

# GREENFIELDS

Creating And Nurturing  
Small Biomass Businesses

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# FOREWORD

## Strengthening the rural economy through a biomass-based entrepreneurial model.

As farmers realise the true potential of biomass, the industry will reach a crucial turning point. After working with BiofuelCircle, many farmers and FPOs realised that they've been setting fire to crores of rupees every year believing it to be 'waste' with no intrinsic value. As the digital platform enables these rural players to collect, aggregate, transport, deliver, sell, and convert waste into wealth, we see soaring optimism among biomass producers. The creation of a new class of farmer entrepreneurs signals transformational times ahead.

Biomass processors see great opportunity for themselves with the rise of these rural entrepreneurs and are banking on the BiofuelCircle platform to help them obtain a reliable supply of good-quality biomass at steady prices. These processors prefer to take in local biomass to bring down transport costs and are really welcoming the concept of biomass banks.

Moreover, for these processors, the possibility of selling their output through the digital platform frees them up to focus on production while the platform takes care of everything till the delivery. As a result, they have a newfound confidence in their business model.

As farmers and processors understand the benefit that this industry will bring, we're witnessing the rise of a new rural social entrepreneur - one who works towards a cleaner environment, a healthier future, and more efficient use of our precious resources.

BiofuelCircle sees these farmers and rural entrepreneurs as the powerhouse of the growing biomass industry and our focus is to remove all roadblocks in their way towards scalability and sustainability.

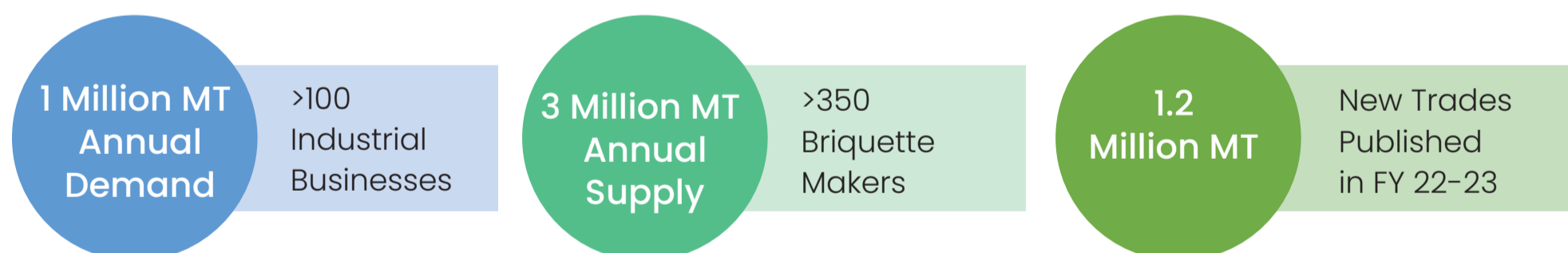
Regards,

**Jacob Joseph**

Founding Member and Chief Customer Officer  
BiofuelCircle

# PLATFORM INSIGHTS

## Green Fuel Platform for Industry



## Building Trust & Credibility



# Biomass Entrepreneurs - Cover Story

## The Rise Of A New Class Of Biomass Entrepreneurs Promises To Reshape The Landscape Of Rural India

“The turning point for me was when I realized that we set fire to crores of rupees every year because we’ve always thought of our agricultural residue as ‘waste’.

says Ram Phalke, a farmer turned agricultural entrepreneur from Panand Agro FPO in Maharashtra.

Phalke’s hopeful analysis is an outcome of various developments that signal a bright future for India’s biomass industry. As much as 235 million tonnes of agricultural residue produced in the country goes up in flames every year. This could potentially power 17% of India’s energy needs. If the country is to meet its global renewable energy targets, the expansion of bioenergy will be necessary.

