	3
<b>2 BACKGROUND</b>	<b>4</b>
2.1 Objectives: Nordic Cooperation and Capacity Building	4
<b>3 WORK PACKAGES</b>	<b>5</b>
3.1 NETS in 2007 – co-funded by Nordic Innovation Center (NICE)	6
3.1.1 Work package (WP) 1: Establishing a Cleantech company register:	6
3.1.2 WP 2: Identification of company groups and target market areas	6
3.1.3 WP 4: Involvement of key clean energy companies	6
3.2 NETS in 2008 – co-funded by the Danish Energy Authority	7
3.2.1 WP 3 - ENS: Networking	7
3.2.2 WP 5 - ENS: Promotion of Nordic Environmental Technology Solutions	7
3.2.3 Budget changes	8
<b>4 RESULTS - NETS ACTIVITIES FUNDED BY ENS</b>	<b>8</b>
4.1 WP 3: Networking	8
4.1.1 NETS Members	8
4.1.2 Business-to-business (B2B)	9
4.1.3 Marketing Instruments	10
4.2 WP 5: Promotion of Nordic Environmental Technology Solutions	12
4.2.1 NETS Homepage	12
4.2.2 Translation to Russian and Chinese	13
4.2.3 Markets and Tenders	13
4.2.4 Coordination	13
4.2.5 Publications	13
<b>5 CONCLUSIONS AND RECOMMENDATIONS (RESUMÉ)</b>	<b>14</b>
<b>6 NEXT STEPS</b>	<b>16</b>
<b>7 ANNEXES</b>	<b>17</b>

## **1 ABSTRACT**

### **1.1 Danish abstract**

I det NICE-støttede projekt "Nordic Environmental Technology Solutions (NETS)" er der blevet organiseret en ny måde at netværke på i Norden med formål at udfordre det hurtigt voksende miljøteknologimarked.

Projektet har til formål at øge kommercialiseringen af nordisk Cleantech på området for energi og vand igennem

- et tættere samarbejde og fælles markedsføringsaktiviteter,
- en hjemmeside,
- Cleantech produktoplysninger i form af brochurer og publikationer
- og deltagelse i relevante handelsmesser og industri arrangementer.

En anden hovedopgave for NETS projektpartnere fra Norge, Sverige, Finland og Danmark har været at assistere med business-to-business aktiviteter for at opnå helhedsløsninger hen imod et tilbud af samlede Cleantech systemer.

Projektet har opnået at etablere et Cleantech register af 600 nordiske Cleantech virksomheder, et netværk af 86 medlemsvirksomheder, udarbejdelsen af flere publikationer og brochurer til teknologipromovering og en hjemmeside for den direkte adgang til virksomhedsprofiler og kontaktdata. Projektpartnerne har deltaget i 14 relevante internationale Cleantech messer og konferencer og har promoveret business-to-business kontakter suppleret med tilbud om kompetenceformidling via to erhvervsworkshops.

Den fremtidige udfordring for projektpartnerne og Nordic Cleantech i det hele taget vil være at koordinere de mangfoldige markedsføringsinitiativer i de Nordiske lande. Det forventes at opnå mere tilpassede aktiviteter og binding af medlemsvirksomheder igennem pålidelige serviceydelser, forbedret synlighed og vidensudveksling. Med den voksende markedsindflydelse og den offentlige bevidsthed om Cleantech vokser ligeledes behovet for udviklingen af helhedsløsninger. Markedsføringsaktiviteterne burde udbredes på tværs af sektorer og landegrænser mellem de forskellige niveauer af involverede aktører fra både den offentlige og den private sektor.

### **1.2 English abstract**

Within the NICE-funded project "Nordic Environmental Technology Solutions (NETS)" a new type of networking at the Nordic level was organized in order to jointly exploit the rapidly growing market potential in the environmental technology sector. The project aimed at increased and professionalized commercialization of Nordic Cleantech in energy and water business segments through

- closer cooperation and joint marketing activities,
- a website,
- cleantech product information via brochures and publications
- and participating in relevant trade fairs and other industry events.

Facilitating business-to-business activities was another core task for the NETS project partners from Norway, Sweden, Finland and Denmark with the aim to encourage total solutions for combined Cleantech system offers.

The project has achieved to establish a Cleantech register of 600 Nordic Cleantech companies, a network of 86 member enterprises, produced several publications and brochures for direct technology promotion and a website for direct access to company profiles and contact data. The project partners have attended 14 relevant international Cleantech trade fairs and conferences and facilitated business-to-business contacts added by capacity building offers through two company workshops.

The future challenge for the project partners and Nordic Cleantech will be to coordinate the numerous efforts within the Nordic countries in order to reach concerted action and binding of member companies for reliable services, an improved visibility and knowledge exchange. With Cleantech's growing market influence and public awareness, the need to develop total solutions is increasing likewise. Marketing efforts should be encouraged cross-sectional and cross-border among the various levels of involved actors from both the public and the private sector.

## **2 BACKGROUND**

Nordic know-how and the image of Nordic environmental technology are at high interest level. Although the environmental business sector is a remarkable employer today, domestic markets in the Nordic countries are rather small. Yet, the global market is huge, estimated being €550 billion per year with an annual growth of 5-20 per cent.

On the global market, customers are increasingly demanding integrated solutions where different products and services together form comprehensive value chains that are tailor-made to fulfil the customers' needs. Especially in the area of environmental technology, these integrated solutions often require expertise across many sectors, including energy, water and waste. However, international customers have difficulties to find suitable Nordic solutions for their growing needs. This is mostly, because industry is fragmented and provides rather single products and very specific technologies instead of total solutions as output of cooperation between several Cleantech companies.

Most of the Nordic environmental technology companies are faced with the same challenges in entering the market or establishing a deal with international customers. These challenges include limited product visibility for customers, difficulties to be competitive on international tenders, broader market approach hampered by home market's limited size, limited capacity for strong marketing efforts, for co-funding, or for testing and demonstrating new technologies. The latter aspects refer especially to SMEs.

### **2.1 Objectives: Nordic Cooperation and Capacity Building**

To overcome this hampering situation, the Nordic Innovation Centre's pre-study on "Cooperation between Environmental Technology Networks in Nordic Countries on Export" (2006) has analysed that networking on international marketing efforts among the Nordic countries and Nordic companies is needed as individual enterprises benefit from cooperation.

NETS (Nordic Environmental Technology Solutions) objective is to establish a long-dated Nordic cooperation to support key sectors within Cleantech via establishing value chains, capacity building and marketing cooperation.

The NETS project aims for the first time at identifying, assembling and organizing Nordic competence in order to generate a clearly arranged marketing network.

The establishment of a NORDIC CLEANTECH NETWORK is therefore highest priority of the NETS project. Capacity Building is an important supportive element to this concept.

The project partners can be seen as cluster engines in their home countries, regions or business sectors. Green Net Finland and Green Business Norway are both representing a national network of environmental technology organisations and Baltic Sea Solutions (Denmark) is a regional cluster engine. Energidalen AB (Sweden) is specialised in the promotion of bioenergy. Grontmij | Carl Bro from Denmark as a large multinational consultancy company is strongly embedded in national and international company networks and has the core task to consult on innovative technologies.

