OECD – Development and benefits of maritime clusters Norwegian cluster policy

1st. December 2016

Bjørn Arne Skogstad, Innovation Norway
Main goal:
Increased competitiveness in regional clusters through long-term internal and external collaboration between companies, R&D- and educational institutions.
## PROGRAM OVERVIEW

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<td>Immature clusters</td>
<td>Mature clusters National position</td>
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<td><strong>Support period</strong></td>
<td>3-5 years</td>
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<td><strong>Annual support</strong></td>
<td>EUR 200.-300.000</td>
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<td><strong>No. clusters</strong></td>
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<td>10</td>
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<td><strong>Selection</strong></td>
<td>Annual open competition – clear criteria – external evaluation panels</td>
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**Target group**
- Immature clusters: 3-5 years, EUR 200.-300.000, 20 clusters
- Mature clusters National position: 5-10 years, EUR 500.-600.000, 10 clusters
- Mature clusters Global position: Up to 10 years, EUR 1.-1,2 mill, 4-5 clusters

**Support period**
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- Mature clusters National position: 5-10 years
- Mature clusters Global position: Up to 10 years

**Annual support**
- Immature clusters: EUR 200.-300.000
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- Mature clusters Global position: EUR 1.-1,2 mill

**No. clusters**
- Immature clusters: 20
- Mature clusters National position: 10
- Mature clusters Global position: 4-5
POLICY – FUNDING - IMPLEMENTATION

Linking policies

Ministry of Trade, Industry and Fisheries

Ministry of Local Government And Regional Development

Innovation agencies: Linking roles and resources
STRATEGIC AREAS

Increased value creation

Strategic Positioning and Host Attractiveness

Collaborative innovation

Knowledge linkages

Cluster development

Cluster-to-cluster
CLUSTERS ACHIEVEMENT

- Stronger interaction and collaboration
- Common strategic focus
- Increased innovation and entrepreneurship
- Better access to competence
- Stronger global orientation
- Improved attractiveness

- Increased value creation and competitiveness
CLUSTERS ROLE ADRESSING..

Disruptive technologies

Oil price decreases

Environmental challenges
CLUSTERS; CORPORATION DEVELOPS

- Corporation internal cluster
- Bi-literal corporation
- Consortiums
- National corporation (responsibilities)

Clusters are now in position to take national responsibility
Clusters are important “locomotives”
The maritime cluster on the west coast of Norway is one of the world’s most complete maritime clusters and a competitive hub in advanced offshore vessels for the global oil and gas industry.

The cluster have through a high rate of innovation, a culture for pioneering entrepreneurship, focus on quality and good business sense gained a significant share of the global market.

Areas of interest:
Virtual prototyping, Simulation driven innovation, Big data, Robotics, Advanced manufacturing, Mechatronics, Advanced Marine Operations, Human Factor driven operations.

Key Figures:
- 18 Shipping companies
- 14 Design enterprises
- 14 Ship yards
- 172 Equipment suppl.
- Employees: 22,500
- Turnover: $ 9,5 B

Key Partners:
- Rolls-Royce Marine
- VARD
- Ulstein
- Kleven
- Farstad
- Havila
- Brunvoll

Website; Norwegian - English
GCE Blue Maritime.pptx
New Innovation and Production processes

Virtual Prototyping

Advanced production
-Skaper muligheter
Skaper muligheter
NCE MARITIME CLEANTECH

This cluster has its gravity on the western coast of Norway. The cluster focuses on creating forward-looking, innovative and competitive solutions for the maritime sector that reduce environmentally harmful emissions to air and sea.

**Areas of interest:**
Propulsion systems, New fuels, Energy storage (Battery technologies, hydrogen, fuel cells), Light weight materials, Production technologies, Design- and optimization tools.

**Key Figures:**
- 31 partners
- Employees: 10,000
- Annual sales: $ 3.4 B

**Key Partners:**
- Wartsila
- Eidesvik
- Solstad Offshore
- Østensjø Rederi
- Fjellstrand yard
- North Sea Container Line
- SKL
- University of Bergen
- CMR
- Prototech

Website: Norwegian - English
Session 4_c3_Bjørn Arne.pptx
VISION

THE WORLD-LEADING CLUSTER FOR CLEAN MARITIME SOLUTIONS

The partners lead the way in creating break-through solutions for the maritime sector. The cluster seeks actively for inspiration in other industries, and collaborates with world-leading expertise.

The partners make a significant contribution to Norway’s international competitive strength.

MAIN GOAL:
Strengthen the cluster partners’ competitiveness by developing and launching innovative solutions for energy-efficient and clean maritime activities.
Strategies for NCE Maritime CleanTech

- **Increase innovation:**
  - Joint innovation and demonstration projects of new technologies

- **Strengthen knowledge base:**
  - International cooperation,
  - Competence development, education programs etc.

- **Stimulating market pull effects and reducing market barriers:**
  - Regulatory framework
  - Demonstration and commercialization of energy efficient environmental technology
  - Public relation

- **Increase the attractiveness of the cluster:**
  - Capital
  - Recruitment

Norwegian Centres of Expertise
NCE Maritime CleanTech

www.maritimecleantech.no
Innovation: Electric and hybrid solutions – Proof of concept

Car and passenger vessels

Offshore vessels

Fishing vessels and workboats

Tourism and expeditions
The Urban Water Shuttle (UWS) is an energy-efficient, high-speed vessel concept for passenger transport.

The vessel will be built in low weight and sustainable materials like aluminium, propelled using the latest low- and zero emission energy storage technologies.
Short Sea Pioneer
– The new way of transporting goods at sea

Short Sea Pioneer ©

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OCEAN SPACE A STRATEGIC OPPORTUNITY

- Multi discipline exercise – demands cross over big time
- Through corporation on national and international level utilize ocean resources in an environmental way to long term value creation
BUILD AND CONNECT COMPETENCE AND TECHNOLOGIES TO..
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<th>New ship constructions</th>
<th>Material technology</th>
<th>Effective Production</th>
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<td>NCE Raufoss, NCE Kongsberg</td>
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<td>Maritime, NCE Maritime Cleantech, Arktisk Maritime klænger</td>
<td>Load and Unload operations</td>
<td>Anker solutions</td>
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<td>GCE NODE, Maritime klænger</td>
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**Examples: Corporate where we can compete when we must..**

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<th>Positioning and wave compensations</th>
<th>Sensors</th>
<th>Remote monitoring</th>
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<td>NCE Kongsberg (DP), GCE NODE</td>
<td>NCE Instrumentering, NCE Mikro – and Nanoteknologi</td>
<td>GCE Subsea, NCE Media, NCE Smart Energy Markets</td>
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<th>System Based solutions</th>
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KEY FIGURES 2015!

Cluster companies: Significant higher growth in turnover and number of employees

- 558 joint innovation projects
- 214 joint internationalisation projects
- 500 joint competence projects
- 192 Cluster to cluster projects

2070 companies
Every company: 15 new joint relations

366 R&D&E inst

36 clusters

140 mill NOK for supporting clusteres
23 mill NOK for running and develop the program

Figures reported for 2015
CLUSTER DEVELOPMENT – NORWEGIAN EXPERIENCES

• Clusters are important drivers in regional and national innovation strategies

• Strong demand for our cluster support

• Companies see the need to form partnerships – and to invest in cluster development processes

• Evaluations of cluster programmes and projects are positive