Country Report: Norway

Introduction

This report has been written as a part of the Europe INNOVA Cluster Mapping Project. One part of the project is a mapping of cluster policies, cluster institutions and cluster programmes in European Countries.

For each country, a separate report has been written. Oxford Research AS in Norway has been responsible for the mapping of cluster policies. Oxford Research has developed the structure of the mapping and prepared the final reports. Most of the work has however been done by research institutes or consultancies in the different countries. These organisations are members of “The European Network for Social and Economic Research – ENSR” or partners in the Europe INNOVA Cluster Mapping Project.

Based on the national reports, the main findings have been summarised by Oxford Research in a separate report.

The Europe INNOVA Cluster Mapping Project has been financed by the European Commission. The views expressed in this report, as well as the information included in it, do however not necessarily reflect the opinion or position of the European Commission and in no way commits the institution.


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Managing director
Oxford Research AS

Please find more information about the Cluster Mapping Project and the Authors of this report on:

www.clusterobservatory.eu
www.oxfordresearch.eu
www.ensr-net.com
Main ministries responsible for implementing cluster policy

<table>
<thead>
<tr>
<th>Finance/Economy</th>
<th>Science/Research</th>
<th>Trade/Industry</th>
<th>Interior</th>
<th>Other</th>
</tr>
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<td></td>
<td></td>
<td>x</td>
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Key agencies responsible for implementing cluster policy

<table>
<thead>
<tr>
<th>Innovation Norway, The Research Council of Norway, SIVA</th>
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Is cluster policy their only task?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>x</th>
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Are there any national cluster programmes?

<table>
<thead>
<tr>
<th>Yes</th>
<th>x</th>
<th>No</th>
<th>Number of programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
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Are there any regional cluster programmes?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>x</th>
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Source of financing

<table>
<thead>
<tr>
<th>National programmes</th>
<th>Regional programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td></td>
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</table>

National ministries

<table>
<thead>
<tr>
<th>EU structural fund</th>
<th>Regional budget</th>
<th>Business</th>
<th>Other</th>
</tr>
</thead>
</table>

Importance of cluster policy

<table>
<thead>
<tr>
<th>National level</th>
<th>Regional level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>x</td>
</tr>
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</table>

Policy papers on national level

<table>
<thead>
<tr>
<th>National level</th>
<th>Regional level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>x</td>
</tr>
</tbody>
</table>

Cluster policy over time

<table>
<thead>
<tr>
<th>Increased importance</th>
<th>Reduced importance</th>
<th>Shifted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-95</td>
<td>1995-2000</td>
<td>2000-05</td>
</tr>
<tr>
<td>x</td>
<td></td>
<td></td>
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</table>

Since when has cluster policy been used?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
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</table>

Cluster development related to a particular person/organization?

<table>
<thead>
<tr>
<th>Yes</th>
<th>x</th>
<th>No</th>
</tr>
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</table>

Successful cluster programmes

<table>
<thead>
<tr>
<th>Research inst.</th>
<th>x</th>
</tr>
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</table>

Is there a cluster or competitive council?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>A general council exists</th>
</tr>
</thead>
</table>

Degree of obstacles when building cluster policy

<table>
<thead>
<tr>
<th>No/Low</th>
<th>Medium</th>
<th>Important</th>
<th>x</th>
</tr>
</thead>
</table>

General assessments of competitiveness?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

Role of clusters as framework in policy areas

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
</table>

Business network policy

| x |

FDI attraction policy

| x |

Export promotion policy

| x |

Sectoral industry policy

| x |

Science and education policy

| x |

Competition and marked integration

| x |

Source: Oxford Research
1.1 Terminology

In each country there will be one or possibly several terms or phrases used to describe clusters. In some cases, different terms represent “competing” perspectives on clusters and, as perspectives change over time, one term may gradually replace another.

In Norway a cluster is called klynger, industrielle distrikter, agglomerasjoner.

1.2 Cluster development programmes and cluster organisations

In many countries, there are programmes set up specifically to promote cluster development. Such programmes can be carried out by existing actors (for example a government agency), or new actors can be set up to run them. Often, one of the purposes of such programmes is to help initiate cluster organisations, that is, the programme provides financing or otherwise promotes the formation of cluster-specific organisations, typically in some form of public-private partnership. A country can have many (even hundreds) of such cluster-level organisations in operation.

Here is presented the identified cluster agencies and cluster programmes at national and regional level in Norway.

1.2.1 Agencies for cluster policy implementation

The Ministry of Trade and Industry as well as the Ministry of Local Government and Regional Development are the most active in supporting clusters with additional support from the Ministry of Education and Research.


These organizations do not have cluster development as their only task, but the Ministry of Local Government and Regional Development has been active in promoting innovation through a variety of instruments. As its functions have expanded, it is now responsible for matters such as housing policy, regional and district development, local government and the administration of elections. The Regional Development Department within the ministry promotes economic development to preserve the country’s basic population settlement pattern and ensure equal living conditions throughout the country.

The Ministry of Trade and Industry acts through several agencies, but has also established a Department for Research and Innovation Policy.


No regional agency work with cluster development in Norway, but regional organisations/agencies play an important supporting role for the national organisations. They act as both advisors and project developers. This is most notably the case for 19 counties in Norway and for Innovation Norways regional departments. Through their regional development plans, the 19 counties provide guidance related to which industries to focus upon. They could also participate in and support different development projects in the clusters which were selected at the national level. Innovation Norways regional departments provide a broad spectre of
business support schemes and activities. Innovation Norway regional departments could supply funding to development projects in the appointed clusters. These organisations do not have cluster development as their only task.

### 1.2.2 National cluster programmes

Norway is now on its third generation of explicit (“core”) cluster programmes. The first programme REGINN ended in 2001. The programme’s strategy was to increase network-based innovation in functional regions using the triple helix model through collaborative R&D projects. Regional R&D institutions were contract partners and acted as facilitators. The second and third generations are:

**Programme 1: The Arena Programme**

- **Financing:**
  The programme is funded by:
  - The Norwegian Ministry of Local Government and Regional Development (KRD)’s national programme scheme
  - The Norwegian Ministry of Trade and Industry (NHD)’s nationwide innovation scheme
  - The Research Council, through funds from NHD
- **Budget:** The annual programme budget is EUR 4 million for 18-20 cluster projects (app. EUR 200,000 per cluster per year)
- **Time horizon:** The programme offers financial support and expertise for the implementation of development projects running over three years, in some clusters up to five years (main projects) and for the preparation of such projects.
- **Actor:**
  Programme initiator: During the autumn of the year 2000, the Research Council and the Norwegian Industrial Research and Development Fund (SND) set up a joint project entitled Regional Innovation Pilots, which was designed to help these agencies adopt a more integrated approach in order to develop regional business clusters and innovation systems. The initial framework for this endeavour was drawn up in connection with the planning of the Innovation More pilot project in 1999. During 2000 and the first half of 2001, preliminary studies were carried out in respect of a further five regional pilot projects. In August 2001, the SND and the Research Council’s Joint Venture Committee set up a steering committee which was tasked with continuing to develop and coordinate this work under the Regional Innovation Pilots. In 2002, SIVA joined as a formal partner. In May 2002, the name Regional Innovation Pilots was changed to Arena – Innovative Networks, and it was given programme status.

