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Nordic Energy Research

ANNUAL REPORT 2009

Contents

Cover: Gullfoss waterfall in Iceland

Chair of the Board: Goal Management in Energy Research

RAGNHEIÐUR INGA ÞORARINNSDOTTIR, CHAIRMAN OF THE BOARD
DEPUTY DIRECTOR GENERAL, NATIONAL ENERGY AUTHORITY IN ICELAND

The Nordic region was host to the largest energy and climate event in 2009 – COP15 in Copenhagen in December. Great expectations had been put forward, but in spite of enormous work prior to the conference a strong political consensus was not obtained. Many anticipated that this disappointing result would negatively impact the global prioritisation of climate and energy solutions. While it is still too early to tell, one thing that is for certain is that joint Nordic prioritisation of solutions to climate change shows no sign of slowing.

Looking back to the end of 2008, we saw another factor threatening climate and energy R&D – the global financial downturn. Indeed, the downturn was tough for R&D, evidenced by the World Intellectual Property Organisation (WIPO) reporting a 4.5% drop in international patent filings in 2009. Many thought that this would harm energy R&D. In many cases however, the opposite seems to have happened. Patent filings in the US in this area have actually been increasing in 2009, from fuel cells and hybrid/electric vehicles to solar, geothermal, wind and bioenergy.

Together the Nordic countries cover almost all areas of renewable energy technologies and Nordic cooperation in energy R&D is a true success story. Nordic Energy Research started out as a research programme in 1985 and since then has contributed to more than 350 PhD graduates. In 2009 alone our R&D project portfolio produced 361 academic publications. Recently, Nordic Prime Ministers have been active in promoting Nordic energy and climate R&D cooperation further. One excellent example is our new Energy & Transport project – building on the Nordic Prime Ministers' declaration on climate change, June 2009:

"The Nordic prime ministers look to utilise the possibilities for Nordic cooperation in reducing CO2 emissions from the transport sector through energy efficiency and new energy system solutions".

Another prime example is the Top-level Research Initiative. The programme was launched in 2009 with a kick-off meeting in Oslo and includes six sub-programmes: Effect studies and adaptation to climate change, Interaction between climate change and the cryosphere, Energy efficiency with nanotechnology, Integration of large-scale wind power, Sustainable bio-fuels and Carbon capture and storage. The programme is a collaboration between the three Nordic institutions in Oslo, Nordic Energy Research, Nordic Innovation Centre and Nordforsk.

In the last 25 years Nordic Energy Research has moved from being a research programme into a user-driven innovation institution that links the results from research to policy advice. In this regard social science is becoming a bigger player in energy research than ever before and is critical in policy-making. As Rolf Annerberg, chair of the Top-level Research Initiative management board emphasises:

"Environmental policy involves both the environment and politics. On the one hand we have 'molecules and wolves', on the other hand we have policy which must be applicable to so- >>

"Nordic Energy Research started out as a research programme in 1985

and since then has contributed to more than 350 PhD graduates"

ciety. This is where the social sciences come into play. We need to know the costs of a policy, how to implement it, and the impacts it may have."

As Nordic Energy Research has developed in its institutional role, so has the composition of the organisation. Birte Holst Jørgensen decided to move back to Denmark after a successful four-year period as director. The board advertised for a new director and received many high-quality applications from all five countries. In October 2009 Nordic Energy Research received its new director, who I am proud to introduce: Anne Cathrine Gjærde from Norway.

In the end of 2009 the board started the development of the strategy and action plan for the coming four-year period of 2011-2014. In October and November 2009, various national workshops were held in the five Nordic countries where key decision-makers from the energy sector, universities, research institutions and other relevant organisations were invited to participate. The board had a workshop in December to synthesise the results of these national workshops. One evident factor was that the new strategy would see an increase in the focus on innovation and international climate objectives. This will move us further from traditional research programmes towards a more goal-oriented, user-driven innovation strategy. The aim is to increase the synergy effects between Nordic Energy Research and national energy R&D activities using a bottom-up approach in addition to the top-down strategy. This should result in a process-focused strategy that fulfils the needs of the researchers, supports national strategies and is coordinated with international objectives in the field of energy and environment.

On its 25th anniversary in 2010, Nordic Energy Research is further developing its position as a knowledge source for environmentally friendly and efficient energy solutions, putting emphasis on a goal-oriented strategy and bridge-building between research results and policy advice.

