

# ***Fi*RE*Si*DE**

**The House Magazine of the Thermax Group Volume 51 No. 4 October - December 2021**



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## **About the Cover**

*This resplendent view captured in  
Ladakh shows nature at its best  
– clean and green! At times when  
climate change is an existential threat,  
preserving nature becomes a priority.  
Let us remind ourselves that nature does  
not need people; people need nature!*



## **Back Cover**

**Have you listened to  
the CLOCC podcasts  
yet?**

## **WORDS OF WISDOM**

**“Keep your face to the sunshine and you  
cannot see a shadow.”**

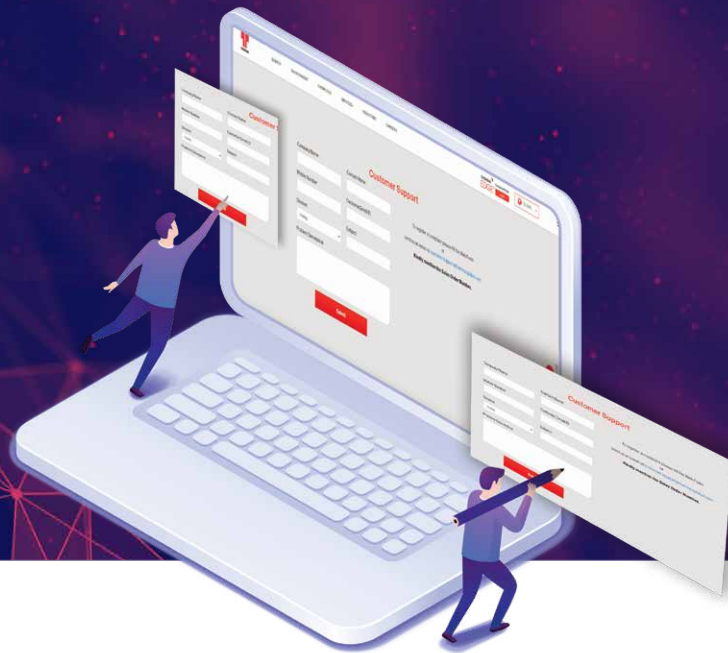
**- Helen Keller**

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# What's New?

## Revolutionising customer experience with Thermax customer portal



## Experience the Edge!

In a substantial step to bring the breadth of Thermax services and offerings at a customer's fingertips, Thermax launched an all-inclusive and one-of-its-kind customer portal – 'Thermax Edge™', on 25<sup>th</sup> November. The virtual event was simulated live to the customers via our website and YouTube platform.

The portal is curated for the complete spectrum of Thermax's clientele, ranging from MSMEs to corporates, who need information on purchasing a product and its related spares and services, tracking completed and/or ongoing orders, as well as staying informed on the latest news from Thermax.

Unlike traditional communication channels, this modernised way of client interaction is all set to revolutionise the way our customers fulfil their requirements for running the business.

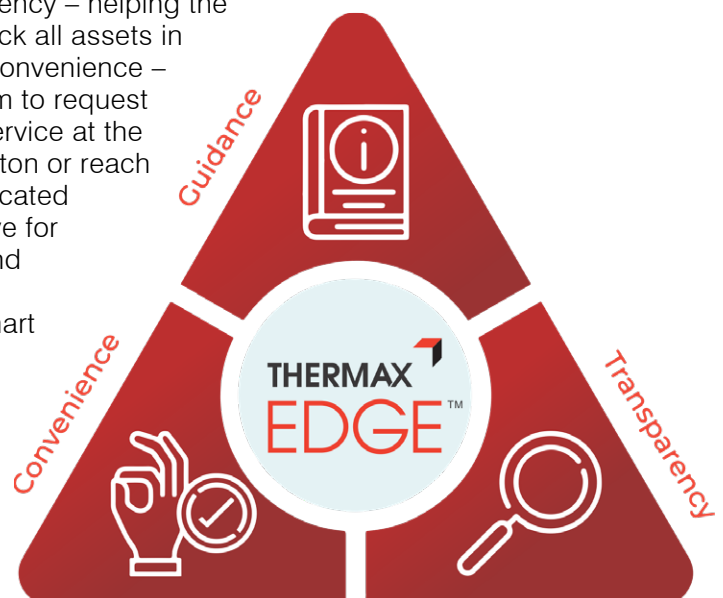
MD and CEO Ashish Bhandari spoke about the inception, the idea and features of the portal. Addressing customers, he said, "Edge does not replace our channel partners and our service franchises – it enhances the power of this network. Behind

the scenes, Thermax Edge™ is connected to our dealers, our dealer systems, Thermax sales / service employees and Thermax's ERPs – we bring everything together to give you what you need. When you request a service or a spare, the fulfilment will continue to happen through the designated service partner but for you, the customer, there is one single interface. The rest will be managed by Thermax."

Thermax Edge™ is built on three important cornerstones keeping the customer in mind viz. Transparency – helping the customer track all assets in one place, Convenience – allowing them to request a spare or service at the click of a button or reach out to a dedicated representative for a request, and Guidance – providing smart

recommendations on the life of spares and expert guidance on preventive maintenance during plant shutdown.

Ashish further informed that this is the first version of the portal; the future releases will integrate IIoT and allow for machine health monitoring through the platform. It will integrate dealer warehouses with Thermax inventory to offer customers superfast deliveries of urgently needed parts as well as will facilitate WhatsApp communication for service scheduling.



Chairperson Meher Pudumjee said, "With this infrastructure being set, we will move closer to our customers and eventually be a company that is aligned to the IoT (Internet of Things). We envision that in the future, this platform will allow our customers to register their own assets and make the most of our IoT-enabled equipment. Edge takes Thermax's ability to serve our customers to the next level".

To watch the complete launch event, click here:



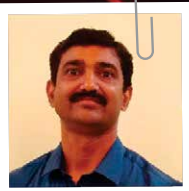
Ashish Bhandari addresses customers during the launch event

## Customer testimonials

“

This tool will guide us to reach out to the right person for addressing all of our equipment related issues. Looking forward to using this digital platform. Great work by Thermax team!

”



- Prashant Rane,  
AGM EHS,  
Emcure  
Pharmaceuticals

“

The customer portal offers user-friendly features like getting the entire asset history at a single place, registering new enquiries, planning for the plant shutdown, registering complaints and seeking feedback, among others. A dedicated SPOC allotted for all order types ensures that customer issues are resolved instantly.

”



- K. Venkatesh,  
DGM - Engineering,  
NSL Textiles Limited

“

I would like to appreciate Thermax for this initiative of creating a one-stop customer portal. Through this portal, I am able to see all my assets and their details in a single place. I can access the contacts of service engineers and get in touch with them for any requirements. The portal also allows me to register complaints and post new enquiries. During the course of time, I would like to give feedback for any improvements required in the portal. I hope Thermax would consider the same and do the needful. Once again, I would like to thank Thermax for its continuous customer support and focus.

”



- T. Thangasagaran,  
General Manager, Manali  
Petrochemicals Limited

“

I believe Thermax Edge is a great initiative. It completely eliminates the manual dependency on both the customer and service sides. From here, I can track the status of my spares as well as service requests in real time and can get in touch with the Thermax representative for prioritisation as well as follow up. The portal will help me go a long way in planning activities at the site.

”



- Anuj Paralikar,  
Manager, Lupin Limited

# Thermax expands its business in the renewable space

**T**he fight against the biggest existential threat that is 'climate change' can be addressed if industries adopt clean energy and transition to more sustainable manufacturing practices.

Fostering our presence in the renewable energy segment, Thermax's group company, First Energy Private Limited (FEPL), is uniquely placed to help its customers in their energy transition journey. With this new infrastructure being set, Thermax will be diversifying its sustainable offerings with solar hybrid farms and storage batteries, catering to

customers in the commercial and industrial space. The spectrum of renewable energy based power delivery solutions will cover capex and opex bespoke offerings that will span across Africa to ASEAN geographies.

FEPL will partner with large and small industries that want to transition to clean energy and help them navigate their energy switch journey over a long period with customised off-grid solutions. The company will enter into long-term contracts with its customers backed with significant investments in building the power infrastructure.

## Purpose Statement

*Accelerating the journey to carbon-neutrality through decentralised RE-power*

The newly introduced FEPL logo – the combination of blue and green symbolises sustainability and solidarity respectively, and its elements denote offerings that fit well for various utilities and applications.



- Navjit Gill,  
CEO, FEPL

**“First Energy doesn't stop at just generating (or even distributing) green power. We control the entire energy corridor – from behind the meter to beyond the meter. This assures dependable and reliable green power for its customers round-the-clock (24x7x365).”**





## Power rechristens to 'Projects and Energy Solutions'

**25** years ago, Thermax decided to venture into EPC (engineering, procurement and construction) of captive power plants; and therefore, Power division, the EPC arm of Thermax, was formed. So far, the division has an EPC installation base of 3,300+ MW, and more than 100 plants under O&M. This is a testimony to the dedication, customer centricity, and integrity of our people who have created this reputation for the division.

