**Annex 5**

**Templates for Mid-Term Evaluation Report**

**(Individual and Consensus)**

**Water Joint Programming Initiative**

**2018 Joint Call**

*Closing the water cycle gap - Sustainable management of water resources*

These Project Management Guidelines will be effective from the date of the National funding decisions and shall remain in force until the last final project report is approved in 2022.

**The Mid-Term Consensus Report will be made available to the Consortium as well as CSC and JPI Water GB.**

**MID-TERM INDIVIDUAL EVALUATION REPORT**

**PROJECT TITLE AND ACRONYM**

Name of Coordinator:

Project code: WaterWorks2017-RECOWATDIG

Duration of project:

Start date: End date:

**DETAILS OF THE EVALUATOR**

Name: Mi-Yong Becker

Organisation: Bochum University of Applied Sciences and Helmholtz Center for Environmental Research (UFZ)

Date of review: April 10, 2021

### **Scientific and technological progress** (*Maximum 250 words)*

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| *Please describe the work performed and the results obtained during the lifetime of the project, and the conformity of work progress within the initial schedule. Take into account the following aspects:*   * *Has progress been achieved towards reaching the project objectives according to the original description and milestones?* The work in this project has focused on WP 2. Within the scope of work of WP2 M.2.1 (completion of the required modifications of the test rigs for testing of different membranes) has been completed and M2.2. (determination of the physico-chemical properties of all the samples of liquid fraction after digestate dewatering and post-condensation water after drying of the solid digestate fraction) has been nearly completed but depends on test in WP 4 for which this mid-term report does not contain any progress information. Furthermore, information on the progress of work packages 4, 5, 7 and 9 all of which have started in month 1, 3 and 16 respectively, is not included in this report, information on WP 6 only cursory (page 10). Of WP 2 the tasks 2.3 to 2.6 have not started yet even though the work is due for conclusion in month 24. Delayed deliverables: D2.3, D 3.2. * *Detailed update on methodology & results* The update focuses on work package 2 and 3 while information on the other work packages was not found in the report. * *Dissemination of the results (publications, patents, other)*:  A number of publications were produced in the project, which is quite positive. * *How has the progress of the project promoted a multi-disciplinary work?* Collaboration among the consortium partners has lead to several joint publications and conference contributions. |

### **Collaboration, coordination and mobility within the Consortium** (*Maximum 250 words)*

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| *Please evaluate the collaboration, coordination and mobility within the Consortium*  *Take into account the following aspects:*   * *Efficiency on the coordination and organization of the projects* Mid-term report states efficiency, in minimizing delay time of the project. * *Collaboration effective between the partners* Collaboration was mostly realized by exchange of samples, knowledge and experiences, and support in interpretation of results. Collaboration among the consortium partners has lead to several joint publications and conference contributions. Most meetings were held online during the pandemic. * *Mobility of the research between the consortia* International exchange on student level was implemented between UT and WUST before the pandemic. * *Does the project meet the transnational nature and its added value?* International exchange on student level was implemented between UT and WUST before the pandemic and collaboration among the consortium partners has lead to several joint publications and conference contributions. |

### **Coordination with other international project funded by WaterWorks2017, or other instruments** (*Maximum 250 words)*

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| *Please evaluate the external collaboration of the Consortium,*  *Take into account the following aspects:*   * *Collaboration effective with other projects funded by WaterWorks2017:* Information on this point is not available in the mid-term report * *Collaboration effective with other projects or consortia:*  Information on this point is not available in the mid-term report |

### **Coverage of the themes and sub-themes of the call** (Maximum *250 words)*

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| *Please evaluate the relation within the project results and the themes and the sub-themes of the call.*  *Within Theme 2, the project aims to contribute to Sub-theme 2.2. The reuse of water.*  The project aims at generating reclaimed water from water from dewatering and drying of high moisture fermentation products. The project results relate to the theme in terms of   * Knowledge, regarding feasibility of the initial cleaning of the effluent from wet MSW digestate, using coagulation and chemical precipitation * Knowledge on membrane purification of digestate gives information on the influence of the type of membrane and transmembrane pressure on the separation efficiency, i.e. reduction of COD, BOC, etc. * Membrane purification of effluent after hydrothermal carbonisation towards reuse of process water   The stated market potential for this technology does not include the estimated overall amount of water that could be recovered and reused as a result of application/introduction of this technology.  Important bottlenecks concerning water quality / effluent quality are not clearly addressed in the mid-term report. |

