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INSIDE :

- ⚡ Sustainable battery technology: For 2025 EV vision
- ⚡ Tropical optimisation of mounting structures
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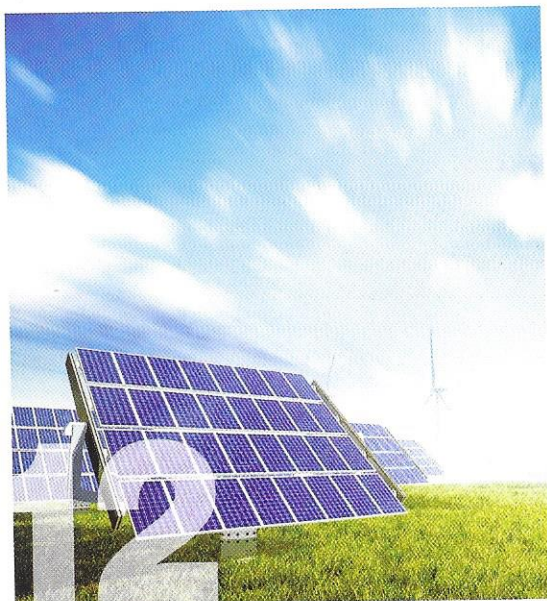
260 GW Renewable energy sector
**NEEDS SYMMETRY TO
MAINTAIN MOMENTUM**

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COVER STORY

260 GW RENEWABLE ENERGY SECTOR: NEEDS SYMMETRY TO MAINTAIN MOMENTUM

India is said to touch renewable energy capacity of 260 GW by 2024, the announcement has left the industry discussing their hopes and how to tackle the current concerns plaguing the industry. Only post which, India can reach the latest target.

EXCLUSIVE

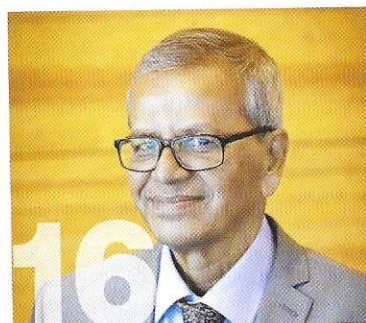
18 Sustainable battery technology: For 2025 EV vision

Government notifications continue to bubble up on our news feed. Welcoming the move to convert all existing two-wheelers below 150 cc vehicles to electric by the year 2025 auto players discuss possible implications the announcement will have on the industry and the major concern of battery technology.

GREEN ZONE

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Hydro, once touted as the sustainable, renewable alternative to coal has slowly faded from the discourse. The industry experts discuss the state of hydro in our country.



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The recent intensity of natural disasters has traumatised the nation. This reminds us of having adequate performance and safety standards in action. Industry experts discuss on utilising solar rooftop arrays in possible sustainable ways to endure nature's cataclysm.

www.eprmagazine.com

Cover Credit: Vivek Navale

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Printed and published by Mr Prasad Kumar Nair on behalf of I-Tech Media Pvt Ltd and printed at Print Process Offset Printers, B-23, Royal Industrial Estate, 5-B, Wadala, Mumbai-400031 and published at I-Tech Media Pvt Ltd, 604, Surya House, Road No 7, Vidyavihar East, Mumbai - 400077. Editor: Mr. Prasad Kumar Nair.

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"Aan data can become the Oorjaadata"; biomass to realise this dream

We need to have a nodal agency, preferably a Ministry for the biomass sector to address every related issue of the bioenergy sector

Lt. Col. Monish Ahuja (Retd), Managing Director, PRESPL

Clearly highlighting the pain points of the biomass sector, Lt. Col. Monish Ahuja (Retd), Managing Director, PRESPL in an interaction with Athira Bejoy discusses how PRESPL has progressed over the years and how the absence of a nodal ministry is causing misery to the biomass sector.

Can you please walk us through Punjab Renewable Energy Systems Pvt.Ltd's (PRESPL) journey till now?

PRESPL was founded in March 2011, and the genesis of this company has been to address the issue of biomass supply chain management for the bioenergy sector. We feel that consistent supply chain management issue is the biggest problem in the bioenergy sector and hence with this problem statement, we promoted PRESPL to work in this field. This is one of pain points for the growth of this sector and hence we focused on this issue to be addressed by PRESPL. With that as a backdrop, particularly around the time we started, we looked at addressing these issues with the biomass power plants and sugar cogeneration plants.