With the merging of FGD and ACC businesses into the Power division, and further, with multiple new business lines being seeded in diverse areas such as bio-CNG,

chemical plants, gasification, energy management solutions etc., it became imperative that the division's name also reflects the extended diverse portfolio. So, the Power division officially announced changing the name of its Business Unit to 'Projects and Energy Solutions,' effective 1<sup>st</sup> December 2021.

"While we shall continue serving our customers for their captive power needs, the Projects and Energy Solutions (PES) division shall nurture many more growth engines, offering a host of energy solutions to a variety of customer needs across multiple industries," said B C Mahesh, BU Head, PES.

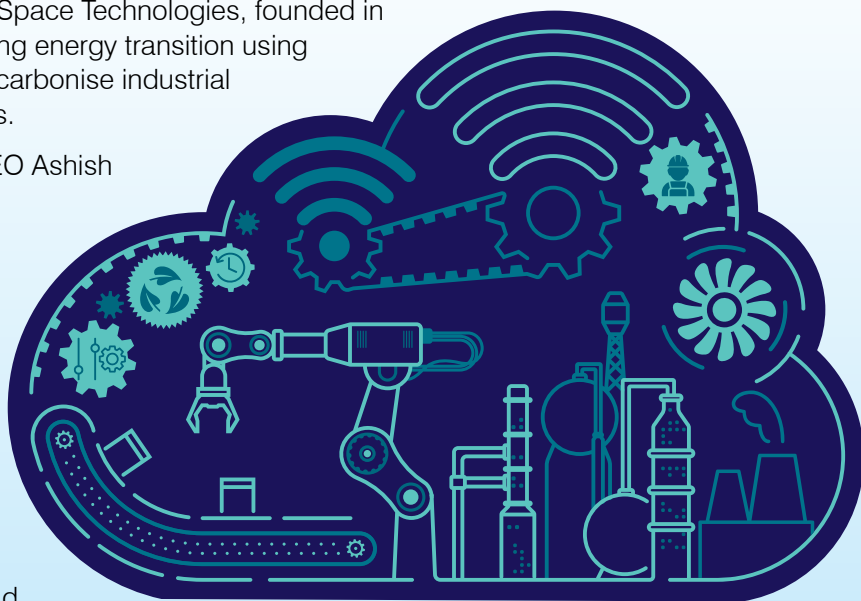
## Thermax partners with ExactSpace to accelerate its IoT journey

**T**hermax has acquired a stake in ExactSpace, a Bengaluru based start-up providing industrial AI and IoT solutions for manufacturing industries. ExactSpace Technologies, founded in 2018, focusses on enabling the ongoing energy transition using deep-domain AI solutions that help decarbonise industrial plants and eliminate unplanned failures.

Speaking on the partnership, MD & CEO Ashish Bhandari said, "Our investment in ExactSpace is a step to augment our digital capabilities. The expertise of ExactSpace in AI and IoT solutions for the energy segment will enable Thermax to deliver superior customer support and increase our share of service offerings."

Pilot projects have been initiated with customers across SBUs to provide asset monitoring, efficiency improvement, uptime and longevity, and analytics-driven failure prediction.

**ExactSpace**  
Analytics for Industries



# Expressions



Can we constantly ask ourselves whether we are faster, better, more efficient, greener, more sustainable than we were previously, or as compared to our competitors?

In this issue of Fireside, I thought of expanding on what I had said at the recent 'All Hands Meet'.

In the last quarter, we clocked a high quantum of orders, making our order backlog the highest to date. Kudos to all of you!

While it's wonderful to receive orders, let us continue to remember that growth must remain profitable with strong cashflows. Top line for the sake of it, may seem appealing but does not help the organisation in the long run.

At this point in time, inflation is high and is likely to continue at

this level. Commodity prices, freight have all gone through the roof, which is beyond our control. But what is within our control is:

- a) A much stronger differentiation or moat - whether it be value engineering our products and projects, differentiated technology, a lower footprint or higher efficiency. As Dr. Mashelkar would say, "more from less"!

Can we constantly ask ourselves whether we are faster, better, more efficient, greener, more sustainable than we were previously, or as compared to our competitors?

It's only then that we're truly adding value and can command a premium.

- b) Keeping a hawk's eye on all our costs - like you did so successfully at the start of COVID. No wasteful expenditure; but investing in areas that will help us differentiate and innovate.
- c) Looking at the way we manage our suppliers and inventory - building strategic relationships with them rather than a tactical approach.

Industries across the world, including India, have started seeing a lot of attrition, and so has

Thermax. Especially for the talent we want to retain, can we ask ourselves why this is happening? Is it just salaries, or can we dig deeper to understand what is bothering people? In the All Hands Meet, I heard someone talk about Internal Job Postings and the fact that managers refuse to let people go – would we rather lose our people to other divisions or to the outside world? Would love to hear your thoughts.

We are moving to a more performance-oriented organisation, which in simple terms means you do what you commit. It's all about keeping your word and being responsible to both internal and external customers. Unfortunately, we tend to spend a lot of our time on non-value-added work, like following up to get a task done. Why should this be? We are also not very good at setting stretched goals, timely appraisals, and honest, authentic documented feedback that happens on a continuous basis to enable an appraisee to know what exactly is expected of her/him, giving them chances to improve. Everyone deserves that.

Jasmeet, his HR team, and the EC (Executive Council) have put in a lot of time and effort introducing CLOCC behaviours - Customers, Lead, Own, Create and Collaborate. I am confident this will help us improve our commitments and service levels.

Just two months ago, we had our Board retreat, during which Ashish

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**My heartfelt congratulations to all of you since Thermax has managed this immediate shift away from combusting coal in a very seamless manner.**

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took us through the significant shift in the energy domain.

My heartfelt congratulations to all of you since Thermax has managed this immediate shift away from combusting coal in a very seamless manner.

At one time, we had nearly half our business or more coming from coal; it has now reduced to less than 20% of our turnover, which is excellent.

As we are all reading and witnessing, the world is grappling with climate change and what will replace fossil fuels. At COP26, our government has committed to India becoming net zero by 2070. Although far out, this is a very significant end goal, which would have repercussions on how India makes its energy transition.

Various enabling policies have already been introduced, whether it be the PLI scheme for manufacturing polysilicon, silicon wafers, cells and modules for setting up solar plants and reducing our dependency on imports; a thrust on biofuels like ethanol and bio-CNG or other renewables; the erstwhile PAT (Perform, Achieve, Trade) to

enhance energy efficiency, RPO (Renewable Purchase Obligation) and many others.

The recent Union Budget also highlighted an increase in capital expenditure, with a strong focus on climate action.

I'd like to talk about what this means for a company like ours in the next issue of Fireside.

Until then, we will all need to learn to live with and be comfortable with change.

However, here and now, it's important that every business executes each order meticulously, safely, and to the best of its ability; always being there for our customers.

Stay safe and keep well.

Warmly,

Meher

# Up Close

***"What you do today will be making a pathway for the opportunities that you will have tomorrow."***

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Khushboo Bhatia, CEO, TOESL, in a candid conversation with Priyanka Sarode, shares what keeps her going, what it means by 'being in the now', and business strategies for the future.

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The right mix of passion, enthusiasm and hard work makes for an exemplary leader. This is what defines Khushboo Bhatia, CEO, Thermax Onsite Energy Solutions Limited (TOESL), who joined Thermax in 2020.

Beginning her career as the youngest regional general manager in the power business across the globe, Khushboo has 17 years of industrial experience in the power, oil & gas domain. Her past experience includes working with GE and Honeywell. Her most recent role was the Region Executive - Sales for GE Power Services, South Asia (India, Bangladesh & Sri Lanka) where she led and anchored growth in the gas power business with key projects of ~10 GW, \$2.5 BN in the last decade. Through her years of service at GE, she has led turnkey projects, operations and life cycle maintenance of industrial plants, power plants, refineries and chemical plants and was part of the two joint ventures with NTPC and BHEL.

With a degree in Automation Engineering from Pune University and a course on Business Strategy in the Energy Industry from Georgia Institute of Technology, USA, she has built her career in the commercial domain, building various profitable businesses across geographies.

Within one and half years of an enriching stint with Thermax, she has been able to turn around the TOESL business threefold,

registering a 170 crore+ turnover. The division's aspiration is to reach the 1000 crore club in the coming years.

Speaking about the value proposition for the TOESL business, she informs, "We partner with our customers to deliver green utilities (like steam heat, power and water) on per unit basis. From investment to statutory compliance and from lifecycle maintenance of plants to delivering key performance metrics - is TOESL's responsibility. This enables the customer to focus on their core processes. Since we work only on green, carbon reduction, conservational solutions, we also help our customers in their sustainability journey and achieving their sustainability goals."

