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Wind, Sun, Atom

India's climate plan looks doable. But it involves major challenges like reforming discoms

TOI Editorials

Prime Minister Narendra Modi's climate combat plan seems realistic, given India's imperatives, but needs plenty of government and political effort. The final goal of net zero by 2070, a phase when emissions of greenhouse gases by human activity are offset by steps to neutralise it, seems a doable deadline, but one which will be revised as science advances. Of immediate relevance however are targets set for 2030.

The energy sector will do the heavy lifting over the next decade, with a changing energy mix expected to cut both projected emissions and carbon intensity of growth. The key 2030 targets are a non-fossil energy capacity of 500 GW and half the energy to be sourced from renewables. Where do we stand today? India's installed capacity at the end of September was 388.84 GW, of which around 40%, or 155.5 GW, was from non-fossil fuel sources. Renewables right now mean solar and wind capacity additions.

Excluding hydro projects, India's installed renewable capacity is about 100 GW. The private sector today owns about 48% of the capacity. For India to meet its 2030 targets, private investors need an incentive to keep at it. That's where the political economy challenge lies. India's power distribution system is broken and repeated attempts over 20 years to fix it have failed. The core issue is that state governments run a complex cross-subsidy regime in the backdrop of fiscal constraints that results in perennial overdues. Discoms today have overdues of about Rs 66,000 crore.

Electoral politics, like Punjab government's recent decision to slash tariffs to unviable levels, have made reform hard. If India's to meet its 2030 target, power distribution reforms need an all-party consensus on backing away from a competitive race to the bottom. India's political class needs to find common ground. Also, a five-fold addition in renewable capacity needs to be accompanied by greater R&D investments by all stakeholders. IP needs to be held by Indian entities and we can't rely largely on China, a dominant player here.

Two other points. India should not depend on the West for clean tech. It needs to set up a fund for incubating ideas in this field. Vaccine inequity has shown global help is uncertain at best. Second, we must not ignore nuclear energy, where India has done much work. As one of our columnists argues today, just focusing on renewables may push up costs of electricity. Nuclear energy deserves as much of a push as wind and solar.

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Go Green, Go Nuclear

DAE and private industry can together produce enough nuclear reactors for India's clean energy

Anil Kakodkar, [The writer is Chancellor, Homi Bhabha National Institute, AICTE Distinguished Chair Professor and former Chairman, Atomic Energy Commission]



COP26, now on at Glasgow, is seeing an intense debate thanks to seriously conflicting stakeholder interests. Only around 20% of the world population today has reached a respectable human development index (HDI) of around 0.9. India's is still at around 0.645. Our energy consumption would need to increase by around five times to realise a quality of life comparable to the best in the world.

Achieving this along with elimination of carbon emission, given that around 96% of primary energy we consume comes from fossil fuels, will mean clean energy supply will have to go up by a factor of around 125.

Our significant clean energy sources are renewable energy (solar, wind and biomass), hydro and nuclear. While hydro has limited growth potential, the other two are large enough to fully meet our future needs.

Renewable energy deployment is progressing quite well. Growth of nuclear power however seems to be very slow in spite of it being the only large on-demand dispatchable source of clean energy. Many believe that we can meet all our requirements using renewable energy alone.

While this is true, studies done abroad (there are no such studies available in the country as yet), particularly the one done at MIT and reflected in the OECD report, suggest that under near-zero emission conditions, without nuclear, the minimum average cost to consumers could be two to four times higher depending on the electricity region one is talking about. While the numbers for India could be different and need to be worked out, we can ill afford costlier electricity supply in India – simply because we ignored nuclear energy.

Except biomass, all other clean energy sources in India are essentially meant for producing electricity. Clean energy transition therefore would lead to a much larger share of energy delivered to consumers as electricity compared to current 20%. This share could rise up to 80% with adoption of e-vehicles and the use of green hydrogen, for cross-country transportation as well as for industrial production.

Another point we must recognise is the inevitability of coal for quite some time. Coal would remain on the scene till alternatives have become large enough. Moreover, certain processes may continue to need coal. Rapid deployment of technologies for carbon capture and use and even sequestration will be essential.

The good news here is that the inevitable thrust on green hydrogen and consequent sharp increase in share of electricity could be leveraged to accommodate load variability in the grid operation of nuclear power plants, with reactors operating in near steady state, thereby making grid operations more robust.

Let me explain this. Since power demand is variable, power-generating units have to be able to adjust to varying demand levels. Nuclear power plants (NPPs) are the most complex generating units and high load variability in the power system imposes difficult operating conditions on them.

With consistently steady demand for electricity to be supplied by these reactors, this problem will be minimal and NPPs will be able to function much better.

Since it is becoming increasingly clear that nuclear energy will be inevitable for an affordable clean-energy transition, there are some key steps GoI has to take.

