



# GEONOR16

NORTHERN REGIONS  
GEOLOGICAL RESOURCES  
CONFERENCE 2016

## MINING AND ENVIRONMENT

Mo i Rana, Norway  
15. – 17. March 2016



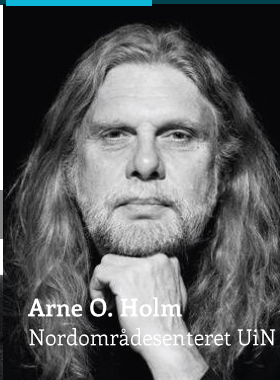
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NordMin



YET TO BE CONFIRMED

**Line Sundtoft**  
Minister of climate and  
environment



**Arne O. Holm**  
Njordområdesenteret UiN



YET TO BE CONFIRMED

**Frederic Hauge**  
Bellona



**Frode Nilsen**  
LNS

**At 66 degrees North, by the Arctic Circle lies Mo i Rana. Founded by tradesmen and with a long industrial history, it is the perfect host town for the GeoNor conference.**

Industrial mining activity started during the late 1800s, and even the American inventor Thomas Alva Edison came here to exploit his patents for magnetic separation of iron ore. He founded Dunderland Iron Ore Company, D.I.O.C. and developed a great number of additional patents on ore dressing machinery and beneficiation processes.

After the WW2, Mo municipality seemed set to become a trading and manufacturing town of about 5000 inhabitants. But the Jernverket ironworks swept aside all plans and visions, and exploded the boundaries of the small community. In just 20 years, the population tripled from more than 8000 to approximately 26,000.

Up to 1975, the world's steel production rose steadily and regularly in line with economic growth. But then the steel consumption flattened out, and steelworks found themselves struggling with the worst economic crisis in the West since the great depression in the thirties. In 1988, the Parliament voted to discontinue state ownership of A/S Norsk Jernverk. They agreed financial support for restructuring the industry and to establish new businesses in Mo i Rana, creating a modern and diverse labour market.

The reorganisation has been a great success. Where once there was only one company, there are now more than a hundred in Mo industrial park, operating at a high level of efficiency and innovation. And the legacy of inventor Thomas Alva Edison lives on through the mining and processing activities of Rana Gruber.

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## 15. March

### GEO GET-TOGETHER

19.00-22.00 Meyergården Spectrum,  
Mo i Rana

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## 16. March

### SESSION 0: ENVIRONMENTAL CONSERVATION OR PROTECTION?

08.00 Registration

08.30 Welcome to the GeoNor  
conference 2016 Thomas Norvoll,  
head of county council, Nordland

08:45 Minerals as part of the  
climate solution Tine Sundtoft,  
Minister of Climate and  
Environment

09:05 The importance of  
minerals in Eco-friendly industry  
development Frederic Hauge,  
Bellona

09:25 Sustainable mining  
Elisabeth Gammelsæter, Norwegian  
Mineral Industry

09:40 Panel discussion

### SESSION 1: SUSTAINABILITY IN MINERAL PRODUCTION

10.40 Primary issues hampering  
the non-energy extractive industry  
from developing sustainably  
Kieran Hooley, Aalto University,  
Finland

11.00 Reflections on the  
sustainability of the limestone  
industry in Verdal Håkon Mork,  
Verdalskalk

11.20 Block Caving instead of  
open pit mining – A way to  
decrease waste rock production  
and CO<sub>2</sub> emission Mahdi  
Shabanimashcool, UiT - The Arctic  
University of Norway, Narvik

11.40 How to use product  
traceability for documentation of  
environmental sustainability in  
mineral production Melania Borit,  
UiT - The Arctic University of  
Norway

12.00 Q&A Lead moderator  
Arne O. Holm

12.15 Lunch

## SESSION 2: ENVIRONMENTAL GUIDELINES – LICENSE TO OPERATE

**13.00 Norwegian Environment Agencies Licensing procedures**  
Norwegian Environment Agency

**13.20 Social license to operate and environmental issues – complementary or conflicting issues in mining activity** Berit Skorstad, Nord University

