UNECE

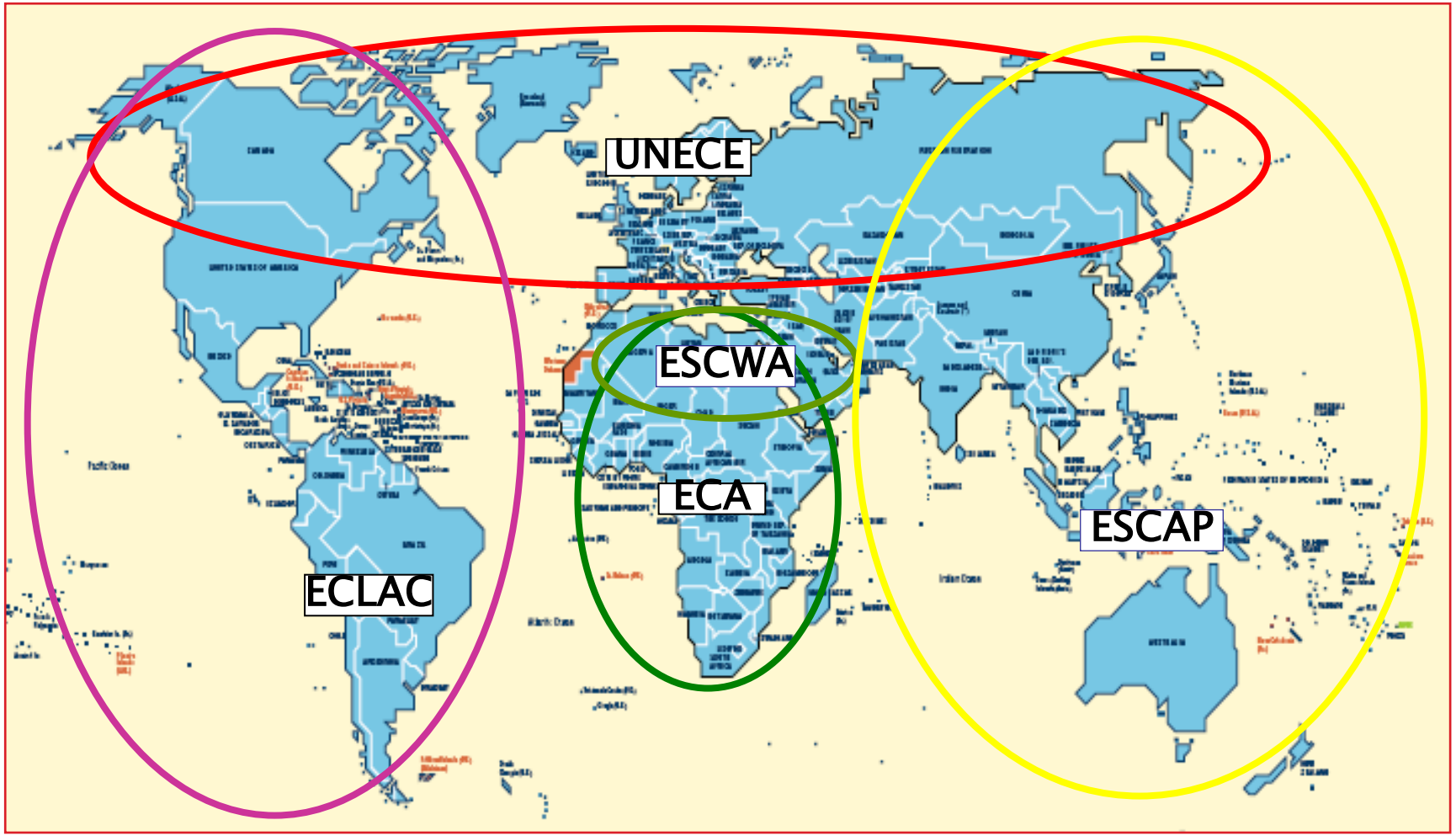
MINEX Europe
18 October
Wroclaw, Poland

ENERGY

Coal mining as a multi-purpose platform serving the needs of the emerging clean energy economies

Session 5, *Net Zero Mining and Energy Transition Agenda*

Raymond Pilcher, Chair
Michal Drabik, Secretary


UNECE
ESCWA
ECA
ESCAP
ECLAC

- Set up in 1947 by ECOSOC
- Brings together 56 countries located in the European Union; non-EU Western, Eastern, and South-East Europe; Commonwealth of Independent States (CIS) and North America
- However, all interested United Nations member States may participate in the work of UNECE
- In addition, over 70 international professional organizations and other non-governmental organizations take part in UNECE activities

