The Research Council of Norway

Work Programme 2013–2022

Large-scale programme
Energy research – ENERGIX





Large-scale Programmes

The RCN initiative to meet national research priorities

The Research Council of Norway

Work Programme for ENERGIX 2013 - 2022

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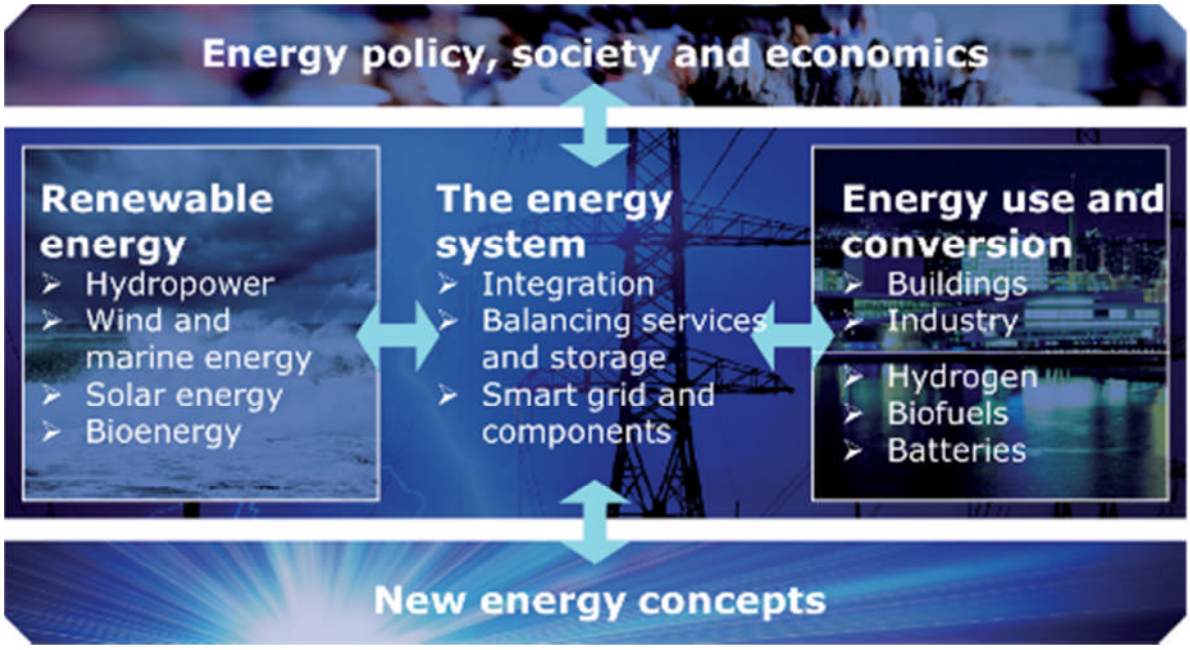
Work programme for the ENERGIX programme

1. Summary

The Large-scale Programme for Energy Research (ENERGIX) was launched in 2013 and will span a ten-year period. The ENERGIX programme is designed to generate new knowledge to support the long-term, sustainable restructuring of the energy system, which will require more renewable energy, more energy-efficient solutions, closer energy integration with Europe, and improved flexibility. Important secondary objectives for the programme are:

- To achieve sustainable utilisation and consumption of renewable energy resources;
- To reduce Norwegian and global emissions of climate gases;
- To ensure Norway's security of supply;
- To strengthen innovation in Norwegian trade and industry;
- To further develop Norwegian research communities.

The ENERGIX programme encompasses the stationary energy system and environment-friendly energy for transport. Activities under the programme are concentrated in the following thematic priority areas:



Knowledge about environmental impacts is vital in all of these thematic priority areas.

The ENERGIX programme will help to achieve energy and industrial policy objectives and is a key instrument in the implementation of Energi21, Norway's national RD&D strategy. The programme will also promote the broadest possible range of research activities to open the door to new thinking and innovative concepts. The programme is targeted towards Norwegian companies and research and educational institutions.

This work programme establishes the formal framework and focus of the ENERGIX programme and provides guidelines for R&D actors seeking funding under the programme. The ENERGIX programme board conducts annual analyses of the project portfolio and development trends in the thematic priority areas. These analyses, together with the work programme, provide the basis for funding announcements for R&D projects. The programme budget for 2013 is NOK 383 million.

2. Background

The dramatically increasing need for energy and aspirations to reduce global greenhouse gas emissions together form the backdrop for the development of national and international energy policy. Norway has stated targets for increasing renewable energy production, further developing the energy system and enabling Norwegian commercial actors to position their products and solutions on the national and international market. To meet these targets, we will need new solutions for the energy supply, vast improvements in energy efficiency and enhanced knowledge about framework conditions and instruments. Norwegian energy and grid companies are to ensure flexibility and a high security of supply, and Norwegian research and educational institutions must provide knowledge, solutions and competent personnel if ambitious goals in the energy sphere are to be achieved.