**Carried out by:**

The programme is a joint venture between Innovation Norway, the Research Council of Norway and the Industrial Development Corporation of Norway (SIVA). A steering committee is responsible for the strategic management of the programme. A programme manager and a secretariat at Innovation Norway are...
responsible for programme operations. Regional projects are based on regional development plans and the county municipalities are important partners.

Source: ARENA Programme Description

- Innovation Norway has a lot of task beside cluster programmes, but the cooperation structure between Innovation Norway, The Research Council and SIVA was formed for this purpose, in 2002.
- The actor has other tasks apart from this programme. It supports regional cluster initiatives through innovative networks to strengthen the interaction between the business sector, knowledge providers and the public sector using a flexible approach with respect to sector, region and cluster development stage.
- Scope and target: The programme is directed at regional business communities where clusters of companies operate within one value chain, at the relevant knowledge suppliers, and where the potential exists for increasing cooperation and teamwork between these participants.

1. Companies
Innovation-based value creation will be achieved through the companies involved, and consequently these companies are the most important target group for Arena. By companies we mean all commercial manufacturers/providers of goods and services within the value chain and related businesses. No size-related or other limitations have been placed on this target group, but in connection with projects based on alternative government funding, the relevant limitations relating to the respective means schemes will apply. Arena is industry neutral, i.e. it has no limitations as regards those value chains which can be accepted.

2. Knowledge participants
These comprise R&D and educational facilities which are primarily or mainly based on public funding. (Commercial knowledge participants fall into the company group). Institutions which are designed to disseminate knowledge also fall into this group. Institutions located within the region concerned constitute the most important grouping in this target group. For many projects, knowledge institutions outside the region concerned will also serve as natural partners.

3. Government agencies and financial institutions
This group comprises all those authorities which are important in the context of framework conditions, business infrastructure and specific financial/subsidy schemes. Key players will be:
- County municipalities responsible for integrated regional development plans
- Municipal or inter-municipal development companies
- Central or local government sector authorities
- Regional government agencies
- Regional investors/seed capital funds, etc.

Geographic coverage: National.

Targeting of clusters in a certain stage of the lifecycle (embryonic, emerging, mature, declining): This programme has a highly flexible procedure for selection that allows different points of entry. If an idea for a project needs development, the group may enter at Stage A and receive funding for a preliminary study. If the group is a bit
more advanced, it may enter at Stage B directly with a preliminary project. If the initiative is truly advanced, it may enter at Stage C for funding of a main project.

Entry A is used for those cases where one is faced with an idea about or an initiative for a project, but where one has little basis for assessing whether or not the idea is sufficiently good and/or realizable.

Entry B applies when one is faced with a draft project which shows the development potential and the documented interest of the relevant participants in respect of project participation.

Entry C applies when a draft project exists which has matured in respect of aims, strategies, integration, participation and organization.

http://www.innovasjonnorge.no/upload/Programme%20description%20March%202004.pdf

- Programme contents:
  Short description: ARENA is a programme owned by Innovation Norway, the Research Council of Norway and the Industrial Development Corporation of Norway (SIVA), with Innovation Norway as the main operator designed to promote increased innovation by engaging in cooperation and setting up networks between business participants, R&D participants and the authorities. The programme is directed at regional business communities where clusters of companies operate within one value chain, at the relevant knowledge suppliers, and where the potential exists for increasing cooperation and teamwork between these participants. The programme offers financial support and expertise for the implementation of development projects running over several years (main projects) and for the preparation of such projects.

  Activities: By supporting regional cluster initiatives through network development, the programme’s goals are to increase innovation and value by strengthening the interaction among firms, knowledge providers and the public sector. That is, implementing and actively following up regional projects based on regional initiatives, broad partnership between regional development participants and targets and strategies adapted to suit those challenges and opportunities which are identified (regional “tailoring”). Second, recruiting projects with clear development characteristics, which can also contribute towards programme learning. Third, implementing development measures which are aimed at common challenges in respect of regional projects and specialist arenas for the exchange of experiences and learning between projects and for external specialist impetus.

Source: ARENA Programme Description March 2004.

- Target group:
  Companies, knowledge participants, government agencies and financial institutions.

Focus on SMEs: Innovation-based value creation will be achieved through the companies involved, and consequently these companies are the most important target group for Arena. By companies we mean all commercial manufacturers/providers of goods and services within the value chain and related businesses. No size-related or other limitations have been placed on this target group, but in connection with pro-
jects based on alternative government funding, the relevant limitations relating to the respective means schemes will apply.

Level of R&D involvement: Knowledge participants comprise R&D and educational facilities which are primarily or mainly based on public funding. Research and development are prime movers which promote innovation, but innovation processes need to be understood as the results of cooperation between a company and other companies, customers, suppliers, knowledge suppliers and others.

What the programme offers the projects: The programme offers financial support and expertise for the implementation of development projects running over several years (main projects) and for the preparation of such projects.

Cross-country/interregional activity: Not much on a programme level (some Nordic/Baltic experience exchange). On project level study trips to foreign countries are frequently used.

- Process:
  Based on applications or appointments: Clusters self select and apply to the programme. Applications are considered through an annual call for proposals
  Top down or bottom-up approach in selection of clusters to support: Bottom up

- Evaluation:
  In 2006 the programme initiated a mid-term evaluation. The evaluation report was published in March 2007 and concluded very positive. The evaluator's believes the programme has achieved it goals. The most prominent effect is that the cooperation between the different actors in the regional innovation systems being part of the programme has strengthened. By that the potential for realising more concrete innovation effects has been increased.

Source: SNF-rapport 1/07.

Programme 2: Norwegian Centres of Expertise (NCE)

- Financing:
  Source of programme financing: The primary financiers are the Ministry of Regional Development and the Ministry of Industry.
  Budget: The annual programme budget is EUR 4.5 million in the first year for six clusters (approximately EUR 625 000 per cluster per year)
  Time horizon: This programme has a ten-year cycle, albeit the timeframe is broken up into three stages with minimum milestones to continue receipt of funding.

