

Evaluation of NETP 2016

For Nordic Energy Research, February 2018



Evaluation of NETP 2016

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About Lauritzen Consulting

Lauritzen Consulting is established in 201515. We offer analyses - to assist strategic decisions and implementation. We are experts in qualitative analyses (eg. survey-based) as well as quantitative, (eg. econometric) analyses. The analyses reflect the challenges the founder, Finn Lauritzen has worked with during his career.

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1. Executive summary

Oxford Research and Lauritzen Consulting undertook in December 2017 an assignment to evaluate the 2016 NETP – Nordic Energy Technology report 2016. The NETP 2016 is produced by NER – Nordic Energy Research, an institution under the Nordic Ministerial Council – and the second of its kind, the first being NETP 2013. Both reports were made in close cooperation between the NER, a large number of Nordic researchers and experts and IEA, the International Energy Agency. Our evaluation was done in the course of January and February 2018 and is contained in this report.

1.1 GENERAL CONCLUSION

Generally, we find the job of producing a report as the NETP 2016 to be challenging and resource-demanding – which in the concrete case resulted in a report of high quality and credibility that is commended by many observers and experts. Overall the report is of high quality and is praised by a large majority of the people that have actually read the report. Also based upon our own experience bringing together a large number of experts (approximately 50) from different countries and locations, in cooperation between two international organizations, is a great and complex task.

If NER chooses to make a new NETP we recommend, however, that a number of changes and improvements to ensure a higher value-for-money should be made.

We suggest a number of changes or improvements in **the process**, the **scope** and the **communication** of the report. We also suggest that the management and board of the NER discusses and clarifies the objectives of the work.

To put the NETP in perspective, no other group of countries have succeeded in producing a similar report or is, according to our IEA sources, contemplating to do so in a foreseeable future.

1.2 PROCESS AND RESOURCES

The report implied high costs totaling 8 million NOK plus internal resources in the NER (and in the IEA, which was paid for as part of the 8 million NOK). Most of the co-authors we interviewed states that the work was well organized and efficient, allowing sufficient time for discussions, alterations etc.

There is, however, a widespread feeling among the contributors of a “silo” system where most of 50 members of the team did not have the opportunity to see each other and discuss methods, results, policy questions etc. with each other. We believe, that, if properly planned, this can be remedied with few extra costs (see our recommendations in sections 1.7).

To some extent, however, the NER will have to choose between maximizing the efficiency in the production of the report and the “side-objective” of improving cooperation between Nordic energy researchers.

1.3 OUTREACH – HAVE PEOPLE READ THE REPORT?

Most people that actually know and/or have read the report evaluate it as a high-quality report. The number of people in this category is, on the other hand, low – also compared with other, similar reports, thereby taking into account that competition for awareness in the area of climate and energy is fierce. In total, we reached 150 people who knew, or knew about, the report – but the majority of these people have only read smaller parts of the report. Only 9 per cent of our survey respondents claim to “know the report well” or to have “read most parts of it”. Overall, we find this dissemination to be an area with opportunities for improvements.

Few respondents have come to know the report via the media or via PR or marketing. Most readers know the report through “mouth-to-ear” dissemination, primarily via colleagues. Some of the readers came to know the report through the “launch events” held in all Nordic capitals in the spring of 2016. The launch events in Oslo, Stockholm and Helsinki had a high number of participants (more than 100), including high-ranking civil servants and decision makers. In Copenhagen and Reykjavik fewer people, and less high-ranking decision makers, attended the launch events.

The majority of people that attended the launch events assess these events as good and interesting, both for researchers and decision makers.

Also measured by the number of visits on NER’s webpage and press and media coverage the interest was limited – and short-lived. The total number of visiting sessions on NER’s website reached 7-800 but only a few days after the publication the number of visitors was back to normal. The same applies for media interest.

1.4 QUALITY AND RELEVANCE

It’s not a directly stated objective for the NER that the NETP is considered to be a **high-quality-project** - and the definition of what this means is of course to some extent a subjective matter. However, on a general level, the majority of our respondents find that the report is of high quality. Through our in-depth interviews it is our assessment that this evaluation stems from the fact that informed readers are aware that the collection and management of a huge amount of energy data is a tremendous task. Moreover, **most informed readers value that the report is balanced and hence credible** - meaning that in matters where opinions may differ assumptions and assessments in the NETP mirror what can be called a “mainstream view” in the energy area.

The overall question of **relevance** is more complicated. Many policy makers find that the NETP only has limited relevance, and the majority of respondents that find it useful and relevant are researchers. This reveals a dilemma that we recommend the NER to consider.

1.5 HAS THE MAIN OBJECTIVES OF NETP BEEN ACHIEVED?

The stated objectives of the NETP are threefold:

- To develop Nordic research competencies
- To provide knowledge for decision makers, and
- To share knowledge outside the Nordic region

The first objective is fulfilled partially - and difficult to measure. The 50 experts chosen for the assignment have of course been selected from a group of already very competent people, most of who have only worked effectively on the project in a short period. The people in this group that we have interviewed are reluctant to state whether their competencies have increased or whether they just used their existing competencies.

Similarly, most high-level decision makers say that the report is useful and interesting (to the extent that they have read it) but more as background material than as supporting knowledge used in concrete planning, decisions or negotiations. In other word, **the second objective is also fulfilled partially**.

The last objective, sharing of knowledge outside the Nordics, is perhaps the most ambitious of the three objectives. A few people in the IEA have read the report, and the report has been used as a source in presentations in international fora, but besides that **the non-Nordic awareness of the report seems to be very limited**.

That been said it is the assessment of the evaluators that the three stated objectives are ambitious. We believe that changes could be made to ensure that the two first objectives are met to a higher degree - but that the last objective might be reconsidered by the NER.

1.6 INTERNAL VALUE

The NER has also stated four internal objectives of the NETP, namely that it should

- Increase collaboration between Nordic researchers and IEA
- Strengthen NER's internal collaboration
- Increase NER's visibility
- Add competencies to the NER

The first objective has been met. The IEA participated to the project with its model (Times), its modelling expertise, and contacts. Collaboration was also strengthened through a process where people were seconded to work in the IEA for a period.

The second objective has been met partially. If the question is interpreted to cover the entire Nordic energy researcher's community, many researchers and experts involved in the process have only contributed to a part of the total project and have limited knowledge of the rest of the report. If the question is interpreted narrowly, meaning the organization of NER in Oslo, including board and steering group, the answer is affirmative - but could have been achieved also with other projects.

The third objective, visibility, is fulfilled to a higher degree. Informed people know about the project, even when they don't know much about its content. Being the only major, comprehensive product produced by the NER as an organization, and in the name and responsibility of the NER, it clearly adds to NER's visibility.

