
**Proposal for a CEN Workshop
on “SEA4VALUE - Brine
mining- Recovery of minerals
and metals from brines of
seawater desalination plants”**

1 Proposal Form for the Workshop proposer

Details of the Workshop proposer:

Ramona G. Simon
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Already known partners:

- SEA4VALUE PARTNERS
- Ramona G. Simon Workshop Chair
- Maria Salud Camilleri Rumbau Workshop Vice-Chair
- Naiara Hernández Ibáñez
- Workshop Project Leader
- Heike Glade University of Bremen, Germany
- Clio Deferm KU Leuven
- Arto Pihlajamäki LUT University, Finland
- Ramón Pericet Técnicas Reunidas SA
- Alexandra Scherer European Science Communication Institute gGmbH
- Aina Amengual Oliver Catalan Water Partnership

Title of the proposed Workshop:

SEA4VALUE - Brine mining- Recovery of minerals and metals from brines of seawater desalination plant

Background/Objectives:

The EU-funded Sea4Value project is the first attempt to recover minerals and metals from brines produced in seawater desalination plants in a cost-effective way. The main focus will be on separating, concentrating and crystallising Molybdenum, Magnesium, Scandium, Vanadium, Gallium, Boron, Indium, Lithium, Rubidium and Calcium from brines, where they can be found in low concentrations. To do that, a multimineral and modular process is developed for brine mining. The implementation of brine mining in seawater desalination plants offers new business opportunities, which can bring value to markets, environment, and society.

With this CEN Workshop, brine mining is to be standardised so that it can serve as a building block for a secure supply of raw materials in the future. To achieve this, it is necessary to remove the barriers to the introduction of a new process and new raw materials by ensuring reliability, knowledge transfer, and quality. Common standards help remove technical barriers to trade, open up markets and make businesses more competitive. Standardisation can act as a catalyst for innovation. To the best of our knowledge, there are no standards on brine mining from seawater desalination plants (SWDP).

The Sea4Value process is novel and planning, designing, implementing and operation needs to be guided to secure and ease the application of this process in practice. Moreover, the recovered M&M are a new raw materials source in the EU. With regularization quality requirements of these products need to be assured, so that industries can rely on safe and reliable raw materials

Scope of the proposed Workshop (planned area of application):

The planned CEN Workshop Agreement (CWA) which will be developed by the CEN/WS aims to provide guidance and recommendations on best practices for sustainable brine mining to ensure transfer of innovation into practice. The guidance refers on the processing of brines to recover minerals and metals and on the properties of the recovered minerals and metals.

In order to achieve a common understanding, a language for describing brine mining needs to be developed as well as terms and system boundaries of brine mining need to be defined.

Moreover, it is planned to describe, explain, and agree on the core elements of brine mining. This will include advice on the fundamental prerequisites, pre-treatment, key (technologic) elements/methods and post-treatment will be specified and recommendations for planning, design, implementation and operation will be given.

The CWA will provide recommendations on good practice approaches, advice on the requirements of circularity in SWDP as well as considerations on environmental and economic impacts and evaluation. Besides the recommendations for the process of brine mining, recommendations will also be made for the recovered product, the minerals and metals, to ensure that the new products meet the market demand.

The planned CEN Workshop Agreement is intended to be used by operators of seawater desalination plants, engineering companies, end-users, traders and distributor of recovered minerals and metals as well as government and environmental authorities.

The proposed CWAs will not provide guidance and recommendations for sustainable mining of brines that are not produced in Seawater desalination plants

Are the following aspects potentially affected?

	YES	NO
Safety matters	<input type="checkbox"/> ¹	<input checked="" type="checkbox"/>
Management system aspects	<input type="checkbox"/> ²	<input checked="" type="checkbox"/>
Conformity assessment aspects	<input type="checkbox"/> ³	<input checked="" type="checkbox"/>
Security matters	<input type="checkbox"/> ⁴	<input checked="" type="checkbox"/>

<Add information/explanations to the points marked „yes“>

Theme related standardization Technical Bodies, standards or regulations, if applicable:

- EN 12901:1999 (WI=00164184) Products used for treatment of water intended for human consumption - Inorganic supporting and filtering materials – Definitions
- EN ISO 21078-1:2008 (WI=00187110) Determination of boron (III) oxide in refractory products - Part 1: Determination of total boron (III) oxide in oxidic materials for ceramics, glass and glazes (ISO 21078-1:2008)
- CEN/TR 16928:2016 (WI=00165270) Guidance for the implementation of environmental aspects in product standards and system standards in the field of wastewater engineering
- EN 12255-13:2023 (WI=00165330) Wastewater treatment plants - Part 13: Chemical treatment - Treatment of wastewater by precipitation/flocculation
- CWA 17354:2018 (WI=WS093001) Industrial Symbiosis: Core Elements and Implementation Approaches
Water reuse regulation

Optional attachments:

Draft Project Plan

¹ For CEN: The CEN/CENELEC Workshop proposal shall be submitted to CEN/BT for decision. For CENELEC: Work on the proposed CEN/CENELEC Workshop shall not be initiated.

