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BOARD OF DIRECTORS' REPORT

2022

1	Contents	
2	SUMMARY	4
3	GOVERNING BODIES	4
3.1	GENERAL MEETING.....	4
3.2	NOFO'S BOARD OF DIRECTORS	4
4	ORGANISATION	5
4.1	HSE AND QUALITY	5
4.2	SECURITY	5
4.3	TURNOVER	6
4.4	EQUAL OPPORTUNITIES.....	6
4.5	GENDER DISTRIBUTION AT VARIOUS LEVELS/GROUPS, INCLUDING PREPAREDNESS GROUPS	6
4.6	MAPPING OF PART-TIME WORK.....	6
4.7	SICKNESS ABSENCE	6
5	FINANCIAL POSITION	7
6	NOFO'S STRATEGY FOR THE PERIOD 2021-2025	7
6.1	ACTION PLAN	7
6.2	FUNDAMENTAL PREREQUISITES	7
6.3	ONGOING WORK	8
6.4	SUSTAINABILITY.....	8
6.4.1	<i>Human rights</i>	8
6.5	COMMUNICATION AND PUBLIC RELATIONS.....	8
6.5.1	<i>Major drill 2022</i>	8
6.5.2	<i>Trade fairs and conferences</i>	8
6.5.3	<i>Collaboration with educational institutions</i>	9
6.5.4	<i>Social media, websites and media</i>	9
6.5.5	<i>The shipowner seminar</i>	9
6.5.6	<i>Municipal and state resources</i>	9
7	NOFO'S PREPAREDNESS	9
7.1	OIL SPILL RESPONSE OPERATIONS.....	9
7.2	PLANVERKET, NOFO'S PLANNING SYSTEM.....	10
7.3	THE MARITIME FORUM	10
7.4	NOFO'S STANDBY FLEET	10
7.5	BASES.....	11
7.6	WASTE-HANDLING AGREEMENT	11
7.7	ENVIRONMENTAL ASSESSMENTS IN CONNECTION WITH DRILLS	11
7.8	ENVIRONMENTAL INVESTIGATIONS	11
7.9	OIL SPILL PREPAREDNESS – EXPLORATORY DRILLING.....	11
8	ACTIVITIES – COAST AND SHORE	12
8.1	IUA, INTER-MUNICIPAL COMMITTEE AGAINST ACUTE POLLUTION	12
8.2	IGSA, EMERGENCY SHORELINE TASK FORCE.....	12
8.3	TASK FORCE – COAST, IGK FINNMARK	12
8.4	TASK FORCE – COAST, IGK SOUTH.....	12
8.5	THE SPECIALIST TEAM	12
8.6	BEACH CLEANUP TEAM – THE REN KYST! CAMPAIGN	13
9	REMOTE MEASUREMENT	13
9.1	GENERAL.....	13
9.2	SATELLITE SURVEILLANCE	13
9.3	AERIAL SURVEILLANCE	14
9.4	RESOURCES FOR LOCAL SURVEILLANCE	15
	DRONES	15
10	COOPERATION DRILLS AND TRAINING	16
10.1	KINN DRILL 2022.....	16
10.2	COURSES AND TRAINING	16
11	STATUS OF OIL SPILL RESPONSE EQUIPMENT	17
11.1	PROCUREMENTS OF OIL SPILL RESPONSE EQUIPMENT	17
11.2	THE EQUIPMENT PORTAL	17
11.3	MAINTENANCE MANAGEMENT	17
12	RESEARCH AND DEVELOPMENT	17
12.1	PROJECT – PROLONGED INCIDENTS.....	18
13	AGREEMENTS	18

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13.1	INTERNATIONAL COOPERATION	19
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Foreword

After two years of Covid 19-related restrictions to some of our activities, NOFO was back to normal operations early in 2022. New challenges have emerged in view of the tense security situation with war in Europe. It is therefore important to carry out operations as scheduled to ensure the preparedness is intact and that all resources have been drilled and trained as planned.

NOFO's strategy for the period 2021-2025 sets the parameters for oil spill preparedness and NOFO's tasks. Strategy follow-up was somewhat restricted in 2021 because of Covid-19, but close follow-up and focus were resumed in 2022 to ensure the schedule is followed.

A new organisation structure was implemented in 2022, with an expanded management team and NOFO growing from three to six departments.

There is a strong focus on cost control, with status reported to the Board of Directors at board meetings.

NOFO performed satisfactorily in 2022 in terms of the parameters assigned and in line with the Board's expectations.

Forus

*Hilde Ådland
Chair*

2 SUMMARY

NOFO kept some of the Covid-19-related measures in place at the start of 2022, but through the year things gradually returned to normal after the pandemic.

We carried out our planned activities, including the entire drill and training programme.

NOFO's tasks, responsibilities and priorities are governed by the strategy adopted for the years 2021-2025.

The main objectives of NOFO's strategy 2021-2025 are:

1. Effective and robust oil spill response
2. Collaboration
3. Development

Strategy follow-up is by means of long-term targets, with the strategy's requirements and expectations broken down into activities and plans for achieving the targets. The pandemic and the focus on maintaining the level of preparedness and access to trained resources led to slightly reduced strategy follow-up through 2021, but this was caught up in 2022.

The Kinn full-scale drill was carried out in the autumn of 2022 with Equinor and several other collaborating partners. The main goal of the Kinn drill was to practise teamwork, communication and coordinated incident command for dealing with a prolonged incident.