- Actor:
  Carried out by: Innovation Norway, The Research Council of Norway (RCN), Selskapet for industrivekst SF (SIVA), The Norwegian Ministry of Local Government and Regional Development (KRD), The Norwegian Ministry of Trade and Industry (NHD)’s nationwide innovation scheme.
  The programme was formed for this purpose, in 2006.
  The programme does not have other tasks apart from this programme, but the actors behind it have a lot of other tasks.
• Scope and target:
The NCE-program intends to support clusters with the best conditions for further growth, and where important actors in the clusters agree to enter into long-term and binding cooperation.

Geographic coverage: National

Targeting of clusters in a certain stage of the lifecycle (embryonic, emerging, mature, declining): The clusters being picked out are appointed as (among) the most internationally competitive regional clusters in Norway

• Programme contents:
Short description: Norwegian Centres of Expertise (NCE) is the most recent programme starting in 2006 and seeks to strengthen clusters with an international orientation and potential for innovation-led growth by increasing value creation and initiating and enhancing co-operative innovation and internationalisation. Secondary objectives are to create interest in and commitment to cluster development, to generate concrete results at cluster and company levels and to provide greater insight into co-operative development processes. The programme is more selective than Arena as it targets the strongest clusters in the country through competitive selection but there is nevertheless a strong accent on the regional knowledge environment in which these clusters operate.

• Activities:
NCE aims to strengthen innovation and internationalisation processes in specific clusters. This strengthening occurs in particular by promoting collaboration between firms, R&D and educational institutions and the public sector.

• Target group:
NCE is designed to select internationally oriented clusters with high potential for innovation-led growth that seek to increase the level of R&D collaboration. The main targets are cluster firms, be they core companies, related companies or new business activities linked to the cluster’s core business area. Secondary targets include R&D institutions, educational institutions, joint ventures, public agencies and financiers.

The programme is more selective than Arena as it targets the strongest clusters in the country through competitive selection but there is nevertheless a strong accent on the regional knowledge environment in which these clusters operate.

Focus on SME: No

Level of R&D involvement: It is designed to select internationally oriented clusters with high potential for innovation-led growth that seek to increase the level of R&D collaboration.

The programme offers the projects: Financial support and competence development

Cross-country/interregional activity: No

• Process:
Based on applications or appointments: Applications

Top down or bottom-up approach in selection of clusters to support: The selection of these particular clusters results from combinations of bottom-up and top-down
processes. The top-down aspect relates to the fact that the national support organization Innovation Norway made the program and its evaluation criteria public. Local actors then had to establish, or use an already existing, partnership of relevant players to form an application.

Main elements in applications: Specific criteria for selection cover: the cluster’s resources base, the maturity of the development process, the level of innovation, the international orientation, the project quality and the development potential.

- **Evaluation:**
  The programme has developed a comprehensive Monitoring and Evaluation system. The system includes baseline studies for each of the clusters is appointed NCE. This baseline study will be used in future evaluations. The system also includes annual reports from the projects and external evaluations after three, seven and 10 years of operation. So far the baseline study for the first six NCE has been published.

Despite the fact that no evaluation has been carried out so far, there are certain qualitative lessons learned:
- It is important to work with existing networks/clusters and engagement.
- Clear expectations/guidelines from the national level (programme) are important.
- In addition, a long-term perspective has been important.
- (Different types of) analysis can help to identify current and potential “strong-holds” to work with. Analysis is helpful in providing strategic guides and factual basis for programme design.
- Clusters have experienced that the development of the cluster/network (cooperation between the triple helix stakeholders) went much faster with support from the national programme. The programme activities highlight the importance of having knowledge institutions tightly involved together with industry.
- Most importantly, the national programmes have served to mobilize the business sector in activities. The cluster handbook has been a useful tool (for cluster managers/facilitators) to guide and understand processes in cluster development. The project financing and administrative routines could function a bit more smoothly.


**Other Programmes:**

In addition to the two aforementioned cluster programmes, other “support” programmes address specific issues for clustering and co-operation. Two such programmes sponsored by the Research Council of Norway include MOBI (Mobilisation for R&D-Related Innovation) and Value Creation 2010. MOBI is an umbrella programme with an experimental approach that seeks to support training, innovation and increasing value added in firms with little R&D experience, notably SMEs. The programme is of experimental nature and the stimulation of regional innovation processes is emphasized. The contract partner is a third party i.e. a college, university or an institute. Some of the sub-programmes include industry-college collaboration and research-based competence brokering. MOBI’s target groups are:

- Companies with little experience of R&D and little R&D competence, irrespective of their sector, industry or size.
• R&D groups: MOBI focuses on co-operation with state colleges, universities and research institutes. An important task for MOBI is to influence the way in which such groups work and disseminate results, as well as highlighting their culture of co-operation, so that companies may exploit their sources of knowledge to a much greater extent than has been done in previous years.

• Other participants in the development process: these include central participants in the processes of industrial development and innovation, including those in the industrial innovation apparatus.

Value Creation 2010 is a research programme to involve all parts of an organisation in the innovation process with a focus on labour-management relations at the firm level. The programme is supported not only by the Research Council but also Innovation Norway and federations of unions and firms.

In 2007 the Research Council of Norway has launched a new programme for regional innovation, including main activities from MOBI and Value Creation 2010 together with several new instruments. The new programme will offer more comprehensive support for regional development activities as prioritised by regional partnerships. Another supporting programme to develop incubators, through physical infrastructure and local firm networks, is managed by the Industrial Development Corporation (SIVA).


1.2.3 Regional cluster programme

There are no regional cluster programmes in Norway.

1.2.4 Successful cluster programmes

Norwegian Centres of Expertise (NCE) was launched in 2006 aiming at strengthening innovation and internationalisation processes in clusters based on collaboration between companies, R&D and educational institutions and public sector. The programme is targeted at well-established clusters with clear strategies and a high potential for further innovation-based growth. The leading actors shall be a group of companies with a long-term commitment to develop the cluster (www.invanor.no/nce). The programme is more selective than ARENA as it targets the strongest clusters accent in the country through competitive selection but there is nevertheless a strong accent on the regional knowledge environment in which these clusters operate (OECD).

The first 6 NCE projects were selected and implemented in 2006:

- NCE Subsea - NCE Subsea is built around the leading Norwegian cluster that specialises in the operation and maintenance of subsea facilities and which generates an annual turnover of more than NOK 8 billion and over 4,000 direct jobs. The cluster is comprised of operating companies, suppliers, manufacturers, marine operating companies and oil service companies, as well as R&D and educational institutions.

