



Annual Report
2022



FORCE annual report 2022

Opening remarks from FORCE MC Chairman

Same procedure as every year, let me start with quick reminder on the purpose of FORCE;

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

2022 has been yet another “excellent FORCE year”. We have continued to successfully conducted a record high number of quality seminars and workshops, in total 4 live seminars, 3 live Lunch & Learns, 25 webinars, including 1 hybrid, and 2 field trips. More than 2600 participants have attended in total. The most popular event in terms of attendees was the “Underexplored plays IV” which was sold out with 300 participants. The cause of the continued high activity is probably a combination of;

- Successful web-based seminars using quality technology and visualization, examples are the “Core-store show and tell Webinars”
- A demand for physical meetings and networking, now with the Covid-19 “lock-down” behind us
- And most of all - the significant effort and solid preparations done by the network groups arranging the seminars. 2022 included an excellent mix of topics within Petroleum Systems, Sedimentology & Stratigraphy, Geophysical Methods, Structural Geology, IOR / EOR / Production, Well Technology & Drilling, CCS /Energy & Environment.

A big thank you to the hard-working network groups and FORCE enthusiast for arranging xx excellent learning events and getting the physical gatherings back on track so swiftly!

As previous years our “2022 FORCE weak-spot” is our ability to increase value from the NCS by generating and collating ideas for Joint Industry Projects (JIP). The FORCE ambition is to aid in faster technology adoption by initiating JIPs where cost and risk can be shared across several companies. Consequently, the challenge to the FORCE membership companies remain: Search for opportunities and synergies across companies and Licenses to generate Win-Win JIPs! One of the vehicles to do this is the bi-annual seminar “Joining Forces”, which was successfully arranged in 2022. Here we have a golden opportunity matching up the desires from the Industry with competencies and ideas from Academia.

Looking ahead, the 2023 FORCE program already starts to fill up with 5 events and 1 field trip to the USA lined up so far. You can find all our upcoming events on the FORCE web site under “Events”. You can subscribe for our Newsletter on any of the pages on the FORCE web site, and follow the discussions occurring in Basecamp.

Finally, the most important asset we have in FORCE is YOU and your colleagues FORCE enthusiasts! So again - a big thank you to committee members, network participants, Tim Austin that Chaired FORCE for most of 2022, and especially the NPD Secretariat - for all your efforts and hard work in 2022!

08/01-23, On behalf of the Management Committee and Tim Austin
Grete Block Vagle, Aker BP, Deputy FORCE Chairman

FORCE annual report 2022

About FORCE

FORCE is a cooperating forum for Improved oil and gas recovery (IOGR) , Improved exploration (IE) and Energy efficiency & environment conducted by oil and gas companies and 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 authorities. The basic idea of the forum is to improve collaboration by sharing knowledge through network groups and by enabling the establishment of cross licensees /company piloting projects within exploration and enhanced oil recovery through project groups.

	Role/task	Participants	Meetings
General assembly	<ul style="list-style-type: none"> • Decide budget • Select members for committees 	<ul style="list-style-type: none"> • All member companies 	<ul style="list-style-type: none"> • Yearly
Selection committee	<ul style="list-style-type: none"> • Propose members for committees 	<ul style="list-style-type: none"> • 3 members 	<ul style="list-style-type: none"> • Biennial
Management committee	<ul style="list-style-type: none"> • (Re-) allocate budget • Synergies between technical groups • External communication • Monitor activities 	<ul style="list-style-type: none"> • Max 8 members 	<ul style="list-style-type: none"> • Quarterly
Secretariat	<ul style="list-style-type: none"> • Arrange meetings • Support activities • Administration 	<ul style="list-style-type: none"> • NPD 	<ul style="list-style-type: none"> • As required
Technical committees	<ul style="list-style-type: none"> • Select project proposals • Facilitate project initiation • Manage pre-projects 	<ul style="list-style-type: none"> • Max 8 members • Whereof 3 asset managers 	<ul style="list-style-type: none"> • Quarterly
Network groups	<ul style="list-style-type: none"> • Share information through workshops • Generate ideas for new projects 	<ul style="list-style-type: none"> • All member companies 	<ul style="list-style-type: none"> • As required

FORCE annual report 2022

Members

All oil and gas companies with an office in Norway can become FORCE members. Interested parties can apply for membership by contacting the Secretariat. The Management committee, consisting of 8 members, will be consulted.