Lastly, it's an objective of the NETP that it adds to competencies in the NER - analytically, gaining access to IEA data and tools, and paving the way for new projects.

We believe that these objectives have been met - first of all by allowing researchers and key people in the NER to learn about IEA's model and data bank.

In our discussions with the NER secretariat we have been aware that the NETP - on top of these four stated objectives - is also used to **set the direction for future activities and research programs** and **provides content for future communication about NER's policies and strategies.** We acknowledge this use as important for the organization.

1.7 RECOMMENDATIONS

Based on our analysis and assessment we recommend the NER to consider a number of changes in order to increase "value for money" in future NETP's (or, for that matter, other, similar projects). We also recommend the NER to reconsider or rephrase objectives that may be - to some extent - in conflict with each other. The recommendations cover **process, scope, communication and subsequent use.**

With respect to **process**, we recommend the NER to increase knowledge-sharing and avoid a "silo-feeling" among experts and researchers contributing to the report. This may be achieved if the group is invited to meet physically and/or through working portals.

We also recommend the NER to invite other (non-contributing) experts and policy-makers to discussions during the process. Both of these changes will take some time and hence increase the time it Takes to produce the report but might nevertheless be a good idea.

With respect to **scope**, we recommend the NER to limit the presentation and discussion of model scenarios. We realize that that this may be a dilemma, since some researchers value the data from model scenarios (a four-degree scenario and a CNS - Carbon Neutrality Scenario) - very much. We believe, however, that the dilemma of how to reach both researchers and policy makers at the same time may be solved by continuing to publish data and relevant appendices, while increasing the weight in the main report on policy dilemmas. We also believe more emphasis should be put on explaining the nature of the scenarios, i.e. that they are not forecasts, but calculations of the most efficient path to carbon neutrality, given the Nordics present energy structure (supply and demand) and assumptions about future demand, investments in energy production and not least the development of technologies.

Examples of policy choices or dilemmas that have been mentioned in our in-depth interviews are the **greening of heavy transport (busses and trucks)**, the **possible speed-up of transition to**

battery-driven PEV's (personal, electrical vehicles), building-related energy demand, nuclear energy, biofuels, energy demand in agriculture and manufacturing, etc. We realize that some of these issues have already been the subject of subsequent research programs or analyses.

We also recommend **increasing the weight on the discussion of economic issues.** Without integrating macroeconomic relations discussions about the size of necessary public and private investments, impacts on manufacturer's competitiveness, sectoral shifts and the creation of new "green jobs" would widen the political interest in the report considerably.

A final note on the scope of the report concerns the so-called "**consensus principle**" which characterizes not only the NER, but also the NMC (Nordic Ministerial Council) and indeed almost all international organizations. The organizations depend on political and economic backing from a wide majority of their member countries. They have no formal power and rely at best on "peer pressure" between member states. We understand this principle in full - but nevertheless recommend the NER to describe the pros and cons, and the arguments used in the debate, of these dilemmas. In other words, we recommend **balancing the consensus principle with sharper recommendations and with more in-depth discussions of sensitive dilemmas.**

Especially in Iceland many readers recommend the NER to include issues that are relevant here, as the possibilities to green transportation or to increase the use of geothermal resources.

If the NETP picked a couple of central policy dilemmas and discussed these, highlighting uncertainties, costs and environmental as well as economic effects this would tend to increase general interest in the report.

With respect to **communication**, we recommend the NER to develop a strategic, systematic and detailed communication and dissemination plan before the report is finalized. The secretariat has informed us that in 2016 time and resources were inadequate to give communication and outreach full priority. Getting professional assistance would be fruitful in this regard.

We also recommend the NER to consider which weight researchers/experts, in relation to decision makers, should have as targeted readers. As described above there could be dilemmas involved in trying to reach both groups - but we think the dilemma could be resolved by maintaining open access to data and models, which is much appreciated by researchers, while including sharper policy and technology discussions, which both many policy-makers as well as many researchers would find interesting.

With respect to **subsequent use of the NETP** we find it regrettable that interest and media coverage is very short-lived - with Norway as a possible exception. We realize that changing technologies or economic or environmental circumstances may outdate the report - but find that better-planned uses of the report in subsequent activities like research programs, workshops, international seminars etc. might make it possible for the NER to reap more from the substantial investment which the production of the NETP report is.

2. Introduction

Increasing climate challenges have increased the relevance of the Nordic collaboration within energy research. A strengthened Nordic collaboration can contribute to develop the needed knowledge and insights for designing sustainable energy- and climate policies at the Nordic as well as the international level.

As part of the effort to enhance Nordic energy research competencies and to provide research-based knowledge for Nordic and international decision makers, Nordic Energy Research (NER) in a collaboration with International Energy Agency (IEA) developed and published a Nordic version of IEA's Energy Technology Perspectives back in 2013 – the Nordic Energy Technology Perspectives 2013. Built on the methodology and approach developed in 2013, NER and IEA published a new version of the Nordic Energy Technology Perspectives in 2016.

The aim of the NETP 2016 was threefold and included: 1) developing Nordic research competencies and cooperation, 2) providing research-based analysis to inform Nordic decision-makers and 3) sharing knowledge to inform decisions on decarbonation outside the Nordics.

2.1 THE PURPOSE OF THE EVALUATION

To get a clear and well documented picture of the outcomes of the NETP 2016, Oxford Research and Lauritzen Consulting have documented and assessed how and to which degree the objectives of NETP 2016 has been met. In addition to this, the evaluation has studied and assessed the possible impact of NETP 2016 on the role, competencies and future work of NER.

Specifically, the aim of the evaluation has been to document and assess the following:

1. How and to which degree has the main objectives of NETP 2016 been achieved?

What are the explanatory factors behind successful as well as less successful achievements in relation to:

- a. Development of Nordic research competencies
- b. Providing knowledge for decision makers, and
- c. Sharing of knowledge outside the Nordic region?

2. How and to which degree has NETP 2016 impacted NER's role and visibility

- a. Has NETP increased collaboration between Nordic researchers and IEA?
- b. Has NETP strengthened NERs internal collaboration?
- c. Has NETP increased NERs visibility?

3. How and to which degree has NETP 2016 impacted the development of NER's competencies and preconditions for future work?

- a. Has NER strengthened its analytical competencies?
- b. Has NER gained access to relevant data and tools from IEA?
- c. Has NER improved its possibilities and preconditions for;

- developing own indicators and infographics;
- developing future meta-analyses;
- engaging in other types of collaboration with IEA;
- developing new relevant projects?

