

# Public Petroleum RD&D – International perspectives

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# Outline of presentation

- The Research Council of Norway
- International strategy
- Public petroleum RD&D
  - PETROMAKS
  - Demo 2000
- Examples

# The Research Council of Norway – a key player in Norwegian research

- One Council covers all science and technology disciplines
- Budget of about 7 billion NOK in 2011
- Responsibilities
  - Advise the government on research policy issues
  - Finance and stimulate public and private R&D
  - Networking and dissemination
  - **International collaboration**



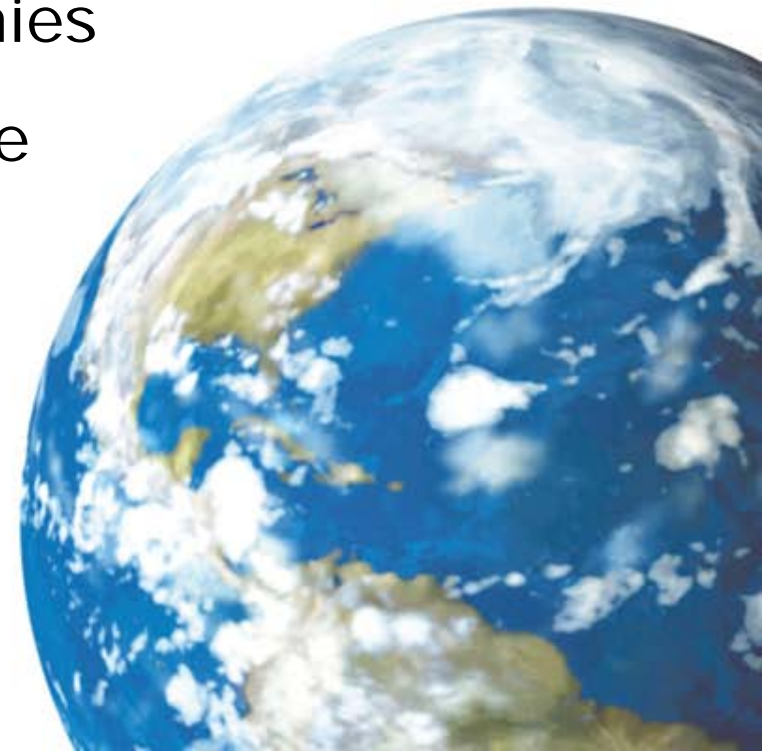
# The Research Council channels nearly 30 % of public funding of Norwegian R&D



# New strategy for international Cooperation 2010-2020

## **Background: New constellations in international research cooperation**

- Increased bilateral and multinational collaboration
- An international labour market for research institutions and companies
- Investments in S&T infrastructure and companies based on quality, not country.
- Increasing emphasis on multinational research funding.



# Drivers for international cooperation – Norwegian perspective

- Contribute to face **Global Challenges**
- Contribute to **increased quality and capacity** in Norwegian Research
- Secure access to international **knowledge production**
- Improve industry **competitiveness**
- Promote Norway as a **leading nation in science and innovation on selected topics**





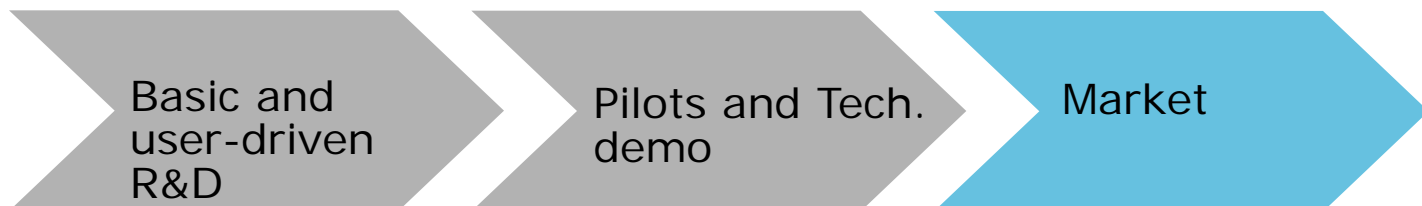
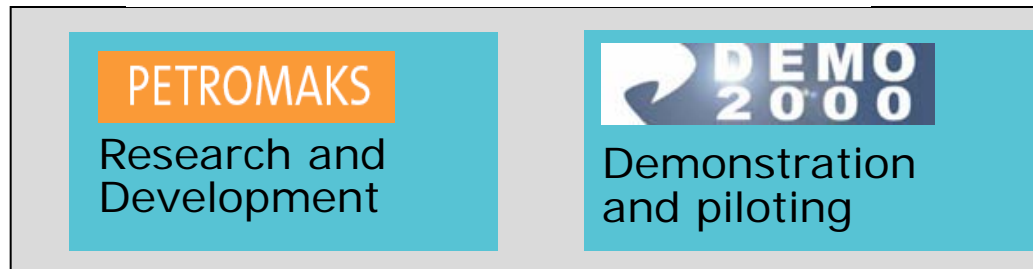