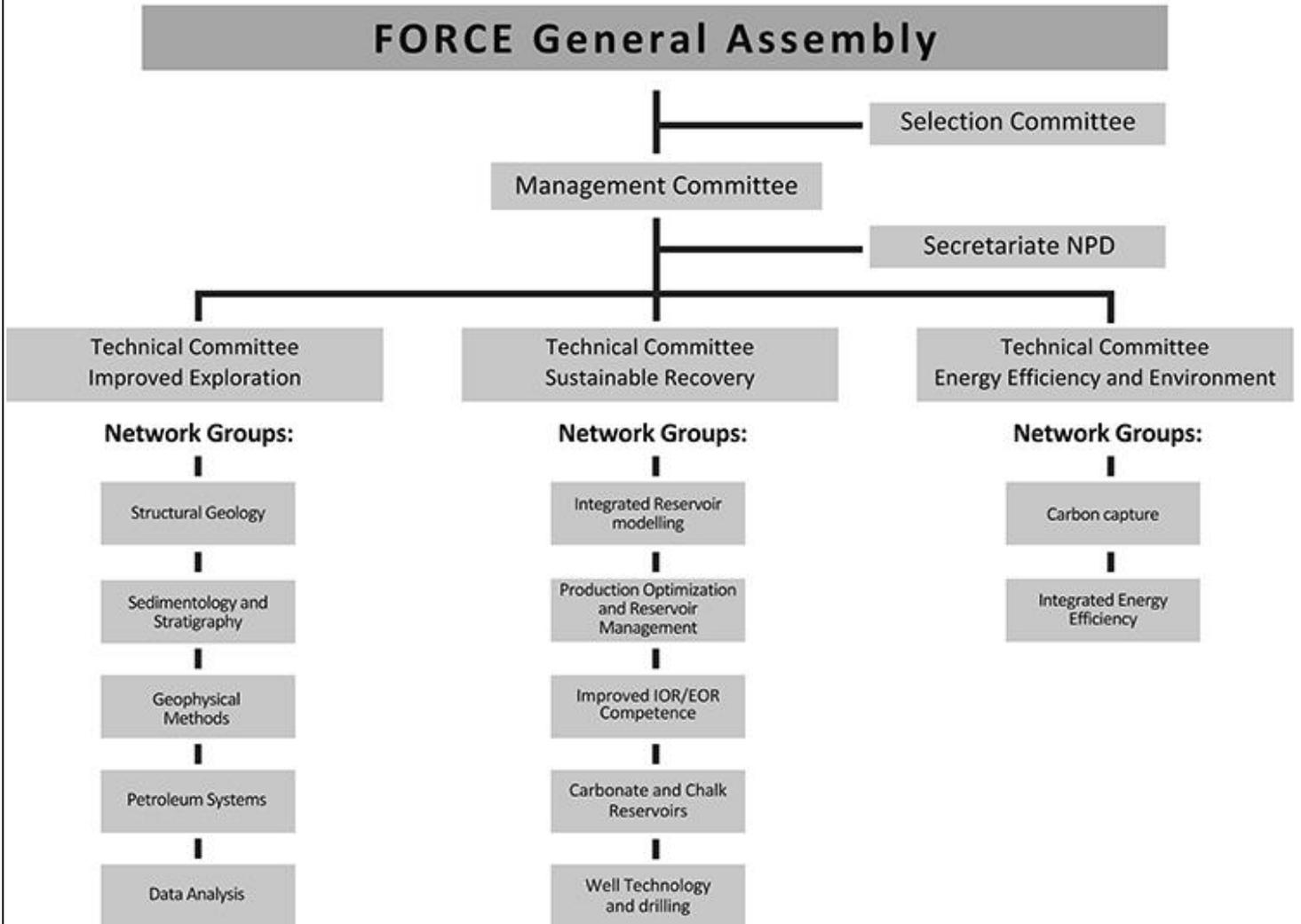
New companies must sign the FORCE Cooperation Agreement. The cost is a given amount divided equally among all members. For 2022 this was NOK 75 736,-.

