

Nuclear Power Plant Meets Future Energy Demands

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Indonesia as the country with the fourth largest population in the world is very crucial on maintaining the energy needs in the future. Data from the Ministry of Energy and Mineral shows Indonesia's oil reserves will run out within the next 12 years, coal reserves can last up to 22 years, and gas will run out in 36 years.

"The fact indicates the utilization of new and renewable energy never changed from what was done 10 years ago. The utilization of hydropower ranges from 10.10% of their resources, geothermal 4.8%, 3.3% biomass, while use of solar, wind, and the ocean is still very limited," said Head of the National Nuclear Energy Agency, Prof. Dr. Djarot S. Wisnubroto, at the Faculty of Engineering, Tuesday (16/2), in 70th commemoration of Higher Education of Engineering.

Djarot said it is difficult for Indonesia to achieve the target of 23 percent of new and renewable energy use in 2025 when only relying on renewable energy alone. Therefore, development of nuclear power plants is necessary in order to meet future energy needs.

"Regulation No. 79 in 2014 declared a target of 115 GWe by 2025, which means the need for construction of power plants an average of 6.2 GWe per year," said Djarot.

By seeing the ability of state company PLN and other private parties, Djarot expects a 26 percent of the need will be unmet in 2025. It is necessary to consider the construction of nuclear power plants that have the characteristics of large power 1,000-1,400 MW/unit.



Djarot said one of the main challenges of nuclear power programs in Indonesia is still the skepticism of some people on Indonesia's ability to manage the technology risk. However, with experience of over 40 years, Indonesia has capability to build nuclear power plants. In addition, it is also supported by a relatively adequate legislation, institutions, as well as adequate human resources.

"UGM has contributed outstanding scholars in the nuclear engineering since 35 years ago," he said.

According to Djarot, Indonesia is better prepared compared to Vietnam, the first country which will have a nuclear power plant in Southeast Asia. Nevertheless, the problem is related to uranium reserves in supporting the development of nuclear power plants. According to economic calculations, operation of nuclear power plants costs no more than 14 percent of the total financing of the operation of nuclear power plants. Accordingly, fluctuations in uranium prices will not affect the price of electricity.

"Uranium is unique, it can be viewed as not consumable fuel. This has caused the country that operates nuclear power plants, but does not produce uranium, remains in a unique position. They still have remaining uranium and plutonium new nuclear material," he explained.

Until now, Indonesia has the potential of uranium up to 70 thousand tons in a number of areas, such as in Bangka Belitung, West Kalimantan and West Sulawesi.

Djarot said the growing desire of many regions to develop Nuclear Power Plant became the capital of the central government to go nuclear. The poll results also show community support for nuclear programs therefore socialization for NPP needs to be done.

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