## Action points for realizing the objectives

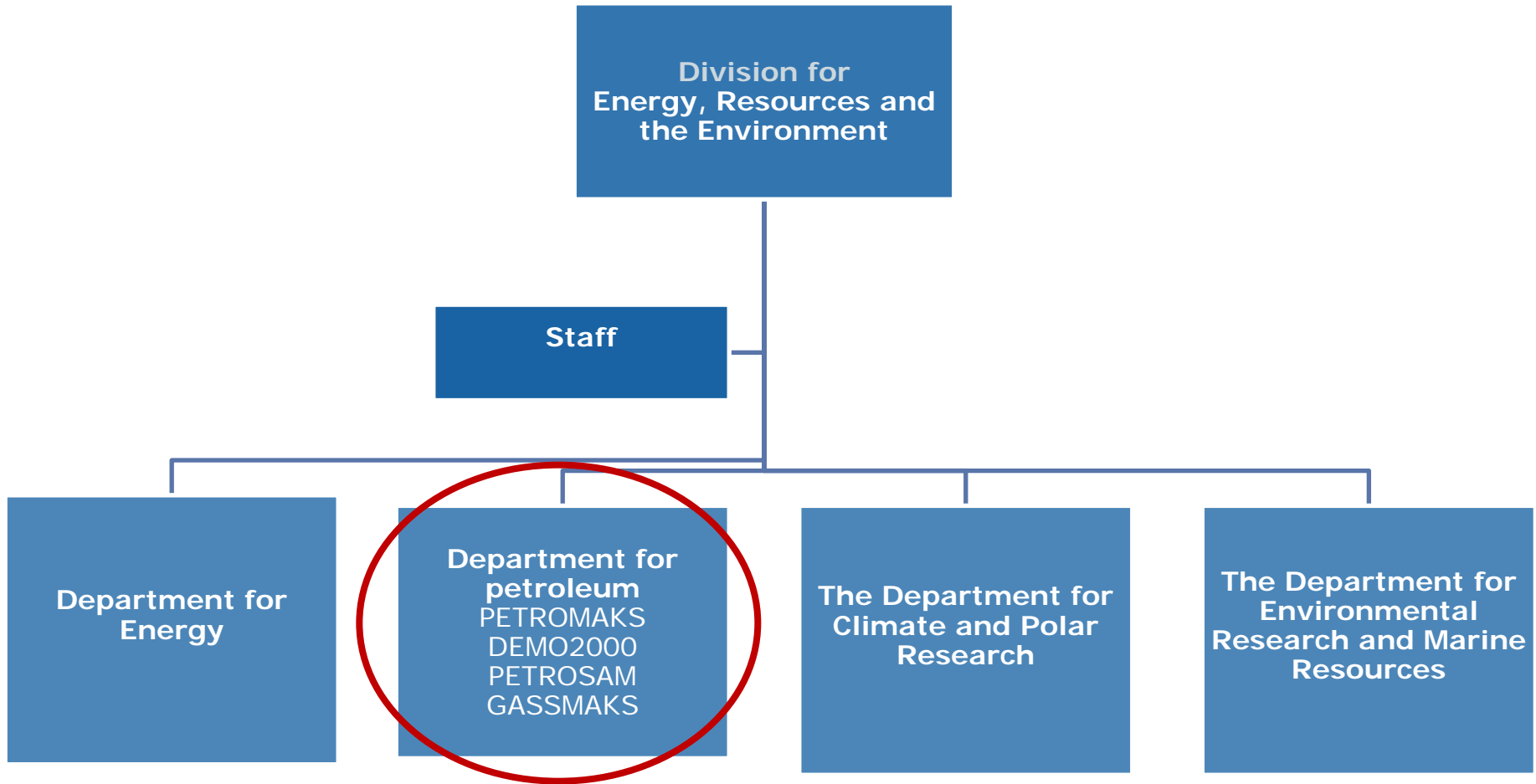
- All programs will have concrete goals for international cooperation
- RCN will participate in multinational joint research programmes
- Give early phase support to long term institutional cooperation
- Stimulate researchers, companies and institutions to be active and competitive on international arenas
- Reward international cooperation in projects proposals