This group of companies joined in 2006 to establish the envisaged Nordic network offering mutual services to their national Cleantech companies.

### 3 WORK PACKAGES

In order to facilitate the establishment of a Nordic Cleantech Network, the starting point for the NETS project was to develop a register of enterprises as overview and basis for coordinated commercialization activities that should benefit Nordic companies towards:

- faster access to the regional production market
- better comparability of products
- synergy effects through cooperation within the Nordic Energy and Cleantech Sector by search for value chain solutions
- information on and mutual access to international tenders for broader project consortia on new markets

It was expected that

- potential Cleantech customers are looking for total solutions for their problem rather than a separate product
- the internet – combined with language diversification – offers a good tool for accessing international customers / markets
- capacity building improves intercultural marketing and operational business capacities of the Nordic Cleantech Network.

To reach these goals, the envisaged activities of the overall project were divided into five *Work Packages* (WP).

Work Packages 1, 2 and 4 were mainly realised in 2007 – through 60% funding of the total project amount for the Danish participation by the Nordic Innovation Center (NICE), Oslo, for the project period 01.10.2006 – 30.09.2008.

WP 3 and 5 were mainly realised in 2008 with further 40% funding by the Danish Energy Authority for the period 01.01 – 31.10.2008.

The Danish partners, Grontmij | Carl Bro and Baltic Sea Solutions, contributed the remaining 10% to the project by own means.

### **3.1 NETS in 2007 – co-funded by Nordic Innovation Center (NICE)**

The following paragraph shortly describes the realised activities and results achieved based on NICE funding.

#### **3.1.1 Work package (WP) 1: Establishing a Cleantech company register:**

In the first part of the NETS project realised in 2007, a Nordic Cleantech company register was established including 600 Nordic companies representing a broad share of different clean energy and energy efficiency related business areas. For this, the project partners assembled nationally registered company data within the Cleantech and Energy sector in all four participating countries. The Danish partners cooperated with the Danish Export Council and the Confederation of Danish Industries (DI).

#### **3.1.2 WP 2: Identification of company groups and target market areas**

The registered energy companies were divided into 25 different energy business areas (e.g. from energy efficiency in transportation to turbines and generators)

The project partners chose clean (renewable) energy and water sectors as the main focus areas for long-term Nordic co-operation. For the energy sector, the project has focussed on:

- Energy Efficiency in Buildings
- Bioenergy
- Solar Energy
- Wind Power
- Wave Energy
- Waste-to-Energy

The key business sectors were identified by the project partners based on available market studies and an analysis on Nordic business strengths in the target sectors.

#### **3.1.3 WP 4: Involvement of key clean energy companies**

The NETS partners assumed that the attracting of strong national companies for the NETS marketing services would function as driving force to convince also smaller companies about NETS capacities. Therefore, all national partners started involving key clean energy companies as first step to develop the Nordic Cleantech Network. On the longer run, the project focussed more on involving SMEs as core target group.

The Danish NETS partners feel to have used the early hour in 2007 quite well: Vestas, Velux, Solar Cap and VE-net have seen potential in NETS and became members. The Bright Green Initiative has offered to promote NETS through their website.

In autumn 2007, the NETS project organised a company workshop in Copenhagen for mutual capacity building. The valuable input from the attending key companies characterized the further development of the whole project (compare Annex 1).

### 3.2 NETS in 2008 – co-funded by the Danish Energy Authority

In the end of 2007, the project partners had already taken essential decisions and implementation steps for the Work packages 1, 2 and 4. But further broadening of the company network towards SMEs and concrete marketing measures were still to be realised.

Due to the strong involvement of the Danish NETS partners in 2007, the NICE co-funding for Denmark was already about to end at this point of time.

The Danish project partners intended heavily to continue their participation in the project and could successfully convince the Danish Energy Authority (ENS) to contribute financially to the remaining second year of the NETS project - for the period of 1<sup>st</sup> of January to 31<sup>st</sup> October, 2008.

ENS funding was approved for the following WPs that will be described below:

- WP3 – Networking
- WP5 – Promotion of Nordic Environmental Technology Solutions

#### 3.2.1 WP 3 - ENS: Networking

Within the Work Package "Networking" the Danish Energy Agency agreed to fund the following activities:

- **NETS Members:** Follow-up on the established contacts in 2007 incl. further involvement of key clean energy companies
- **Business-to-business (B2B):** Continued Match Making between Danish and Nordic companies (Business Dating)
- **Marketing instruments:** Establishment of common mechanisms for company contacts

#### 3.2.2 WP 5 - ENS: Promotion of Nordic Environmental Technology Solutions

Within this Work Package the Danish Energy Agency gave funding for:

- **NETS Homepage:** (part of WP4)
  - Further upgrading
  - Translation to Russian and Chinese
- **Publication:** Elaboration of a quality publication on "Nordic Clean Energy Solutions" for international dissemination
- **Coordination:** Coordination with Danish [www.EnergyMap.dk](http://www.EnergyMap.dk)
- **Markets:** Markets analysis and international tenders

### 3.2.3 Budget changes

During summer 2008 it became obvious that travel needs were less than expected. Instead time-consuming coordination on the national level with Danish member companies demanded additional personal hours. The Danish Energy Authority approved the budget changes in favour of further efforts on the national level.

## 4 RESULTS - NETS ACTIVITIES FUNDED BY ENS

The Danish NETS partners continued their Nordic cooperation in 2008 as agreed with the Danish Energy Authority on the above named work packages. The results are summarised in the following.

### 4.1 WP 3: Networking

#### 4.1.1 NETS Members

Altogether 870 Nordic companies were contacted by the project partners in order to introduce the NETS project and activate them to participate. Out of these, 86 companies have participated in NETS activities – 20 of them from Denmark. Among the participating companies, there are both high technology niche SMEs and large globally operating key companies.<sup>1</sup>

The companies were offered to meet during two NETS workshops and one NETS seminar.

- The first workshop, supported by the Danish Trade Council, focused on energy in Copenhagen organised by the Danish partners in September 2007
- The second workshop in Stockholm focused on the water sector under Swedish responsibility in March 2008
- NETS seminar on energy-efficient construction in the building sector in Helsinki, September 2008.

During the energy-related Copenhagen Workshop, several SME challenges were addressed; and the NETS partners together with the 39 participating Nordic companies elaborated lists of specific business demands through four thematic workshops: (1) Innovation Management, (2) Marketing and Promotion, (3) Business-top-Business Services (4) Export Initiatives.

The feedback from each workshop was structured in a summary document (see Annex 1).

Most relevant outputs are named here:

---

<sup>1</sup> DK: ANS Solar Energy, Baltic Sea Solutions, Cenergia, EcoVent Aps, Gaia Solar A/S, Grontmij | Carl Bro, H2Logic, IRD Fuel Cells A/S, JHM-Moldow A/S, Landia A/S, Ro-Clean Desmi A/S, Savepower, Simon Moos, SolarCAP, SolarVenti A/S, SOLUM Ltd, UniTerm, VELUX A/S, VE-Net, Vestas.



