



# FORCE Overview

Presentation to Joining Forces Meeting April 2018

Grete Vagle (Aker BP)

Chairman FORCE Management Committee





**Co-operation forum for improved oil and gas recovery (IOGR) and improved exploration (IE) for oil and gas companies and the authorities in Norway.**

**Our ambition is to play a significant role in the future value creation on the Norwegian Continental Shelf, through facilitating cooperation between industry, research institutions and the authorities.**



# Members:

- ◆ 1995: Force was established, 13 companies and NPD
- ◆ 2018: Force represent 42 companies

Today almost all of the oil and gas companies registered in Norway are members of Force, and the big increase reflects the development and interest for the Norwegian Continental Shelf during the last 20 years



 **FORCE**





FORCE 17.11.1995



FORCE 06.02.2018





# Purpose of Force:

- ◆ A non-profit organisation for subsurface activities
  - ◆ Find more - Improve Exploration
  - ◆ Produce more - Improve Recovery
- ◆ Based on long-term strategy advised by OG21

# Working instrument:

- ◆ Create active meeting arenas for knowledge / technology transfer and idea generation
- ◆ Facilitate communication within the Force community and with our R&D partners and stimulate project initiations

# Liability:

- ◆ Regulated by Cooperation Agreement
- ◆ Members pay an annual administration fee
- ◆ Members decide themselves whether to participate in JIPs, workshops and seminars