2.2 METHODOLOGY

The evaluation is based on a combination of qualitative and quantitative research methods. Desk research, datamining, surveys and structured in-depth interviews with different stakeholder groups – in all Nordic countries as well as outside the Nordics, incl. the IEA contribute to an evaluation that sheds light on different aspects and perspectives of the NETP 2016.

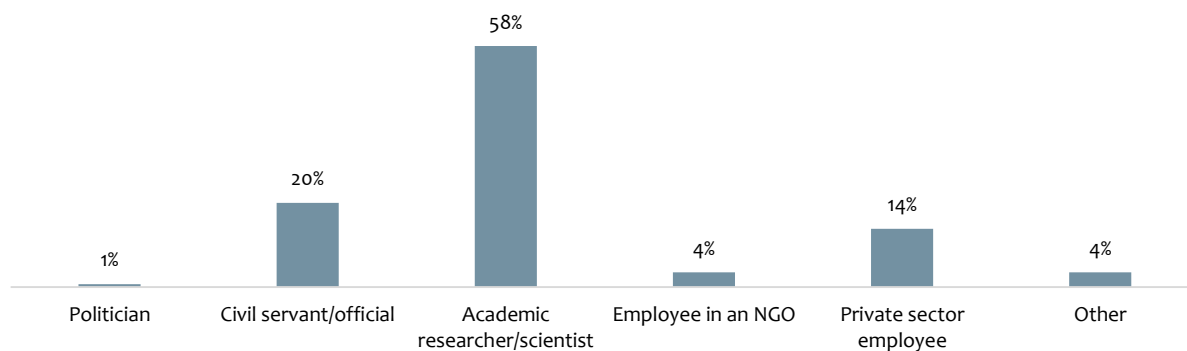
2.2.1 Qualitative interviews

In total, we have conducted **41 in-depth interviews** with selected stakeholders, including inside stakeholders which took part in the work and external stakeholders, primarily other researchers and decision-makers in ministries, energy authorities and industrial organizations. We have also conducted interviews with project coordinators and key staff in the NER and the IEA. For a full list of interviewees, see appendix 1. Our respondents and interviewees are distributed evenly in all five Nordic countries, including Iceland, who had the same number of interviewees as the 4 other countries but fewer survey respondents. We are aware that some of our interviewees were not neutral, having either had a role in the process, or in some instances possibly taking a “competitors” view, but found that we were able to take that into account in our evaluation.

2.2.2 Survey

We have performed an **e-mail based survey** with survey questions sent to approximately 1000 addresses delivered to us by the NER. Of these a little more than 700 addresses were still valid, and 143 responded. As seen from figure 2.1. below, the majority of the 143 respondents are ‘academic researchers/scientists’ (58 percent). The second and third largest groups of respondents are ‘civil servants/officials’ (20 percent) and ‘private sector’ employees (14 percent). Other types of respondents that make up a small share of the respondents include ‘employees in an NGO’ (4 percent) and ‘politicians’ (1 percent).

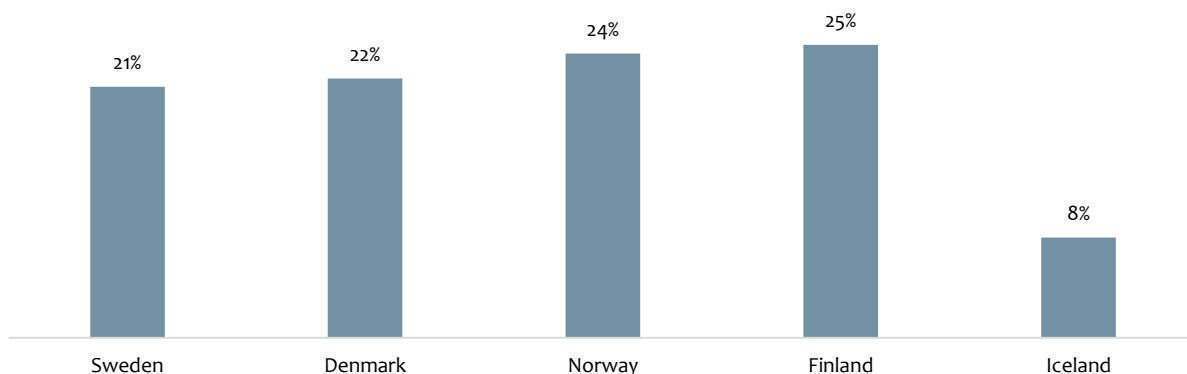
Figure 2.1. Distribution of responses – professional role



Source: Oxford Research, n=143

Concerning the respondents’ country of residence, figure 2.2. shows that the respondents are evenly distributed throughout Sweden (21 percent), Denmark (22 percent) Norway (24 percent) and Finland (25 percent). A lower share of the respondents are from Iceland (8 percent), but this is also expected since there are fewer Icelandic respondents in the total population.

Figure 2.2. Distribution of responses – country of residence



Source: Oxford Research, n=142

2.2.3 Data mining

To gather data and analyze media coverage of NETP 2016 we have used existing quantitative data on media coverage, downloads, hits at Nordicenergy.org etc. to get a picture on the dissemination of NETP 2016. We have done a comprehensive media coverage mapping including all major printed, online and broadcasting media in the Nordic countries and to assess the total number of readers/receivers. This has been done in collaboration with Retriever. Retriever is one of the leading Nordic media analytics consultancy and has access to the largest media database in the Nordics.

Secondly, we have used Google Scholar to measure the use of the NETP in research articles and other indicators measuring the how much the NETP was mentioned in the media.

3. Process and resources

Overall, the conclusion of the evaluation is that **the working processes of NETP 2016 have generally been effective and well-functioning**. At the same time, due to the involvement of 50 experts from different countries, the work has been resource-demanding.

A point made in a few interviews is that the previous working process and effort for realising the NETP back in 2013 has strengthened the cross-Nordic collaboration, as several of the same researchers, involved in NETP 2013 have also contributed to NETP 2016. Thus, there was a good starting point for NETP 2016 that relies on collaboration and consensus between IEA, NER and different Nordic research institutions. The interviewees involved in the process all accentuate the complexity in a set-up involving different types of stakeholders, including the NER staff, Nordic researcher groups, the NER's director, the steering group and the IEA. NER has experienced a relatively smooth working process, where they did not have to step in. The NER primarily played a role in reaching 'political' compromises. There were in addition discussions and negotiations taking place between NER and IEA about resources and practical issues. Generally, **the researchers involved in the process adopt a positive attitude towards NER's management and coordination** of the project.