The current approach is of building pressurised heavy water reactors (PHWRs, designed by NPCIL) that can produce 700 megawatt of electricity in fleet mode (simultaneous planning and procurement for multiple units). This should be augmented by taking up at least three additional fleets of ten reactors, each, preceded by attendant reforms in policies, implementation structure and financing.

Allowing the private sector in nuclear utility business is often mentioned as a solution. But note that in India, the Department of Atomic Energy (DAE) is the only technology holder in nuclear energy. We have full technological and near 100% value addition capability within the country and our reactors have consistently demonstrated globally competitive performance at less than half the capital cost in the global market.

Accessing nuclear technology from abroad is thus not a viable solution. This has also been borne out in our attempts to set up plants under international cooperation. A better way could be to create a consortium of industries and DAE entities to develop a nuclear power plant product.

The consortium can then participate in open competitive bidding for both domestic as well as foreign markets. This can be done within the framework of the existing Atomic Energy Act. Private sector participation in utility business could then be the next step. By which time there would be reasonable nuclear experience in the private sector.

India-made small modular reactors (SMRs) are a viable product. SMRs are nuclear fission reactors that are a fraction of the size of conventional reactors, reduce any chance of adverse impacts and can be transported to plant sites. Building these reactors can leverage our existing experience in building small pressurised water reactors (PWR) and safe advanced heavy water reactors (AHWR). SMRs can also overcome location constraints faced by nuclear power plants – sites vacated by retiring coal plants can be conveniently used.

India has an advantage in nuclear power production. And there's the decarbonisation imperative. What we need is a mission mode approach.

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Quota without data

States should base reservation policies on data, not political expediency

Editorial

An exclusive internal quota for a single caste group was always fraught with the danger of judicial invalidation. It is no surprise, therefore, that the Madras High Court has struck down the Tamil Nadu law that earmarked 10.5% of seats in educational institutions and jobs for the Vanniyakula Kshatriya community and its sub-castes. The court's foremost reason is that the State Assembly lacked the legislative competence to enact the law in February 2021, at a time when the Constitution 102nd Amendment, conferring exclusive power to identify backward classes on the President, was in force. That the Constitution 105th Amendment subsequently restored the States' powers to identify backward classes was not deemed relevant as, on the date of the enactment, the Assembly had been denuded of such power. The Bench of Justices M. Duraiswamy and K. Murali Shankar, also ruled that identifying one caste as a separate group for creating an exclusive quota, without any quantifiable data on its backwardness relative to others, amounted to giving reservation solely on the basis of caste and, therefore, impermissible under the Constitution. Further, it noted that the remaining 115 castes under the 'MBC and Denotified Communities' category were forced to share the remaining 9.5% (in two groups with 2.5% and 7%, respectively) of what used to be a 20% MBC/DNC quota. This amounted to discrimination.

The court also rejected the comparison with the sub-quotas enjoyed without hindrance by Backward Class Muslims and Arundhatiyars, a Scheduled Caste, noting that these two measures were backed by Census data and valid recommendations. What may cause some concern is that the court has said changes in the existing 69% quota classification cannot be made without amending the State's 1994 reservation protection law, which received the President's assent and was also included in the Ninth Schedule to put it beyond judicial review. This legal position may pose problems for the BC (Muslim) and SC (Arundhatiyar) quota too, as these were introduced through stand-alone laws that received only the Governor's assent without any amendment to the 1994 Act. That an impending agitation by the PMK, a restive ally of the then ruling AIADMK, was behind the Vanniyar quota law is known. The government did not wait for the report of a commission it had appointed earlier to gather quantifiable data to justify the State's 69% total reservation. The present DMK regime also backed the exclusive Vanniyar quota in court, and is likely to go on appeal. The Supreme Court has been asking governments to justify their reservation levels through quantifiable data. Instead of looking for shortcuts to popularity, regimes in all States should focus on compiling credible data both on the backwardness of sections of society and their level of representation in public services and educational opportunities.



दैनिक भास्कर

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अनौपचारिक क्षेत्र का यह संकट सरकारी मदद से ही दूर होगा