This expansion will create huge opportunities for all players in the biofuel supply chain from farmers and rural entrepreneurs to industrial processors and tech innovators. *Our work with the BiofuelCircle platform allows us to witness and be part of this expansion. In particular, we are excited to see the rise of a specific category of inspired rural entrepreneurs, keen to have their share of the pie.* In this piece, we cover the stories of three rural biomass businesses and the unique ways in which they are navigating the opportunities available to them.

### The passionate trailblazer

As Phalke is quick to understand, rural India has much to gain from the effective organization of the biomass supply chain. Phalke has worked for the past two years to aggregate agri-waste from farmers in Maharashtra in order to supply briquette makers. He uses the BiofuelCircle platform to register other farmers, coordinate collections of raw material, and organize deliveries to briquette manufacturers.

Through this work, Phalke has developed a deeper perspective on the biomass industry. He sees that, with some effort, he can significantly widen the profit margin for the farmers in his FPO. As an aggregator, Panand Agro FPO is just about breaking even, working to bring down transportation costs to widen its profit margin.



Ram Phalke

“I want to be able to do more for the farmers who currently receive nothing for their agri-waste. With BiofuelCircle, we are trying to give them the share they deserve from this raw material which will have high industrial demand in the coming years. This is why we are going to start making the briquettes ourselves.”

For a basic initial investment, the FPO is acquiring a briquetting machine that can generate 200-300 metric tonnes of briquettes every month. Although the venture is rife with challenges, Phalke is proceeding confidently based on the assured connection to briquette consumers through the BiofuelCircle platform.

“This business perfectly matches the vision for grameen unnati (rural development). Biomass is inexhaustible and once we learn to use it properly, we will see the birth of a new generation of businessmen and naukriwale (job-holders) within the villages itself,” says Phalke with all the zeal of a newly awakened entrepreneur.

### The seasoned pragmatist

Establishing a robust rural biomass enterprise does not come without its challenges. With over 15 years of experience, Vikas Mhetre of Shree Industries has a more sober but nonetheless optimistic view of the biomass industry. 15 years ago, Mhetre quit his cushy corporate job as an IT professional to become a briquette manufacturer. He found meaning in the business since every tonne of biomass he processed meant one less tonne going up in smoke.

But, Mhetre’s transition was not an easy one. When he entered the business, he knew nothing about biomass and painstakingly built up his knowledge. The widespread disorganisation of the biomass sector did

nothing to ease his troubles. Over time, he established a network of farmers to serve as his supply chain. To cope with the seasonal supply of agri-waste, he set up a warehouse near his factory to store biomass in the summer to sustain production through the monsoons.

Despite his best efforts, Mhetre was unhappy with the rates he received for his briquettes and as a small manufacturer, he struggled to draw the attention of big briquette consumers. Without a standardised quality verification system, he found it hard to test the quality of his briquettes and communicate that to his consumers.

Two years ago, Mhetre partnered with BiofuelCircle to voice some of his problems and together we figured a way for him to use the platform to his benefit. Today he can access various reliable buyers in his region and examine his briquettes to provide quality assurance to his consumers.



**Vikas Mehtre**

Mhetre credits his success in an uncertain and volatile industry to his ability to adapt -

**"I am constantly implementing new policies, trying out new technologies like this platform, and collaborating with new players in the market, and I think this is why I have been able to sustain this business."**

## The compassionate social worker

The biomass enterprises have the potential to generate more than a better profit margin for farmers. As a clean and healthy source of energy, they can improve the quality of life in rural India, particularly the lives of women.

Most meals in rural India are cooked over the traditional 'chulha' or firewood-powered stove. For hours every day, women across India squat over these stoves, inhaling smoke. Many of them collect this wood from nearby fields or forests and carry it home over their heads. It is no wonder that lung issues and spinal pain is rampant among elderly women in rural India.

Providing rural women with alternative stove solutions has become one of the most important projects for the socio-ecological development of India. Jnana Prabhodini is an NGO that works to give rural women an improved, smoke-free biomass-powered stove. They also produce and supply biomass pellets for the women to power their new stoves.