Since the first contract was initiated in Punjab, we named it as Punjab Renewable Energy System Pvt Ltd. We wanted to take this initiative across multiple states in India, having state specific names for them too, however the way our business spanned out and the way it grew, and our company evolved, we decided to continue with the same name which has now become a brand in this business sector. We are now operational on a pan India basis.

PRESPL is invested in Series-A round by responsAbility a Zurich HQ Global Impact PE fund since Sep 2013.

In the Series-B round in Apr 2019 Neev Fund (Promoted by SBI, SBI Caps, SIDBI and DFID UK) has invested in PRESPL. As a follow on to the Series-B round on 27th Aug 2019, PRESPL shall announce the investment by global oil major which is investing in the equity of PRESPL.

With its shareholders, investment partners, business associates and clients, PRESPL is strongly poised to grow in the years ahead with specific emphasis on rural growth, energy security, energy transition to sustainable RE with all global norms of risk mitigation, EHSG principles and to develop a sound sustainable business model in which we are delivering the "Aan data se oorjadata" as stated by Hon'ble PM from the Red Fort on 15th Aug 2019 and Hon'ble FM in her maiden budget speech.

What were the challenges faced during your tenure? What are your other business verticals?

Opting for a forward integration for the development of our business, we went on to transition from being a supply chain management aggregator of raw biomass from the fields across India to venturing into densification of raw biomass, starting with briquettes manufacturing operations. Since, we were fairly new to the business of briquettes manufacturing, we developed multiple models of briquetting operations by setting up our own briquetting plants, we also ran briquetting plants on lease, supplied biomass to sick units and got them to convert into briquettes on job work basis, and developed a team for marketing of briquettes across the states of Maharashtra, Karnataka, Gujarat, Punjab, etc.

PRESPL brought a corporate structure into this briquetting market. When we engaged our clients, they get to know that here is a company in a corporate structure which is willing to work and stay for a long period of time. We thereafter went for further forward business integration by venturing into operation and maintenance of those boilers itself which meant further converting the biomass into steam energy for the client and generate and sell steam energy.

The third line of business is – selling steam at cost. With this PRESPL transitioned into an energy utility

service provider. Here, we also started managing the boiler assets for our clients and continued at backend the biomass fuel management which is the core strength of PRESPL business model.

We have now transitioned into the fourth business model, where PRESPL is investing in the boiler asset. These contracts are called as BOOT Contracts (build, own and operate transfer contract), with a term of between 10 – 15 years. So for supplying this steam at the client side we make an investment in the boiler in a B2B contract agreement with the client and this is a fast growing business model for PRESPL.

The fifth one is consulting, where we work with the multinational companies, government agencies, state government regulators and private sector on the biomass supply chain management studies. We conduct studies and build their supply chain management networks and support them to proceed with their projects as and when planned since raw material management and pricing is a must for the business models of the Bioenergy sector projects. We build the supply chain management for them, where they can take a formal decision on project sites, with availability for biomass on a long term basis. This is also a big support for financial institutions to be able to review the projects.

What kind of investments are we looking at here?

Having a biomass power plant in India, has its own challenges, since we were a step down service provider for them and an ancillary industry our business was equally hit when the power plant was affected. Unfortunately, we faced multiple jitters in almost all the projects which we were supporting during the initial years of business as a start-up company. Having said that, in our journey till date, we did a fair job in establishing our model. In 2013, we raised capital under series 'A' round, with capital being infused by 'responsAbility' impact private equity fund.

'responsAbility' have been in India for almost 8 years now, and PRESPL was one of its first equity investment in the Indian market by this Zurich HQ PE fund. This capital raised in 2011 which gave us an impetus to establish the new business models in biomass supply chain management. It further gave us an impetus to build a business models across various types of biomass and develop more businesses in the biomass domain.

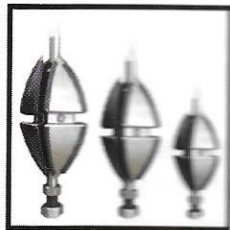
2014 to 2017 was a rough patch for our business. However, we survived this phase with a strong resolve and backing of our investors and shareholders. But the situation reversed in our favour during the financial year 2017-18 and 2018 – 19. Frankly, in these two financial years, our organisation saw a 6-fold growth. Having that level of achievement already, on



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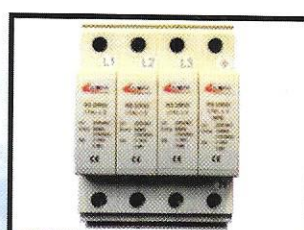
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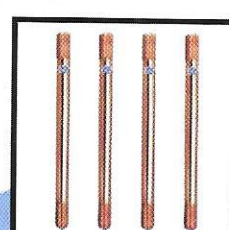
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the path of these five business verticals in April 2019, we received our Series 'B' investment, coming from the Neev fund (promoted by SBI, SBI Caps, SIDBI & DFID UK). We are now in the financial markets to leverage the equity raised for term loan, working capital and non-fund based banking limits.

