



Fundy Ocean Research Center for Energy

## **9<sup>TH</sup> Meeting of the Community Liaison Committee (CLC)**

FORCE Visitor Centre Theatre  
1156 West Bay Road

Tuesday, December 2<sup>nd</sup>, 2014

### **Minutes**

#### **1. Welcome & Introductions**

The meeting was called to order by Co-Chair Gerard Cormier at 10:06am. The Agenda and EEMP update were circulated (the minutes of the previous meeting having been circulated electronically). Present at the meeting were: Gerard Cormier (GC), Cindy Tupper (CT), Donnie Fletcher (DF), Robert Yorke (RY), and Tom MacLaren (TM), Anne-Marie Belliveau (AMB), Carys Burgess/EMERA (CB), Mary McPhee (MM). Melissa Nevin (MN) called to say she was running late and arrived at the meeting at 10:10am. Regrets were received from Lois Smith, Frank Hartman, Steven Collinson and Andrew Wagstaff. GC asked for a round of introductions and the membership introduced themselves around the table, including Carys Burgess (Emera rep) and Tom MacLaren, both of whom were attending their first CLC meeting. The Agenda was approved as circulated. MM shared a video concerning the deployment of the subsea power cables, after which MM shared with the membership how to find and share the video via FORCE's Vimeo channel ([vimeo.com/fundyforce](http://vimeo.com/fundyforce)) and discussion arose regarding the possibility of a local paper media feature concerning the project with supporting photos and video, members wondered if Andrew Wagstaff might be interested in such a feature.

#### **2. Minutes of Last Meeting & Business Arising**

The discussion turned to the minutes of the last meeting, GC asking if everyone had reviewed the minutes and if there were any outstanding matters from the document. GC asked if there had been any progress on fisher members, and MM responded that FORCE had met with lobster fisher Dave Rafuse, who she would approach re. attending meetings, scheduling meetings. As well, MM indicated that an upcoming Fishers Update meeting may allow opportunity to solicit fisher members for CLC. The members discussed the relative amount of fishing in Minas Passage compared with other areas, with MM noting that consideration also has to be given to fishing occurring in West Bay/East Bay and other areas used for mooring, trials, and transit of tidal energy marine assets. Discussion around members missing consecutive meetings arose, prompting CT to comment that day-time meetings aren't optimum for those working during the day. MM commented that Cindy had missed few meetings and that this could be a consideration to schedule the next meeting around the schedule of those working during the day. The members discussed the approach to planning the next meeting, and it was determined to schedule before spring lobster season, and to re-visit scheduling in the New Year. MM advised the membership that revised CLC Terms of Reference (TOR), which had been circulated electronically, was now updated in document form and posted on the CLC page of the FORCE website. Further, MM told the membership that the CLC page had been fully revised and was up-to-date with postings of minutes & other documents.

### **3. New Business:**

#### **a. FORCE Project Update**

MM gave an update on the FORCE project, beginning with an overview of ICOE, saying what a great event it was for FORCE, including the FORCE site tour. MM thanked the members who volunteered. TM asked how many delegates attended ICOE. MM & AMB responded that 650 attended the conference, with 150 attending the FORCE site tour. Discussion of the experience of the ICOE tour followed, including visiting the FORCE substation. GC asked if a tour could be arranged in the future for CLC members who had yet to see the substation. TM noted that it would be valuable to see the power conversion equipment. MM indicated that FORCE would examine the possibilities of such a tour in the New Year. MM told the membership that the public meetings re. FORCE and Tidal Energy held May 20 and September 30 were two of the best public events ever held re. the project in terms of attendance, feedback, questions asked, and general vibe, adding that it was very rewarding for FORCE staff to conduct these meetings and see the engagement of members of the public. MM indicated that CLC members were to be thanked for encouraging others to attend these events, and attending themselves. MM then described the FORCE Power Cables project which had been completed over the majority of October, as well as part of November, telling the membership that planning, risk assessment and preparations began months before, with intense prep beginning in mid-August. MM described the installation process, as well as the beach burial, vault connections and testing which had occurred. MM told the members that the primary contractor was R.J. MacIsaac Construction of Antigonish with subcontracted tug boats, safety transfer vessel, welding and crane operators, as well as Seaforth Geo-Surveys, Tony Gillis' Tidechaser vessel as the fast-rescue craft, Earle MacAloney Excavation, Northumberland Electric, Strum Engineering, Rafes Construction and Vistacare and several other companies involved in the project, mostly regional, with a few cable specialists from the UK. TM asked the total cost of the FORCE electrical infrastructure, and AMB/MM responded that approximately \$30 million had been utilized to complete all of the infrastructure, comprising about 25% of the project costs, and saying that this was largely public funding. TM noted the financial benefits that had been seen in the local area. DF commented that a great deal of money had been spent in the community during this project, including in accommodations and other businesses that might not have been open (at the time of year the project occurred) without the project. The membership discussed the financial benefits to the local community from the power cable project. MM updated the membership on the FAST program, telling members about the station keeping & anchoring trials which had occurred in July & August, and the assembly of the mini-platform, the instrumentation and the updates to the project. MM told the membership that the Vectron had been tank- and wharf-tested, and was progressing well. Further, MM described the work with Ocean Networks Canada (ONC) and the development of the Fundy (FORCE) observatory, online interface, sharing with the membership the ability of the public to access the info.

