# Overview

An overview of the MAW01 export and inter-array cables was presented, along with some details on the process that will be carried out to determine suitable design burial depths. Following this the baseline shipping and navigational data for each zone of the export and inter array cables was presented.

## Attendees

The following were in attendance at the meeting:

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| Name | Organisation | Position |
| Ali MacDonald (AM) | Anatec | Principal Risk Analyst |
| Dr Lucy MacNay (LM) | Anatec | Senior Risk Analyst |
| José Antonia Reyna Gutierrez (JOSAG) | Ørsted | Senior Cable Burial Engineer |
| Laurence Cross (LC) | Ørsted | Lead Geotechnical Engineer |
| Michael Evans (ME) | Ørsted | Environmental and Permitting Specialist |
| James Neveu | Ørsted | Permitting Manager |
| Hywel Roberts | Ørsted | Environmental Advisor |
| John Williamson (JW) | Ørsted  | Fisheries Liaison Officer |
| Ron Beck | Tetra Tech | Senior Consultant, Maritime Energy |
| Brian Thibault (BT) | RILA (Rhode Island Lobstermen’s Association) | Vice President |
| Bonnie Brady (BB) | LICFA (Long Island Commercial Fishing Association) | Executive Director |
| Fred Mattera (FM) | CFCRI (Commercial Fisheries Center of Rhode Island) (Bay State Wind FR) | Executive Director |
| Shaye Rooney | CFCRI | Assistant Director |
| Katie Almeida | Town Dock | Fishery Policy Analyst |
| Erica Felins | Navy | Environmental Planner |
| Chris Tompsett | Navy NUWC (Naval Undersea Warfare Centre) Newport | Environmental Planner |
| Heather Hopkins | Navy NUWC Newport | NBTF Manager |
| Rodney Griffith | NUWC NBTF (Narragansett Bay Test Facility) Newport | NBTF Manager |
| Frank McNeilly | NUWC NBTF Newport | Environmental Planner |
| **On Phone** |  |  |
| Beth Casoni | MLA (Massachusetts Lobstermen’s Association) (Bay State Wind FR) | Executive Director |
| Andrea Carpenter  | Naval Sea Systems Command | Environmental Planning/Encroachment |
| Ed LeBlanc (EL) | USCG (United States Coastguard) | Chief, Waterways Management Division |

## Minutes

Ali MacDonald (AM) provided an overview of the MAW01 cables and the Cable Burial Risk Assessment (CBRA) process. The following comments were made:

### Overview of Cables and CBRA Process

* Ali Macdonald (AM) explained the cable burial risk assessment process, which includes considerations of potential hazards, causes of hazards, the frequency of occurence, and the consequence of an interaction. The hazrds, frequency, and consequence are assessed in different areas and at different depths to determine a target burial depth below which the risk of interaction is acceptable.
* The risk assessment consideres fishing gear interaction differently than other interactions such as anchor penetration. Anchor penetration risk is assessed based on a statistical/probabilistic model accounting for number and size of vessels using an area and the likelihood of anchor strike. This is considered a ‘property’ or ‘business’ consequence. However, fishing gear interation is considered a ‘people’ consequence, and thus no level of interation is acceptable.
* Michael Evans (ME) confirmed that the slides would be made available. **[Action – Ørsted]**
* Fred Mattera (FM) questioned what the target burial depths are. Jose Reyna Gutierrez (JOSAG) explained that this is key output from meeting. That recommendation from Carbon Trust is 0.3m (12inches) penetration from fishing so 0.6m (24inches) burial. Will be location specific along the route.
* Bonnie Brady (BB) queried whether trawling is prevalent for UK wind farms where water depths are shallow and applicability of these penetration depths to the US fishing industry. Jose and Ali MacDonald (AM) confirmed that one of the main purposes of the workshop is to get input for US fishing gear types.
* Brian Thibault (BT) asked what fluctuations were allowed within the cable corridor and stated concerns on areas that wouldn’t achieve burial due to rocky bottom and concerns with additional protection such as concrete mattresses, sand bags, etc. He also requested that fishing risk is not ranked as the lowest category in terms of consequences with respect to economic consequences. Laurence Cross (LC) acknowledged that certain areas are challenging and that experience in the UK has shown that they will need additional protection measures. (There most likely will be technical issues during installation). Every effort will be made to bury the cable, but if that doesn’t work, additional protection will be required. Ørsted are working actively on rock berm design and installation. Ørsted will have a strategy in place which will be made available to stakeholders.
* BT asked if the CBRA will be an addendum to the COP (Construction and Operations Plan). ME said that, yes, the CBRA will be an appendix to the COP, but it may be updated at a later time when the geotechnical and geophysical data collected this summer/fall is analyzed. BT stated that the risk factors for economic impacts should be high (for fixed gears, potters, etc.)
* BB asked what was the % of rock protection is opposed to burial in UK experience. LC stated that circa 5% of a route in similar conditions needed remedial work, of which some of this could be re-buried (therefore <5%) but some required additional rock protection. It is of course dependant on the ground conditions.
* FM stated that in continental Europe cables are not buried and questioned if all of Ørsted’s wind farm cables are buried. JOSAG confirmed that this is the case, and Ørsted make every effort to protect the cable.
* FM asked whether VMS is representative of fishing activity, as this can vary considerably over the years and stated that they would like to know where the high risk areas have been identified. He also stated that areas where additional protection measures are used should be clearly stated on the charts. Ørsted agreed to consider this.
* FM acknowledged that Ørsted’s outreach to fishermen had been welcomed.
* AM commented on the FishSAFE system used in the UK and that perhaps consideration could be given to the implementation of such a system in the US.
* BB stated that they have been told that cable crossings will not be buried. JOSAG stated that the cable will cross over existing cables and that they will develop crossing agreements for these crossings. ME stated that there are 3 pipeline crossings in the Sakonnet river and 1 cable area but nothing offshore.
* BB noted that VMS data is not completely representative of fishing as it does not go back far enough and only took New England data during the BOEM (Bureau of Ocean Energy Management) lease process and did not include New York.

