

# NORM Meeting in Katowice, Poland

## 1<sup>st</sup> ENA Workshop & IAEA NORM Project Technical Meeting

Information about meeting locations is provided below.

### Final combined outline, 19<sup>th</sup> -23<sup>th</sup> November 2018

19 Nov. 2018	1 <sup>st</sup> ENA workshop	IAEA NORM Project TM
08:00 – 09:00	Registration and information desk open at GIG	
08:15 – 12:30	<b>Short training courses morning session</b>	
08:15 – 10:15	Application of gamma spectrometry for NORM measurements	
10:30 – 12:30	Application of LSC for NORM measurement	
09:00 – 10:00		Steering committee meeting
10:00 – 11:00		Welcome, Overview of the NORM Project and tasks, Schedule for the week, Organisational issues
12:00 – 18:00	Registration and information desk open at GIG	
12:30 – 18:00	<b>Short training courses afternoon session</b>	<b>Facilitated discussion</b>
12:30 – 13:45	Inventory of NORM and existing regulatory context	IAEA participants may choose to attend the short training courses.
14:00 – 16:00	Application of gamma spectrometry for NORM measurements	For those not attending the courses:
16:15 – 18:15	Application of LSC for NORM measurement	<ul style="list-style-type: none"> <li>• Presentations on (1) key NORM issues, (2) IAEA NORM-related resources and activities, (3) Task 2 guidance on developing NORM inventories, and more.</li> <li>• Facilitated discussion on needs of IAEA Members States represented in the meeting and the scope and structure of future IAEA activities on NORM</li> </ul>
18:30 – 21:30	<b>Welcome reception at the Vienna House Easy Angelo</b> Located at Sokolska street 24, Katowice	

#### Location Details

The short training courses, meetings specific to the IAEA NORM Project TM will take place at the Główny Instytut Górnictwa (GIG) – /Central Mining Institute/ located at Plac Gwarków 1, Katowice.

Welcome reception at the Vienna House Easy Angelo located at Sokolska street 24, Katowice

<b>20 Nov. 2018</b> Tuesday	<b>1<sup>st</sup> ENA workshop</b>	<b>IAEA NORM Project TM</b>
<b>08:00 – 16:00</b>	Registration and information desk open	
<b>09:00 – 12:20</b>	<b>Introductory session</b> Chaired by: Astrid Schellenberger and Boguslaw Michalik Joint session for all participants of ENA Workshop and IAEA NORM Project	
09:00 – 09:15	S. Prusek (Director of GIG) and B. Michalik (the workshop Organising Committee leader): General welcome and organisational announcements	
09:15 – 09:30	R. Wieggers, C. Kunze (president, vice president of ENA): ENA welcoming speech	
09:30 – 10:00	A. Poffijn (former radiation expert FANC/UGENT, Belgium) and H. Schulz (IAF-Radioökologie GmbH, Germany): On the origin of ENA	
10:00 – 10:30	<b>Coffee break</b>	
10:30 – 11:00	H. Monken-Fernandes (IAEA, Waste Technology Section): The Waste Hierarchy in the scope of NORM waste/residue management	
11:00 – 11:30	H. B. Okyar (IAEA, Occupational Radiation Protection Unit): IAEA Safety Standards Approach to industries involving NORM-what's just over the horizon for proper worker protection?	
11:30 – 12:00	J.F. Lecomte (ICRP Task Group 76): Application of the ICRP's Recommendations to NORM	
12:00 – 12:20	K. Smith (chair of IAEA ENVIRONET NORM project): ENVIRONET NORM Project	
<b>12:20 – 13:20</b>	<b>Lunch break</b>	
<b>13:20 – 15:20</b>	<b>Session 1: NORM management challenges and approaches</b> Chaired by: Karen Smith and Christian Kunze Joint session for all participants of ENA Workshop and IAEA NORM Project	
13:20 – 13:40	G. Jonkers (The Netherlands): Establishing National NORM Policies and Implementing Strategies to Address NORM Management Challenges	
13:40 – 14:00	M. García-Talavera (HERCA): HERCA Activities in Support of a More Effective NORM Regulation across Europe	
14:00 – 14:20	W. Schroevers (Belgium): How to establish a NORM inventory	
14:20 – 14:40	R. Gellermann (Germany): Quantification and characterization of NORM inventories in industrial processes – a comprehensive approach for radiation protection purposes	
14:40 – 15:00	M. Leier, T. Vaasma, M. Kiisk, S. Suursoo (Estonia): Steps towards developing national NORM management policy and strategy in Estonia	
15:00–15:05	Wrap up and information on further events later this afternoon (ENA meeting, IAEA meeting, social event)	
15:00 – 15:20	<b>Coffee break</b>	
<b>15:20-16:45</b>	<b>ENA General Assembly meeting</b>	<b>Presentations and Discussion</b>
<b>17:00 – 22:00</b>	<b>Social event</b>	

**Location Details:** The meetings specific to the IAEA NORM Project TM and ENA General Assembly will take place at the Główny Instytut Górnictwa (GIG) – Central Mining Institute located at Plac Gwarków 1, Katowice.