MM continued the update discussing that there had been several updates and media pieces concerning the FORCE Berth-Holders, various announcements re. timelines, Open Hydro/Emera 2015, BRTP 2016, possible 5<sup>th</sup> proponent announced (DP Energy) at ICOE. This portion of the update generated lots of questions, and merged into an update about the ongoing Electrical Capacity Expansion. GC asked when the turbines would be installed. CB responded that Emera/Open Hydro is planning to install in 2015, now looking at mid-august for beginning a multi-week deployment, estimating adjustments to the timelines, with assembly of the turbine bases commenced at a location near the ferry docks in Dartmouth. GC asked if the two turbines would be deployed at same time. CB responded that the two turbines would be deployed separately on their base. TM asked about the electrical expansion (to 20, 50 MW) that had been discussed and how that would affect developers. MM explained that on the onset of FORCE project, developers were looking at 1-MW devices, now

at 5MW, and used the example of the planned Emera/Open Hydro deployment to illustrate how one deployment could utilize most of the MW allowance for the site. CT asked what would happen with the addition of a new berth-holder. AMB responded that any new Berth-holder would be included in expansion, but qualified that this process (potential new berth-holder) is not very advanced; stating that discussion at the Provincial level had just started. MM added that each developer's turbine was different with varying production levels (ie. 2MW + 2MW versus many small turbines on strings). CT asked about the process to upgrade to 50MW. CB responded that this is a multi-staged development, expansion of renewable sector will include wind, look at projects like Maritime Link, reach Provincial goals; explaining that such an increase is part of an overall energy discussion which is on-going. GC asked for clarification on the project timeline, stating that it did not appear with the current timeline that the project would end in 2020. MM responded that there had been significant timeline alterations with various parts of the FORCE project, including power cable install, budget-related delays, as well as those relating to getting turbines in the water, adding that the project end-timeline would change accordingly, and that the various designs from berth-holders would vary in installation and testing timelines, which would further affect the completion of the demonstration project. TM asked if this was a competition for solely commercial process or research or combination. CB responded that for FORCE and berth-holders there is a research program as to in-stream technology development, including development and expansion of the industry. MM responded that FORCE's mandate is as a research company with an environmental watchdog role, which would see research into site characterization, as well as effects of turbines on environment, vice-versa, and incremental expansion. CT asked if the cable installation technology used on the Maritime Link project could be applied in Fundy. CB responded that the technology used in the Cabot Strait cable install is a known technology application, with different challenges, parameters in Fundy. MN added that in such applications, directional drilling methodology is employed. CB added that there the substrate lends to the use of directional drilling due to scour, known parameters. MM added that part of the FORCE project was research and testing as to deploying cables at the FORCE site, based on other cable installations but specific to the challenges in Minas Passage. MM concluded that research in various topics is essential FORCE role, but that obviously there is commercial value to technology development from the developer perspective. CB added that FORCE had completed great deal of background work, which was an excellent resource for developers. MM told the membership that the electrical infrastructure upgrades were in progress, options had been explored, supported by the 4.2 million dollars the Province allocated to FORCE, including upgrades to FORCE transformer, nearby grid-substations, as well as next steps. TM asked about the status of the tariff for the FORCE project. MM responded that this was different than the FIT established for other projects, saying that the UARB had released the FIT in the spring of 2014. Discussion followed regarding the actual rate and lifespan. Addendum - TM sent MM an excerpt of the FIT for sharing with the membership 2014-12-20, as follows:

This table lays out the Feed-In Tariffs (FIT) that berth holders will receive for electricity delivered to the grid, it covers up to a 15 year period.