"The Nordic region should act as a test market for green transport and build the green Nordic brand in the global energy sector"

ANDERS FOGH RASMUSSEN, NORDIC GLOBALISATION FORUM, BLUE LAGOON, REYKJAVÍK, ICELAND, 27TH FEBRUARY 2009

Director's Word: A Transitional Time

ANNE CATHRINE GJÆRDE, DIRECTOR

2009 has been an exciting year – both on the world stage and in Nordic energy R&D cooperation. Amidst the turbulence of the financial crisis and the dashed hopes of COP15 in Copenhagen, we at Nordic Energy Research saw development, change and a renewed focus in 2009. In addition to the positive results from our R&D portfolio, we have continued to give attention to energy technology policy issues and international branding activities, and have seen important changes in the secretariat.

In October I took up the reigns from former director Birte Holst Jørgensen, whose four years leading Nordic Energy Research have created great results. I bring with me insight from both public and private sectors, broad experience ranging from NTNU in Norway to DONG Energy in Denmark, and a drive to see Nordic cooperation in energy research fulfil its excellent potential. From the moment I began as director, I have endeavoured to maintain and channel the momentum instilled by my predecessor towards developing a way forward for 2011 to 2014 – our next four-year strategy period. The development of our new strategy began in mid 2009 and will continue into 2010, and for my part has been a positive, enlightening and fruitful process.

It is great to see projects in our R&D portfolio present their results and reveal common value to the Nordic research and business communities. This year saw the end of several Nordic Energy Research-funded projects with such positive yields. One example is the Basic Phenomena in Mechanical Pulping project based in Finland, which focused on energy efficiency in paper and pulp manufacture – a vital sector across multiple Nordic countries. Another example was the NorPEM project, which developed a prototype Proton Exchange Membrane (PEM) fuel cell-powered forklift able to function in the cold Nordic climate. This project assembled a very strong cluster of Nordic businesses including Statoil and Volvo.

While some are ending, others are just getting underway. We are proud of the new Top-level Research Initiative, which focuses on the intertwined issues of climate, energy and the environment and is the largest joint Nordic research and innovation initiative to date.

In addition to funding, we are known for our expertise in coordinating R&D programmes. We coordinate various ERA-Net programmes for the EU, with the second call of the Northern European Innovative Energy Research programme (N-INNER) being the most prominent example in 2009.

2009 was also the year of the Icelandic chairmanship of the Nordic Council of Ministers, where the interlinked sectors of energy and transport were put in the spotlight. This led to a policy project in 2009 and has been the impetus for a much larger project financed by the Nordic Council of Ministers entitled Energy & Transport, led by Nordic Energy Research and starting in 2010. A key competence for Nordic Energy Research is connecting research with decision makers – being at the nexus between these two enables us to offer sound policy advice. 2009 saw a further strengthening of this role, with examples including the NORIA portfolio synthesis report, the initiation of the Nordic Energy Technology Scoreboard, and events such as the intelligent energy session at Nordic Climate Solutions in September.

In an increasingly competitive global clean energy technology market, the communication and international profiling of the

The forestry industry provides around 20% of the energy consumed in Finland and represents 19% of the country's exports. Improvements in energy efficiency are crucial for the industry's future competitiveness. Left: Helsinki at night. Right: Wood chips for pulp production.

many excellent energy solutions emerging from the Nordic region is becoming all the more pivotal. My experience as both a researcher and a communicator has equipped me well for this challenge, and we have seen various excellent examples launched in 2009. Nordic Energy Solutions, Bioenergy Promotion and the planning for the 2010 Nordic-Chinese Energy and Climate Day offer prime examples.

With these thoughts in mind, I can reveal that our new strategy will rest on four legs: Funding, Coordination, Policy Advice and Communication. The combination of these is what has enabled Nordic Energy Research to fulfil a unique and vital role in Nordic energy technology development, and what will support the future development of this role. I, for one, am truly excited by the possibilities.

"With all this uncertainty being put into the system, the former grid – that was not dumb – was dealt a whole new assignment."