An organisation development process was implemented in NOFO in 2021 and 2022, with broad employee involvement. The organisational change took effect on 1 September 2022.

3 GOVERNING BODIES

3.1 General meeting

Two general meetings were held in 2022.

At 31 December 2022, NOFO had 16 members, all full members.

The following operating companies are members:

AS Norske Shell, Aker BP ASA, ConocoPhillips Skandinavia AS, Chryasor Norge AS, DNO Norge AS, Equinor Energy AS, OKEA ASA, OMV (Norge) AS, Neptune Energy Norge AS, PGNiG Upstream Norway AS, Repsol Norge AS, Spirit Energy Norway AS, Sval Energi AS, TOTAL E&P NORGE AS, Vår Energi ASA, Wellesley Petroleum AS, Wintershall Dea Norge AS.

3.2 NOFO's Board of Directors

Four ordinary board meetings plus a number of extraordinary board meetings were held in 2022. At 31 December 2022, the Board of Directors was made up as follows:

Company	Representative	Position
Vår Energi ASA	Hilde Ådland	Chair
Equinor Energy AS	Steinar Ådland	Deputy Chair
Aker BP ASA	John G. Vedøy	Member
OKEA ASA	Erlend Furu	Member
Neptune Energy Norge AS	Anne Botne	Member
NOFO	Ståle Jensen	Employee representative

4 ORGANISATION

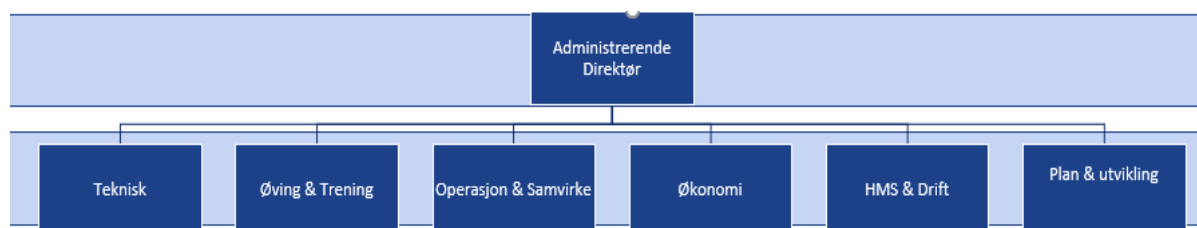


Figure 1 Organisation from 01.09.2022

At 31 December 2022, NOFO had 143 employees. Of these, 36 work at the office in Sandnes and three in Hammerfest.

The remaining 104 employees are affiliated to NOFO's preparedness groups (the specialist team and IGSA, emergency shoreline task force). The percentage of full-time equivalents for IGSA and the specialist team has been calculated as 2.5%.

Including IGSA, the specialist team and contract workers, NOFO employed a total of 43 FTEs at 31 December 2022, with NOFO being the main employer for 39 of them. At 31 December 2022, NOFO had one contract worker.

In 2022 NOFO reorganised its administration teams in Sandnes and Hammerfest. The main outcomes were a more even distribution of employees between the departments and fewer management levels in the organisation. In the wake of the reorganisation, NOFO's management group has increased from three to six departmental managers. The new organisation was implemented on 1 September 2022.

4.1 HSE and quality

NOFO's management system is certified in accordance with ISO 9001:2015 and covers both the administrative and operational parts of the organisation's governance.

KPIs are defined and monitored on a regular basis.

One incident with potential for serious personal injury was reported in 2022. Incidents are followed up in accordance with the management system.

NOFO was audited by an external party in 2022, and NOFO also carried out two internal and two external audit activities itself. NOFO is certified in accordance with ISO 9000.

A major project was carried out in 2022 to ensure that NOFO's new tools for reporting matters relating to HSE and quality, the organisation's risk management and process-based management system were fit for purpose.

In 2022 NOFO worked on changing the management system to a process-based management system and will use 2023 to finalise, implement and fine-tune this.

4.2 Security

In common with many other participants in the Norwegian oil industry, NOFO introduced extra security measures and increased vigilance in light of the tumultuous situation in Europe.

NOFO is also seeing a generally high threat level within the ICT domain and has established a security forum made up of experts from a wide range of disciplines to strengthen a holistic approach in value assessments and evaluations of threat levels, and to implement specific measures to tackle vulnerabilities.

4.3 Turnover

NOFO as a whole experienced employee turnover of 4.9% in 2022. For administrative employees (Sandnes and Hammerfest), turnover was 10.26%. Turnover is calculated by dividing the number of employees who leave the company by the average number of employees in the period.

Pensioners and employees with disabilities leaving the company are not included.

4.4 Equal opportunities

The gender distribution at 31 December 2022, including IGSA, the specialist team and contract workers, was 17% women and 83% men. This breaks down as follows:

- NOFO as primary employer: 31% women and 69% men
- Preparedness groups (IGSA and specialist team): 12% women and 88% men

The share of women in NOFO's management following the reorganisation is 50%.

