

**BE-AWARE II Method Seminar**

8-9 April 2014, Southampton, UK

Report of the BE-AWARE II Method Seminar

Agenda Item 1 – Welcome

1.1 The UK welcomed the participants to the Method Seminar which was hosted by the Maritime and Coastguard Agency in Southampton on 8-9 April 2014. The purpose of the seminar was to discuss the methodology for the BE-AWARE 2 project.

Agenda Item 2 – Introduction to BE-AWARE II including Project Task and Time Plan

2.1 The Secretariat gave a presentation on the BE-AWARE II project. The BE-AWARE I project mapped the risk of oil spills and the potential outflow of oil for 2020 in the Greater North Sea and its approaches. The BE-AWARE II project aims to identify the most effective future risk reduction and response measures to manage the predicted risk of oil spills in 2020. The project partners are from all Bonn Agreement Contracting Parties and the Secretariat is the project coordinator. It is important that all the Contracting Parties had a stake in the project. COWI have been appointed as the sub-contractor for the technical work. The budget for the project is almost 700,000 euros with 75% of the finance from the EU. The rest of the financing is from the project partners and the co-financiers. The project runs from 1 December 2013 to 30 November 2015 and there are 10 work packages to be undertaken within that timeline.

2.2. The Bonn Agreement area is very diverse. In the northern North Sea there are oil and gas installations, the southern North Sea is a high traffic area and the wider Atlantic can have severe weather conditions. The Bonn Agreement area has therefore been divided into five sub-regions according to specified criteria.

2.3 The main three tasks of the project are data collection (Task D), oil spill modelling (Task E) and the environmental sensitivity analysis (Task F). The final three tasks combine into an impact analysis to establish the scenarios for the sub-regions giving risk management conclusions for the regions. The first key task is to identify possible Risk Reducing Measures and Response Scenarios for 2020. The Secretariat gave an outline of the 10 project tasks.

The results of the project would feed into the new draft Bonn Agreement Action Plan for 2016-2019 and into the sub-regional plans and a possible ministerial meeting in 2016.

The purpose of the Method Seminar is to:

(i) discuss and agree the methodology

(ii) consider the literature and current data review

(iii) identify risk reducing measure and response scenarios.

Agenda Item 3 – Lessons learned from BE-AWARE

3.1 The Secretariat also gave a short presentation on the lessons learned from BE-AWARE I highlighting that too much time was spent on the data collection and a strict deadline was not set for submissions which had placed pressure on the rest of the project implementation. Contracting Parties did not submit complete datasets to the Secretariat and the Secretariat/Consultants did not enforce the time plan and deadlines sufficiently in the early project period. Finally the project team did not discuss the presentation of the results early enough in the implementation.

3.2 Therefore within BE-AWARE II the main points that should be taken on board were that the data collection should be done right first time, the data request note needed to be specific, Contacting Parties need to be as thorough as possible, including seeking clarification when needed, and there should be a clear cut-off dates for the submissions. Finally the time-plan needs to be rigorously adhered to and the presentation of results will be agreed from the start.

Agenda Item 4 – Introduction to the Methodology Note (COWI, MUMM)

4.1 COWI introduced the methodology to allow the project partners to discuss it and to align their expectations with the task of BE-AWARE II. The Method Note will be prepared by COWI based on the outcomes of those discussions. The first task would be to define the risk reducing measures and the response measures to reduce the impact of pollution on the environment. For each proposed measure the reduction in environmental impact needs to be quantified, including how effective and how costly the measure will be.

4.2 Germany highlighted that the facts must be quantifiable, for example, it was not possible to quantify all the risk reducing measures. Also there would be a reduction in the number of wind farms in 2020 but the exact number is not known. How can that be quantified? COWI informed the meeting that the upper and lower figures need to be estimated. All modelling into the future has uncertainty and variance in the input parameters therefore it was important to find Risk Reducing Measures that could be quantified. To include a scenario in the model it would have to be quantified with the uncertainties we have. For example when a new device is introduced to spray dispersants we can estimate the percentage that will remain on the water surface. We need to agree on the number we will use and thereby agree on the level of uncertainty within which we will work. If we use the same calculations in one scenario as for another scenario they can then be compared. Uncertainty between the relative results is therefore very small.

4.3 NL said that there are different attitudes in different countries to response measures to oil. Mechanical recovery might only remove 10% of the oil, but there are conditions where 75% can be removed. What was the guarantee that extremes are balanced out? COWI said that in the BRISK project all processes were included in the model. They did not ask what the recovery rate is but instead what is the process and how does it work, such as is the work done at night or in high waves. The processes are examined and then agreed upon. If we calculate the processes and have all the conditions included we end up with something like 20%. Big spills and small spills are all included by modelling the processes. The process and the measures are quantified.

4.4 A long list of measures will be drawn up. In drawing up the long list there is a need to think creatively to generate new ideas beyond the obvious and to include any novel ideas or devices that project partners have come across.