A work programme that covers a ten-year period must be adaptable, must stake out a clear course, and must identify pressing challenges as well as promising opportunities. The purpose and objectives of the Large-scale Programme for Energy Research (ENERGIX) are rooted in the policy and challenges described above. A more detailed description of the framework conditions for the programme is presented in Attachment 2: Key documents and guiding principles for the ENERGIX programme (Norwegian only).

The ENERGIX programme is funded by the Ministry of Petroleum and Energy, the Ministry of Transport and Communications, the Ministry of the Environment, the Ministry of Agriculture and Food, the Ministry of Education and Research, and the Ministry of Fisheries and Coastal Affairs. These ministries represent a wide range of sectors with challenges and opportunities that touch on or lie within the energy sphere, and their involvement enhances the reach of programme.

The overall objectives of the allocations from the Ministry of Petroleum and Energy to energy research are to promote increased, long-term value creation and ensure the efficient, cost-effective and sustainable utilisation of Norwegian energy resources. Funding for energy research is intended to reinforce investments in R&D in both the public and private sectors, as well as to support the establishment of and bolster new independent research projects on topics not yet prioritised by industry.

Funding will be awarded to projects with anticipated major economic benefits. The programme board will support projects with a significant level of risk that would not be realised without this support, or would be realised on a smaller scale. Funding will also awarded to projects that meet the needs of the energy sector and society at large for long-term competence-building.

The Ministry of Petroleum and Energy established the Energi21 national strategic body to provide advice on the desired course of energy research in Norway. The Energi21 RD&D strategy report sets out three primary objectives:

- To increase value creation on the basis of national energy resources and utilisation of energy;
- To facilitate energy restructuring with the development of new technology and efficient production of environment-friendly energy;
- To cultivate internationally competitive expertise and industrial activities in the energy sector.

The Energi21 strategy report of 2011 is one of the key documents for the ENERGIX programme.

As the ENERGIX programme receives funding from a wide range of sectoral ministries, it has been given a mandate that extends beyond Energi21's sphere of responsibility. Energy for stationary purposes and for transport are becoming increasingly integrated, and developments in the transport

sector have an impact on the stationary energy system. Environment-friendly energy for transport is therefore also an important area of focus under the ENERGIX programme. In Norway, biomass represents a vital resource for use in both transport and stationary energy. Sustainable management of the biomass base and integrated value chain development are critical to the success of the bio-based industries in the energy sphere.

The ENERGIX programme represents a considerable effort on the part of the authorities to meet the above-mentioned challenges. The programme period will run for ten years, with a time horizon that extends beyond this. The ENERGIX programme builds on the positive experiences gained from the programme Clean Energy for the Future (RENERGI), which also spanned a ten-year period (2002–2012) and was of similar breadth and depth.

3. Objectives of the programme

The ENERGIX programme is a large-scale, high-profile programme in an area of strategic importance for the long-term restructuring needed to achieve Norway's aim of becoming a carbon-neutral society by 2050.

The ENERGIX programme will provide support for activities that promote creative thinking and innovation. The programme will encourage and create a foundation for new and existing companies and research groups to build new knowledge. The programme will also develop relevant funding instruments to achieve its objective and targets.
Objectives of the ENERGIX programme:

Primary objective:

The ENERGIX programme is designed to provide support for the long-term, sustainable restructuring of the energy system in order to accommodate a greater supply of new renewable energy, improve efficiency and flexibility, and facilitate closer energy integration with Europe.

The programme will help to generate new knowledge and cutting-edge solutions aimed at achieving five primary targets, which are presented and elaborated on below.

The programme will work:

- **To achieve sustainable[1] utilisation and efficient consumption of Norway's renewable energy resources** in the short and the long term by developing new knowledge, technology and solutions for:
  - using energy properly and using the proper energy;
  - exploiting Norway's particular advantages with regard to value creation.

- **To reduce Norwegian and global emissions of climate gases** by:

[1] The term sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". (UN 1987) Sustainable development is built on three pillars: 1) the economic, 2) the social, and 3) the environmental. (Official Norwegian Reports 2009:16) The environmental pillar encompasses considerations relating to ecosystem services, i.e. the benefits humankind receives from nature.

- enhancing knowledge relating to policy design, effective planning and decision-making processes, development of framework conditions, markets and altering energy consumption;
- developing new knowledge, technology and solutions in areas in which Norway has special expertise.

- **To ensure Norway's security of supply** in light of the increasing integration and internationalisation of the energy system by developing new knowledge, technology and solutions for:
  - ensuring sound management, secure production and optimal consumption and transmission of energy;
  - improving the resilience and flexibility of the energy system.