Source: http://www1-invanor.no1.asap-asp.net/TP_fs/Infoark%20subsea_engelsk310107.pdf
- **NCE Maritime** - The maritime cluster at Møre shall over the course of 10 years become recognized as the world’s leading and most innovative knowledge and expertise cluster in advanced maritime operations. The main objective of the cluster is to increase its turnover from NOK 20 billion in 2002 to NOK 100 billion in 2016.

Source: [http://www1-invanor.no1.asap-asp.net/TP_fs/NCE/Infoark%20Maritime_engelsk310107.pdf](http://www1-invanor.no1.asap-asp.net/TP_fs/NCE/Infoark%20Maritime_engelsk310107.pdf)

- **NCE Systems Engineering** - The Kongsberg cluster currently comprises over 110 knowledge based companies, several of which are world leaders in the demanding industries like subsea, maritime, automotive, aircraft, defence or aerospace industries. Many of the core companies grew out of civilian divisions of Kongsberg Våpenfabrikk (a weapon factory), which was restructured in 1987. The Kongsberg cluster has generated new industry and value creation using brainpower, expertise and collaborative solutions. The cluster leads Norway in industrialising major technological innovations and has achieved a key position in global markets. Nevertheless, there is no guarantee that such growth will continue on its own in Kongsberg.

Source: [http://www1-invanor.no1.asap-asp.net/TP_fs/Infoark%20Kongsberg_engelsk310107.pdf](http://www1-invanor.no1.asap-asp.net/TP_fs/Infoark%20Kongsberg_engelsk310107.pdf)

- **NCE Raufoss** - More than one hundred years of experience with international industrial development forms the background for the Raufoss industrial cluster, an outgrowth of Raufoss ASA. The cluster’s core areas of activity are the manufacturing of products in lightweight materials by automated production, and its goal is to develop a national resource centre. The industrial cluster at Raufoss currently consists of over 40 companies with more than 3,000 employees. The group’s total turnover amounts to roughly NOK 4.5 billion, of which exports comprise some 85%.

Source: [http://www1-invanor.no1.asap-asp.net/TP_fs/NCE/Infoark%20Raufoss_engelsk310107.pdf](http://www1-invanor.no1.asap-asp.net/TP_fs/NCE/Infoark%20Raufoss_engelsk310107.pdf)

- **NCE Instrumentation** - Situated in Trøndelag, NCE Instrumentation represents cutting-edge expertise in the field of instrumentation. Based in the dynamic R&D community in Trondheim, represented by the Norwegian University of Science and Technology (NTNU) and the SINTEF research group, the cluster has developed over a 20-year period, serving challenging national customers within the areas of maritime and offshore applications. As a result, a global competitive business cluster, with a current direct and indirect turnover of NOK 4 billion in some 100 companies, has emerged.

Source: [http://www1-invanor.no1.asap-asp.net/TP_fs/NCE/Infoark%20Instrumentation_engelsk310107.pdf](http://www1-invanor.no1.asap-asp.net/TP_fs/NCE/Infoark%20Instrumentation_engelsk310107.pdf)

- **NCE Microsystems** - NCE Microsystems is the result of a long-term commitment to microtechnology in the region of Vestfold. The companies in the cluster comprise the most important commercial arena for microsystems technology in Norway, and play a leading role in the Norwegian electronics and ICT fields. Most of the companies in the cluster are international leaders in their product areas – marketing and selling their products to major, demanding international customers.

Source: [http://www1-invanor.no1.asap-asp.net/TP_fs/NCE/Infoark%20Microsystems310107_engelsk.pdf](http://www1-invanor.no1.asap-asp.net/TP_fs/NCE/Infoark%20Microsystems310107_engelsk.pdf)
1.3 Cluster policies

Above the level of agencies and programmes is the policy level. On the policy level, plans and strategies are developed in the form of policy documents, directives and legislation, rather than concrete programmes and organisations.

There may be one overarching policy for clusters, a “cluster policy”, outlining specifically how cluster development should be pursued. In addition, clusters may form a framework in a long range of policy fields. Primarily, this is often the case in three key areas: innovation and technology policies, regional economic development policy, and entrepreneurship/SME policy. However, it can also occur in many other policy areas.

1.3.1 Overarching cluster policy

The main goal of the government is that Norway should become of the leading, innovative, dynamic and knowledge based economies in the world within the areas where Norway has competitive advantages. The government wants to develop national strategies based upon the businesses where Norway has a high level of competence or certain competitive advantages. Norway should become word leading within these businesses. This should promote growth and high level of employment.

Cluster policy is important both on the national and regional level. Cluster policy plays an important role both within business development and innovation policy, regional policy and research policy. We refer to chapter 2.2.2 and 2.2.3 for an overview of explicit clusters measures.


There have been published policy papers on national level, public and/or official studies and reports i.e. white papers where the cluster approach is as part of innovation policy.

The last white paper on innovation policy was published in 2002. Cluster policy was fo-cused upon in that paper. The paper highlighted that Norway has some natural advantages that are of importance for the overall national level of welfare, in particular oil and gas and fisheries. Further development of the clusters based on these resources represents a sig-nificant potential for value creation, employment growth and internationalization. Based on their potential for future growth, four industries or technology were prioritized within Norwegian research. These were marine research, ICT, medical and health related research and research within the border of energy and environmental issues. It was emphasized that the support agencies should contain schemes for commercialization of research from these areas. In addition, they should also be able to identify good ideas for commercialization within all sectors and industries.

Both the business development policy and regional policy should focus upon creating a solid foundation that enables cluster development all over the country. To create a policy with direct measures towards clusters, there is a need for information regarding how cluster benefits is obtained, how cluster benefits can be identifies and the geographic characteris-tics of the clusters. This implies that policy development is a complex process, but both the research community and policy agencies can make significant contributions. Cluster policy should first and foremost be directed
towards new clusters and clusters with potential for further growth. The government should focus upon developing the foundation for such a policy, while the regional innovation systems are in the best position to make the specific policy prioritizations for the different clusters.

A 2004/5 White Paper on regional policy emphasized regional development, innovation and internationalization. It suggested that the country’s regionally focused innovation policy should: support local opportunities and remove local barriers to innovation, exploit regional competitive advantages, promote co-operation at the local level across different actors (firms, government, and research) and strengthen knowledge about technology, products and markets.

A new white paper on innovation policy will be published by the end of 2007.