4.5 COWI explained the principle of how they model the effects. In BE-AWARE 1 they identified all the accidents and hazards. They looked at ship traffic and the oils that are transported, the locations and the risk of spills. This gave the future scenarios. In BE-AWARE II they take the risk of spills and look at Risk Reducing Measures and spreading drift and fate of oil. This gives a map of damage and location. RRM will impact the risk (emergency vessels will collect some oil) and can change the emergency response measures. It is possible to calculate the risk under difference scenarios using the steps outlined below:

1. Drift spreading fate
2. Response collection/dispersion
3. Pressure impact
4. Environmental soc-eco vulnerability
5. Impact (damage)

**Methodology for drift, spreading and fate of oil**

***Drift***

4.6 COWI explained the terms used in the model. Drift was how the centre of gravity of the oil slick moves. Fate was how the oil slick changes its state, evaporates or gets thicker or disappears. The modelling would include platforms and wells (new). For drift the North Sea currents provided by MUMM would be applied. The centre of gravity moves with current and with the wind friction. They will take the mean currents and superimpose them with the wind direction and 2-3% of the wind speed. Only non-dispersed oil at the surface layer that can be collected by booms will be included.

4.7 The NL said that some models use 3% wind speed (most models do) and asked whether different volumes and the four types of oil are taken into account. The oil types included were those from BE-AWARE 1 and COWI highlighted they would validate the model with the high accuracy MUMM models. There were uncertainties but this study compares the effect of different measures not how accurately spills can be modelled. Norway asked about substances other than oil and it was confirmed that BE-AWARE II is focusing on oil only.

[NL: it appears that some modellers use 1,7 percent of the wind force up to Bft 3, and up to 3 percent for higher wind speeds]

***Spreading***

4.8 The theory of oil spreading, its temperature and viscosity etc. are important in the North Sea area where there are tidal flats which can extend to 20 km areas with no water and then into areas with water. Marshes have high relevance for the environment. Coastal marshes are highly sensitive to oil contamination. These shallow water areas are very specific for some parts of the Greater North Sea and its approaches.

4.9 Tidal currents will be included in the oil spill model. The affected area increases where tidal excursion > mean drift. In tidal areas a much bigger area is affected than out in the North Sea. The North Sea will be divided into hydrographic areas with different wind and current characteristics. COWI would discuss with Contracting Parties how to divide the area. Germany said that the extent to which a coastal area is affected by a spill depends on its distance from the coastline. The Secretariat said that “distance from the coast” will be included as a parameter in the Method Note.

4.10 UK stated that temperature affects viscosity and wave height affects recovery and drift and Germany agreed that sea state will affect drift and spreading. The higher the sea state the more natural dispersion there will be, particularly for the lighter North Sea crudes. COWI said they would consider this. COWI highlighted that spills were more dangerous after a few days when the slick centroid reached coastal areas where there was a significant increase in the radius of the spill. Aged oil does not spread as much as light fresh oil. Sweden said that while marsh areas are important, Sweden has a specific requirement that all sensitive areas be included in the model and that the risk of oil spill is connected to the sensitivity of the area; displaying the vulnerability.

***Fate***

4.11 As the oil is aging it is also spreading. The volume of thin oil goes down, old spill thickness is very small but the radius goes up and up. Concerning wave height, in the southern North Sea the winds are mainly south-westerly. Gales give a lot of waves from North to south. Therefore the model should take this into account. There is also a need to take into account gales from the North West which generates greater wave height and sea energy conditions.

4.12 The UK asked whether dispersed oil was included in this model and COWI said it was and a proportion would move into the water column. Fish can swim away from this three-dimensional spread but shell fish and larvae cannot. The Secretariat stated that in the development of the environmental sensitivity methodology in BE-AWARE the area was split into regions. Experts looked at the top 20 m and developed an additional sensitivity layer to cover the deeper water.

4.13 COWI said the processes involved in the oil spill modelling were extremely complicated. It was not possible to model the scenarios in detail for the whole area so we would not look at the accuracy of the results of a single scenario but at the difference between the scenarios to give a strong analysis. Some submerged spills and blow-outs will stay in the water column and some will go to the surface and be treated as a traditional surface spill. We need to decide how much goes to the surface. Oil slicks on the surface will be modelled as before.

4.14 The water column below 20m is described as a deep layer and a PEC[[1]](#footnote-1)/PNEC[[2]](#footnote-2) model used for dissolved substances. The Secretariat asked how to average currents over the depth range. Some wells are 1000 metres deep. COWI said that it is a 3D model (OSERIT) with different thickness bands covering currents at different depths. However, the focus area of the study is not the oil industry and platforms but how to reduce the risk of accidents from navigation and how to recover oil from the water surface.

4.15 Norway asked whether the use of dispersants on sub-sea will be taken into account. The Secretariat informed that this would be addressed when discussing the scenarios. There exists equipment capable of capping wells to pump off oil and injection of dispersants at the spill source. COWI said that following Macondo this needs to be addressed but combatting such spills should not be the focus.

4.16 COWI highlighted that in the case of a typical spill drifting and spreading and when dispersants and in-situ burning are used x% will stay at the surface and the rest will go into the water column (100-x)%. What was required was an accurate value for x. Denmark, Germany and Sweden said they do not use dispersants or in-situ burning. Germany asked if water depth will be taken into account in this RRM. Due to UK and FR recommendations dispersion should not be applied when the water depth is less than 20m. COWI said this can be included in the Method Note.