4.5 Gender distribution at various levels/groups, including preparedness groups

Job category based on level of responsibility and complexity (1 = low, 5 = high)	Women	Men	Percentage of women	Total
Total	25	118	17%	143
Level/group 1	3	3	50%	6
Level/group 2	3	6	33%	9
Level/group 3	4	10	29%	14
Level/group 4		4	0%	4
Level/group 5	3	3	50%	6
Level/group – preparedness	12	92	12%	104

4.6 Mapping of part-time work

Kjønnsbalanse		Midlertidig ansatte		Uttak av foreldrepermisjon		Deltidsarbeid			
						Faktisk deltidsarbeid		Ufrivillig deltidsarbeid	
Antall kvinner	Antall menn	Midlertidig ansatte kvinner	Midlertidig ansatte menn	Kvinnens uttak av foreldrepermisjon (gjennomsnitt antall uker)	Mennens uttak av foreldrepermisjon (gjennomsnitt antall uker)	Deltid kvinner	Deltid menn	Ufrivillig deltid kvinner	Ufrivillig deltid menn
25	118	0	0	0	0	12	92	0	0

4.7 Sickness absence

NOFO had average sickness absence of 6.7% in 2022. Sickness absence is primarily linked to several cases of long-term sickness absence in 2022. NOFO has drawn up a dedicated action plan for following up sickness absence, in addition to standard routines for monitoring employees on sick leave.

5 FINANCIAL POSITION

NOFO's revenue derives entirely from its members and amounted to NOK 468.2 million in 2022.

Revenue 2022:

- Membership fees: NOK 431.9 million
- Other revenue: NOK 36.3 million

A surplus of NOK 42.9 million has been taken to equity.

In 2022, investments in oil spill response equipment totalled NOK 69.0 million. These investments were made to upgrade equipment and to replace equipment that had reached the end of its useful life. In addition, commitments of NOK 29.2 million were made relating to investments for delivery in 2023. The investments have been debt-financed with loans of NOK 54.9 million. Other investments have been made using equity.

As a basis for making decisions on investments and upgrades, NOFO has drawn up the Strategic Investment Plan (SIP), a long-term plan intended to provide predictability on investments. This is reviewed annually in connection with the budget process.

At 31 December 2022, NOFO had loan obligations totalling NOK 275.2 million. These comprise loans to finance oil spill response equipment and depots. The repayment profile is aligned with the estimated technical/economic life of the operating assets. NOFO's liquidity is robust, with current assets at 31 December 2022 of NOK 192.3 million.

Operations are funded by membership fees, and the financial risk is considered to be low. NOFO's exposure to market risk, credit risk and liquidity risk is also deemed low, although the association makes some purchases in USD, EUR and DKK. The financial statements have been prepared on the assumption of a going concern, and provide a true and fair view of activities and results.

At year-end 2022, total assets amounted to NOK 578.9 million, compared with NOK 544.2 million at year-end 2021. The equity ratio at year-end was 36.0% in 2022 and 30.4% in 2021.

6 NOFO'S STRATEGY FOR THE PERIOD 2021-2025

6.1 Action plan

The Board of Directors submitted the strategy for the period 2021-2025 to the general meeting in January 2020, where it was approved.

As part of its follow-up work, the Board has worked with NOFO to draw up an action plan for the coming strategy period.

There is some variation in how far NOFO has progressed in following up the long-term goals. Priority was given to the pandemic situation, a work environment survey and follow-up of this, alongside day-to-day operations and maintaining preparedness. This prioritisation was decided by NOFO's management and approved by the board, for which reason there were no expectations surrounding explicit processes, results and strategic status reports in 2022.

This situation changed at the end of 2022, and NOFO has now resumed its work on the strategy and action plan.

6.2 Fundamental prerequisites

The strategy defines a number of fundamental prerequisites within the three main goals: effective and robust oil spill response, collaboration and development. These prerequisites form the basis for

NOFO's follow-up of the particular focus areas outlined in the strategy. The prerequisites reflect current expectations relating to the level of oil spill preparedness that has already been achieved and is expected to be continued or developed.

The fundamental prerequisites were attended to in 2022.

6.3 Ongoing work

A new organisation was implemented in NOFO on 1 September 2022, changing from three to six departments. The allocation of the long-term goals to the previous heads of department is therefore no longer relevant.

The long-term goals are now being transferred to the new heads of department to be dealt with in the line going forward. Among other things, this involves transferring tasks and work completed from departments and employees to others (where relevant).

6.4 Sustainability

NOFO's sustainability work is anchored in our strategy and our motto: "Keeping the seas clean". NOFO has appointed a cross-disciplinary group to assess and identify focus areas for our work on sustainability. The main focus in 2022 has been on identifying areas that we as an organisation can control and influence.

6.4.1 Human rights

NOFO's strategy is to work according to a long-term perspective and maintain positive, open dialogue with all partners. This is important in order to succeed with all areas of our sustainability promise. Our obligations are defined by the guidelines for responsible business management endorsed by the Board of Directors.

NOFO is subject to the Norwegian Transparency Act and works closely with its own organisation, our providers and business partners to promote fundamental human rights and decent working conditions. A large part of the work in 2022 involved establishing systematics to ensure continuous, in-depth due diligence assessments in order to map and assess actual negative consequences that our operations may either have caused or contributed to, or that are directly linked to our services through supply chains or business partners. NOFO will publish information on the organisation's compliance with the Transparency Act on our website.

