

Biofuels: an opportunity for India

India is often berated for being late in planning and solving our social, economic and infrastructure issues. This results in the country moving from one crisis to another—we start the summer with water shortage issues, during the monsoon we cannot handle the rains, change in seasons cause a health crisis with a spike in the incidence of viral diseases and during the winter we are plagued with high levels of pollution. The general tendency is to look for a solution in long-term planning and investment rather than short-term stop-gap arrangements, even when technologically sustainable and efficient policy alternatives exist.

A glaring and current problem is the pollution plaguing the entire north Indian plains. The short-term solution for this issue exists in the quick and scaled-out expansion of biofuel-powered public transport across the country. Imagine bringing down pollution levels by up to 90% in carbon emissions by public transport vehicles, eliminating stubble burning by farmers, instead increasing their incomes, reducing our foreign trade deficit and adding nearly a million jobs (during a period when no jobs especially blue-collar one's are being added) by the Central and state government's deciding on one major policy initiative—reduce taxes on biofuel-driven buses and trucks—available today.

The government appears to have put all its eggs in only one basket by making a major announcement to incentivize and go all-electric by 2030. First, this is a very aggressive goal for a middle-income country like India and second, even assuming that this were to happen, do we all need to suffer the ill-effects of pollution for another 12 years?

India's transport policy needs to prioritize renewable vehicular fuels for large transport; e-mobility alone will not achieve the ambition of creating a sustainable transport sector.

A ready solution is available in the form of biofuel-driven buses, which can be easily deployed at a short notice for all public transport purposes within cities and even for inter-city travel. Imagine being able to use 170 million tonnes of agricultural waste out of the 800 million tonnes generated to be used for ethanol production in the current situation. This could easily be ramped up to 250 million tonnes per year, to produce between 31-47 billion litres of ethanol by 2020, a radical increase from the current production of 2 billion litres. This will lead to a huge reduction in stubble burning because of an economic incentive available to remove and give the crop waste to biofuel plants.

Further, sewage treatment plants (STPs) hold a lot of promise. India generates around 70 billion litres of waste water every day, which is expected to double in the next 15 years according to the McKinsey Global Institute. By building biogas generation and upgrading facilities at the STP sites, the output can potentially substitute 350 million litres of diesel, 2.3 gigawatt hours of natural gas fired power and over 8 million LPG cylinders of 14.2kg each.

If all efforts are made to substitute diesel fuel, India could replace over 40% of the projected demand for diesel in 2020. Another way to look at this is that the energy generated from biofuels is equivalent to 340 million barrels of oil or over \$22 billion (assuming a landed price of \$65 per barrel). Considering that in the first quarter India had a current account deficit of \$14.3 billion, we could wipe out almost a third of our current account deficit.

According to a Bloomberg New Energy Finance study *Next-Generation Ethanol: What's In It For India?*, the increase in ethanol production alone has the potential to create over 700,000 jobs when targeting only the base potential. States with a combination of high agricultural activity and large fuel consumption like Maharashtra, Punjab and Uttar Pradesh would be the best positioned

to exploit this opportunity.

We have started with some encouraging pilots for biofuel-driven buses in cities like Nagpur, where the government has allowed special purpose vehicles to own and operate these buses along with the plants and the depots required to fuel the buses. However, the economic viability of placing more orders and scaling up such pilot projects would only happen if a rational tax policy is implemented.

We need measures which are available today and at affordable costs. This one measure of pushing for biofuel buses for public transport within a specific timeline like 2020, would help transform our public transport services, improve the health of our citizens, provide economic impetus and create jobs. Surely a win-win proposition at a fraction of the cost associated with the subsidy-driven push being planned for E-mobility.

When sustainability focused countries like Sweden and a developing country like Brazil have used ethanol in a big way to achieve their environmental and economic objectives, India must make efforts to scale up technology alternatives.

It is a good time for policymakers to review and align policy intent with available options to enable achieving the stated objectives of building a sustainable transport sector with varied clean fuel solutions for various vehicles—from large buses to scooters. With a holistic approach, which includes the full potential of biofuels for vehicles, we will be able to achieve our dream of creating an environmentally and economically sustainable transport sector.

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