1. **Stakeholder/industry engagement** (*Maximum 250 words)*

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| *Please evaluate the participation of stakeholder/industry on the project and the added value of this participation.*  The mid-term report does not mention any stakeholder involvement (e.g., technology advisory board, innovation board) other than the involvement of ZOC, which is also a consortium partner. |

### **Recommendations for improvements/amendments of the report** (Please complete Table below)

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| **Page** | **Modification** | **Rationale for change** |
| 10 | Add information on work and tasks performed in WP 4,6,7, and 9 | This information in important in order to understand whether the project is on track |
| 23 | Add plan for managing the project and expected results under prolonged Covid-10 conditions | To ensure project goals, a revised project plan, may be even including revised project goals should be provided. Transparency for the funding organizations is important. |

1. **Recommendations/ problems and risks** (Maximum *250 words)*

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| *Please include problems identified or specific risks to the projects, deviations in relation to the planned work or budget, as well specific recommendations/feedback with could be relevant to the Consortium.*  Add information on how much wet MSW digestate could be treated globally and how much reclaimed water could be generated for which reuse purposes. This information has been missing from the beginning and while the project claims to provide results for SDG 6 (see 8. Knowledge output and Transfer, pp. 18-20), it remains unclear whether the technology can deliver outcomes on a scale signficant for reuse purposes on SDG level. |

**MID-TERM EVALUATION CONSENSUS REPORT**

**This Consensus Report will be made available to the Consortium as well as CSC and JPI Water GB.**

**PROJECT TITLE AND ACRONYM**

Name of Coordinator:

Project code: WaterWorks2017-CONSORTIUM ACRONYM

Duration of project:

Start date: End date:

**FOLLOW-UP GROUP**

Please include the data of the FG members reviewing the report

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| Name | Organisation |
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### **Scientific and technological progress** (Maximum *250 words)*

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| *Please describe the work performed and the results obtained during the lifetime of the project, and the conformity of work progress within the initial schedule. Take into account the following aspects:*   * *Has progress been achieved towards reaching the project objectives according to the original description and milestones?* * *Detailed update on methodology & results* * *How has the progress of the project promoted a multi-disciplinary work?* * *Dissemination of the results (publications, patents, other)* |

### **Collaboration, coordination and mobility within the Consortium** (Maximum *250 words)*

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| *Please evaluate the collaboration, coordination and mobility within the Consortium*  *Take into account the following aspects:*   * *Efficiency on the coordination and organization of the projects* * *Collaboration effective between the partners* * *Mobility of the research between the consortia* * *Does the project meet the transnational nature and its added value?* |

### **Coordination with other international project funded by WaterWorks2017, or other instruments** (Maximum 250 *words)*

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| *Please evaluate the external collaboration of the Consortium*  *Take into account the following aspects:*   * *Collaboration effective with other projects funded under the 2018 Joint Call:* * *Collaboration effective with other projects or consortia.* |