6.5 Communication and public relations

6.5.1 Major drill 2022

A major drill, the Kinn drill, took place in 2022. This was an oil spill response drill in which NOFO and providers – a number of the Inter-Municipal Committees against Acute Pollution (IUA Bergen, IUA Nordfjord, IUA Sogn og Sunnfjord, IUA Sunnmøre and IUA Romsdal), the Norwegian Coastal Administration and Equinor – practised working together in an oil spill scenario. The main goal, namely "The participants shall manage the incident by working together and following relevant procedures", was achieved by resources from the Norwegian Coastal Administration, NOFO and providers, Aker BP, ConocoPhillips, OKEA, Sval Energi, Vår Energi, Wintershall Dea and Equinor (IMT and GIMAT) working together at the same location to manage the incident.

6.5.2 Trade fairs and conferences

For the first time, NOFO had a stand at the industry event Offshore Northern Seas (ONS) in Stavanger in August 2022. The aim was to provide information on NOFO's role, and the stand was well visited by interested delegates from Norway and abroad.

NOFO hosted the Global Response Network (GRN) board meeting held in Stavanger in June.

6.5.3 Collaboration with educational institutions

NOFO has entered into a collaboration with Vågen upper-secondary school on their Interior and exposure design line of study, with pupils creating designs for trade fair stands. The plan is for the best design to be used for future participation at trade fairs such as ONS.

NOFO has given lectures on the one-year programme in communication at the University of Stavanger (UiS). In addition, NOFO has given lectures on preparedness and environmental risk on the bachelor's programme in international preparedness at UiT, the Arctic University of Norway. The aim of the teaching is to increase knowledge of private oil spill preparedness on the Norwegian continental shelf and how NOFO works proactively on communication.

6.5.4 Social media, websites and media

One of the goals of our communications work is to increase knowledge of Norwegian oil spill preparedness on the continental shelf among the wider society. To achieve this goal, NOFO has focused on simple, easy-to-understand factual messages using simple illustrations and easy content. This targeted strategy has increased the reach of our posts on social media, increased our number of followers and increased our interaction with them.

We have seen visitors to our website increase month by month, and our users spend less time finding the information they want. Website visits are evenly divided between the Norwegian and English pages.

In 2022, we decided to focus on new technology implemented in NOFO's work and ran advertising campaigns covering both drone technology and the collaboration with Kongsberg Satellite Services (KSAT) on oil spill preparedness.

The campaigns attracted a high level of positive attention, from our members, partners and other media.

6.5.5 The shipowner seminar

A contact meeting for shipowners in IGK (emergency response task force coast) South was held in Trondheim in week 48. There were a total of 21 participants, which is a good level of attendance. The programme followed the procedure for contact meetings, but also shone a spotlight on HSE in oil spill response operations with speakers from organisations including the Norwegian Safety Investigation Authority and the Norwegian Maritime Authority.

6.5.6 Municipal and state resources

NOFO has maintained regular contact with the IUAs (Inter-Municipal Committees against Acute Pollution) and the Norwegian Coastal Administration during the year. This included planning and implementing the 2022 major drill and planning for the 2023 major drill.

7 NOFO'S PREPAREDNESS

7.1 Oil spill response operations

NOFO's preparedness organisation was mobilised in connection with two incidents in 2022.

The first was in January, when a gas leak was observed resulting in hydrocarbons in the sea. NOFO mobilised its operations management (on-call team). The surveillance aircraft LN-KYV, an SAR helicopter and a NOFO system (aboard Esvagt Stavanger) were also mobilised to the location. A further NOFO system with offshore task force leader (ILS), drone team and environmental team was mobilised. Aerial surveillance in the afternoon provided information that there was no actionable oil on the sea, and no actions were taken other than remote measurement. The incident transitioned to the normalisation phase after 24 hours.

The second incident was in September. The initial report came from a supply vessel (PSV), which had observed hydrocarbons and bubbles on the surface at a facility. NOFO's on-call team was mobilised together with a NOFO

system and the surveillance aircraft LN-KYV and LN-TRG. An environmental monitoring team and a drone team for remote measurement were also mobilised.

The oil slick was extremely fluid and not actionable. No booms were deployed and no chemical dispersion carried out; only the remote measurement resources were activated.

The incident transitioned to the normalisation phase after 72 hours, at which point all resources were demobilised.

7.2 Planverket, NOFO's planning system

Planverket provides a uniform and quality-assured basis for analyses and plans for operating companies on the Norwegian continental shelf. Planverket is freely accessible to everyone on NOFO's website. Planverket was operational throughout 2022 and checked, maintained and – if changes were required – updated on a regular basis.

NOFO maintains a full overview of degradation studies conducted for Norwegian crude oils and condensates. Reports from degradation studies are stored in Planverket. The results from further modelling of degradation characteristics (SINTEF OWM – Oil Weathering Model) have been collated in a database in Planverket, among other things making it possible to compare different oil types and their characteristics under different conditions.

Planverket is continually updated with new oils, based on degradation studies made available by the operating companies. In 2022 it was updated with three new oils.

7.3 The Maritime Forum

The Maritime Forum comprises all NOFO members that contribute OR (Oil Recovery) vessels to the NOFO pool.

The forum's work is restricted to maritime oil spill response. Two meetings are held a year, or more if required. Working groups can be set up under the Maritime Forum to cover defined areas of work within the specialist field.

NOFO arranges and chairs the meetings. The operating companies nominate a deputy chair, who is elected for one year.

The chair and deputy chair are also members of the Expert Forum.

7.4 NOFO's standby fleet

NOFO's standby fleet is a generic term to denote the vessels to which NOFO has contractual access. The standby fleet was trained and drilled during the year in accordance with the plan drawn up.

