

Erfa møte Arendal 14.12.2015

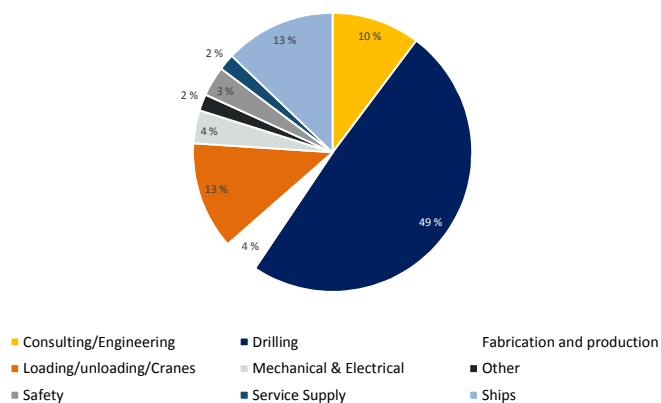
A LEADING GLOBAL TECHNOLOGY CLUSTER

GCE | **NODE** | GLOBAL CENTER
OF EXPERTISE

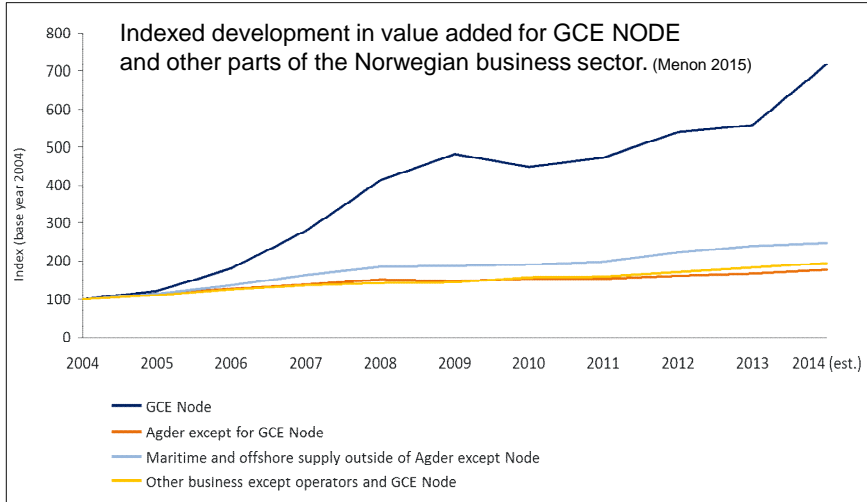
Anne-Grete Ellingsen
CEO GCE NODE

Value Creation in the GCE NODE

Industrial classification of the Node Members. The relative size of each segment is weighted to the total value added



Value added



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Key focus areas: Technology and supply chain management



2012 – some of the major NODE companies:

- International purchases: BNOK 10
- Creating 31,000 jobs outside of Norway



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GCE goals

- Maintain and increase NODE firms' global competitiveness within their core products and markets.
- Expand industrial base by extending existing technology and competence to new markets.



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IO - 10 years of experience...

The vision in 2005...

In a five to ten year perspective, it is expected that integrated operations by smart use of real-time data, visualisation and new work processes based on Information and Communication Technology (ICT), will constitute the single most important driver for increased efficiency in the Norwegian oil and gas industry.

Kilde: The OLF Work Group (WG) on Digital Infrastructure Offshore (DIO) 20.10.2005



Kilde: Digital Infrastructure Offshore OLF 2005



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NODEs RD&I focus to meet the challenges SFI - Offshore Mechatronics

- 200+ mill over 8 years, industry has the majority in the Steering Committee
- National and international industry partners from both customer and suppliers side
- Hosted by University of Agder

Goal:

- Fully automated operations and certification based on condition monitoring and increased use of land-based operation centers.
- Tord Lien the OG21 2015 conference: "Expert center to find ways to reduce cost in oil & gas industry".



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Focus areas and project

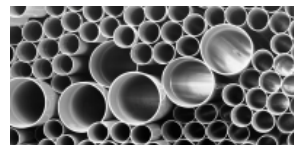
Maintain and increase NODE firms' global competitiveness within their core products and markets.

- Digitalization/Big Data
- Automation / Robotics
- Plug & Abandonment / Decommissioning
- New Materials / Composites

Expand industrial base by extending existing technology and competence to new markets - Blue Growth strategies

- Offshore Wind
- Subsea mining
- Aquaculture
- Geothermal

Sustainable innovation and products - Ecotrack



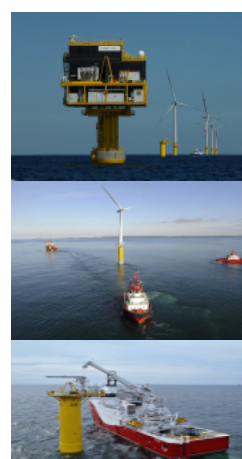
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New markets