The aim of the cluster policy is both to focus upon wider policy issues and particular industries and technologies. At the most aggregate level, the policy should contribute to an increased level of welfare in the Norwegian society by promoting growth and increased employment both on a regional and a national level. At the business level, the policy should contribute to make Norway of the leading, innovative, dynamic and knowledge based economies in the world within the areas where Norway has competitive advantages, for example the maritime sector, oil and gas, fisheries tourism.

The research policy is closely related to the cluster policy. Within the research policy, it’s strongly emphasized that Norway must find a balance between concentration and width. It is necessary to secure a sufficient width to be able to understand and utilize knowledge developed abroad. However, since Norway is a small country, certain businesses and areas must be prioritized. Norway has chosen to focus upon research related to energy and environment, marine activities, the food sector and health. The following technological areas are put on top of the agenda; ICT, new materials and nanotechnology and biotechnology.

Professor Torger Reve at the Norwegian School of Management introduced the cluster concept in Norway. This was done in a book written by Reve, Lensberg and Grønhaug in 1992 called "Et konkurransedyktig Norge". Reve elaborated the concept in a book written by Reve and Jacobsen in 2001 titled “Et verdiskapende Norge”. This book was vital in stimulating the public debate regarding business development and put cluster development on the agenda.
The centre for innovation research (STEP, now called NIFU STEP Studies in Innovation, Research and Innovation) was also important for the development of the concept in a quite early phase. The research carried out by STEP was not related to a single researcher as such, but more to a group of researchers. Compared to Reve, STEP conducted research on a more aggregated level. The research was mostly related to national and regional innovation systems.

At the present, the development of cluster policy is now longer associated with a few persons and institutions. The policy development is now associated with several institutions. The universities and many of the regional colleges play a role. The same goes for many of the regional research institutes and knowledge- and technology parks.


1.3.2 Clusters as framework in key policy areas

Innovation and technology policy

Innovation is a vital condition for economic growth and welfare in the Norwegian society. A sustainable Norwegian industry and commerce depends upon the ability to continuous renewal and new business gestation. As a result, the innovation policy should promote the ability to increased renewal and readjustment of the Norwegian industry and commerce.

Norway’s ability to innovate is dependent upon a range of conditions and areas. The government wants to develop the so called “Nordic model”, i.e. a model emphasizing good welfare arrangements combined with a high level of value creation and the ability to readjustment. The innovation policy touches upon a number of policy areas, amongst others the labour market policy, education and research policy, infrastructure policy, regional policy and tax policy. The innovation policy is therefore dependent upon a holistic perspective and cooperation between different departments and policy areas.

The government wants to promote value creation and welfare in the future by utilizing an active policy for industry and commerce. The aim of the government is that Norway should become of the leading, innovative, dynamic and knowledge based economies in the world within the areas where Norway has competitive advantages. The government wants to strive to create good framework conditions and favourable schemes for innovation. This should contribute to the highest level of value creation in the society. To fulfil the government’s overall goals, several industry and commerce related schemes exist. These schemes should contribute to release projects that would not have been realized and that are profit-able from a business and/or socio-economic perspective. The public schemes should be targeted towards areas and industries where Norway is highly likely to succeed. This is especially highlighted within the research and development policy. During 2007, the government will develop national strategies for maritime industries and tourism.

Three agencies, Innovation Norway, The Industrial Development Company of Norway (SIVA) and The Research Council of Norway, have the main responsibility to contribute to the government’s efforts regarding innovation. Together, the agencies are aiming to form a competent, holistic, accessible and efficient support agency. Innovation Norway contributes finance, competence and network to
innovative activities within the firms. SIVA contributes as an active partner for the development and management of innovation and business milieus. The Research Council of Norway supports research projects in industry and commerce, strategic research, commercialization of research and international research collaboration.

Innovation Norway is mainly owned by the Ministry of Trade and Industry. It is also financed by the Ministry of Local Government and Regional Development, the Ministry of Agriculture and Food and the Ministry of Fisheries and Coastal Affairs. Innovation Norway should promote nationwide industrial development profitable to both the business economy and Norway’s national economy, and should help to release the potential of different districts and regions by contributing towards innovation, internationalisation and promotion of Norway as a tourist destination. Innovation Norway should focus upon industries where Norway has a high level of competence and/or specific competitive advantages, for example maritime industries, marine industries, energy, environment and tourism. In addition, priorities should be given to rural areas, entrepreneurs, women, inventors and small and medium sized enterprises with growth potential. To help Norwegian industry and commerce succeed internationally, resources should also be spent to make Norwegian firms aware of the possibilities in international markets and more visible in international markets.

Innovation Norway got numerous schemes. Most of the organizations budget is allocated to innovation related schemes. Among these, most of them contribute finance to innovation related projects. The financial support can be divided into 4 main categories; secured loans, venture capital loans, grants and competence and network related programmes. The level of financial support varies according to rurality and firm size. Norway is divided into 4 different zones and the smallest firms in the most rural and deprived areas receive the highest level of support. The different zones and the maximum level of support for respectively small, medium and large enterprises an be found on:


SIVA is managed by the Ministry of Trade and Industry. SIVA aims to develop strong regional and local industrial clusters through ownership in infrastructure, investment and knowledge networks as well as innovation centres. The goal is to improve the national infrastructure for innovation. To achieve this goal, SIVA is involved in a number of innovative activities and projects. These utilize the following schemes; Research and Science Parks, Business Gardens, Business Incubators, Industry Incubators, Norwegian Centres of Expertise, International Investment Parks and Investment and Venture companies. SIVA’s role is to develop and spread the concepts, invest in local initiatives and build network and create meeting-places between its concepts and other participants.

The Research Council of Norway is financed by the Ministry of Education and Research and the Ministry of Trade and Industry. The Research Council is a national strategic body and funding agency for research and innovation activities. The Research Council covers all fields of research and innovation and works together with research institutions as well as the private and public sectors to reach the national financial goals and quality targets set in this area. The Research Council is divided in three research divisions; Division for Science, Division for Strategic Priorities and Division for Innovation. The Division for Innovation seeks to
promote research, development and innovation, and thus represents an important partner for industry and the public sector at both the regional and the national level. The division operates a portfolio of programmes and means specifically designed to meet the needs of industry. The division's measures are primarily aimed at enhancing Norwegian innovation capacity and supporting the conversion of research results into commercial activity.

Regarding the Norwegian innovation policy, general and thematic national efforts and schemes is more much important than cluster policy. This is most notably expressed through a business and research policy emphasizing business development in general and in certain industries such as oil and gas and certain themes such as ICT and biotechnology. However, the importance of cluster policy has increased in the last decade. Cluster policy is now quite important on the national level, but the importance is less at the regional level.


