

Symposium on the Availability of raw materials from secondary sources - a key aspect of circular economy

24. April 2018, Palais des Nations, Geneva

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1 Background

Securing the future supply of energy and minerals is fundamental for both regional and global economic development and prosperity. In contrast to the traditional mining sector, the stakeholders in the urban mining, recycling and recovery sector lack reliable information on the material quantities expected to be available in the near future. This impedes the identification of recycling and recovery opportunities and creates risks for investment decisions concerning secondary raw material processing facilities. In addition, it hinders national resource planners from integrating primary and secondary sources into a comprehensive raw material system that can be used for accounting, scenario development, and policymaking.

To overcome the barriers, reliable and transparent estimates on the availability of secondary raw materials are needed. Therefore, the United Nations Economic Commission for Europe (UNECE) - Expert Group on Resource Classification (EGRC) and the pan-European Expert Network “Mining the European Anthroposphere” (COST Action MINEA) are developing a new standard for classifying raw materials from secondary sources, such as mine tailings, buildings, infrastructure, consumer goods, and all sources from the material life cycle stages, including production, use and end-of-life.

Applying this new standard enables consistency and transparency in communicating retrievable material quantities. This allows government authorities, policy makers, investors and decision makers in the materials and waste management sectors to make a reasoned and balanced judgment on the potential of material sourcing projects and strategies. From an operational point of view, it supports project portfolio management, national material management, policy setting and capital allocation.

2 Goal and scope

The symposium reflects on the future availability of secondary raw materials and the need for a unifying global standard – the United Nations Framework Classification (UNFC), to manage anthropogenic resources in a circular economy, with special reference to valorizing wastes for the recovery of Critical Raw Materials.

The symposium aims to

- (1) develop a global agenda of priority actions and strategies on the future availability of secondary raw materials to accelerate progress towards circular economy,
- (2) facilitate greater collaboration across disciplines, sectors, initiatives and countries through the implementation of the UNFC for all types of Anthropogenic Resources (in the morning) and with a focus on Critical Raw Materials (in the afternoon),
- (3) share the pan-European research coordination results of COST Action MINEA and provide inputs for the development and application of the UNFC to anthropogenic resources, and
- (4) discuss the possibility of establishing a platform for identifying challenges in the supply of Critical Raw Materials and developing case studies based on UNFC methodology.

The Symposium includes a poster session. The thematic focus is on methodologies and case studies for urban mining, material recovery from secondary sources, resource classification according to the United Nations Framework Classification and sustainable resource management.

3 Target audience

- Policy makers
- Industrial representatives from the recycling sector
- Statistical bodies on European and national level
- National authorities
- Representatives from European Research Centers
- Experts in the field of resource management, resource markets and recovery technologies.
- Experts from emerging economies in eastern Europe

4 Committee

Committee Members (alphabetical order):

- Ass. Prof. Dr. Johann FELLNER [Technische Universität Wien, Head of the Christian Doppler Laboratory on Anthropogenic Resources, Austria]
- Dr. Roland GAUSS [EIT Raw Materials]
- Prof. Dr. Soraya HEUSS-ABBICHLER [Ludwig-Maximilians-Universität München, Leader MINEA Working Group on Classification and reporting of material resources/reserves, Germany]
- Dr. Julian HILTON [Aleff Group, Chair EGRC Working Group on Sustainable Development Goals Delivery, MINEA WG Member]
- Ms. Alessandra HOOL [ESM Foundation, Switzerland]
- Dr. Ulrich KRAL [Technische Universität Wien, Chair of MINEA and Chair EGRC Working Group on Anthropogenic Resources, Austria]
- Ass. Prof. Dr. Joakim KROOK [Linköping University, Leader MINEA WG on the resource potential of waste in landfills, Sweden]
- Dr. Jakob LEDERER [Technische Universität Wien, Leader MINEA Working Group on Resource potential of solid residues from waste incineration, Austria]
- Dr. Mohamed OSMANI [Loughborough University, Leader MINEA Working Group on material recovery from construction and demolition waste, United Kingdom]
- Dr. Estathios PETEVES [EC Joint Research Center]
- Mr. Mark SIMONI [Norwegian Geological Survey, MINEA MC and WG Member, Norway]
- Dr. Patrick WÄGER [Swiss Federal Laboratories for Materials Science and Technology, MINEA WG Member, ESM Foundation, Switzerland]
- Ass. Prof. Dr. Nemanja STANISAVLJEVIC [University of Novi Sad, Leader MINEA Working Group on Knowledge management and dissemination, Serbia]
- Mr. Harikrishnan TULSIDAS [United Nations Economic Commission for Europe]
- Dr. Andrea WINTERSTETTER [VITO, MINEA WG Member, Belgium]