### Baseline Data

Lucy MacNay (LM) presented an overview of the baseline data for Zones 1 to 5. The following general comments were made:

* Brian Thibault (BT) and Bonnie Brady (BB) highlighted that there is a tremendous amount of fishing effort which is being missed as many boats are not included in the VMS and AIS data.
* Fred Mattera (FM) and BB suggested that contact is made with the fishermen to gain information on historic fishing activity and the type of fishing gear used in each zone, so that the burial depth can be designed based on fishing gear penetration. **[Action – Ørsted/Anatec]**
* FM indicated that the cable protection measures (rock, mattresses) need to be well marked on nautical charts
* Outside 12 miles fishing vessels have to broadcast on AIS since it was mandated in 2015. Fishermen are known to turn it off.
* BB queried whether there would be mitigation measures in place for disruption to fishing during construction. It is noted that this is a key concern but does not have an impact on design burial depths.
* BB noted that VMS data does not include out of fishery, which is a limitation to the data. AM commented that the frequency of fishing activity is not a concern, and that the key factor is the most aggressive type of gear used in the area so that the cable can be buried to protect against that, where it is known / predicted to operate.
* FM and BT confirmed that the gear that causes the most damage is clam dredgers, followed by trawlers. If the cable burial is designed for clam dredgers then everyone else should be covered. However John Williamson (JW) pointed out that trawlers can fish in more places than clam dredgers.
* FM indicated that he would consider a burial depth of at least 3 feet to be comfortable towing any gear over it.

The following comments relating to Zone 1 (KP 1-14) of the cable route were made:

* Fishing in this area is mainly pots. Conch fishing done with fixed gear, trawls and traps. It is seasonal, mostly in spring. Shrimp fishing (trawling) also occurs at night. This is not shown in the AIS and VMS data. There is also demersal fishing in the area.
* It is noted that some boats are not required to file a Vessel Trip Report (VTR), e.g. lobster boats. Only require a single waypoint so not as accurate as can be at start or at the end of the day.
* BT stated that there is a tremendous amount of fishing effort in the area which is being missed, including conch fishery, lobster fishery, small trawlers, that do not have VMS and are not required to file a VTR.
* The main area for fishing in this area is south of the bridges, although some conch fishing takes place in Mount Hope Bay.
* BT stated that he would pass contact details for fishermen operating in this area on to John Williamson (JW). **[Action – BT]**
* There are also conch trawl lines in the area, i.e. a string of 8 to 10 traps on one trawl line. These would not penetrate very much into the seabed.
* There will be small boats using nets in this zone (e.g. shrimp trawlers and beam trawlers).
* Frank McNeilly stated that between the 2 bridges the bottom is very dynamic and lots of scouring in this area. This will be an issue for the burial of the cable. JOSAG confirmed that Ørsted are aware of this and that they hope that demolition of the old bridge occurs before cable installation.