1<sup>st</sup> ENA workshop session will take place at the Vienna House Easy Angelo located at Sokolska 24, Katowice.

<b>21 Nov. 2018</b> Wednesday	<b>1st ENA workshop</b>	<b>IAEA NORM Project TM</b>
<b>08:00 – 16:00</b>	Registration and information desk open	
<b>08:30 – 12:00</b>	<b>Session 2: NORM waste water issues and challenges</b> Chaired by: Cristina Nuccetelli; Fernando P. Carvalho Joint session for all participants of ENA Workshop and IAEA NORM Project	
08:30 – 08:50	M. Wysocka, S. Chałupnik, I. Chmielewska, E. Janson (Poland): The Assessment of radium release into environment as a result of hard coal mining in Poland	
08:50 – 09:10	C. McGuire (Scotland): Modelling offshore oil and gas produced water discharges to the North East Atlantic – Part 1: Far-Field Modelling	
09:10 – 09:30	A. Stackhouse (Scotland): Modelling offshore oil and gas produced water discharges to the North East Atlantic – Part 2: Near-Field Modelling	
09:30 – 09:50	G. Jonkers (The Netherlands): <sup>210</sup> Pb Contaminated Lead Deposits in Geothermal Operations	
09:50 – 10:20	<b>Coffee break</b>	
10:20 – 10:40	M. Wolf (Germany): NORM in geothermal facilities – experiences from practical radiation protection	
10:40 – 11:00	C. Kunze, H. Hummrich, J. Schott, A. Schellenberger (Germany): TRANSPOND: determination of Pb-210 and Po-210 in suspended particulates after disruptive events releasing mining wastes into transboundary waters	
11:00 – 11:20	M. Kahrwad (Libya): The Importance of Dynamic Effectiveness Test in Evaluation of Scale Inhibitors: Experimental Results	
11:20 – 11:30	Radiation Control Instruments – exhibitor presentation	
11:30 – 12:00	<b>Coffee break</b> /Technical break / session change	

**Location Details:** All events will take place at the Vienna House Easy Angelo located at Sokolska 24, Katowice.

**Posters:**

*All posters are presented from 20<sup>th</sup> November till the end of the workshop on 22<sup>nd</sup> November. As there is not a special poster session, authors are expected to be available during the session coffee break.*

*2.1. Preliminary investigation of distribution of natural radionuclides in river Pra as a result of alluvial gold mining activities in Ghana.*

O.K. Adukpo, E.O. Darko, D.O. Kpeglo, F. Otoo, J.K. Amoako, L.A. Agyeman, A. Maruf, B.K. Agyeman, R. Kpordzro. (Ghana)

*2.2. Investigations on zeolite use for radium removal from water*

K. Samolej, S. Chałupnik, M. Wysocka (Poland)

*2.3. Natural radionuclides in water intended for human consumption and sludge generated in water treatment plants.*

