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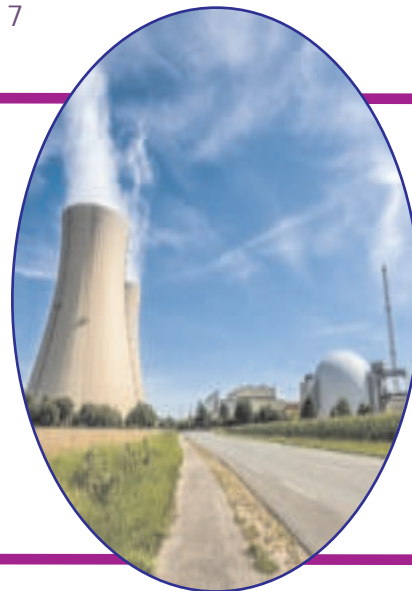
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CONTESTING NUCLEAR ENERGY AS CLEAN ENERGY

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ABSTRACT:

The Climate Change commitments and debates have given rise to a new set of claims which classifies nuclear energy as a clean energy. Though there is a scientific lobby in the west that promotes and encourages the use of nuclear energy as a safe option. The important issue that needs to be addressed here is whether the nuclear energy debate loses its case amongst the general public simply because of its obscure nature and the incapability of the common people to participate in the debate.

KEYWORDS: *Contesting Nuclear Energy, Climate Change commitments, clean energy.*

INTRODUCTION:

Nuclear power reactors have remained a site of protests and anti government feelings since a long time. The beginning of anti nuclear protests, in the USA and Europe actually took the form of anti government protests in the later stages. The state apparatus being an important tool for the promotion and the establishment of the nuclear power plant makes it capital intensive and a part of the infrastructural development plan that can even go against the people's interests.

Nuclear power plant sites have continued to fuel apprehensions and uneasiness amongst the people who reside near the power plant. The state having failed repeatedly to allay the fears of the common people merely become a propagandist tool, promoting nuclear energy through different methods, which appears assuring while the actual safety of the nuclear power plants still remaining a matter of serious concern.

Let us for a short time understand why and how nuclear energy is being considered as a clean energy. The quest for a clean and green energy for humanity has been an age old one. Especially since the climate change commitments and debates have been trying to fix the state's responsibility towards a measurable and result oriented solutions.

Nuclear energy option became a result oriented solution simply because it is not a carbonized fuel. Thus its burning will not produce any greenhouse gases. According to a paper published by Nuclear Energy Agency, an organization based in Paris, concerning the policy matters of the OECD Countries highlighted the importance of nuclear energy as an important source of energy by classifying it along with the hydro and the renewable and in contrast to coal, oil and gas that emit Carbon dioxide, methane and nitrous oxides, thus harming the environment.

Most OECD countries, claimed the paper, would be taking initiatives for decarbonising the electricity generation plans for which nuclear energy forms an important source. Hence the expansion of the nuclear energy is inevitable. The limit to use hydro power also works to the advantage of the nuclear energy. The

electricity generation thus starts showing too much dependency on the nuclear option. Apart from that, the possibility to use carbon capture and storage as a mechanism to dispose off the greenhouse gases produced by burning the fossil fuels into the geological formations is still struggling to gain social acceptability and the right mode of application.

The safe option of using nuclear power plants in electricity generation therefore only faces the challenge of the indirect emissions that can be produced due to uranium mining, which again is silenced on the basis of new mining techniques being developed that will not be energy intensive at all.

Though these claims need to be thoroughly examined but the optimism with which the portrayal of the nuclear energy as an important option left for tackling greenhouse gas emissions, after having weighed the other options exhaustively, portrays the image of, nuclear energy as an authentic choice. Though people need to be aware of the other facets of the nuclear technology as well.

Nuclear Energy- The International Perspective

Nuclear Energy coming from the nuclear technology requires investment in nuclear installations as well as regular research oriented activities to keep the loopholes plugged arising out of the risks associated with the nuclear technology. The nuclear energy promotion lobby has tried to bat for its case, not because of its own facts and benefits but more on the basis of the dismissal of the apprehensions of the people and by not addressing the risks associated with the nuclear technology satisfactorily. The case for nuclear energy as a viable option can be analysed in the comparative terms, that means when nuclear energy is compared with other forms of energy generation ways, eg. Use of coal, gas, and the other renewable forms of energy.