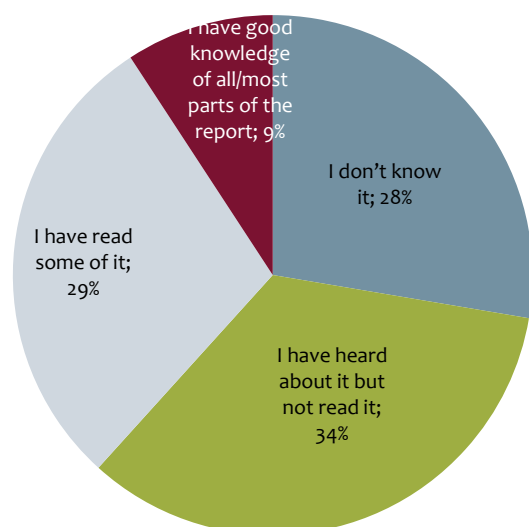
The main criticism raised in the interviews is **the feeling of a "silo" system** where most of 50 members of the team did not have the opportunity to see each other and discuss methods, results, policy questions etc. with each other. The involved experts express that they have little knowledge and insight into the content and scope of the parts of the report which they have not been involved. We find that there is room for improvement in further nurturing and strengthening the cross-Nordic collaboration. If properly planned, this can be remedied with few extra costs (see our recommendations in sections 1.8).

In terms of resources, the NETP 2016 implied costs totaling 8 million NOK plus internal resources in the NER and in the Nordic countries (and in the IEA, which was paid for as part of the 8 million NOK). Still, most of the co-authors we interviewed states that the work was well organized and efficient, allowing sufficient time for discussions, alterations etc. However, one interviewee thinks that some resources were not used efficiently, because there were spent resources on work that was not used as well as other lost resources due to duplication of work.

4. Outreach – Have people read the report?

Overall, the evaluation shows that **the outreach of the report has been limited**. The survey data shows that almost 2/3 of the respondents (62 percent) in the target group of NETP 2016 have either only ‘heard about the report and not read it’ or ‘don’t know’ the report. Few respondents have a deep knowledge and insight into the content of the report, as nine percent states that they ‘have good knowledge of all/most parts of the report’. Most of the respondents have heard about the report via colleagues, and as the evaluation shows, only 14 percent heard about NETP 2016 via news media. The media coverage varies between the Nordic countries and was mentioned in news and magazines related to the energy sector in Norway and Sweden, but to a limited extent in the other Nordic countries.

Figure 4.1. Are you familiar with the content of NETP 2016?



Source: Oxford Research, n=141

about the report, but not read it as indicated by 34 percent, or they ‘don’t know’ the content of NETP 2016 (28 percent). On this background, we find that the dissemination of the report is an area with opportunities for improvements.

As figure 4.1. illustrates, only **nine percent of the respondents ‘have good knowledge of all/most parts of the report’**. This points to the fact that there is a small dedicated group of people with an in-depth knowledge and insight into the content of NETP 2016.

29 percent of the respondents have read the report more selectively and only some of the content in the report. Our interviews indicate that this group primarily uses the report for inspiration or background knowledge and not for a specific purpose. An example of this type of reader is the civil servant in a ministry that uses the report to get an overview of the situation in the Nordic countries.

However, **most of the respondents have not read the report**. Either they have ‘heard

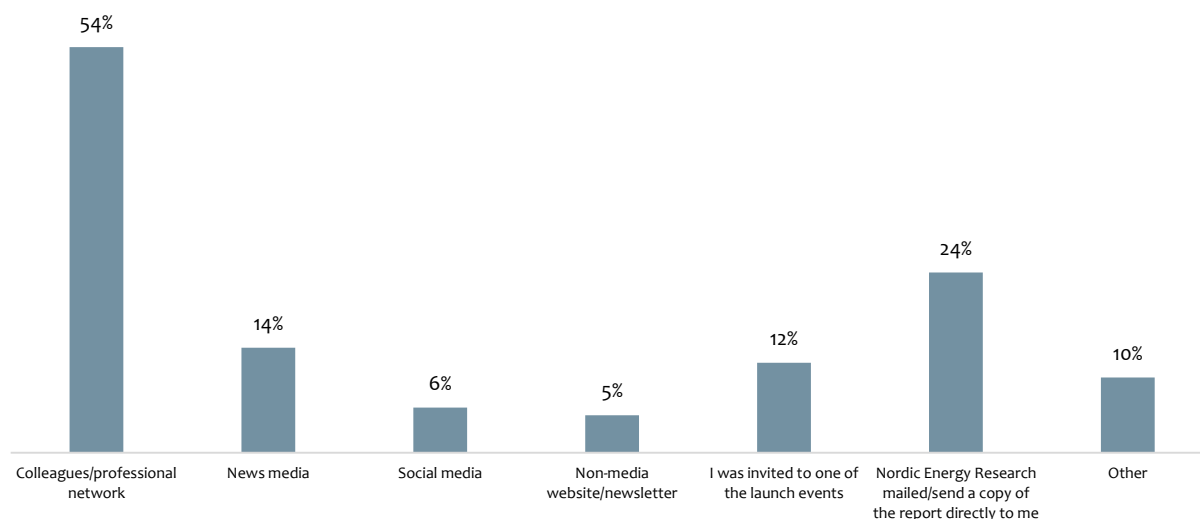
4.1 FROM WHERE HAVE PEOPLE HEARD ABOUT NETP 2016?

Most of the respondents have heard about the report through “mouth-to-ear” dissemination, primarily via colleagues. As shown in figure 4.2, more than half of all the respondents (54 percent) have come to know about NETP 2016 in this way. Another significant channel for disseminating the report is through direct communication to the target group, e.g. via email. Approximately 1/4 of the respondents know NETP 2016, because Nordic Energy Research mailed/send them a copy of the report directly.

To some extent, the invitations to the launch events held in all Nordic capitals in the spring of 2016 also contributed to the outreach of the report. 12 percent heard about NETP 2016 through the invitation to the launch events. The launch events in Oslo, Stockholm and Helsinki generally had a high number of participants (more than 100), including high-ranking civil servants and decision makers. In Copenhagen and Reykjavik fewer people, and less high-ranking decision makers, attended the launch events.

Other sources include news media (14 percent), social media (6 percent), non-media website/newsletter (5 percent) and other (10 percent). We find that these are relatively low shares, that reduce the overall outreach of the report. **A precondition for increasing the overall outreach is to have a stronger media presence.**

Figure 4.2. From where have you heard about NETP 2016?