I. Chmielewska (Poland)

<b>21 Nov. 2018</b> Wednesday	<b>1st ENA workshop</b>	<b>IAEA NORM Project TM</b>
<b>12:00 – 16:30</b>	<b>Session 3: NORM characterization and modelling approaches</b> Chaired by: Hildegard Vandenhove and Stéphane Pepin Joint session for all participants of ENA Workshop and IAEA NORM Project	
12:00 – 12:20	C. Nuccetelli, E. Caldognetto, F. Trotti (Italy): Processing of zircon sands: the Italian experience	
12:20 – 12:40	F. Mosqueda Peña, J.P. Bolívar Raya (Spain): Radiological evaluation of a NORM industry devoted to the copper hydro-pyro-metallurgical production	
12:40 – 13:00	C. Kunze, H. Schulz, E. Ettenhuber, J. Dilling, A. Schellenberger (Germany): Discharges from NORM Facilities: Key Parameters to Assess Effective Doses for Public Exposure	
13:00 – 14:00	<b>Lunch break</b>	
14:00 – 14:20	R. García-Tenorio, I. Vioque (Spain): NORM environmental impact generated by different mining activities in South of Spain	
14:20 – 14:40	F. Grandia, A. Sáinz-García, E. Colàs, J. Olmeda, M. Grive, J. C. Robinet, P. Henocq, I. Munier (Spain/France): Geological disposal of radium-rich wastes from REE-producing industries in France: Insights from reactive transport modelling	
14:40 – 15:00	J. Regner, C. Schramm, W. Löbner, K. Geringswald, P. Schmidt (Germany): Experiences in Time-resolved Radon Measurements and Tracer Gas Studies for Clearing up of the Causes of High Radon Concentrations in Buildings at former Mining Sites	
15:00 – 15:20	<b>Coffee break</b>	
15:20 – 15:40	F. P. Carvalho, J.M. Oliveira, M. Malta (Portugal): Potential enhancement of environmental radioactivity levels from biomass burning and municipal waste incineration	
15:40 – 16:00	C. Ahrens, K. Flesch, R. Gellermann, K. Nickstadt, O. Neugebauer (Germany): Dry descaling of NORM-contaminated components.	
16:00 – 16:20	K. Skubacz, K. Wołoszczuk (Poland): Size distribution of ambient and radioactive aerosols formed by the short-lived radon progeny	
16:20 – 16:30	<b>Wrap up and information on further events later this afternoon</b> <b>(ENA meeting, IAEA meeting, social event)</b>	
<b>16:40 – 18:40</b>	<b>ENA Working group workshop</b>	<b>Presentations and Discussion</b> <b>Related to Developing National Level</b> <b>NORM Policies and Implementing</b> <b>Strategies</b>
<b>19:00 – 22:00</b>	<b>Dinner</b>	

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**Posters:**

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*3.1. Analysis of natural radioactivity in soil and assessment of effective doses in several districts surrounding Jakarta, Indonesia.*

Makhsun, Dadong Iskandar, Kusdiana (Indonesia)

*3.2. Contribution of Oil and Gas Industry, Coal-fired Power Plant to NORM Radioactivity Level In Indonesia*

- J. Mellawati, G. Suharyono, Maksun, Kusdiana (Indonesia)
- 3.3. *Design of a system for radon exhalation rate continuous measurement*  
I. Gutiérrez-Álvarez, J.E. Martín, J.P. Bolívar (Spain)
- 3.4. *Determination of  $^{210}\text{Pb}$  concentration in NORM waste – self-attenuation corrections for gamma-ray spectrometry and its influence on exposure evaluation*  
M. Bonczyk (Poland)
- 3.5. *A study of a closed - loop production of coagulants and pigments without secondary wastes from Vietnamese red mud*  
Le Thi Mai Huong, Nguyen Van Tien, Bui Cong Trinh, Nguyen Tuan Dun (Vietnam)
- 3.6. *Indoor radon survey in Danyang County, one of radon-concerned areas in Korea*  
P. Jaewoo , K. Yong-Jae, C. Byung-Uck, K. Yu-Gyung (Korea)
- 3.7. *Rare Earth production and NORM wastes management*  
TENG Iyu Lin (Malaysia)
- 3.8. *A monitoring station for radioecological studies at a Belgian NORM site*  
N. Vanhoudt, J. Vives i Batlle (Belgium)

<b>22 Nov. 2018</b> Thursday	<b>1st ENA workshop</b>	<b>IAEA NORM Project TM</b>
<b>08:30 – 16:00</b>	Registration and information desk open	
<b>09:00 - 12:30</b>	<b>Session 4: NORM in building materials</b> Chaired by: Małgorzata Wysocka and Rob Wiegers Joint session for all participants of ENA Workshop and IAEA NORM Project	
09:00 – 09:20	B. Hoffmann, A. Venemans, P. Vuorinen (CEN CT351 WG3): Assessing ionizing radiation from construction products under Construction Product Regulation CPR — Current State of the Standardisation Process	
09:20 – 09:40	K. Kovler, A. Tsapalov, S. Antropov, W. Schroeyers, C. Nuccetelli, R. Koch (Israel, Russian Federation, Belgium, Italy, Estonia): Determination of activity concentration index and radon emanation for building materials by screening and standard laboratory tests	
09:40 – 10:00	T. Löfqvist, M. Miljökontroll (Sweden): Swedish accredited method and experience working with and testing of NORM in building materials	
10:00 – 10:20	M.F. Máduar; B.P. Mazzilli; M.B. Nisti (Brazil): Modelling of radiation doses arisen from the use of phosphogypsum-made bricks in construction	
10:20 – 10.50	<b>Coffee break</b>	
10:50 – 11:10	C. Nuccetelli, F. Leonardi, R. Trevisi (Italy): An advanced database of radon emanation and exhalation rate of building materials: need for a shared measurement protocol.	
11:10 – 11:30	S. Friedreich, E. Lindner-Leschinski, M. Korner, M. Tatzber, C. Katzlberger (Austria): ONR CEN/TS 17216 & NORM in Austrian building materials	
11:30 – 11:50	K. Gijbels (Belgium): Incorporation of phosphogypsum in alkali-activated materials and their radon exhalation behavior	
11:50 – 12:10	B.P. Mazzilli, M.P. Campos, M.B. Nisti, M.F. Maduar (Brazil): Radiological implications of using phosphogypsum as building material: a case study of Brazil	
12:10 – 12:30	T.M. El Hajj et.al (Brazil): Long-term prediction of non-processed waste radioactivity of a niobium mine which could be used to produce concrete	
<b>12:30 – 13:30</b>	<b>Lunch break</b>	

