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Meeting Report

Deliverable D.10 – WP1

Less-Water Bev.Tech

Contract ECO/13/630314

Reporting Date
22/09/2017

Project coordinator: **A DUE DI SQUERI DONATO & C. S.p.A.**

Project website: www.lesswaterbevtech.com

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Description of the Deliverable n. 10 of Work Package 1.

This deliverable, included in the Annex I of the Grant Agreement for the Project Less-Water Bev. Tech (ECO/13/630314), regards the “Project coordination meeting #9” that was held on September 22nd 2017, at A DUE S.p.A. premises in Riccò di Fornovo Taro (Parma, Italy), as planned during the previous meeting.

Meeting Participants

- Eng. Simone Squeri, A DUE S.p.A., CEO;
- Eng. Alberto Dilda, A DUE S.p.A., COO and R&D director;
- Eng. Guido Marossa, A DUE S.p.A., project engineer;
- Eng. Paolo Caselli, A DUE S.p.A., project designer automation;
- Eng. David Del Monte, A DUE S.p.A., automation engineering Dept. Director;
- Eng. Gian Paolo Pescini, A DUE S.p.A., mechanical engineering Dept. Director;
- Mr. Claudio Guatelli, A DUE S.p.A., customer care manager;
- Mr. Paolo Ferrari, A DUE S.p.A., technical sales engineering
- Dr. Micaela Guerzoni, A DUE S.p.A., subcontractor;
- Eng. Maurizio Violi, A DUE S.p.A., subcontractor;
- Dr. Federico Cappa, A DUE S.p.A., in-house consultant;
- Eng. Marco Bortolini, UNIBO, senior researcher;
- Mr. Craig Clayton, CVAR Ltd, CEO, via teleconference.

Meeting Agenda

The points in the agenda were the following:

1. State of the art of technical activities and finalisation (All partners);
2. State of the art of dissemination activities and finalisation (A Due; UniBo);
3. Review of the deliverables to produce by the end of the project (All partners);
4. Administrative and financial inputs to prepare the Final Report (All partners);
5. Any Other Business (All partners).

The partners are carrying out all the project activities according to the scheduled timetable defined in Annex I, without any noticeable problems in terms of deviations from the original Gantt. All the partners are fully committed in the project tasks and give the needed contributions to its implementation, according to the indications of the coordinator.

1. State of the art of technical activities and finalisation

After the engineering, integration, assembly and start-up of the water treatment pilot plant at the client's premises (the CCdP - Consorzio Casalasco del Pomodoro - Fontanellato, Parma-Italy <http://www.ccdp.it/>), several industrial tests have been carried out and many different kind of wastewaters analysed. Almost all the parameters respected the clients' standards, thus demonstrating that the tests supported the good functionalities of the water treatment pilot system developed under the project.

The waters parameters are currently recorded thanks to a module for the automatic on-line download of all the data (readable via remote systems), developed by Cvar, with the generation of a panel indicating the synthesis of main results achieved by the water treatment system for deeper analyses. The operators' manual is ready in English and in Italian, with possibility to translate it into other languages. The Italian version of the documentation (which includes: layout, CE manual and declaration of conformity, CE user manual, wiring diagram, component list and spare parts list, and attachments like Pumps, Valves, Electric components, Pneumatic components, Filters, Heat exchanger, Steam accessories, Measuring instrument, UV System, Membrane and Materials certificate) has been duly provided to CCdP whose operators have been trained on the correct use of the system.

Presently, the water treatment pilot plant is self-operating and running 24/7, directly controlled by the clients. The system activities are monitored through the use of the remote system.

The planned improvements, as agreed during the meeting held on March 22nd 2017, have been made:

- the turbidimeter and flowmeter have been better calibrated;
- the self-cleaning filter to protect the UF has been installed to operate also with those polluting inputs that gave the highest grade of difficulty, i.e. tomato juices, pears and orange cells;
- some small ameliorations on plant layout.

The tests carried out after these ameliorations show the effectiveness of the self-cleaning filter

to prevent the premature clogging of pre-filters, while ensuring the necessary ultrafiltration protection.

In conclusion, the tests carried out so far are satisfactory and the results collected during the project will enable the new water treatment system to be effectively and satisfactorily presented to the potential stakeholders.