A. The rates are summarized in Table 1.

Table 1. The Proposed Rates

Developmental		Phase I Test		Phase II Test	
≤16,560 MWh	>16,560 MWh	≤3,330 MWh	>3,330 MWh	≤16,560 MWh	>16,560 MWh
\$545	\$425	\$590	\$470	\$505	\$385

Concluding the FORCE project update, MM told the members about the bird-tracking programs that had

occurred at FORCE via Canadian Wildlife Services, Environment Canada and Mount Allison University for the last 3 summers, and announced that FORCE was now a site for the new MOTUS tracking program (Bird Studies Canada), which would see the tower site at FORCE used in telemetry tracking of bird species, bats and some migrating insect species in future years, saying that FORCE was extremely excited to be part of this program.

b. Visitor Centre 2014 Season Update

MM provided an update on the 2014 visitor season, sharing the visitor total standing at 5400, representing an increase 25% over last year. DF asked what kind of numbers the Ottawa House Museum was seeing and if they were seeing corresponding increases. TM responded that the increases at Ottawa House were not near the 25% annual increase level, with steady numbers year to year. MM told the members that collaboration with other locales, including Fundy Geological Museum had added to the Visitor Centre programs, adding that primary local promotion at FORCE is toward tidal beaches, Ottawa House/Partridge Island being top-rated, as well as Fundy Geological Museum, Age of Sail, parks, Joggins Fossil Centre, Macan Tidal Bore. MM announced that FORCE would have a sign on the Provincial Highway Attractions signage, at Exit 12 coming from Halifax (Masstown Exit), saying that the cost was significant and that if FORCE pursued more signage of this type, they would look at options for the NB/NS border, Amherst area next. Comments were that increased signage had increased visitors, ease of finding FORCE. MM told the membership that this season's staffing was fantastic, stellar, and that she could not be happier with her staff in 2014. Hanna Doyle, Provincial Funding, also Wetlands Compensation, Programs, Visitor Services, project assistance, stayed on in fall, working on new wetlands interpretation; Luke Gillis, high school grad, now at NSCC, amazing with people, excitement for project, visitor services, assisted with project, July & August, Federal funding; part-time staffing this year, Carrie Goodwin, amazing visitor services, hospitality, guidance second-to-none on local area, eager to learn; overall excellent year. GC asked if the staff of the Visitor Centre would be expanded in the coming year with the increases in visitors. MM responded that it would depend on budget, staff commitments, project needs. MN suggested that FORCE may want to look at more funding opportunities for staffing, including looking at NS Environment opportunities, etc. AMB thanked MN for her suggestions. MM told the membership that as well as an overall increase in visitors, there were more students visiting FORCE, including post-secondary, various NSCC classes. MM concluded with the announcement of new interpretation materials for 2015 including developer materials, sensor technology, electrical infrastructure, wetlands ecology, saying that hours of operation for 2015 would be announced in late winter.

c. EEMP (Environmental Programs) update – Anne-Marie Belliveau

A paper copy of the EEMP update had been circulated. AMB highlighted the updates from the EEMP, including those perspectives from the power cable project, as well as an upcoming Fishers Update to share with fishers the locations of cables and get feedback, meeting invites to weir, LFA, scallop, long-line fishers. AMB told the membership about FORCE's Wetlands Compensation components, as well as the FAST monitoring platform, the latest EMAC meeting, the most recent update from FERN, and the current RFP for the future EEMP, as well as the much anticipated upcoming release of the second EEM report to the public. AMB explained that the tidal energy sector is new to regulators, as well as FORCE and developers, and that the monitoring process helps to define industry standards, that all groups are working together to achieve this. AMB added that FORCE hoped to get the second EEM documents out to the public (i.e. website) by end of year, early 2015. AMB told the membership about the trials which had occurred during the summer for the FAST program, which were a two-part process, both in station-keeping (which could be applied to various processes including turbine deployment, cable installation) and deployment and recovery of the platform. AMB added that the big FAST platform was to have an RFQ released for fabrication in the coming months, anticipating fabricate of the base in spring, as well as the purchase of instruments for the platform, following the fabrication, the instruments would be installed on the base and then plans for deployment would follow.

