

A Preliminary Deliberation on the Global Assured Nuclear Fuel Supply Frameworks
GNEP Partners Will Pursue¹

Shunsuke KONDO, Chairman
Japan Atomic Energy Commission

Ministers and Distinguished delegates, I am Shunsuke Kondo, Chairman of Japan Atomic Energy Commission. As my role at this session is to facilitate the discussion among delegates, allow me to raise some points for discussion, at the beginning.

The GNEP is, as stated in GNEP Statement of Principle, cooperation of partners or those States that share the common vision of the necessity of the expansion of nuclear energy for peaceful purposes worldwide in a safe and secure manner.

The GNEP cooperation has taken a step forward, this morning, with our signing of the GNEP Statement of Principles as partners. Further development of the partnership structure for the promotion of the cooperation will be discussed later in the executive session.

Therefore it is important at this time to discuss concrete objectives of the cooperation and, I am sure that in that light, it has been proposed for us to talk about the policies to be taken by GNEP partners on global nuclear fuel services in this session.

As you know, one of the objectives to be pursued by the cooperation in the spirit of GNEP Statement of Principle is to establish international nuclear fuel supply frameworks to enhance reliable and cost-effective fuel services and supplies to the world market.

To be more specific, it is hoped that the cooperation will provide the global community options for generating nuclear energy and fostering development while reducing the risk of nuclear proliferation, by creating viable alternatives to acquisition of sensitive fuel cycle technologies.

Last year, the IAEA hold an Special Event on Assurances of Nuclear Fuel Supply and Nonproliferation, as a side event of its General Conference, of which subject was to implement a regime by which nations wanting to enjoy the benefits of nuclear energy can have the assurance of nuclear fuel supply without developing an indigenous capability to enrich or reprocess spent fuel. It is understood that for the time being, a central concept the IAEA may pursue is a safety net mechanism to back up the fuel supply market in the event of disruption due to non-commercial reasons.

The GNEP can distinguish itself from this and other ongoing endeavors to develop fuel

¹Presented at Session I “Steps that could be taken by GNEP Partners in Support of a Global Nuclear Fuel Services” of the Second Ministerial-level Meeting of Global Nuclear Energy Partnership (GNEP), Vienna, Austria, September 16, 2007.

supply assurance activities in various ways as the partners intend to develop advanced nuclear fuel cycle technologies that are highly resistant to nuclear proliferation, including fast reactors and technologies for reprocessing spent fuels from both light water reactors and fast reactors.

In order to pursue the objectives effectively, it is important for GNEP partners to continuously exchange views among potential suppliers and users on the provision of reliable fuel supply services they would like to realize in the future, timely taking into account the progress in such R&D activities.

As this session is a kick-off forum to exchange such views among partners, I would like to present a few observations on the practicality of fuel leasing arrangements for preliminary deliberation of a fuel supply assurance mechanism in the context of GNEP.

As you know, the fuel leasing arrangement is not a new provision in nuclear business as many countries have enjoyed the services of the United States to take back spent fuel from research reactors which utilize highly enriched uranium fuels or the service of former Soviet Union to take back the spent fuel of nuclear power reactors the country exported.

Therefore it is rational to deliberate this type of fuel leasing arrangements in the first place, in which arrangement the user partners of GNEP are guaranteed a supply of uranium oxide fuel from the supplier partners of GNEP on the condition of sending back the spent fuel.

The benefit for the user partners of GNEP in this arrangement is that they can avoid the cost of a nuclear infrastructure including uranium enrichment, reprocessing and waste management.

The conditions that this arrangement can be realized are;

- 1) The willingness of some States among GNEP partners to accept the spent fuel generated in other States;
- 2) The competitiveness of nuclear power in user partners in comparison with other forms of electricity generation, taking into account the cost or tariff of the use of this arrangement which should be set based on polluter-pay-principle.
- 3) The assurance of the continuation of this arrangement for a lifetime of plants the leased fuel is to be loaded.

Obliviously the first condition is the most important and difficult one, as it is necessary for potential supplier States which will take back the spent fuel from users to obtain the public acceptance of the disposal of the radioactive waste generated in foreign countries on their soil, not to mention the relevant articles in the International Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Accordingly, it may be right to say that the establishment of this type of fuel leasing

arrangement would be limited to the case where countries are strongly interdependent politically, economically and socially, and those countries to be suppliers maintain a large scale nuclear energy program and those to be users will plan to maintain a small scale nuclear energy program.

The fuel leasing arrangement of the second type is the arrangement in which the supplier partners guarantee a supply of uranium-oxide fuel on the condition that the user partners not only send back spent fuel to the supplier but also receive from the supplier the return of high-level radioactive wastes resulted from their reprocessing. In this arrangement, the plutonium recovered in the reprocessing of spent fuel returned is to be used by the supplier partners.

The merit of this arrangement is to ease the aforementioned difficulty in establishing the fuel leasing arrangement of the first type on the side of potential supplier partners and the scheme is more consistent with the polluter-pay-principle.

As GNEP intend to pursue the development of advanced fuel cycle technologies, it is relevant to consider the impact of the availability of such advanced technologies upon the feasibility of the arrangement. It is easy to speculate that if the R&D open the possibility that the high-level radioactive wastes are virtually benign by the proper use of such advanced processing technologies, the difficulty of establishing this type of fuel leasing arrangement will be significantly relaxed. In such situation, it can be hoped that supplier partners will be able to receive larger number of spent fuel, and it will become less difficult for user partners to find the site for disposing the high-level wastes returned from the supplier partners.

So far, I have not mentioned the way to decide the level of the cost or tariff to use these arrangements. In principle, the tariff should be decided by market mechanism. However, a sound market can be realized only through the existence of rule of universal compliance. It is a future task of GNEP partners to pursue the agreement on the market rules on the transaction of nuclear fuel, taking into consideration the importance of both the promotion of the utilization of nuclear energy which we believe an essential element of global energy system for the sustainable development of global community and the pursuance of nuclear security and nonproliferation in the world.

Finally, I would like to add that it is important for GNEP partners to pay due attention to concerns of coastal countries about the safety and security of transportation of radioactive materials when implementing this kind of arrangement.

With that said, hopefully as a food for thought, I would like to invite both partners and observers to give their opinion on this topic of global assured nuclear fuel services.