4.17 UK use dispersants as an early response but only if suitable and UK has not used dispersants for 15 years except a little around platforms. Most oils transported in UK waters are amenable to dispersants for hours, although for some the application window is days. In the Sea Empress incident dispersants were used for 3 days. In some cases however nature is better than dispersants and these applications can do more harm than good.

**Response**

4.18 COWI also outlined that information would need to be collected on existing response capabilities and equipment locations. This should include vessels (number, home port, response time, speed, capacity), booms, skimmers, storage (filling/emptying times), wave restriction (wind speed, fetch, wave height 1.3m), daylight restriction (seasonal) and bad visibility restriction (regional).

4.19 Concerning capacity, Germany asked how to handle one major response vessel carrying sweeping arms and booms and another vessel which will only tow the boom to concentrate but not recover the oil. COWI explained that they would be handled together concentrating on the main vessel. This would be described in the Method Note. COWI said it is important to know how many booms can be deployed from a given area. There are all kinds of different arrangements in the different national setups. Booms, skimmers and storage will be described and then put in the model. This will be part of data collection to be collected in a formalised way.

4.20 Peter Poulsen highlighted that the excel file from the BRISK project could be used for data collection. Denmark highlighted that data is available in the EMSA inventory, if it is up to date. COWI also explained that we needed to decide on the standard wave height where you cannot operate booms. Most countries used 1.3m however Germany had a limit of max 1.6m.

4.21 Germany said that EMSA will build up dispersant stock piles in the North Sea in the next 2/3 years and engage aircraft due to the new EMSA Action plan for offshore oil and gas installations. This should be taken into consideration. COWI said they need to make a base scenario for 2020 of capacity for all Contracting Parties which will be the base scenario.

4.22 UK said tidal streams and long-shore drifts should be in the model as they will affect the ability to collect oil. COWI said they will get a description of oceanography from MUMM but noted that small scale areas will not be modelled e.g. within a port and there was a need to concentrate on an average operational situation.

4.23 Germany said they have agreements with companies to get tanker capacity for additional storage of recovered oil. COWI said additional storage will go on the data request note and that BRISK only included the dedicated vessels and not the contracted vessels. Germany stated these need to be included, as if you have a spill of 10000 tonnes you need other vessels especially tankers. COWI said we need to agree on the time-frame to have additional storage and how to model this. NL said they need to be capable of recovering 15000 tonnes in 3 days and that this could be used in the methodology. Additional tank capacity is needed within 72 hours. Germany said they would check the time-frame for capacity. COWI agreed to include non-dedicated tanker capacity.

4.24 Concerning other vessels to include in response capabilities COWI highlighted that Contracting Parties should consider the realistic amount that can be drawn upon and the mobilisation time for a vessel. Germany said they will include vessels from the Baltic Sea as they pass the Kiel Canal and after some hours can be used in the North Sea. The Secretariat stated that vessels should be included if they were in national plans. Germany highlighted the two EMSA vessels dedicated to the North Sea use and that these should be included.

4.25 COWI outlined that the model would calculate the oil on the water’s surface, which is the expected amount of oil affecting the water surface of a sub-region, long time average (tonnes/sub-region). The expected amount dispersed in the water volume of a sub-region, long time average (tonnes/sub-region), and the expected amount of oil affecting the coastline of a sub-region, long time average (tonnes/sub-region).

4.26 COWI explained that the results would be integrated across the sub regions and the grid scale of the model would be based on geographical restrictions, such as the width of the Channel, i.e. 2 x 20 km. This was a slightly different approach from BE-AWARE I where the risks were calculated according to the route net.

**Environmental and Socioeconomic vulnerability**

4.27 COWI explained how the environmental and socioeconomic vulnerability analysis would be undertaken using the methodology developed by MUMM in BE-AWARE I and based upon the data collected in the data request note. COWI highlighted the habitat map EU Sea Map as the kind of high-resolution map that was required. There were many habitat classification systems: EUNIS habitat classification; national marine habitat classification for UK & Ireland; CORINE; all using different codes therefore it would be important to clarify these in the data request note. The UK explained that EUNIS code is EU-wide and each country should be able to match EUNIS codes to national codes. There is also a MESH format existing already and it specifies the EUNIS code as part of that format. Some of the open water habitats were also available for OSPAR and some socioeconomic features were available in Eurostat. It was agreed that these common data sources should be identified before data is requested nationally through the data and literature review.

4.28 COWI explained that when the features had been mapped they would be combined using the ranking agreed at the ranking workshop to provide the overall vulnerability maps. These would then be combined with the outcome of the modelling to give damage maps. Sweden highlighted that the maps developed in BRISK had been very helpful and had been used in the redeployment of their response vessels south to just north of Bornholm.

Agenda Item 5 – Risk Reducing Measure (RRM) and Response Scenarios (COWI)

5.1 COWI outlined that a key part of the project was to consider and decide upon which RRM and response scenarios would be modelled in BE-AWARE II. The measures that were ultimately modelled should be:

- Relevant for the North Sea;

- Innovative or well proven;

- Comparable to the measures in BRISK;

- Capable of having their effect quantified.