TOESL recently bagged its first international order in Indonesia for providing biomass-based steam for their process plant. Elaborating on the future growth trajectory of TOESL, she says, "Our strategy would have three levers – i) continued momentum in India by partnering with credible MNCs, ii) taking TOESL international by steadily targeting new geographies in the overseas market, and iii) diversifying our portfolio by incorporating emerging technologies based on water conservation, green hydrogen into our offerings."

"Transformative" is how Khushboo likes to define her leadership style. "Having a vision and chalking a roadmap to drive the team to get there is what I focus on," she adds.

At the same time, understanding that each individual is wired differently and perceives and processes things differently has been a critical aspect that she imbibed very early on in life. She believes this trait has helped her greatly to navigate through challenges in the course of her

professional life.

When asked about her success mantra, she promptly replies, "Having a dream, being rooted in reality, and persevering to achieve that dream!"



Talking about what it takes to lead a company, she quotes her idol Indra Nooyi, former CEO, PepsiCo – "To be a CEO is a calling. You should not do it because it is a job. It is a calling, and you have got to be involved in it with your head, heart and hands."

Being a woman leader, she feels deeply towards the cause of supporting and empowering women, especially in scientific and technical fields. "In India, we have 43% women in the tertiary segment of STEM (science, technology, engineering and mathematics), which is larger as compared to the US, UK, Germany and France, where the representation is relatively low. Neglecting this potential workforce, about 50% of the population, will be regressive. Therefore, it is very important that we acknowledge and encourage the diverse talent pool in our country," she says.

Her interests that have shaped her personality significantly have been travelling and reading. The fact that she has never stayed in her hometown longer than a week during the past 16 years is

a testimony to how avid a traveller she has been, and that has kept her passion for the job alive. Since the pandemic didn't allow much travel over the last two years, Khushboo resorted to cooking to

give herself a break. "I can now make you a mean mutton curry," she quips.

Her other hobby, reading, has been an integral part of her since her childhood. It has led her to traverse from Enid Blyton's adventures to books on business management by Peter Drucker. "My current read is 'A Promised Land' by Barack Obama," she shares.

An organisation plays a vital role in shaping not only the career path but also the belief system of an individual. "The values Thermax abides by like respect, integrity, compassion, and supporting people around is very valuable, and I really appreciate it," she comments.

What is the one advice you would want to give to the young aspirants today? "Be in the now!" "What you do today will be making a pathway for the opportunities that you will have tomorrow," she elaborates.

She signs off with a saying by the famous children's author, Dr. Seuss - "It's not about what it is, it's about what it can become."

# Round up

## Customised solution by Thermax Chemicals helps pharma major improve efficiency

**N**ow-a-days, many pharma companies have been opting for Zero Liquid Discharge (ZLD). One of the major pharma customers based in south India was looking for a customised solution to address microbial growth in their cooling towers and wanted to recycle water from ETP as makeup to cooling towers. Thermax Chemicals suggested the application of our chlorine dioxide generator and strong biocide combination to tackle algae formation, slime growth and to control chemical oxygen demand (COD) / biochemical oxygen demand (BOD).

Before the treatment, they faced issues of corrosion, choking of fills and had to shutdown the cooling tower for cleaning purposes. But now, with our treatment, they are even able to reuse this water.

Apart from the above benefits, the approach temperature of chillers was maintained constantly with less than +0.5 degree variation. This was much better than an earlier treatment provided by a competitor, which required monthly or even fortnightly cleaning as the approach temperature would frequently rise by more than 4-5 degrees in that period.



## APC's FGD system to curb SOx emissions



*Thermax's FGD system's absorber tower*

**H**ere is a glimpse of Thermax's flue gas desulfurisation (FGD) system's absorber tower (sulphur capture), ready to be shipped to Saudi Arabia's leading sugar refinery.

The air pollution control (APC) business supplied a flue gas desulfurisation (FGD) system to the United Sugar Company (USC), a leading sugar refinery in Saudi Arabia. The FGD system will reduce sulphur oxides (SOx) caused by burning high sulphur fuels in the boilers. It will also help the customer to achieve the required SOx emission norms.

## Diagnotherm services contract bagged for specialty chemicals company



**T**hermax recently bagged a prestigious order from one of the leading Indian specialty chemicals manufacturers based in the western part of India for its Diagnotherm services.

Diagnotherm service is a comprehensive equipment health check-up done to improve operational safety and reliability of these critical process heating equipment and safeguard them against possible failures and accidents.

The prestigious order was won for 17 boilers and nine thermic fluid heaters that are installed and are operating at five different manufacturing units belonging to three different zones of the specialty chemical manufacturer. These 26 units of equipment are a mix of Thermax and other competitor-makes.

With this order, Thermax aims to improve the overall process heating system on the efficiency and safety aspects.

## Thermax commissions process heating equipment for an FMCG major

**T**hermax has successfully commissioned and handed over an 8 TPH oil fired boiler, a 3 MnKCal/hr thermal oil heater and a thermosyphon to a subsidiary of one of the Indian multinational conglomerates that focusses on personal and home care products for consumers.

The scope of this EPC-based order included piping along with engineering, supply and commissioning of the three process heating equipment required for manufacturing of consumer goods at the customer's plant in the southern part of India.

The customer is an existing and happy user of Thermax equipment and continues placing their trust in Thermax's reliability as a process heating solution leader.

*The 3 MnKCal/hr thermal oil heater (left) and 8 TPH oil fired boiler commissioned at the site*



# TOESL's pilot ash bricks project leads to circular bio-economy



*Biomass ash from the TOESL site in Pune*

**T**hermax Onsite (TOESL) collaborated with an ash disposal vendor to pilot an initiative of producing ash bricks from the bed ash being generated at one of its sites in Pune, thus contributing to circular bio-economy.

TOESL invested in the brick making machine, which can also produce paver blocks. As compared to red bricks, the ash bricks have a non-polluting manufacturing process, with better compressive strength, smoother finish, better acoustic properties and heat resistance. Since these bricks are bigger, interim spaces between the bricks are reduced during construction, thus requiring a lesser quantity of concrete.



*Bricks manufactured from biomass ash*

Gathering insights from this pilot project, the next steps shall be to support the local brick manufacturer and bring in automation in the manufacturing process, achieve Bureau of Indian Standards (BIS) certification for the ash bricks and scale this model to other TOESL sites across India, in collaboration with local partners.

## PES commissions cogen plant for a leading pigment manufacturer

**P**ower and Energy Solutions' (PES) Small Power Plant (SPP) division recently commissioned a 7.4 MW cogen plant for a leading colour and effect pigment manufacturer in Roha, Maharashtra. The project, which was executed on EPC basis, included a Thermax make AFBC boiler, back pressure steam turbine generator and balance of plant equipment.

This was a repeat order from the customer, after successful installation of the 9 MW cogen plant in 2016, in the same premises. The Thermax team is also providing O&M services to both the plants.



*7.4 MW cogen plant commissioned at the customer's site*



# Enviro helps steel major improve blast furnace efficiency with its coal preparation plant

## Introduction

In the manufacturing process of iron and steel, pulverised coal plays a very important role in improving the blast furnace efficiency by partially replacing the coke needed for the hot metal production process inside the blast furnace. While the coke is utilised as a reducing agent in the chemical reaction to extract iron metal from iron oxide (iron ore), the heat needed (1,500 to 2,000°C) for this reaction is provided by the pulverised coal being injected inside the blast furnace along with the hot blast (high pressure hot air). Thus, reduction in coke consumption results in overall cost reduction and increases the profitability of iron and steel production.

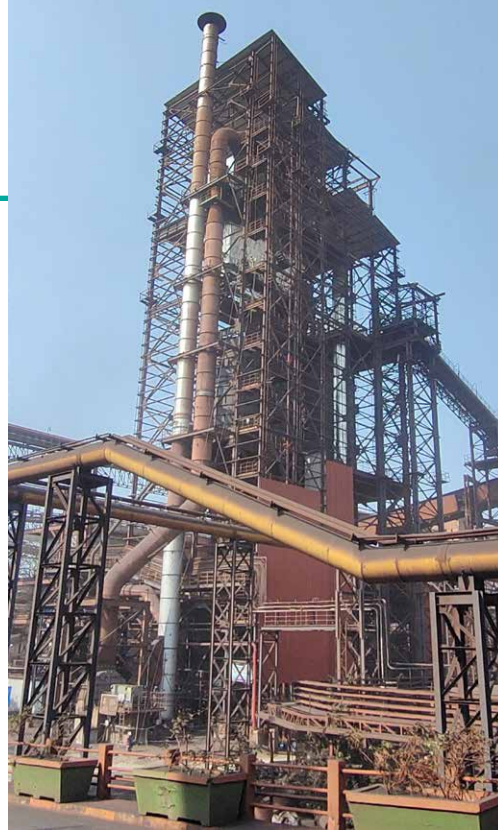
## Objective

The customer, a steel major from Karnataka, needed a capacity expansion of its 3 X 50 TPH coal preparation plants (also supplied by Thermax) due to an increase in their iron and steel production. Another objective was to reduce coke consumption by increasing coal injection into the blast furnace.



