Norwegian Subsea Sector
- Bringing industry and research together

Jon O. Hellevang, Senior Subsea Innovator
GCE Subsea strengthens innovation and internationalisation of the Norwegian subsea cluster
GCE Programme

// **Goal:** Make the cluster more dynamic and attractive, and boost individual companies’ innovation and competitiveness.

// Part of the Norwegian Innovation Clusters programme, launched to trigger and enhance collaborative development in central Norwegian business clusters.

GCE Subsea

// NOK 10 million in annual funding
// Annual budget at NOK 25 million
// 6 man-years in the organisation
GCE Subsea - Employees

OWE HAGESÆTHER
CEO

JON O. HELLEVANG
Senior Subsea Innovator

GISLE NONDAL
R&D Manager

GUNNAR BUVIK
Business Development Manager

ANNE-GRETHE SOLBAKK
Head of Finance and Communication

KJERSTI BOGE CHRISTENSEN
Event and Office Manager

Florø:
TROND STRØMGREN
Subsea Innovator
GCE Subsea

Main goal:
Increase the cluster’s competitiveness and global market share, and take a leading position in sustainable utilisation of ocean resources.

Main objectives:
● Cost-efficiency: strengthen competitiveness
● Research-based innovation: paradigm-shifting technology
● Ocean Innovation: beyond oil and gas

Key global drivers:
● increased demand for energy and marine resources
● climate and environmental challenges
● stronger global competition
GCE Subsea - A Unique Position

Norway has:
- the world’s most complete cluster for subsea life-of-field solutions
- more than 50 per cent of the global subsea market share
- a strong complementary marine and maritime industry and competence

The cluster boasts:
- the longest subsea track-record
- the highest hydrocarbon recovery rate
- the best HSE performance

A. Flow metering and pumping
B. Separation, injection and boosting
C. Integrated environmental monitoring
D. Wet gas compression
Results

Competence:
// 3 BEng and 2 MEng programmes
// Subsea Awareness Course
// Global Subsea University Alliance

Technology:
// Supported over 60 pre-projects
// LoVe Ocean Observatory
// 2 OTC Spotlight on New Technology awards

Business Development:
// Subsea First/Next Step
// Subsea Entrepreneur

Market:
// International stands and study tours
// Brazil Entry programme
// Broad international collaboration

www.gcesubsea.no/page/6700/Success_Stories
From NCE to GCE Subsea

// New focus areas:

- **Ocean Innovation**: Subsea solutions and knowledge beyond oil and gas
- **Work Processes**: Strong focus on global competitiveness

// Increased focus on:

- R&D test facilities and infrastructure
- International education, mobility and R&D programmes
- Supporting members in international markets
GCE Subsea - Overview

Deep-sea mining

Marine food production

Integrated monitoring

Subsea Factory

Offshore renewable energy
GCE Subsea - Services

// Increased knowledge and expertise
// Support for innovation projects
// Business development programmes
// Meeting places:
  ● exclusive events
  ● priority and discount on events
// International market programme
// Large international network
// Promoting and marketing

www.gcesubsea.no/page/5640/Our_Services
Key Strategic Areas

I. Competence and Infrastructure

II. Ocean Innovation

III. Technology

IV. Entrepreneurship and Business Development

V. Market

VI. Work Processes
Competence and Infrastructure

/// Increased focus on joint test facilities and R&D infrastructure

/// Science City Bergen

/// Global Subsea University Alliance: international education programme and RDI projects
www.subsea-alliance.org
Ocean Innovation

Collaborate with the strong competence in Norwegian marine and maritime clusters to expand into related industries.

// Marine food production: 35 per cent increase in aquaculture from 2013-2022.

// Deep-sea mining: 10 per cent of minerals will come from the seabed in 2030.

// Offshore renewable energy: The EU has targeted a 20 per cent reduction in greenhouse gas emissions and 20 per cent increase in use of renewable energy by 2020.
Technology

// Strengthen the link between industry and R&D groups.