5 Programme

5.1 Thematic Workshop on Classifying anthropogenic resources

Chair: David McDonald
Co-Chairs: Ulrich Kral and Roland Gauß
Room: Salle XXVII, Building E, Palais des Nations

N°	Time	Duration	Topic	Presenter / Facilitator	Organisation
	09:00	5'	Welcome words	David McDonald	Chair of the UNECE Expert Group on Resource Classification (EGRC)
	09:05	5'	Introduction and programme overview	Ulrich Kral	Chair of UNECE EGRC Anthropogenic Resource Working Group and Chair of MINEA
Keynote talks					
1	09:10	20'	Why we need a standardized internationally accepted resource classification system for primary and secondary resources: Opportunities and challenges	Friedrich-W. Wellmer	Former President of the Federal Institute for Geosciences and Natural Resources in Hannover
	09:30	20'	Quantifying and characterizing in-use stocks of non-fuel mineral commodities	Nedal T. Nassar	Chief of the Materials Flow Analysis Section at the National Minerals Information Center, USGS
	09:50	10'	Question and answers		
Anthropogenic Resource Classification					
2	10:00	15'	Why and how to classify material quantities from secondary sources?	Ulrich Kral	Chair of UNECE EGRC Anthropogenic Resource Working Group and Chair of MINEA
	10:15	15'	Challenges for anthropogenic resource classification on national level	Daniel Müller	Norwegian University of Science and Technology, MINEA WG Member
Secondary raw materials challenges and case studies					
3	10:30	15'	Reprocessing of mine tailings: from inventory to practical action	Patrick D'Huges	The French Geological Survey, MINEA WG Member
	10:45	15'	Challenges for extraction of critical technology elements and radionuclides from phosphogypsum tailings	Michael Haschke	DMT
	11:00	15'	Gypsum souring: forthcoming challenges and recommendations	Christine Marlet	Eurogypsum, MINEA WG Member

	11:15	20'	<i>Coffee break (sponsored by 3esi Enersight)</i>		
	11:35	15'	A methodology for the viability of secondary raw materials' recovery and circularity in the construction sector.	Mohamed Osmani	Loughborough University, MINEA WG Leader on the resource potential of construction & demolition waste
	11:50	15'	Investigating, evaluating and classifying material quantities in fly-ash from waste incineration: A Viennese case study	Florian Huber	Technische Universität Wien, MINEA WG Member
	12:05	15'	Evaluating the secondary resource potential of Chromium rich slags from stainless steel production	Andrea Winterstetter	VITO, MINEA WG Member
	12:20	15'	How to evaluate landfill mining? On the challenges of assessing feasibility and performance.	Joakim Krook	Linköping University, MINEA WG Leader on the resource potential of waste in landfills
	12:35	25'	Breakout session on barriers to establish clean, functional and profitable material cycles	Mohamed Osmani	Loughborough University
Tools and Skills					
4	13:00	15'	The European Commission's Raw Material Information System (RMIS) – the importance of resource classification	Constantin Ciupagea	EC Joint Research Center in Ispra
	13:15	15'	European Minerals Yearbook as a reporting platform for anthropogenic resource classification	Zoltán Horváth	EuroGeoServices, MINEA WG Member
	13:30	15'	UNFC Evaluator Qualifications and Competent Person Requirements	Soraya Heuss-Aßbichler	Ludwig-Maximilians-Universität München, MINEA WG Leader on classification and reporting of material resources/reserves
The next steps forward					
5	13:45	25'	Target discussion on priority actions for implementing UNFC on company, sectors and government level.	Sigurd Heiberg	Petronavit a.s, MINEA WG Member
6	14:10	5'	Wrap up and closing	Roland Gauß	EIT Raw Materials
	14:15	45'	<i>Lunch Break: Sandwiches and drinks will be provided, front of room Salle XXVII. (Sponsored by CEC4Europe, ESM Foundation and EIT Raw Materials)</i>		

