



Meeting Minutes

WP8 – 5th WP Leaders Meeting

Date: 02-Mar-2017
Time: 13:00 – 14:30
Location: Skype for Business

Participants

Anne-Belinda Bjerre	DTI (Coordinator & WP8 leader)
Jaap van Hal	ECN (Executive Board Chairman, WP5 leader)
Benny Pycke	SIOEN (WP1 leader)
Xiaoru Hou	DTI (WP2 leader)
Ana López Contreras	WFBR (WP3 leader) – <i>Sick absent</i>
Wouter Huijgen	ECN (WP4 leader)
Jonna Fry	ERM (WP6 leader)
Rita Clancy	EURIDA (WP7 leader, Dissemination Officer)
Bert Groenendaal	SIOEN (IPR Officer)

Agenda

1. Welcome
2. WP1 Status
 - Seaweed Analysis Protocol Book
 - Coding System
3. WP2 Status
4. WP3 Status
5. WP4 Status
 - Progress for amendment of the project plan in the deliverable D4.5
6. WP5 Status
7. WP6 Status
8. WP7 Status
 - EXPO 2017



- Algal book
- 9. WP8 Status
 - Advisory Board Update
 - Deliverables
- 10. Other issues

Minutes of meeting

1. Welcome

- The meeting was hosted by Anne-Belinda
- Xiaoru would take the meeting minutes
- Ana was absent due to bad flu.

2. WP1 Status

- Benny summarized the WP1 status. WP1 went on well on schedule. Two extra lined were deployed for cultivation of *Saccharina* and *Alaria*. Cultivation sites for this year will be both in Scotland (partner SAMS) and Denmark (partner AU) with primary focus on *Saccharina* and *Alaria*. *Palmaria* will also be investigated. **ACT1: Biomass request for this year will be sent out to the partners by Benny next week.**

Bert supplemented that the preparation work for this years harvest on May has started. Anne-Belinda asked how the harvest will be done. Bert answered that for this year the harvest will be done manually. The mechanical harvesting, as part of WP1's task in the project, is on its 1st phase of design by SIOEN. More information will be come back to the consortium later.

Anne-Belinda emphasized that this year's seaweed biomass should contain substantial amount of sugars, as a premise for the following biofuel conversion processes. Bert answered that the seaweed biomass composition will be monitored by quick analysis. The seaweed plant are very small at the moment, and the 1st sample for composition analysis will be taken in the middle March.

- Analysis Book

ECN was invited to join a protocol book on macroalgae, to be published by CRC Taylor & Francis, for writing a 10-page chapter (PROTOCOL style) about, for example, i) "extraction and analysis of carbohydrates" and/or ii) *Ulva* biorefinery (ending up with proteins, carbohydrates, *etc.*). Since there are tasks of analysis protocol development from both MacroFules and MacroCascade project, Wouter and Jaap thus invited partners from MacroFuels i.e. SAMS, DTI, WFBR and MacroCascade i.e. MATIS, for joint-contribution and got positive reply. **The deadline of submission will be the end of May. ACT2:**



Wouter will read through the editors' requirement/guidelines and send to the agreed partners the writing plan including input, schedule, format example etc.

- Code System

Jaap presented the seaweed sampling code system. The first letter indicating seaweed species and harvest location will be revised because of more than two harvest locations of some species e.g. *Ulva* (both from Scotland and Denmark). No further comments were given from the WP leaders. **ACT3. Jaap will send the finalized code system to the whole consortium next week.**

3. WP2 Status

- Xiaoru presented WP2 status. WP2 went on well with Schedule. Next 3-months WP tele-meeting will be held in April (date waiting for Doodle vote). In DTI, the main focus at present is on ensiling as a method for pretreatment and storage, incl. at different temperatures and comparison of natural ensiling and lactobacillus inoculum. The ensiling effects on enzymatic hydrolysis and fermentation will also be tested. In Marincox, they are testing the recombinant enzymes' behavior on DTI's previously sent brown seaweed *Laminaria digitata*'s hydrolysate. In ECN, Wouter has sent to WP3 partners a request for concentrated sugar syrup's quality (i.e. maximum salt concentration), for developing the suitable process for sugar concentrating. Wouter supplemented that ECN has also compared the different conditioning methods for storage on different seaweed species, and he would present the results in the next WP2 tele-meeting. A presentation slides summarizing the content will be sent to WP2 partners before the meeting.

4. WP3 Status

- Ana was absent due to the bad flue. But she sent to all the meeting participants in advance a small summary of WP3 status, which was read again by Xiaoru in the meeting: "WP3 is proceeding on schedule. On WP5, I have been in contact with Jaap and with Mr Jacob Jeppesen from DTI. They can work with the ABE or IBE mixes, which is very good news. For fuel testing, up to 20% water in the samples are accepted. In our samples there is more water, so we have to find a way to remove it. Jaap would discuss this with colleagues at ECN Hopefully we can find a way in the consortium".
- Xiaoru supplemented that the deliverable concerning the delivery of produced for engine test (D3.5 Fuel samples for engine testing), the responsible partner is MATIS. She would thus like to figure out with Ana MATIS' and other WP3 partner's role in this fuel sample delivery.