By the end of 2022, the number of members had decreased from 36 to 27 members, and one new member, Harbour Energy was welcomed. The reduction in members were mostly because of company merges.

These companies were members during 2022 (this is according to invoicing).

A/S Norske Shell	NPD
Aker BP	OKEA
Cape Omega	ONE-Dyas
Chrysaor	OMV Norge
Concedo	Pandion
ConocoPhillips	Petoro
DNO Norge	Petrolia NOCO
Equinor	PGNiG Upstream International
Idemitsu Petroleum Norge	Repsol Exploration
INPEX	RN Nordic Oil
KUFPEC Norway	Spirit Energy Norge
Lime Petroleum	Source Energy
LOTOS Exploration Production Norge	Suncor Energy
Lukoil Overseas North Shelf	Sval Energi
Lundin Norway	TotalEnergies
Mime Petroleum	Vår Energi
MOL Norge	Wellesley Petroleum
Neptune E&P	Wintershall Dea Norge

Organization



Management- and technical committees

Management Committee	
Tim Austin, Chairman – retired Sept.	ConocoPhillips
Helen Haneferd	ConocoPhillips (replace T. Austin)
Grete Block Vagle – temp. Chair	Aker BP
Olga Matveenکو	TotalEnergies
Søren Andersen	Wintershall Dea
Thomas Gorm Theting	Equinor
Filippos Tsikalas	Vår Energi
Rolando di Primio	Lundin
Claire Richardson	Shell
TC Improved Exploration	
Ingrid E. I. Øxnevad, Chairman	Aker BP
Atle Folkestad	Equinor
Michael Young	ConocoPhillips
Richard Olstad	Pandion
Jon Halvard Pedersen	Lundin
Marli Blumenwitz	Wintershall Dea
Paul Spencer	Vår Energi
Matteo Gennaro	Vår Energi (replaced P. Spencer)
Janka Nakken Rom – withdrew	NPD
Stig-Morten Knutsen – replaced Janka	NPD (replaced J. Rom)
TC Sustainable Recovery	
Johanna Normann Ravnås, Chairman	Wintershall Dea
Roar M. Kjelstadli, Chairman	Aker BP
Erik Søndena	Petoro
Teodor Damian	Shell
Robert Moe	ConocoPhillips
Rune Boge	Spirit Energy
Svein Tollefsen	Equinor
Eli Jens Høgnesen	NPD
TC Energy Efficiency and Environment	
Ola Tarjeson Miljeteig	Equinor
Silje Kommedal	Repsol
Carlo Cavalli	PGNiG
Hans Røstøen	ConocoPhillips
Georgios Samouilidis	Shell
Siri Nesbø	Spirit Energy
Britt Bjelland	Petoro
Aslaug Eskeland Jansen	NPD