**13.35 Sea deposition of mine tailings: Environmental challenges addressed in NYKOS** Morten Schaanning, The Norwegian institute for water research (NIVA)

**13.50 Sustainability criteria for the Nordic Extractive Industry**  
Thomas Ejdemo, Luleå University of Technology

**14.05 Environmental guidelines – Norway versus Greenland** Frode Nilsen, LNS

**14.20 Q&A** Lead moderator Arne O. Holm

**14.35 Coffee-break**

## SESSION 3: MINERAL WASTE – DISPOSAL OR VALUE CREATION?

**15.00 Realistic use of tailings**  
Rolf Arne Kleiv, Norwegian University of Science and Technology (NTNU)

**15.20 Working towards sustainable aggregate extraction in Iceland – some initial observations** Herdis H. Schopka, Ministry for the Environment and Natural Resources, Iceland

**15.40 Towards Environment-Friendly Mineral Industry: An innovative process for Alumina Production with CO<sub>2</sub> Utilization**  
Suni Aranda, Institute for Energy technology

**16.00 Title, Boliden**

**16.20 Alternative use of mineral waste** Rana Gruber

**16.40 Q&A and closing remarks**  
Lead moderator Arne O. Holm

**17.15 1 hour guided bus tour:**  
Mo industrial park

## BANQUET – MEYERGÅRDEN SPEKTRUM



**19.00 Networking and drinks**

**19.30 Banquet**



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## 17. March

### **NORDMIN WORKSHOP: MINERAL WASTE – DISPOSAL OR VALUE CREATION? NEED FOR RESEARCH AND INNOVATION**

**08.30** Welcome Moderator and NordMin representative

**08.45** Excess Material from Mineral Industry – use or disposal? Per Helge Høgaas, SINTEF

**09.05** Geothermal "mining" waste in Iceland - disposal and value creation Sveinborg Hlíf Gunnarsdóttir, Iceland GeoSurvey



**09.25** Research concept to enhance sustainable and responsible mining in Finland Helena Wessman-Jääskeläinen, VTT Technical research centre of Finland

**09.45** Urban exploration. Challenges assessing urban waste slag materials. Examples from Copenhagen Per Kalvig, Geological Survey of Denmark and Greenland (GEUS)

**10.05** Coffee-break

**10.30** Workshop – introduction and session 1

**12.00** Lunch

**12.45** Workshop – session 2

**14.00** Presentations and dialog

**15.30** Call for preparatory project proposals on Mineral Waste and Closing remarks NordMin

**16.00** Ending day 2

NordMin, a Nordic network of expertise and research, is focusing on sustainable non-energy raw materials. NordMin is initiated by the Nordic Council of Ministers with its management at Luleå University of Technology.

NordMin supports research, development, innovation and education initiatives in the raw materials sector in all Nordic countries and Greenland.

The strength and synergy from the complementary capacities of the Nordic countries give NordMin the competitive edge on a global basis.



PHOTO: Helge Rushfeldt

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## Secretariate/Registration information

Kunnskapsparken Helgeland, [www.kph.no](http://www.kph.no)

## Conference hotel

### Scandic Meyergården Hotel

Fridtjof Nansens gate 24-28, 8624 Mo i Rana

Phone: +47 75 13 40 00

[meyergarden@scandichotels.com](mailto:meyergarden@scandichotels.com)

## Nearby hotels:

### Clarion Collection Hotel Helma

Thomas Von Westens gate 2, 8624 Mo i Rana

Phone: +47 78 10 11 80

E-mail: [cc.helma@choice.no](mailto:cc.helma@choice.no)

### Comfort Hotel Ole Tobias

Thora Meyers gate 2, 8622 Mo i Rana

Phone: +47 75 12 05 00

E-mail: [co.ole.tobias@choice.no](mailto:co.ole.tobias@choice.no)

## Taxi service:

Phone: 07550

# PROGRAM COMMITTEE 2016

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