Uranium Mining and Socio-Economic Development

RESOURCE MANAGEMENT WEEK 2021

ENABLING SUSTAINABILITY PRINCIPLES IN RESOURCE MANAGEMENT

UNECE

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OECD-NEA
Nuclear Technology Development and Economics

Why uranium and nuclear?

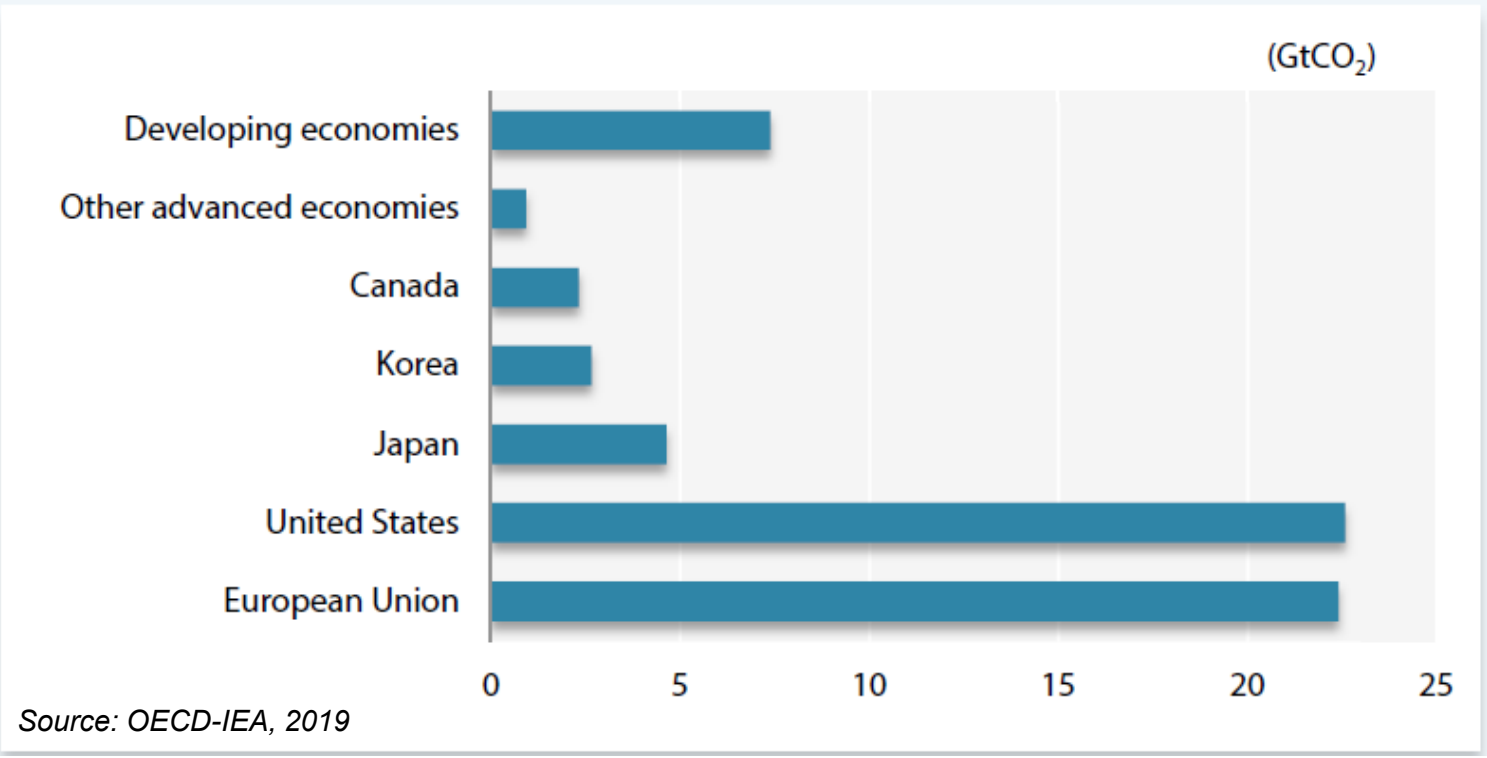
ANSWER: *the economics and environmental benefits of nuclear energy are overwhelmingly convincing*