- **To strengthen innovation in Norwegian trade and industry** in areas in which Norwegian players have specific competitive advantages by:
  - developing new knowledge, technology and solutions to boost companies' national and international competitiveness;
  - ensuring that Norwegian players have access to international knowledge production and strengthening opportunities for innovation in Norwegian trade and industry.

- **To develop Norwegian research communities** in priority areas by:
  - enhancing technological, natural science and social science-based knowledge about challenges relating to the long-term restructuring of the Norwegian energy system;
  - facilitating innovative research on future conditions and development trends that are not yet known and to answer questions that have not yet been asked.

The framework within which these targets are to be met is continually shifting to reflect economic and industrial developments; environmental, social and cultural circumstances; and national and geopolitical conditions, among other key factors. Thus, an understanding of this complex overall context will be essential to ensuring that the research activities adequately target the implementation of new knowledge and application of results.

4. Priority research tasks

Thematic priority areas

The thematic priority areas of the ENERGIX programme are designed to address the priorities described above. The programme will support the development of an integrated energy system that promotes sustainability and safeguards the natural environment.

The programme will also promote the broadest possible range of research activities to open the door to new thinking and innovative concepts.

The programme encompasses the entire stationary energy system and environment-friendly energy for transport. Sustainability and environmental considerations are an important component of all of the thematic priority areas, and social science-based research is also given a key role. The figure below illustrates the organisation of the programme's activities into five thematic priority areas.

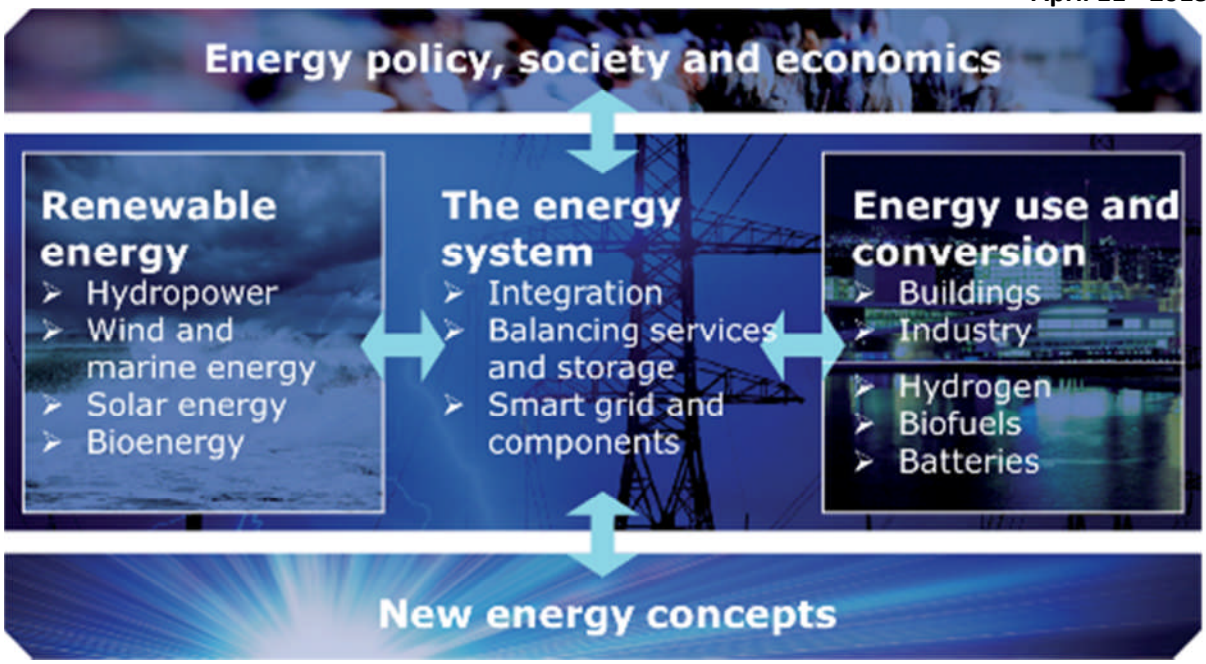
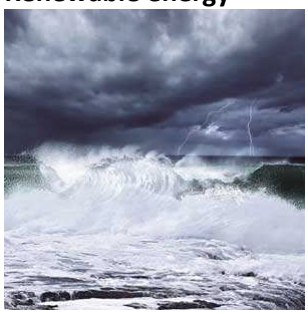


Figure 1. Thematic priority areas of the ENERGIX programme.

Renewable energy



Research activities must help to increase the sustainable production and utilisation of renewable energy resources in Norway – while preserving the natural environment and ensuring security of supply – as well as contribute to industrial development in areas where Norwegian players have competitive advantages.

