



Maharashtra at the Forefront of Industrial Development

Praj – Making Pune a Hub for Bio-Mobility

Positively Impacting Energy, Environment, Economy and Society

- Dr. Ravindra Utgikar

The transportation sector has been playing a very important role in connecting the human race across the globe. The energy demand for transportation sector (surface, air and water) is expected to surge exponentially in the coming decade; particularly for developing countries like India & China. On one hand, we have to keep up with the increased energy demands for rapid economic progress, and on the other hand we have to honour the Nationally Determined Contributions (NDCs) towards COP 21 Paris Climate Change summit. Decarbonizing transportation sector with the help of latest mobility technologies has emerged as promising solution in this regard.

The World Economic Forum (WEF) in their Comprehensive Global Risk Report of 2021 has published a list of top 10 risks to the global economy. Environment related risks such as global warming, environmental pollution and geopolitical energy security dominate the list due to the wider significance and the impact on overall economic development and progress of civilization. The problem of global warming (Green House Gas Emissions) and environmental pollution assumes importance because they are considered pervasive, responsible for erratic weather patterns across the world, leading to health and other hazards. Therefore, to mitigate these problems, longstanding multiple strategies in tandem with green and sustainable pathways are important for the realization of the progress.

Several nations are pursuing usage of captive alternative energy sources for ensuring energy security, generating employment, and mitigating CO2 emissions. As a signatory to Paris summit to

reduce GHG emissions by 30-35%, India has to redefine its transportation fuel mix. India started its biofuel initiative in 2003. The Government has been trying to maximize share of renewable energy in India's overall energy mix, which is currently dominated by fossil fuels. Among all, Biofuels have emerged as an ideal choice to meet these requirements. Recently, with petrol prices touching a three-digit figure, the Government's decision to advance its plan to bring 20% ethanol mixed fuel into the market, from the earlier timeline of 2030 to 2025 is a step in the right direction. Biofuels, as a renewable transportation fuel (gases/liquids) is a very promising, alternate clean energy source. Biofuels are environment friendly and help improve the rural economy. Besides facilitating energy self-reliance, biofuels utilize existing infrastructure and ecosystem of ICE automotive industry. A coherent, consistent, and committed policy with long-term vision can sustain India's biofuel efforts. This would bring about substantial saving of foreign exchange and reduction in pollution levels.

Praj's Bio-Mobility™ platform envisions the use of bio-based feedstock for the production of low-carbon renewable transportation fuels for all modes of transport. The prospect of Bio-Mobility™ is pivoted on the recent progress of sustainable use of biomass feedstock, as they are environment- friendly, available abundantly and captive in nature.

This unique platform also works in tandem with e-mobility solutions. Bio-Mobility™ platform comprises of established solutions such as 1st generation bio-ethanol, and fast emerging

advanced biofuel solutions such as 2nd generation bio-ethanol, sustainable aviation fuel (SAF), compressed bio-gas (CBG), marine bio-fuels, biodiesel etc. With adoption of Bio-Mobility™ platform for transportation, we can create winners in the social, economic and environmental areas. This includes entrepreneurship and employment opportunities for the farming community, boosting rural economy, and minimizing air pollution resulting in curbing GHG emissions. It also aligns with the government's vision of doubling the farmer's income and contributing towards India's Aatma Nirbhar Bharat Abhiyan.

Pune and its suburbs such as Pimpri, Chinchwad and Chakan are among the most prominent auto centers in the country. With more than 4,000 manufacturing and ancillary units, Pune has emerged as a mobility hub. Auto sector giants such as Tata Motors, Mahindra & Mahindra, Bajaj Auto, Volkswagen, Jaguar Land Rover, Hyundai and General Electric have units here. Organisations like Automotive Research Association of India (ARAI) are playing crucial roles in ensuring safe, less polluting, more efficient and reliable vehicles. Since 1966, it is assisting the government and the industry on formulating automotive standards & regulations with global standards.

Praj Industries in collaboration with ARAI has been working to drive application development of advanced biofuels that will find usage in industry and transportation. Biofuels developed for the mobility sector will have a positive impact on environment by way of reduced carbon footprint and improved tailpipe emissions. Biofuels are derived by processing bio-based feedstock such as agri residue, molasses, cane syrup etc. As a renewable transportation fuel in gaseous as well as liquid form, biofuels provide an energy source that complements fossil fuels such as gasoline, diesel and aviation fuels. Since bio-based feedstock is a captive source, biofuels facilitate energy self-reliance while helping conserve the environment.

Through the collaboration, Praj and ARAI will jointly address technologies to propagate use of biofuels in a variety of applications including usage in internal combustion engines (ICE) in the transportation sector. As a leading player in the global bio economy, Praj brings to the table its expertise of around four decades in developing and deploying biofuel technology through its end to end solutions business model. On the other hand, as an R&D major, ARAI brings its vast experience in the field of alternative fuels, green and sustainable mobility, to the association. ARAI is working closely with DHI, energy vertical of Niti Aayog, MoPNG and MoRTH for development of regulations and demonstration of technology competence in various alternate fuels spectrum like CNG, LPG, LNG, HCNG, dual fuel technology, Bio-CNG, Hydrogen, Ethanol, DME and Methanol. With complementary strengths in technology and application, Praj and ARAI will work together to test and commercialise newer fuels with improved efficiencies.

The collaboration between Praj and ARAI aims to reinforce India's position as a technology leader in the global biofuels industry. ARAI wishes to execute mutually beneficial collaborative projects for development of technologies, to produce customized fuels for best efficiency in terms of reduced fuel consumption and discharge emissions, under this alliance. Advanced biofuels technology applications that will be developed as a part of this association will help curtail health hazards attributable to the air pollution in the transportation sector.



Dr. Ravindra Utgikar

Vice President, Corporate Strategy and Marketing
Praj Industries Ltd.