Closing Remarks

Mr Jun Ho SHIN, President,
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Dear Participants,

The successful conclusion of the 22nd INPRO Dialogue Forum marks a significant achievement.
I extend my sincere appreciation to everyone involved.

Our world faces a complex array of challenges.
Hence, a multi-faceted approach to energy is imperative.

While the transition to renewable energies is pivotal, their intermittent nature raises concerns about potential large-scale power outages. Currently, renewable energy sources, excluding geothermal and hydroelectric power, necessitate energy storage due to their intermittent nature.

To attain net-zero emissions, it is crucial to prioritize not merely renewable energy, but also the proactive integration of nuclear power, hydrogen, and other carbon-free energy sources. Specifically, extending the lifespan of nuclear power plants and ensuring their uninterrupted operation are paramount.

The emergence of Small Modular Reactors (SMRs) offers safer and more adaptable solutions, catering to diverse needs such as electricity and heating.

Integrating SMRs into the power grid could significantly reduce the required capacity for energy storage, enhancing overall efficiency.

SMRs are thus expected to play a crucial role in establishing future carbon-free energy networks.

The exploration of various business opportunities across multiple sectors underscores the extensive potential of SMRs. Notably, this includes their innovative use as power sources within cutting-edge industries such as the space sector.

Dear Participants,

To ensure the successful deployment of SMRs with such potential, what future considerations will be necessary during the pre-paradigmatic period? Personally, it seems vital to proactively advance the construction of first-of-a-kind (FOAK) SMRs to position them as leading candidates for dominant designs.

To achieve dominance in design and secure a foothold for the smooth global dissemination of subsequent Nth-of-a-kind SMRs, several key steps must be coordinated and successfully completed, both within and external to the SMR sector. These steps include nurturing a skilled workforce and adapting to meet market-specific requirements.

Primarily, conducting a thorough status review is essential to ensure the successful development of each model.

In July 2023, the NEA SMR Dashboard provided authoritative assessments of the progress of SMRs globally. Beyond the technology readiness level, it considered six additional enabling conditions based on objective criteria: licensing, siting, financing, supply chain, engagement, and the commercial supply of qualified fuel.

From the perspective of institutional innovation, efforts should be directed towards establishing harmonized regulatory frameworks and fostering international standardization cooperation.

From the viewpoint of demand-pull, overcoming cost efficiency barriers is particularly critical, as demonstrated by the economic evaluations of NuScale's FOAK SMR project in November 2023.

Reportedly, construction costs have surged due to global supply chain disruptions and increases in raw material prices,
resulting in NuScale's SMR failing to secure demand due to inflated generation costs.

Strategic international collaboration is also essential for the sustainable deployment of SMRs in the future. Given the maturity of nuclear power generation in markets like North America and Europe, which already have established power infrastructures, these regions are expected to play a crucial role as launching pads for innovative products like SMRs.

Additionally, it appears necessary to explore the feasibility of replacing coal-fired power plants with SMRs, and to establish licensing systems and incentive policies for SMR deployment. On April 29th, G7 ministers for climate, energy, and the environment agreed to phase out coal-fired power by 2035 to cut greenhouse gas emissions. With the G20 likely to follow suit in moving away from coal, this shift will present new market opportunities for SMRs.

Dear participants,

We must unite and exert our utmost effort to overcome the challenges ahead. Your dedication to harnessing nuclear energy for peaceful and efficient purposes is important.

I believe the thought-provoking discussions and valuable insights shared during this Dialogue Forum will significantly contribute to shaping a sustainable future.

I hope this Dialogue Forum will be remembered as a milestone for fortifying the foundation and facilitating the successful development and sustainable deployment of SMRs in the times ahead.

I express my gratitude to the KONICOF team and the Secretaries of the IAEA for their efforts in making this meeting possible and ensuring its smooth operation.

Special thanks to our distinguished speakers and panelists for their inspiring contributions.

Lastly, my heartfelt thanks go to:
Ms. Carolynn Scherer, Section Head, IAEA;
Mr. Dohee Hahn, SMR Platform Coordinator, IAEA;
Mr. Sung Soo Kim, INPRO Senior Nuclear Expert, IAEA;
Mr. Jong Tae Seo, Main Chair; and,
Mr. Bum-jin Jung, President, Korea Nuclear Society.

I wish you all the best in your future endeavors.

Thank you, goodbye, and safe travels to all.