Biomass makes up only a small portion of the electricity generation in India and its value has fallen year-over-year. Why do you think that is happening?

Let's not talk about biomass, in terms of electricity generation only. We need to realise that electricity is only one form of energy. If we look at the biomass for multiple forms of energy, in India and globally, considering the valued added products produced and generated from biomass, biomass to electricity would be among the lowest products in the entire value chain. People and companies are transitioning from biomass-to-electricity to biomass-to-energy. Biomass to electricity is stagnant, as there have been challenges of supply chain management, clarity from the government in terms of purchasing the electricity, as the cost of electricity is much higher than the other existing forms of renewable energy like wind and solar among the others.

The cost of biomass electricity is still envisaged to be higher, but that is actually not the case once the full analysis from the generation unit to the end customer is tracked. Having said that, I would like to mention that, the government has pushed wind and solar by having a wind mission and a solar mission, but it hasn't yet promoted or pushed the biomass project. Whatever happened in the biomass sector is sporadic and there hasn't been any holistic push from the government.

The second important point here is the existence of multiple stake holders for the biomass sector and no single apex body. We have MNRE, Ministry of Power, and Ministries of Agriculture, Rural development, Environment and Climate change and with the recent notification; we have a Ministry of Petroleum also a stakeholder ministry. All these ministerial departments are the stakeholders of the biomass sector, companies/plants. However, none of them is the nodal ministry, neither is there any interconnection between these ministries to introduce a comprehensive policy for the biomass sector.

Since you are now into the core biomass industry, what would you suggest as a comprehensive plan for effective utilisation from the ministry?

Firstly, we need to have a nodal ministry like the MNRE which serves as the nodal ministry for wind and solar. A big gap is created when so many stake holders get involved; hence, there's a requirement for a nodal ministry or for a combination of 2-3 similar ministries. Post that, it's imperative to draw a collective roadmap for the energy

that we will be harnessed from biomass. Energy in multiple forms, such as electricity, heat, cooling, liquid fuels, ethanol, bio-diesel, bio-aviation fuel, compressed biogas, bio-CNG, are from the raw material biomass. So, we need to have a comprehensive energy plan or a bioenergy mission which then drives development across the six – seven streams, which will be utilising the biomass energy. There has to be some comprehensive plan to proceed with the idea of promoting biomass.

Don't you think that there must be some policies for procurement and transportation cost of biomass, as these two things are mainly plaguing the sector?

Yes, absolutely Yes! There is an urgent requirement of stringent policies for both procurement and transportation cost. There also has to be a policy to say that biomass from a particular region will be transported only till a limited distance in kilometres, and not beyond that. This is essential as the cost at times fluctuates unnecessarily. We can have potential depots for biomass collection, just like we have mandies for the farmers, where they can deliver the biomass and get a price for that. You need to have development across states, as it is a subject where agriculture is a state and central matter, and is in a concurrent list. So, it's an onus to have a comprehensive policy between the State and the Central Government, by chalking out a roadmap for each states of the entire bioenergy policy, with designed targets and KPI's to be earmarked. If such policies are put in place and are rigorously monitored, then what is desired from the Prime Minister's office, in terms of rural development, and like the Prime Minister said – "Ann data se Oorjaadata", is something that would ultimately become a 100 per cent realisation. On realising the energy potential, we can have a price point for the rural and agricultural waste, we can also mitigate the air pollution caused by the open field burning. We will have decentralised energy getting generated in multiple forms as electricity, bio-CNG, ethanol, bio-diesel and heat that would contribute to the energy security of the country.

How do you propose hybrid biomass solar PV projects in India?

There has been a first tender, by PEDA (Punjab Energy Development Agency) for 54 MW hybrid project, out of which 48 MW of solar and 6 MW is for biomass. I think it's a fair and decent attempt. However, with all due regards to the processes, we have pegged a minimum price and capped the tender. If we are going ahead with the tender, we would like to have a price discovery mechanism to happen; you have to leave it to the industry to bid it and find out the price. Unfortunately, since the pre-pegged price is relatively very low, there's no participation in the tender. As a result, they have already extended the tender once and in all likelihood will further keep extending the tender unless there is an appropriate participant.