For 2022, the fleet in barriers 1 and 2 comprised 13 OR vessels on permanent standby, i.e. vessels that the operating companies use as standby vessels, and 13 OR vessels on mobilisable standby, i.e. vessels that mobilise with equipment and personnel from NOFO's bases.

Two verifications/drills are carried out for each fleet.

The OR vessels permanently fitted with oil spill response equipment on board also carry out independent training to maintain and increase their own competence. The training is also intended to ensure regular and fit-for-purpose functional testing of the equipment.

In addition to OR vessels in barriers 1 and 2, NOFO has contracts with 60 vessels (e.g. fishing vessels) in order to operate our IGK emergency response task force coast in barrier 3 (Task force coast). 30 vessels are based in Finnmark and 30 from Lofoten southwards. Temporary mobilisation can be required in connection with exploration wells. This is when activities not covered by the ordinary oil spill preparedness on the continental shelf generate a need for training and drills for crews and vessels. Six such activities were carried out in 2022.

7.5 Bases

NOFO has five manned oil spill response bases along the coast. These are located in Tananger, Sløvåg, Kristiansund, Sandnessjøen and Hammerfest. There are also two depots in Hasvik and Havøysund. In 2022, the newly built oil spill response base in Tananger was completed with an increased storage area (approx. 3000 m²) and overhead travelling crane for good HSE and safe handling of equipment. The base has also gained appropriate teaching facilities. The storage capacity at the base in Kristiansund has been expanded, such that there is now space to store all oil spill response equipment inside.

7.6 Waste-handling agreement

NOFO has worked with its provider to draw up a waste-handling agreement for use in any oil spill response action. The plan covers everything from handling small volumes of waste to receiving large volumes of collected oil emulsion. The named provider took part in the Kinn drill in week 37, practising alongside the operating company and NOFO.

7.7 Environmental assessments in connection with drills

Environmental assessments have been carried out for both major and minor drills to avoid the activities damaging the environment. The highest frequency of assessments applies to shoreline drills, barrier 3, which have been held from Vestland to Finnmark. Strategic environmental assessments have also been carried out for drills in the offshore area, barriers 1 and 2. Through the annual cycle, this provides a generic presentation of relevant environmental focus in the areas where these drills are held.

7.8 Environmental investigations

Environmental investigations are chemical, physical and biological investigations carried out both during and after acute environmental pollution. These need to be initiated to identify and describe damage to vulnerable environmental values in the open sea, near to the coast and on the shoreline. Environmental investigations are to be started as quickly as is safe, and conducted in accordance with the guidance contained in "Guidelines for environmental investigations of the marine environment after acute oil pollution" (TA-2955).

In 2022, NOFO and representatives of the member companies drew up a process description for environmental investigations in the marine environment after acute pollution.

The target group is environmental consultants in incident command, decision makers and providers who monitor environmental investigations during an incident. The process description was used during the Kinn drill.

An agreement was also entered into with SINTEF in 2022 to purchase a SilCam (Silhouette Camera). SilCam will replace LISST (laser in situ scattering and transmissometry system) to measure drops and concentrations of oil in the water column. SilCam has several advantages over LISST, including that the instrument can distinguish oil drops from e.g. air bubbles mixed into the water column. The instrument will be delivered in 2023.

7.9 Oil spill preparedness – exploratory drilling

NOFO registered 29 exploratory drilling operations requiring oil spill preparedness in 2022. Four of these were in the Barents Sea. A total of 10 of our members were involved as operating companies for these wells. Preparedness was structured according to the needs of the individual activity.

8 Activities – coast and shore

8.1 IUA, Inter-Municipal Committee against Acute Pollution

All the IUAs signed a new agreement with NOFO in the course of 2022. The agreement runs for 10 years and safeguards access to the IUAs' personnel and resources. In return, the IUAs receive an annual contribution as well as access to training, drills and assistance in connection with their own activities. The training offer for the IUAs has been stepped up significantly in preparation for full-scale drills. This includes courses in Uniform Command System (ELS), Crisis Incident Manager (CIM) and dedicated specialist days on selected topics. The feedback on the training has been extremely good.

8.2 IGSA, emergency shoreline task force

IGSA currently has 44 members, and three IGSA drills were carried out in 2022.

The first drill was held in Hasvik and was affected by Covid-19, with measures taken to isolate participants. On returning home, several of those who had taken part in the drill tested positive for Covid-19.

Drill no. 2 took place in Havøysund. Because of poor weather, the drill was moved closer to shore and took place in the immediate vicinity of the depot. The drill involved training in use of the equipment stored at the depot. Three guests from OSRL (Oil Spill Response) joined us for this drill.

The third drill was executed from Akkarfjord, and split into two groups. This drill was also used to tackle backlogs from the full-scale drill held in Finnmark in week 38/2021 (Bivrost drill).

8.3 Task force – coast, IGK Finnmark

There are 29 fishing vessels and two support vessels in region IGK Finnmark. A total of seven drills were conducted in the region in 2022, and the majority of the drill programme for the vessels was completed.

IGK Finnmark organised three IGK courses for crews ahead of the drills.

8.4 Task force – coast, IGK South

There are 26 fishing vessels in region IGK South. In addition, NOFO has a preparedness agreement with Equinor and Shell to use a total of 10 terminal vessels based at the operating companies' onshore facilities.

These vessels are class OR (oil response) with interim storage capacity for oil emulsion and are available for shoreline deployment from Rogaland in the south as far as Trøndelag in the north. None of these vessels took part in joint drills with NOFO in 2022.