- cost of 1 kg of enriched fuel is < $2,000
- this yields about 360,000 kWh of electricity
- equivalent to 160 tons of steaming coal

- Nuclear power avoids each year between 1.2 and 2.4 Gt of CO_2 emissions

Nuclear power and clean energy transitions

Cumulative CO_2 emissions avoided by nuclear power over the period 1971-2018

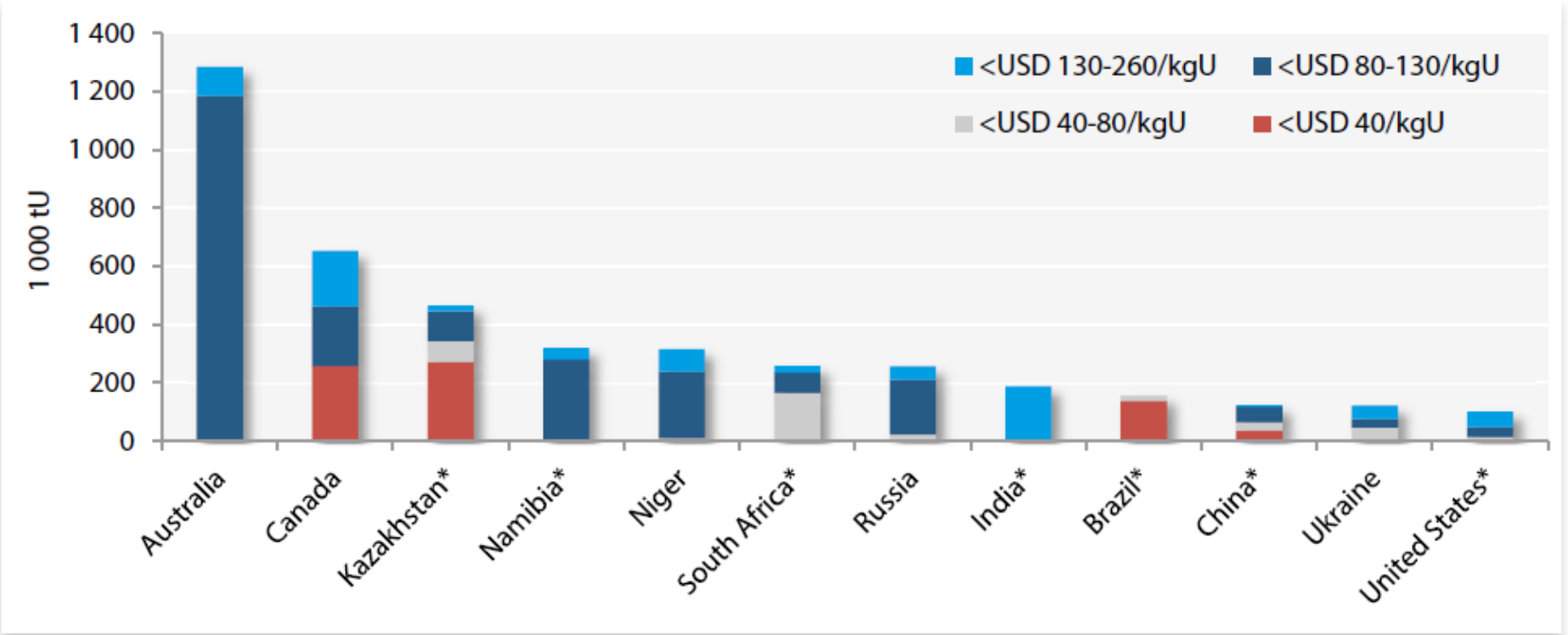


Source: OECD-IEA, 2019

- Nuclear power has avoided 63 Gt of CO_2 emissions over the past 50 years. About 90% were in advanced economies with the US and EU avoiding each 22 Gt.
- Climate change goals at risk without nuclear power.