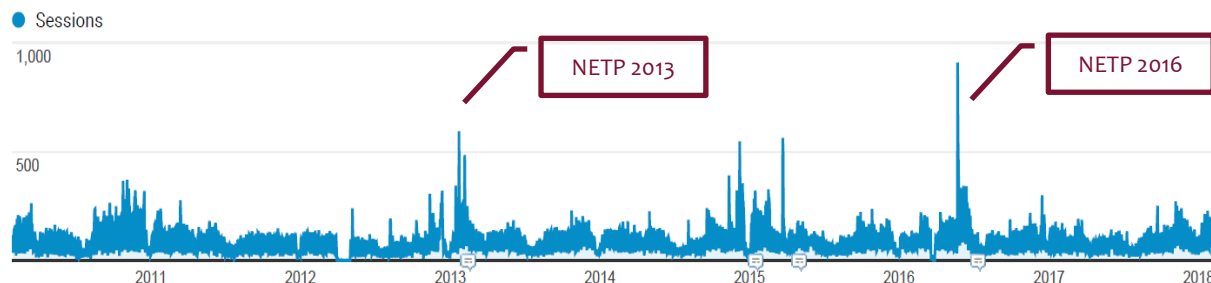
Source: Oxford Research, n=100

4.2 MEDIA COVERAGE OF NETP 2016

Based on the number of visits on NER’s webpage as well as press and media coverage, the evaluation shows that **the public interest has been limited – and short-lived.**

Figure 4.3. is a visualization of the number of session at NER’s website – nordicenergy.org. After the launch of NETP 2016, the total number of visiting sessions on NER’s website reached 7-800 but after one or two weeks the number of visitors was back to normal. The same pattern was seen in 2013 when NETP 2013 was launched, but on a lower level. In other words interest in the 2016 report was higher than in 2013.

Figure 4.3. No. of sessions at nordicenergy.org



Source: Nordicenergy.org

Considering the media coverage of NETP 2016, the evaluation shows that this has been limited in most of the Nordic countries. As already shown in figure 4.2, few respondents have heard about NETP 2016 through the news media, and unsurprisingly our media coverage analysis shows that NETP 2016 has been mentioned in articles to a low extent.

	Number of articles where NETP 2016 have been mentioned	Share of articles in May and June 2016	Number of potential readers
NO	24	39%	1.269.972
DK	5	60%	83.400
SE	7	57%	715.400

Source: Retriever 2018

Note: Excluding NCM’s own web and invitations to events

Table 4.1. Media coverage analysis

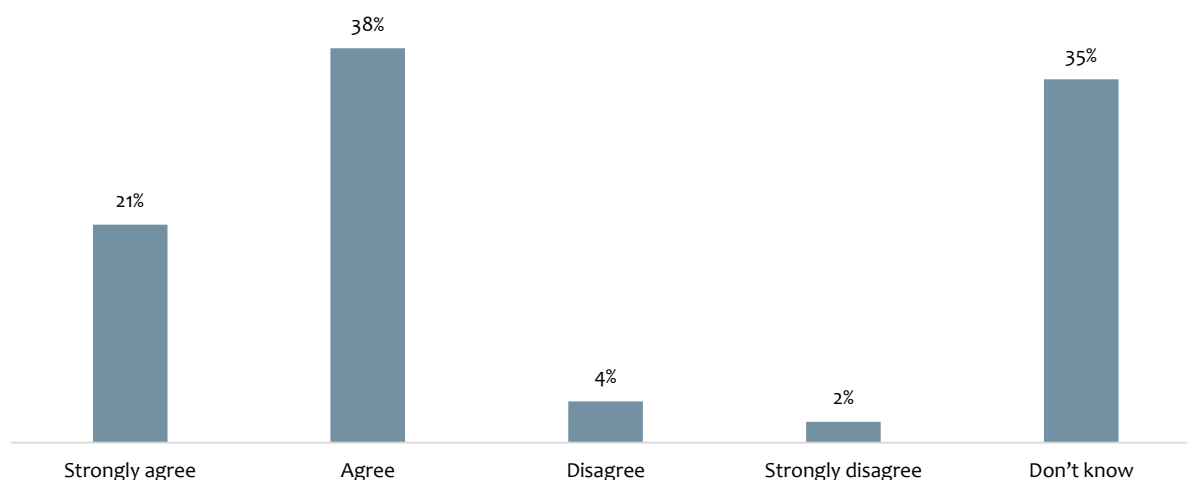
As table 4.1. shows, the number of articles mentioning NETP 2016 is highest in Norway with 24. In Sweden (seven articles) and Denmark (five articles) the number of articles is considerably lower. In Finland and Iceland, no relevant media mentioning NETP 2016 has been found. However, it can’t be ruled out that NETP 2016 has been mentioned in online media in Finland and Iceland. In Norway and Sweden, the media mentioning NETP 2016 include both broader media (Dagens Næringsliv in Norway and Dagens Nyheter in Sweden) and niche media, while in Denmark NETP 2016 has mainly been cited in smaller niche media. This difference is also reflected in the number of potential readers that is considerably higher in Norway and Sweden than Denmark.

5. Quality and relevance

Most of the respondents in the survey as well as interviewed stakeholders in the evaluation find the **NETP to be a high-quality project**. Even though this finding is to some extent a subjective matter, it is a good indication of a well-written report with credible findings and results that is acknowledged among a wide range of relevant professionals within the energy-related area.

As shown in figure 5.1, most respondents either strongly agree or agree (59 percent) that the publication of NETP has a high level of quality. Few strongly disagree or disagree (six percent) with NETP 2016 having a high level of quality.

Figure 5.1. Do you think the publication NETP 2016 has a high level of quality?



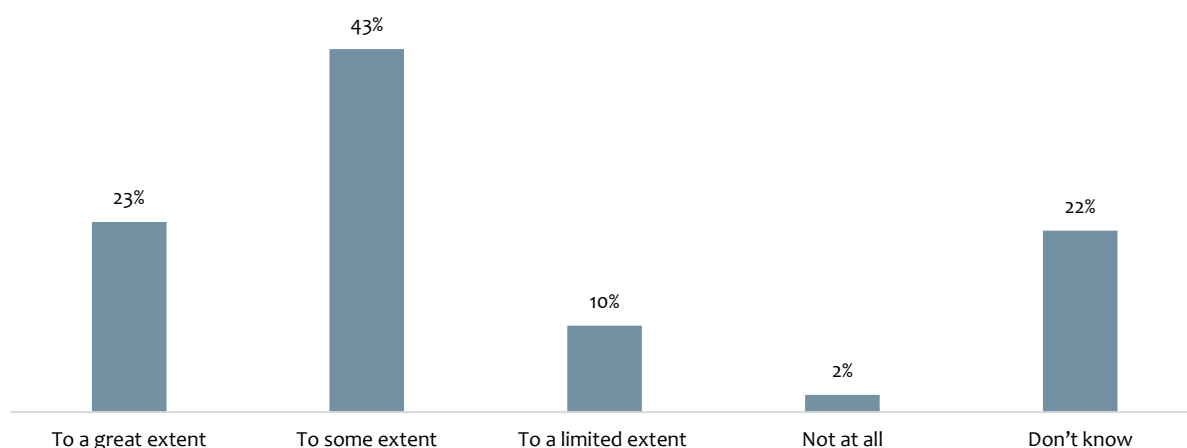
Source: Oxford Research, n=100

Taking a closer look at the survey results in figure 5.1, we also see that the large group that answers “don’t know” to the question mainly stems from the respondents who “have heard about the report but not read it”. If we only look at the respondents who either “have read some of the report” or “have a good knowledge of all/most parts of the report”, the percentage of respondents that either strongly agree or agree that NETP 2016 has a high level of quality is much higher than in the figure above (approx. 80 %).