d. FORCE-related Activities at Parrsboro Wharf/Hbr: Past, Present, Future

MM told the membership that this Agenda item had been requested. MM described the past activities at the Parrsboro Harbour as basically some environmental monitoring, background studies, some vessel-activity, local vessels, as well as data cable deployment, mobilization in 2013, power cables mobilization, personnel transfer, surveys of various types, some Berth-Holder activity as recent as last few months. MM further told the members that present activities include instrument testing i.e. Vectron, FAST installation phases, some survey work (fueling, personnel transfer possible). Finally MM outlined some potential future activities for the harbour/wharf, as follows: the proximity of wharf/harbour to FORCE site could prove to be economic & time advantage, FORCE would utilize when possible, safe, but dependent on vessel sizes and services available (wharf structural capacity, available space, and access). No guarantee. There are questions regarding safety, which are a part of individual risk assessments for each operation and a crucial component of all projects. TM asked if there had been a recent assessment of Parrsboro wharf. MM said FORCE & contractors commissioned assessment in November 2013 because Parrsboro Harbour Commission could not provide an up-to-date assessment, and that this assessment failed portions of the wharf for safety and stability, which limited FORCE/contractor use in some cases (i.e. heavy lifting, crane operations). RY asked if the Harbour Commission had access to this assessment. MM responded that FORCE had given the assessment to the Harbour Commission in 2014 to use as an assessment tool. Discussion ensued about the necessity of assessment, upgrades to wharf, who is responsible, how local groups can work together, what the process/steps are, how tidal energy can benefit local area. Actions from discussion: DF will speak with Lois Smith, as well as Jamie Baillie and Scott Armstrong (MLA & MP); TM & GC will meet with Tidal Readiness group from Parrsboro Board of Trade and discuss a way forward for collaboration among local interests, groups.

4. Next Meeting & Adjournment

Considering the discussion earlier in the meeting, the membership resolved to have a meeting outside week-day business hours, milling over the options for day of week, evening time slots, possibilities for a Saturday meeting, and considering the spring lobster season. April was decided to be appropriate month, and resolved to re-visit the timing in the New Year to determine best timing, share schedules.

The meeting adjourned at 2:10 pm.

**Update - FORCE's Environmental Effects Monitoring Program (EEMP) – December 2014**

**Power Cables** – FORCE successfully deployed four submarine power cables in FORCE's Crown Lease Area (CLA) this past October. The cables are presently being connected to the land cables, and then will be commissioned. FORCE ensured that all permits and notifications were obtained/issued prior to the commencement of the project. Prior to the power cables deployment, FORCE met with the lobster fishers who operate in the Minas Passage to discuss the operation and ways in which to work together. FORCE is planning to meet with the larger group of fishers (LFA 35) on December 16<sup>th</sup>, 2014 to provide a project update and to discuss a proposed Safety Zone around FORCE's power cables.

**Wetlands Compensation** – FORCE's four power cables were buried in a wetland between the shore and FORCE's visitor centre in September. FORCE, in consultation with Nova Scotia Environment, is undertaking several measures to compensate for the anticipated disturbance to the wetlands:

- 1) FORCE hired a local student this past summer who monitored pre-disturbance growth patterns of marsh grass along the cable routes through the wetland;
- 2) FORCE supported DoT with replacing a culvert along the West Bay road whose speed of discharge was negatively affecting the wetland; and
- 3) FORCE is presently working on the design to install interpretive panels at the FORCE visitor centre in relation to the wetland

The site will also continue to be monitored for two years to document changes and verify the predictions that the wetland restoration measures have been successful.

**Monitoring Platform Project** – FORCE has developed and fabricated a small cabled subsea platform to test monitoring instruments in high-flow environments, and will provide data in real time. It is anticipated that the platform will be deployed in March 2015. FORCE is also developing a larger subsea platform that will be moved to various locations throughout FORCE's CLA to provide data specific to each location. This platform will also house FORCE's flagship R&D instrument, the Vectron. The fabrication of this platform will begin in early 2015.

**Environmental Monitoring Advisory Committee (EMAC)** - The 14<sup>th</sup> EMAC meeting was held on October 16<sup>th</sup> to discuss FORCE's EEMP RFP (see below).

**EEMP Development - Request for Proposals (RFP)** – FORCE developed and issued an RFP for a consultant to develop FORCE's new EEMP in anticipation of the next turbine deployment in mid/late 2015. The RFP closes on December 19<sup>th</sup>, and FORCE will aim to award the project in mid-January 2015. The RFP can be seen at <http://fundyforce.ca/media-center/opportunities/>

**2<sup>nd</sup> EEM Report** – FORCE's 2<sup>nd</sup> EEM Report will cover the period of 2011-2013 and was finalized with the assistance of the Fundy Energy Research Network (FERN), and reviewed by FORCE's EMAC. The completion of the final 2<sup>nd</sup> EEMP report is anticipated by the end of 2014 and will then be made available to the public.

**If you have any questions or comments regarding this update, please contact Anne-Marie Belliveau at [am\\_belliveau@fundyforce.ca](mailto:am_belliveau@fundyforce.ca) or 902-406-1166 ext. 5.**