This implies that the nuclear energy option requires a well thought out plan and procedure, investments and implementation mechanism to make it run successfully or to extract its potential in the best way as it is being thought of. The nuclear energy production requires a skilled workforce, so that its utility and its unwanted aspects can be taken care off. It is this specialization which the nuclear energy warrants, thereby makes it an interest laden option rather than requirement based option.

In a document released by the IAEA (International Atomic Energy Agency) , titled “ Managing environmental impact assessment for construction and operation in new nuclear power programmes” in the year 2014, focusing on the planned approach to start a new nuclear energy program includes the crucial three reports that is required, before any new nuclear power program can start. They are initial environment information analysis, ESR (Environmental Scoping Report) and the EIA(Environmental Impact Assessment). ESR precedes EIA , and is basically a plan to carry out EIA. ESR identifies issues and stakeholders that needs to be identified for a better EIA.

The EIA does a comprehensive study of the environment and the people, and suggests ways to minimise the adversarial effect on the environment and the population. This environmental Impact assessment (EIA) needs to take into account the fallout of the effect due to the radiations and the effect on the any nearby water bodies located near the power plant site. Further, the involvement of the statutory and the non statutory stakeholders of the power plant are attached special importance, since their opinion can direct the ways in which the nuclear power plant can be implemented. These steps form the initial stage of the planning and implementation of the nuclear power plant and therefore the thrust is on the initial dissemination of information to the public, so that their concerns about their neighborhood can be taken into account when any final decision will be made.

The first stage of environment assessment includes the direct and the indirect affect on the people, as well as other stakeholders linked to the other aspects like “mining, enrichment, fuel fabrication, reprocessing and disposal” issues associated with the power plant in their day to day life. (IAEA 2014).

The initial planning of the nuclear power plant thus is not very different from any other big infrastructural projects, that the government undertakes starting with the environment assessment programs, though in the case of nuclear power plant a set of standard international guidelines can be set and standard procedures can be followed, depending on the willingness of the government. Though despite all international procedures and guidelines, as laid down by few international organizations, the implementation of the nuclear

power plant depends on how the government handles the challenges of the area where the power plant is to be established.

In this context, the Asian countries have emerged as the new markets for the nuclear power industry. According to the statistics available from the Nuclear Technology Review 2016 released by IAEA (International Atomic Energy Agency), 68 reactors were under construction in the world, as on 31 December, 2015 of which 45 were in Asia and particularly in China. The report stresses on the importance of the “comprehensive legal and regulatory” mechanisms to be placed in the country along with the required human resource before the nuclear power program is ready for the final rollout.

In the very same report, the nuclear power is considered an important source of energy which meets the climate change mitigation demands as it is capable of controlling the release of about 2 billion tonnes of carbon-dioxide per year. The expansion of nuclear power is advocated strongly since the coming of the Paris agreement in the 21 Conference of Parties (COP21) does not ‘include or exclude any form of energy but allows countries to identify low carbon energy options’ (Nuclear Technology Review 2016).

Nuclear energy being a non carbonized fuel wins the argument for being a safe energy source as it will not release any pollutants during the energy production. The nuclear energy option appears safe in that context but at the same time, various other processes through which establishment of the nuclear infrastructure can harm the environment is not taken into account.

Nuclear energy stands its case only on the basis of it being a non pollutant energy source once the power plant becomes operational. Thus the infrastructural demands as well as the demands specific to the nuclear industry like mining, fuel fabrication or waste disposal is treated as the issues that would arise in the development of any other power source, be it coal, oil, or gas. The other demands are dismissed or the focus diverts to expanding capabilities to tackle problems arising out of them as it appeared in the EIA (Environment Impact assessment) assessment goals from the report of the IAEA. The EIA procedures thus becomes a planning for the implementation of the nuclear power plant, where mitigation strategies are more focused upon.

Further, the report categorises nuclear power fulfilling the goals of the United Nations Sustainable Development Goals 7 which states that “Ensure access to affordable, reliable, and modern energy for all” as well as goal 13 “take urgent action to combat climate change”. This demonstrates the urgency to promote nuclear energy as a suitable energy of the present times.