- SMEs operate with a strict balance between own crucial technology knowledge and the need to make alliances externally in order to develop their business. A Nordic cooperation should respond to this demand by offering a specific service portfolio to SMEs.
- SMEs with limited resources will to a large extent base their decisions on external input. In order to develop successful SME businesses, high quality business intelligence is required. A central SME challenge is to separate less relevant market information from highly relevant and accurate information.
- Furthermore, the workshop concluded that NETS' role is to act as a facilitator, coordinator and initiator. The core competence to be developed within the NETS team is to professionalize towards these roles.

With this feedback, the NETS partners have oriented their future activities. The service portfolio on demand was divided into short term and long term services – either for the running NETS project period or to be considered in a NETS 2 project.

The Helsinki seminar offered the NETS partners and member the opportunity to present innovative technological approaches in front of an audience of ca. 50 participants from both the private and the public sector. Company contacts were established again.

#### 4.1.2 Business-to-business (B2B)

Creation of B2B contacts between companies has been considered an important task in the NETS project, in order to give added value for the companies.

The NETS partners have taken a systematic approach in dealing with B2B activities by:

- Development of NETS B2B forms (Norway and Denmark)
- Promotion of the opportunity to provide B2B services, utilizing NETS partners in the Nordic countries in order to reach new partners and cooperation.

B2B activity was mostly built between Danish and Norwegian companies. The Danish partners designed a special form for the companies to search for a Nordic business partner. The easy-to-fill-in form made the process more straight-forward and less time-consuming. The form was tested by a couple of companies. The filled-in forms were spread among the NETS project partners as nodal point to each country's companies for easier introduction among interested parties.

Through this method, 10 B2B initiatives have been initiated among the project partners during the NETS project period within the energy areas of: (1) Energy Efficient Transport, (2) Marketing and Technology Innovation, (3) Waste to Energy, (4) Geothermal energy.

Out of these 10 initiatives three B2B activities are in further progress:

- Miljøbil Grenland (NO) and the Danish Technological Institute (DK) on the topic of Energy Efficient Transport
- Green Business Norway and Bindslev A/S (Marketing and Technology Innovation)
- Miljø – Teknologi – looking for partners in Denmark (Odour reduction systems)

Via direct company contact, the NETS partners have experienced an increasing interest in using NETS as a platform for broadening B2B interactions in the Nordic countries. This was also statistically stated by the annual growth analysis conducted by GREEN BUSINESS NORWAY among their member companies. It indicated that the Nordic countries are considered to be an extended domestic market for the companies.

Addressing the member companies on their interest in expanding towards China and Russia, the NETS partners experienced that starting up in those markets through assistance from already established networks and / or within a consortium of partners for a combined product solution generated more interest among the companies than individual efforts.

#### 4.1.3 Marketing Instruments

The main effort for the NETS partners has been to develop close cooperation among their individual cleantech business networks of the partner countries. As project partners they have been responsible to activate and commit the companies from their home countries to participate in the project activities. The nationally-based Cleantech networks improved their capacity to identify key business areas, create and coordinate business networks at Nordic level and carry out B2B. Marketing was strengthened through external expertise contributed by national export organisations and companies and also by experience-sharing among the project partners.

It was very important to involve the expertise and global presence of official trade promotion organizations in the partner countries to achieve a convincing international outreach.

The NETS partners chose furthermore to be present and personally accessible through the below named workshops, seminars as well as through key trade fairs and industry events:

- Environmental Technology 2008 (Helsinki, Finland)
- Copenmind, (Copenhagen, Denmark 2008)
- Third Nordic Sustainability Conference (Odense, Denmark, Sept. 2008)
- RESTA 2008 (Building Technology, Vilnius, Lithuania)
- WIREC (Renewable Energy, Washington D.C., USA 2008)
- Green Trade Network Summit (Santa Cruz, USA 2008)
- World BioEnergy 2008 (Jönköping, Sweden)
- Green Business Norway Conference 2008 (Norway, 2008)
- Meeting Arena Environmental County Västernorrland (project) (Sweden 2008 )
- 16th European Biomass Conference & Exhibition (Valencia, Spain 2008)
- Swedish Delegation to Shanghai, Nanjing and Zhongshan (2007)
- International Ecological Fair POLEKO (Poznań , Poland 2007)
- The 15th European Biomass Conference & Exhibition (Berlin, Germany 2007)
- easyFairs INDUSTRI & MILJÖ I NORR (Sundsvall, Sweden 2007).

Especially, the output of three of these activities realised in 2008 shall be described here in more detail:

**(a) Third Nordic Sustainability Conference, Odense/ Denmark, Sept. 2008**

The Third Nordic Sustainability Conference focused on the topics:

- Transport, mobility and accessibility
- Urban planning and construction
- Consumption
- Biodiversity as climate regulator

The conference attracted about 350 participants from the Nordic countries.

By spreading NETS marketing material and individual information, the NETS partner Grontmij | Carl Bro broadened the awareness about the NETS project – both among representatives from the Nordic public sector as well as among the exhibiting clean-tech and energy companies. Several companies could be won as new members for the envisaged NETS 2 project.

**(b) WIREC, Washington D.C./USA, March 2008**

The NETS project was present at the Washington D.C. International Renewable Energy Conference and Exhibition WIREC in March 2008.

([www.wirec2008.gov/wps/portal/wirec2008](http://www.wirec2008.gov/wps/portal/wirec2008)). Green Business Norway organized the booth in close cooperation with the Danish partners Baltic Sea Solutions and Grontmij | Carl Bro.

Results:

- About 200 visitors where registered at the NETS booth.
- 40 contacts where established for follow up, either directly as B2B connections or more long term cooperation development
- The Norwegian state secretary Ms. Liv Monica Stubholt from Department of Petroleum and Energy visited the NETS stand and was informed about the NETS cooperation.
- The companies attending the exhibition emphasised the importance of NETS as a facilitator and coordinator towards Nordic Technology.
- The brand “Nordic Environmental Technology Solutions” received high recognition from the visitors.