Research must address the following areas:

- Hydropower: Promoting sustainable and efficient utilisation of hydropower resources, and ensuring and further developing expertise for supporting export-oriented trade and industry.
- Wind and marine energy: Developing a knowledge base for a Norwegian industry, and laying a foundation for sustainable utilisation of Norway's resources in the long term.
- Solar energy: Encouraging innovation targeted towards a large and growing international market, and facilitating the use of solar energy in selected niches in Norway.
- Bioenergy and heating: Promoting sustainable utilisation of Norway's biomass-based energy resources, and developing a knowledge base for the up-and-coming biomass, geothermal and other heating industries, and the combined heat and power industry.

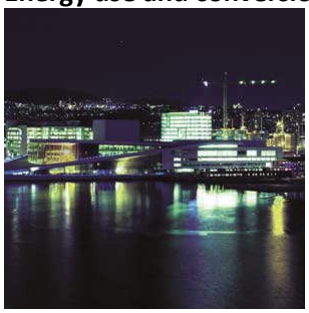
The energy system

Research activities must support the further development and management of an energy system that can effectively accommodate national and international restructuring involving new renewable energy production and new patterns of energy consumption. System perspectives and integrated perspectives play a key role within this thematic priority area.

Research must address the following areas:

- Integration: Systems understanding and integration between various energy carriers and the Norwegian and European energy grids.
- Balancing services and storage: Accommodating a growing proportion of less reliable Norwegian and international power production.
- Smart grids and components: Ensuring high security of supply and environmental standards, and improving user-friendliness and potential for efficient operations and development.

Energy use and conversion



Research activities must promote more efficient conversion and use of energy for both stationary and transport purposes. Raising energy efficiency in buildings and industry will require new solutions and technology, increased user competence and insight into non-technological barriers. Reducing emissions in the transport sector is heavily dependent on boosting efficiency and phasing in new environment-friendly transport solutions.

Research must address the following areas:

- Energy use in buildings: The introduction of passive houses and aspirations to introduce plus-energy buildings set the agenda for new integrated solutions, including for renovation of buildings, where the existing building mass must to a greater extent be viewed as a whole.
- Energy use in industry: Raising energy efficiency, and thereby reducing emissions, cutting energy costs and enhancing the competitiveness of Norwegian industry.
- Hydrogen and fuel cells: Facilitating the phasing in of hydrogen and fuel cells in the transport sector and stationary energy supply as well as the export of hydrogen from Norway, with focus on the entire value chain from production and storage to conversion.
- Biofuels: Developing sustainable value chains for the development, efficient conversion and use of biofuels.
- Batteries: Developing batteries with appurtenant technology and systems to promote innovation and more extensive use of electricity in transport, as well as the use of electrical batteries for stationary energy storage.

Energy policy, society and economics

Renewable energy is an important element of transition strategies towards a carbon-neutral society. The point of departure for such a transition must be the prevailing economic, environmental and cultural conditions. A broader understanding of how societal framework conditions pose barriers to as well as opportunities for change is needed. Continual development of the fact base for energy policy and market development is essential to achieving ambitious goals in the energy sphere.

Research must generate knowledge in the following areas:

- Public policy and instruments that are critical to achieving societal objectives.
- Technology analysis, innovation and dissemination of knowledge that is vital to the implementation of new solutions.
- Market design for production, sale and supply of renewable energy, as well as market effects and use of instruments.
- Sustainability and efficiency of resource use.

New energy concepts

Tackling challenges in the energy sector will require new technology and new solutions. Research and development activities lead to continual, incremental improvement. Novel approaches and radically innovative technologies may result in major leaps in improvement in efficiency, use or costs – which is needed throughout the energy chain, from energy resources to energy consumption. The programme seeks to cultivate ground-breaking innovation for the development of entirely new energy concepts by research groups and industry players alike.

Attachment (in Norwegian only):
Attachment 1, thematic priority areas, provides a more detailed description of the five thematic priority areas. While these descriptions are not necessarily complete or the overviews exhaustive, they give a good indication of the main challenges and opportunities and important targets that the programme will help to achieve.

The funding sectoral ministries are listed in Chapter two, background. The key documents that provide important guiding principles for the programme have been published by or involve these ministries, and are described in Attachment 2: Key documents and guiding principles for the ENERGIX programme (Norwegian only).

The Energy21 strategy report recommends intensifying efforts across the board, with targeted efforts in six priority focus areas. The mandate of the Energi21 strategy is limited to stationary energy production and consumption, while the ENERGIX programme encompasses a wider scope.

Key focus under the programme will be placed on energy production and consumption relating to transport and agricultural biomass.