# Public petroleum RD&D Cooperation model



# Organisation



# Instruments for petroleum RD&D

- **PETROMAKS** Basic research and innovation
- **DEMO 2000** Demonstration and piloting
- **PROOFNY** Discharge to sea
- **PETROSAM** Social science related to petroleum
- Centres of Excellence
  - Integrated petroleum research
- Centres of Research-based Innovation
  - Multiphase flow
  - Integrated operations
  - Arctic Technology
  - Drilling and wells

# Thematic Areas for R&D

- **Environmental technology for the future**
- Exploration and reservoir characterization
- Enhanced recovery
- Cost effective drilling and intervention
- Integrated operations and real time reservoir management
- Subsea processing and transportation
- Deep water, subsea and Arctic production technology
- Gas technology
- Health, Safety and work environment (HSE)

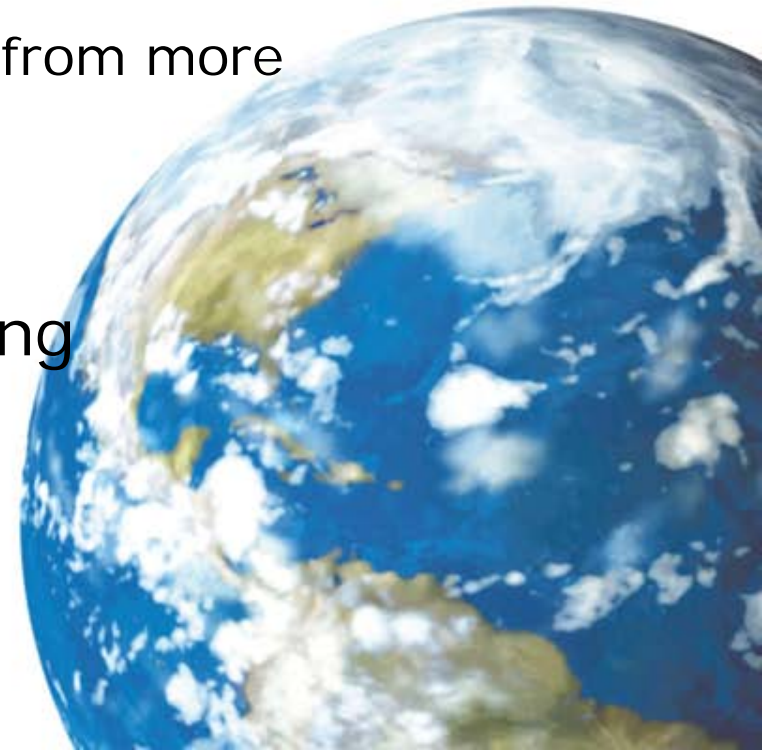
# DEMO2000 International activity

- Partners
  - Norwegian supplier industry together with international oil companies
- International dimension
  - Demonstration outside Norway
  - Potential for export of technology



# PETROMAKS International activity

- Partners
  - Partners from more than 35 different countries
- Education
  - PhD-students and research fellows from more than 27 countries
  - Yggdrasil (Brazil and Russia)
- 10 International workshops during program period