5.2 Special Workshop on Waste Valorization and Critical Raw Materials

The special workshop will discuss the implementation of the UNFC for management of secondary resources, especially critical raw materials, for facilitating the sustainable management of raw materials with a focus on reducing and valorising (industrial) waste. The workshop will lay the modalities for an active implementation of the UNFC methodology into industrial application by taking first steps towards projects on applying UNFC for waste valorization and secondary raw materials recovery in general, and in particular the management of Critical Raw Materials needed for sustainable development.

Chair: David McDonald
 Co-Chairs: Alessandra Hool
 Room: Salle XVIII, Building E, Palais des Nations

Opening and Keynote talks					
1	15:00	10'	Opening Speech	Bas de Leeuw	Managing Director, World Resources Forum
	15:10	10'	Introduction to UNFC Anthropogenic Specifications and summary of the morning session	Ulrich Kral	Chair of UNECE EGRC WG anthropogenic resources and Chair of MINEA
	15:20	20'	Raw materials for sustainable development: Opportunities and challenges	Karen Hanghøj	CEO, EIT Raw Materials
Recovery of Critical Raw Materials: Opportunities and Challenges					
2	15:40	20'	EU Policy and Strategy on secure supply of mineral resources	Rodrigo Chanes	DG GROW
	16:00	20'	The new monitoring framework on circular economy	Stephan Moll	European Commission - Eurostat
	16:20	20'	Critical metals recovery from vehicle electronics	Patrick Wäger	Empa, ESM Foundation, MINEA WG Member
	16:40	30'	Challenges for anthropogenic resource classification on project level / Recent developments in Canada towards waste reduction	Julian Hilton / Julian Hilton on behalf of Carl Weatherell	Aleff Group / Canada Mining Innovation Council (CMIC)
	17:10	10'	Question and answers		
The next steps forward					
3	17:20	30'	Targeted discussion on challenges, identification of possible collaborations towards case study projects	Roland Gauß Alessandra Hool Ulrich Kral Harikrishnan Tulsidas Julian Hilton	
	17:50	10'	Closing remarks	David McDonald	Chair of UNECE EGRC
	18:00		End		

6 Poster session

N°	Title	Authors
1	Harmonization between national and international classification systems (CRIRSCO and UNFC) – cases for mining wastes in Hungary.	Zoltán Horváth, Katalin Szabó, Szilvia Bányácsi, Ulrich Kral
2	Integration of LCA with monetary valuation into a resource classification framework: The case of MSWI fly ash	Huber Florian, Fellner Johann
3	United Nations Framework Classification for Resources	

7 Directions to Meeting Rooms

All meeting rooms are on the first floor in Building E. The entrance is through Door E40.

Once you have entered through the Pregny Gate, i.e. past the Security Officials, follow the path down to the left in the direction of the E Building. You will then see a car park and Door E40 directly in front of you. When you enter, you will be on the second floor and will see the escalator in front of you; please take this escalator down one floor.

8 Online registration

Follow the link and register:

https://uncdb.unece.org/logon.faces;jsessionid=7CC2F31C3B5B52605D10F6F63BE5D23D?meeting_name=UNECE%20Resource%20Management%20Week%20-%20UNFC%20for%20Sustainable%20Development,%2023-27%20April%202018&meeting_date=23/04/2018&meeting_city=Geneva&meeting_country=Switzerland

9 Practical information

Information for delegates: [https://www.unog.ch/80256EE60057CB67/\(httpPages\)/A4E85C5987169D36C1256F1100342CBE?OpenDocument](https://www.unog.ch/80256EE60057CB67/(httpPages)/A4E85C5987169D36C1256F1100342CBE?OpenDocument)

10 References

COST Action “Mining the European Anthroposphere: <http://www.minea-network.eu>

EIT Raw Materials: <https://eitrawmaterials.eu>

ESM Foundation: <https://www.esmfoundation.org>

UNECE Expert Group on Resource Classification: <https://www.unece.org/energy/se/egrc.html>

CEC4Europe: www.cec4europe.eu