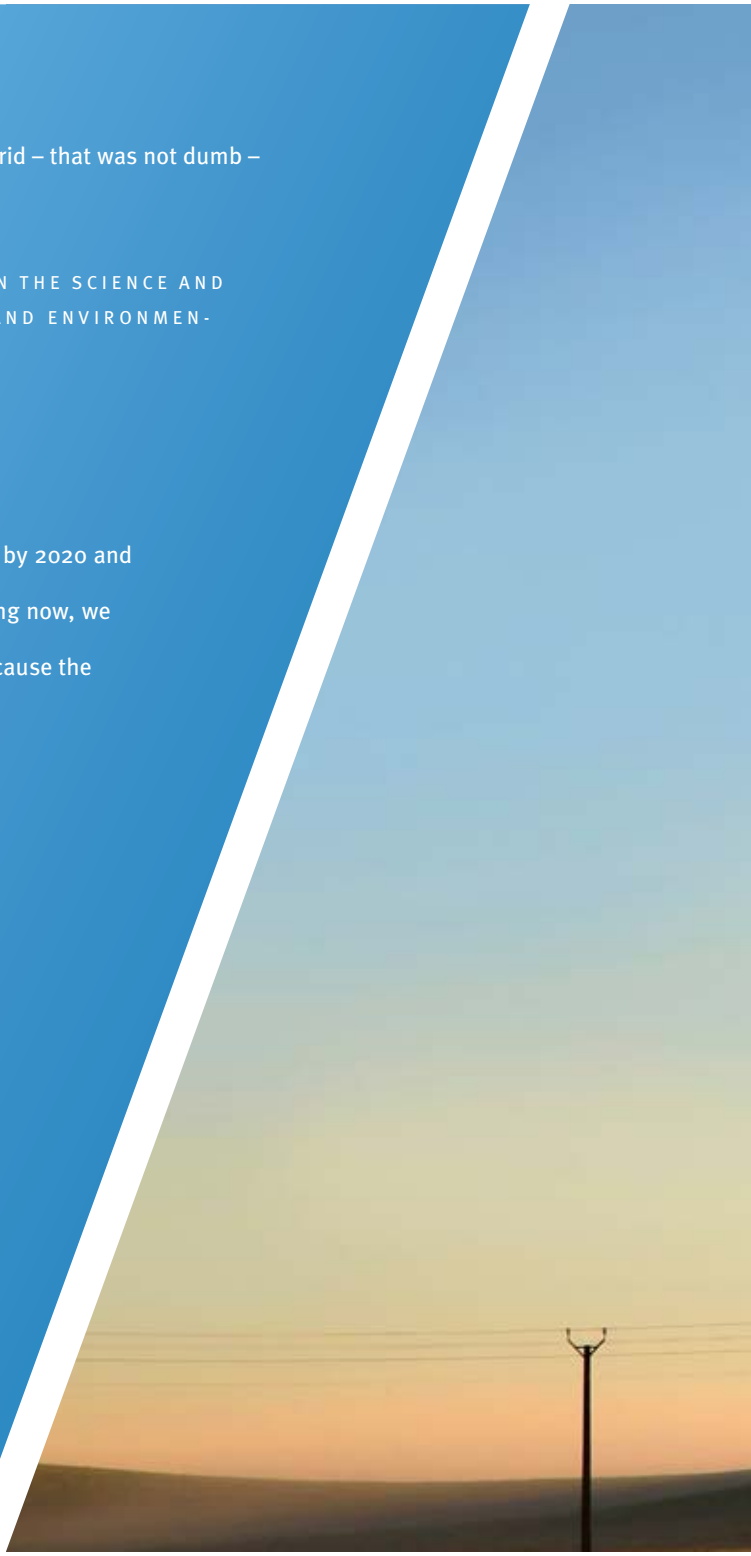
LOREN COX, ASSOCIATE DIRECTOR OF JOINT PROGRAM ON THE SCIENCE AND POLICY OF GLOBAL CHANGE, AND CENTER FOR ENERGY AND ENVIRONMENTAL POLICY RESEARCH, MIT

"If we want to deliver what our ministers have told us to deliver by 2020 and 2050, we should have started 10 years ago, but as we are starting now, we have to double our efforts..." ..."Collaboration we will need because the problem is quite huge."

DUNCAN BOTTING, CEO, SCOTTISH EUROPEAN GREEN ENERGY CENTRE

"If you give a stock broker a very narrow brief he will not be able to maximise your earnings, on the other hand you will be able to take out money at your will. With a wide brief it is the opposite. These are the types of contracts that we need to engage in with the energy consumer."

HENRIK BINDSLEV, DIRECTOR OF RISØ DTU IN DENMARK



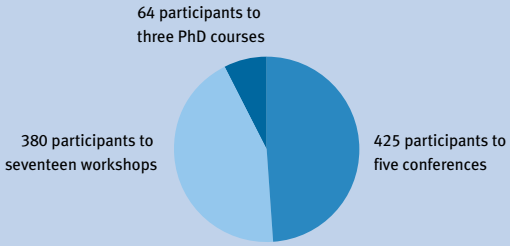
The quotes below are excerpts from International Technology Collaboration on Intelligent Energy, a panel discussion hosted by Nordic Energy Research at the 2009 Nordic Climate Solutions conference in Copenhagen. A concise report can be downloaded from www.nordicenergy.net, under Publications.

