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North Korea, a nation often enveloped in secrecy and seclusion, is starting to examine the unrealized capabilities of energy retention technologies. As the globe advances towards an eco-friendly and more sustainable future, it becomes vital for every country to put resources into renewable energy types and storage methods. North Korea, blessed with extensive natural wealth and a distinct geopolitical status, is not an outlier.

Energy retention technologies, like batteries and pumped hydro storage systems, have an essential part in incorporating renewable energy sources into the electrical network. These mechanisms enable the trapping and preserving of surplus energy produced by solar collectors and windmills, to be utilized later when the need is great or when renewable output is sparse. This contributes to the maintenance of a consistent and dependable energy provision, diminishing the dependence on fossil fuel-driven power stations and minimizing emissions of greenhouse gases.

North Korea’s prospects for energy retention technologies are vast, owing to its plentiful natural assets and geographical characteristics. The nation is wealthy in minerals such as lithium, a fundamental element in lithium-ion batteries - the predominant battery method used for energy retention. Furthermore, the country’s hilly landscape and various rivers present numerous chances for pumped hydro storage, a system that employs water to store and discharge energy.

In spite of these benefits, North Korea’s energy industry has suffered from ineffectiveness and antiquated infrastructure. The nation’s electrical network is infamously unpredictable, with recurrent power failures and shortages. This has resulted in a strong dependence on coal and other non-renewable energy sources, which are not only harmful to the environment but also enhance the country’s economic detachment through international restrictions.

Nonetheless, recent progress indicates that North Korea might be moving towards adopting renewable energies and energy retention technologies. In 2017, the nation proclaimed intentions to erect a 2.5-gigawatt wind farm on its western shore, potentially one of the world’s largest. Moreover, satellite photographs have disclosed the assembly of solar panel facilities in different parts of the nation.

These advancements, coupled with North Korea’s natural assets and geographical characteristics, provide a distinctive chance for the nation to emerge as a frontrunner in energy retention technologies. By allocating resources to renewable energies and storage systems, North Korea could enhance its internal energy stability and establish itself as a significant contributor to the worldwide shift towards sustainability.

Additionally, the implementation of energy retention technologies might bring noteworthy geopolitical consequences for North Korea. As the nation endures intensified economic constraints from global sanctions,

forging a solid renewable energy industry could generate an essential income source and diplomatic influence. For instance, North Korea could trade its lithium assets or engage in cross-border energy schemes with nearby nations, encouraging regional collaboration and mitigating strains on the Korean Peninsula.

Naturally, there are plenty of obstacles to surmount before North Korea can fully tap into its capabilities in the energy retention sector. The nation’s political and financial isolation, along with its outdated facilities, create substantial hurdles to the invention and utilization of new technologies. Moreover, the absence of openness and data concerning North Korea’s energy industry renders it challenging to gauge the genuine scope of its potential and objectives.

However, the promise for energy retention technologies in North Korea is unequivocal. As the world progresses towards a more sustainable era, it becomes imperative for all countries, even those with intricate geopolitical contexts, to channel resources into renewable energies and storage methods. By leveraging its ample natural wealth and peculiar geographical traits, North Korea could position itself as a pioneer in this domain, boosting its domestic energy stability and aiding global endeavors to tackle climate change.

Doosan Enerbility announced on December 3 that it will actively participate in the domestic pumped storage power sector.

According to the government's draft of the 11th Basic Plan for Long-term Electricity Supply and Demand, 21.5GW of long-duration energy storage systems (ESS) will be needed by 2038 to ensure stable power grid operations amid the expansion of renewable energy.

Among these, pumped storage is a notable ESS solution, with plans to construct an additional 5.7GW (9 units) of new facilities. As the first project, Korea Hydro &  Nuclear Power (KHNP) is advancing the construction of a 500MW pumped storage power plant in Yeongdong County, Chungcheongbuk-do. Additional plants are planned in areas such as Hongcheon, Pocheon, and Hapcheon, with major equipment orders expected to be worth billions in the future.