5. WP4 Status

- Wouter summarized WP4 status, which went on well with schedule. Xylose extracted from seaweed *Palmaria* resulted in very good yield for furfural. However production of alginate furfural did not give very promising results up to now, when the trial was scaled-up from analytical-scale. Anne-Belinda asked for the possible reasons. Wouter suspected that it might be due to the inefficient heating when the scaling up. They are trying to figure out the problem and possible back-up solutions for this task (task 4.1).
- Progress for amendment of the project plan in the deliverable D4.5: The deadline for submission will be 1st May, as agreed.



6. WP5 Status

- Jaap summarized WP5 status, which went on well with schedule. Many communications between WP3, WP6 partners and DTI engine test partner Jacob Jeppesen have been initiated, for clarification the basic requirement for those 20L biofuels for real engine test.
- Plan A/Plan B/Plan C considering the 20L biofuels for real engine test will be ready in April, based on the seaweed composition, equipment requirement and availability, *etc.*
- The task to evaluate the proteins and minerals in the residues will start in M20. Thus, we will request to save sufficient amounts of samples during this summer WP2-4 tasks to assess these residues.

7. WP6 Status

- Jonna summarized WP6 status, which is progressing to schedule. Next WP6 meeting will be held on 14th March.
- Data collection for the techno-economic and environmental assessments has been divided between two partners ECN and ERM. ECN will collect / model the necessary data for the bioproduction (bioplant) processes. ERM will collect / model the necessary data for cultivation and harvesting. AU will also help ERM with data and in checking the assumptions regarding cultivation.
- AU has commented that the right cultivation system still need to be established in order to determine the appropriate data to use.
- Rita summarized the activity in the task of social assessment. A social impact canvas will be built for seaweed aquaculture, also considering comparable issues from other sea farming activities (e.g. salmon farming) to find out about possible misperceptions from coastal communities and citizens, as well as existing social issues that may become risks for future exploitation plans. Rita will have a meeting with Suzi Billing, a social scientist from partner SAMS, who is going to work on a social impact assessment for seaweed aquaculture in a UK funded project. The virtual or physical meeting will take place in May at the latest, for more discussion and scientific review (input) of social impact.
- Benny briefly introduced the activity in the task of business risk assessment. Potential scenarios from cultivation to harvest need to be established for assessment.
- Jonna mentioned that an abstract has been submitted to the conference LCM 2017 (<http://lcm-conferences.org/>). The conference is Europe-oriented and will be held in September this year. The feedback of whether the abstract will be accepted will be given in April.

8. WP7 Status

- Rita summarized WP7 status, which went on well.
- EXPO 2017:
 - The movie storyboard has been sent to the organizers of EXPO. They like and accepted it.
 - Many materials from partners (e.g. SAMS, MATIS) for the storyboard have been sent to Rita and are still under collecting by Rita. Xiaoru read Ana's comment "For the expo, I will send Rita a link to another video that is maybe interesting, on fermentation of *Ulva* to ABE and 1,2-propanediol". And Rita replied that she had already received it.
 - Anne-Belinda, Jaap, Bert and Rita will filter through the materials for the movie. In case more materials are needed, Rita will contact the relevant partners individually.



- Nils Torvalds from MEP Finland, who is an advocate for capping 1st generation bioethanol and the promotion of new generations of bioethanol, among others from seaweed, will participate in the movie for short interview. Contributions from Shell (to provide an industry view) is under discussion.
 - Sketch for the visual exhibition of key process has been sent to the Curator of the EXPO 2017, and the comments from the scenographers who are responsible for implementation will be sent back to us.
 - Overall, the communication is at the start stage, and EU commission will only be informed and invited for commenting, when everything is completed.
- Algal Book:
 - Xiaoru read Ana's comment: "The book chapter is in progress. We sent recently our revisions in the proof prints."
 - **ACT4: A template for an internal newsletter together with a new collection list for dissemination activities will be sent to the consortium by the end of March the latest.**

9. WP8 Status

- Advisory Board:
 - Shell Biodomain is working on the formal work for agreement signing.
 - Novozymes showed interest however no further reply obtained up to now, after getting the required materials from MacroFuels. Anne-Belinda will try to contact Novozymes again.
 - Sky Energy, a company for shipping fuels, and members from European renewable ethanol association are under consideration.
 - Statoil declined.
- Deliverables:
 - 1st Year Internal Scientific report is under working.
 - **ACT5: Wouter will send to Xiaoru the 1st year progress report of WP4 and input of task 2.4 and task 2.5 for the 1st year progress report of WP2.**
 - **ACT6: Xiaoru will merge the 1st years report from all the WPs and send to the whole consortium the middle of next week.**
 - Three deliverable reports need to be submitted to EU commission at the end of this year (31st December): D2.6 (ECN), D4.1 (ECN), D7.3 (ECN).

10. Other issues

- Rita and Jaap will find and organize meetings for stakeholders (deliverable report D7.3: stakeholder engagement events and results' evaluation report, 31st Dec 2017).
- Bert will have a meeting with Xiaoru, for organizing a seaweed ensilage workshop (11th April, Copenhagen). Details will be sent to Rita afterwards.



- Preparation work for the next project meeting in Bruges has started. Program and meeting agenda will be sent to the consortium in weeks.
- When the “code system for seaweed sampling” is ready, it will be sent to Rita to be uploaded to the “Members Area”.

Noted by Xiaoru Hou, revised by Wouter Huijgen, Jaap van Hal, Rita Clancy, Jonna Fry