In the meantime, the profitable collaboration with the CCdP continues, with the aims of testing the effectiveness of the system also with new water pollutants; testing the system reliability over the time, the consistency and repeatability of the results obtained so far from both a chemical-physical and a microbiological point of view.

2. State of the art of dissemination activities and finalisation

Several dissemination actions have been carried out in the previous months.

Event	Date	Location	Partner
4 th International Conference on Sustainable Design and Manufacturing	28/04/2017	Bologna, Italy	UniBo
ITIS Parma	09/05/2017	Parma, Italy	A Due
24 th International Conference on Production Research ICPR2017	02/08/2017	Poznań, Poland	UniBo
Clustering event	11/09/2017	Munich, Germany	A Due
VDMA Water Symposium at Drinktec 2017	14/09/2017	Munich, Germany	A Due
22 nd Summer School F. Turco - Industrial Systems Engineering	13/09/2017	Palermo, Italy	UniBo

4th International Conference on Sustainable Design and Manufacturing

UniBo participated at the 4th International Conference on Sustainable Design and Manufacturing held in Bologna (Italy) on April 26th-28th 2017 (<http://sdm-17.kesinternational.org/index.php>). Eng. Marco Bortolini, from the University of Bologna, presented the first scientific paper about the project, titled “Design of an innovative plant for the wastewater recovery and purification in the food & beverage industry”. The conference consisted of keynote talks, oral presentations, invited sessions and workshops. It covers the theory and applications of sustainable design and manufacturing, and related areas, whilst providing an excellent platform for the presentation and discussion of new data and concepts, leading to knowledge exchange and the generation of new ideas. Conference proceedings are edited by Springer (<https://link.springer.com/book/10.1007/978-3-319-57078-5>).

ITIS Parma

On May 9th 2017, A Due team presented the Niagara project to the teachers and about one

hundred and fifty students attending the high school Industrial Technical Institute (ITIS Leonardo da Vinci) in Parma (Italy), for mechanical, biotechnological and electronic experts. The initiative was part of the so called “School/Job Alternation” which aims to facilitate the meeting between the school and business needs of companies and to motivate and guide young people, spreading the culture of work. During the meeting, A Due team introduced the objectives and outcomes of the project as well as the premises from which it originated (i.e. the increasing commitment of companies and institutions to safeguard water resources, both from a qualitative and quantitative point of view). They also presented the innovative features, which led this project to the attention and the support of the European Union.

ICPR2017 – 24th International Conference on Production Research

The outputs of NIAGARA project are given at ICPR2017, the 24th International Conference on Production Research held in Poznań (Poland) on August 2nd 2017 (<http://www.24icpr2017.put.poznan.pl/>). Eng. Marco Bortolini, from the University of Bologna, presented the third scientific paper about the project, titled “Environmental assessment of an innovative plant for the wastewater purification in the beverage industry”. The Conference encourages the communication among researchers in the fields of production development, production systems and processes. It is regarded worldwide as one of the leading conferences promoting research in the fields of production research and industrial engineering.

Clustering event

The workshop organised by Less-Water Bev.Tech project team at Drinktec in Munich on September 11-15th 2017 (<http://www.drinktec.com/>) has seen the participation of Mr. Solon Mias, the EASME representative, 5 EU funded relevant projects dealing with water issues, and an Italian company dealing with filtration system technologies for water treatment.

The perfect opportunity for all those present to learn about new technologies and innovative solutions in the field, exchange experiences and share best practices, discuss potential synergies and cooperation.

This was the occasion to present the project video which is now reachable by clicking on the following YouTube link: <https://www.youtube.com/watch?v=juDzEUV3710>

Water Symposium at Drinktec 2017

Outputs of NIAGARA project have been presented at the VDMA water-technology@drinktec

Symposium, a lecture and discussion event on the topic of water, held at Drinktec Fair 2017. The Symposium, which was part of the official program of the fair, offered exhibitors an additional platform to present their technologies and solutions for water management; meanwhile Drinktec visitors interested in or responsible for sustainable production were provided of a compact and complete overview about water-related solutions.

Mr. Guido Marossa, process technologies Senior Engineer at A DUE SPA, presented the technical paper about the project, titled “Wastewater close-loop recovery and purification solution to decrease the water footprint of the Food & Beverage industry”. The presentation includes bits of project video (<https://youtu.be/juDzEUV3710>) specifically created to make NIAGARA project easier to understand to everybody.