World distribution of uranium resources

Reasonably Assured Resources (RAR)



Source: OECD-NEA/IAEA « Uranium 2020: Resources, Production and Demand »

- Australia leads the world's uranium resources with about 28% of the total identified resources (<USD130/kgU); Kazakhstan and Canada dominate the lowest cost RAR (<USD 40/kgU)

While the environmental concerns of uranium mining are usually at the forefront of stakeholder engagement, there is not enough focus on opportunities

Background

Mining can be a critical socio-economic driver in many countries (employment, training, salaries and wages; foreign direct investment, export earnings and government revenues).

OECD-NEA study

Are the uranium activities managed to ensure socio-economic benefits and avoid negative impacts?

Case studies in both developed and developing countries to understand the uranium mining impact on regional/national economic development, jobs, supply chains, education,....

Resulting in…

Toolbox of approaches and recommendations for policy makers, industry, local communities… to ensure that the development potential of uranium mining can be maximised;

Case studies focus on various socio-economic policy aspects

1. In country value creation: Employment, Supply chains, Innovation

2.Community and Indigenous development

3. Uranium Royalties and Taxation

4. Governance – Uranium industry Policy and Regulation

5. Uranium exports and imports, including security of supply

Australia, Canada, Kazakhstan, Mongolia, Namibia, Niger, the US

Well-designed policy frameworks can improve outcomes in these areas…

In country value creation: Employment, Supply chains, Innovation

"Local content" policies can serve as overall approach to ensure that uranium projects will catalyse socio-economic development

"Local content" policies can focus on increasing:

- local employment,
- local procurement,
- domestic processing of mined products,
- the capacity of local actors as mining sector operators, including state-owned enterprises,
- national expertise and innovation in the sector,
- linkages into non-mining sectors.

Local content policies cover a variety of approaches, from mandatory targets to soft requirements…

As each country has different conditions, local content policies are highly context-specific…

Saskatchewan case study: socio-economic agreements

Saskatchewan is the only uranium producing jurisdiction in Canada. No real recognition of socio-economic benefits or requirements prior to the 1970's. Provincial government made the decision not to provide revenue sharing but to require socio-economic benefits from uranium operations.

Socio-economic benefit requirements enforced through regulatory methods:

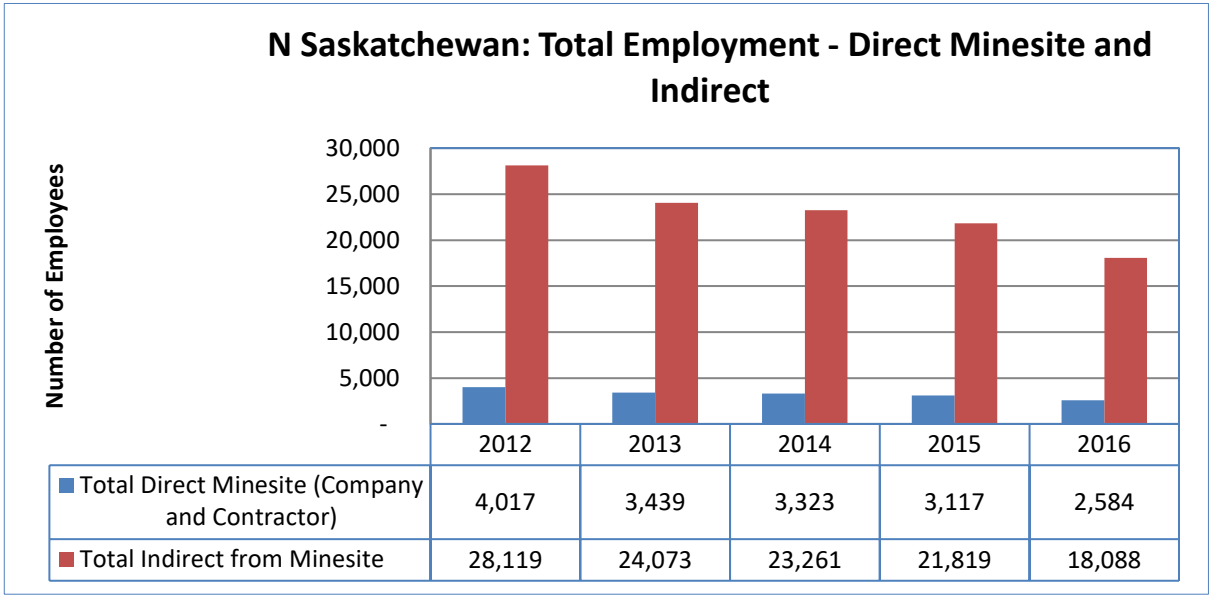
- Mine Surface Lease Agreement
- Human Resource Development Agreement (HRDA) – focus on:
  - maximizing northern employment and training ("best practices policy")
  - maximizing business opportunities ("best practices policy")
  - increasing stakeholder communication.