Today, Jnana Prabhodini has given hundreds of stoves across several villages in central India. Their work has so far been supported by CSR initiatives. The current cycle of funding stops within the next year, placing their work in jeopardy. Suvarna Gokhale, Member of the Executive Committee of Jnana Prabhodini, sees this as an opportunity for them to become self-sufficient. She hopes to establish a commercial for-profit section of the organisation that generates a surplus of biomass pellets to sell to industrial consumers.

However, with all their attention on their primary goal - the upliftment of rural women - Jnana Prabhodini hopes to use BiofuelCircle's platform to make this business possible. "Once we are producing a surplus, we will need to use the platform because otherwise, we have no way to connect with reliable buyers. We are committed to improving the health of as many rural women as we can, and becoming commercial briquette suppliers will help us do this," shares Gokhale.



**Suvarna Gokhale**

## A chance for meaningful business

The economic opportunities available in the biomass industry are apparent for anyone to see. However, the industry also provides another type of opportunity - to be part of a meaningful change - a change towards a cleaner environment, a healthier future, and more efficient use of our precious resources. Our work enables us to witness the birth of a new group of social entrepreneurs - ones who have the rare chance to prosper while working to improve the lives of people and the quality of the environment.



# Glimpses of the Future

## Insights From The People Leading India's Sustainable Industrial Revolution

Millind Thombare on the hopes and challenges of a small briquette manufacturer



Millind Thombare

Millind Thombare runs Mak Joven Corporation, a briquette manufacturing unit in the Vidarbha region of Maharashtra, India. Two years ago, he joined the BiofuelCircle platform in search of better growth opportunities and is now an active user of the platform. In this interview, he speaks to us about his experience as a small briquette manufacturer and his vision for the future

### Can you tell me a little bit about your business?

We make biomass briquettes from agricultural waste of various types - soya bean husk, sawdust, and cotton husk. After we collect the raw material from farmers, we take it to our premises where we have a machine that presses it into a 90mm briquette that can be used as fuel in an industry.

Our manufacturing capacity is 250-300 metric tons per month and I sell all of this through the BiofuelCircle platform. Currently, I have one machine and employ 10 people - 8 unskilled labourers and 2 skilled ones.

We currently only operate for 8-9 months a year because we need to dry the biomass to achieve the appropriate moisture content. We don't have a drying system right now so we dry it in the sun which takes time. But hopefully, if we have greater demand in the future, we can invest in a drying machine and increase our manufacturing capacity.

### What are the biggest challenges you've had to face in this business?

As a manufacturer, the main problem we face is the long time payment schedules of big buyers which is around 60 days. Most rural biomass manufacturers cannot survive without payments for that long since we need to pay our expenses on a daily basis.

So, I had to rely on traders who take a large cut in return for financing my sales. This put a lot of pressure on me and made it difficult to sustain the business. Many small businesses get involved with these traders, burn out and go away. But then I learnt about BiofuelCircle and I learnt that they've created a platform where I could find and connect to big buyers, suppliers and raw material manufacturers on my own.

With BiofuelCircle, I could offer a discounted price and get my payments the very next day. I choose this option most of the time. Because otherwise, I have to deal with traders and that is troublesome. But BiofuelCircle is not a trader, it's just a neutral trading platform that works for everyone, so that makes a difference.

Even on the raw material aggregation side, BiofuelCircle is providing farmers and FPOs with a connection directly to the biomass manufacturers. This way the farmers enter the business themselves which will positively change the sector.

### In what other ways has the platform changed the way you operate?

Being on the platform gives me a wide perspective on the changing scenario of the market and how demand and supply fluctuate on a daily basis. By using the platform, I learnt about biomass buyers close to my manufacturing unit in the Vidarbha region itself and my costs came down drastically. Earlier, my company in Vidarbha would supply all the way to Pune or Mumbai and my transport costs were very high.

At the same time I can identify farmer suppliers or raw material traders in the Vidarbha region and connect with them on the platform so the cost of my raw material also goes down.