"International Technology Collaboration on Intelligent Energy" session report

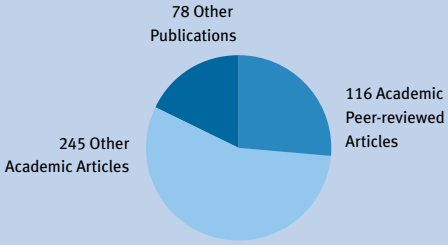
R&D Portfolio

IN 2009 NORDIC ENERGY RESEARCH-FUNDED PROJECTS:

Attracted **869** participants to events



Led to **439** publications



Contributed to **24** PhD degrees

Top-level Research Initiative

The Top-level Research Initiative is the largest joint Nordic venture for research and innovation, and was initiated by the Nordic prime ministers in April 2008. The programme had a kick-off in June 2009 where the secretariat – NordForsk, Nordic Innovation Centre and Nordic Energy Research – presented the six sub-programmes: *Effect studies and adaptation to climate change, Interaction between climate change and the cryosphere, Energy efficiency with nanotechnology, Integration of large-scale wind power, Sustainable bio-fuels and Carbon capture and storage.* Nordic Energy Research administrates two of the sub-programmes: *Integration of Large-scale Wind Power* and *Sustainable Bio-fuels.* The two programmes both launched a call for NOK 30 million on the 15th of October in 2009. The projects will begin during the summer of 2010.

www.toppforskningsinitiativet.org

SmartGrids ERA-Net

As with other European Research Area Networks (ERA-Nets) such as HY-CO and N-INNER, Nordic Energy Research acts as a coordinator between national funding agencies participating in the SmartGrids ERA-Net. 18 partners from 10 different countries are participating in the programme, which looks to facilitate research activities to speed up the development of a smart European electrical infrastructure. The first call is scheduled for 2010.

PROJECT PORTFOLIO 2007-2010 (FUNDED BY NORDIC ENERGY RESEARCH)

INTEGRATION OF THE ENERGY MARKET

Nordic Energy, Environmental Constraints and Integration
2007-2010, Torstein Bye, SSB (NO), 8.0 (9.4) MNOK
Stockholm School of Economics (SE), Copenhagen Univ. (DK), Univ. of Iceland (IS), Helsinki School of Economics (FI), Univ. of Bergen (NO), Univ. of Oslo (NO), Gothenburg Univ. (SE), Risø DTU (DK)

Distributed Generation Integration in the Nordic Energy Market (Completed)
2007-2008, Berit Tennbakk, ECON Pöyry (NO), 1.3 (2.6) MNOK
The Norwegian Electricity Industrial Association (NO), VTT (FI), Sweco Grøner (NO), Norwegian Univ. of Life Science (NO), Univ. Catholique de Louvain (BE), University of Copenhagen (DK), Norwegian School of Management (NO), Kola Science Centre (RU)

Initiation of Nordic Automatic Metre Reading Forum (Completed)
2007-2008, Andrei Morch, SINTEF (NO), 1.4 (2.7) MNOK
VTT (FI), Elforsk (SE), DEFU (DK), Ekodoma Ltd (LV)

Energy Foresight Forum
2007-2009, Einar Hope, NHH (NO), 0.9 (1.2) MNOK
Univ. of Bergen (NO), Stockholm School of Economics (SE), Copenhagen Univ. (DK), Univ. of Iceland (IS), Helsinki School of Economics (FI)

RENEWABLE ENERGY

Nordic Graduate School II of Biofuel Science and Technology
2007-2010, Mikko Hupa, Åbo Akademi (FI), 8.0 (16.0) MNOK
Chalmers Univ. of Technology, NTNU (NO), DTU (DK)

New Innovative Pre-Treatment of Nordic Wood for Cost Effective Fuel-Ethanol
2007-2010, Karin Øyaas, PFI (NO), 8.0 (12.7) MNOK
Prokaria EHF (IS), STFI-Packforsk AB (SE), SINTEF (NO), LTH (SE), VTT (FI)

Nordic Centre of Excellence in PV
2007-2010, Arve Holt, IFE (NO), 8.0 (12.8) MNOK
Univ. of Uppsala (SE), Helsinki Univ. of Technology (FI), Danish Technology Inst. (DK), NTNU (NO), Physico-Technical Inst. St. Petersburg (RU), Tallinn Univ. of Technology (EE)

Model Development for Power System & Wind in the Nordic Grid
2007-2010, Ola Carlson, Chalmers (SE), 5.0 (11.1) MNOK
DTU-Risø (DK), SINTEF (NO), VTT (FI), Tallinn Univ. of Technology (EE)