5.2 The selected scenarios would then be compared against the baseline of what was expected to have been implemented by 2020 with business as usual. The future scenarios could then be compared to the baseline, as well as a cost/benefit analysis. COWI highlighted that they had suggested some scenarios in preparation for the meeting but that it was up to the partners to decide upon those selected.

5.3 The Secretariat highlighted that the partners needed to decide what they want to investigate in their region. All scenarios would then be compiled into a list before being checking if it was possible to quantify them. The list would then be circulated for consultation before a final decision was made at OTSOPA on those that would be included. Germany asked if the scenarios had to be used in all regions and was informed that all scenarios would be modelled for the whole BE-AWARE region. Therefore the list had to be agreed by all partners before modelling started.

5.4 The meeting then ran through the list of potential scenarios circulated before the meeting. The UK highlighted that ETVs can also be a mitigating factor or response. If the main focus is reducing the risk of having a spill it is RRM, if primarily focused on collecting the oil it is response. Germany highlighted that some countries had discontinued the use of ETV for political reasons and enquired how this would be addressed. COWI informed them that in the ETV scenario only selected areas around the ETVs in position would be modelled; however the results would be presented for the region.

5.5 With regard to the scenarios that had been used in BRISK Ireland asked why the double hull cargo and double hull bunker tanks for vessels <5000BRT scenario was taken out and was informed it had a very small effect in the high-traffic area and only had a measurable effect in low-traffic areas and hence had little impact on the overall risk.

5.6 COWI outlined the response measures (RM) modelled in BRISK, such as additional response equipment as proposed by parties, 50% additional response equipment compared to 2020 or increased night visibility (0.85). COWI also suggested that increased use of dispersants or in situ burning could be considered in BE-AWARE II.

5.7 The Netherlands also suggested we should investigate the e-navigation improvements being investigated by the ACCSEAS project, however it was pointed out that this will end mid-2015 and that the purpose may be different and might not help BE-AWARE. Germany highlighted that there may not be much room left for additional TSS to separate traffic, deep-draught tankers and other vessels, in some regions due to maritime spatial planning and expected developments, e.g. with offshore wind farms. The Netherlands also highlighted that for a spill above 200 tonnes the use of mechanical recovery might be the first option and dispersants a second.

5.8 Ireland suggested the inclusion of a scenario on the impact of satellite data as a response measure. The EU was launching 6-8 environmental satellites as part of the Copernicus project, which would give more up to date data about oil spills. It was highlighted that if this was to be operational before 2020 it should be included in the base scenario if it could be quantified.

5.9 The Secretariat invited project partners to suggest any other scenarios they would like to see included in the long list through a tour de table. The following measures were suggested for addition to the list: Virtual buoys on AIS (wind farms), Enhanced VTS (number, area, surveillance, more VTS staff), Vessel traffic management (similar to air traffic controls) high traffic areas, Automated AIS guard ring warnings, Passive escorting certain vessels in certain areas, Improved satellite cover (Copernicus), Speed regulations/right of way for larger vessels, Increased salvage capacity, Places of refuge, greater use of International / national assessment teams, Increased use of response products and marine spatial planning.

5.10 Germany stated that the inclusion of Escort towing would be a problem for them as it was excluded in their national plan however COWI explained that as with some other measures (e.g. ETVs) the areas they were implemented in would be restricted to those proposed by the Partners.

5.11 COWI and the Secretariat developed a list of the proposed scenarios overnight and the meeting went through them in more detail on the second morning. Contracting Parties were invited to say what scenarios they would like to investigate in their region, noting that some scenarios may be restricted to a certain area and this needed to be defined. The Secretariat reminded the meeting that when selecting scenarios Contracting Parties should keep in mind the results of BE‑AWARE 1 and how they affect where they want to see measures implemented.

5.12 The list of scenarios would go through several rounds of checking. The first screening at the method seminar was to make sure that everyone understands what the scenarios mean. After the method seminar a preliminary list of scenarios will be drawn up and circulated to Contracting Parties. At OTSOPA 2014 the final list of scenarios will be agreed. The final cut off point for the list is OTSOPA 2014, 20-22 May 2014.

5.13 The UK inquired how and when for each modelled scenario the project would decide on the size and shape of the threat. COWI explained that all accident types are included in the model, along with all weather conditions, with all threat scenarios weighted with their relative risk probability.

5.14 The UK also highlighted that some areas were more vulnerable than others where any sort of spill is critical and inquired if the scenarios could be focused on them. COWI explained that the outcome of the risk calculations undertaken in BE-AWARE I showed the resolution that the project could work with. For example there were high risk areas off Rotterdam and around oil platforms in the northern North Sea. These risks for spills were the integration of many small spills and huge spills. This strategic way of approaching this outlined in the methodology integrates all this and gives an environmental impact. In the long-term the average risk is important.