**(c) NETS at Green Trade Network Summit, Santa Cruz/USA, Sept. 18, 2008**

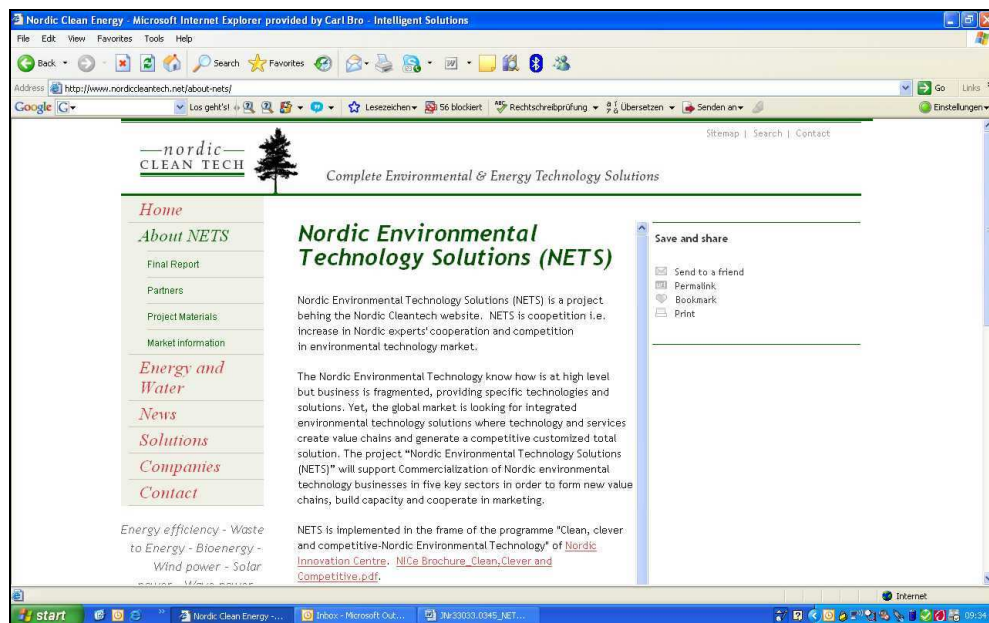
Via the Danish partner Baltic Sea Solutions (Bass), four companies of the NETS network were invited to present themselves at the Green Trade Network Summit in Santa Cruz, California in September 2008. Bass presented the NETS project, whereas further participants ECOVENT from Denmark and ENERGIDALEN from Sweden presented their companies individually with a voice-recorded powerpoint presentation. The Green Trade Network Summit gathered experts and companies from around the world from both the public and private sector to discuss, present, network and exchange ideas on how “we can *green* the world and grow our businesses through trade and investment”. The Green Trade Network Summit also conducted an exhibition forum that featured the best of breed in green technologies, services and products from vendors throughout the world.

## 4.2 WP 5: Promotion of Nordic Environmental Technology Solutions

The strategy for promotion was based on both face-to-face contacts and the internet. Marketing cooperation was considered mainly very successful.

### 4.2.1 NETS Homepage

The NETS website [www.nordiccleantech.net](http://www.nordiccleantech.net) offers easy access to Nordic environmental know-how.



The website includes:

- general information on the NETS project
- background information on Energy and Water Technology in Nordic Countries
- a company search tool introducing Nordic companies according to country and technology sector<sup>2</sup>
- Total solutions / Consortia
- News and event information

The challenge is to involve more resources to improve and keep the site up-dated for a continuous development. This is an important aspect for following up on the NETS project.

<sup>2</sup> Bio energy, Solar energy, Geothermal energy, Waste to energy, Wind power, Hydro Power, Wave energy, Hydrogen and Fuell Cells, Boilers, Boiler plants, Power plants, Power Plant Components, Fuel handling, Burners, District heating / cooling, Electrification, Energy efficiency of buildings, Construction and engineering, Building services technology, Building level energy equipment, Energy Saving Products, Measurement and automation, Facility management, IT solutions, Expert services, Engineering, Research, Transportation, Water, Water Resources, Water Supply, Urban Storm Water, Waste Water Treatment, Sludge Treatment

#### 4.2.2 Translation to Russian and Chinese

In an extra effort made for the Danish companies, the Danish NETS partners could offer to translate the company profiles to Russian and Chinese free of charge. 9 out of 20 companies accepted the offer, and their profiles are now made available on the website to Russian and Chinese customers.

#### 4.2.3 Markets and Tenders

The NETS partners used the water sector activation to promote 2 common tender applications within 2008 among the member companies. As this was not energy-related, the Danish partners funded their work on this without financial ENS involvement. The findings are positive though: In both cases, a couple of member companies showed their high interest and got involved in the tenders. Approval was not given though – but contacts were established.

#### 4.2.4 Coordination

The Danish NETS partners have established contacts to other marketing initiatives like ENERGYMAP.DK, BRIGHT GREEN INITIATIVE (DI) and NORDIC CLIMATE SOLUTIONS.

With the input from outside the network, the project partners are currently trying to attract interest for arranging a Nordic workshop to coordinate and achieve more concerted action of marketing actors involved – in order to provide best possible and not fragmented service to Nordic Cleantech companies.

The NETS project has until today shown the most institutionalized effort to establish a cross-border Cleantech network with a bottom-up approach for common marketing. Due to its direct company contact, the network feels to contribute effectively with added value to any further steps in coordinated action by the Nordic authorities.

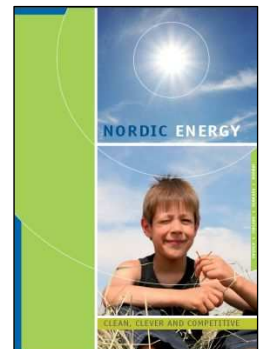
#### 4.2.5 Publications

The NETS partners experienced positive reactions on their publications especially when presenting NETS on international occasions like fairs and conferences.

The following printed materials were prepared for marketing and promotion of the member companies and their products (find digital versions attached to this report).

- Nordic Clean Technology Solutions (project introduction brochure) (500 copies)
- Nordic Energy – Clean, clever and competitive<sup>3</sup>. The publication introduces 52 Nordic solutions or initiatives and has proved to be very popular among experts and potential customers. (6000 copies)

<sup>3</sup> Direct link: [www.nordiccleantech.net/midcom-serveattachmentguid-c5d8788f355a961fa9bb7f30bff39f49/nordic-energy-magazine.pdf](http://www.nordiccleantech.net/midcom-serveattachmentguid-c5d8788f355a961fa9bb7f30bff39f49/nordic-energy-magazine.pdf)



- Sludge Treatment – Nordic Waste Water Treatment (2000 copies)
- Project posters

The “Nordic Energy” publication promotes 52 Nordic companies and networks – of which 15 are Danish – through articles and individual company profiles within the two focus areas of:

- Energy Efficiency (CHP /DHC, energy saving in buildings, energy intensive industries)
- Renewable energy (Solar energy, Wind energy, Wave energy, Bioenergy)

## 5 CONCLUSIONS AND RECOMMENDATIONS (RESUMÉ)

The NETS project, which was carried out by five networking actors in four Nordic countries, has led to the following overall project output:

- Contact lists of 600 Nordic Cleantech companies established (DK = 320)
- 86 companies involved and more interested (DK = 20 +)
- 10 potential B2B cases promoted (DK = 3) and 2 consortia built for tenders
- Common brochures prepared and delivered to customers
- Common project website established
- Workshops and Seminars: Approx. 170 seminar participants to discuss Nordic Cleantech cooperation
- Exhibitions: Worldwide contacts (e.g. USA, China, Baltic States, Spain, Germany)

At the same time, the project partners gained important experience and strengthen their capacity to identify key business areas, create and coordinate business networks at Nordic level and carry out B2B marketing. These elements of their daily work were strengthened through direct company contact (national and transnational), external expertise and experience-sharing among the project partners as well as exchanging know-how on marketing measures and instruments.

On this basis, the partners coordinated their efforts, encouraged cooperation among member companies cross-border, and supported each other effectively in taking Cleantech marketing activities in turns on international exhibition and fair events – also outside Europe. The project benefited especially also from the close contact to marketing institutions on national level and their involvement in knowledge-spreading regarding the NETS project and the individual member company information.

Summing up, the project’s objectives have been achieved by:

- Creating networking and cooperation among Nordic companies in a range of Cleantech business sectors involving also a broader range of marketing actors on national and regional level.
- Strengthening national cleantech business networks in Finland, Sweden, Denmark and Norway in networking and B2B marketing at Nordic level through workshops and seminars.
- Planning and implementing joint marketing activities, including the NETS website, several publications and brochures and participating in relevant trade fairs and other industry events.