There are two coastal tankers in the region with storage capacity of 4000 m³.

Two days of drills were held for 26 oil spill response vessels belonging to Task force South in 2022.

Two of the Norwegian Coastal Administration's multipurpose vessels/oil response vessels in class OR (OV Skomvær and OV Hekkingen) took part in drills in Kristiansund, Meløy and Rørvik.

8.5 The specialist team

At 31 December 2022, NOFO's specialist team comprised 63 persons: 23 advisers, 13 spill site managers and 26 parcel leaders. The members of the specialist team shall provide assistance in shoreline actions (working with IUA) in roles such as staff adviser, spill site manager and parcel leader.

NOFO has specialist team members in all the IUAs with which we have agreements.

The pandemic continued to make its mark on activities at the start of 2022, including for the specialist team. Members of the specialist team are normally used as instructors on the "Oil spill response in cold and icy conditions" course at the Norwegian Fire and Rescue Academy. Activities at the academy

were cancelled as early as December 2021 because of Covid-19. However, a course was held in Tromsø with instructors from NOFO and the specialist team, and participants from IUA Midt og Nord Troms, IUA Vest-Finnmark, IUA Midt-Finnmark and IUA Øst-Finnmark.

The specialist team has a working committee that NOFO uses actively in connection with planning and coordinating activities in which the specialist team takes part. During the year, all the groups in the specialist team participated in phase 2 drills and in the large Kinn oil spill response drill. Personnel from the specialist team were involved in the drill as staff (Equinor and IUA), oil spill staff, evaluators and controllers.

The group also upgraded their skills at a joint meeting held in week 39 in the Stavanger/Forus area. IUA Sør-Rogaland took part in the planning of the meeting and provided equipment and personnel during the activities in the field.

8.6 Beach cleanup team – the Ren Kyst! campaign

In 2020 NOFO entered into a preparedness agreement with NovuMare to train personnel for beach cleanups. After signing the agreement, NovuMare took over the administration of *Ren Kyst!*, comprising 182 trained and practised beach cleanup volunteers.

Training for *Ren Kyst!* participants follows *the national curriculum for acute pollution*. Participants are recruited from various environmental protection organisations. The training is a combination of e-learning and training in the field.

9 REMOTE MEASUREMENT

9.1 General

NOFO has access to various platforms and sensors to detect oil spills. The various sensors and platforms have different properties and different applications. Having access to several types of tools enables us to combine them to obtain the best possible mapping of an oil spill.

9.2 Satellite surveillance

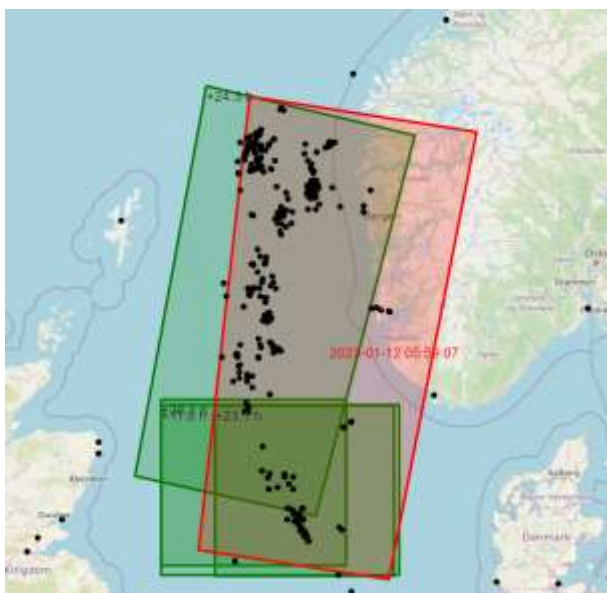
NOFO has an agreement with Kongsberg Satellite Services (KSAT) concerning surveillance of all producing fields at 28-hour intervals. The purpose of the agreement is to ensure early detection and notification of acute oil spills. Satellite is a useful tool for oil detection, covers large areas and is able to determine the position and extent of oil on the sea. Dedicated notification routines are followed if wave-damping phenomena are detected. Extra coverage has been established on the southern fields at the request of two of the operating companies.

KSAT delivered a total of 3,376 scenes/images in the course of 2022. We received 899 green, 36 amber and 3 red warnings.

KSAT has the following satellite constellations providing coverage of the Norwegian continental shelf. The service performance of the satellites is good. At the end of 2022, KSAT added CSG, which is a new constellation of satellites and offers good service performance. KSAT continuously strives to assemble the coverage of the continental shelf using the satellites that provide the best service performance.



If the satellite is unable to deliver data, an “Anomaly report” is sent, which is forwarded to our operating companies so that they can choose to deploy compensatory measures. The report shown below is something that was developed with KSAT in 2022, making it easy to see which scene was cancelled and which scenes will be captured in the coming hours.



9.3 Aerial surveillance

A total of 85.08 flying hours were recorded for NOFO in 2022.

NOFO has divided the continental shelf into zones for aerial surveillance purposes: the South Fields, West, Haltenbanken and the Barents Sea. Each of these zones is covered a minimum of four times per year.