The Official Norwegian Report on energy and the Government white paper on climate policy both emphasise the importance of raising energy efficiency in buildings and industry alike. Energy markets and energy policy are integral topics in the Energy21 strategy report of 2011, and are brought further to the fore in more recent strategy documents. The ENERGIX programme has the additional responsibility of promoting the broadest possible range of research activities to open the door to new thinking and innovative concepts.

5. Funding instruments

The ENERGIX programme employs three funding instruments (project types) for research and innovation activities:

- Researcher Projects
- Knowledge-building Projects for Industry
- Innovation Projects for the Industrial Sector

Additional funding instruments will be designed for projects addressing new concepts in the energy sphere.

The ENERGIX programme's funding instruments support fundamental knowledge development, development of strategic competence, and research for innovation in the first segment of the innovation chain. (Please refer to the figure in Chapter 10 of the work programme.) Constructive cooperation with the other public agencies within the research and innovation system, both nationally and internationally, is crucial to generating high-quality results of significant relevance and benefit to the various stakeholders, to providing the stability and reliability users need over time, and to ensuring a high degree of achievement of the objectives of public investment.

In addition to using the three ordinary funding instruments employed by Research Council programmes, the ENERGIX programme will take new steps to encourage pioneering ideas in the field of environment-friendly energy research – ideas that do not fit within the framework of the ordinary calls for proposals. To this end the programme will develop new funding instruments within the thematic priority area New concepts in the energy sphere.

Long-term objectives and stable framework conditions for companies and research-performing environments are given high priority under the ENERGIX programme. At the same time, the programme is designed to maintain the flexibility required to adapt to changing needs and opportunities over time. Such flexibility will also be crucial when prioritising funding instruments/types of projects. For example, it may be best to promote long-term competence-building in one area for a certain period of time, while promoting industrial innovation in another. The programme board will weigh such considerations on an ongoing basis, while striving to ensure that the need for stability is met.

Ongoing strategic planning and assessment are essential to striking the right balance of research activity on various technologies, branches of industry and topics. Different technology areas will require the use of different funding instruments. Such considerations comprise an important part of the strategic planning efforts of the programme board.

6. International cooperation

Knowledge generated under the ENERGIX programme constitutes an important component of Norway's knowledge base both in terms of strengthening and exploiting the country's competitive advantages as well as promoting Norwegian industrial development in an international market, and in terms of helping to address global challenges. International cooperation will be an important tool for:

- further developing Norwegian research communities of high scientific calibre in an international perspective;
- enhancing the level of expertise in industry-oriented and applied R&D;
- improving the position of Norwegian research communities by highlighting their efforts and increasing their visibility;
- participating in and advancing the international research front in areas in which Norway has particular advantages.

There is an increasing trend towards co-financing of research projects and programme cooperation across national boundaries. This is accompanied by the emergence of new funding instruments and extends to a growing number of arenas for cooperation.

The EU Framework Programmes for Research and Technological Development attach importance to bringing together the research policy and research funding spheres and to building strong relationships between leading research communities in Europe. Greater weight will be placed on this under the forthcoming framework programme, Horizon 2020, which will be implemented from 2014. Horizon 2020 encompasses both innovation and R&D, and these components must be coordinated to a greater degree.

The European Strategic Energy Technology Plan (SET Plan) sets out priority areas for energy research in Europe. The ENERGIX programme board will coordinate the programme's activities vis-à-vis the plan. The development of the SET Plan and Horizon 2020 has involved stronger focus on programme cooperation under Joint Programming Initiatives, the European Energy Research Alliance, European Industrial Initiatives and similar instruments. Programme cooperation will also be taken into account when it comes to allocating funding for such efforts. Measures to encourage R&D groups and industry players to participate in EU cooperation and have a hand in shaping strategy will be assessed on an ongoing basis.

Research groups that participate in EU projects receive support at different rates in the different segments of the project. One potential measure for boosting involvement in EU projects is to make the conditions for participation in the framework programme and other EU-led activities as similar as possible to conditions for participation in Norwegian R&D projects.

In addition to EU projects, important research is being performed at the Nordic level, under the auspices of the International Energy Agency (IEA), and under bilateral agreements with a number of different countries.

The ENERGIX programme will enhance the Norwegian research community's awareness of and access to networks by serving in an advisory capacity, providing a meeting place and offering targeted support for researcher mobility. The programme may also facilitate cooperation with leading international research groups.

Support for institutional cooperation may be constructive in helping Norwegian R&D institutions to gain a foothold on global research markets and serve as a springboard for establishing concrete

research cooperation. This may be a relevant funding instrument for boosting cooperation with R&D groups at the international forefront as well as with partners from emerging economies.

The lack of energy and poor security of supply in many countries calls for the development of sustainable, renewable energy solutions internationally. Expertise developed in Norway is sought-after in many parts of the world, representing new research and market opportunities for Norwegian R&D actors, consultants and industry. The ENERGIX programme will collaborate with other programmes targeting developing countries and emerging economies to ensure adequate scientific priorities when awarding funding to projects in these areas.