FORCE annual report 2022

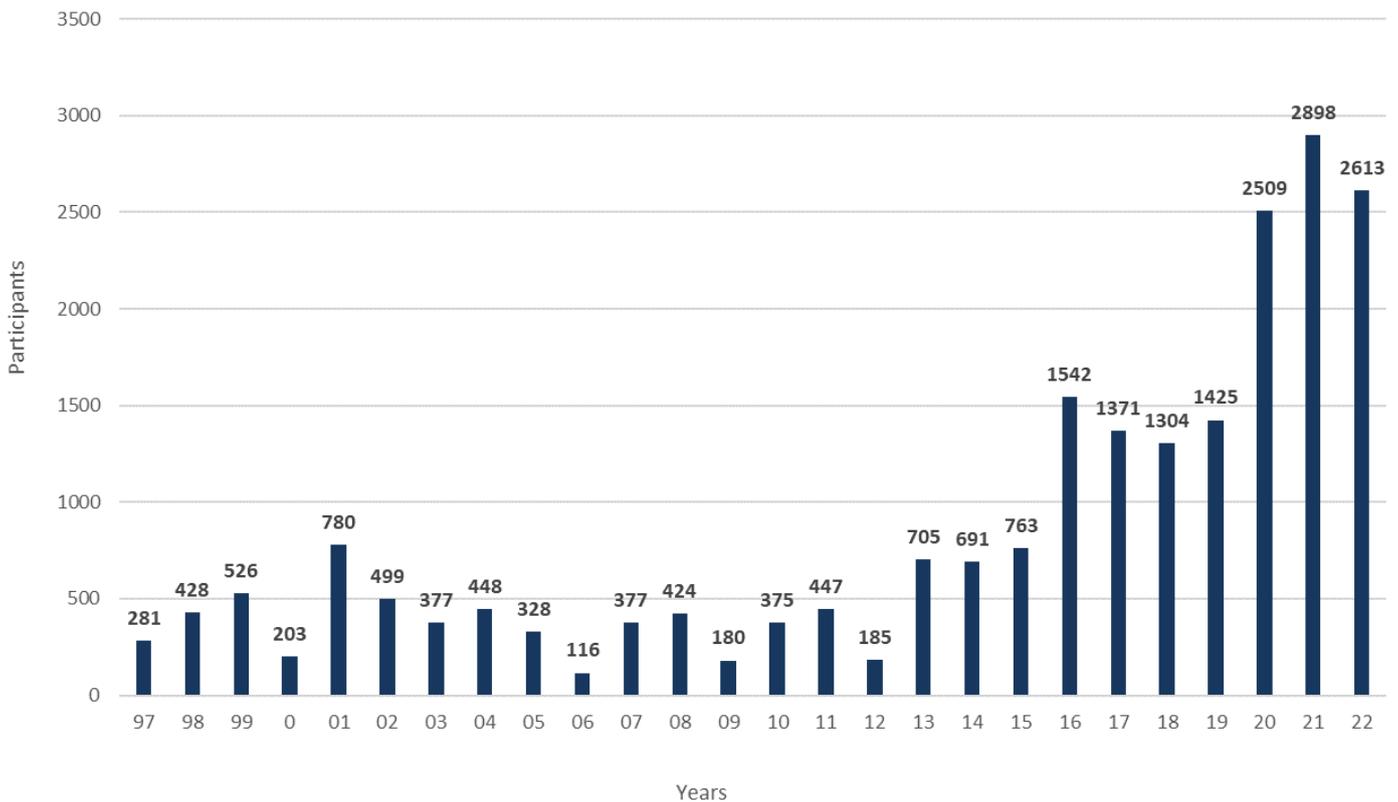
Activity reports

2022 has proven to be another good year for FORCE. As pandemic restrictions were removed early in 2022, we could slowly get back to hosting in-person seminars and meetings again. This was a positive change for many, to finally meet again, having good conversations and network-building. Still, many preferred the flexibility to attend events digitally, and there were some new challenges with combining digital and in-person attendance. There is now an ongoing discussion about this, where all members are invited to bring in their views on how events should be arranged.

With a total of 36 events, including webinars, seminars, lunch&learn and field trips, the number of participants ended up at 2613, which is at the same level as 2021's record breaking number.

The diagram below illustrates number of attendees at the seminars and workshops through time.