5.15 The meeting ran through each of the scenarios in detail and discussed whether they should be included on the list to be sent to Contracting Parties, although it was noted that nothing would be removed at this stage, although scenarios would marked not for inclusion, and the preferences of each country would be added. Table 1 below contains the results of the discussion, including the initial preferences of each Contracting Party expressed at the meeting.

Table 1: Reviewed long list of Potential Scenarios

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Yes | Maybe | No | Remarks |
| 1. No RR, no RM
 | SE, NL, DK | FR | DE, BE, NO, IR, UK |  |
| 1. Existing RRM, No RM
 |  | FR | DE, NO, IR, NL, SE, UK, BE, DK |  |
| 1. Existing RRM, existing RM
 | DE, NO, IR, NL, UK, SE, BE, DK, FR |  |  |  |
| 1. 2020 RM (already decided upon)
 | DE (VTS Wind farms), NO, IR, NL, UK, SE, BE, DK, FR |  |  |  |
| 1. Mandatory pilotage in wind farm areas (add. to 2020 RRM)
 | NO, IR, NL, UK, SE, BE, DK | DE, FR |  | UK: pilotage not mandatory. Suggest for selected vessels in regions rather than in selected areas. Include wind farms. DE: mandatory pilotage in estuaries only. |
| 1. Vessel Traffic System (VTS) in selected areas/hotspots (add. to 2020 RRM)
 | DK (Skaw), NL, IR, SE, FR, NO, DE, UK (within regions), FR (extended range) |  |  | Where does VTS make a difference |
| 1. Traffic separation schemes (TTS) in selected areas (add to 2020 RRM)
 | DK (From Skaw to main route to Channel), UK, BE, DE, FR, SE, NO, IR, NL |  |  |  |
| 1. Electronic chart display and information system (ECDIS) for all large ships (add. to 2020 RRM)
 |  |  | Not to be included | Should be in the base scenario.  |
| 1. Double hull at the cargo tank (<5000 BRT) (add to 2020 RRM)
 |  |  | Not to be included |  |
| 1. Double hull at bunker tank
 |  |  | Not to be included |  |
| 1. Escort towing for all tankers in narrow shipping lanes where towing is done now (add. to 2020 RRM)
 |  |  | Not to be included |  |
| 1. E-navigation / ACCSEAS
 |  | Needs better quantification |  | Needs better quantification after consultation. More an operational aid also contributing to safety. Too early in ACCSEAS to measure it properly. |
| 13a. Availability of commercial towage |  | Needs better quantification |  | Needs better quantification |
| 13. Additional dedicated ETVs | IR (Rosslare), NL, DK |  | DE, UK, FR | IRL: off the coast in Rosslare; will provide locations. How to quantify other vessels that are partially available. Can include the % of time they are available15. |
| 14a. Relocation of equipment nationally (including vessels) | NL, IR, SE, FR, BE, UK | DK,  | NO, DE | NL: relocation of vessels may be interesting in say UK;UK: also need to consider timelines for moving equipment. |
| 14b. additional response equipment as proposed by partners | DE, NO, IR, NL, UK, SE, BE, DK |  |  |  |
| 15. 50% add. response equipment compared to the usual 2020 situation |  |  | Not to be included | DK: looking into the possibility of outsourcing the recovery response task.There is no big difference between 14b and 15A good new base scenario |
| 16. Night visibility (0.85) | DE, NO, IR, NL, UK, SE, BE, DK, FR |  |  | Was a good idea in BRISK.0.85 is the efficiency of working at night compared to daytime. All EMSA vessels have this capability. There is a difference in systems, which ones do we include? |
| 17. Use of dispersants (beyond 20m) | DE, NO, IR, NL, UK, SE, BE, DK, FR |  |  | COWI: Need to establish the parameters for the use of dispersants to include in the model. Focus on shipping, not offshore. NL: could use dispersants according to the EU DUETS document.  |
| 18. In situ burning |  |  | DE, NO, IR, NL, UK, SE, BE, DK, FR | COWI: we should look at and quantify the residue. DK: need more information before we can include it. |
| 19. Virtual AIS buoys (wind farms) | DE, NO, IR, NL, UK, SE, BE, DK, FR |  |  | Should already be included in the base scenario for 2020. DK: implemented already for 2020. |
| 20. Enhanced VTS (number, area, surveillance, more VTS staff, speed control) |  | Covered by Scenario 6 |  |  |
| 21. Vessel Traffic Management (similar to air traffic control) high traffic areas |  | Needs to be able to be quantified |  | Can we quantify what the risk-reducing factor for the Channel and Southern North Sea will be?Needs to be able to be quantified. |
| 22. Automated guard ring warnings (outside VTS zones) (See item 19 above) | DE, NO, IR, NL, UK, SE, BE, DK, FR |  |  | Need to be able to quantify it.DK: this is cheap and effective.Set up a guard ring around a wreck and if a ship enters the area they get an alert. The measure extends VTS to key areas and is a step down from full coverage. |
| 23. Passive escorting |  |  | Not to be included |  |
| 24. Satellite (Copernicus) |  | Needs to be able to be quantified |  | Copernicus will monitor oil spills and could influence response. It is going ahead anyway so it should be in the base scenario.IRL: output from Copernicus is detailed, it should be mentioned as it is a European project. Also in 2020.Compare with CleanSeaNetNL: difficult to quantify. |
| 25. Speed recommendations | FR | DE, NO, IR, NL, UK, SE, BE, DK, |  | FR: This is an upper speed limit on vessels. Not the same as VTM, it is a simple political measure. Has an impact on the gravity of collisions.UK: this has wide-ranging ramifications. It is up to the master of the ship to determine the speed.NL: outside 12 miles there is no authority to do make speed recommendations. |
| 26. Salvage capacity (including heavy lift) | UK, NL | DE, NO, IR, SE, BE, DK, FR |  | UK: The availability of salvage capacity is a significant mitigation factor and RM.COWI: it is the commercial sector so should be left out. Salvage is down the road and the project should be restricted to risk reduction measures.Secretariat: how do we quantify and model.  |
| 27. Places of refuge |  |  | Not to be included | It is not included in the base scenario.IRL: it should be part of the base scenario if it is part of national legislation.COWI: Places of refuge are related to geography and we will not reduce the risk by including these  |
| 28. International/national assessment teams |  |  | Not to be included |  |
| 29. Marine spatial planning |  |  | Not to be included | FR: this is already included in TSS.DK: procedures for this are already in place. |
| 30. Response products R&D |  |  | Not to be included | NL: The Bonn Agreement and European countries are not active in designing products. |
| 31. Ban on HFO (as fuel) in specific areas. |  |  | Not to be included | DE: due to new MARPOL annex VI regulations HFOs are banned for use as fuel due to high content of sulphur and because of air pollution. Already implemented from 2015.NO: It is implemented in Svalbard and forbidden elsewhere in Norway from next year. |