7. Communication and dissemination activities

The ENERGIX programme will actively use communication and dissemination of research findings and knowledge development under the programme as a tool in achieving its objectives. Trade and industry and the research community comprise the main target groups for communication activities, followed by the public administration and the public at large.

The broad-based political agreement on climate policy achieved in the Storting in 2008 has led to a considerable boost in the level of activity in the field of energy research. It is important to clearly communicate that investment does have the desired effect. Dissemination of research results will be strengthened under the ENERGIX programme, and will be an important component of the programme's communication strategy, both in terms of making sure that the results are put to use and in terms of drawing attention to the significance of the programme.

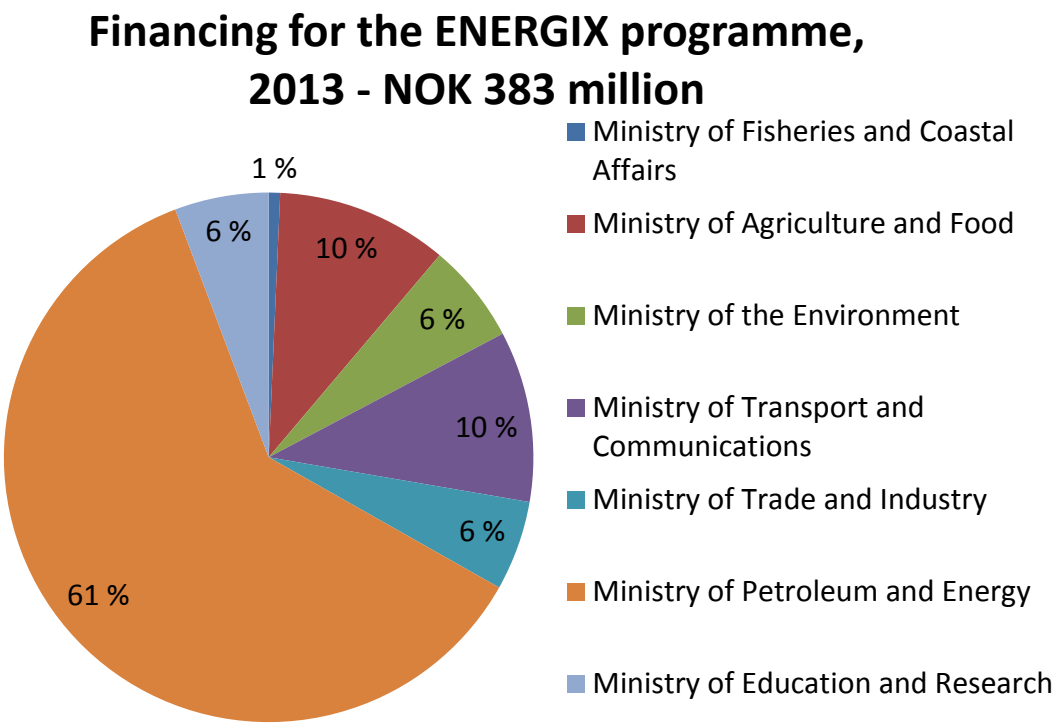
Communication activities under the ENERGIX programme will primarily be dedicated to conveying the following overall points:

- Increasing private and public investment in research is critical to identifying measures for dealing with climate-related challenges in the short and the long term.
- Investing in research at an early stage will reduce the total costs of the forthcoming energy restructuring and decarbonisation. This applies both to Norway and internationally.
- Research activities under the ENERGIX programme will promote the development of new knowledge and solutions for a sustainable restructuring of the energy system.

The Research Council's integrated communication activities encompass communication, dissemination of information and media handling. There are guidelines for the individual programme's contribution to these activities, as well as requirements for dissemination from research projects.

8. Budget

The ENERGIX programme was launched in 2013 with a budget of NOK 383 million, comprising allocations from seven ministries. The Ministry of Petroleum and Energy provides around two-thirds of the overall allocation and is clearly the most important stakeholder in the programme.



A high level of allocations to the ENERGIX programme must be continued if we are to meet the coming challenges in the energy and climate sphere. The Energi21 strategy report recommends increasing the amount of funding to be channelled via the programme to NOK 500 million annually.

It is important to view the energy research portfolio as a whole. Most of the Centres for Environment-friendly Energy Research (FME) are funded up to 2017, and will thus be concluded during the lifetime of the ENERGIX programme. Discontinuation of allocations to the FME centres may lead to a sharp drop in the overall budgetary framework for energy research. This may in turn influence the demand for other types of research funding and thereby have an impact on the programme. The ENERGIX programme will follow up developments relating to the FME centre scheme to ensure that consideration is given to any potential impacts on the programme.