Assignments in which LN-KYV participated during 2022 include:

- General surveillance of the continental shelf
- Verification of Maritime Broadband Radio (MBR) and SEACOP Atpomar on permanent standby vessels
- Vessel drills, barriers 1 and 2
- Vessel drills, barrier 3
- Genuine incidents

9.4 Resources for local surveillance

Drones

NOFO has a standby agreement with Tiepoint (previously Andøya Space) to supply 10 drone pilots to one of NOFO's bases within 24 hours. The drone pilots are Tiepoint's own and fly in accordance with their own operations manual.

In 2022, Tiepoint was involved in five drills in barriers 1 and 2 and three in barriers 3 and 4. The focus has been on becoming even more familiar with the tool, the possibilities and the limitations of a drone in the different barriers, and making drones a familiar resource in drills.

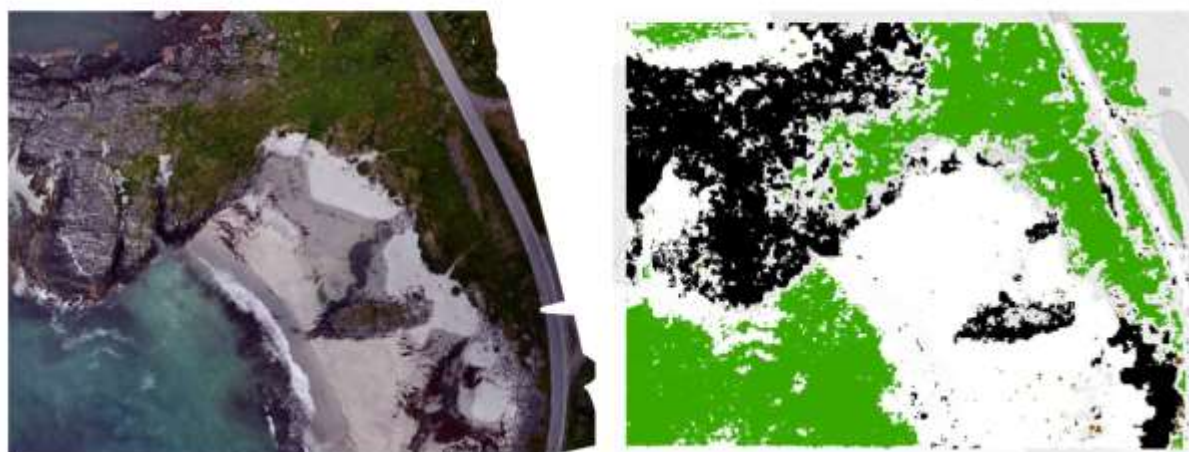


Entering into the drone contract has, in a positive sense, generated large volumes of data. This got us started with machine learning and artificial intelligence, so that we are only presented with the information we are seeking.

A project with Tiepoint was established in 2022 to collect data from e.g. the Andøya sample area, which can be used for machine learning. The project has used both fixed-wing and multi-rotor drones for data gathering.

NOFO already has a large quantity of information on the different sample areas, but the idea here is also to make updates if we find new information. Another part of the project involves establishing operational procedures for flights using the fixed-wing C-Astral, as part of the operationalisation. The aim is to be able to extract data, e.g. type of beach, fauna (birds and sea mammals) and bays where rubbish has accumulated, and detect oil with the aid of machine learning using drones.

Første skritt mot maskinlæring



10 COOPERATION DRILLS AND TRAINING

10.1 Kinn drill 2022

The 2022 cooperation drill was planned in collaboration with Equinor and the Norwegian Coastal Administration, and was carried out over five days in week 46. The starting point for the drill was a well north-west of Bergen and involved simulated resources in barriers 1-3 with staff drills for five IUAs from Bergen to Romsdal as well as the environmental teams with which NOFO has agreements. During the drill, NOFO manned positions in Equinor's incident command. In addition, NOFO's specialist team provided the IUAs with execution and evaluation support. Ahead of the drill, the participants from NOFO had undergone a comprehensive training programme organised by Equinor. The drill provided NOFO with valuable experience in how Phase 4 of the Process description for NOFO operations management can be executed. The experience was also useful for following up the project "Incident command in prolonged incidents".

10.2 Courses and training

After two years affected by the pandemic, in 2022 we were able to restart our usual training in our own premises.

NOFO organised or coordinated courses for the entire line of command in oil spill response – a total of 21 courses over the year. This spans everything from basic courses in practical work to general courses in organising operations. Our own course portfolio comprises a basic course in oil spill response, a basic course in oil spill response for ship crews, and courses in remote measurement, dispersion and meteorology. We have an ongoing collaboration in place with the Norwegian Coastal Administration on courses in offshore incident command. In 2022 NOFO also ran courses under the aegis of the Norwegian Fire and Rescue Academy and at Nordkapp Maritime Vocational School.

As well as our own premises, we used teaching facilities at NOFO's Tananger base for the type of course where it is useful to have access to oil spill response equipment.

11 STATUS OF OIL SPILL RESPONSE EQUIPMENT

11.1 Procurements of oil spill response equipment

With a focus on reuse and reducing costs, several upgrades of existing equipment and machinery were carried out in 2022 in place of new procurements. Upgrades significantly extend the service life of the equipment.

By way of example, five spill drums (SMV) and several pumps for overflow skimmers were upgraded.

Two new offshore booms and two new shoreline booms were purchased, and delivery was taken of three TransRec systems. These will be commissioned in 2023. In addition, 30 mm³ of dispersion fluid was purchased.