### **Coverage of the themes and sub-themes of the call** (Maximum 250 words*)*

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| *Please evaluate relation within the project results and the themes and the sub-themes of the call.*  *Theme 1. Enabling sustainable management of water resources.*  The overall aim for this theme is to develop new governance and knowledge management approaches.   * *Sub-theme 1.1. Promoting adaptive water management for global change:*   The aim of sub-theme 1.1 is to increase knowledge and to develop evidence-based methodologies and technologies for monitoring the cumulative impacts of human activities and climate change on the water cycle, but also to develop management options on the water cycle (considering all cycle compartments) and water / ecosystem services. This knowledge must be applicable for the adaptive management of water resources on a regional scale, while enabling downscaling to address local or catchment situations.   * *Sub-theme 1.2. Integrative management by implementing Natural Water Retention Measures (NWRM) such as Managed Aquifer Recharge (MAR):*   The aim is to increase the knowledge and develop NWRMs such as MAR in a multidisciplinary way, to protect, prolong, sustain and augment freshwater supplies. Evidence of their effectiveness and on the multiple benefits they deliver should be demonstrated.   * *Sub-theme 1.3. Mitigating water stress in coastal zones and urbanized areas:*   The aim is to develop and demonstrate a comprehensive coastal zone management system based on monitoring and modelling to ensure the provision of freshwater security under a range of conditions including saline intrusion, sediment management, storms, floods and droughts, but also specific coastal water uses. Please, refer to H2020 calls on nature-based solutions to propose complementary actions.  *Theme 2. Strengthening socio-economic approaches to water management.*  The overall aim of this theme is envisaging education and communication initiatives to raise social awareness of consumption habits and water scarcity and to increase the levels of social acceptance and use of recycled water.   * *Sub-theme 2.1. Integrating economic and social analyses into decision-making processes:*   The aim is to increase the knowledge the effectiveness and efficiency of existing economic mechanisms and policy instruments related to water management, with a special emphasis on implementation of water policies (such as the EU Water Framework Directive) and development of a circular and green economy. The approach should aim to break boundaries between services valuation including more flexible pricing and charging mechanisms, management tools and institutions, and the employment of economic and social sciences to develop best practice management guidelines for efficient water uses, including under extreme events such as droughts and floods.   * *Sub-theme 2.2. The reuse of water:*   The aim is to develop integrative methods and cost-effective technologies for the implementation of acceptable and sustainable solutions on a large scale for different reuse cycles, spanning from irrigation, via livestock drinking water, to human consumption. Furthermore, goals include assessments of social acceptance for the use of recycled water and the development of integrated approaches combining technological solutions with social-psychological acceptability, economic viability and appropriate governance approaches. Research into the removal of emerging contaminants must consider the cost of the technology vs yield and realistic options for reuse of the recovered water. Please refer to projects funded under previous Water JPI Joint Calls (2013, 2015 and 2016) to avoid any duplication. See Joint Calls on Water JPI website.   * *Sub-theme 2.3. Connecting science to society:*   The aim is to increase understanding of the role of socio-economic approaches to water uses in hydrological cycles. Knowledge building should address stakeholders' and public awareness of water challenges and values, and how perception of policy measures and technological solutions are formed and how stakeholders can be steered towards desirable behaviour. Local and/or regional context (attitude, social norms, cultural context, etc.) should be taken into consideration. The value of improved water stewardship overall should be considered by developing sustainable business models.   * *Sub-theme 2.4. Promoting new governance and knowledge management approaches:*   The aim is to develop innovative water management tools and approaches suitable for decision-making based on an analysis of the limitations of current practices. These approaches should involve the broad participation of stakeholders (including public monitoring, communication and education), multidisciplinary research, and short and long-term water cycle scenarios to support decision-making and the integration of water policy into other policy fields. In effect, governance capacities for implementation of water policies at the local and regional levels should be enhanced.  *Theme 3. Supporting tools for sustainable integrative management of water resources.*  This theme aims to complement the actions developed under the European Strategy Forum for Research Infrastructures (ESFRI) and other European initiatives. Emphasis should be on establishing networks and information sharing among existing research facilities/field labs, analytical methods, monitoring tools and programmes, access to databases and platforms, exploring the use of big data solutions and establishing reliable hydrological standards. Across the globe, there is a large body of knowledge, methodology and data related to hydrology and the water cycle that has the potential of being beneficial for a wide range of the world's regions. The alignment of water-related research and sharing of data and results will serve to avoid duplication of research, support progress based on previous finding, and thus facilitate the establishment of water management policies addressing rapid climatic changes. |

1. **Stakeholder/industry engagement** (*Maximum 250 words)*

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| *Please evaluate the participation of stakeholders/industry on the project and the added value of this participation.* |

### **Recommendations for improvements/amendments of the report** (Please complete Table below)

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1. **General Assessment Comments** (*Maximum 250 words)*

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| *Please include a summary of the key points of this evaluation.*  *Problems identified or specific risks to the projects. As well recommendations/feedback, which could be relevant to the Consortium.* |