Agenda Item 6 – Data Request Note (COWI)

6.1 COWI outlined the content and purpose of the Data Request Note (DRN). The DRN would cover the data required to map the environmental and socioeconomic parameters that were previously discussed, in a GIS format. It would also cover the risk reducing measures and response capacity, including the following: capacities of response vessels, max wave height for operations, bad visibility (%) restrictions, effect of dispersants (How fast can the dispersant be applied, how much of the oil is dispersed), effect of in situ burning (How fast, how much is left on surface), Blow out: How much to surface (always dispersants?), price estimation of measures ("logarithmic") and specification of new RRM and RM.

6.2 The DRN would ask specific questions, particularly for the positions and capacities of vessels. For each dedicated response vessel the data on wave height, the capacity, number of skimmers, booms, draught, sailing speed and mobilisation time, etc. will be sought. The Secretariat highlighted the importance of giving as much detailed and accurate information as possible when completing the data request note and urged Contracting Parties to contact them if they had any queries whilst filling out the note.

Agenda Item 7 – Presentation of the Results (COWI)

7.1 COWI outlined how they intended to present the results from BE-AWARE II. The impacts maps would be presented in the same way as the results of the BRISK project with a coloured scale combining the results of the vulnerability analysis and scenario modelling for the whole area. The effects of the scenarios would also be presented in bar chart form at the sub regional scale and there would be several results parameters:

* Oil on surface (BRISK)
* Oil in water column
* Oil on coast (BRISK)
* Impact on environmental feature
* Impact on socio-economic features
* Total Impact (BRISK)

The Netherlands requested to present various parameters in separate maps and also to concentrate on sub-regions. Also all results would be brought together in one map.

7.2 France and the Netherlands enquired if the vulnerability would be presented by season and were informed by COWI it would depend upon the results exactly how they were presented as there were many options. In BRISK the seasonal differences were small once all the features were integrated into total vulnerability maps. The UK enquired if the environmental and socioeconomic vulnerability would both be presented in one map and were informed that this had been left open in the vulnerability mapping methodology. COWI explained that both separate and a combined map would be produced.

7.3 COWI explained in more detail how the comparison of the effect of individual scenarios (plus effect of dispersants on the water columns) would be shown. The bar charts would be presented covering how much less oil is spilled for the different parameters in each scenario. The graphs will be done on a sub-regional level as well as for the whole BA area. The UK stated that there were distinct at-risk hotspots and wondered if an analysis could be done for these but were informed by COWI that this was outside the project scope but that hotspots would be identified in the maps. Peter Poulsen highlighted that if Contracting Parties wanted additional analysis done for specific areas they could discuss that bilaterally outside the project.

7.4 COWI also explained how the cost effectiveness would be presented on a scatter graph with the estimated cost per year and tonnes of oil spilt both presented on logarithmic scales. Germany asked if the cost effectiveness would be broken down per country and was informed that it would only be at the regional scale. COWI highlighted that the graph gave a good indication of the differences and allowed a qualified discussion on the best risk management conclusions.

Agenda Item 8 – Project Implementation (Secretariat)

8.1 The Secretariat outlined some of the potential problems that could delay the project implementation these included:

1. Problems with data collection: due to lack of data or quantification of measures
2. Modelling complications, complex, longer, 3d modelling difficulties
3. Lack of agreement on ranking of features: ranking workshop to rank features.
4. Lack of agreement of risk management conclusions

8.2 The Secretariat highlighted the need for all project partners to be actively involved in all project tasks to reduce the potential for difficulties.