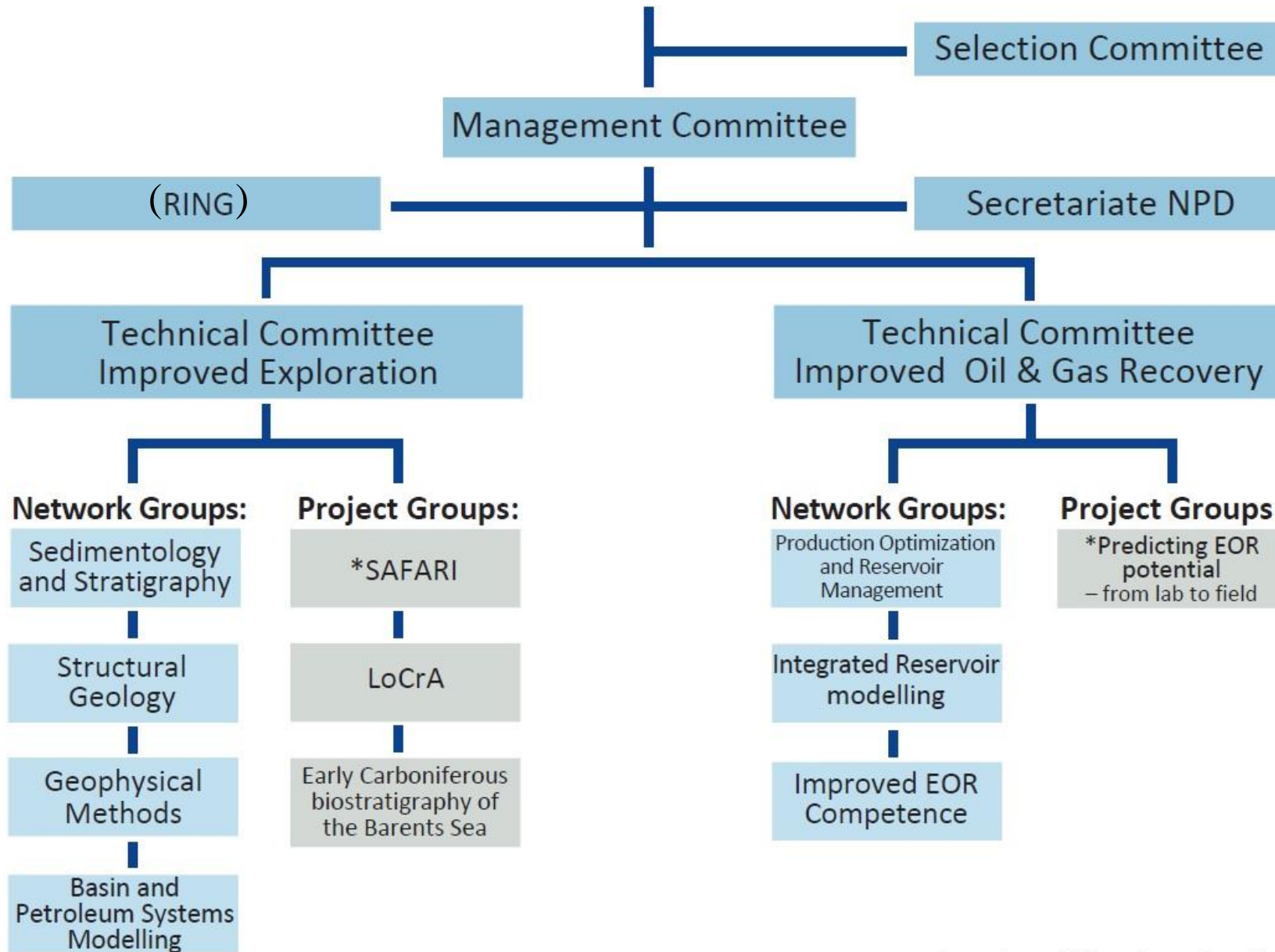


# What is unique with the Force community?

- ◆ Members that primarily are in competition with each other have agreed to cooperate to improve knowledge and technology (“win-win”)
- ◆ The Force community have access to large databases like DISKOS (well data, seismic and production data). Possibility for project initiation
- ◆ Philosophy is to share:
  - ◆ released and “untreated information”
  - ◆ Interpretations and products when appropriate
  - ◆ But of course compete on the interpretation of the data



# FORCE General Assembly



\*Require additional membership

## FORCE organized 25 seminars in 2017: L&L (10), 1 day (13), 2 days (2)

- The value of CO<sub>2</sub> - how can we utilize it? *L&L (24)*
- Water Saturation Modelling – a Multi-disciplinary Approach *L&L (72)*
- The use of broadband seismic - Is it meeting expectations? *1dag (128)*
- Smartwater EOR for NCS *1dag (40)*
- Cores of the year 2017 *1dag (73)*
- Wisting Field: Developing shallow reservoirs in the Barents Sea *L&L(56)*
- Research project proposal-BASE *1dag (20)*
- The science behind structural geology tools *1dag (24)*
- Uncertainty handling in static-dynamic modelling workflows *1dag (113)*
- Wintershall Brage Polymer Associated Surfactant Flooding (PASF) Project *L&L (19)*
- Fault Compartment Seminar *1dag (74)*
- Opportunities and challenges in the southern Norwegian Barents Sea *L&L (30)*
- Frontier Exploration Workshop *1dag (67)*
- Enhancing Geomodels with LWD deep resistivity Geosteering and reservoir mapping tools *L&L (33)*
- Use of seepage and gas chimney detection in exploration *L&L (43)*
- Reservoir Surveillance and Monitoring *1dag (59)*
- Provenance and correlation of hydrocarbon reservoir sandstones using heavy mineral techniques *L&L (34)*
- Predictive Stratigraphy *2dager (46)*
- Lunch & learn Reflections on decision making in upstream oil & gas *L&L (28)*
- Simulation of EOR-processes *1dag (25)*
- Practical Rock Physics and Inversion for Exploration and Production *1dag (151)*
- Triassic Park - understanding triassic stratigraphic architecture and reservoir quality *2dager (83)*
- Uncertainty handling in static-dynamic modelling workflows, Part 2 *1dag (70)*
- Reservoir modelling – a historical lookback *L&L (26)*