Nordic Network for Sustainable Development in Isolated Locations
2007-2010, David Pointing, DTU-Risø (DK), 4.0 (7.1) MNOK
IFE (NO), DTU Arctic Technology Centre (DK), Greenland Innovation Centre (DK), Danish Polar Centre (DK), GRID-Arendal (NO), NCM "TBO" Task Force, IRD Fuel Cells (DK), StatoilHydro New Energy (NO), Pure project (UK), REEEP South East & Asia Pacific Secretariat (AUS)

ENERGY EFFICIENCY

Basic Phenomena in Mechanical Pulping
2007-2009, Mikael Lucander, KCL (FI), 4.0 (9.7) MNOK
Mid Sweden Univ. (SE), NTNU (NO), Tampere Univ. of Technology (FI), Helsinki Univ. of Technology (FI)

Primary Energy Efficiency
2007-2010, Rolf Ulseth, SINTEF (NO), 8.0 (13.4) MNOK
Univ. of Iceland (IS), VEKS (DK), Lund Univ. (SE), Helsinki Univ. of Technology (FI), Tallinn Technical Univ. (EE)

THE HYDROGEN SOCIETY

Bio Hydrogen
2007-2010, Peter Lindblad, Uppsala Univ. (SE), 6.0 (8.1) MNOK
Univ. of Bergen (NO), Univ. of Turku (FI), University of Copenhagen (DK), Univ. of Akureyri (IS), Tampere Univ. of Technology (FI), Univ. of Jyväskylä (FI), Stockholm Environment Inst. (SE), Tallinn Centre (EE), Roskilde Univ. (DK), Riga Technological Univ. (LV)

Nordic Centre of Excellence on H2 Storage
2007-2010, Hannes Jonsson. Univ. of Iceland (IS), 8.0 (10.8) MNOK
IFE (NO), Univ. of Oslo (NO), Stockholm Univ. (SE), Uppsala Univ. (SE), DTU (DK), Risø DTU (DK), Helsinki Univ. of Technology (FI), Lithuanian Energy Inst. (LT), St. Petersburg State Univ. (RU)

Development & Demonstration of Competitive PEMFC
2007-2009, Steffen Møller-Holst, SINTEF (NO), 4.4 (8.8) MNOK
Powercell SV AB (SE), Volvo Technology (SE), StatoilHydro (NO), H2 Logic (DK)

Scandinavian Hydrogen Highway Partnership (Completed)
2007-2008, Ulf Hafseld, StatoilHydro (NO), 1.0 (2.2) MNOK
Zero (NO), ETC Batteries and Fuel Cells Sweden AB (SE), Region Midtjylland (DK), H2 Logic (DK)

THE EFFECTS OF CLIMATE CHANGES ON THE ENERGY SECTOR

Climate and Energy Systems; Risks, Potential and Adaptation
2007-2010, Arni Snorrason, NEA (IS), 10.0 (18.2) MNOK
Swedish Meteorological and Hydrological Inst. (SE), NVE (NO), VTT (FI), SINTEF (NO), Landsvirkjun (IS), Elforsk (DK), Finnish Energy Industries (FI), Dong Energy (DK), Statkraft (NO)

PROJECT PORTFOLIO WITHIN THE NORTHERN EUROPEAN INNOVATIVE ENERGY RESEARCH PROGRAMME, N-INNER, 2008-2010 (FUNDED BY THE PARTICIPATING COUNTRIES)

Synthesis and Durability of CNT based MEAs for PEMFC (Nanoduramea)
2008-2010, Pertti Kauranen, VTT (FI)
HUT (FI), SINTEF (NO), NTNU (NO), SDU (DK), KTH (SE)

Optimizing Lipid Production by Planktonic Algae - LIPIDO
2008-2010, Timo Tamminen, SYKE (FI)
Ludwig Maximilian Univ. (DE), Icelandic Energy Research Inst. (IS), NTNU (NO), Univ. of Oslo (NO)

Solar Hydrogen
2008-2010, Dinko Chakarov, Chalmers Univ. of Technology (SE)
Univ. of Oslo (NO), DTU (DK), Univ. of Iceland (IS)

Evaluation Platform for Polymer Solar Cells – Morphoso
2008-2010, Michael Niggemann, Fraunhofer ISE (DE)
Åbo Akademi Univ. (FI), Linköping Univ. (SE)

Novel High-Temperature Proton and Mixed Proton Electron Conductors for Fuel Cells and H2-Separation Membranes
2008-2010, Reidar Haugsrud, Univ. of Oslo (NO)
SINTEF (NO), Risø DTU (DK), Chalmers Univ. of Technology (SE), Research Centre Jülich GmbH (DE)

Policy Activities

WORKING GROUP FOR RENEWABLE ENERGY

The Nordic Council of Ministers' Working Group for Renewable Energy supports the Nordic system through cooperation projects and information exchange. The group also supports the international promotion and dissemination of Nordic expertise and technologies in the field of renewable energy. In 2009 the group commissioned a study evaluating cooperation mechanisms of the RES Directive which can be downloaded from www.nordicenergy.net, under Publications. NordVind is a working group under the Working Group for Renewable Energy, which shares experiences and develops common approaches to planning and permit processes for wind power. Nordic Energy Research is the secretary for both groups.