Agenda Item 9 – Any Other Business

9.1 The meeting discussed the timing of the ranking workshop and agreed that as it could be held independently of data collection and mapping the original timing of September should be maintained with a preference for the first week. The workshop would agree the ranking of the socio-economic and environmental features using the criteria agreed in BE-AWARE I. The participants at the workshop should be the environmental experts who were involved in developing the methodology.

9.2 The Secretariat proposed that a process be set up to ensure that the data is signed off. Germany emphasised that data collection is time consuming and the earlier the Data Request Note (DRN) can be circulated the better. The DRN will specify the format that the data should be sent in. The Secretariat said that there will be a literature and data review first and the DRN will be based on that and would be circulated near the time of the OTSOPA 2014 meeting. Peter Poulsen said that the data to be collected is mostly environmental features and the data exists already.

9.3 The Secretariat confirmed that the summary record from the Method Seminar would be circulated by Friday 18 April 2014 and would include the list of scenarios. Following that the Secretariat will work with COWI to flesh out the measures on the list and grey out the measures to be excluded and to discuss the onward process. Any additional items to be included on the list should be sent by 29 April 2014, the deadline for submitting documents to OTSOPA 2014 where the list will be discussed and finalised.

9.4 The draft methodology note will be circulated to Contracting Parties to be signed off in a written procedure. COWI would confirm when they can produce that: it will be a considerable document of at least 100 pages.

9.5 The first regular project team WebEx meetings to review project process would be held on Friday 25 April 2014 to be confirmed through Basecamp. Once the DRN goes out Webex meetings will play an important role in taking forward the work and should be attended by the main contact point. The Basecamp online collaboration tool will be used to share files, messages and a calendar and will be open to the wider group to allow them to keep track of the project.

9.6 The BE-AWARE I Final Report was available on the [BE-AWARE website](http://beaware.bonnagreement.org/final-report). The Final Report comprises the BE-AWARE I Summary Report and the 10 Technical Sub-Reports. Financial and technical reports have been sent to the EU. The Secretariat has new Communications staff who will look at how to use the BE-AWARE I results. The results will be presented to Interspill 2015. Contracting Parties are invited to please pass on any ideas on sharing the BE-AWARE I output.

9.7 A Communication Plan for BE-AWARE II has been developed to communicate the project to the widest possible audience. The Secretariat and project partners will be responsible for implementing the plan. The Secretariat will upload the draft plan to Basecamp shortly for approval. The Secretariat is also currently working on the BE-AWARE 2 website and a beta version will be ready for OTSOPA. The current website has already been transferred to the new site.

9.8 The Netherlands requested that COWI include more detail of the MUMM model in the data request note. The Secretariat would confirm this with COWI.



**BE-AWARE II Method Seminar**

8-9 April 2014, Southampton, UK

**Day 1** – start 09.30 am

**1.** Welcome (UK MCA)

**2.** Introduction to the BE-AWARE II (Secretariat) including Project Task and Time Plan.

**3.** Lessons Learnt from BE-AWARE (Secretariat)

**4**. Introduction to the Methodology Note (COWI, MUMM)

**a.** Presentation and discussion of the proposed methodology

**b.** Consideration of Risk Reducing Measures (RRM) and Response Scenarios to be modelled in the project as presented by Project Partners. For measures to be considered they should meet the following requirements e.g.:

 - be relevant for the North Sea

 - Innovative or well proven[[3]](#footnote-3)

 - Effect must be quantifiable

**Day 2** – start 09.00 am

**5.** Continue discussion of the preliminary list of scenarios

**6.** Review and adaptation of the Data Request Note (COWI/MUMM)

**7.** Result presentation (COWI)

Consideration of and discussion on how the final results (deliverables) shall be presented to the readers:

* Diagrams
* Tables
* Etc.

**8.** Project Implementation (Secretariat)

Consider issues which are likely to cause difficulty for the project implementation and identify possible solutions