So really my profit margin is a game of transportation - if I can have both the end user and the supplier near my unit, it is very good for business.



What kind of opportunities do you see for yourself and the business in the future? How do you think the industry will evolve?

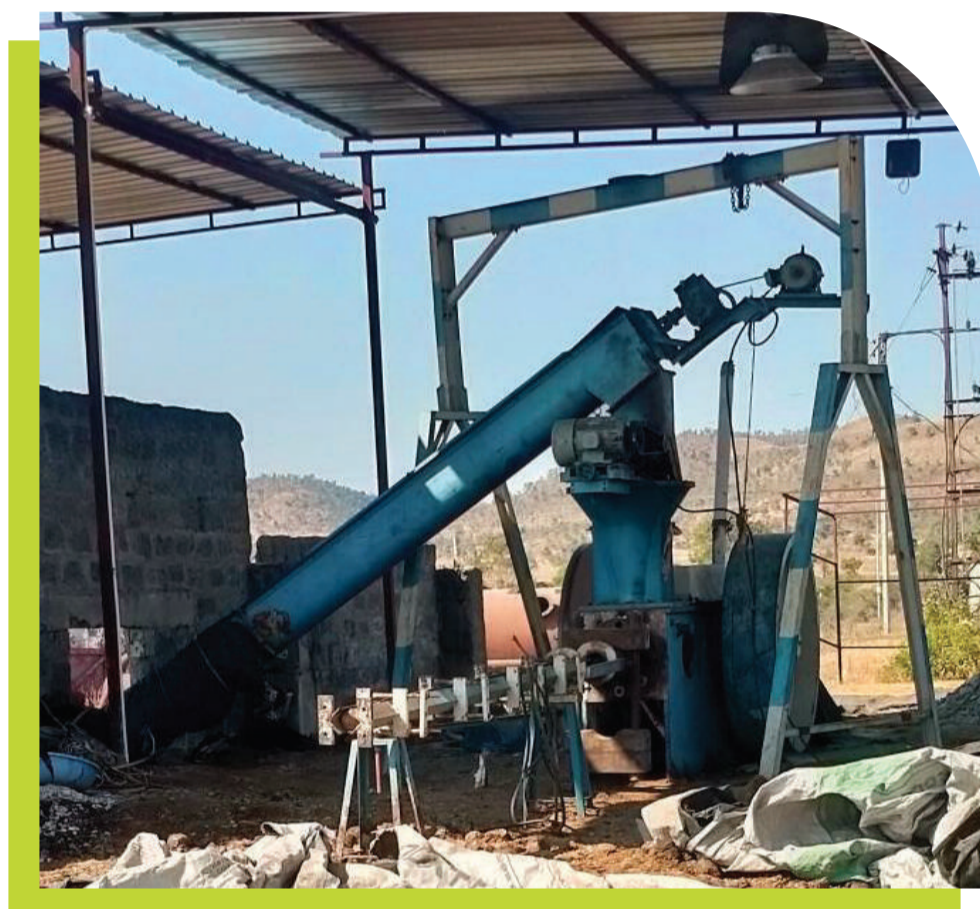
In the Vidarbha region, there are many opportunities for biomass manufacturers right now. Earlier, bad road infrastructure made it difficult for manufacturers to enter the region and for existing manufacturers to expand their operations. But now, with new highways, we can expect many new businesses to come up here.

India generates so many millions of tonnes of biomass, but in my knowledge, only 10% is being used for fuel because of the shortage of manpower and advanced technology to collect the material from the farms and transport it to the biomass companies. The issue is that India has very small land parcels, maybe 5-10 acres and so it takes a lot of capital and manpower to aggregate a usable amount of biomass from so many small farms.

A lot of modernisation and the introduction of new technological innovations is essential for the future of the biomass industry - currently, everything is done very labour-intensively which makes the process very slow and inefficient. But eventually, as other countries have done, we need to automate some of the processes like the collection of raw

material to ease the flow of biomass through the supply chain.