*Thermax's team at the customer site*

*The 80 TPH coal preparation plant commissioned by Thermax Enviro*



## Implementation

Thermax Enviro commissioned an 80 TPH coal preparation plant for the customer. The scope of the project involved a structural steel building of approximately 63 metre height, 800 m<sup>3</sup> raw coal silo, 1,280 m<sup>3</sup> pulverised coal silo, coal grinding mill, pulse jet product collection bag filter, hot gas generator, ID fan, booster fan in addition to interconnecting ducting, dampers, piping and valves for various gases and water, necessary electrics, instrumentation, automation and control with all safety interlocks for this closed loop system. It also included site fabrication of 11 metre diameter fine coal silo and 8.5 metre diameter raw coal silo along with its erection at site.

This plant will help generate 80 tonnes of pulverised coal per hour which can be injected and fired in the blast furnaces.

## Result

The system supplied by Thermax controls the suspended particulate emissions up to less than 10 mg/Nm<sup>3</sup> during the entire pulverisation process. It is the highest capacity plant for the customer at the location as well as for Thermax.

The project was executed with more than 2,10,000 incident-free man-hours, and the customer appreciated the team for safety practices. This has reinforced Thermax's prowess in turnkey execution of critical projects like coal preparation plants.



## A sustainability campaign by Thermax Cooling

**W**ith climate action taking centre stage due to the recent COP26 summit held at Glasgow, UK, many sustainability legislations have been enforced on industries of different kinds, majorly focussing on reducing industrial carbon emissions. The urgency can be understood from the summit's goal to reduce the global temperature from 1.84°F (as of January 2022) to 1.5°F within 2030. The need for climate action is more crucial than ever as we have only a few years to control the situation.

### Backdrop to the campaign

At Thermax, we have been empowering our customers to go grid-free and reduce their carbon emissions with absorption technology. With sustainability campaigns currently at the forefront of energy branding across the world, we should strategically aim to showcase the green cooling we add to the planet, thus promoting the business

as a viable option for energy-efficient cooling and heating.

Cooling and heating systems account for over 50% of building energy and run largely on fossil fuels - pushing the planet's temperature to dangerous levels. Hence it is critical to switch to alternative energy sources for industrial and commercial cooling and heating. Thermax enables industries make a seamless switch to sustainable cooling

with vapour absorption technology. Thermax is thus well positioned to drive change and lead the world towards sustainability.

### Objective

With Zero We Go, our move towards reviving a healthier and greener world begins with the fundamental aspect of reduced emissions. As a thought leader of sustainability and energy savings, with this

**Driven by sustainability, Thermax Cooling's journey is marked with milestones of innovative and efficient developments, all that aim to ultimately reduce emissions associated with cooling and heating.**

1984

Establishes Absorption Cooling business as a part of the Heat Recovery division, selling chillers made by Sanyo, Japan

1989

Develops steam fired chillers in technical collaboration with Sanyo

2003

Launches waste heat recovery based B4K series of absorption chillers

2005

Launches glycol-free zero-degree absorption chiller

2010

Develops chiller-heater that recovers excess heat from the cooling cycle

campaign, Thermax intends to inspire and encourage industries to incorporate zero-emission solutions, like our Vapour Absorption Machine (VAM), to realise the net-zero dream soon.

The major goal of the campaign is to position Absorption Cooling as a viable candidate for industries and commercial complexes' cooling requirements.

### Acknowledging our conscious customers

Over the past three decades, when climate change was not the world's biggest concern, many of our customers had already chosen Thermax chillers for their business, consequently restoring the environment. On this account, through Zero We Go, we appreciate and acknowledge their contributions and look forward to having many such environment-conscious customers with us.

### Initiatives

For propagating this campaign on a wider scale and to drive home the message effectively, we have been laying out digital and print communication regarding the different varieties of sustainable cooling solutions available with Thermax, so that audience can easily identify their own custom cooling and heating needs. Simultaneously, we have also been conveying the distinct benefits of Thermax chillers — cost-effectiveness, reduced emissions, and energy optimisation — to our prospects and encouraging them to join our journey to build a greener and healthier world.

### Walking the talk

Sustainability starts within us. So, while advocating Zero We Go to the world, we have also been engaging the Thermax

family to be a key part of this campaign. Through the chosen avenues, like social media, digital, print, and events, we have been inspiring and engaging internal and external stakeholders as well, making them enthusiastic advocates of our project. By starting the journey of zero-emission right from home, we have been adding credibility to the messages we speak for.

With Zero We Go at the front, our innovative cooling and heating solutions address the climate crisis in their own way. With every machine commissioned at our customers' facilities, every message we propagate about adapting sustainable solutions, we are getting a little closer to a greener and better world.

### A digital library for Zero We Go is live now

To be a part of this campaign and learn everything about it, [click here](#).

To further encourage the world around us to make sustainable choices, we have instituted the "Zero We Go Day" on 28<sup>th</sup> January. The day aims to drive the world around us towards a greener and better tomorrow and bring every environment-loving mind together onboard.

Hop on the Zero We Go ride



2014

Develops ultra-low pressure absorption chiller that offers 100% carbon savings

2014

Launches hot water driven heat transformer

2018

Launches single effect steam and low temperature hot water chillers for improved source utilisation

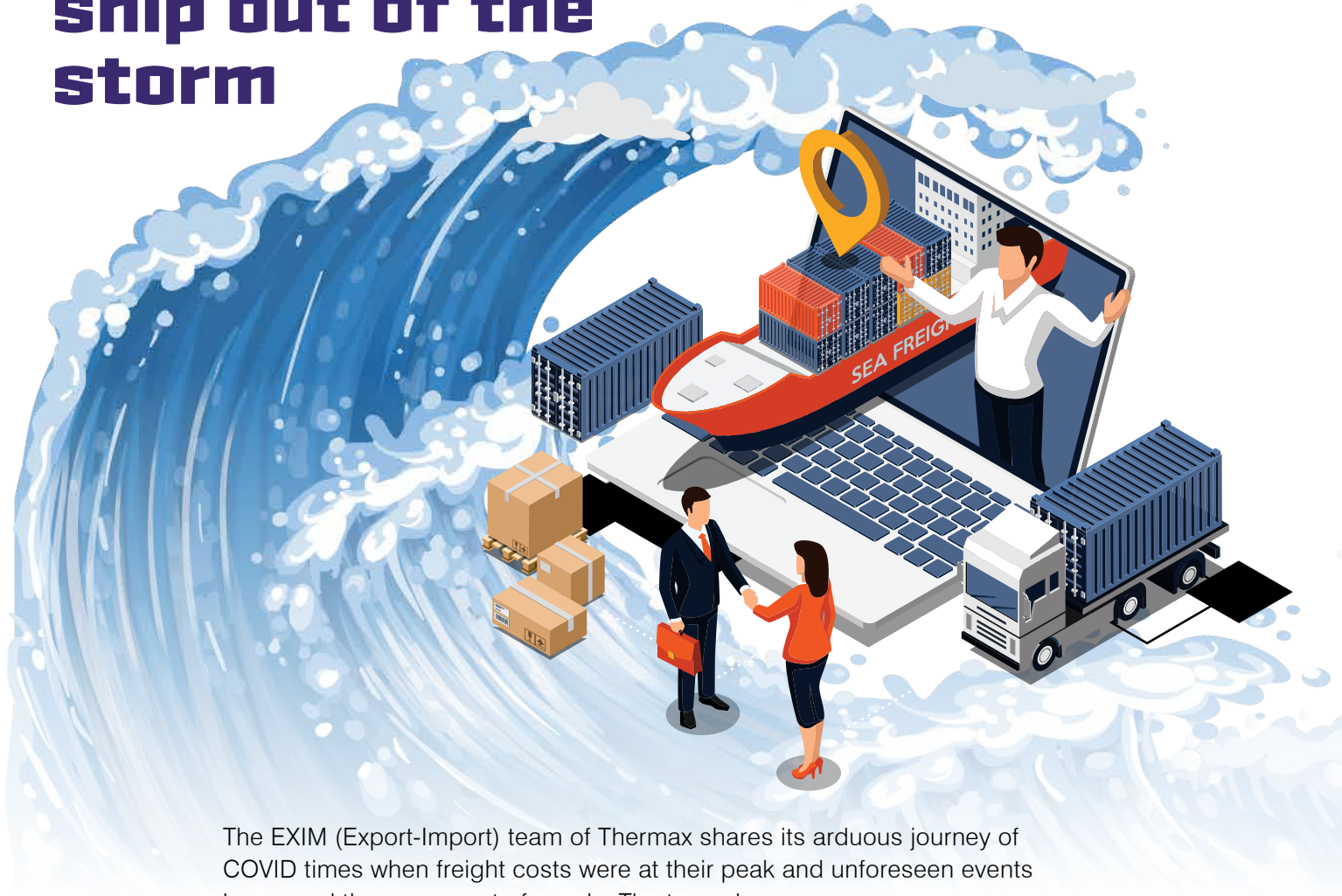
2019

Started the smart 'Green Factory' for VAM manufacturing at Sri City, India

2021

Launches **ZEROWeGo**  
For our planet

# Maneuvering the ship out of the storm



The EXIM (Export-Import) team of Thermax shares its arduous journey of COVID times when freight costs were at their peak and unforeseen events hampered the movement of goods. The team, however, overcame every challenge and managed to keep its promise of delivering packages to customers against all odds.

