



# Interreg



Danube Transnational Programme

DA-SPACE



## **GUIDELINES FOR THE PILOT PHASE OF THE DA-SPACE PROJECT:**

### **THE OPEN INNOVATION LAB**

#### **Annex 4 – Challenge Template**





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*Please fill the Challenge Template in each part together with the seeker. It could be useful to organize a workshop with the seeker to help them understand better how the challenge should look like and the possible output of DA-SPACE lab. Please use the DA-SPACE official document template*

**1. Name of the challenge** (short, powerful and inspiring description):

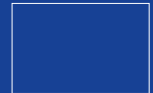
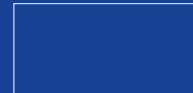
- Water and Energy Efficiency for better industry (WE<sup>2</sup>I)

**2. Context:** (what is the background information behind the challenge, what is the state of the art of the sectors, the role of the organization in this context, the target group to whom the solution need to be addressed, etc)

- State of the art of the sectors is based on knowledge transfer from University/Faculty to industry, but also vice versa. A new and improved solution for water, energy and production management based on principles of sustainable development is the core of our organization.
- The role of the organization in this context is to offer well designed and most efficiency product/problem solutions that will help industry to solve fresh water demand, wastewater and energy efficiency problem based on 'turn-key system'.

*Wider target group includes all industry sectors and categories, but food and drink industry represent key target group of the organization. Also, local population and stakeholders should be aware that investments of this kind are month deliverable and estimated pay-back period is less than a year.*





3. **Problem:** *(What is the problem that needs to be solved, why is important to solve, impact of this problem in the close future, impact of the problem on local or international area)*
- *The main problem includes inadequate management of fresh and waste water and energy in terms of their consumption, preparation and life cycle. In order to address these issues, true scope of problems should be identified, and troubleshooting dynamics should be defined. For example, if less water is used or discharged, less wastewater is generated. Therefore, a complete balance of water consumption and the amount of waste water that can be generated has to be calculated. The second step is the analysis of the quality of wastewater and excess water (e.g. process water) that occur during the production process, followed by analysis of the possibility of water recirculation/reuse and the application of techniques for reducing the amount of fresh water as raw material. Final amount of wastewater should be separated to at least two categories (low and high organic/nutrient load) simultaneously defining appropriate treatment of these wastewater courses. Treatment of highly polluted wastewater should be based on sustainable development principals (energy production processes, use as fertilizer, etc.). Improvement of energy efficiency is integrated part of all of these solutions.*
4. **Additional info (for internal use):** *(what is expected to be delivered by the team (idea/concept/prototype), what are the specific tools & instruments that shall be used (eg. Programing language etc), what are the asset (as knowledge, materials) will be given to the team*
- *The basic idea is development of optimal cost-benefit systems for water and energy rationalization in industry that still uses out of date technologies. This also includes development of conceptual and prototype*



solutions including problem detection, process simulation, best available solutions etc., for specific industry (e.g. food and drink industry as most common in our region).

- Specific tools & instruments that should be used are: simple, but well applied experiments that can simulate target industrial processes. For general-purpose programming language could be used for most important processes and related parameters for mass and energy transfer flow chart and diagrams. Additionally, chemical technology laboratory pilot scale experiment should be designed.

5. **Skills of the team (for internal use):** *what specific skills shall the team have in order to address the challenge*

- All members of the team should be well educated in aspect of chemical technologies, food industry and environmental protection. Specific skills are: ability for exchanging information, elaborating, problem solving and compiling of results in order to achieve cutting edge solutions. Team member should preferable have experience in field of sustainable development, energy efficiency improvement and development of optimization of wastewater treatments.

- Also managing of data, analyzing of results and their interpretations for stakeholders are all of great importance for team members.

5. **About the Seeker:**

- *Description of company/institution: Years of experience in field of industrial process: water and energy efficiency, wastewater treatment technologies, research of waste technologies, inventory cadaster, environmental impact assessment, remediation of contaminated sites etc.*

- *Vision: where do you see the company/institution in 5 years?*

*On EU and also world-wide scale based on novelty and efforts in solving specific challenges and problems in fields of water, energy and*



*environmental issues this solution could be systematically applied on large number of similar facilities.*

*- Description of the specific unit/department/function that opens the challenge and how the challenge will be integrated in the company vision:*

*The challenge will be integrated in the company vision after elaborating the specific problems and solutions in very short time period with very short payback time. This assumption is based on world, EU and experimental data similar analysis and most important our previous experience with similar projects.*

Tip: Good questions to ask the Seeker when defining a challenge:

- *What could be the new strategic areas at your organization?*
- *What are the BIG problems your organization will solve in 5 years?*
- *What would you like to learn more about?*
- *What is interesting for YOU or your team?*
- *Challenges/problems or ideas/concepts you want to test out?*