Community based agreements, Collaboration Agreements with Indigenous peoples - focus on economic opportunities, engagement and environmental stewardship, and direct community investments.

Resulting in…

- an increase in local skilled workers, competitive local suppliers and better informed communities

Saskatchewan case study: uranium mining jobs are good jobs



Source: Ministry of Energy and Resources, Cameco and Orano companies.
Data do not include statistics from exploration companies. Head office value is not included in this figure.

The economic impact in northern Saskatchewan is significant.

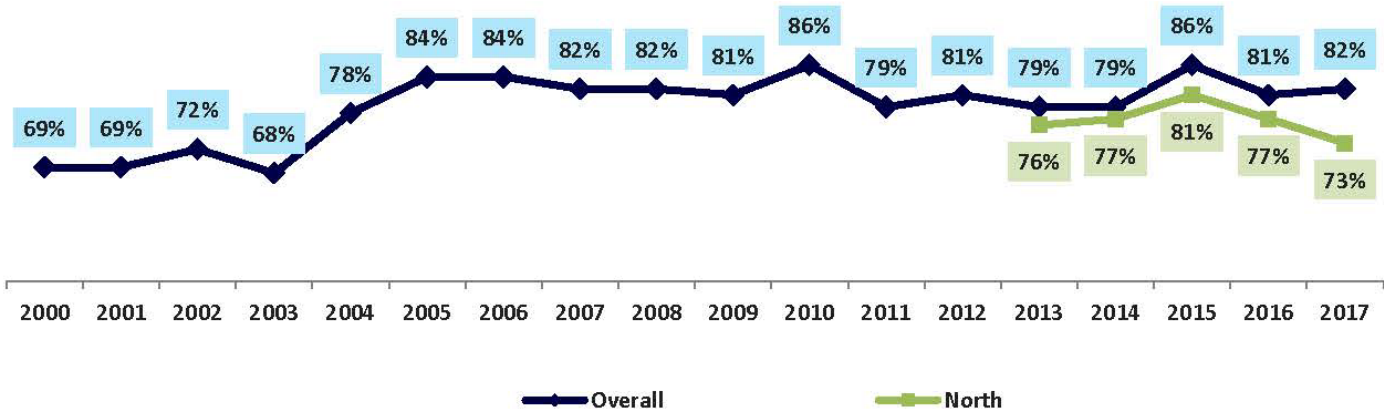
- 22% of total employable population in direct jobs (2015). High incomes vs other sectors.
- Indirect employment - estimated by a factor provided by the Ministry of Energy and Resources (7*)(transport personnel, external goods,...).
- Good performance for Indigenous employment (39% as 2018).
- 68% of workers continue to reside in the northern region despite the temporary cessation of production at several mines (2019).

Community engagement and environmental stewardship activities

- Industry has instituted a community-based environmental monitoring programme to provide assurance to local residents that the operations are not impacting the environment.
- Allows local residents to assist in the determination of sampling points, the collection of samples and the interpretation of the monitoring data.
- Provincial government has established and continues to support *Environmental Quality Committees* staffed by local residents to improve communication between the industry, government and local residents

Public support

- Uranium industry maintains one of the highest rates of public support .
- As end of 2018, support was 80% provincially, 82% in northern Saskatchewan.
  - High level of acceptance maintained through continued evolution of policies and a supportive and proactive industry.