Through our in-depth interviews it is our assessment that the positive assessment of the quality of NETP 2016 stems from the fact that informed readers are aware that the collection and management of a huge amount of energy data is a tremendous task. Moreover, **most informed readers value that the report is balanced and hence credible** - meaning that in matters where opinions may differ assumptions and assessments in the NETP mirror what can be called a “mainstream view” in the energy area.

Moreover, stakeholders in this evaluation have assessed the relevance of the NETP, and the overall question of relevance is more complicated. Many of the respondents and interviewed stakeholders find – to some extent – the report to be relevant.

Figure 5.2. To what extent is the report relevant for your professional work?



Source: Oxford Research, n=97

Again, there is a positive correlation between respondents that actually have read the report and to what extent the report is relevant for their professional work. The survey results also shows that the group of civil servants/officials that find the report relevant is lower compared to academic researchers/scientists, which indicates that the NETP 2016 is more relevant for academia than for concrete policy making.

These finding are supported in the in-depth interviews. Many researchers appreciate the data and analysis of model scenarios in the report, while some policy makers find that the NETP 2016 has limited relevance due to its limited focus on policy choices and the discussion of economic issues. This reveals a dilemma that we recommend the NER to consider as explained further in our recommendations in chapter 1.7.

6. Have the main objectives been achieved?

The main focus of the evaluation has been to document and assess how and to which degree the objectives of the NETP 2016 have been met. The stated objectives are threefold and include:

- To develop Nordic research competencies
- To provide knowledge for decision makers, and
- To share knowledge outside the Nordic region

Overall, we find that the first two objective is fulfilled partially and the third objective only to a limited extent. However, it is also our assessment that the three stated objectives are ambitious and demanding to achieve. We find that changes could be made to ensure that the two first objectives are met to a higher degree – and that the last objective might be reconsidered by the NER.

6.1 NORDIC RESEARCH COMPETENCIES

To which degree the report has developed Nordic research competencies is of course a difficult objective to measure. However, from the survey results and the in-depth interviews we have a good indication that the process and presentation of the NETP 2016 to some degree has developed the Nordic research competencies – and thereby fulfilled the first objective partially.

A large group of researchers (50 experts) have been involved in the process of making the report, which is a good basis for competency development and knowledge-sharing among the experts and researchers contributing to the report. However, the 50 experts and researchers chosen for the assignment have of course been selected from a group of already very competent people, and most seem only to have worked effectively on the project in isolated parts and in a limited period.

The people in this co-author group that we have interviewed are reluctant to state whether their competencies have increased or whether they just used their existing competencies. However, some of the persons do state that working with the data and modelling scenarios has been an educational experience.

Many of the interviewed researchers explain that the NETP has been used for further research. For example, as a basis for applications to a call for tenders. From the survey results we can also see that 37 % of the respondents have used the report as a basis for further research and analysis.

Looking at the number of research papers that cites NETP 2016, the report has been cited in 5 academic articles, 1 conference paper and 2 master theses. We find that this is actually a high number considering that the report is relatively new and the time it normally takes to produce and publish research papers. The citations are presented in the figure below.

Figure 6.1 Citations in academic articles and papers (Google Scholar)

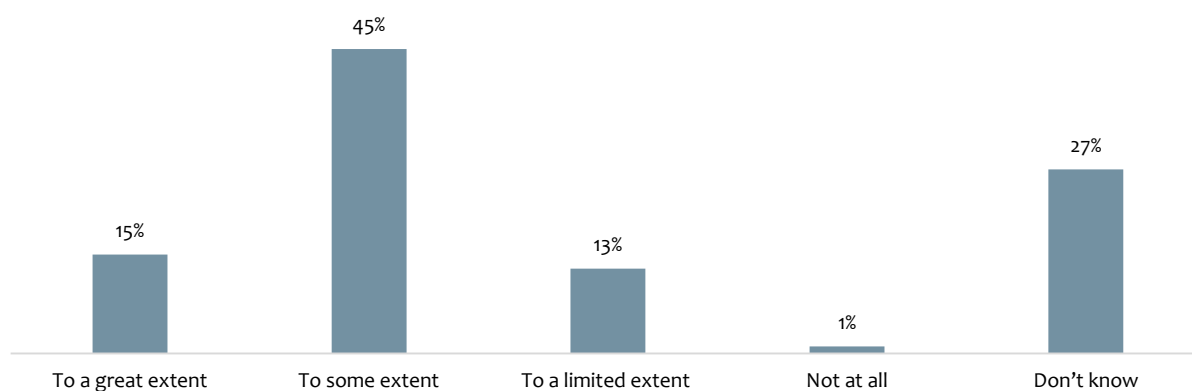
- *Decarbonising the Finnish Transport Sector by 2050—Electricity or Biofuels?* By Klaus Skytte og Rasmus Bramstoft Pedersen, DTU Management Engineering Article in: The Nexus: Energy, Environment and Climate Change (2018),
- *Five years left – How are the EU member states contributing to the 20% target for EU's renewable energy consumption; the role of woody biomass.* By Svetlana Proskurinaa, Richard Sikkemab, Jussi Heinimöc, EsaVakkilainena, Lappeenranta University of Technology Article in: Biomass and Bioenergy, Volume 95, December 2016,
- *Modelling of electricity savings in the Danish households sector: from the energy system to the end-user.* By Mattia Baldini and Alessio Trivella, Department of Management Engineering DTU Article in Energy Efficiency, Volume 11 / 2018
- *Decarbonizing Sweden's energy and transportation system by 2050.* By Klaus Skytte og Rasmus Bramstoft Pedersen, DTU Management Engineering Article in: International Journal of Sustainable Energy Planning and Management Vol. 14 2017 03–20, Aalborg University
- *Sustainability assessment of electro-mobility transition.* By Reza Fazeli,, Brynhildur Davidsdottir, Ehsan Shafiei,, Hlynur Stefansson, Eyjolfur Ingi Asgeirsson, School of Science and Engineering, Reykjavik University

Source: Google Scholar 29-01-2018

6.2 KNOWLEDGE FOR DECISION MAKERS

In the figure below, survey respondents in general find that the NETP to some extent provides relevant knowledge for decision makers.