## The role of team EXIM

The EXIM team across Thermax ensures and coordinates the movement of goods internationally. Whether by road/air/sea, it is the duty of the team to ensure that the goods reach out to international customers safely and within the estimated timelines. Along with the movement of the cargo, the team also needs to ensure that

the documents necessary for clearance are sent ahead of time so that the cargo sails through without a hitch. This involves a lot of coordination between different entities - such as local customs, shipping lines, freight forwarders, clearing house agents (CHAs), banks, to name a few, and one of the relatively economic means of transport via sea, the shipping containers.

## A challenging time for freight

About two years ago, the world encountered COVID-19 and to date, we are still trying to recover from the unforeseen events that occurred. As the pandemic caught us unaware, the EXIM team of Thermax had to find out ways to move from the document-heavy model to a digitised one to keep operations

running smoothly. Global trade was hampered due to multiple lockdowns occurring globally. Freight movement by sea was increasingly becoming uncertain. The usual flow of containers got hampered, and empty containers began to pile up in distant locations and did not get collected.

One of the major obstacles came when a large chunk of empty containers from America kept accumulating and could not be sent back to other countries due to border and trade restrictions. This also resulted in containers piling up at ports. This, along with the staff shortage due to local restrictions, further led to the paucity of empty containers used for shipping cargo. The shipping lines reduced the number of vessels plying and rerouted them to more profitable trade routes, resulting in gaps between supply and demand for many trading routes.

## An unprecedented event

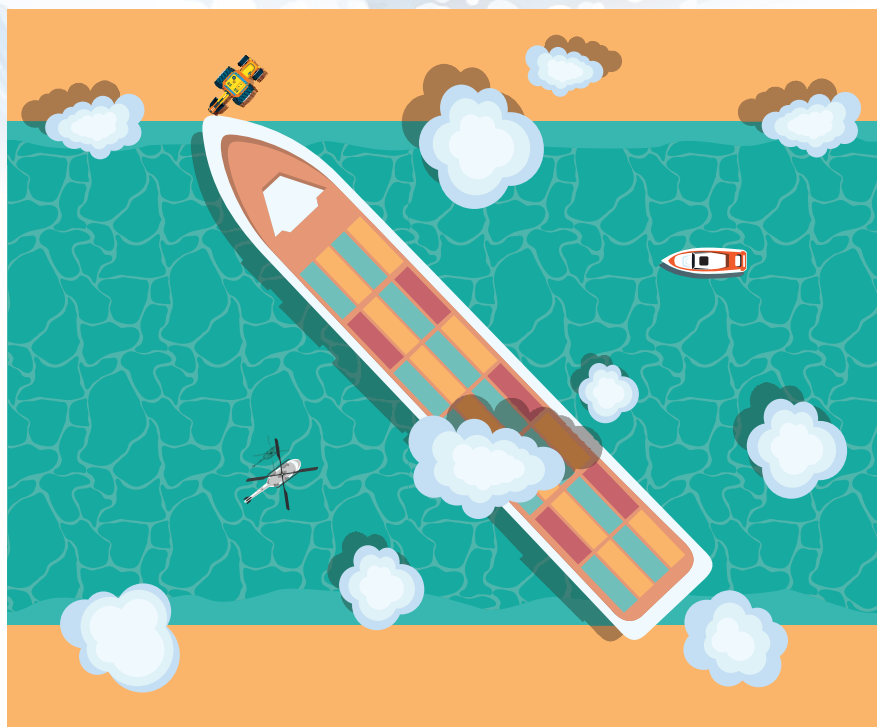
On 23<sup>rd</sup> March 2021, one of the world's largest container ships - EverGiven, got stuck in the Suez Canal. It was on its way from Malaysia to the Netherlands when it got stuck in the canal, blocking movement of trade in either direction for six days! Affected vessels totalling up to 16.9 million tonnes got delayed due to it. Vessels transiting through the canal contribute to roughly 15% of the world's marine traffic, and this occurrence was a major setback to trade. This added to the delay that the transport was already facing. Other carriers which were due to take that route had to be rerouted around Africa via Cape of Good Hope to their destinations to avoid getting caught in the interruption, but this added two weeks to the journey time. Some of our containers on

route to their destinations got further delayed by this deadlock.

## Resorting to workaround

For the entire transaction of an international shipment, there is also a significant movement of original documents from one party to another. LC (letter of credit) and BG (bank guarantee) needs to be created along with the original set of invoice, packing list and shipping documents that need to be sent across to international vendors and banking partners as a guarantee for the shipment. But with the shortage of staff and the little to no operation of the courier, sending original documents across became a hassle. This situation was deftly handled by the EXIM team after discussion with our banking partners. Soft copies of the documents were issued over email in place of originals. Not all the parties involved agreed to this initially, but due to the uniqueness of the situation, they accepted to work with this temporary workaround.

Sanjay Datye, Group Head, Commercial Heating, said, "It was for the first time that we handled the LC document through the bank in the absence of original documents. We had managed to convince the bankers, customers and overseas agents by giving indemnity. Some of the customers agreed and cleared against BG, while a couple of them penalised us for delays due to detention/demurrage. We could, however, recover 85% of our payments."



*A graphic representation of EverGiven blocking the Suez Canal*

## Experiences from EXIM

Slowly, as countries started to open up and trade gradually began to resume, the shortage of containers became more prominent as the requirement and needs of companies increased, and due to the shortage, the rates for the available containers began to rise. The imbalance in the available equipment and containers, along with staff shortage at ports resulted in a backlog of containers. Our shipments across multiple divisions too were affected by this domino effect for international as well as domestic movements. With COVID wreaking havoc, along with travelling restrictions, there was a shortage of truck drivers who would agree to pick up our shipments from our factory and carry them to the port. This, paired with a surcharge in fuel prices, meant that not everyone consented to the pre-agreed contracts. To tackle the situation, drivers had to be paid a premium to collect the shipments.

### i) Chemical rises up to the challenges

The Chemical division set up a separate room near the premises for all the drivers coming to pick up the shipments. This was undertaken as a safety precaution to restrict interaction between our employees at the stores and the truck drivers. All necessary steps to ensure the safety of both parties were taken into consideration.

The team at Chemical, after discussion with customers and the management, began to plan and execute orders almost two months in advance in anticipation of a delay at the port or in transit. This ensured that the orders were executed, keeping the timelines in mind. However, the surging freight rates and shortage of equipment couldn't be avoided, and we had to bear the increased costs. Rates for Europe and

USA had increased manifold, which affected the movement of goods. Freight for goods destined for USA which used to be for \$5000, were now available at over \$15000. It was difficult to procure it with budgeted rates. The team thus reached out to their customers to come to a mutual agreement of ensuing freight surcharge. This ensured the systematic movement of goods as and when they were ready.

Rajesh Shete, Head, Commercial Chemical, informed, "The customers, after checking with their logistics team, were ready to pay the additional freight surcharge apart from the agreed rates. In cases where they did not agree to the increased rates, the customers were given the option to depute their own forwarder to pick up the shipment."

### ii) Cooling overcomes the COVID hiccups

A major issue that was prevalent among many of the shipments was the kind of load that the shipping line could carry amongst the few plying on that route. Shipments had to be split in accordance with the liner and the documents modified accordingly. This further led to an increase in freight and other corresponding charges. The Cooling division's shipment destined for the west of Africa from Chennai had got stuck due to the restrictions. The consignment



*A separate room arranged by the Chemical division for all the drivers coming to pick up the shipments*



*Chiller loaded on mafi and awaiting movement*

and documentation were planned with rates and timelines as per regular, but the shortage of space on operational vessels threw a spanner in the works. Unavailability of space, in addition to high freight rates, made the situation worse. Being COVID times, the shipment was made ready for dispatch but got stuck as none of the shipping lines were plying on that route.