# PETROMAKS Norwegian-Russian collaboration

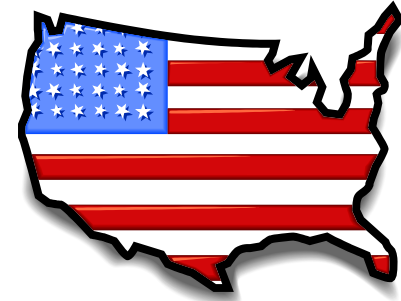
- 5 workshops
- Formal agreements
  - MoU between RAS and RCN
  - Agreement on cooperation between RAS Institute of petroleum and PETROMAKS
- 20 projects ongoing or completed
- The cooperation consists of:
  - Field trips and data exchange
  - Joint publications in scientific journal
  - Education of both Russian and Norwegian Master and PhD students
  - Workshops and conferences





# PETROMAKS Norwegian-North American Collaboration

- 5 workshops
- Formal agreements
  - MoU between MPE and DoE
  - Ca. 75 projects ongoing or completed
- The cooperation consists of:
  - Both academic and industrial RD&D cooperation
  - Joint publications in scientific journal
  - PhD, postdoc and guest researcher exchange
  - Workshops and conferences



# Increased focus on Brazil

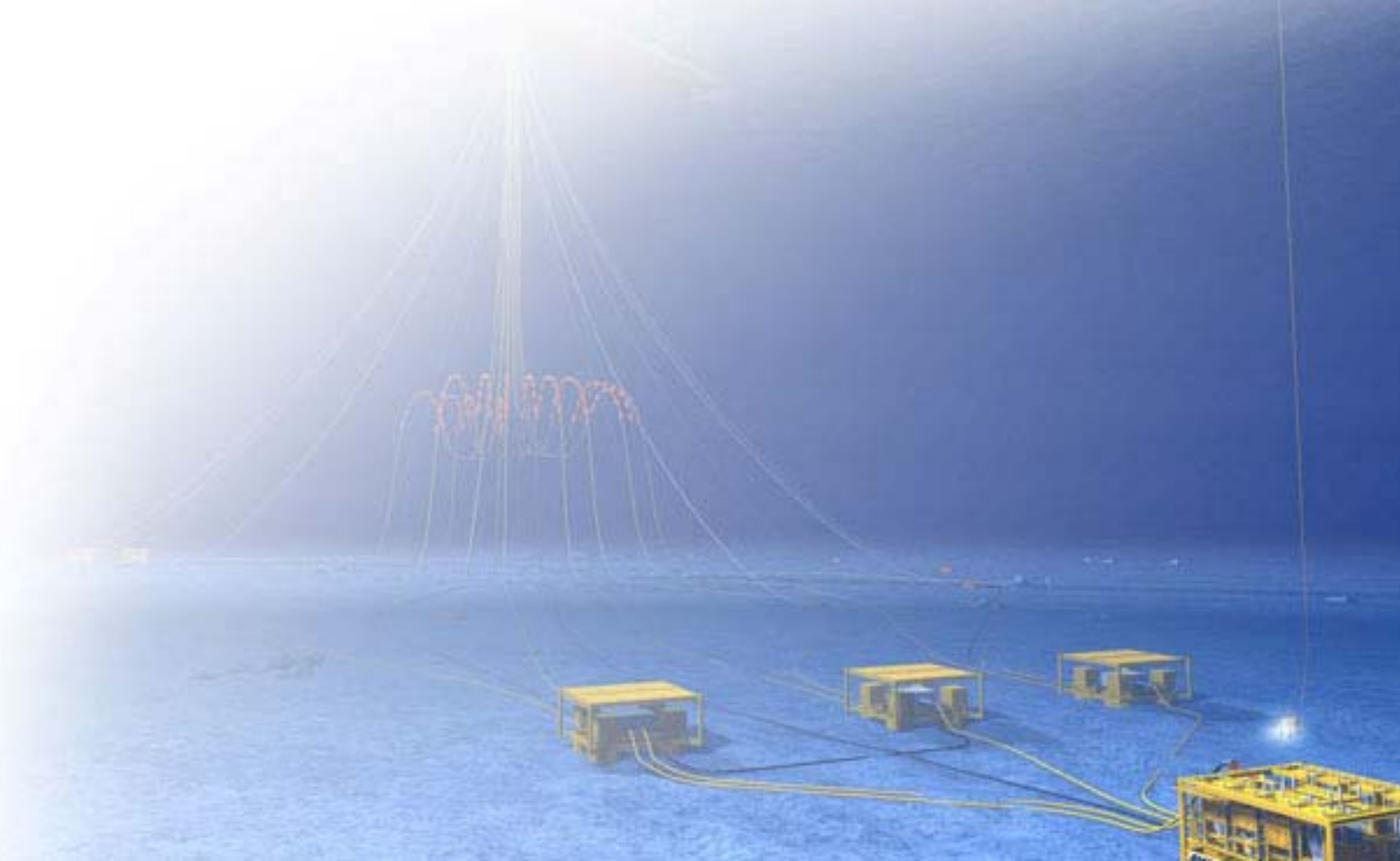
- Workshop in Rio 26<sup>th</sup> May 2011
  - Safe drilling and wells
  - Modeling and effects of oil spills
  - Sintef, IRIS and Ministry of Energy and Petroleum
- Formal cooperation
  - Government's Brazil Strategy – petroleum a central common area of interest
  - Increased budget for RCN's Latin- America R&D program
  - Initiation of more formal agreements between government bodies
- Please contact us for more information if interested