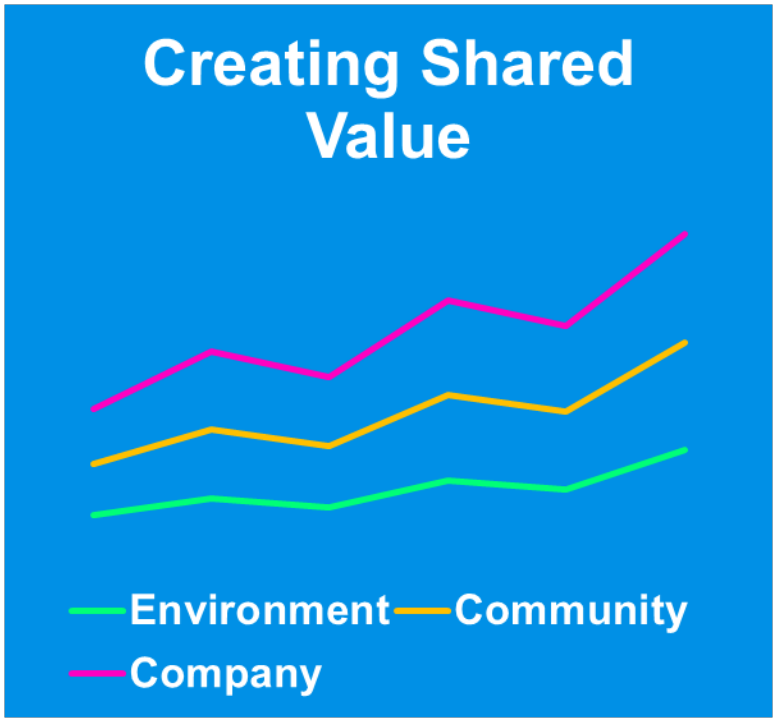
Source: Saskatchewan Mining Association, 2017 (public opinion poll conducted by Fast Consulting).

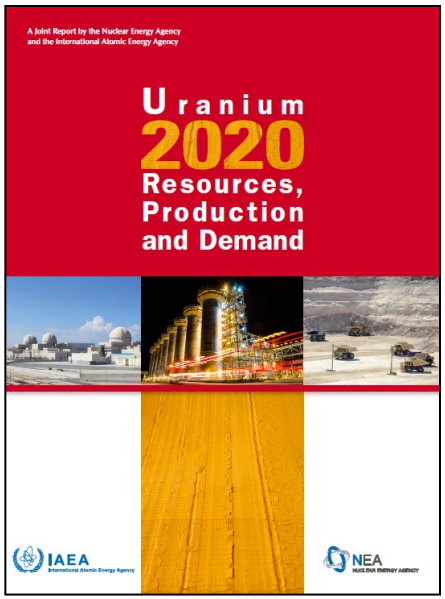
- It cannot be understated the importance of social license and the commitment of government and industry to develop and maintain a strong positive public image.

There is scope for further value to be derived

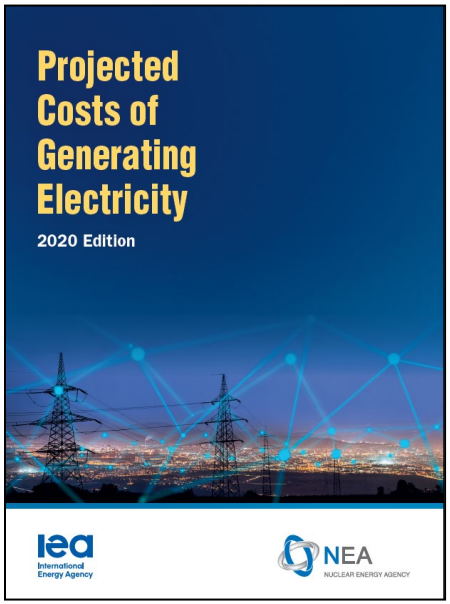
- Finally, for uranium projects to be successful in the broadest sense of the word, they must deliver—*and be seen by their stakeholders to deliver*—real benefits to the communities and regions in which they operate.

- By partnering across the various sectors, there is an opportunity to **create shared value** from uranium projects and to increase trust and transparency in industry and government actors.





NEA publications and institutional documentation available at www.oecd-nea.org



Maximising Uranium Mining's Social and Economic Benefits: A guide for Stakeholders

To be published soon…