On this basis, the NETS partners want to share further conclusions and recommendations for future activities with interested parties:

- Especially smaller companies value the support for marketing and B2B contacts to find reliable partners at Nordic level that otherwise they would not have the resources to undertake. It should be noted that out of 870 companies contacted during the project, 86 companies that were mainly SMEs actively participated in project activities, e.g., in trade fairs, website and brochures.
  - The impact achieved by targeted market support and involvement of national trade promotion organizations has been significantly higher than any individual company could achieve on its own.
  - It is much easier to commit the companies in building value chains in the form of a consortium for international tenders than generic value chains for marketing purposes as it is difficult for them to commit resources for something that does not provide immediate results. Network building is a lengthy process in which a two-year project can only lay the foundation for interested companies to take the lead in developing it further.
  - The companies that have been committed to participate in the Cleantech network are expecting continuing services. The companies' expectations on future action can be seen as a proof for the added value that Nordic level networking generates in the Cleantech sector. Sustainability and stability have to be guaranteed.
  - **DK 1:** In Denmark, promoting the idea of a Nordic Energy Technology Network was an uphill process due to experiences made by public and especially private institutions with "Green Cities Denmark". This country-wide network had just gone bankrupt with its members' shares in it some months before the NETS idea started to develop. A relation between this incident and a general retention of companies to become NETS member is directly seen.
  - **DK 2:** Denmark experiences a special situation: In 2007, Denmark was declared to host the 15th United Nations Climate Change Conference in Copenhagen in December 2009. Since then, Cleantech and especially energy technology as well as measures and tools for climate change adaptation and mitigation are of high political and commercial interest. Not only that demonstration projects on innovative technology are boosted for showing the world Danish technology at its best. Also marketing efforts for technologies are appearing all over to attract as many future clients as possible. This situation – although in its overall appearance very positive and promising – results in a heavy competition among upcoming Cleantech networks to attract companies' involvement and members' fees, in fragmented market access for companies and weakens each other's effects.
- ⇒ From the NETS projects' point of view, a concerted action among networks – both public and private and cross-border – is seen as much more beneficial in order to avoid loss of companies' engagement due to fragmentation. Similar developments have been observed recently also in Norway.

- ⇒ The national business institutions and networks should continue supporting the companies in forming Nordic consortia for tendering in international competitive biddings. Thus, the expertise of individual companies complements rather than competes with each other. This leads to pooling competences instead of individual bidding.
- ⇒ For funding organizations, it is recommended to continue supporting the coordination and networking activities at Nordic level. Especially SMEs clearly benefit from the work carried out by national network organizations but these organizations need extra external resources for work at the Nordic level as it is often outside their national mandate.
- ⇒ The NETS project has until today shown the most institutionalized effort to establish a cross-border Cleantech network with a bottom-up approach for common company marketing. Due to its direct company contact, the network feels to provide a strong added value to further steps taken towards concerted marketing encouraged by the Nordic authorities.

## 6 NEXT STEPS

Denmark and the other Nordic countries are having high expectancies of the upcoming UN Conference on Climate Change in Copenhagen in the end of 2009. After this event, there remains the important task for all regional actors to follow-up effectively on established new contacts and business opportunities and answer global clients' needs with institutional structures that commonly manage further Nordic product marketing.

In order to convert the various existing efforts into an adequate form of effective marketing measures and business promotion, the NETS project wants to contribute relevantly to fulfil the Nordic companies' needs to become more obvious on the global market and consolidate their important role within Cleantech technology.

The NETS project has shown a potential and a need for further action in common marketing of Nordic Cleantech. The NETS partners are currently eagerly striving for continual support for their already established networking structure. This includes:

- Encouraging a pan-Nordic Workshop to link the various individual efforts towards effective Cleantech promotion and networking. This needs involvement and discussion among a series of interests and actors.
- Identifying adequate support structures as public-private cooperations to support the relevant energy and Cleantech sectors most effectively
- Offering two additional components as NETS services: (1) Innovation management and (2) Initiation of demonstration projects
- NETS Website: Identifying potentials for mutual interlinkage with other networks to join efforts and presence

The NETS partners have a strong willingness to continue co-operation as this project and similar initiatives have proven that Nordic networking in the Cleantech sector creates additional value for all – especially when striving for concerted action.

We hope to mirror other actors' perception and encourage cooperation.



## 7 ANNEXES

### ANNEX 1 - COPENHAGEN NETS WORKSHOP - ENERGY, SEPT. 2007

#### 1.1. WORKSHOP AGENDA

##### Nordic Environmental Technology Solutions

**Green Business**, or often referred to as **Cleantech** is one of the fastest growing business sectors in the world. Issues like global and local resource and environmental problems are discussed in every corner of the world. New and innovative technologies are continuously developed to reduce emissions and make the use of resources and energy more efficient.

The reality is that clean technology includes all technical solutions and knowledge-based technologies, products or services that improve operational performance, productivity or efficiency and at the same time reduce costs, inputs, energy consumption, waste or pollution. However, successful implementation of clean technology also needs appropriate business models.

If the IEA emission reduction strategy should be followed, consumers and business sectors needs to invest more than US\$ 2.4 trillions in more efficient equipment and infra structure the next 25 years. The economical results of this is assume to be US\$8.3 trillions in reduced electricity bills and US\$ 3 trillions in reduced investments in energy infrastructure. The figures are at the same size for issues related to water supply and consumption.

#### Workshop, September 11th, Copenhagen Denmark

Venue: Eigtveds Pakhus, Asiatisk Plads 2 G, 1448 Copenhagen

Where: Eigtveds Pakhus is located next to the Ministry of Foreign Affairs, Denmark: (<http://kort.krak.dk/ml/link.asp?id=f0171a549b1440c59e19b40f7a302c05>) The location is about 25 minutes with taxi from Copenhagen airport.

Time: September 11th , 09:30 - 1900 (final remarks 17:15)

Registration: [thor@greenbusiness.no](mailto:thor@greenbusiness.no) before August 31st, workshop attendance is free of charge, participants cover their own travel and accommodation expenses.

A Nordic collaboration with partners from Sweden, Finland and Denmark has been established to prepare for increased collaboration between companies in the four countries.

The collaboration is called NETS (Nordic Environmental Technology Solutions) and is a two year project financed by the Nordic Council.

The project will particularly focus on companies who operate in the following fields:

- Waste to energy solutions
- Wind power
- Solar Power
- Wave Power
- Energy efficiency
- Bioenergy

The purpose of the workshop is to discuss market possibilities and services the NETS project can offer to Nordic companies.