### Regional economic development policy

The present Government has put regional economic development policy high on the agenda. The regional economic development policy is closely related to the more general regional development policy, i.e. a holistic perspective is being utilized within this field. The Government wants to give people a real choice about where they want to live and to ensure that all parts of the country are put to use. It is the Government’s ardent wish that everybody in every part of the country has the opportunity to develop their abilities and ensure quality of life. The good life can be achieved in rural as well as in urban communities. The Government places prime importance on fostering equal opportunities across the country and sustaining in large measure the present settlement pattern. The aim is to facilitate a fair distribution of growth between cities and rural areas. Stronger economic growth and a more robust capacity for growth locally and regionally are the means of achieving this goal while being ends in themselves.

According to the Government, business agglomerations, centres of excellence and enterprises all over the country contribute to growth, prosperity and competitiveness. It is essential to make use of these vital resources in an increasingly global economy. A large proportion of the Norwegian export industry is located outside the larger urban areas. This includes existing industry and geographically fixed resources. Cities and towns are home to specialized businesses, scientific and knowledge communities. Norway needs to take advantage of these urban areas to engender growth and promote cross fertilization of business and knowledge communities. The growth in employment has largely favoured the service sector. While specialist services and services targeting the business community tend to cluster in the cities, other kinds of work are divided more evenly among Norway’s municipalities. A main challenge is to create the dynamic environment necessary for new competitive businesses to succeed outside urban areas. We need businesses which exploit regional advantages and specialties and the fund of knowledge and expertise that is available in Norway.

The Government wants to pursue an active rural and regional business development policy. The Government will focus upon a number of issues and initiatives. Maybe the most vital one the system of regionally differentiated social security contributions. The system of regionally differentiated social security contributions has been a key element within the Norwegian rural and regional business development policy.
The system was severely restricted due to a decision made by ESA in 2003, but the Government has now been allowed to reinstate the system. The regionally differentiated social security contributions will be utilized across as wide a geographical area as possible, while setting up alternatives to regionally differentiated social security contributions in relevant areas. The level of the regionally differentiated social security contributions vary according to a rurality index. There are five different areas or zones, and the social security contributions decrease with increased rurality.

The Government will also focus upon a number of other issues and initiatives:

- It will widen eligibility for business support under regional development policy.
- It will enhance targeted incentives via Innovation Norway, the Industrial Development Corporation of Norway, the Research Council of Norway, county and local authorities.
- Ease access to various types of risk capital by way of the seed capital fund among other facilities.
- Support the establishment of new industrial parks and promote innovation in existing parks.
- Support the establishment of more Norwegian Centres of Expertise (NCE).
- Increase the number of entrepreneurs by supporting entrepreneurial education at schools, providing assistance to new businesses, supporting the commercialization of marketable ideas from the scientific community and spin-offs from existing businesses;
- Dismantle barriers to entrepreneurial activity among the young, women and ethnic minorities;
- Set up municipal business development funds under the county authorities and promote intermunicipal partnerships for business development.

In addition to these initiatives, the Government will target business development and job creation outside the main urban areas by means of sector specific incentives. These will related to developing culture-based businesses, developing tourism, improving the agricultural policy, conservation, management and development of protected areas, developing the fisheries and aquaculture, developing the oil industry in the northern parts of Norway and stimulate the development of alternative sources of energy.

The key implementing agency within this field is Innovation Norway. Innovation Norway is described in general terms above. Innovation Norway has a certain responsibility for rural areas. Within its general guidelines, the organization should prioritize rural areas. In addition, in addition to the national schemes, Innovation Norway got their own schemes for rural areas. The largest and most important in monetary terms is regional venture capital loans and regional development grants. Both within these and the national schemes, the level of support varies according to a rurality index. The rural areas receive the highest level of support. In the most rural areas, it is also the case that a wider spectre of businesses can be supported. For example can a grocery store be supported in the most rural areas and not in more urban areas.

The 19 counties in Norway are also playing a vital part when it comes to the regional economic development policy. Each country should develop a broad regional devel-
opment programme. Through the regional development programme, the counties should create guidelines for what kind of activities that should be focused upon to create a favourable regional development. One element in this context is the regional economic development policy. The counties should provide guidelines regarding what kind of businesses that should be given priority to. They should also provide general principles when it comes to how the funds from Innovation Norway should be spent and what kind of schemes the budget should be allocated to.

The counties are responsible for creating arenas where regional actors can meet, and manage regional triple-helix partnerships. The counties should also put vital issues for regional development in their region on the agenda, identify important issues that need to be looked into in more detail, participate in national networks and maintain a close dialogue with different actors and users of their services.

Clusters play a somewhat minor role as a framework for the regional economic development policy. The general focus is upon creating jobs and wealth in the region as a whole, but certain industries and certain clusters are emphasized. The cluster programme Norwegian Centres of Expertise (see above) will gain importance in a regional economic development policy context in the future.


Entrepreneurship and SME policy

The entrepreneurship and SME policy is very closely related to the overall innovation policy accounted for above. The government points out that creating new business activity, in both new and existing firms, is vital to secure renewal and growth in the economy. To get a growing economy, Norway is dependent upon new firms, growth in existing firms and closure of unprofitable firms. Entrepreneurship is regarded as the central driving force to maintain this dynamic process. New firms contribute to the creation of new products and more innovative solutions. These replace the ones being closed down.

The society’s attitudes towards entrepreneurs may support or counteract the entrepreneurs’ private commitment. It is vital working to create positive attitudes related to entrepreneur-ship. To create your own business might be risky for the individual compared to being employed. A low unemployment rate and a good welfare benefits are strengths for the Norwegian economy, but it may cause that fewer people are willing to take the risk that is involved with being self-employed.

Women are underrepresented when it comes to self-employment. To fully exploit the potential for value creation in the society, it is of significance to get females to start up their own businesses. One of the most important means for creating an entrepreneurship culture is to highlight entrepreneurship within the education system. This may increase the young people’s belief in their own abilities and lower their barriers to enter into self-employment at a later stage.

Establishing new businesses are demanding. The main support agency for entrepreneurs is Innovation Norway. Of Innovation Norway’s priority areas is to support and guide entre-preneurs. With the exception of the entrepreneurs own competence and attitudes, access to counselling, networks and financial capital will be significant for whether or not the individual entrepreneur succeeds.

Innovation Norway should focus upon entrepreneurs and business ideas that are innovative and have potential for growth. Within this framework, women, young
people, inventors and agriculture should be emphasized. Innovation Norway’s schemes for entrepreneurs are to some extent related to competence development, but the main focus is upon the provision of financial capital to entrepreneurs. The entrepreneurs can utilize Innovation Norway’s general financial means for business development. In addition, there are four grants directly targeted at entrepreneurs. These are: a general start-up grant, start-up grant within agriculture, incubator grant and inventor grant. Of these four, the first two involve the largest amounts of money.