9. Coordination with other related instruments at the Research Council

The ENERGIX programme shares an interface and arenas for cooperation with various programmes at and outside of the Research Council, and will strive to ensure good coordination between them. Activities for addressing areas of interface and developing arenas for cooperation will be specified in action plans and through collaborative efforts with other programmes.

The most important programmes with activities that share an interface with the ENERGIX programme are:

- Funding Programme for User-driven Research-based Innovation (BIA)
- Research Programme on Nanotechnology and Advanced Materials (NANO2021)
- Environmental Research Towards 2015 (MILJO2015)
- Research Programme on Sustainable Innovation in Food and Bio-based Industries (BIONAER)
- Innovation Programme for Maritime Activities and Offshore Operations (MAROFF)
- Large-scale Programme for Petroleum Research (PETROMAKS2)
- Climate Change and Its Impacts in Norway (NORKLIMA) and subsequent climate research programmes
- Competence and Value Creation in ICT (VERDIKT) and subsequent ICT research programmes
- Research Programme on the Oceans and Coastal Areas (HAVKYST)
- Research Programme on Catalysis and Organic Synthetic Chemistry II (KOSK II)
- The Industrial Ph.D. Scheme (NAERINGSPHD)
- Programme on Intelligent Freight Transport (SMARTRANS)
- Norway – Global Partner (NORGLOBAL)
- Norwegian Programme for Research Cooperation with China (CHINOR)
- Norwegian Programme for Research Cooperation with India (INDNOR)

Further details about these programmes are provided in Attachment 3: Programmes that share an interface with the ENERGIX programme (Norwegian only).

Centres for Environment-friendly Energy Research (FME)

The ENERGIX programme will work to achieve constructive collaboration with nine of the 11 Centres for Environment-friendly Energy Research (FME). (The other two FME centres deal with CCS and collaborate with the Norwegian RD&D CCS programme (CLIMIT).) The FME centre scheme focuses entirely on the field of environment-friendly energy research. Six of these FME centres were established in 2009 and address areas of key importance to the ENERGIX programme: Centre for Environmental Design of Renewable Energy (CEDREN), Bioenergy Innovation Centre (CenBio), Norwegian Centre for Offshore Wind Energy (NORCOWE), Norwegian Research Centre for Offshore Wind Technology (NOWITECH), Norwegian Research Centre for Solar Cell Technology, and Research Centre on Zero Emission Buildings – ZEB.

The other three centres are FME Centres for Social Science-related Research, which address shared topics/areas of overlap with the ENERGIX programme: Strategic Challenges in International Climate and Energy Policy (CICEP), Oslo Centre for Research on Environmentally Friendly Energy (CREE), and Centre for Sustainable Energy Studies (CenSES). CICEP is targeted towards climate policy to a somewhat greater extent.

The FME centres play a key role within the research and innovation system in achieving renewable energy targets. The centres bring together leading research groups and relevant industry players in selected priority areas, and focus on long-term research, with clear objectives and work packages. Centre activities are intended to open up new opportunities for innovation, raise new questions and identify new research needs. This will in turn lead to the establishment of new research projects that

will help both to develop the expertise at the FME centres and to achieve the objectives of the ENERGIX programme. Like the other research and innovation actors, the programme will safeguard and further develop the expertise developed at the centres.