## Program, Workshop

0930 Coffee, mingling

### 1000 - 1320 Plenary session

1000 Welcome address  
*by Claus Hofmann Frisch, Danish Trade Council*

1005 Introduction to NETS project, ambitions, goals and background  
*by Päivi Saarnia, Green Net Finland, Project Manager of NETS*

1020 Green Business Market, the worlds most promising business sector, how can Nordic companies approach this great opportunity?  
*by Heikki Sundquist, Business Director, Environmental Programme, Finnish Innovation Fund*  
*by Lars Aagaard, Deputy Director, Dansk Energi*

1100 Break, small talks

1140 Total Solutions, cooperation between companies, how and why?  
*by Jonas Törnblom, Director Corporate Marketing & Information, Envac AB*

1210 The Investor approach to Green Business market  
*by Svein Erik Olesen, Investment Manager, BTV Invest*  
*by Søren Houmøller, Director, 1st Mile*

1250 Lunch

1350 NETS services to members in the Nordic countries, short term and long term  
*by/ Thor Sverre Minnesjord, Chief Executive Officer, CEO Green Business Norway*

### 1410 - 1610 Parallel sessions

Theme: NETS project services to member companies

Method: Small groups walking from room to room discussing specific themes where NETS could offer services to the companies. An introduction note, presenting services that can be provided to the companies will be e-mailed to the attendees.

Groups: The participants will be divided into groups according to their respective business sector (energy efficiency, waste to energy, bio energy, etc.). The groups will be defined based upon the attending companies and the business sectors they represent.

Support: Each theme will be introduced by a “theme leader”, who is responsible for keeping the discussion going, and make a summary in the end.

Room 1:

**B2B (business to business) services**

Connect demand and needs/Match making between Nordic member companies (products and services, subcontractors, capacity-building, and market development) on an on-going basis. *30 minutes discussion*

Room 2:

**Export initiatives**

Fact finding missions, consortium development/total solutions, coordinate and facilitate exhibitions in domestic and foreign markets. *30 minutes discussion*

Room 3:

**Innovation Management**

Training and courses in Innovation Management, Innovation Monitoring on company and network level. *30 minutes discussion*

Room 4:

**Marketing and promotion of the sector**

Marketing of new innovations from the members, promotion towards government & public sector etc.. *30 minutes discussion*

1610            Coffee Break

1640            Presentation of results  
by *leader of groups*

1710            Final remarks

1715            Informal gathering at Eigtveds Pakhus, small talks and match making between attendees

1900    End of workshop

## 1.2. WORKSHOP PARTICIPANTS:

Group A		Time	Room
Wave Dragon	Lars Christensen	1410 - 1440	Room 1
Texun AB	Mathias Gabrielsson	1440 - 1510	Room 2
Teknologisk Institut	Frank Elefsen	1510 - 1540	Room 3
Søren Houmøller	1st Mile	1540 - 1610	Room 4
Svein Erik Olesen	BTV Invest		
Split Vision Development AB	Jan Broberg		
Solar Cap	Helle Meinertz		
Seec AB	Thomas Wildig		
Research Center RISØ	Jørgen Kjems		

Group B		Time	Room
Oilon Oy	Pasi Aaltonen	1410 - 1440	Room 2
Norwegian Ministry of Trade and Industry	Knut Vrålstad	1440 - 1510	Room 3
Norwegian Ministry of Trade and Industry	Marianne Rørvik	1510 - 1540	Room 4
Naturenergi Iwabo AB	Öyvind Norlinder	1540 - 1610	Room 1
Ministro AB	Anders Jansson		
Lindum Ressurs & Gjenvinning	Bjørn Øyvind Østlie		
Lars Aagard	Dansk Energi		
Jonas Törnblom	Envac AB		
IVL	Ulf Burmann		

Group C		Time	Room
I/S Amagerforbrænding	Ulla Röttger	1410 - 1440	Room 3
Helsinki Region Energy Cluster	Herkko Lehdonvirta	1440 - 1510	Room 4
Heikki Sundquist	Finish Innovation Fund	1510 - 1540	Room 1
Hannevind Vindkraft AB	Göran Månsson	1540 - 1610	Room 2
Hannevind Vindkraft AB	Svenn Åke Hannevind		
H2Logic	Mikael Sloth		
Energidalen AB	Anders Karlsson		
drivegreen	Bendt Iversen		
drivegreen	Sune Grøntved		

Group D		Time	Room
Danbio	Svend Brandstrup	1410 - 1440	Room 4:
Compower AB	Lars Malmrup	1440 - 1510	Room 1:
Claus Hofmann Frisch	Danish Trade Council	1510 - 1540	Room 2:
BioTek AS	Vibeke Rasmussen	1540 - 1610	Room 3:
Biogasol	Klaus Henrik Jørgensen		
Baltic Sea Solutions	Jesper Krogh Jensen		
Aquateam	Bjarne Paulsrud		
Aquasol solvarmesystem	Thomas Reidarsson		

### 1.3. WORKSHOP OUTPUT - SUMMARY

The purpose of the Copenhagen NETS Workshop in Sept. 2007 was to further develop the network model, and invite companies and institutions to take part in the development of NETS activities. Several theses about SME challenges were addressed and feedback from workshop participants was structured into a summary document (appendix 3).

During the Copenhagen Workshop, NETS together with the participating companies elaborated lists of specific business demands within 4 thematic workshops:

- (1) Business-to-Business Services
- (2) Export Initiatives
- (3) Innovation Management
- (4) Marketing and Promotion

39 Nordic companies participated in the event and workshops.

A substantial output from the conference was that SMEs operate with a strict balance between having crucial knowledge within the organisation and the need to make alliances externally in order to develop their business. NETS could respond to this demand by offering a portfolio of services to the SMEs.

Response from the SMEs indicated a need for an extensive portfolio of services to be developed. Taking into consideration the timeframe of the NETS project, the portfolio was divided into short term and long term services. Short term services were considered services or activities the NETS project could implement within the project period, while longer term services should be considered in a NETS 2 project.

SMEs with limited resources will to a large extent base their decisions on external input. In order to develop successful SME businesses, high quality business intelligence is required. The workshop identified a strong demand for business intelligence. A central SME challenge is to separate less relevant market information from highly relevant and accurate information. Furthermore, the workshop concluded that NETS role is to act as a facilitator, coordinator and initiator. The core competence to be developed within the NETS team is to professionalize towards these roles. Specific expertise needed on portfolio activities should be involved on a case to case basis.

## 2. WORKSHOP OUTPUT - IN DETAIL

### **WORKSHOP 1: B2B (BUSINESS TO BUSINESS) SERVICES**

Room 1: Moderators - *Hans Martin Friis Møller, Grontmij | Carl Bro (NETS); Lauri Hietaniemi GreenNetFinland (NETS)*

Connect demand and needs/Match making between Nordic member companies (products and services, subcontractors, capacity-building, and market development) on an on-going basis.

*30 minutes discussion*

#### **Thesis:**

Small and medium sized companies operate with a strict balance between having crucial knowledge within the organisation and the need to make alliances externally in order to develop their business. Could a Nordic cooperation respond to this demand?

