

## **Inter-State Agreements and Role of Governments to Secure Uranium Supply: Between strategic agreements and uranium geopolitics**

Kenza SEKKAT, Paris-Dauphine University, +33 6 29 59 67 22, Email: [Kenza@live.com](mailto:Kenza@live.com)

### **Overview**

In recent years, the field of natural uranium has witnessed a number of developments. First, the positions of different actors in the mines (mining companies traditionally, but also manufacturers of nuclear power plants, and more recently new entrants such as utilities) have multiplied. Chinese and Korean Nuclear operators - but also the Japanese till the Fukushima accident - are particularly present. In addition, there is a decline in the production of industrialized countries in favor of emerging markets. Kazakhstan became the largest producer of uranium in 2009, with 36%<sup>1</sup> of world production in 2012. If Namibia, Niger and Russia were to be added, it is 55% of the production that comes from key emerging countries. Finally, the question of funding arises today more acute. On the one hand, like oil fields, uranium mines become increasingly expensive to operate in some areas (accessibility and ore grades). On the other hand, the economic crisis has started the financial capacity and confidence of lenders (banks and financial institutions). Sovereign funds and state-owned banks took therefore an increasingly important role to engage uranium exploration, mining and milling.

Globally, during the 90s-2000s, a dual trend was observable: first, the arrival of new players in the market adopting new strategies to enhance their ability to secure their uranium supplies (joint ventures more often versus long term contracts); second the physical rarefaction of the uranium, caused by a sharp increase on the demand side - due to demographic and economic factors, especially in emerging markets - while the production side was already under pressure<sup>2</sup>. An inter-dependence between producers and consumers is therefore created. Mining projects require important investments and advanced technology knowledge which usually producer countries lack of. For instance, Kazakhstan has the objective to become totally integrated in the value chain of uranium. Hence it gives access to its mines only to partners that will operate some technology transfer. The more valuable the technology, the bigger access to the mines the partner gets. Also, even if it's wide spread, consumer countries don't have enough uranium in their territories to feed their reactors. In order to ensure uranium supplies, China has made joint-ventures and overseas partnerships in almost every country where uranium is extracted since 1996.

In this context, uranium represents not only a geopolitical issue, *ie.* focused on the control of the resource<sup>3</sup>, but also a geo-economic issue because the resource control induces political and economic gains associated with the resource trade on the supplier side, and an opportunity to access to cheap and clean energy on the demand side that will allow a proper development. This study will focus on demonstrating the link between the role of governments, agreements state representatives sign and security of uranium supply. Many producer countries use some old policies to control the resources on their national soil such as the presence of state representatives on companies' boards or their influence on public banks

---

<sup>1</sup> All data coming from WNA, otherwise stated.

<sup>2</sup> The HEU deal coming to an end in 2013, the decline of secondary sources, the decreasing production from Australia, the uncertain extension of Olympic Dam mine are some examples that illustrate the pressure in presence on the supply side in the uranium market.

<sup>3</sup> Production and commercialisation.

to finance some projects with some foreign partners rather than others. Resources are therefore used as a leverage to achieve geopolitical and geo-economic objectives. Consumer countries try to lock in resources via vertical integration when possible, most often than not, they conclude joint ventures.

## Methods

In this study, we'll use an econometric approach based on the work of Arkel, Boots and Jansen's (2004) to demonstrate that inter-state agreements such as *Memorandum of Understanding* (MoU) signed to set a long term trade agreement is key to secure supplies of uranium. The countries we'll focus on are China and Japan. Four indicators will be used: geographic diversification in supply, socio-politic stability in the supplier country, imports dependence, and resources projections.

## Results

The econometric framework is on a very early stage for now because we are gathering data to run the model.

## Conclusions

As stated in the IAEA report<sup>4</sup> (1988), utilities tend to favor joint ventures<sup>5</sup> rather than long term contracts or going to the spot market because they provide more security for future supplies. The strategy of large producing countries such as Kazakhstan is to conclude more contracts with countries or market players strongly supported by their countries, with large uranium needs while maintaining a control over their resources. This double motivation (get a better market share and keep control over the country's natural resources) promotes the growth of Joint Venture (JV) witnessed in the market in recent years. Consumer countries emphasize technology transfer to negotiate supply contracts / JV. The notion of reserves is an economic one, uranium reserves will increase with the prices growth. But more technical and human capital will be needed, because uranium mines that will be explored need advanced technology and experience. Hence, partnership between producing countries (mostly in Eastern Asia, Australia and Canada) and consumer countries in Europe and Asia should develop in the future.

## References

- Arrow, Kenneth J., "Vertical integration and communication", *Bell Journal of Economics* 6, n° 1 (1975) : 173-183.
- "Contractual Arrangements for Uranium Exploration and Mining", International Atomic Energy Agency, Vienna, 1988
- Saussier, S. and Breuve, J., "Interfirm Cooperation in Strategic Relationships: The Role of Formal Contract", *Industrial and Corporate Change*, 2012, 21 (4), 811-836.
- "Uranium 2011: Resources, Production and Demand", A Joint Report by the OECD Nuclear Energy Agency and the International Atomic Energy Agency OECD, 2012
- "World Uranium Mining Production", World Uranium Association, August 2012

---

<sup>4</sup> "Contractual Arrangements for Uranium Exploration and Mining", International Atomic Energy Agency, Vienna, 1988

<sup>5</sup> Joint Ventures represent a vertical integration that is open. This form of exchange is practiced because governments want to keep their national resources under control.