- Produces 40% of the world's energy, consumes 45%
- Home to important energy industries
- Produce nearly 50% of the global economic output
- Fossil fuels are 60% of primary fuel in the UNECE region
- UNECE region accounts for half of global emissions
- The region is diverse: comprised of high- and low-income countries, countries that are energy rich and energy poor and countries that are in economic transition

- Its aim is to promote pan-European economic integration
- It is a platform for dialogue on economic and sectoral issues
- It facilitates greater economic integration and cooperation among its member countries and promotes sustainable development and economic prosperity through:
  - policy dialogue
  - negotiation of international legal instruments
  - development of regulations and norms
  - exchange and application of best practices
  - technical cooperation

- 17 SDGs, agreed by UN GA in 2015, are the principal framework for the UNECE's work in sustainable energy.

- SDG 7 is about providing sustainable energy to the world.

- UNECE focuses on 'energy for sustainable development' because energy is a golden thread that underpins all SDGs.

Committee on Sustainable Energy

- Develops normative instruments (best practices, standards) that facilitate cooperation and enable needed investments.
- Provides countries with a platform for a dialogue on energy-related matters.
- Leads and oversees SED's work on implementation of the UN Sustainable Development Goals.

Committee on Sustainable Energy

- Six subsidiary bodies (Groups of Experts on):
  - Energy Efficiency
  - Renewable Energy
  - Resource Management
  - Cleaner Electricity Systems
  - Natural Gas
  - Coal Mine Methane and Just Transition

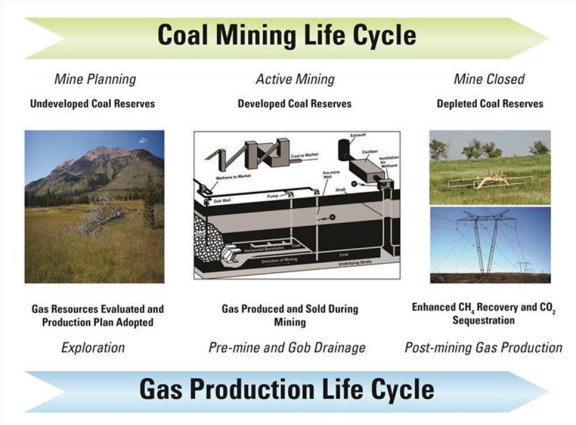
- Established in 2004
- Network of almost 500 experts from most coal mining countries
- Experts are professionals trained and practicing many disciplines — we are:
  - scientists,
  - engineers,
  - economists,
  - miners,
  - lawyers,
  - government officers,
  - members of NGOs,
  - politicians,
  - equipment manufacturers,
  - …
  - from the Member States of the United Nations

- Collaboration between governments and the private sector is a driving force of our activities. Leading experts come from both the public and private sector. They are at the forefront of the "best practices movement".
- Inclusiveness, dialogue, exchange, cooperation.

- To promote efficient transition of industries along the coal value chain ensuring the reduction of associated greenhouse gas emissions and social equity of the process through substantive, results-oriented activities that may help the recovery and use of methane in order to reduce the risks of explosions in coal mines; mitigate climate change; and support sustainable development, and that may support communities, local economies and the environment in the just transition process.

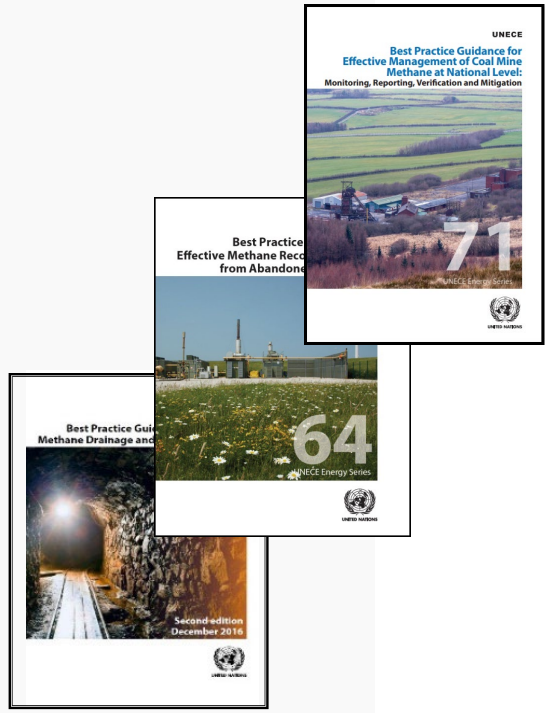
- **4 pillars**:
  - Environment, Economy, Working Safety, and Social Justice.