Clusters play a minor role as a framework for the entrepreneurship policy. Some industries are emphasized to a certain extent, but the general focus is upon promoting renewal and growth in the economy as a whole.

Source: St.prp. nr. 1 2006/2007. Nærings- og handelsdepartementet, Oslo; www.innovasjon.norge.no

1.3.3 Clusters as framework in various policy areas

Business network policy

Clusters play a somewhat minor role as a framework in the business network policy. Clusters only play a role for certain programmes. It is of significance for the ARENA-programme and NCE-programme. These are described in detail in chapter 1.2.2 and 1.2.3.

Cluster policy plays a role for the network policy within the maritime sector. Based on an initiative from the Ministry of trade and industry, a programme for maritime development (MARUT) was established. MARUT shall contribute to increased value creation within the maritime sector by utilizing cooperation between the industry, the government and R&D institutions. 7 areas are up till now selected as a starting point for the work, and these will form the basis for concrete development projects. The 7 areas that are selected is: small scale liquid gas, maritime operations in northern waters, maritime ICT, development of technology for offshore production and distribution of seafood, development of new logistic solutions, support to an escalation of deliveries to market for new maritime equipment and development of new and innovative solutions within shipping.

The MARUT-programme constitutes of to financial schemes, MAROFF and grant for maritime development projects. The MAROFF scheme is administrated by The Research Council of Norway and contributes financial support to two kinds of development projects; user driven innovation projects and competence projects with user involvement. At the end of 2006, 112 million Norwegian kroner were allocated to 14 projects stretching from 2007-2010. Regarding the grant for maritime development projects, the grant consists of 20 million Norwegian kroner and is distributes by Innovation Norway. Through the grant, projects emphasizing to strengthen the capability to innovate in the maritime industry through increased cooperation between firms, the government and R&D institutions is given priority. The projects should focus upon the areas listed above.


FDI attraction policy

Clusters play a minor role as a framework for the FDI policy.

Source: Oxford Research
Export promotion policy

Clusters play a certain role regarding the export promotion policy. The main support agency within this field is Innovation Norway. Many of Innovation Norway’s export related programmes and activities are generic, but some are directed towards certain businesses. Within the energy sector, there is an Energyforum between Norway and Germany. The forum was established in 2001, and serves as a common meeting place for Norwegian energy businesses aiming at exploiting the deregulated energy markets in the EU and Germany. The forum is open for Norwegian firms within the entire energy sector who want to work actively in the German or other EU-markets. The forum meets four times a year, twice in Germany and twice in Norway, and it consists of seminars, workshops and business visits.

Innovation Norway has some forums where Norwegian firms with common challenges can meet each other. These meeting places are related to certain businesses. At present, there is a forum for biotech firms and a forum for firms with airport-related products and services.

For the travel industry, Innovation Norway has several schemes for marketing Norway abroad. The organization has developed an internet site for www.visitnorway.com. Innovation Norway also organizes international campaigns, develops a brochure for the Norwegian tourism business as a whole and distributes brochures for the different destinations in markets abroad.

Source: http://www.innovasjoninorge.no

Sectoral industry policy

Historically, sectoral industry policy has been very important within the Norwegian business policy. This is still the case, and it is most clearly expressed when it comes to the tax policy and other framework conditions. The stand out industries in this connection is the maritime industry, the energy intensive industry, oil and gas, the fisheries and agriculture.

The Norwegian maritime businesses are favoured tax wise, i.e. got a lower rate than businesses in general. There is also a so called net wage for Norwegian shipping companies. This involves wage subsidies to companies registered in the Norwegian shipping registers called NOR and NIS.

Energy intensive businesses, for example aluminium producers, receive subsidised electricity. This is done by allowing the energy intensive businesses to enter into long term contracts securing them a price which is significantly lower than what is charged on the common Nordic market. Some of the businesses are also.

Oil and gas related production got their own tax scheme. The oil and gas companies have to pay a resource rent which secures the government income that can be spend on public services. The resource rent is equivalent to a tax rate of around 80 percent on the companies’ profit.

The fisheries are characterised by specific framework conditions. First, the amount of fish that can be caught is limited by quotas. The quotas are set by the government to prevent a too high harvesting level of the stock. Second, there is an own market system. All sales have to go trough six sales organizations owned by the fishers. This sales system is fixed by a law called “Råfiskloven”.

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The agriculture is quite heavily subsidized. The total amount of the subsidies is around 20 billion kroner. The subsidies are received in two ways. First, there are direct subsidies which are determined through negotiations between the government and the farmers’ organisations. Second, there are high tax rates on imported agricultural products. These represent indirect subsidies for the agriculture or border protection.


Science and education policy

The research policy is closely related to the cluster policy. Since Norway is a small country, certain businesses and areas must be prioritized. The Research Council of Norway has chosen to focus upon research related to energy and environment, marine activities, the food sector and health, The following technological areas are put on top of the agenda; ICT, new materials and nanotechnology and biotechnology. The efforts made by The Research Council of Norway are followed up by the main business support agency Innovation Norway through sector efforts in the same areas. This should promote innovation and value added in the society.

The Research Council of Norway has established Centres for Research-based Innovation (CRI). The CRI should enhance the capability of the business sector to innovate by focusing on long-term research based on forging close alliances between research-intensive enterprises and prominent research groups. The CRI scheme will:

- Encourage enterprises to innovate by placing stronger emphasis on long-term research and by making it attractive for enterprises that work on the international arena to establish R&D activities in Norway.
- Facilitate active alliances between innovative enterprises and prominent research groups.
- Promote the development of industrially oriented research groups that are on the cutting edge of international research and are part of strong international networks.
- Stimulate researcher training in fields of importance to the business community, and encourage the transfer of research-based knowledge and technology.

The host institution for a centre can be a university, a university college or a research institute, or an enterprise with a strong research activity. The partners (enterprises, public organisations and other research institutions) must contribute to the centre in the form of funding, facilities, competence and their own efforts throughout the life cycle of the centre. So far, 14 CRI are established. Each centre receives among 10 million kroner per year.