**NETS services:**

- Exchange knowledge and personnel between Nordic companies that are “members/cooperating with” the Nordic network (NETS project)
- Cooperation on technology development (groups of companies operating in the same business sector)
- Facilitate members in seeking joint venture agreements and/or sub contractors
- Financial engineering (seek external funding for project initiated by NETS)

**Companies’ situation**

1. Status Quo in companies
2. Best practices in companies
3. Needs in companies (changing fields of business → changing needs)
4. Contributions of companies (non-monetary resources)

**NETS Role:**

- Facilitator
- Coordinator
- Initiator

NETS project team should on a case to case basis involve external expertise when and if they don’t have competence within the project team (Green Business Norway, Energidalen, Green Net Finland, Grontmij | Carl Bro / Baltic Sea Solutions)

**WORKSHOP 2: EXPORT INITIATIVES**

Room 2: Moderator: *Tord Fjällström, Energidalen (NETS); Ragnar Eriksen, Green Business Norwa (NETS); Anders Stouge (Dansk Industri)*

Fact finding missions, consortium development/total solutions, coordinate and facilitate exhibitions in domestic and foreign markets. *30 minutes discussion*

**Thesis:**

The export marked is filled with many opportunities, and has a rapid growth. Small and medium sized companies often lack financial, organisational, technological and market resources to cope with all opportunities abroad. The challenge is to prioritize resources on selected markets, focus on short term possibilities, and try to balance with medium and longer term possibilities.

**NETS services:**

- The NETS project could initiate market surveillance towards selected markets abroad, that has a network potential (potential for a group of companies that are members to the network)
- Initiate and coordinate exhibitions abroad
- Establish AD-HOC consortiums
- Financial engineering (seek external funding for projects initiated by NETS)

**Companies’ situation:**

5. Status Quo in companies
6. Best practices in companies
7. Needs in companies (changing fields of business → changing needs)
8. Contributions of companies (non-monetary resources)

**NETS Role:**

- Facilitator
- Initiator
- Coordinator

NETS project team should on a case to case basis involve external expertise when and if they don't have competence within the project team (Green Business Norway, Energidalen, Green Net Finland, Grontmij | Carl Bro / Baltic Sea Solutions)

**WORKSHOP 3: INNOVATION MANAGEMENT**

Room 3: Moderator: *Tor Arne Bellika, Innovation Performance AS, Norway; Rikke Hansen, Grontmij | Carl Bro (NETS)*

Training and courses in Innovation Management, Innovation Monitoring on company and network level. *30 minutes discussion*

**Thesis:**

Growth oriented companies create a continuous stream of innovation projects to renew or develop new products and new markets. Innovation leaders produce a continuous stream of successful high return innovation projects because they continuously work to improve the quality of innovation processes, work practices and the innovation competencies of their employees. SMEs can increase their innovation capabilities and ROI on Innovation much faster through open cooperation. Working together inside a network or cluster creates valuable arenas for people involved to exchange of experiences, tools and knowledge.

**NETS Services:**

- Innovation and growth ambition monitoring- creating growth motivation and learning opportunities.
- Practical training and courses for the members on improving the Innovation performance.
- Arenas to meet and discuss with Innovation managers and project management peers in other companies.

**NETS Role:**

- Facilitator
- Initiator
- Coordinator

NETS project team should on a case to case basis involve external expertise when and if they don't have competence within the project team (Green Business Norway, Energidalen, Green Net Finland, Grontmij | Carl Bro / Baltic Sea Solutions)

#### **WORKSHOP 4: MARKETING AND PROMOTION OF THE SECTOR**

Room 4: Moderator: *Päivi Saarnia, GreenNetFinland (NETS); Christian Theel, Baltic Sea Solutions (NETS)*

Marketing of new innovations from the members, promotion towards government & public sector etc. *30 minutes discussion*

##### **Thesis:**

Increased attention towards the Green Business sector creates higher visibility for the companies. A Nordic Network (NETS) is a very good tool for more attention towards the Green Business sector and companies delivering cleantech.

##### **NETS services:**

- Web site
- Promotion of new innovations from the companies
- Promotions of solutions from the members
- Communication with public authorities

##### **Companies' situation:**

1. Status Quo in companies (marketing mix, target groups ...)
2. Best practices in companies
3. Needs in companies (changing fields of business → changing needs)
4. Contributions of companies (non-monetary resources)

##### **NETS Role:**

- Communicator
- Administrator

NETS project team should on a case to case basis involve external expertise when and if they don't have competence within the project team (Green Business Norway, Energidalen, Green Net Finland, Grontmij | Carl Bro / Baltic Sea Solutions)



## ANNEX 2 – STOCKHOLM NETS WORKSHOP - WATER. MARCH, 2008



### Nordic Environmental Technology Solutions

**Green Business**, or often referred to as **Cleantech** is one of the fastest growing business sectors in the world. Issues like global and local resource and environmental problems are discussed in every corner of the world. New and innovative technologies are continuously developed to reduce emissions and make the use of resources and energy more efficient.

The reality is that all technical solutions and knowledge-based technologies, products or services designed, that improves operational performance, productivity or efficiency while reducing costs, inputs, energy consumption, waste or pollution are clean technology. However, success full implementation of clean technology also needs appropriate business models.

If the IEA emission reduction strategy should be followed, consumers and business sectors needs to invest more than US\$ 2.4 trillions in more efficient equipment and infra structure the next 25 years. The figures are for issues related to water supply and consumption.

### Water workshop, March 13<sup>th</sup> 2008, Stockholm, Sweden

The purpose of the workshop is to address trends and developments in the water sector with a particular focus on the Nordic countries and opportunities in selected markets abroad.

Venue: IVL Valhallavägen 81, Stockholm, [www.ivl.se](http://www.ivl.se)

Time: March 13<sup>th</sup> 2008, 09:30 – 16.30 Final remarks

Registration: [thor@greenbusiness.no](mailto:thor@greenbusiness.no) before 2008-03-03, workshop attendance is free of charge, participants cover their own travel and accommodation expenses.

### About NETS

A Nordic collaboration with partners from Sweden, Finland, Norway and Denmark has been established to prepare for increased collaboration between companies in the four countries.

The collaboration is called NETS (Nordic Environmental Technology Solutions) and is a two year project financed by the Nordic council.

The project will particularly focus on companies who operate in the following fields:

- \* **Water**
  - Waste to energy solutions
  - Wind power
  - Solar Power
  - Wave Power
  - Energy efficiency and transport
  - Bioenergy



Green Business Norway



Grontmij | Carl Bro





### **Program, NETS Water Workshop Stockholm 13<sup>th</sup> of March 2008**

09:30 Coffee, mingling

#### **10:00 – 11:45 Plenary session**

10:00 Welcome address

*Tord Fjällström, Managing Director, Energidalen AB Sweden*

*Ulf Burman, Workshop coordinator, Group Leader, IVL Sweden*

10:10 Introduction to NETS project, ambitions, goals and background.