As new innovations and ideas emerge, there will be a lot of opportunity in this sector and especially for the farmers and small businesses.





# The Inside Scoop

## Stories And Lessons From Our Growing Team Of Passionate Professionals

### Vaishali Kamble on Enabling the Success of Small Biomass Businesses

Vaishali Kamble is a General Manager- Operations at BiofuelCircle. She has over a decade of experience in customer relationship management, business development, and account management. She has been with BiofuelCircle since its infancy and works closely with our customers to ensure that they extract the most benefit from our platform.

### What inspired you to join BiofuelCircle in its infancy and what made you stay?

When Ashwin and Suhas (co-founders of BiofuelCircle) told me what they were trying to do, I was very intrigued. When I began to seriously think about the problems that we could solve, the benefits we could bring to the farmers and the FPOs and the fact that no one has thought of this kind of a solution yet, I jumped at the opportunity.

I joined the company based on my faith in the idea, I didn't know whether it would work or not. But now, after two years of studying the sector so closely, I believe that there are vast opportunities available in this field, and we have the potential to grow widely and rapidly.

My job involves interacting directly with the customers, so I've come to understand clearly what they think about the market, what problems they face, and what sort of environmental issues need to be tackled. I feel like we're properly motivated and equipped to address the situations and alleviate some of these problems.

You say that you were excited by the kinds of problems this innovation is going to solve - can you tell me a little more about what you mean?

As you probably know, this is an unorganised sector without clearly established processes of operations and tracking systems.

For instance, when studying the biomass industry, we found that the farmers or FPOs who work 8-10 hours a day get almost nothing for their agri-waste. They sell it to brokers who transport it to briquette manufacturers and then take a sizeable cut. We want to make sure that the farmer, at the heart of biomass creation, gets his due and becomes

an important part of the supply chain. We're bringing transparency and efficiency to the sector to ensure that anyone who wants to buy, sell or aggregate biomass can do so successfully.

I think our reliability and commitment to transparency have worked very well for us. It really builds trust with our customers, especially the small businesses and farmers.



Vaishali Kamble



## Can you tell me about your interactions with these small businesses in terms of the issues they come to you with and the process they go through with the platform?

Most small briquette sellers don't have an entry point into the market. If they go to a big buyer and say that they have 100 tones to sell, they are generally ignored. The big buyers are looking for something more like 1000 tones. But with the Smart Buyer program, the big buyer can place an order of say 1000 tones on the platform which makes it possible to bring together multiple trades from multiple small briquette makers to fulfil this large order.

The other issue is that these big industrial buyers have 30-45 day payment schedules, which becomes really difficult for small rural manufacturers who need quicker payouts. With our system early financing, we buy their material with the assurance that as soon as the material is accepted by the buyer and unloaded at their factory, we will pay them. By offering a minimal discount on their material, any small seller can avail this financing option.

And then the last issue is with transportation. Sometimes the sellers are willing to sell, they've opted for the early payment option and at the last minute, their transporters fail to arrive. In this case, we offer our own transportation which makes sure they stick to their commitment and the deal goes through.



## How was the transition for you from a corporate culture to this job where you interact with people from all walks of life?

This is not a sector that has traditionally seen women in positions of influence - has this ever been an issue for you?

So I did face issues coming into this industry from a very different work culture. Many of our customers, particularly on the rural side are not used to seeing women in certain roles. So they are hesitant to discuss business with a woman. They're a bit confused that a woman is talking money with them and they sometimes try to see if there's someone else they can speak to.

But I don't get bothered by those comments. If the person doesn't want to talk to me, I just remain persistent and go back to them until they realise that I'm the one who's responsible for this and they will have to interact with me.

But I think the industry is changing - we are onboarding women manufacturers, women-run FPOs and women proprietors who understand the business and the industry well. Since my team can see this change, we're happy to take on these issues and make an extra effort.