"Analysis of Flexible Support Mechanisms"

WORKING GROUP FOR SPARSELY POPULATED AREAS

The Nordic Council of Ministers' Working Group for Sparsely Populated Areas looks at ways to provide clean, secure and cost-efficient energy systems in Nordic regions with weak or no access to a larger electricity grid. In 2009 the group was involved in both Driving Sustainability in Reykjavik and the Wisconsin Midwest Renewable Energy Association's annual energy fair. The group currently writes a white paper on the specific challenges for sparsely populated areas. Nordic Energy Research is the secretary for the group.

ELECTRICITY MARKET GROUP

The Nordic Council of Ministers' Electricity Market Group is charged with increasing the harmonisation of the Nordic electricity market and responsible for following through resolutions from the Nordic Council of Ministers for Energy. Although the Nordic electricity market is the most harmonised cross-border market in the world, there are still areas where continued and increased efforts are needed. In 2009 the Nordic Energy Ministers reaffirmed their support for the common Nordic retail market. Furthermore the ministers continued their high emphasis on an action plan for the development of the Nordic electricity market.

SUSTAINABLE TRANSPORT PROJECT

During 2009 Nordic Energy Research had the responsibility to implement the Icelandic Chairmanship project "Sustainable Transport – The Nordic region charts the route". The project aimed at providing information and raising the profile of sustainable transportation among Nordic decision makers. The project consisted of the following activities:

- Developing a brochure presenting Nordic success stories and good examples
- Developing a foresight analysis focusing on Nordic strategies for sustainable transportation
- Presenting project results at the Driving Sustainability conference
- Coordinating the production of two whitepapers by Nordregio and the Working Group for Sparsely Populated Areas on sustainable transportation in sparsely populated areas, and spatial planning and sustainable transportation

As a continuation of this project, and as a result of the Nordic Prime Ministers' focus on sustainable transport at their 2009 meeting, the Energy & Transport programme will begin in 2010. Nordic Energy Research will lead the programme secretariat, with support from Nordic Innovation Centre. The programme has a budget of around DKK 30 million over three years.

"Transport Transformed" brochure

"Nordic Strategies for Renewable Transport" foresight analysis

"Spatial Planning and its contribution to climate friendly and sustainable transport solutions"

NORDIC ENERGY TECHNOLOGY SCOREBOARD PROJECT

The Nordic Energy Technology Scoreboard will demonstrate and propose a set of indicators to measure the conditions and performance of clean energy technology development in the Nordic region. By equipping public and private decision-makers with a clear picture of the conditions and performance of technology development, they are better able to contribute to achieving a more sustainable, secure and competitive energy system. Building on the NORIA studies funded in 2007 and 2008, the scoreboard will be published mid 2010. It looks to act as a pilot study, developing methodologies for more comprehensive scoreboards in the future, and aims to promote better data collection.

NORIA SYNTHESIS REPORT

"Nordic Energy Technologies - Enabling a Sustainable Nordic Energy Future" was published in late 2009 and summarises the results from the NORIA portfolio. It provides a mapping of Nordic clean energy innovation systems, a comparative analysis of innovation performance through various indicators, and an assessment of international cooperation opportunities. The report offers a concise and readable overview of the state of Nordic clean energy innovation, and can be downloaded from www.nordicenergy.net, under Publications. Individual reports from the NORIA portfolio can also be downloaded from our website, under NORIA Policy Studies.

"Nordic Energy Technologies – Enabling a Sustainable Nordic Energy Future" synthesis report

NORDIC RESEARCH AND INNOVATION AREA (NORIA) ENERGY TECHNOLOGY POLICY PORTFOLIO, 2008-2009 (FUNDED BY NORDIC ENERGY RESEARCH)

Competitive Policies in the Nordic Energy Research and Innovation Area (eNERGIA)
(Completed)
2008, Antje Klitkou, NIFU STEP (NO)

Patterns of Need Integration and Co-operation in Nordic Energy Innovation Systems
(Completed)
2008, Mads Borup, Risø DTU (DK)
Norwegian School of Management (NO), Chalmers Univ. of Technology (SE)

Russian Energy Research and Innovation – Prospects for Co-operation on Renewables and Energy Efficiency
(Completed)
2008, Indra Øverland, NUPI (NO)