² The CEN/CENELEC Workshop proposal shall be submitted to the CEN/CENELEC BT(s) for decision.

³ CEN/CENELEC Internal Regulations - Part 3, 33 applies.

⁴ For projects dealing with security matters the security risk analysis provided below (item 3) shall be carried out.

2 Proposal Form for the Workshop secretariat

CEN Workshop on "<Add English working title (see form for Workshop proposer)>"

Details of the Workshop secretary:

Name: Mario Gallo
Organization: UNI – Ente Italiano di Normazione
Postal address: Via Sannio 2, 20137 Milano, Italy
Email: mario.gallo@uni.com
Phone: 0270024213
Webpage: www.uni.com

Finance:

The administrative costs of the Workshop Secretariat and other logistical support are financed within the framework of SEA4VALUE research project.

Drafting and Dissemination:

The kick-off meeting is planned to take place on-line on 2024-01-31. A draft for public commenting will be published for 30 days.

At least 6 workshop meetings (kick-off meeting and Workshop meetings) and web conferences will be held, during which the content of the CWA will be presented, discussed and approved. The CWA will be drawn up in English (language of meetings, minutes, etc.). The CWA will be written in English.

The Workshop proposal will be disseminated to the following relevant stakeholders and bodies for consultation:

- standards committee, working group etc.
- Operator of seawater desalination plants
- Engineering companies
- end-users , traders, distributor of M&M
- Governments and environmental authorities
- Research projects dealing with brine mining

Does the proposed CWA conflict with an EN or an HD?

	YES	NO
EN	<input type="checkbox"/> ⁵	<input checked="" type="checkbox"/>
HD (CENELEC)	<input type="checkbox"/> ⁵	<input checked="" type="checkbox"/>

<please add information/explanations to the points marked „yes“>

Is the proposed CWA within the domain of an existing CEN and/or CENELEC Technical Body?

– NO

CEN/CENELEC Management Centre (to be completed by CCMC):

Name of the CCMC project manager:
Organization: CCMC
Postal address: Rue de la Science 23, 1040 Brussels
Email:

⁵ Work on the proposed CWA shall not be initiated.

Phone: +32 2 550 xxxx

Webpage: <https://www.cenelec.eu/aboutus/MgtCentre/Pages/default.aspx>

Response of identified potentially affected CEN/CENELEC TCs

	YES	NO
Is there an active work item covering the scope of the planned CWA?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there arguments against the topic of the planned CWA?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<Add information/explanations to the points marked „yes“>		

3 Security risk analysis

3.1 General

Security risk analysis is a process of identifying and analysing the main negative factors that may affect a standardization project's objectives. The following is targeted at secretariats of CEN/CENELEC Workshop Agreements (CWA) dealing with security issues. Its purpose is to help them identify and mitigate the risks associated with their project. It is structured around two main security threats that can affect the success of the work: major diverging interests among stakeholders and sensitive information.

3.2 Risk analysis on major diverging interest among stakeholders

Diverging interests among stakeholders can impede the process in reaching agreement on the CWA and even lead to failure to deliver the planned CWA. In order to identify and possibly mitigate the risks, the following questions should be reviewed:

- Is the planned CWA expected to have a major impact on the security policy/strategy of the core stakeholders?
- Does the scope of the CWA cover products or services with a clear dual-use purpose (i.e. which can be used for military purposes)?

3.3 Risk analysis on sensitive information

- In light of the scope of the CWA, is it likely that it may deal with sensitive information? If so, what is the information sensitivity level?
- Is there a need for a (non-)disclosure agreement?
- Is there any conflict of interest for stakeholders involved in the CEN/CENELEC Workshop, regarding especially the use they may make of any information they receive during the development of the CWA?
- What steps should be taken to manage information dissemination and storage (e.g. memory stick, emailing, storage) during the development process of the CWA?

No specific risk is identified on major diverging interests and/or on sensitive information.