**9.** AOB

**10.** Closures (UK MCA)



**BE-AWARE II Method Seminar**

8-9 April 2014, Southampton, UK

List of participants

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| **BELGIUM**\*Mr Guido FidlersDG EnvironmentFederal Public Service Health, Food Chain Safety and Environment - Marine Environment UnitPlace Victor Horta 40 box 10B-1060 BrusselsBELGIUMTel: 00 32 2 524 95 35Fax: 00 32 2 524 96 43E-mail: guido.fidlers@environment.belgium.be | **DENMARK**\*Mr Alex JensenAdmiral Danish Fleet HeadquartersPO-Box 1483Soedalsparken 20DK 8220 BrabandDENMARKTel: + 45 8943 3405E-mail: pol.con.den@sok.dk |
| **FRANCE**\*Mr Romain GallenCEREMA/DtecEMF/PTI155 rue Pierre BouguerF-29280 PlouzanéFRANCETel : +33 2 98 05 67 83Fax : +33 2 98 05 67 67E-mail : romain.gallen@cerema.fr | **GERMANY**\*Mr Dirk ReichenbachCentral Command for Maritime Emergencies (CCME)c/o WSA CuxhavenAm Alten Hafen 2D-27472 CuxhavenGERMANYTel: + 49 4721 567 482Fax: + 49 4721 567 490E-mail: DReichenbach@havariekommando.de |
| **GERMANY**Mr Bernhard LitmeyerFederal Waterways and Shipping AgencySchlossplatz 926603 AurichGERMANYTel: + 49 4941602352Fax: + 49 4941 602378E-mail: Bernhard.Litmeyer@wsv.bund.de | **GERMANY**Dr Christina SchneiderFederal Waterways and Shipping AgencyKiellinie 24724106 KielGERMANYTel: + 49 431 3394 8102Fax: + 49 431 3394 6399E-mail: christina.schneider@wsv.bund.de |
| **IRELAND**\*Mr Dave McMylerIrish Coast GuardDepartment of Transport, Tourism and SportLeeson LaneDublin 2IRELANDTel: + 353 1 678 3446E-mail: davemcmyler@dttas.ie | **NETHERLANDS**\*Mr Sjon HuismanRijkswaterstaat Dienst Zee en DeltaLange Kleiweg 342280 GK RijswijkTHE NETHERLANDSTel: + 31 653848673E-mail: sjon.huisman@rws.nl |
| **NETHERLANDS**Mr Michiel VisserRijkswaterstaat Dienst Zee en DeltaLange Kleiweg 342280 GK RijswijkTHE NETHERLANDSTel: + 31 651814463E-mail: michiel.visser@rws.nl | **NORWAY**\*Ms Ingrid LauvrakNorwegian Coastal AdministrationCentre for Emergency ResponseMoloveien 73187 HortenNORWAYTel: +47 90 15 72 03E-mail: ingrid.lauvrak@kystverket.no |
| **SWEDEN**\*Ms Else TimmsSwedish Coast Guard HeadquartersBox 536S-37123 KarlskronaSWEDENTel: + 46 455 353 557Fax: + 46 455 10521E-mail: else.timms@coastguard.se | **UNITED KINGDOM**\*Mr Stan WoznickiUnited Kingdom Maritime and Coastguard AgencyBay 2/11, Spring Place105 Commercial RoadSouthampton SO15 1EGUNITED KINGDOMTel: + 44 2380 329 525E-mail: stan.woznicki@mcga.gov.uk |
| **UNITED KINGDOM**Mr Neil ChapmanUnited Kingdom Maritime and Coastguard AgencyBay 2/11, Spring Place105 Commercial RoadSouthampton SO15 1EGUNITED KINGDOMTel: + 44 (0)2380 329 228E-mail: neil.chapman@mcga.gov.uk | **UNITED KINGDOM**Mr Gaynor EvansMEDINJoseph Proudman Building6 Brownlow StreetLiverpool L3 5DAUNITED KINGDOMTel: + 44 (0)151 795 4881E-mail: gaev@bodc.ac.uk |
| **UNITED KINGDOM**Mr Peter WalkerNatural England4th Floor Foss House, Kings Pool1-2 Peasholme GreenYork, YO1 7PXTel: +44 (0)300 0601119Mobile: 07920 182177[Peter.Walker@naturalengland.org.uk](file:///%5C%5Csamnedfsn1%5Ccommon%5C%40Science_Evidence_%26_Analysis%5CGeographical_Services%5CGeographic_Information_%26_Analysis_Services_3%5CMarine%5CBe%20Aware%5CPeter.Walker%40naturalengland.org.uk) | **UNITED KINGDOM**Mr Kevin ColcombUnited Kingdom Maritime and Coastguard AgencyBay 2/11, Spring Place105 Commercial RoadSouthampton SO15 1EGUNITED KINGDOMTel: + 44 (0)2380 329 411E-mail: kevin.colcomb@mcga.gov.uk |
| **COWI**Dr Carsten JürgensenCOWI A/SParallelvej 2DK-2800 Kongens LyngbyDENMARKTel +45 5640 1213E-mail: crj@cowi.dk | **COWI**Mr Anders MadsenCOWI A/SParallelvej 2DK-2800 Kongens LyngbyDENMARKTel +45 5640 1259E-mail: anma@cowi.dk |
| **BE-AWARE CONSULTANT**Mr Peter PoulsenNiels Bjerres Vej 6DK-7620LemvigDENMARKTel: + 45 2160 6010E-mail: peter.poulsen@dlgmail.dk | **BONN AGREEMENT SECRETARIAT**Dr Darius CampbellMr John MouatMr Chris MoultonMs Paula CreedonBonn Agreement SecretariatVictoria House37-63 Southampton RowLondon WC1B 4DAUNITED KINGDOMTel: +44 20 7430 5200Fax: +44 20 7242 3737E-mail: secretariat@bonnagreement.org |

1. Predicted effect concentration (gives the volume of water that is affected over time) [↑](#footnote-ref-1)
2. Predicted node effect concentration [↑](#footnote-ref-2)
3. Participants have to think out of the box when considering RRM and RM – document all ideas considered and prepare a list with the variety of measures. [↑](#footnote-ref-3)