

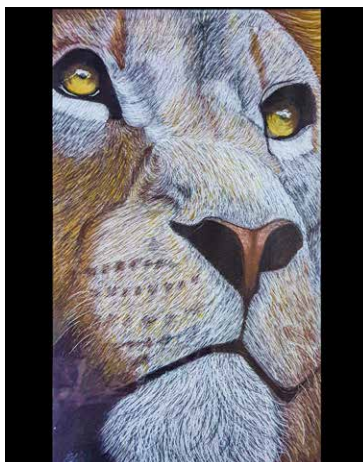
FiREside

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About the Cover

Majesty, strength, courage, justice, and might – the traits of the king of the jungle. Undeterred by circumstances, the king is always proactive and righteous with a focussed vision. The same is true in life; if we wish to stand out from the crowd, we must emulate these attributes. Roar!

- Painting by Roma Shukla, daughter of Rahul Shukla, PMG Sales Head, Heating division



Back Cover

Experience and explore Darwinbox

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WORDS OF WISDOM

"Life is like riding a bicycle. To keep your balance, you must keep moving."

- Albert Einstein

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What's New?

Elevating customer experience with **Thermax Edge Live**

Chief Digital Officer Prosenjit Sengupta with the customer on the occasion

Standing true to its promise to give a major upgrade to Thermax Edge, Thermax launched Thermax EDGE™ Live - an enterprise asset performance enhancement solution, on 14th June. The launch was simulated live through our website and YouTube channel.

While Edge allows customers visibility into their Thermax asset, Edge Live enhances their experience by catering to their demand for real-time practical insights into asset health to improve efficiency and achieve energy optimisation.

Edge Live revolves around three key aspects viz. connect: collect real-time critical operating parameters of the asset, collaborate: cloud-based architecture that allows seamless sharing of information and enhanced security features enabling the customer to choose the level of sharing, and care: advanced tools for predictive health and efficiency.

Thermax Edge Live integrates all of the customer's industrial assets across the globe and can perform data analytics at the click of a button. It is powered by advanced capabilities such as AI (Artificial Intelligence), ML (Machine Learning), and Thermax engineered algorithms that make asset management both predictive and proactive. In addition, Edge Live offers advanced features such as fleet view of all the customer assets and a list of anomalies, several asset class-specific capabilities and modules, and energy manager, a performance enhancement solution for boilers, among others.

MD and CEO Ashish Bhandari unveiled the digital solution and took the audience through the platform and its features. He said, "Think of it as 'Google maps' for



our products – a tool that helps the customer achieve the best out of their asset(s). Edge Live will be extended to our entire product range in the near future. It is also available as a mobile app."

The event concluded with TBWES bagging the first order from a leading sugar manufacturer.

The launch event was well received and attended by over 1,400 participants across geographies.

How does Edge Live help customers augment their business outcomes?



Improved Plant Performance

Diagnosis and prevention of losses

- Provides recommendations to optimise energy consumption and reduce carbon footprint
- Facilitates expert guidance to improve efficiency and enhance decision making

Enhanced Uptime

Minimise unplanned downtime

- Predicts issues and recommends actions
 - › Automated detection leveraging the diagnostic library with 2,000+ failure modes
 - › Predictive models - enables learning from the past and detecting issues early in order to minimise failures
- Facilitates safe operations

Knowledge Management

Enhanced knowledge sharing and collaboration

- Improves asset performance by leveraging timely alerts and reports
- Empowers the workforce to leverage expert guidance
- Retains knowledge expertise
- User-friendly access at your fingertips

To access the detailed presentations and other collaterals

[Click here](#)





Thermax caters to the district heating needs of Hamburg, Germany

A significant breakthrough for securing district heating needs in Germany was achieved when Thermax supplied three THP S1 H2 - single effect steam fired heat pumps to a district heating plant in Borsigstraße, as part of its waste to energy project recently. These heat pumps are the heart of the nationwide unique project, which has already been awarded the 'German Renewables Award 2021'. This innovative project significantly increases the efficiency of heat generation from waste for the Borsigstraße waste recycling plant (MVB) and thus makes a further major contribution to heat transition in Hamburg.