*Päivi Saarnia, Green Net Finland, Project Manager of NETS*

10:20 Water in the world

*Östen Ekengren, IVL Vice president*

10:35 Description of water sector in the Nordic countries, trends and developments

*Lauri Hietaniemi, Managing Director, Green NetFinland*

*Ragnar Eriksen, Marketing Manager, Green Business Norway*

*Silke Alsen, Consultant, Grontmij/CarlBro, Denmark*

*Ulf Burman, Group Leader, IVL Sweden*

Short break

11:15 Municipal water, The coming 10 years challenge for a water company

*Steen Bjerggaard, Director of International Projects, Stockholm Water Company*

#### **11:45 – 13:15 Export and business development**

*Facilitator: Thor Sverre Minnesjord, CEO Green Business Norway*

11:45 Introduction to selected markets, National planning

New EU member states, Poland, Romania Balkan, Turkey MEDA,

Case examples of EU founding in Poland

*by Ulf Burman, senior advisor business development IVL*

12:20 Investment priorities and markets for the water sector in the coming years

*By/Torben Vindeløv, Vice President NEFCO*

12:40 Discussions

13:15 Lunch at Stockholm Royal technical University, KTH



14.30- 16.00 Visit for all participants to Hammarby Sjöstadswerk (appendix pdf document)

16.10 Coffee

16.30 Concluding remarks and end

For more information, please contact:

Sweden

Anders Karlsson, Energidalen AB  
Tel. 0730-53 48 82  
E-mail: anders.karlsson@solleftea.se

Norway

Thor Sverre Minnesjord, Green Business Norway  
Tel. +47 90 86 33 49  
E-mail: thor@greenbusiness.no

Denmark

Silke Alsen, Grontmij/CarlBro  
Tel. + 45 8220 3558  
E-mail: silke.alsen@grontmij-carlbro.dk

Finland

Päivi Saarnia, Green Net Finland  
Tel. +358 400 678 705  
E-mail: paivi.saarnia@greenetfinland.fi

## ANNEX 3 – HELSINKI NETS SEMINAR, SEPTEMBER 2008

### 3.1. SEMINAR PROGRAM



## NORDIC CLEANTECH SOLUTIONS

**Future visions and tools for energy efficiency in buildings  
and housing areas**

Seminar organised by  
Nordic Environmental Technology Solutions (NETS) and the OSKE Cleantech Cluster Programme

12.9.2008, 9am-3 pm  
Helsinki Fair Centre, Congress Room 204-205  
Address: Messuaukio 1, 00520 Helsinki

#### Morning Session

*Chair: Lauri Hietaniemi, Managing Director, Green Net Finland*

- |       |  |
|-------|--|
| 8.30  | <b>Registration</b>  |
| 9.00  | <b>Welcome</b><br><i>Natalia Grebennik, Advisor, Nordic Innovation Center</i>  |
| 9.15  | <b>Opening Speech: On the Way towards More Energy Efficient Buildings and Housing Areas in Finland and the EU</b><br><i>Juha-Pekka Majala, Senior Technical Adviser, Ministry of the Environment, Finland</i>  |
| 9.45  | <b>CO2-emission limits as drivers for building sector in England</b><br><i>Herkko Lehdonvirta, Managing Partner, Greenfield Consulting Ltd.</i>  |
| 10.15 | <b>Changing Behaviour - the EC 7th FP project.</b><br><b>Research and development of energy saving practices in Finland and Estonia</b><br><i>Eva Heiskanen, Research Professor, National Consumer Research Centre of Finland</i><br><i>and Tiit Kallaste, Climate &amp; Sustainable Energy Expert, Stockholm Environment Institute, SEI-Tallinn</i> |
| 10.45 | <b>Discussion</b>  |
| 11.00 | <b>Lunch break</b>   |





#### Afternoon Session

Chair: Ilari Aho, Marketing Manager, Uponor Corporation

**12.00 Nordic cases: Total solutions for increasing energy efficiency of buildings and regions**

**Geoenergy solutions, a sustainable showcase for commercial buildings in Norway**

*Frederik Indebetou, CEO Geoenergi AB/ Business Developer, Geoenergi Group*

**Energy efficient construction in Sweden -Three current examples with different solutions**

*Torsten Berglund, Director, Regional Energy Agency Västernorrland*

**Danish low-energy building projects**

*Silke Alsen, Consult, Grontmij/CarlBro*

**13.00 Case Marja-Vantaa: Introduction of a new housing area**

*Reijo Sandberg, Project Director, Marja-Vantaa project, City of Vantaa, Finland*

**13.30 Coffee served**

**13.45 Panel discussion: Development of a new energy efficient housing area**

*Facilitator: Ilari Aho, Marketing Manager, Uponor Corporation*

*Participants:*

*Simon LeRoux, Architect, Pöyry Architects Oy, Finland*

*Silke Alsen, Consult, Grontmij/CarlBro, Denmark*

*Reijo Sandberg, Project Manager, City of Vantaa, Finland*

*Tiit Kallaste, Climate and Sustainable Energy Expert, SEI Tallinn, Estonia*

*Frederik Indebetou, CEO Geoenergi AB/ Business Developer, Geoenergi Group*

**15.00 End of the Seminar**

The Seminar is organized during the Helsinki Fair Centre's biennial trade fair for the environmental technology sector. Welcome to visit our [exhibition stand No 5a2](#).

### 3.2. ALL PRESENTATION OF THE HELSINKI SEMINAR

To be found here: <http://www.nordiccleantech.net/about-nets/material/>

## ANNEX 4 – PUBLICATIONS

### 4.1. PROJECT BROCHURE



#### 4.2. NORDIC ENERGY – CLEAN, CLEVER AND COMPETITIVE.

Link: [www.nordiccleantech.net/midcom-serveattachmentguid-c5d8788f355a961fa9bb7f30bff39f49/nordic-energy-magazine.pdf](http://www.nordiccleantech.net/midcom-serveattachmentguid-c5d8788f355a961fa9bb7f30bff39f49/nordic-energy-magazine.pdf)



	
<h1>NORDIC ENERGY</h1> <h2>CLEAN, CLEVER AND COMPETITIVE</h2>	
<h3>CONTENTS</h3>	
<b>FOREWORD</b>	3
<b>CLIMATE: THE DRIVING FORCE</b>	4
<b>NORDIC SOLUTIONS FOR ENERGY EFFICIENCY</b>	5
INCREASING PRIMARY ENERGY EFFICIENCY – CHP/DHC AND DISTRIBUTED ENERGY SYSTEMS	9
ENERGY SAVING TECHNOLOGIES – IMPROVING THE ENERGY PERFORMANCE OF BUILDINGS	14
INTEGRATED BUILDING SOLUTIONS – FROM LOW TO ZERO ENERGY	18
RAISING EFFICIENCY IN ENERGY-INTENSIVE INDUSTRIES – PROCESS OPTIMIZATION AND REDESIGN	25
<b>NORDIC SOLUTIONS FOR CLEAN ENERGY PRODUCTION</b>	27
SOLAR ENERGY – ELECTRICITY, HEATING AND COOLING FROM THE SUN	27
WIND ENERGY – FOCUS ON OFF-SHORE WIND PARKS	32
WAVE ENERGY – INNOVATIVE TECHNOLOGIES FOR FUTURE	34
BIOENERGY – FROM WOOD COMBUSTION TO BIO-REFINERIES	36
Solid wood- and agro-based biomass – From pellet burners to co-firing CHPs	38
Biogas – Complete solutions for biowaste treatment	41
Liquid Biofuels – Refining biofuels from multiple feedstocks	45
<b>NORDIC COOPERATION ON ENVIRONMENTAL TECHNOLOGY</b>	47
<p>Published by: Green Net Finland <a href="http://www.greenetfinland.fi">www.greenetfinland.fi</a></p> <p>Layout: Graafinen suunnittelu Tiina Kuoppala</p> <p>Print: Mestari Offset Oy, 2008</p>	 <p>Nordic Innovation Centre</p> <p>Nordic Environmental Technology Solutions Project Partly Financed by Nordic Innovation Centre</p>



#### 4.3. Nordic Waste Water Treatment – Sludge Treatment