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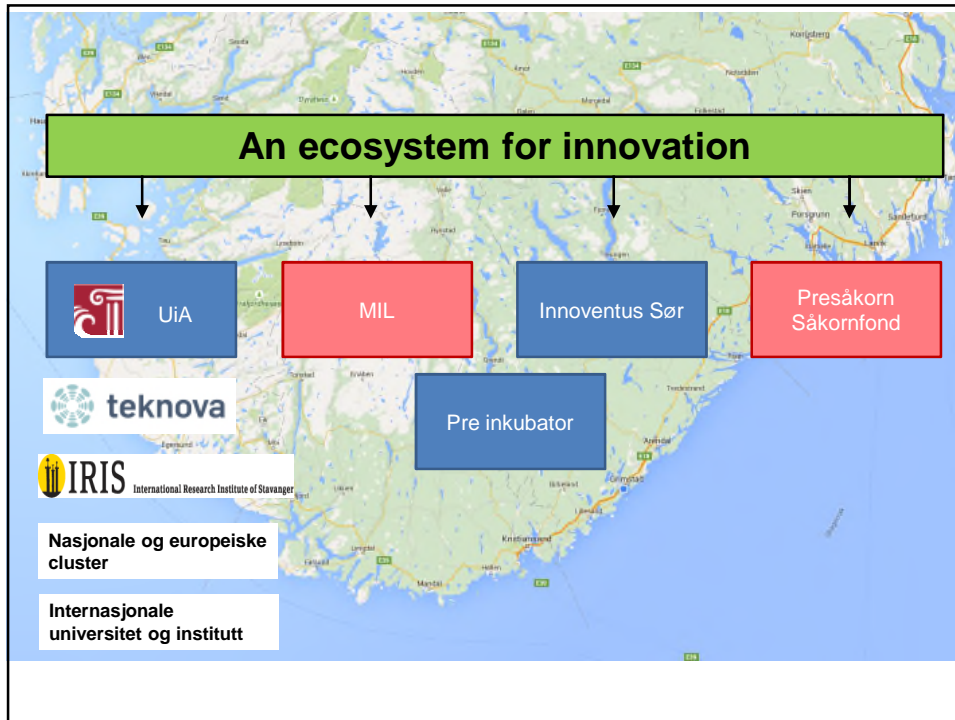
Teknologi og kompetanse i nye markeder Strategier for havrommet



GCE NODE i samarbeid med GCE Subsea og GCE Blue Maritime



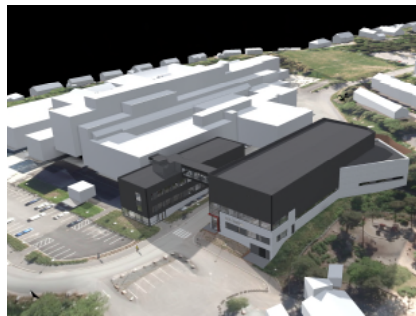
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NODE RD&I focus to meet the challenges

RD&I Infrastructure - Mechatronics Innovation Lab

- National laboratory located at University of Agder, Grimstad
- Pilot testing and market qualification
- Reduced time-to-market
- Cooperation between University of Agder, the NODE companies and Umland
- Support from the Ministry of Industry and Fisheries
- Construction starts Q4 2015



A leading international center for innovation, piloting and technological qualification in mechatronics and related fields

NODE RD&I focus to meet the challenges

Building competence

- Mechatronics
- International hydraulic certificate
 - CETOP 2 – Fall 2015
 - CETOP 3 – New in Norway (BSc)
- Welding engineer / inspector
 - European/American welding certificates
 - Only offer available to Norwegian businesses
- Supply chain management and risk
- Project management
- University of Agder in cooperation with NODE companies



GCE NODEs klyngeutviklingsprogram for økt samspill og verdiskaping

De tre temaene som klyngeutviklingsprogrammet dekker er:

- Supply Chain Management & Risk (oppstart 26.-27. mai 2015)
 - Forskning, utvikling og innovasjon (oppstart fjerde kvartal 2015)
 - Internasjonalisering (oppstart andre kvartal 2016)
- Programmet vil ta opp 15-25 bedrifter som kan delta med inntil to representanter hver.
 - NODE-bedrifter vil ha fortrinnsrett.
 - Programmet har et begrenset antall plasser for deltakere fra andre klynger eller bedriftssammenslutninger innen fagområder som dekkes av NODE-klyngen.

Marketing of the cluster companies

- **OTC Houston mai 2016**
 - Forbereder faglig program sammen med offentlig sektor og UiA
 - Fokus på tema som bedriftene vil prioritere
 - Arbeide for å få felles NODE stand på INs norske stand
 - Hotell reservert
- **ONS Stavanger august 2016**
 - Felles hotell med møtefasiliteter
 - Stand reservert
 - Faglig program under arbeid
- **Arendalsuka** Global Outlook
 Energy Outlook

NODE cooperation

- Norsk olje&gass
- Norsk Industri
- UK decom
- Arctic Frontiers
 - MacGregor
 - Sevan
- Rederiforbundet
- Esca – European cluster organization
- Intsok
- Intpow