Governance and Research of Nordic Energy System Transition (GoReNest)
2008-2009, Annele Eerola, VTT (FI)
CEM (ES)

Industrial Development and Export Opportunities for Nordic Energy Industry and other Companies in the Energy Field (Nordic Energy Perspectives)
2008-2009, Anders Sandoff, Univ. of Gothernburg (SE)
Profu (SE), VTT (FI)

How to Bring Renewable Energies down their Learning Curves
2008-2009, Camilla Josephson, Lund Univ. (SE)
Cinzia Daraio Univ. of Pisa (IT)

Nordic Opportunities for Collaboration with China in Energy Research and Innovation
(Completed)
2008, Jørgen Delman, NIAS (DK)
Ministry of Science and Technology (CI), Lund Univ. (SE)

Communication and Profiling Activities

Nordic Energy Solutions

NORDIC ENERGY SOLUTIONS

The world needs energy solutions and the Nordic countries have much to offer. The Nordic Council of Ministers Globalisation Forum in February 2009 saw the launch of Nordic Energy Solutions – a new web portal that seeks to spread that message. The project was commissioned by the Nordic Council of Ministers' Working Group for Renewable Energy and is managed by Nordic Energy Research. The web portal presents some of the best energy solutions developed in Denmark, Finland, Iceland, Norway and Sweden with the aim of reaching a broad international audience of decision makers from both public and private sectors. New examples of sustainable energy technologies, innovations and policies are continuously being added to the site, ready for the world to discover.

www.nordicenergysolutions.org

Nordic-Chinese
Energy & Climate Day
25 JUNE 2010

NORDIC-CHINESE ENERGY AND CLIMATE DAY

Part of a broader project to promote cooperation in clean energy technology development between China and the Nordic region, the Nordic-Chinese Energy and Climate Day will take place on the 25th of June 2010 at the Shanghai World Expo. Planning for the event began in 2009, which will bring together ministers, business leaders, researchers and other key stakeholders from China and the Nordic region. The event will focus on how greater Chinese-Nordic cooperation and interaction can contribute to the development and deployment of clean energy and climate technologies.

www.nordicenergy.net/china

Bioenergy Promotion

BIOENERGY PROMOTION

The Bioenergy Promotion project aims to strengthen the development towards a sustainable, competitive and integrated Baltic Sea Region in the sustainable use of bioenergy. Nordic Energy Research is one of 33 partners from 10 countries, and has been responsible for the development of the project website to facilitate cross-sectoral and transnational networking. The website was launched in August and includes a growing interactive register of people, organisations and projects that can be browsed as a map. Nordic Energy Research has also commissioned a report under the project to map developments in bioenergy technologies in the Baltic Sea Region, which is available on our website under Publications. The Bioenergy Promotion project is partly funded by the European Union's Baltic Sea Region Programme 2007-2013.

www.bioenergypromotion.net
"Mapping the Baltic Sea Region on Developments"

Nordic Climate Solutions 2009, Copenhagen

Key Events

DRIVING SUSTAINABILITY

SEPTEMBER 14TH – 15TH 2009, REYKJAVÍK

Nordic Energy Research supported the third international Driving Sustainability conference which was a part of the Icelandic Chairmanship Project on Sustainable Transportation. The conference covered a wide range of topics related to the emergence of a sustainable transportation sector, spanning from the increased efforts in bicycle deployment in Copenhagen to the deployment of electric cars in China.

NORDIC GLOBALISATION FORUM

FEBRUARY 26TH – 27TH, REYKJAVÍK

The Nordic Prime Ministers, alongside representatives from Greenland, the Faroe Islands and Åland, gathered on the 26th and 27th of February 2009 at the Blue Lagoon in Iceland for the second annual Nordic Globalisation Forum. Danish Prime Minister, Anders Fogh Rasmussen suggested that *"the region should act as a test market for green transport"* and voiced his support for further Nordic investment in initiatives that will help brand the region as 'The Green valley of Europe'. This vision helped initiate the Energy & Transport programme, jointly administered by Nordic Energy Research and Nordic Innovation Centre.

NORDIC CLIMATE SOLUTIONS

SEPTEMBER 8TH – 9TH, COPENHAGEN

At the Nordic Climate Solutions conference, Nordic Energy Research hosted a lively panel discussion focussing on international technology collaboration on intelligent energy. It tackled an issue pivotal in realising our renewable energy and greenhouse gas emission targets – the smart grid. Smartening up the electricity grid is a crucial step in bringing the necessary wind, solar and other weather-dependent renewable energy sources online in the near future. A concise summary of the session is available on our website under Publications.