# The digital marketplace is becoming a storehouse of valuable data on the biomass industry

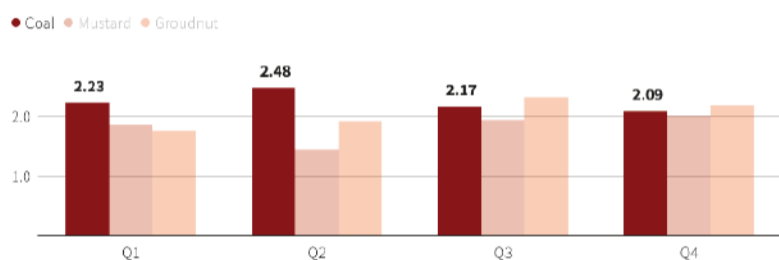
As the BiofuelCircle platform widens its reach, its marketplace is turning into a rich source of information on industry trends, supply-demand fluctuations, and prices. In January, Reuters reported on how Indian industry is increasingly turning to biomass in response to alarming levels of air pollution.

The report highlighted the widely fluctuating briquette prices in 2020-21 based on data from the BiofuelCircle platform. "Average prices of biomass briquettes rose 36% to 7,711 rupees (\$94.80) a ton by the end of 2022, versus 5,677 rupees at the end of 2021, on online marketplace BiofuelCircle, based in the western city of Pune," reports Reuters.



## Biomass mostly cheaper than coal

Prices of biomass in 2022 were mostly lower than that of Indonesian coal on rupees per kilocalories basis when delivered to users in Gujarat state on India's western coast, indicating biomass buyers had to pay less to extract more energy compared to coal users. Indonesia is India's largest coal supplier.



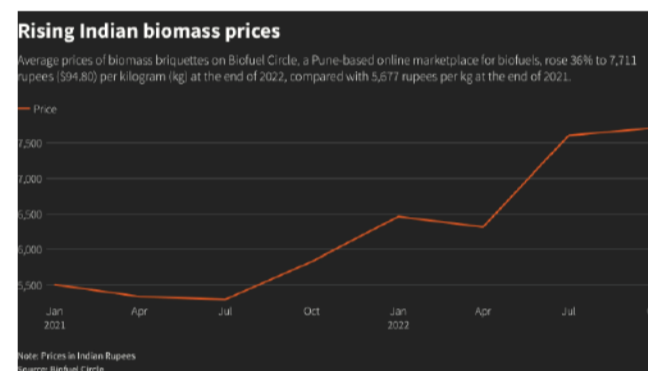
Note: Coal prices calculated by averaging prices on the last Saturday of every month during the quarter  
Source: Biomass prices and calorific values - Biofuel Circle. Coal prices - I-Energy

Reuters Graphics



## RISING PRICES

But biomass traders and consumers are voicing concern about rising prices after the coal ban and seasonal fluctuations in the supply of crop residue, citing these as factors limiting wider national use of the fuel.



Reuters Graphics

# Highlights from our Workshop on 'Creating a Bioenergy Digital Marketplace'

Earlier this year, in January, we ran an exciting day-long workshop in Pune organized by MNRE, GiZ, BiofuelCircle and BAIF that brought together industry experts, policymakers, and other notable dignitaries to discuss the future of the bioenergy industry in India.

The event was presided over by Mr. Dinesh Jagdale, Jt. Secretary, MNRE, Govt. of India as the keynote speaker, who spoke about role of digitalisation and his vision for future of India's biomass markets.

This workshop was aimed at sharing BiofuelCircle's journey together with BAIF and GIZ in creating biomass based entrepreneurial model for FPOs called Biomass Bank. The project is under implementation across Maharashtra. It aims to create market linkage for 15,000+ farmers, providing a sustained method for evacuating 100,000 MT Agri-residue biomass annually and create additional rural income of Rs 15 Crores. It also aimed at strengthening engagement with government and industry stakeholders to expedite the creation of an enabling farm-to-fuel ecosystem.

The workshop was well attended by over 200 participants from across the supply chain - from farmers, FPOs, SHGs to Industrial users - in person and remotely.

