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Nuclear Power in Japan's New Goals to Combat Climate Change

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Suga Yoshihide, the new Prime Minister of Japan took office in September 2020. Soon after, he introduced a new plan for tackling the problem of climate change in the country and has promised to bring down net emissions of greenhouse gases (GHG) to zero by the end of 2050.[1] This goal is in line with similar pledges made recently by China and the European Union.[2] Being the fifth-largest emitter of GHG in the world, Japan's pledge to achieve carbon neutrality was applauded by many. However, it also raises several questions regarding the feasibility of this plan, including if Japan's new climate goal would mean a resuscitation of nuclear energy in the country?

Having once been the third largest user of nuclear power in the world, the Fukushima accident in 2011 saw a major decline in Japan's civil nuclear programme. The accident resulted in the country shutting down all its nuclear reactors until more stringent safety clearances were authorised. The consequent dependency on fossil fuels to meet the immediate energy requirements brought the problem of rising carbon emissions as the use of coal and natural gas increased, making up for 74% of Japan's energy supply.[3] Recognising the importance of low-carbon energy sources to curb the problem of global warming and meeting the new climate goals, the Prime Minister has specifically identified the role of renewable and nuclear energy. According to the current plan, the targets for the energy mix are set at 30% from coal-fired power, 20-22% from nuclear power and 22-24% from other sources of renewable energy by the year 2030.[4] As of 2017, nuclear power contributed to just 3% of total electricity generation.[5] Realising the new plan will mean a major boost to the nuclear energy sector. Chief Cabinet Secretary Katsunobu Kato has, however, stated that Japan will be focusing on making the existing reactors safer and isn't currently considering constructing new nuclear power plants.[6] There is however no clarity as of now if this position will change in the near future.

Importance of Nuclear Power to Combat Climate Change

Nuclear energy has been considered as an important tool to tackle the problem of climate change for several reasons. First, it has a low carbon footprint. In fact, the only time GHG emissions are released in the nuclear fuel cycle is from the ancillary use of fossil fuels during the construction of nuclear power plants, transportation of materials, decommissioning of plants, etc. Due to this, nuclear energy can significantly contribute to curbing the problem of air pollution. It is estimated that the amount of Co2 emissions that are reduced because of the use of nuclear energy for electricity is equivalent to removing more than 400 million cars from the road each year.[7] Consequently, it also helps in preventing deaths caused by air pollution. For example, a study conducted by the *Goddard Institute for Space Studies* and *Columbia University* revealed that about 1.8 million deaths which would have been caused due to air pollution since 2009 were avoided by the replacement of coal plants by nuclear power plants.[8] In addition, among all low carbon sources of energy, nuclear power has the least amount of negative environmental impact.[9] Considering these factors, nuclear power could indeed play a significant role in meeting Japan's climate change commitments.

Challenges

Increasing the role of nuclear power in the country, however, is likely to be mired in several complex challenges. First, despite the efforts taken by the government to restart the nuclear reactors, progress on this regard has been exceedingly slow. The delays are caused either because of the strict safety regulation clearances or because of the several lawsuits being filed against nuclear power plants. At the same time, old reactors are also being decommissioned, which will reduce nuclear output. In addition, garnering public support will also be a challenging task, considering that Japanese citizens have become wary of nuclear power since the Fukushima accident. A survey conducted by the Japanese newspaper *Asahi Shimbun* in 2016, reveals that 57% of the respondents were against the restarting of nuclear power plants even if they fulfilled all the safety requirements. 73% of the respondents supported the phasing out of nuclear power altogether while another 14% backed the immediate shutdown of the nuclear power plants.10 Gaining public trust in the nuclear industry thus would be a challenging task.

Conclusion

While there is lack of clarity on the details of the new plan, it does however appear to be clear that there is larger support for nuclear power by the current leadership. This support is

favourable not only to combat climate change but also to acquire energy security and boost economic development. One of the major reasons that Japan developed its civil nuclear programme was because of the paucity of its indigenous energy resources. Thus, when it suspended the operations of all its reactors after the 3/11 accident, it was once again exposed to the same energy vulnerabilities. The loss of its nuclear capacity led Japan to modify its energy mix which placed oil and natural gas on the forefront. This further led to import dependency which resulted in Japan becoming the world's largest importer of LNG and second-largest importer of fossil fuels. [11] This has not only created import dependency but is also proving to be uneconomical. The sharp increase in energy imports led to Japan facing the worst trade deficit in its history.[12] In this regard, the new plan that calls for a balanced energy basket, with nuclear energy playing a significant role appears to be an astute one.

However, the lack of details on the new plan has resulted in reservations among energy experts who have raised questions about the feasibility of the plan. Questions have also been raised if the announcement made by the Prime Minister is just a rhetoric or if actions will be taken. This distrust comes from the government's promise in July, when it announced the deactivation of over 100 domestic coal-fired power plants by 2030. However, plans to build 22 new coal-fired plants are still underway. How the new Prime Minister follows up on this new goal will go a long way in consolidating his leadership in the country and in getting Japan to be at the forefront of meeting its climate change commitments.

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

Notes

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