"International Technology Collaboration on Intelligent Energy" session report

NORTH EUROPEAN RENEWABLE ENERGY CONVENTION (NEREC)

OCTOBER 7TH – 8TH 2009, OSLO

Nordic Energy Research (NEF) and Nordic Innovation Centre (NICe) collectively represented the Nordic Council of Ministers at NEREC (formerly Scan-REF). There was broad interest among conference-goers about the Top-level Research Initiative and various other ongoing projects presented at the Nordic stand.

NORDIC ENERGY FUTURES

MARCH 17TH 2009, OSLO

The "Nordic Energy Futures" conference was organised by Nordic Energy Perspectives (NEP), a Nordic project financed and supported by a range of public and private sector actors, including Nordic Energy Research. NEP analyses national and international political goals, directives, and policy instruments within the energy area, and their influence on Nordic energy markets, energy systems, infrastructure and institutional structures. Central themes explored at the conference were means to increase renewable generation, improve energy efficiency and reduce emissions according to the EU's 20% targets by 2020.

COP15

DECEMBER 7TH – 18TH 2009, COPENHAGEN

The "Climate and Energy Systems; Risks, Potential and Adaptation" project under the R&D portfolio was represented at COP15, where results were presented to summit delegates. The goal of the project is to look at climate impacts on the energy system and assess the development of the Nordic electricity network for the next 20-30 years. The 3-year project puts focus on how the conditions for production of renewable energy in the Nordic area might change due to climate change.

The Board

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Annual Accounts

REVENUES/Inntekter	2009	2008
Ordinary budget funds from NCM/ Ordinære budsjettmidler fra NMR	5.846.000	5,676,000
National grants/ Nasjonale bidrag*	25.660.430	27,526,032
Other revenues/ Øvrige inntekter	3.012.918	1,492,037
Financial revenues/ Finansielle inntekter	1.094.249	1,788,583
Project grants from NCM/ Prosjektmidler fra NMR	3.992.616	3,585,478
TOTAL REVENUES / Totale inntekter	**39.606.213**	**40,068,130**

EXPENSES/Utgifter		
Secretariat/ Sekretariat	15,604,227	11,462,769
Project expenses/ Prosjektutgifter	22,805,208	26,898,869
Other expenses/ Øvrige utgifter	3,135	5,003
TOTAL EXPENSES/ Totale utgifter	**38,412,570**	**38,366,641**

NET PROFIT/Årets resultat	**1,193,643**	**1,701,489**

ASSETS/Aktiver (NOK)		
Trade debtors / Debitorfordringer m.m	1,307,764	169,118
Grants/ Prosjektfordringer	3,944,068	1,220,483
Costs paid in advance/ Forskuddsbetalte omkostninger	3,725,893	
Cash at bank/ Bankkonto	25,006,193	38,938,220
TOTAL ASSETS / Aktiver i alt	**33,983,918**	**40,327,821**

LIABILITIES/Passiver (NOK)		
Trade creditors/ Kreditorgjeld m.m	13,049,496	1,207,766
Project advance payment/ Prosjektforskudd	13,223,927	34,957,839
Accounts payable/ Skyldige omkostninger	3,526,446	842,411
Transfers / Overførte midler	4,184,049	3,319,805
TOTAL LIABILITIES/Passiver i alt	**33,983,918**	**40,327,821**

*National grants 2008:	Nordic activity	Activities in adjacent areas	Total
Denmark	6,082,325	608,233	6,690,558
Finland	4,773,125	477,312	5,250,437
Iceland	327,300	32,730	360,030
Norway	7,473,350	747,335	8,220,685
Sweden	8,618,900	861,890	9,480,790
Total	**27,275,000**	**2,727,500**	**30,002,500**

*National grants appear as revenues of only NOK 25,660,430, with the remainder appearing in the balance
I regnskapet er det kun inntektsført NOK 25,660,430, resten av nasjonale bidrag er ført i balansen.

The annual accounts are audited by the Office of the Auditor General in Norway
Regnskapet er revidert av riksrevisjonen i Norge

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"This is a step in the right direction. But, much more needs to be done; investment in energy efficiency and clean technologies would need to increase four-fold if we want to keep the rise in global average temperature under 2°C. This means USD 400 billion more every year over the next 20 years"

NOBUO TANAKA, EXECUTIVE DIRECTOR OF THE INTERNATIONAL ENERGY AGENCY (IEA), REFERRING TO THE SURGE IN FUNDING FOR CLEAN ENERGY TECHNOLOGIES UNDER ECONOMIC STIMULUS PACKAGES TO THE FINANCIAL CRISIS, IN RESPONSE TO A G8 DECLARATION, JULY 2009.

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