"It was a challenging time during the mid of last year in shipping the chiller to one of our customers in Nigeria. None of the shipping lines were accepting OOG (Out of Gauge) cargo to any of the Nigerian ports due to heavy congestion. The chiller was lying at our plant for more than a month, and we were not able to dispatch it as the BBK (break bulk) vessel option was proving to be too costly than the container mode. Therefore, we had to start exploring other opportunities. Finally, we moved the cargo to an RO-RO vessel under mafi operation.

This was the first time it was being done for the Cooling division," said Muthukumaran R., Group Head, Absorption Cooling.

### Putting our best foot forward

Not only the freight rates were out of budget, but other expenses such as storage charges began to pile up due to the delay. Documents such as LCs had to be modified as they were nearing expiry. Ready shipments cannot be kept in storage without incurring additional unnecessary

charges, and it was very much prevalent in this case. After a lot of efforts, the team managed to move the shipment. Finally, after completing the necessary documentation for the onboarding of the vendor, the shipment was dispatched for its destination. This was just a small taste of what soon became common for many other shipments which were to happen.

Now, although most of the staff and offices have resumed daily operations and movement of orders have almost neared normalcy, freight prices are still at their peak with no slowdown in sight. This is mostly due to the lack of empty containers and backlog that has been already created. The governments all around the globe are slowly realising how terrible the freight outlook is, and they have just begun to take action to provide some relief to the exporters. But till that time comes, the EXIM team will do their best to ensure that orders get executed as promised.

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**"Challenges have never been new to the logistics manager; however, under the present situation, the challenges are way beyond anybody's control or anticipation. Collaborative and proactive approach with excellent coordination has become the key focus, agility and flexibility have become the key drivers for logistics execution in order to control the uncertain situation and, to some extent, cost. There have been many instances where our team has done commendable work in these challenging times."**

- Anand Iyer, Head, EXIM

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Social Compact (SoCo) is an initiative dedicated to ensuring safe and secure working conditions for migrant workers across the country. The core tenets of SoCo include - starting with a common minimum undertaking that is legal, moving to additional good practices with an industry-focussed lens, and defining a set of parameters that outline standard working conditions.

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**SoCo caters to these human centric outcome areas:**



This is a self-driven journey by companies that are committed to ensuring a set of standards for their workforce. It aspires to cover one million informal workers spread across the ecosystem of 150 companies in India and has started connecting with 15 in the pilot phase across Pune, Mumbai and Ahmedabad.

Thermax kickstarted the SoCo initiative in 2020 in partnership with NGO Dasra, and with like-minded corporates. We identified some of our sites for quick and immediate attention under the SoCo initiative. In collaboration with NGOs Dasra and Aajeevika Bureau, a survey was undertaken at a few of our factory locations and sites in

Gujarat and Maharashtra, basis which gaps and opportunities were identified to improve the working conditions of the informal workforce.

**Stay tuned to receive more updates on SoCo in your inbox!**





# Chemical business markets ion exchange resins @ Aquatech



Thermax Chemicals participated in Aquatech at RAI Amsterdam. The exhibition was held from 2<sup>nd</sup> to 5<sup>th</sup> November 2021, to create brand visibility of ion exchange resins in European geographies and to network with potential customers for business development. The Tulsion® brand of ion exchange resins with a product basket of more than 400 products, offers solutions ranging from water and wastewater treatment to highly specialised applications that cater to a gamut of industries.

Aquatech is the world's leading trade exhibition for process, drinking and wastewater solutions. The exhibition is a unique concept in Europe with a complete focus on water and records attendance of more than 15,000 visitors and over 550 exhibitors every other year.

The customers appreciated our knowledge in the subject matter and Thermax's diverse product portfolio of Tulsion® ion exchange resins and its applications.



*Thermax representatives address visitor queries at the exhibition*



*Thermax's Chemical Division, US, at the International Water Conference*

## Participation at the International Water Conference, US

Thermax showcased Tulsion® ion exchange resins offerings and its applications at the International Water Conference (IWC), held from 7<sup>th</sup> to 11<sup>th</sup> November 2021, at Talking Stick Resort, Scottsdale, United States.

The IWC is dedicated to advancing new developments in the treatment, use and reuse of water for industrial and other engineering purposes.

Attendees come to learn details about the latest applications available in the industry, get educated on current technology, and hold wide ranging discussions with their peers from the water treatment industry.

# Diversity and Inclusion

## Embracing inclusion

A diverse and inclusive workplace is one that makes everyone, regardless of gender, nationality, religion/caste, age, and irrespective of where they come from, feel equally involved in all areas of the workplace.

The Diversity and Inclusion initiative by Thermax brings to you stories amongst us that inspire and make us proud!

Vinoth Kumar R. and Hari Krishnan B. joined Thermax as apprentices at Sri City factory earlier this year. While they do the daily tasks of recording readings on the machines and arranging products - there is one thing that sets them apart - both are speech and hearing impaired!

In an inspiring initiative at Sri City, four differently abled candidates (with speech and hearing disabilities) have been recruited at the factory's shop floor.

P. Raja, Group HR Head, Cooling, informs, "As part of our Diversity and Inclusion journey, today we have women employees at Sri City working with various functions. Adding another milestone to the journey, we have hired people with speech and hearing disabilities who are deployed at the shop floor. Right from sourcing to deployment of employees at the factory, all the necessary care is taken, including providing facilities for accommodation, allotting an appropriate job profile to them, giving sign language training to

the supervisor etc. Their safety is our top priority and therefore, we have designed a handholding programme along with the supervisor and safety officer for the initial days. The recruits are now being trained on specific job roles, and they feel happy to be a part of the Thermax family."

What better way to commence our Diversity and Inclusion page than to hear them out? So, the HR and Corporate Communications teams reached out to them to know how they feel to be a Thermaxian. A sign language interpreter helped us to interact with them.



**"Diversity and inclusion are two interconnected concepts - but they are far from interchangeable. Diversity is about representation or the make-up of an entity. Inclusion is about how well the contributions, presence, and perspectives of different groups of people are valued and integrated into an environment."**

— Matt Bush,  
Culture Coaching Lead



**Vinoth Kumar**, graduated from ITI in 2021, and joined Thermax post the interview proceedings. With happiness reflecting on his face, Vinoth introduced himself

and gave us a brief of his work schedule.

Talking about his family background, Vinoth informed that his parents are daily wage workers, and they are three siblings. Coming from a humble background, Vinoth wanted to be self-dependent and earn in order to support his family. "I had joined the Vocational Rehabilitation Centre and underwent training there before joining Thermax. I am happy to have been chosen and



*Vinoth Kumar at work*

to be joining this company," he conveyed.

His job comprises monitoring details of raw materials and feeding the same into the system. Support and acceptance from his colleagues was crucial for Vinoth to feel a sense of belonging. When asked about the support he received from his seniors, he shares, "Everyone around has been very cooperative. The HRs and supervisors have been very encouraging and communicate with patience. Even if we make some mistake, we are taught



*In conversation with Vinoth Kumar*

about the right and the wrong; and are guided to complete the task as required."

The work environment and a sense of independence have raised Vinoth's confidence.

When asked what his aim in life is, he simply smiles and replies that he wants to lead a happy life.



**Harikrishnan B.**, like Vinoth, was equally elated to take up the job at Thermax. His childhood was far from comfortable as he and his two siblings faced a lot of challenges coming from an underprivileged family. His father is a labourer and mother is a homemaker. Post his class XII, he completed his ITI training at the Vocational Rehabilitation Centre. Thermax has been a ray of hope

for Harikrishnan, who today feels energised to come to work every day and is satisfied to have a job at hand.

With minimal knowledge of the factory operations, Harikrishnan was a little flummoxed in the beginning, but he soon adapted to the work environment with support from his seniors and supervisors.

Communication was a challenge initially, but gradually he could make friends at the shop floor and is enjoying his work.

He greeted us and spoke in detail about his work routine at the factory that starts at 9:00 in the morning. Harikrishnan works with spares and helps to arrange products as per their labelling.

When asked what he likes to do in his leisure time, Harikrishnan says that he likes to spend time with his friends or watch some comic videos.

"I could earn enough for my hostel, travel as well as give some amount to my family,"

he shares, talking about his first salary. Having had a tough childhood, Harikrishnan's dream is to earn an ample amount of money so that he and his family can live peacefully.

The two interactions made us realise that living simply and being able to enjoy the small things in life is the greatest achievement.

We wish them a fruitful and successful career at Thermax!



*In conversation with Harikrishnan B.*



*Harikrishnan at work*

# Limelight

## Shubham Patil treks to Everest Base Camp



*Shubham rejoices on reaching the Everest Base Camp*

Shubham Patil, son of Shantinath Patil from TBWES, successfully summited the Everest Base Camp on 3<sup>rd</sup> December 2021. It was the first attempt for this 25-year-old working in Intel.