Figure 6.2 To what extent do you assess that the report provides relevant knowledge for decision makers in your country? (country of residence)



Source: Oxford Research, n=96

But looking only at the answers from civil servants in the survey and from policy makers the in-depth interviews gives another picture. Less policy makers are answering “to a great extent” than in the figure about and few policy makers in the in-depth interview have used the report for policy making. Most decision makers say that the report is useful and interesting (to the extent that they have read it) but more as background material than as supporting knowledge used in concrete planning, decisions or negotiations. Some examples of where the report was used is however in the Danish strategy paper on strategic investment in research areas (Forsk2020) and as input to the Finnish strategy paper for climate and energy.

In general, most of the policy makers we have interviewed are sceptical of the concrete policy relevance of the report. Partially because higher-level decision makers have no or very limited knowledge of the report and partly because the report in its present scope have limited use at the policy level. With respect to the scope, some policy makers say that they miss more discussion of alternative scenarios and technological uncertainties and the integration of macroeconomic related discussions – some examples of policy choices that have been mentioned are the nuclear energy, biofuels, heavy transport (busses and trucks), transition to battery-driven vehicles, building-related energy demand, etc.

So, based on the survey results and the in-depth interviews we therefore evaluate the second objective, to provide knowledge for decision makers, as fulfilled partially.

6.3 SHARING KNOWLEDGE OUTSIDE THE NORDIC REGION

The last objective, sharing of knowledge outside the Nordics, is perhaps the most ambitious of the three objectives due to the strong focus on the Nordic countries in the report. We have also found little evidence of international knowledge sharing and international awareness of the report, and therefore evaluate that the third objective to a limited degree has been fulfilled.

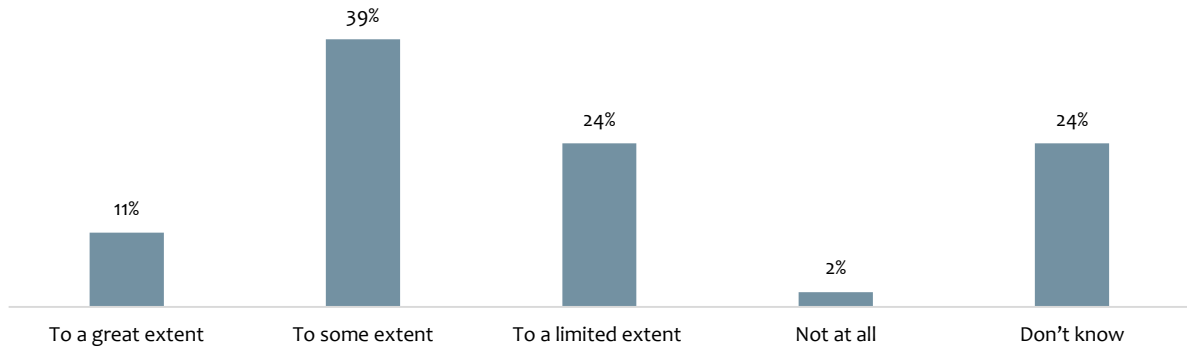
There is nonetheless some example of an international utilisation of the NETP. The report was for example used at seminars at COP22 (however with few attendants¹) and has been cited in a few academic articles published in international academic journals and written by Nordic researchers. Another example is the Baltic Energy Technology Scenarios² where the model scenarios that was developed in the NETP 2016 was used for the modelling exercise with focus on the Baltic states and their climate and energy targets.

From the survey, we see that 17 % of the respondent’s answer that they have used the report to profile the Nordic region in the global community. And according to the figure below, the majority of the respondents either assess that the report to some extent (34 %) or to a limited extent (24 %) is relevant outside the Nordics.

¹ Evaluation of the Nordic Council of Ministers’ activities at COP22, Oxford Research and LEAD Agency, January 2017

² <http://www.nordicenergy.org/project/bente/>

Figure 6.3 To what extent do you assess that the report is relevant outside the Nordics?



Source: Oxford Research, n=96

Based on the comprehensive number of in-depth interviews and the limited evidence of international utilisation and awareness, it is our impression that only a small group of people outside the Nordic countries have read the report.

7. Internal value

Next to the evaluation of the three main objectives of NETP 2016 we have also assessed the possible impact of NETP 2016 on the role, competencies and future work of Nordic Energy Research (NER). The NER has in this connection stated four internal objectives, including:

- Increasing collaboration between Nordic researchers and IEA
- Strengthening NER's internal collaboration
- Increasing NER's visibility
- Developing NER's competencies and preconditions for future work

Overall, we find that these four objectives have been met – first by allowing researchers and key people in the NER to learn about IEA's model and data bank.

7.1 COLLABORATION BETWEEN NORDIC RESEARCHERS AND IEA

It is our assessment that the first objective has been met. The evaluation shows that the collaboration between the Nordic researchers and IEA was well-functioning and rewarding for both sides. Through IEA, the Nordic researchers made a number of new contacts, and also benefited from IEA's expertise in modelling. The relation between the Nordic researchers and IEA was also strengthened through a process, where people were seconded to work in the IEA for a period.

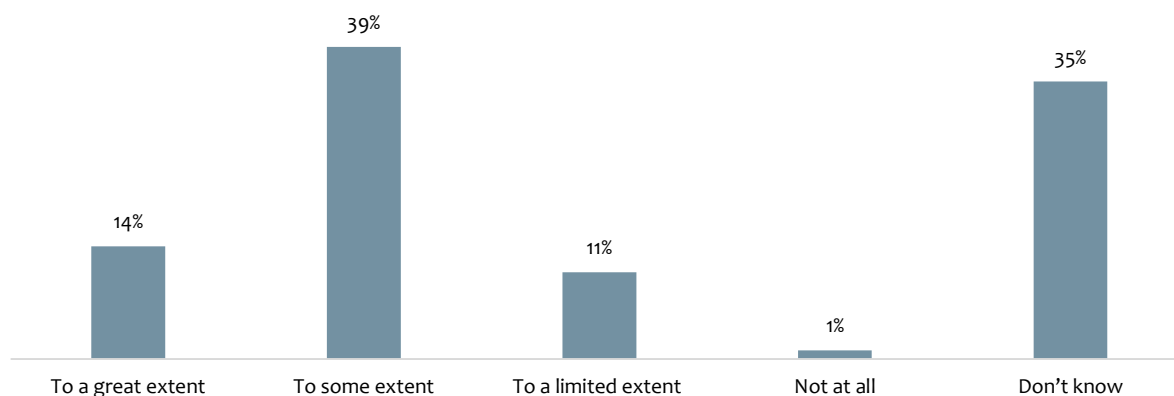
7.2 NER'S INTERNAL COLLABORATION

It is our assessment that this objective has been met partially. If the question is interpreted to cover the entire community of Nordic energy researchers, many researchers and experts involved in the process have only contributed to a part of the total project and have limited knowledge of the rest of the report. If the question is interpreted narrowly, meaning the organisation of NER in Oslo, including board and steering group, the answer is affirmative - but could also have been achieved with other projects.