# Seminars 2018

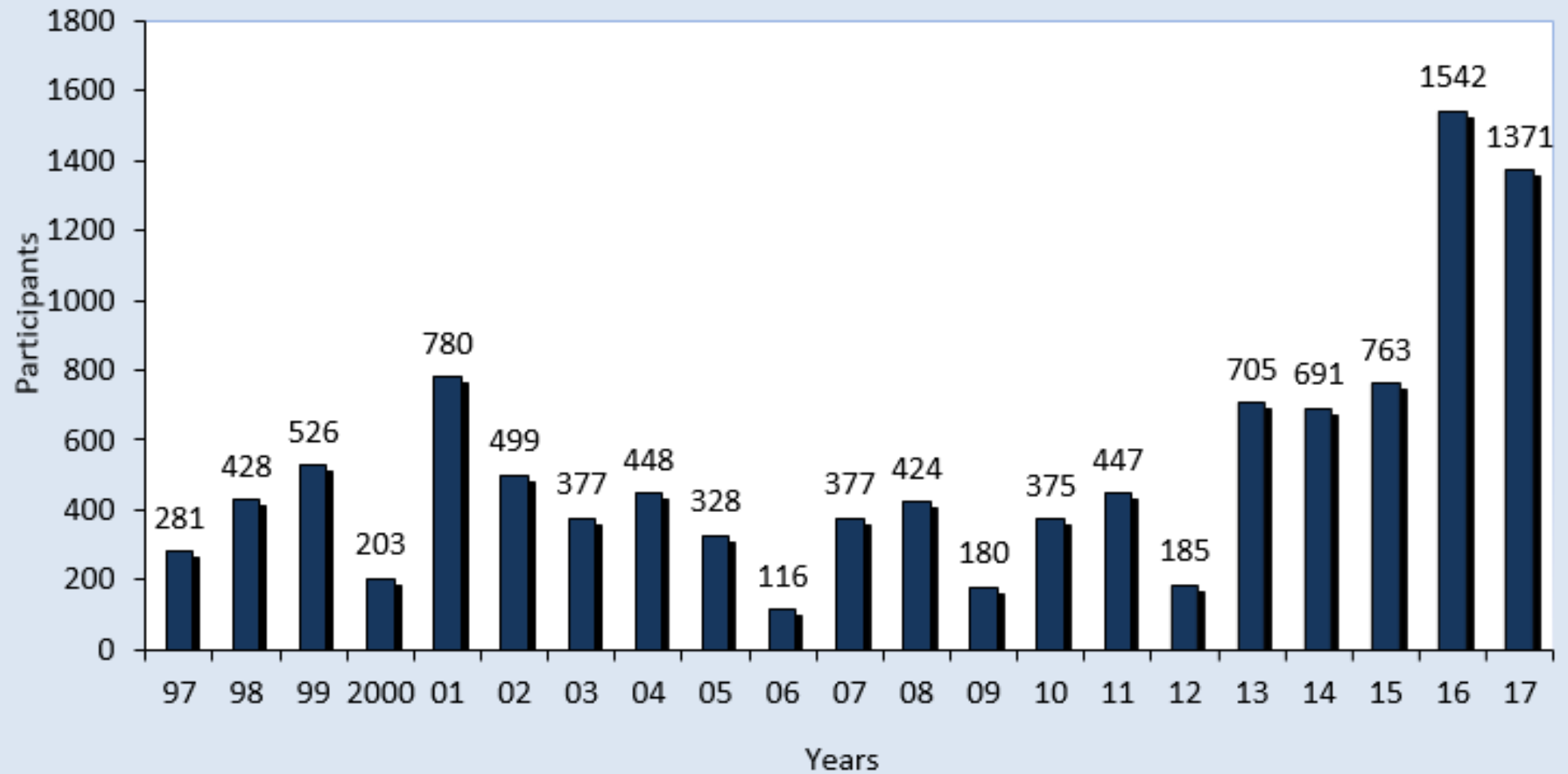
- ◆ Project proposal for an Ultra-Deep Imaging Seismic Survey in Norwegian Sector (27)
- ◆ Digitalization – a necessity for further improvement (52)
- ◆ Cores of the year (62)
- ◆ Advances in siliciclastic and carbonate sedimentology (83)
- ◆ Joining Forces (51)
- ◆ Recent advances of WAG (May)
- ◆ CO2 EOR and storage in NCS (June)
- ◆ Biostratigraphy NCS Operators Meetings within FORCE (June)
- ◆ Challenges related to Fault Modelling Workflows (June)
- ◆ From Seismic Fantasy to Geological Fact III (September)
- ◆ Field trip to Jæren (October)
- ◆ Field trip to the Gulf of Corinth (October)

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◆ L&L in blue



## FORCE SEMINARS 1997 - 2017



## Force seminars/workshops – Low threshold (and cost) competence building

### Seminar participant price-list

1 day seminar/workshop		Price	2 day seminar/workshop		Price
Member		Free	Member		NOK 1000,-
Non member		NOK 1000,-	Non member		NOK 2000,-
University/student		Free	University/student		Free