22nd Summer School F. Turco - Industrial Systems Engineering

UniBo participated at the XXII edition of the Summer School “Francesco Turco”, September 13-15th 2017, Palermo (Italy) (<http://www.summerschool-aidi.it/>), during which the second scientific publication has been presented, entitled “A review of technologies and applications for water purification in the food & beverage industry”. The proceedings are published online and indexed on Scopus database. The Summer School promoted interaction and cooperation among researchers coming from different universities and enhancing, at once, the sense of belonging to the SSD ING-IND/17 (Industrial Systems Engineering academic scientific sector).

3. Review of the deliverables to produce by the end of the project

Hereinafter, the next deliverables to be produced are listed by deadline. Even if every partner is involved in the deliverable production, the partner responsible for its finalisation is indicated, as agreed during the meeting.

#	Deliverable Name	Type	Resp. PP	Due to
D1.16	Monitoring and measurement of the performance indicators (at the end of the project)	Report	UniBO	Sept-17
D2.4	Feasibility study of the beverage solid waste energy recovery via biomass plant	Report	UniBO	Sept-17
D5.6	First-mover & New technology standard exploitation	Installed innovative equipment; Report	UniBO ADUE	Sept-17
D5.9	Clients exploitation: Group 1: Big CSD Bottling Companies in EU and MENA – Technology partnerships	Installed innovative equipment	ADUE	Sept-17
D5.10	Distribution, Promotion & Replication	Report	ADUE	Sept-17
D5.11	Cost-Benefit Analysis	Report	UniBO ADUE	Sept-17
D6.5	Project information updates (pre-defined) http://ec.europa.eu/environment/eco-innovation/projects	text, ppt	ADUE	Sept-17

#	Deliverable Name	Type	Resp. PP	Due to
D6.6	Inputs to additional common information material related to eco-innovation actions (pre-defined)	input to	ADUE	Sept-17
D6.7	Project presentations (pre-defined)	ppt, presentation, participation in events	ADUE	Sept-17
D6.12	Scientific paper redaction	Scientific report	UniBO	Sept-17
D6.13	Conference attendance	Meeting	ADUE	Sept-17
D6.16	Public events participation	Public events	ADUE	Sept-17
D6.17	Clustering Event	Public Event	ADUE	Sept-17
D1.15	Final Report (FR), project quality assessment and improvement actions	Report + Project Information Sheet	ADUE	Nov-17
D1.17	Monitoring and measurement of the performance indicators (2 years after the end of the project)	Report	UniBO	Sept-19
D6.9	Evaluation report including performance indicators (pre-defined)	Report	UniBO	Sept-19

D1.16 Monitoring and measurement of the performance indicators

This deliverable is intended to compare schematically the situation before and after the project implementation. The aim is to assess the real impact and the benefits achieved by the new technology in terms of improved environmental performance of the plant, better use of natural resources, economic performances and market replication. The output is a Report.

D2.4 Feasibility study of the beverage solid waste energy recovery via biomass plant

This feasibility study assesses the possibility to reuse and valorize the fruit sludge coming from the water treatment system in a small biomass digester, by treating them in an anaerobic way generating fuel to produce energy that can be used for auto-consumption in the water treatments. The output is a Report.

D5.6 First-mover & New technology standard exploitation

This deliverable reports the actions carried out by partners to start a discussion with Authorities, market players and stakeholders to propose a collaboration on the new technology that can be considered as a new standard for water treatment in bottling plants. The output is a Report.

D5.9 Clients exploitation: Group 1: Big CSD Bottling Companies in EU and MENA – Technology partnerships

The deliverable reports on the steps performed to install the water treatment system at the client's premises and its official opening. The output is the Installed innovative equipment.

D5.10 Distribution, Promotion & Replication

This deliverable reports about the internal training sessions to teach dealers and agents on the new know-how needed for installations and after-sale services. It also includes the dedicated presentations to clients during sectorial exhibitions. The output is a Report.

D5.11 Cost-Benefit Analysis

The analysis regards the results of the application of the new integrated water treatment system to existing CSD production plant, to assess the effective impact in terms of ROI for the client. The index reports on company's operating profitability in relation to the employed financial resources. In addition, the analysis can be extended to the sector in EU and Mena regions according to the average cost of water in the regions. The output is a Report.