7.3 NER'S VISIBILITY

The third objective, visibility, is fulfilled to a higher degree. Being the only major, comprehensive product produced by the NER as an organisation, and in the name and responsibility of the NER, it clearly adds to NER's visibility. Figure 7.1. shows that more than half of the respondents assess that the report has strengthened NER's role and visibility either to a great extent (14 percent) or to some extent (39 percent).

Figure 7.1. To what extent has the report strengthened the Nordic Energy Research's role and visibility?



Source: Oxford Research, n=92

Still, we find that NER's role and visibility could be further strengthened. As figure 7.1. shows, more than 1/3 of the respondents (35 percent) don't know and thus can't assess, if the report has contributed to strengthening NER's role and visibility. Our survey data shows that the respondents more inclined to think that the report has strengthened NER's role and visibility are those that have read the report, whereas respondents that have 'heard about it but not read it' don't know if the report has strengthened NER's role and visibility.

As the data measuring the number of sessions at nordicenergy.org shows, the interest for the NETP is short-lived. After the launch of NETP 2016, the total number of visiting sessions on NER's website reached 7-800, but after one or two weeks the number of visitors was back to normal. This indicates that the long-term effect of the report on NER's visibility is limited.

7.4 NER'S COMPETENCIES

Lastly, it is an objective of the NETP 2016 that it adds to competencies in the NER – 1) by strengthening the analytical competencies, 2) by gaining access to IEA data and tools, and 3) for paving the way for developing indicators, infographics, meta-analyses and new relevant projects. Overall, our assessment is that NETP 2016 has contributed to developing NER's competences and pre-conditions for future work, but to a limited extent. We assess that NETP's contribution to strengthening NER's analytical competences is limited, as the NER team is small and the project coordinator has left NER. The objective of gaining access to relevant data and tools from IEA may also be of limited value to NER (internally), as we find that this objective is mostly relevant to Nordic researchers that can directly benefit from free access to data.

We find that the added value of some of the internal goals are still unclear and not well defined, and some of the goals may also be achieved in other (and simpler) ways. According to NER's secretariat

the most important value internally for NER is that NETP provides content for communication activities and helps set the direction for subsequent activities. This seems reasonable, but in general we recommend that NER discusses what role NETP's should/can play internally for NER and also considers, which weight these goals/side effects of producing the NETP should have.

7.5 SETTING THE DIRECTION FOR FUTURE ACTIVITIES

In our discussions with the NER secretariat we have been aware that the NETP - on top of these four stated objectives - is also used to **set the direction for future activities and research programs** and **provides content for future communication about NER's policies and strategies**. We acknowledge this use as important for the organization.

8. Appendix 1: List of interviewees

Name	Country	Institution	Position
Kenneth Karlsson	Denmark	Technical University of Denmark	Senior researcher
Stig Uffe Pedersen	Denmark	The Danish Energy Agency	Deputy director
Stine Leth Rasmussen	Denmark	Danish Energy Association	Head of department
Brian Vad Mathiesen	Denmark	Aalborg University	Professor
Knud Vilby	Denmark	The Ecological Council (former)	Chairman of the board
Dorthe Nøhr Andersen	Denmark	Ministry of Energy, Utilities and Climate	Ass. permanent secretary
Klaus Rosenfeldt Jakobsen	Denmark	Danish Agency for Science and Higher Education	Special advisor
Morten Gylling	Denmark	University of Copenhagen (Department of food and resource economics)	Senior consultant
Sigurdur Johannesson	Iceland	University of Iceland	Ass. Professor
Erla Björk Þorgeirsdóttir	Iceland	Energy Authority of Iceland	Project manager
Helga Bardadóttir	Iceland	Ministry of industries	Head of division
Bryndís Skuladóttir	Iceland	Fed. of Icelandic Industries	Head of Environment and Energy
Hallgrímur Jonasson	Iceland	Icelandic Research Organisation	Director general
Jakob Björnsson	Iceland	National Energy Fund	Director
Jon Björn Skulason	Iceland	Newenergy	Director
Sveinn Olafsson	Iceland	University of Iceland	Research leader
Kari Espengren	Norway	IFE	Specialist
Ingeborg Graabak	Norway	Sintef	Team leader
Monica Havskjold	Norway	NVE	Section manager
Jostein Sundet	Norway	Nordforsk	Seniorrådgiver
Asgeir Tomsgaard	Norway	NTNU	Research leader
Lasse Fridstrøm	Norway	TOI (Transportøk. Institut)	Senior researcher
Fredrik Martinsson	Sweden	IVL	Senior researcher
Maria Suner Fleming	Sweden	Svenskt Näringsliv	Dep. Director
Eva Jernbäcker	Sweden	Regeringskansliet	Utredare
Filip Jonsson	Sweden	Chalmers	Senior researcher
Susanna Widstrand	Sweden	Energimyndigheten	Programme manager
Klaus Hammes	Sweden	Energimyndigheten	Chief Economist
Jonas W Ringsberg	Sweden	Chalmers Tekniska Högskola	Professor
Stefan Montin	Sweden	Elforsk	Consultant
Tiina Koljonen	Finland	VTT	Research team leader
Peter Molander	Finland	Projectum	Consultant
Peter Lund	Finland	Helsinki University of Technology	Professor
Kati Takala	Finland	Finnish Energy Industries	Senior Advisor
Hannu Lipponen	Finland	Ministry of Employment and the Economy (TEM)	Senior Advisor
Ron Zevenhoven	Finland	Åbo Akademi University	Dr. tech. /professor

Petteri Kuuva	Finland	Ministry of Economy and the Employment	Deputy Director General
Hans Jørgen Koch	NER	NER	Director
Benjamin Smith	NER (at that time)	NER	Project coordinator
Dolf Gielen	IRENA	IRENA, Bonn	Director
Paul Simons	IEA	IEA	Deputy executive director