1 day seminar/workshop + dinner		Price	2 day seminar/workshop + dinner		Price
Member		NOK 1000,-	Member		NOK 1500,-
Non member		NOK 2000,-	Non member		NOK 3000,-
University/student		NOK 500,-	University/student		NOK 500,-



## **Actions from the previous Joining Forces seminar Feb 2016**

- ◆ **Consider planning for another Joining Forces meeting in 2-3 years**
- ◆ **Facilitate project specific meetings between Academia and the Network groups to discuss project proposals**
- ◆ **Work towards getting an overview from companies of the areas/topics of interest for future projects**
- ◆ **Maintain an active list of R+D projects that come through FORCE that is reviewed and updated by the TC and Network groups on a regular basis**
- ◆ **Ensure feedback is provided on projects that are turned down**





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**Improved oil and gas recovery (IOGR)**  
and **Improved exploration (IE)** conducted by  
oil and gas companies and authorities in  
Norway.

Our ambition is to play a significant role in the future  
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### Upcoming events



17.-18th April Advances in  
siliciclastic and carbonate  
sedimentology

19.-20th April Joining Forces  
2018

6th June Co2 EOR and storage  
in NCS

20th June Challenges related  
to Fault Modelling

12th September From Seismic  
Fantasy to Geological Fact

3.-4th October 2-day field trip  
to Jæren

22.-25th October Field trip to  
the Gulf of Corinth

### Presentations



Some of the presentation  
material used in seminars is  
public and free to download.

### Projects



There are a vast amount of  
ongoing projects in FORCE.  
Open an overview here:

### Focus areas



FORCE technical committees  
(TC) have listed topics they will





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## Contact us

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**Visiting address:**

Prof Olav Hanssens vei 10

**E-mail:** [info@force.org](mailto:info@force.org)

**Telephone:** +47 51 87 67 57/ 51 87 61 75

More information about the Secretariat [here](#).

[Do you wish to contact a technical committee, network or project group, click here.](#)

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## Contact Networks or Project groups

Do you have any questions for or would like to come in contact with any network or project group?

Choose your network or project and use the form on the next page.



**Contact Geophysical  
Methods**



**2016 Kunnskapsdager  
feedback**



**Contact Mature fields -  
Maximize Recovery**



**Contact Improve EOR  
competence**



**Contact Technical  
committee Improved  
Evaluation**



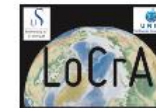
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field**



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### Contact Geophysical Methods

Do you have any questions to the Geophysical Methods network group?

Please use this form:

Your name


E-mail


Question


Force | Professor Otav Hannesens vei 10, 4021 Stavanger Postboks 600, 4003 Stavanger Phone: +47 51 87 67 57 [info@force.org](mailto:info@force.org) [Sitemap](#)





 **Technical committee**

 **Network groups**

 **Project groups**

Projects - Improved Exploration


SAFARI Phase 2

SAFARI Phase 3

LoCrA

Early Carboniferous biostratigraphy of the Barents Sea

Geophysical Inversion to Geology

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# Projects - Improved Exploration



The project groups within FORCE have specific scopes to impact exploration success and increase reserved in the producing fields. The basic idea behind the project groups is to create cross-licencees' intercompany collaboration within exploration, EOR piloting and implementation.

The list below is an overview over the recent years' projects in the Improved Exploration group.

Project	Status	Accepting late participants
<u>GIG Consortium (2017)</u>	Active	Yes
<u>LoCrA (2012)</u> <u>SedStrat group</u>	Active	Yes
<u>Safari 3 (2013)</u> <u>Uni Reserach AS/SedStrat</u>	Active	Yes
<u>RING (2010)</u> <u>SedStrat group</u>	Active	Yes
<u>Sub-basalt (2006)</u> <u>SedStrat</u>	Active	
<u>Carboniferous Barents Sea (2013)</u> <u>UiB/SedStrat</u>	Active	Yes



# Recommendations from Force to our R&D partners

- ◆ Use the web page: [www.force.org](http://www.force.org)
- ◆ Feel free to suggest improvements to the web page
- ◆ Contact groups and networks you need to discuss with. Get feedback for your project proposals
- ◆ Participate in seminars and workshop. A lot of ideas within Force appear in these forums
- ◆ Your ideas are always valuable to **FORCE!**