NOFO has recently experienced an increase in delivery times and issues with deliveries of equipment and parts. In line with the strategic investment plan and NOFO's strategy, there was a specific focus in 2022 on procuring replacement parts needed for prolonged oil spill response operations.

11.2 The equipment portal

The equipment portal served as the day-to-day working platform for bases, depots and NOFO staff in 2022. As well as technical condition and maintenance records, the equipment portal provides information on the equipment's location and its standby status. This is of great benefit when coordinating preparedness in drills or when mobilising.

The equipment portal and the vessel register communicate with each other, making it possible to find information on which NOFO equipment is on which vessel.

At the end of 2022, more than 13,000 maintenance activities had been registered on more than 2000 items of equipment as completed, ongoing or open and ready to be carried out before the agreed deadline. More than 2650 transport forms were also registered for equipment that had changed location.

11.3 Maintenance management

All oil spill response equipment is now registered with a NOFO ID in the equipment portal. Equipment with a NOFO ID is subject to preventive maintenance at least once a year, often more frequently. All information on oil spill response equipment, such as history and routines for preventive maintenance, subsequent use checks and corrective maintenance, is registered to the equipment's ID. The aim is to keep track of maintenance and use the information in cost-benefit analyses carried out in connection with repairs, renewal and replacement of equipment. Information from the equipment portal is also used in connection with the strategic investment plan and budget.

12 RESEARCH AND DEVELOPMENT

There were several development projects in progress in 2022. One long-term project that continued in 2022 is the development and expansion of an HF radar chain in collaboration with the Norwegian Meteorological Institute. Operational HF radar installations have been located in both Finnmark and Western Norway. The Norwegian Meteorological Institute currently uses data from these HF radar facilities as important input values in its analyses and models. More radar installations are planned, which will help to further improve the quality of observations and forecasts. NOFO has also contributed to extended efforts to develop a solution to separate oil emulsion and free water in shoreline preparedness.

During 2020 and 2021, NOFO worked alongside the Norwegian Coastal Administration and the Norwegian Maritime Authority in a working group to revise the “Regulations on use of vessels in oil spill response operations”. The revised regulations were published in March 2022. One of the key changes is that it has been made possible to take oil emulsion on board in a vessel’s cargo hold or tanks. This change in the regulations could help to increase the effectiveness of shoreline oil spill response and improve safety for personnel when tackling acute oil pollution. NOFO started the project by entering into a collaboration with relevant shipowners, who want to be able to certify their vessels in accordance with the new regulations with a view to being able to provide interim storage of emulsion on board in the vessel’s own tanks.

In June 2022, NOFO conducted the Oil on Water (OoW) drill in collaboration with the Norwegian Coastal Administration. The main purpose of this was to verify the movement of an emulsion of high-wax oil with a high solidification point to different skimmers in a Current Buster 4 (CB4) system. Trials were also conducted to provide a better understanding of the dispersion of marine gas oil (MGO) in terms of drift, spreading and oil film thickness. OoW is an extremely valuable activity in terms of meeting regulatory requirements that equipment used to counteract acute pollution must be tested under realistic conditions in terms of functionality, operativity and collection efficiency.

12.1 Project – prolonged incidents

In 2022 NOFO worked with its members to facilitate the first phase of “Project – prolonged incidents”. The aim is to further improve collaboration in prolonged oil spill response operations and, as a result, ensure the stamina and capacity of incident command.

Recent preparedness analyses show that the operating companies and NOFO alone do not have sufficient capacity and competence in incident command to be able to handle a prolonged oil spill response operation extending over several months. We would then be dependent on bringing in resources from other operating companies to ensure robustness and stamina. A working group was appointed to clarify requirements, interfaces and how this issue can best be resolved.

The working group recommended that the industry concentrate on a common methodology and planning process in order to ensure good, effective collaboration in prolonged oil spill response operations. It is recommended that the industry focus on the Incident Command System (ICS) and that the companies coordinate with one another through shared training and drills. The recommendations on further work were supported by NOFO’s Board of Directors and general meeting. A working group (phase 2) was established to draw up a common draft agreement to be submitted to the general meeting in April 2023.

13 AGREEMENTS

At year-end 2022 NOFO had a portfolio of approx. 200 agreements in order to ensure that we have sufficient resources to provide preparedness within all the barriers. The agreements range from lease of storage for oil spill response equipment and purchase of services and assistance in drills and mobilisations, to deliveries of oil spill response equipment, ICT services and office supplies. NOFO also has a large number of agreements with vessel owners on leasing of vessels for drills and mobilisations. The level of activity in NOFO in 2022 can be considered normal, with several agreements renewed and some new ones added.

The NOFO agreement was revised in 2022 and approved by NOFO’s general meeting in October 2022. The key change in this revision was an annex to the agreement stating that NOFO shall comply with regulations and ensure that our providers act in an ethically correct manner, respect and follow human rights legislation, and counteract corruption.

13.1 International cooperation

NOFO continued its membership of Global Response Network (GRN) in 2022. Meetings of GRN are conducted both in person and via digital platforms.

* * *

Forus, 8 March 2023

Hilde Ådland (Chair)

Vår Energi ASA

Steinar Ådland (Deputy Chair)

Equinor Energy AS

Erlend Furu (board member)

OKEA ASA

Anne Botne (board member)

Neptune Energy Norge AS

John Gunnar Vedøy (board member)

AkerBP ASA

Ståle Jensen (employee representative)

Alv B. Solheim (CEO)

NOFO