

RESOURCES OF THORIUM TOWARD ALTERNATIVES POWER PLANT IN INDONESIA: A CONCEPT OF IMPLEMENTATION

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Indonesia is in the verge of energy crisis. We need at least additional 35 GW(e) new power plant in order to sustain economic growth competitively. Many problems realizing this demand. Especially lack of infrastructure, building permits, and depletion of primary natural resources for energy etc. One of the option to look at is the use of nuclear power plant (NPP). However, NPP is still considered as the last option in the energy mix. Even that, the use of Uranium-based NPP such as Light Water Reactor (LWR) technology requires Uranium enrichment. Indonesia is not in the position of capable doing enrichment ourselves. Therefore, option of using LWR type of reactors is not a wise one. Different approach is sought using Thorium-based NPP. Whereas Thorium does not require enrichment. Thorium is also abundant in the country. This paper will discuss our approach and strategy to use Thorium as an alternative of NPP. The type of reactor being considered is Thorium Molten Salt Reactor (TMSR) type of technology. It looks that Thorium approach receives welcome and blessing from the Government and the people of Indonesia. The criteria being set for using Thorium based NPP are: cheap, clean, safe, and reliable. Cheap means cheaper than coal. Clean means no polluted emission being produced – green nuclear, safe means no accident could occur based on regular design basis accident (DBA) and beyond of LWR type technology, reliable means high capacity factor. Based upon these criteria would make national energy policy to become sustainable.

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