The same report, on the issue of nuclear safety post Fukushima Daiichi accident in Japan talks about the urgency of disseminating information pertaining to the technical aspects of the nuclear power plant based on the analysis of the failure witnessed in such cases and encourage further research and development to reduce the possibility of such accidents. (Nuclear Technology Review 2016). The Technology Roadmap for Nuclear Energy 2015 published by International Energy Agency highlights the differential challenges that nuclear energy industry is facing in different parts of the world. Countries with already existing nuclear power utilities are more concerned about the research and development in the nuclear industry that can enhance the safety features of the nuclear plant, while on the other hand few countries especially in Asia are struggling with the enabling factors that can further their quest for developing nuclear power. Public acceptance is the major challenge according to the report and along with that the skilled workforce to work in the nuclear installations also requires effort and investment.

According to the Technology Roadmap Nuclear Energy 2015, OECD (Organisation for Economic Cooperation and Development) countries account for the largest reliance on nuclear technology for energy production, France being the country that has around 74 percent of its energy needs met by the nuclear technology, though the latest French government initiative is towards reducing the share to 50 percent by 2025. The OECD countries are also moving towards replacing its ‘aging fleet’ of nuclear installations and thus nuclear installations in Europe will witness a “generational decline”, that will lead to coal and gas meeting the need of energy requirements of few European countries in the coming times.

While in the case of United States, US with its shale gas revolution as well as natural gas combined cycle plants has given tough competition to the expansion of the nuclear industry. Despite that fact, US government policy remains favorable towards the nuclear energy. (Technology Roadmap Nuclear energy 2015).

The problem areas with nuclear energy in Europe and America in 1960, 70s and 80s. Keeping in mind the above aspect, the journey into the history 30 - 40 years down the line will tell us how nuclear energy and the nuclear power plants have given rise to the strongest and most powerful social movements in Europe and America. One of the famous movements was in South Western Germany in a place called Wyl in 1975-76, where the nuclear reactor construction site itself became the site of the protests. The people expressed solidarity from across Europe and the major concerns of the protesting people was their spirit to protect their environment and ecology. The participation by women in large numbers demonstrated the discomfort with the nuclear energy, in the spirit of eco-feminism.

In an interesting case in Germany, in the year 1983, the German government took the case of uranium mining in Australia as a serious cause of concern for the ecology and hampering of interests of the indigenous population living in the areas where uranium mining was practised. The German government declared the nuclear energy unsafe and stopped the sourcing of uranium from Australia as their new policy.

During the same time approximately in a place called Maleville in Southern France in the year 1977, the people protested against the nuclear plant site in large number, though it was controlled by the French authorities. Similarly, anti nuclear protests were marked by solidarity of large number by people from different places across Europe and America but ended with police action and criminal charges slapped against the participants of the movement who were protesting for their own genuine cause and who found nuclear energy threatening to themselves in one form or the other.

The police high-handedness in all the cases of anti-nuclear movements, the famous one being Brokdorf in Germany in 1981 and Seabrook in United Kingdom in 1978 demonstrates the audacity of the people in opposing nuclear plant sites and the degree of suppression proves that the government had no better way to handle the dissatisfaction expressed by the people against coming up of the nuclear power plant.

CONCLUSION

The anti nuclear movements in Europe and America give glimpses into the turmoil ridden history that forms an unforgettable part of the now established nuclear industry of both the continents. In this context the revisiting of nuclear energy as a form of clean and green energy needs serious consideration. Especially in the context of the Asian countries with special reference to India and China, who are battling the case of their development along with sharing the responsibilities to meet the climate change commitments, the nuclear energy option appears lucrative for their case.

Along with these, the international organizations with the good and bad experiences of the western countries in their kitty are ready to be the guiding light for other countries with little or no experience in nuclear power, so that the expansion of nuclear energy in these countries remain less tumultuous. Despite that in the case of India the option of using nuclear energy will remain undemocratic and mired in controversy and corruption, lack of transparency and where public participation is deliberately allowed to take a back seat by the state authorities.

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