D6.5 Project information updates (pre-defined)

This is the updated of the web site <http://ec.europa.eu/environment/eco-innovation/projects> with the last info and achievements of the project. The output is text as input to the web site.

D6.6 Inputs to additional common information material related to eco-innovation actions (pre-defined)

This inputs are sent upon request by EASME. The deliverable reports about the sending of sample project materials to an internal event under the participation of high-level people of the European Commission (November 2015) and the availability to present the project during the 20th European Forum on Eco-innovation in Tallinn, Estonia (October 2016). The output is a text.

D6.7 Project presentations (pre-defined)

The deliverable reports the project presentations and the participation in events by partners. The output is a Report with presentations attached.

D6.12 Scientific paper redaction

The deliverable is made of two scientific papers edited by UniBo and presented to the scientific community (respectively, the third and the fourth published in the project). The third one is titled "Environmental assessment of an innovative plant for the wastewater purification in the beverage industry" presented at ICPR2017, the 24th International Conference on Production Research, held in Poznań (Poland) in August 2017, related to the plant

manufacturing and assembly LCA analysis.

The fourth one is titled “Design, prototyping and assessment of a wastewater closed-loop recovery and purification system” and it is about the full reporting of the design and prototyping activities, the technical, economic and environmental assessment of the prototype installed at CCdP. The manuscript is to be submitted in late September/early October to the International Scientific journal “Sustainability”, SI Economic, Business and Management Aspects of Sustainability (<http://www.mdpi.com/journal/sustainability/instructions>). The output is a Report.

D6.13 Conference attendance

The deliverable reports about the attendance of partners to conferences, also without a presentation. The output is a Report with agenda attached.

D6.16 Public events participation

The deliverable reports on the participation of partners to general public events, even without a presentation. The output is a Report with agenda attached and the eventual presentation.

D6.17 Clustering Event

The Clustering Event is conceived as a workshop, putting together experts, researchers, end-users, EU funded projects and every potential stakeholder in innovations regarding Saving-Water technologies. The aims was to present and discuss the projects results, demonstrate new technologies and innovative solutions, share best practices and stimulate the development of further innovative industrial research with possible creation of the basis for a future cooperation on different Saving-Water solutions. The workshop took place at DRINKTEC exhibition in Muenchenmesse, Hall A5 - Room A 51 on Monday, September 11th 2017, h. 14:30 to h. 17:00. The exhibition is the most important event at global level for the beverage industry and related technologies, attracting all the stakeholders in the Saving-Water technologies. The output is a Report.

D1.15 Final Report

It includes the technical implementation report and the financial statements per each beneficiary and shall be submitted 2 months following the closing date of the project, covering the whole duration. The output is a Report and a Project Information Sheet.

D1.17 Monitoring and measurement of the performance indicators (2 years after the end of the project)

This deliverable is due by month 60, namely 2 years after the end of the project, giving an update of the performance indicators assessed at the end of the project. The output is a Report.

D6.9 Evaluation report including performance indicators (pre-defined)

This deliverable is due by month 60, namely 2 years after the end of the project, giving a technical evaluation on the performance indicators assessed at the end of the project. The output is a Report.

4. Administrative and financial inputs to prepare the Final Report

In accordance with the relevant provisions the Grant Agreement, the coordinating beneficiary provides the EASME with a final technical implementation report and financial statements within 60 calendar days following the closing date of the action, covering the whole duration of the action. The Final Report includes:

- the technical report;
- the financial report with summary of allowable costs and individual financial statements from each beneficiary;
- Layman report;
- the final version of project information sheet;
- copy of the deliverables produced during the reporting period, excluding those already sent with the previous reports;
- audit certificate by the coordinator.

All the partners are committed to provide precise information and detailed data to the coordinator in order to allow a smooth preparation and finalisation of all the documents composing the Final Report.

5. Any Other Business

It was agreed that the cooperation among A Due and UniBo will continue also beyond the project, in particular UniBO will investigate new possible technologies (still under research)

and methods to be applied in the future for the development of further innovative water treatment systems.

A training to the personnel of A Due on the results achieved by UniBo will follow. Understanding the alternatives to the ultra-filtration is the other objective of the collaboration, also investigating on similar project like <https://www.youtube.com/watch?v=q8-5IDsbf-o>.

No other issues were discussed. All the partners have unanimously agreed on the contents of this document, which reports the schedule of the activities to perform in the next months, including the related responsibilities.

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