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#### **Posters:**

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#### *4.1. Case study: Radioactivity in ashes from the bioenergy production in Finland*

M. Kämäräinen, A. Kallio, J. Turunen, M. Pelkonen (Finland)

#### *4.2. Continuous wavelet transform in the analysis of gamma-ray spectra with NORM*

M.F. Máduar; P.M. Junior (Brazil)

#### *4.3. NORM in building materials: A delicate balance between sustainability and radiation protection*

Smetsers RCGM, Tomas JM and Folkertsma E

#### *4.4. Incorporation of Phosphogypsum in Cements*

F.P. Carvalho, J.M. Oliveira, M. Malta (Portugal)

#### *4.5. Surface treatments on ornamental rock plates to reduce radon and thoron exhalation rates*

Thammiris Mohamad El Hajj, Mauro Pietro Angelo Gandolla, Paulo Sergio Cardoso da Silva, Homero Delboni Junior (Brazil)

<b>22 Nov. 2018</b> Thursday	<b>1st ENA workshop</b>	<b>IAEA NORM Project TM</b>
<b>13:30 – 16:00</b>	<b>Speakers corner:</b> Short information from EU Member States 10 months after the implementation deadline of the EU BSS into national regulation Chaired and moderated by: Marta Garcia-Talavera San Miguel and Wouter Schroeyers Joint session for all participants of ENA Workshop and IAEA NORM Project	
13:30 – 13:40	S. Pepin, G. Biermans, B. Dehandschutter, A. Poffijn (Belgium): 17 years of NORM regulations in Belgium: was it worth it?	
13:40 – 13:50	M. Lajos, L. Juhász (Hungary): Survey the NORM activities in Hungary	
13:50 – 14:00	J. Dilling (Germany): The new radiation protection law in Germany	
14:00 – 14:10	D.M. Dogaru (Romania): Radiological Safety Considerations in the Field of Natural Radiation Sources	
14:10 – 14:20	Wolfgang Ringer, Per Nilsson, Boris Dehandschutter and José – Luis Gutiérrez Villanueva (Austria, Sweden, Belgium): The European Radon Association (ERA)	
14:20 – 14:30	Z. Fan, K. Baldry, S. Pepin (IAEA, Austria, Belgium): SUN: a regulatory forum for the safe management of uranium and NORM	
14:30 – 14:40	J. Chen, A. Gaw, L. Close (Canada): Radon Management in Workplaces – An Update on the Canadian NORM Guidelines	
14:40 – 14:50	Short brake for coffee to go	
14:50 – 16:00	Discussion on the implementation of EU BSS – exchange of experience	
<b>16:00 – 16:30</b>	<b>1st ENA Workshop Closure</b>	
<b>16:30 – 18:00</b>	<b>No activity</b>	<b>Presentations and Discussion Related to Occupational Radiation Protection in Industries Involving NORM</b>

**Presentations are followed by the relevant posters.**

**Location Details:** All events will take place at the Vienna House Easy Angelo located at Sokolska 24, Katowice.

<b>23 Nov. 2018</b> Friday	<b>1st ENA workshop</b>	<b>IAEA NORM Project TM</b>
<b>09:00 – 16:00</b>	No activity	<ul style="list-style-type: none"> <li>• Working session on NORM cost assessment (Task 3)</li> <li>• Facilitated discussion of NORM inventory guidance document (Task 2),</li> <li>• Discussion of next steps for the tasks and overall project,</li> <li>• Wrap up and closure of TM</li> </ul>
<b>16:00 – 17:00</b>	No activity	Steering committee meeting

**Location Details:** All events will take place at the Główny Instytut Górnictwa (GIG) – Central Mining Institute located at Plac Gwarków 1, Katowice.