

# INSIGHT CONVERSATION: Monish Ahuja, Punjab Renewable Energy Systems



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*This is the last of a seven-part Insight Conversation series where leaders and stakeholders in the biofuels space share their thoughts on the opportunities and challenges in Asia's biofuels sector.*

From command chains to bioenergy supply chains: **Monish Ahuja**, a former lieutenant colonel in the Indian Armed Forces, now leads Punjab Renewable Energy Systems, or PRESPL, as chairman and managing director. Ahuja has played an instrumental role in shaping national policy, collaborating extensively with government agencies to advance India's renewable energy framework and rural biomass economy.

PRESPL serves as a link between farmers and the energy industry by integrating agricultural wastes into bioenergy supply chains.

Ahuja talks to S&P Global Commodity Insights senior editor Aditya Kondalamahanty about the second-generation biofuels industry, financing challenges, and the lag between policy and implementation.



**"Progressive iterations** will help build viable business models, reduce costs and bring in **transparent pricing** in the second-generation biofuels industry."

- Monish Ahuja, Punjab Renewable Energy Systems

### **Can you detail how your company is working to working to build supply chains of agricultural wastes?**

At PRESPL, our mission is to utilize farm agricultural residues such as rice paddy straw, corn, sugarcane trash and cotton stalks. We work with farmers in collecting these and we create a warehouse. The farmer, also known as the village-level entrepreneur, can work with the equipment we provide. When they deliver that agri-residue feedstock, there is a payment made to the farmer through the banking channel. The VLE is a farmer who is doing this first-mile collection based on the type of biomass and equipment provided by us.

Ahead of that, we find forward contracts for the feedstock. This can be a power plant, CBG [compressed biogas] plant, ethanol plant, among others. We also supply renewable steam to the pharmaceutical, FMCG [fast-moving consumer goods] and cosmetics industries to help lower their scope 1 emissions.

Essentially, we work along the value chain, from upstream supply chain management to midstream asset creation to downstream product market creation.

## **What are the main hurdles in bringing agricultural wastes into the biofuels supply chain in India?**

The first problem is that we don't have clarity on the return on money. On the second-generation ethanol side, there is no transparency on pricing. Currently, there is a government-nominated potential price, but the transparency of that price is not known, so capital will not move toward it. Also, there is no single regulator or dedicated ministry, so growth in the sector is not happening in a linear way, as planned, but in bits and pieces.

Let's take the example of solar power in India. The first solar power purchase agreement or PPA in India was quite expensive, in double-digit rupees per kilowatt hour. However, with every tender and capacity increase, the government was able to bring the price down, and it hit Rupee 2/kWh in 2020. But it took us 14-15 years to get here.

The same methodology must be followed by the biofuels industry. As technology deployment, engineering and understanding increase, the price per unit will keep going down. If we don't develop incrementally, it [2G biofuels] will continue to be expensive.

## **On the financing side, what obstacles do Indian biofuel companies or private players face when seeking investments?**

The blunt answer is that it's not attractive. It is my view that currently the economics only make sense for companies that also run dispensing stations for petrol or LPG, such as the national oil marketing companies or OMCs. This is because the retail price then forms their ceiling price. So, if they establish a compressed biogas plant, they work out the project IRR [internal rate of return] at the pump sale price.

Meanwhile, a pure biofuel producer without a distribution station would have to sell their product [gas or ethanol] at say 80% of the retail price to the OMC. Hence, it is not a level playing field because both players will be competing for the same or similar type of financing opportunities.

## **What lessons can be learned from India's ethanol ramp-up that could apply to other industries?**

The success of India's ethanol story is remarkable, as it has increased its ethanol mix from 1.4% in 2004 to over 20% by 2025. This achievement was driven by the government's push for clean fuels over the past decade. The experience suggests that clear mandates and policies can significantly enhance industry growth, which can be applied to other sectors. However, there are challenges, particularly in the implementation of second-generation ethanol projects, which need to be addressed to ensure sustainable growth.

For example, more than a decade back, 12 2G ethanol projects were to be started by PSUs [Public Sector Undertaking, a government-owned company in India]. Ten years down the line, only one of these 12 projects was started [in 2022] and that is yet not operating to full capacity.

What we did fantastically well was to align the sugar industry toward ethanol. After that, grain and corn were also incorporated to reach the 20% mandate for ethanol.

So I think we need to reexamine our 2G ethanol policies, especially given the dangers of climate change. Right now, we are a food surplus country, but if our grain production suffers, what will happen to those [ethanol plant] assets?

I would personally like to see the 2G mandate coming back online. The growth from a 20% ethanol mandate to 27% should be coming from the second generation, and not from more corn and rice.

## **Second-generation feedstocks are enjoying record-high prices in global markets. Is that a potential market for Indian agri-wastes?**

For a long time, exporting agri-wastes was banned in India. I was personally on a panel that worked with eight ministries to free up exports, and today, biomass can be exported under an HSN-free code.

The problem is that globally, agri-waste exports happen based on ISO [International Organization for Standardization] standards. The present ISO certification is mostly for wood-based pellets, while Indian agri-wastes are mostly crop-based. We need to develop certification and standards domestically to align with international standards. There is work happening at the Bureau of Indian Standards toward this.

I'm part of the BIS committees, which are engaging with the ISO teams to get that done. I hope a standard will be established soon. Once that happens, I see a big surge in India's agri-waste exports.