// Provide financial and professional support to realise your projects.

// Focus on establishing international RDI projects.

// **Key project:** Integrated Monitoring Technology and Methodology
Entrepreneurship and Business Development

// Link entrepreneurs to funding, industry and R&D groups.

// Increase focus on service innovation.

Business development programmes:

// **Subsea First Step** – supports start-ups and early phase companies.

// **Subsea Next Step** – helps you develop new product and services.
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Market

// A maturing Norwegian sector
// Growth in the international market
// Sharing knowledge within the cluster
// Supporting SMEs collaboration and increase presence in the international market
// Strengthening the market collaboration with INTSOK, Innovation Norway abroad and Norwegian export oriented clusters
Work Processes

Strong industry focus to improve productivity and competitiveness.

// **Life cycle systems engineering**: strengthen link between engineering and operations.

// **Lean management and production**: learn from other industries.

// **Standardisation**: work across the supply chain to standardise documentation, interfaces and requirements.
Innovation Example – ClampOn and Partners

Corrosion-Erosion Monitor (CEM)

// NCE Subsea pre-project funding
// Technology presented at seminars

// Results:
● IFU contract with BP and Innovation Norway
● OTC Spotlight on New Technology Award (2012)
● Successful commercialisation of product

– NCE Subsea has provided a great arena for contact between ourselves and high-level suppliers of components to the Corrosion-Erosion Monitor (CEM).
Dag Aldal, CEO ClampOn
Innovation Example – METAS and Partners

Integrated Environmental Monitoring

NCE Subsea business development programmes, gap-analysis report, workshops and seminars.

Results:
- Morvin drilling licence
- LoVe Ocean Observatory
- DEMO2000

– NCE Subsea has provided valuable business development programmes and important network arenas resulting in international R&D collaboration and business.

Olav Birkeland, CEO METAS

LoVe Node 1 (Source: Statoil / LoVe)

METAS lander installation at the Peregrino field in Brazil
Innovation Example – NLI Odda and Partners

Work Processes and Supply Chain Innovation

// NCE Subsea pre-project funding
// NCE Subsea seminar

// Results:
• More efficient work process and supply chain management
• Improved collaboration with suppliers

– NCE Subsea support has helped NLI to develop more efficient collaboration with its partners to enable competitive strength in a global market.
Ingvald Torblå, Managing Director NLI Odda
Innovation Example – OCTIO and Partners

Permanent Oilfield Monitoring

- NCE Subsea pre-project funding
- Industry and R&D partners
- Workshops and seminar
- Brazil Entry programme

Results:
- Contract with Statoil at Oseberg (2014)
- DEMO2000
- Collaboration between complementary companies and R&D institutes

NCE Subsea has provided valuable support in several of our projects, both with their in-house expertise and by establishing various market and technology focus groups.

Bjarte Fagerås, CEO OCTIO
Crossover Oil and Gas to Offshore Wind

Subsea Next Step programme in 2012

Results:

- 90 million Norwegian kroner in revenue within offshore wind in 2015. This is about twice the company’s total revenue in 2012.

– Participation in the Subsea Next Step programme was very useful to expand our business of bend-stiffener products towards the offshore wind market.

Henrik Bang-Andreasen, CEO Seaproof Solutions
Innovation Example – Wisub and Partners

Pinless Subsea Wet-mate Connector

// NCE Subsea supported applications
// Subsea First Step programme

// Results:
  ● International sales and secured investors
  ● Collaboration with companies and R&D institutes in Norway and abroad
  ● OTC Spotlight on New Technology Award (2015)

– NCE Subsea support has helped enable WiSub to court top Norwegian and international partners and secure funding for innovation projects.

Mark Bokenfohr, CEO and co-founder of WiSub
Pre-Project Funding and Support

GCE Subsea offers financial and professional support to realise your project idea.

We have supported 10-15 technical pre-projects every year since 2008.

Contact us at an early stage to find out how we can support your project.

For more information: www.gcesubsea.no/page/5662/Project_Funding