Michael Pollmann, State Councillor of the Authority for the Environment, Climate

Protection, Energy and Agriculture (BUKEA) and Prof. Dr. Rüdiger Siechau, Managing Director of Stadtreinigung Hamburg (SRH) were present on 21st April when the three absorption heat pumps from Thermax were installed.

On the occasion, Michael Pollmann said, "MVB's even more efficient use of waste heat is an important contribution to Hamburg's climate neutrality journey through decarbonisation of district heating. It is a pioneering and future project for the heat transition in Hamburg, which saves 1,04,000 tonne of CO₂ annually."

Prof. Dr. Rüdiger Siechau informed, "The construction progress is taking an important

milestone with the installation of the steam-powered absorption heat pumps as the centre piece. With this expansion, we will become one of the largest suppliers of climate-friendly energy for the city without the additional use of waste as fuel. We will then feed an additional 3,50,000 MWh/a of heat into the performance network of Hamburger Energiewerke, with which we will be able to supply around 35,000 more Hamburg households with climate-neutral and secure heat from the waste recycling process in the future." He adds, "Especially in these times with strongly fluctuating market prices for fossil fuels, we are providing a stable and secure supply here."

The heat pump quality was much appreciated by the customer. The units are scheduled to be commissioned in October/ November.

To watch the video, [click here](#).

Installation of Thermax's absorption heat pumps at the Borsigstraße waste recycling plant in the presence of MD, Stadtreinigung Hamburg, Prof. Dr. Rüdiger Siechau (left) and State Councillor Michael Pollmann (Source: Thorge Huter)





Ravi Pandit conferred the Honorary Doctorate degree by Coventry University

It was indeed a proud moment for Thermax when Independent Director S. B. (Ravi) Pandit was recently conferred the Honorary Doctorate of Technology by the reputed Coventry University in recognition of his work in sustainability and automotive technologies.

Coventry University based in Coventry, UK (the birthplace of British automotive industry and the heartland of British manufacturing) is one of the top and larger universities in the UK. The university is recognised for its contribution to technology research and enterprise. It is also recognised internationally for the world-leading calibre of its engineering and design graduates – particularly in the automotive field.

The 11 research centres of the University specialise in different fields, including the future of transport. Over 70% of the research is acknowledged as world class. Coventry University has also recently won the prestigious Queen's Anniversary Prize in 'Engineering and Technology'.

Fireside extends a hearty congratulations to Dr. S. B. (Ravi) Pandit!



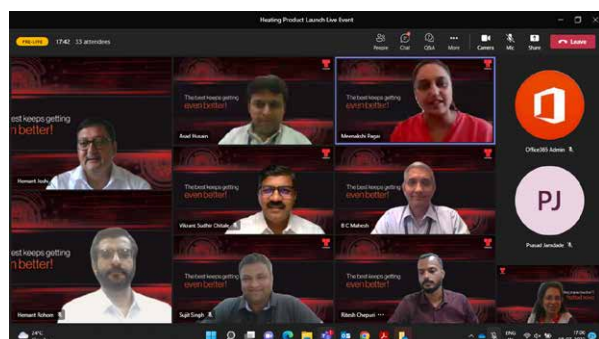
AquaNexa E-series launched for industrial hot water requirements

The Channel Business Group (CBG) along with the Heating division, launched AquaNexa™ E-series, the hot water generator, on 8th July through a virtual launch. The launch was attended by a total of 115 participants, including TCAs and the internal team.

AquaNexa is a hot water generator working on the principle of reverse refrigeration. This hot water generator comes with building management system connectivity. This allows the end users, which are majorly from the hotel and hospitality



AquaNexa E-series



The virtual launch of AquaNexa E-series

segments, to optimally manage the hot water generator along with all other utilities.

AquaNexa E-series also offers a high temperature variant for industrial hot water requirements up to 75°C. Earlier it could cater to hot water requirements up to 55°C only.

The launch featured a detailed explanation of the product through a presentation and product video. A major feat was a total booking of 26 units on the day of the launch!

Cooling division launches Heat Pump Chiller

Cooling and heating are essential to many industries. Usually, a vapour absorption machine is employed to meet the cooling demands meanwhile liquid/ gaseous fuels meet the heating demands by generating hot water. It takes two separate machines to effectively meet both demands. Though there are few solutions currently available in the market, they do come with their own limitations when it comes to providing simultaneous primary cooling and heating outputs flexibly.