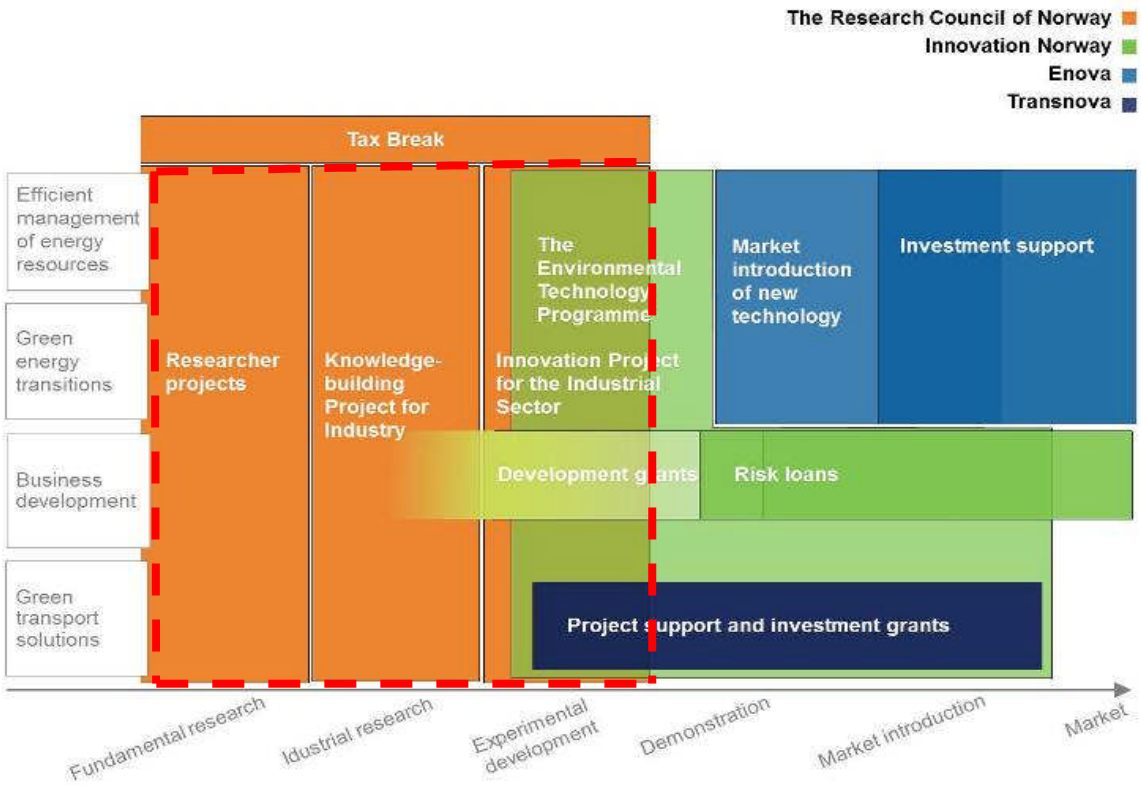
National research infrastructure

Given that energy is an area of strategic importance to Norway as a nation, the ENERGIX programme will also cooperate with the Division for Science at the Research Council on strengthening national research infrastructure.

10 Coordination with other national instruments

Transnova, Innovation Norway and Enova

Public sector players are also important partners in cooperation, as illustrated in the figure below. The figure shows the areas of interface and coordination with the other public agencies within the research and innovation system, aside from the Research Council.



The research and innovation system. The Research Council channels funding for renewable energy research via the ENERGIX programme (red dotted frame) and the FME centre scheme. The ENERGIX programme administers Researcher Projects, Knowledge-building Projects for Industry and Innovation Projects for the Industrial Sector (orange field).

Under the SkatteFUNN Tax Incentive Scheme, companies may receive a tax deduction of up to 20 % of the costs related to R&D activity in an approved project, up to a maximum of NOK 5.5 million. This is a rights-based scheme administered by the Research Council and Innovation Norway. The total amount of public funding received under the ENERGIX programme, the SkatteFUNN scheme and other public funding schemes is regulated by the rules for state aid and will be taken into consideration when assessing the level of support for the various funding instruments.

11 Organisation

The programme board of the ENERGIX programme is appointed by and reports to the Research Board of the Division for Energy, Resources and the Environment. The programme board is charged with administering the instruments at its disposal to achieve the programme's objectives. This is to be carried out in accordance with the intentions and objectives of the Research Council's overall strategy, the guidelines from the Council's Executive Board and the Research Board of the Division for Energy, Resources and the Environment and the ENERGIX work programme.

The programme's priorities, research tasks and financial framework will be assessed and adjusted in relation to changes in the national budget and annual allocation letters from the funding ministries. The programme board's activities shall at all times be in compliance with the overall principles and guidelines for the establishment, operation and conclusion of research programmes as set out by the Research Council. The programme board acts on behalf of the Research Council and reports to the research board via the executive director.

The ENERGIX programme administration is responsible for carrying out the day-to-day tasks of the programme and consists of a programme coordinator assisted by personnel with scientific and administrative expertise. The programme administration carries out the scientific and administrative functions of the programme and facilitates the implementation of the programme board's decisions. The programme coordinator reports to the programme board and takes a proactive role in ensuring that the programme is carried out in accordance with the approved work programme.

Application review process
Grant applications for Researcher Projects and Knowledge-building Projects for Industry will primarily be assessed by international referees. When feasible, the referees will be convened in a panel for consensus discussions. The consensus process will provide the formal basis for application review.

Innovation Projects for the Industrial Sector will be assessed by national referee panels convened for discussion. The programme administration will incorporate the referee assessments into its recommendation to the programme board. Applicants who wish to have their applications for innovation projects treated confidentially must explicitly request this. In such cases applicants will have the opportunity to comment on the proposed referees.

The ENERGIX programme will strive to achieve a balance in gender, age and international scientific expertise among the participants on the external referee panels.

New concepts in the energy sphere is a new thematic priority area, and will require new types of application review procedures. The first funding announcement within this area will be issued in early 2013 and is a pilot call for proposals. Grants will be allocated in a two-phase process, in which greater weight will be placed on assessment of the concept itself rather than on ordinary assessment criteria. The application review process will be adjusted on the basis of experience with this initial call.

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