Reaching the Everest Base Camp with a height of 5,364 metres at a temperature of -20°C was certainly a memorable feat for Shubham. It took him a total of eight days to travel from Lukla (a small town in north-eastern Nepal) to the base camp.

Trekking is a hobby and passion for Shubham, who wishes to summit the Island Peak in the Himalayas by next year.

## Kshitij Sharma qualifies for football nationals

Kshitij Sharma from TBWES is a member of the Pune Senior Masters Football Team that emerged as a winner in the Second Maharashtra State Masters Games Championship, held in the last week of November 2021 at Indapur, Pune. Kshitij will now represent Maharashtra in the national football tournament to be held in Telangana in May 2022 in Kerala.

Kshitij has played for the top elite football club of Pune, and has represented his school, college at the district level; and also played for the Pune University team in the past.



*Kshitij receiving the medal for winning the Second Maharashtra State Masters Games Championship*

# Signposts

## Germany's plans for wind power are dauntingly ambitious



.....  
In what could change the face of the country, as per Robert Habeck, Green vice-chancellor, Germany, the government is all set to harness wind power, taking the country's capacity to generate 80% of electricity from renewable sources by 2030. Reaching the 100+ GW of onshore wind power would mean upgrading existing turbines and setting 2% of the German territory aside for wind turbines. Though some lurking challenges like understaffed municipalities and threat to the vulnerable red kite need to be addressed, the government is determined to get its phase of energy transition right.  
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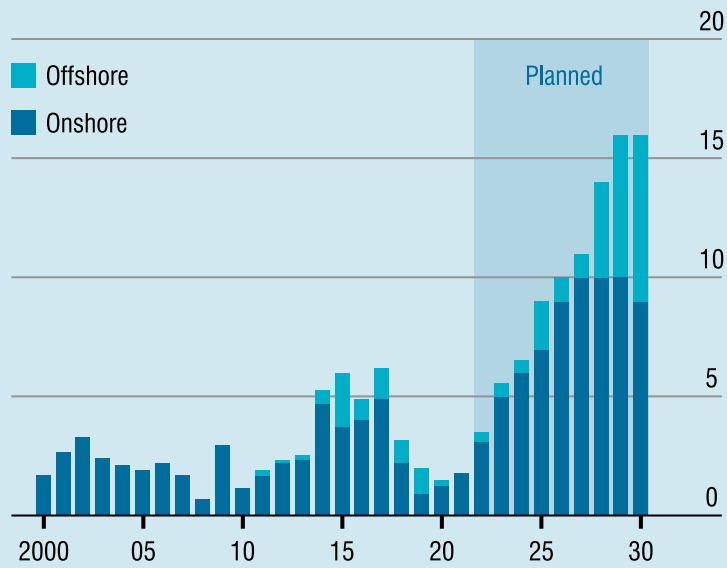
“Wind energy is *Schmarrn* (nonsense),” exclaims Albert Köstler in his earthy Bavarian vernacular. He became hostile to wind power as mayor of the small

town of Neualbenreuth, near Germany's Czech border. Having reinvented itself as an attractive spa town, Neualbenreuth fought to prevent wind farms from spoiling the view for tourists. Now Mr Köstler's scepticism has

curdled into frustration with the pushy investors and *plemplem* ('crazy') politicians who wish to stud the landscape with turbines. Bavaria's vistas tend to inspire nimbyism in locals, admits Roland Grillmeier, chief administrator of

## Windmills on their minds

Germany, annual wind-energy installation, GW



Source: Working Group on Renewable Energy Statistics

The Economist

the nearby Tirschenreuth district. But he shares their concerns.

On current form, Mr Köstler has little to worry about. Last year just eight turbines were erected in Bavaria, Germany's largest state. Indeed, where vast subsidies and legal guarantees had once turned Germany into Europe's wind-power heavyweight, construction of turbines has lately ground to a near-halt (see chart). In the first half of 2021, coal overtook wind as the leading electricity source in Germany.

That is set to change.

Decarbonising German industry and energy is the guiding project of the three-party 'traffic-light' coalition that took office in December. As part of its goal of turning Germany carbon-neutral by 2045, the government pledges that 80% of electricity will come from renewable sources by 2030, up from 42% today. Because demand will rise, that implies a 120-150% growth in renewables.

Wind is central to that effort. The government wants to have more than 100 GW of onshore wind

power installed by the end of the 2020s. Account for the removal of old turbines, and that means more than doubling the current capacity, of 56 GW, in eight years. By law, 2% of German territory will be set aside for wind turbines. "The face of the country is going to change," said Robert Habeck, the Green vice-chancellor, whose climate-and-economy ministry will push the rollout. Even lobbyists are taken aback by the scale of the ambition.

Hurdles lie ahead. In Germany's federal system, nimbys have the ear of state governments, nowhere more than in Bavaria, where since 2014, turbines have had to be placed a minimum distance of ten times their height from settlements. German industry is concentrated in southern states like Bavaria; but the northern coast is windier. Rather than scrap the '10 H' rule, Markus Söder, Bavaria's pugnacious premier, thinks Germany should invest in more north-south grid capacity.

But the federal government says every state must do its bit. To press the point, Mr Habeck has embarked on an 'ecological patriotism' tour of all 16, starting with a testy visit to Mr Söder in Munich. Because wind power brings revenue and rent,



communities are often split. Mr Habeck says Germans should discuss his plans around their kitchen tables. Mr Grillmeier says he looks forward to a 'thrilling' debate.

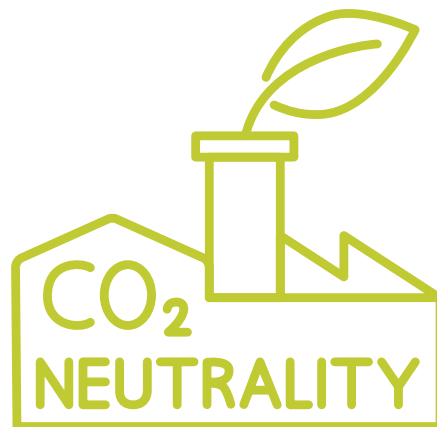
A second problem is the bureaucratic tangles and skill shortages that clog infrastructure planning across Germany. Understaffed municipalities fearful of lawsuits are often ill-equipped to handle complex applications. Environmental checks run in circles. Even upgrading existing turbines often means a whole new approval process. The typical application takes four years, and their numbers will grow. The government vows to halve that period.

Then there is the red kite, an iconic bird of prey whose flight patterns leave it peculiarly vulnerable to death by turbine. On a chilly winter day, Martin Kolbe, head of the Red Kite Centre in Halberstadt, a town in the eastern state of Saxony-Anhalt, points out a handful of the fork-tailed birds arcing gracefully over the bare trees. Birds are well protected in German law (to a fault, say wind groups). But studies still find a negative correlation between the numbers of wind turbines and red kites in a given area. Gory pictures of decapitated birds are

a staple of anti-wind campaigns.

More turbines will mean more dead birds. That will intensify 'green-on-green' tensions between climate activists and conservationists. The government wants to shift from a legal framework that protects individual creatures to one that preserves species numbers, and to tweak the relevant EU directives. It will also enshrine a 'public interest' principle giving renewables priority over animal or landscape protection. National conservation groups accept that Germany needs wind power. But their local affiliates tend to be testier. Mr Kolbe, a measured sort, says some of his conservationist peers are deeply concerned. "This will be an extremely painful discussion," says one observer.

For now, Mr Habeck will treat Germany's states as allies in his quest to get to 2%. But should some demur, the federal government could remove their powers to impose distance rules. Some expect it to convene a wind summit where state politicians will haggle over how to reach the national target. Lawsuits are likely, political bunfights certain. Yet ministers are quietly confident. "The politics of wind have changed," says Patrick Graichen, one of Mr Habeck's



deputies. "A few years ago, this was dominated by nimbys and protesters. Now German industry knows it needs cheap power, and the states are moving."

Germany's *Energiewende* (energy transition) has been full of wrong turns and expensive missteps like the closing of its nuclear plants. But if it can get this phase right, it could prove a model for other industrialised democracies weaning themselves off fossil fuels. Mr Habeck has not tried to sugarcoat the scale of the transition. Yet Mr Köstler, for one, will take some convincing. "If I was Söder I would have sent Habeck all the way back to Berlin," he cries. "By bicycle!"

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*This article appeared in the Europe section of The Economist's print edition under the headline 'Robert Habeck's odyssey'.*



# Voices

## Music

Food for the soul



**"For me, music begins where words end."**

**- Jean Sibelius**

I am writing this piece to share some musical encounters and knowledge that I have gained in my journey as a musician. I will share these experiences with you as episodes that will help you all to use music to focus on your daily work, improve concentration and calm your mind under all-situations.