FORCE SEMINARS 1997 - 2022



FORCE annual report 2022

Webinars, lunch&learns and seminars 2022

Date	Type	Name	Part.
26.-27.01	Webinar	Underexplored Plays	300
02.02.	Webinar	Hywind Tampen – An industrial part of the solution	68
16.02.	Webinar	Dual Drilling	84
24.02.	Webinar	The role of basin modelling in CCS applications - play to prospect workflows	142
10.03.	Webinar	Vår Energi Retrofit Multilateral Campaign: Existing infrastructure utilization to reduce emissions and costs	51
15.03.	Webinar	State of the art heat pumps and energy integration	29
16.03.	Webinar	The Acorn and VNZ projects: CCS on the UKCS	108
17.03.	Hybrid	Johan Sverdrup: experience from first 2 years of production	85
24.03.	Webinar	Machine learning based oil family classification above 62° North – method and some observations	53
03.01.	Seminar	Joining Forces	81
27.04.	Webinar	Cyber security in the D&W community	30
28.04.	Webinar	The Paleozoic petroleum system in the North Sea	104
05.05.	Webinar	Core Webinar The Filicudi discovery	62
09.05.	Webinar	Northern Lights: CO2 Shipping expanding global reach of CCS	41
02-06.05.	Field trip	Field Trip to the gulf of Corinth	15
12.05.	Webinar	Goliat Retrofit MLT: from target maturation to production performance	53
13.05.	Webinar	Core Webinar The Edvard Grieg cores, the first oil discovery made by Lundin Energy at the NCS	63
16.05.	Webinar	Storage resource maturation and beyond: The Northern Lights experience	124
31.05.	Webinar	Core Webinar Caves, breccias, sinkholes and the evaporites that are not there anymore – Paleokarst features of the Loppa High, Barents Sea	53
09.06.	Webinar	Controls of bulk petroleum compositions in conventional and unconventional petroleum systems	17
14.06.	Field trip	Field Trip to Technology Centre Mongstad	25
16.06.	Webinar	Rock and Fluid Data: An Integrated Effort on Improving Subsurface Analysis and Modelling Workflows	38
17.08.	Webinar	Structural Group afternoon fault lectures	99
01.09.	Webinar	Veien til nullslipp i Statnetts Langsiktige Markedsanalyse	24
07.09.	Seminar	A Cityringen Journey through Danian and Danish Carbonate rocks	13
15.09.	Webinar	Use of fishbones for improved recovery, challenges and results	95
22-23.09.	Seminar	PSA & geochemistry conference	46
23.09.	L&L	The winner of the IOR award 2022	19
04.10.	L&L	Fundamentals of Borehole Seismic Technology	33
19.10.	Webinar	CCS Network Webinar	112
29.11.	L&L	Gas vs oil production: adjusting to the new political and economic climate	25
15.11.	Webinar	Long term experience of CO2 injection and monitoring on the NCS	186
30.11.	Seminar	NSRG and FORCE presents Shallow sedimentology and implications for offshore infrastructure and renewable industries seminar	117
01.12.	Webinar	Traditional and machine learning techniques applied to oil-source correlation in the Norwegian Sea: Åre we able to end the Spekk-ulation?	65
06.12.	Webinar	Pre-salt reservoirs in Brazil: a quick introduction	65
07.-08.12.	Seminar	Experience Sharing: Assisted History Matching & Ensemble Modelling	88

FORCE annual report 2022

Budget and annual accounts 2022

Budget 2022			Result 2022	
	Income	Expenses	Income	Expenses
Transferred from 2021	1 941 242		1 941 242	
Pre-projects TC group		200 000		
Payment (seminar fees)	100 000		317 700	
Sponsors			0	
Seminars Expenses		200 000		417 700
Seminar buffer		300 000		114 089
Lunch&Learn	30 000	15 000	53 300	17 015
Invited speakers-EE&E		200 000		
Invited speakers - IE		200 000		5 655
Invited speakers - IOGR		200 000		
Membership fees	2 120 000		2 120 000	
Administration fee NPD		1 820 000		1 820 000
New members				
Secretariat expenses NPD		300 000		213 664
Extra funding web development		0		
<i>Service at meetings</i>	<i>Incl. secretariat expenses</i>	30 000		26 271
<i>Marketing</i>	<i>Incl. secretariat expenses</i>	30 000		
<i>Web page</i>	<i>Incl. secretariat expenses</i>	195 000		126 008
<i>Accessories for seminars</i>	<i>Incl. secretariat expenses</i>			5 437
<i>PayEx fee (monthly)</i>	<i>Incl. secretariat expenses</i>	5 000		26 069
<i>Div/travel expenses</i>	<i>Incl. secretariat expenses</i>	40 000		29 879
Total	4 191 242	3 435 000	4 432 242	2 588 123
Estimated balance 31.12.2022	756 242		1 844 119	

Result	
Transferred from 2021	1 941 242
Outgoing balance	1 844 119
Result 2022	-97 123
Result seminar	-214 089
New members	0
Lunch & learn	30 630
Membership fee (income)	2 120 000
Admin cost (NPD)	-1 820 000
Secretariat	-213 664
Sum	-97 123

Budget/balance	
Balance	1 844 119
Budget/balance	756 242
	1 087 877
Seed funds/Pre-projects	200 000
Seminars	0
Seminar buffer	185 911
Lunch & Learn	21 285
Invited speakers	594 345
Admin fee and secretariat	86 336
New members	0
	1 087 877