- Its **activities** include:
  - Mining hazards
  - Methane emissions MRV and mitigation (capture, destruction, and use)
  - Transition (mine closure, land repurposing, and just transition)
- **Focuses** on:
  - The whole: coal value chain and mine life cycle.



- **3 Task Forces**:
  - Safe Operations and Closure of Mines
  - Methane Emissions Reduction
  - Transition of the Coal Sector
- **2 Centres of Excellence** (Poland, and China)
- **3 Best Practice Guidance** documents on CH_4 emissions:

  from (1) active and (2) abandoned mines, and on (3) their MRV.



Transition

- Modernization cannot be avoided or delayed.
- UNECE
  - Helps States to paln and implement transition of their coal mining regions;
  - Stresses Importance of the social and cultural dimensions;
  - Works on identifying elements that are necessary to enable the start and ensure progress of just transition:
  - Develops tools to facilitate a transition to low-carbon energy and green economy.
    - The check list - mapping just transition efforts worldwide and identifying the issues that need to be addressed while engaging in the process
  - Offers a new approach to coal

Just transition is an integrated approach to sustainable development that brings together social progress, workers' protection, environmental consciousness, and economic success into a framework of democratic governance and institutional support.

- A comprehensive system-wide strategy encompassing all aspects (economic, technological, environmental, social and cultural) is necessary, as is also inter- and cross-regional dialogue allowing for an exchange of experience and lessons learnt.
  - Without such approach, undertaken projects will be developed in silos and will not form a coordinated strategy to allow the change of economic profile of coal mining areas.
  - Only with a comprehensive, reliable data-driven strategy will the coal mining areas in transition be able to precisely identify their needs and thus request particular and detailed help from aid providers and donors.

- Decarbonization creates new opportunities, but it also entails disruptive effects, which almost always fall disproportionally on the shoulders of the localities that are economically reliant on energy-intensive industries.
  - Social justice must be prioritized during the transition process.
    - It is the duty of governments, but also of the organizations such as the United Nations to make sure that no one is left behind and the transition is just for all.
    - Effective “just transition” strategies require local, bottom-up engagement of all affected stakeholders and commitment by the governments to guarantee their buy-in and provide planning security.
    - The concept of “just transition” is an essential component of energy transformation, ensuring that the latter is delivered in a socially sensitive manner, which is a condition for sustainability of its results.

"Leave no-one behind"

UNECE offers a new approach to coal

- Considering coal solely as a source of fuel ignores alternate value propositions and opportunites for creating new business models. A higher value for some coal deposits' lies in the potential to be refine and utilize the carbon and other materials as higher value resources

- The proposed approach creates new opportunities for economic development

  - By preserving/creating jobs, it will facilitate the transition by mitigating the exposure of communities and regions in transition to cultural and social shocks

  - By mitigating the risk of stranded coal assets, it gives financial institutions an opportunity to preserve them, thus freeing significant resources for investments needed in infrastructural projects, which not only depend on the feedstock provided by coal companies, but also make the business case for coal mines continued existence as a crucial element of the new green economy

Finding new value in coal mines should be attractive to investors:

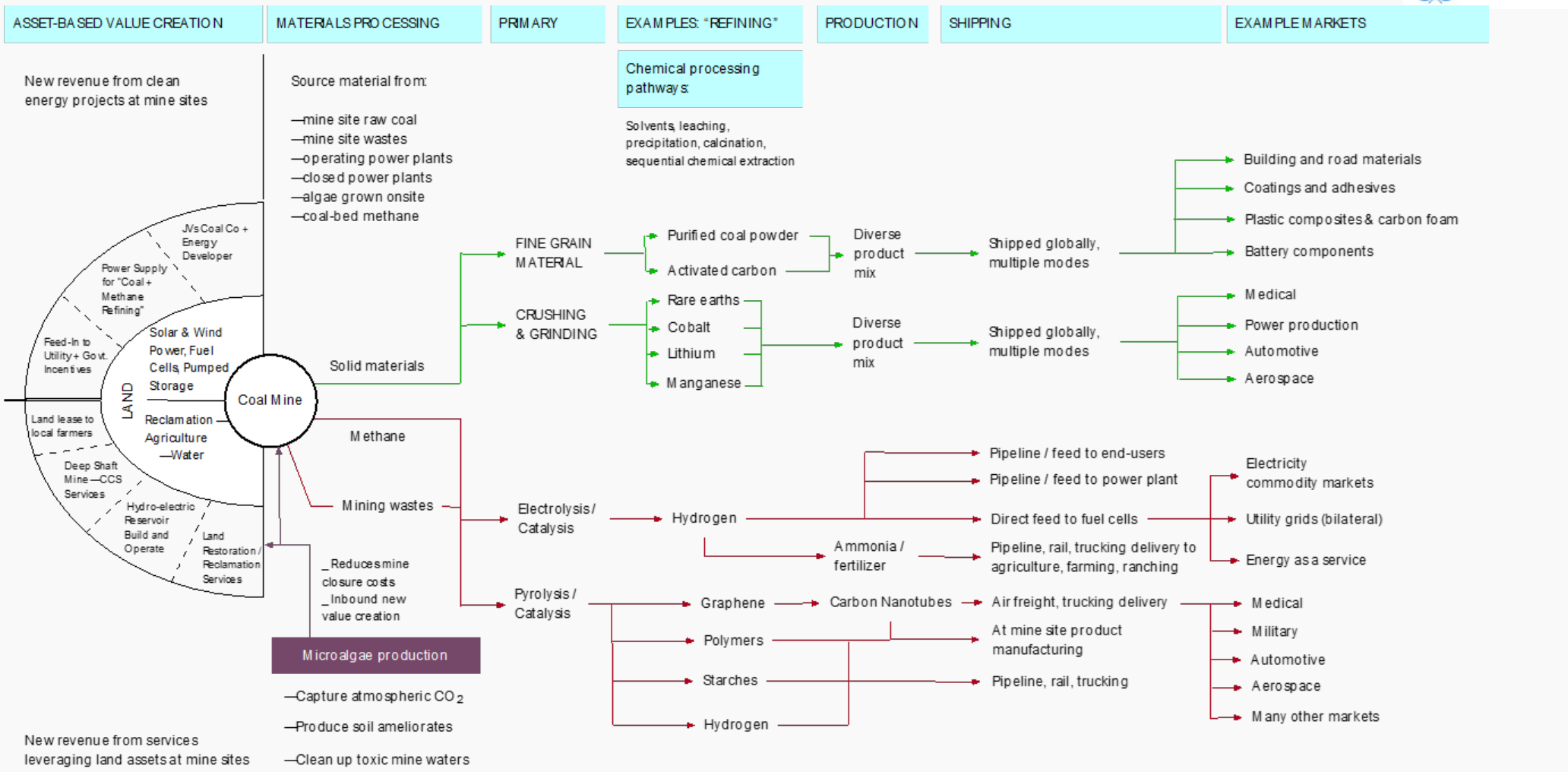
- The coal mining sector was valued at $1.27 trillion USD in 2011
- In 2020 the value of the sector was approximately $500 billion USD
- In 2023 the value is approximately $600 billion USD
- The erosion of value is due to the pressure on the electric power industry to move from coal to lower carbon intensity fuels, the favorable pricing of natural gas, and lower cost renewables.
- New business models can be developed for active and idled mines—potential for re-mining mine tailings should also be considered

Some coal deposits have additional value which has not been recognized:

- Recent work has shown that rare earth elements occur in trace amounts in many coal deposits and in the enveloping strata which is treated as waste
- Acid mine drainage in some coal deposits mined in West Virginia have very high levels of REEs and other valuable metals. Similar reports of trace element occurrences come from work on coal deposits in the western US, India and China.
- Other critical raw materials have been found in minable coal deposits, but our knowledge of these occurrences is still being acquired—most coal exploration programs are not designed to test for other metals unless they are likely to be environmental pollutants.

Coal as a multi-purpose platform

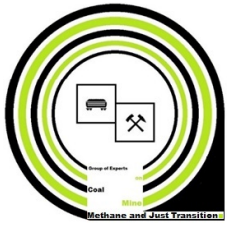
The Concept



David Jermain, et al, 2023, in review

The UNECE recognizes that a shift is needed to realize a just and equitable future for all

- Research on deposits that are actively being mined should become a focus for re-evaluation of alternate potential uses of the coal as a source of carbon for graphite, graphene, carbon nano tubes and other high value materials
- Coal deposits and mine wastes should be analyzed for valuable metals, REEs and other critical raw materials.
- Fly ash at mine mouth power plants and at other locations should be tested for valuable and extractable materials.
- Some mine sites may have abundant methane that could be used rather than vented



Michal Drabik

Chief of Section a.i., Economic Affairs, UNECE

Secretary of the GoE on CMM & JT

Tel: +41 (0) 22 917 3966

Email: michal.drabik@un.org

http://www.unece.org/energy/se/cmm.html