Before we start our musical sojourn together, let me tell you that you do not need any prior musical knowledge to understand or implement this. I hope this serves as an interactive read for you with some relaxation during your break.

It is hard to believe that music does not have an exact definition to date. I am also sure that Google will give you many versions of the same definition. However, music, to me, is a way of expression. Sometimes, where words cannot express, music does. Music lets you feel and understand what the words mean.

Music is a subject that can be studied, experienced and shared. To make it simple, we can say that music is a set of varied frequencies arranged in a particular fashion to create an emotion. This being the first episode, I would like you to put on a pair of headphones and listen to the music encoded in the QR code (*Raag Basant*) below. The music you would be listening to is by Pandit Hariprasad Chaurasia, played on the flute.

*Raag Basant* is commonly used to celebrate an event or an occasion. There are many compositions on the same. It deeply denotes the change in season, and if you find yourself in a phase of changing emotions, you will be able to relate and see what you are feeling now. Sometimes, it becomes difficult to focus on our goals and ambitions; this *raag* will help your subconscious mind to move from confusion to clarity.

I hope you have a sense of upliftment in yourself after listening to this melody. Our interactions will not only be on classical music or just only one kind of music - we will discuss, learn and understand how music can change our lives in the smallest of ways.

Do let me know your feedback.

Till the next edition of Fireside, I bid you goodbye. Enjoy your reading.



Signing off,  
Mijar Aditya Shenoy,  
Export Sales, Cooling division



 *Raag Basant*

# First mile made special!

The first job experience is always a special and memorable one for all. Young workforce joining the organisation share their views on what it feels like to be a Thermaxian. Read on.



**Sayali Jadhav,**  
Associate R&D,  
Water & Waste Solutions

## Hands-on experience has been a great learning

I vividly remember my college days when I used to see the Thermax building in awe, completely unaware of the fact that one day I'll be a Thermaxian!

On 9<sup>th</sup> August 2021, I joined Thermax as an R&D Associate. This gave me an opportunity to ameliorate my technical skills and work in the research and development field to design ingenious solutions for a diverse set of real-life challenges. Very soon in my career, I had the chance to travel on-site, perform pilot-scale studies and enhance my understanding about the process and working of plants.

The best part of my job is working on new projects and interacting with people from different domains, which has helped me to accelerate my learning curve considerably!

I would like to thank Thermax for providing me with this incredible experience.



**Anupam Pathak,**  
Associate – R&D,  
Water & Waste Solutions

## Upgrading my technical knowledge and skillset

Joining Thermax was like a dream come true! I joined the organisation in August 2021 as an R&D Associate in the Technology and Innovations Department of Thermax's Water & Waste Solutions. Getting a clear insight into my roles and responsibilities, I have realised the application of knowledge gained during my academic career.

An R&D Associate's role at Thermax's WWS involves not only executing technological applications, but also serving as a technical resource to other departments. This time has been full of challenges and growth opportunities for me. It allowed me to garner the technical expertise and skills required for the water and wastewater industry. Collaborating with other PUs like Services, Industrial Projects Group and Standard Product Group has been significant to my learning.

The work culture and ethics at Thermax make it an employee-friendly organisation, which has given me a sense of confidence to lead and grow.



## Great exposure and business insights

**Ayushi Mishra,**  
Associate – Process  
Engineer, Water and  
Waste Solutions

My first mile has been special because I started my career with Thermax as an Associate-Process Engineer, and I am very obliged for this opportunity. During my tenure here, I have had great exposure and insights on how to handle challenging situations. This experience has not only enhanced my technical knowledge but honed my interpersonal skills as well.

The best thing about the organisation is that people around me have been very considerate and helpful. I hope to make great contributions towards the success and growth of the company.

# Slice of Life

## Here's why car windows have those little black dots

No, they're not just for decoration.

You probably haven't given much thought to the pattern of little black dots on the edges of car and bus windows. Those black dots on windshields and windows and the black rims that surround them do have a reason for being there (other than decoration). It has to do with how car windows are made - from the 1950s and '60s onward, car manufacturers started to use an adhesive to hold car windows in place, rather than metal trim.

This adhesive got the job done, but it wasn't very aesthetically pleasing. The frits (and the dots that border them) are made from ceramic paint. The frits are there to hide the rather icky-looking, but very important, adhesive from view. Also, since these painted rims are baked - yes, baked - into the window, they are all but indestructible. They hold the glue in place, which in turn holds the windows in place!

As for the dots, they are there to make an aesthetically pleasing transition from the thick black lines to the transparency of the window. The dots aren't randomly placed; they are positioned in what's known as a 'halftone pattern,' getting smaller and farther apart as the black recedes. This pattern is less jarring to the eye than opaque black paint juxtaposed with transparent glass. Their other purpose, besides the visual effect, is to provide temperature control. To get the glass of windows and windshields to be bent the way it is, the glass is heated up. The black-painted glass heats up faster than the rest of the window. The dots are there to distribute the heat a little more evenly, which prevents the windshield from warping in the heat.

So, now you know!

Source: Reader's Digest

## Welcome to behind the scenes at the Beijing 2022 Winter Olympics - welcome to the future



Inside the Olympic bubble, COVID-19 measures mean Star Wars R2-D2-esque robots are a familiar sight in media centres and hotels, cleaning and reminding people to wear their masks.

In scenes resembling a science fiction movie, temperature checks, cooking

and delivering food are all offered as an automated service.

It even extends to mixology - meaning you can be sipping your favourite cocktail without even having to tip the bartender!

As per reports, the media dining area is also equipped with robotic replacements to make it contact-free dining. If we go by the reports, robot chefs assemble hamburgers and deliver dishes to tables from an overhead grid at the main press centre.

Source: Times of India / BBC



## STEPS FOR MOMMY



One of my wife's third graders was wearing a Fitbit watch, which prompted my wife to ask, "Are you tracking your steps?" "No," said the little girl. "I wear this for Mommy so she can show Daddy when he gets home."

- James Avery

Source: Reader's Digest

# FUNTIME

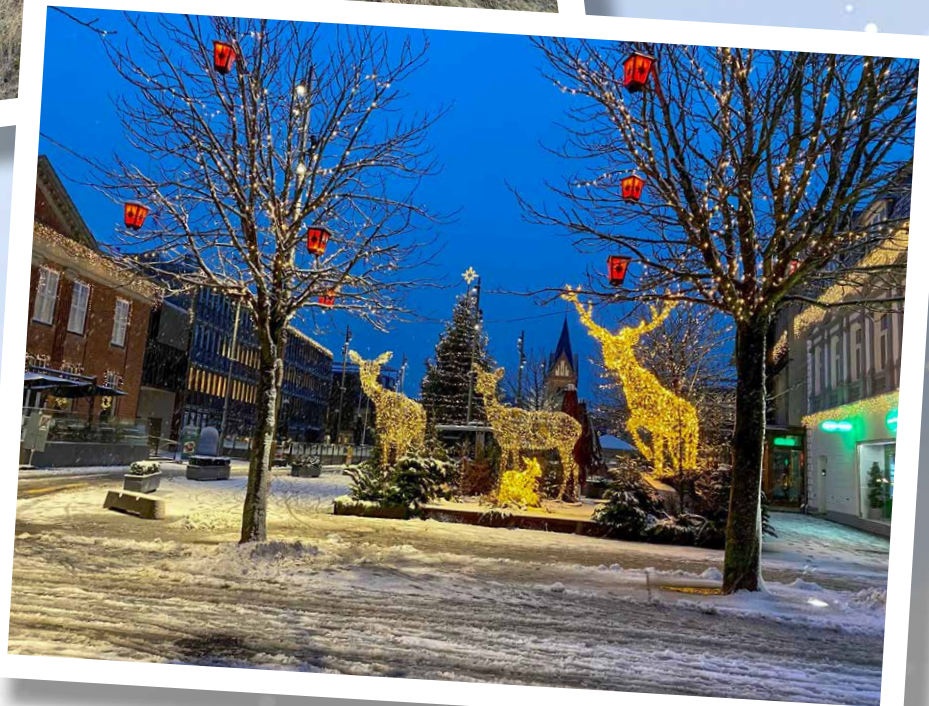
IN PICTURES!



◀ A trek to Shillim peak during the Board retreat

Ashish captures the Christmas festivities during his visit to Denmark ▼

Pledging to be ecologically conscious this New Year! ▼



# 2021

There's no turning back now





# Have you **CLOCC** Podcasts yet?

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Listen to these  
interesting  
podcasts and  
share your  
views with us.

The new podcast series at Thermax - 'CLOCC Talks- The Podcast' was recently introduced. The podcasts will be covering different leaders across the organisation to discuss topics which impact all of us. A quiz activity on the podcasts was also conducted, and the winners were announced.



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