संपादकीय

भारतीय स्टेट बैंक की ताजा रिपोर्ट के अनुसार पिछले तीन वर्षों में अनौपचारिक (इनफॉर्मल) सेक्टर में 20 प्रतिशत का संकुचन आया है। गौरतलब है कि इस क्षेत्र से देश के 93 फीसदी कामगार जुड़े हुए हैं, जाहिर है इस संकुचन का असर प्रवासी मजदूरों, निर्माण-श्रमिक और कृषि-मजदूर जैसे गरीब तबके पर पड़ा है। रिपोर्ट ने इस संकुचन का मूल कारण कोरोना के अलावा नोटबंदी और जीएसटी को बताया है। इस रिपोर्ट के मद्देनजर सरकार को मनरेगा में बजट बढ़ाना होगा, क्योंकि फिलहाल वही इस संकट से करोड़ों लोगों को निकाल सकता है। यह सच है कि इस मद में सरकार ने कोरोना काल में 1.11 लाख करोड़ रुपए व्यय किए, लेकिन चालू वित्त-वर्ष में इसे 73 हजार करोड़ ही रखा गया है। 21 राज्य ऐसे हैं जिन्होंने इस मद में अपना कोटा अक्टूबर अंत तक खर्च कर दिया है और केंद्र पर दबाव है कि वह पैसा जारी करे। अनौपचारिक क्षेत्र में संकुचन यानी करोड़ों लोगों के लिए मनरेगा ही एक मात्र आय का साधन है। आर्थिक रूप से भी देखें तो जब इनके हाथ में पैसे आएं तो वे खर्च करेंगे, जिससे एमएसएमई सेक्टर भी रफ्तार पकड़ेगा और आर्थिक पहिया चलेगा। हाल ही में आरोप लगा कि केंद्र के आदेश पर इस योजना में काम करने वालों की जातिगत सूची बनाई गई। कई श्रमिक संगठनों ने बताया कि एससी/एसटी वर्ग के मजदूरों को पेमेंट एक सप्ताह के भीतर दिया जा रहा है लेकिन बाकी का देर से भुगतान हो रहा है। वित्त-सचिव से बैठक में भी इन संगठनों ने आगाह किया कि पेमेंट में इस तरह का भेदभाव सामाजिक आक्रोश को जन्म दे रहा है। मनरेगा कानून में भुगतान को लेकर ऐसे किसी भी भेद-भाव का जिक्र नहीं है। फिर भी सरकार को यह प्रयास जारी रखना चाहिए कि किसी भी जाति वर्ग के श्रमिकों के भुगतान में विलंब न हो।

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ग्लासगो में मोदी

संपादकीय



अंतरराष्ट्रीय जलवायु शिखर सम्मलेन (कॉप 26) में प्रधानमंत्री नरेन्द्र मोदी के सुझाव से निःसंदेह जलवायु परिवर्तन के खतरे को कम करने में मदद मिलेगी। बिना लाग-लपेट के मोदी ने जिस तरह से विकसित देशों को पिछड़े देशों की मदद करने की बात कही, वह वाकई प्रशंसनीय है। भारत और विकासशील देशों में खेती पर मंडराते खतरे को लेकर भी मोदी ने अपना रुख साफ किया। यह इसलिए भी चिंता की बात है क्योंकि कृषि क्षेत्र में वर्तमान हालात को अगर समय रहते नहीं संभाला गया तो दुनियाभर में भुखमरी के हालात पैदा हो जाएंगे। न केवल खेती बल्कि सामाजिक वैमनस्यता बढ़ने का भी अंदेशा जताया जा रहा है। लोगों में आपसी टकराव से समाज का ताना-बाना भी बिगड़ेगा। कॉप 26 में क्या कुछ हासिल हो पाया या यह कितना सफल रहा, इस पर तो आगे भी चर्चा

होगी मगर भारत ने जिस तरह से वैश्विक तौर पर अपनी भूमिका को लेकर परिपक्वता दिखाई है, उसे नजरअंदाज नहीं किया जा सकता है। पृथ्वी का पारा बढ़ने को लेकर ब्रिटिश प्रधानमंत्री बोरिस जॉनसन का प्रलय की आशंका जताना निश्चित तौर सतर्क हो जाने का संकेत ही माना जाएगा। क्योंकि वैश्विक तापमान 1.1 डिग्री सेल्सियस बढ़ चुका है और इसके 2.7 डिग्री सेल्सियस तक पहुंचने का अंदेशा है। यानी अगर हम सब नहीं चेते तो दुनिया को तबाही से कोई भी नहीं रोक सकता है। यह बात ध्यान रखनी चाहिए कि प्रकृति का अगर सम्मान नहीं किया गया तो वह अपने रौद्र रूप से संतुलन कायम करती है। अतीत में हमने केदारनाथ त्रासदी और केरल में भारी बारिश और बाढ़ की विभीषिका देखी है। मोदी ने जलवायु परिवर्तन से निपटने का जो पंचामृत पेश किया है, उसको गंभीरता से समझने की दरकार है। चूंकि पर्यावरण और पारिस्थितिकी को और ज्यादा खराब होने से बचाने के वास्ते भारी-भरकम धनराशि की जरूरत है, इसलिए विकसित देशों की जिम्मेदारी ज्यादा है। हालांकि भारत ने जलवायु परिवर्तन के खतरे को कम करने की दिशा में बेहतर प्रदर्शन किया है मगर पूंजी जुटाने के मसले पर उसकी भूमिका काफी सीमित हो जाती है। इसीलिए मोदी ने धनी देशों पर दबाव डालते हुए कहा कि विकासशील देशों के जलवायु परिवर्तन लायों को हासिल करने के लिए वादे के अनुरूप जलवायु वित्त पोषण की 100 अरब डॉलर की राशि विकासशील देशों को जल्द मुहैया कराएं।