Competition and market integration

Within the total Norwegian economy, cluster policy plays a minor role as a framework for the competition and market integration policy. The exception here is the fisheries and agriculture. These industries are treated differently when it comes to competition and market integration policy. The fisheries are allowed to let all sales go trough six sales organizations owned by the fishers themselves. The value chain related to agriculture is the industry with the most comprehensive and peculiar policy
on this field. Cooperatives are allowed both within primary production and processing. The cooperatives are responsible to regulate the markets, for example the milk and meat. The aim is that this should contribute to the farmers getting the negotiated target prices. The target prices themselves are determined through negotiations between the government and the farmers’ organisations. These negotiations are held each year.

Source: Oxford Research

Other policy fields

The petroleum sector has contributed significantly to our economic growth and to the Norwegian welfare state. Norway also very early established policy on local content and domestic technology development. We promoted the establishment of local industry and promoted technology and knowledge transfer through co-operation with the International Oil Companies. The NCS was, and remains, a testing ground for new technology and collaboration between the industry and R&D institutions. The government will continue to prioritise research and development. Industry, research institutions and government must continue to work together.


1.4 Cluster or competitiveness councils

In some countries, councils have been set up to promote a dialogue about clusters and competitiveness. Often, these councils have representatives from the government sector as well as from the academic world and the business community.

There is no distinct cluster or competitiveness council in Norway. The agency that is closest to filling such a role is Innovation Norway. Innovation Norway is described in more detail in chapter 1.3.2 above.

Source: Oxford Research

1.5 Other policy issues

Sometimes it is useful to know about any other issues that have an impact on clusters in a country. Such issues could be, for example, any macro economic policies that may be relevant for clusters (tax regimes, etc), or if any general evaluation has been made about the country’s competitiveness and barriers to competitiveness.

To promote research and development, The Research Council of Norway and Innovation Norway has developed a rights based tax deduction scheme called SkatteFUNN for research and development projects in all Norwegian firms. The SkatteFUNN-scheme favours the development of research and development intensive clusters to a certain extent. Through the SkatteFUNN-scheme, all projects that can be defined as research and development projects according to certain criteria’s are getting a tax deduction. The tax deduction is 20 percent of the total project expenditures for firms with fewer than 250 employees and 18 percent for firms with 250 or more employees. The total maximum tax deduction is 0.8 million kroner per year if the firm carries out the project(s) on their own and 1.6 million
kroner per year if the firm cooperates with a publicly approved research and development institution. To get a tax deduction, the expenses related to the project has to be approved by an accountant. Young firms that aren’t in a position to benefit from the tax deduction, receive a direct subsidy of the same amount.

The development of the infrastructure is to some extent of relevance for cluster development. This is among others related to the standard of the road system and to the production and distribution of gas. The standard of the road system is for example important for improving the logistics within the fisheries and fish farming. This may reduce the costs and/or improve the quality of the fish that is sold. Building new gas power plants and gas pipelines may also be of significance for developing the power intensive industry. This is related to securing the industry a sufficient amount of energy and fair prices.

Source: www.skattefunn.no; http://www.nordlandsforskning.no/files/Rapporter%202006/rapp_12_06.pdf

Cluster policy has become more accepted over time and plays a more significant role in the innovation policy. The way the Norwegian cluster policy has developed is described in more detail in chapter 1.3.1.

Source: Oxford Research

Major obstacles to the process of building cluster policy:
- Strengthen the ties between cluster initiatives and the international FDI offices internationalize cluster initiatives
- Find synergies by cross-sector approach between industrial sectors
- Develop/find a methodology for identifying emerging sectors
- One concern is the ongoing European discussion regarding limitations on state aid to clusters

Source: Mapping of national cluster programmes in the Baltic Sea Region (2007), INNONET

A number of assessments have been made through different research projects, but the version approved by the Ministry of Trade and Industry can be found in the government’s plan on a coherent innovation policy, “Fra idé til verdi” (published in 2003).

Norway has a newly elected government which wants to be more active in the field of providing sound frameworks and programmes in order to enhance the competitiveness of the Norwegian enterprises. The goals are to increase public spending on R&D, develop an active industrial policy and strengthen the agencies’ role and scope.

The report “Fra idé til verdi” – the government’s plan on a coherent innovation policy (published in 2003) – gave a foundation and is an example of a formalized national policy. This policy was signed by five Ministries and takes a cross-policy approach and points out five important policy areas to address:

- general frame conditions
- knowledge and competence
- research and development/commercialization
- entrepreneurship/new companies, and
- infrastructure
The policy also states that to be successful in implementing there is a need to work together between private and public actors, but also be able to on work local, regional and national levels in a coordinated way.

One of the future tasks for developing policies is to find “new” areas that combine traditional areas of strength (e.g. oil and maritime) with new research areas (e.g. nanotechnology and biotechnology) that can be the future foundation of the Norwegian industry. The road ahead implies that the following actions need to be taken:

• Innovation Growth Strategy
• Increase Seed Capital – and regionalize functions
• Ownership
• White paper on Innovation Policy
• OECD review of Innovation Policy with start 2007
• Cross policy departmental/ministerial group to enforce the Innovation Policy
• IPRs and how to increase activity
• Increased focus on the service sector and its low innovativeness
• From regional development focus to metropolitan and regional policies

In the context of cluster policy, the regions have played an important role. National ministries strive to have close relations with regional policymakers. Regional political strategies, as well as the structure of knowledge institutions and industrial support infrastructure (e.g. SIVA offices), drive national innovation strategies and programmes.

Source: mapping of national cluster programmes in the Baltic Sea Region (2007), INNONET

### 1.6 Policy trends

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<th>Policy Stream</th>
<th>Old Approach</th>
<th>New Approach</th>
<th>Cluster Programme Focus</th>
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</table>
| Regional policy        | Redistribution from leading to lagging regions    | Building competitive regions by bringing local actors and assets together   | Target or often include lagging regions
Focus on smaller firms as opposed to larger firms, if not explicitly than de facto
Broad approach to sector and innovation targets
Emphasis on engagement of actors |
| Science and technology policy | Financing of individual, single sector projects in basic research | Financing of collaborative research involving networks with industry and links with commercialisation | Usually high technology focus
Both take advantage of and reinforce the spatial impacts of R&D investment
Promote collaborative R&D instruments to support commercialisation
Include both large and small firms; can emphasise support for spin-off start ups |
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<th>Policy Stream</th>
<th>Old Approach</th>
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| Industrial and enterprise policy                  | Subsidies to firms; national champions            | Supporting common needs of firm groups and technology absorption (especially SMEs) | Programmes often adopt one of the following approaches:  
  Target the "drivers" of national growth  
  Support industries undergoing transition and thus shedding jobs  
  Help small firms overcome obstacles to technology absorption and growth  
  Create competitive advantages to attract inward investment and brand for exports |

Source: OECDA review of national cluster policies: why are they popular, again?, June 2006