# How can RCN contribute?

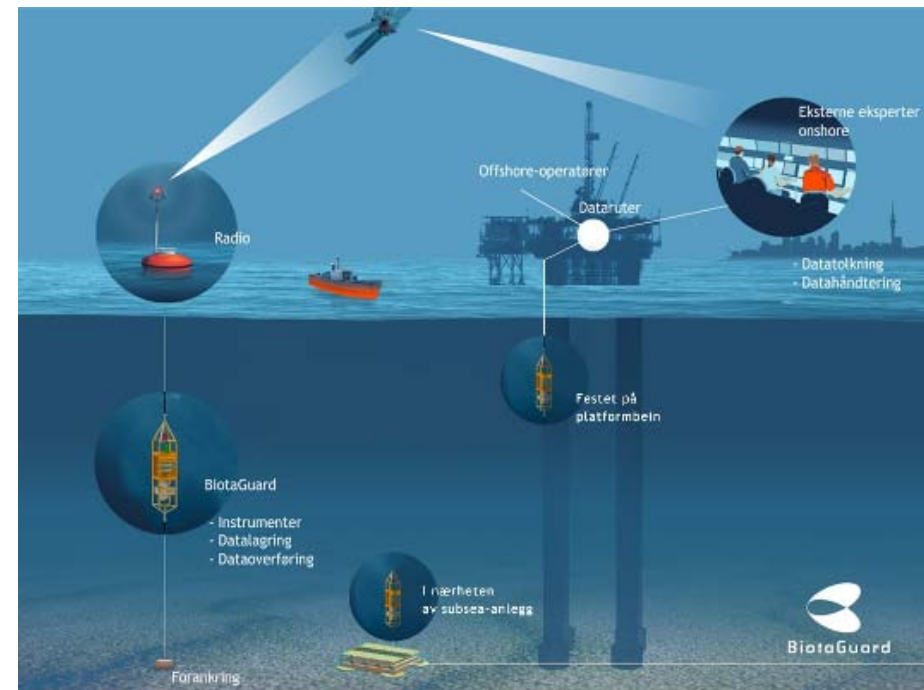
- Opportunities for bilateral collaboration
  - Networking and workshops
  - Call for proposals
  - Centers
  - Increased focus on environmental issues
- Challenges
  - No petroleum in EU7
  - Few similar international public R&D petroleum programs
  - Tight budgets -> little room for additional initiatives

# Examples from PETROMAKS portfolio



# Real time environmental effect monitoring

- Competence and technology development
- BiotaGuard AS
  - IRIS and multiple oil companies
  - Russian R&D partners
- Biosensorer for oilspill detection
  - Special focus on the Barents Sea
  - Real time data analysis



# Cost Effective Drilling and Intervention

- Encapsulated Seabed Drilling Rig for operations in deep waters and under ice
  - Power from shore or other infrastructure
  - No discharges to sea
  - Cost effective
- Seabed Rig AS  
UiS, IRIS, NASA, Stanford and Statoil



## Trends and future focus

- Environmental footprint
  - Discharge to sea
  - Emissions to air
- Increased recovery
  - Drilling
  - EOR
  - Need for pilots and demonstration
- Northern offshore areas
- International cooperation



Thank you for your attention!

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