The following comments relating to Zone 2 (KP14-34) of the cable were made:

* Many of the comments above under Zone 1 are also applicable to Zone 2.
* It was noted that the monkfish boats identified on VMS are not actively fishing as there is no monkfish in this area. These vessels are in transit to/from port.
* There is a seasonal pelagic fishery (May/June) at the mouth of the Sakonnet River.
* The whole of zone 2 has conch and fixed traps, lobster pots and lobster trawls.
* Conch season is mainly spring and fall.

The following comments related to Zone 3 (KP34-51) of the cable were made:

* The cable route in this zone crosses the Traffic Separation Scheme (TSS) and the Recommended Vessel Route for deep draft vessels entering and departing Buzzards Bay (“green route”), as is close to a designated anchorage area.
* Ed LeBlanc (ED) stated that there were no particular concerns from the USCG in this area (i.e. recommended route or TSS), as he noted that the CBRA was looking at the vessels using the area and the anchor sizes.
* Vessels may anchor to the north of the designated anchorage if it is busy or when pilots are boarding vessels. South of the anchorage is not a good anchorage (poor holding ground).
* December through to March, large vessels (e.g. from Gloucester) use this area for herring pelagic trawling. These vessels will anchor up in this area. Rhode Island DEM may be able to provide more information. These are pair trawlers which do not use doors, but use clump weights (4,000 to 5,000 lbs). **[Action – Ørsted]**
* FM suggested that Ørsted reach out to the URI Graduate Study of Oceanography, who use Autonomous Underwater Vehicles (AUVs) and also use tows on the bottom. It was recommended that Al Kluderman at Woods Hole would also be a good contact. **[Action – Ørsted]**
* BT stated that during summer season, this area is busy for squid fisheries. It is noted that this fluctuates greatly from year to year, with 2016 being a very busy year for squid fishing, while the year before was much quieter.
* FM stated that there will be multiple tows over multiple periods of time in this area, with more repetition from trawlers. However, he noted that clam dredgers will go deeper.
* BT stated that there are fixed gear lobster traps and gill netting of monkfish in this area. He also stated that some of the area in this zone is rocky bottom, where burial of the cable will be difficult and the area will require additional protection measures. He stated that this was a concern for lobster habitat as there are lots of egg bearing lobsters in this area.

The following comments related to Zone 4 (KP51-94) of the cable were made:

* The Navy does not have any concerns with the cable route intersecting the military operating area, as it is not an active firing zone.
* LC presented trawl tracks identified in the bathymetry data and queried what type of vessel could be making them. FM suggested they could be clam dredgers.

The following comments related to Zone 5 (inter-array cables) were made:

* Fishing for squid, scallops, whiting etc. takes place in this area.
* BT asked if the turbine layout was available. ME stated that it was and the rows of turbines are 1 nm apart. Within the rows, the average spacing between turbines was approximately 0.75nm, but that the transit corridor was still under discussion. BT queried whether the cables will be installed at the same time as the substation. ME confirmed that the substation would be installed prior to cable installation and that the installation sequence is quite complicated in order to allow back-flow of energy from the onshore grid to commission/test the offshore substation and WTGs, while also accounting for potential time-of-year restrictions.
* FM offered to provide information in terms of the tracks from 24 different trawlers working in both Zones 4 and 5, but requested a confidentiality agreement for this information. ME confirmed that business-confidential information can be redacted from= the COP. **[Action – Fred Mattera/Ørsted]**
* FM confirmed that these vessels are generally 45-90ft in length (average 60ft), that there are 20,000 tows back and forth and that they could make tows there for 4 days. He also noted that 80-90% of the tracks are erased. The tracks are in WinPlot format.
* FM also commented that there are charter boats towing anchors in this area (around 35 feet in length). These are recreational fishing vessels that could be fishing for tuna. FM will provide contacts. **[Action – Fred Mattera]**
* Ron Beck (RB) offered to provide information on recreational boat anchor studies. **[Action – Ron Beck]**

## Actions

The following actions were noted:

* Michael Evans to make slides available to workshop attendees.
* Ørsted / Anatec to make contact with the fishermen to gain information on the type of fishing gear used in each zone and maximum penetration depths.
* Brian Thibault to provide Ørsted with contact info for fishermen who use Mount Hope Bay and Sakonet River.
* Ørsted to contact Rhode Island DEM (Department of Environmental Management) for more information on large pelagic trawlers from Gloucester anchoring in the area.
* Ørsted to reach out to the URI Graduate Study of Oceanography, who use AUVs and also use tows on the bottom.
* Fred Mattera to provide WinPlot information of 24 different trawlers working in zones 4 and 5. Ørsted to provide confidentiality agreement for this data.
* Fred Mattera to provide contacts for charter boats towing anchors in zone 5.
* Ron Beck to provide information on recreational boat anchor studies.