The world is on the brink of depleting energy resources and the global warming issue is still looming. In a crucial time like this, it's prudent to use a single machine that can singlehandedly cater to both cooling and heating

requirements, thus reducing energy consumption. This has led Thermax Cooling to come up with the new flexible, combined cooling and heating solution, Heat Pump Chiller, which can meet the new-age industrial demands by delivering the operations of both a chiller and a boiler in a single solution. It cools, heats, or does both simultaneously by offering three unique modes of operations, viz. cooling, heating, and simultaneous. Having waste heat recovery and absorption techniques at its core, Heat Pump Chiller helps industries reduce energy usage and carbon emissions, thus becoming one of the crucial sustainable solutions to save our environment.

The machine can be run by



Heat Pump Chiller, a flexible cooling and heating solution

various heat sources, such as steam, hot water, exhaust gas, fuel firing, or thermic fluid, offering an astounding 32% overall savings and 60% water savings. It delivers chilled water as low as 1°C and hot water as high as 90°C.

The ability to efficiently run the machine in cooling or heating mode alone makes it an irresistible choice for automobile, beverage, pharmaceutical, chemical, and dairy industries.

TOESL executes its first multi-utility supply contract for an agrochemical major

Continuing with its growth in green utilities, Thermax Onsite (TOESL) recently commissioned its first multi-utility plant under the Build-Own-Operate model for an agrochemical major in Dahej, Gujarat.

TOESL had already partnered with the customer for green steam supply to another plant and had showcased the benefits of outsourcing utilities. Hence, for their greenfield project, the customer entrusted TOESL to supply all their plant utilities such as green steam, chilled water, treated water, effluent and sewage treatment and recycling along with cooling water and compressed air, using Thermax's as well as external technology, under a long-term utility supply agreement.



Air compressors and dryers



Boiler



MVR and RO plant



ETP and STP

Facilitating energy transition for a customer in Bhutan

Introduction

In the modern world, where sustainable energy is the need of the hour, most companies are increasingly transitioning towards greener and more sustainable energy solutions. Thermax has a wide range of products, from energy-efficient industrial boilers to renewable energy solutions to industrial effluent filtration systems, catering to the diverse needs of its customers with a constant focus on innovation, research and collaboration.

Thermax was assigned the task of developing a clean energy solution for process heating for a company operating under the Army Welfare Project at one of the distilleries in Bhutan.

Challenge

The main challenge was to design and develop a first-of-its-kind electric boiler within the strict deadlines of the project. In addition, the Covid-related restrictions mandated that the newly developed boiler be remotely commissioned. The new unit was to be produced in collaboration with Danstoker, a Thermax-owned subsidiary.



First-of-its-kind electric boiler supplied to Bhutan

Solution

The 600 kg/hr boiler provides clean energy in the form of steam for the customer's process requirements. Thermax collaborated with its subsidiary, Danstoker, to design and customise the boiler as per the customer's specifications. In spite of the pandemic, the boiler was commissioned remotely on schedule while adhering to all Covid-related protocols.

Result

The first-of-its-kind electric boiler developed for the customer by Thermax provided several unique advantages. In addition to providing clean energy, the electric boiler has significantly increased the efficiency of the manufacturing process. The electric boiler has also helped to leverage the low cost of electricity in Bhutan, which in turn ensured lower operating costs compared to conventionally fired steam boilers.



Presenting the Brand Communication Guide

A brand is not just a logo, a website, or your business card... it's an experience!



Every brand is recognised by its elements like the logo, colours, icons, fonts etc. The Thermax brand, as we know, is identified with the iconic red 'T' emblem that signifies solidity. With a legacy of over 50 years, the Thermax brand has a strong recall value in the eyes of our customers



Working with the printing agency to derive the 'Thermax Red'

and stakeholders.

Over the years, with our communication channels multiplying and undergoing a paradigm shift, it is increasingly important to represent and portray the Thermax brand correctly and

effectively across all touchpoints. It was observed that the marketing personnel, stakeholders and our vendors often faced challenges while designing the marketing collaterals or social media posts. It was necessary to have a style guide in place to ensure consistency across all our internal and external communications - a comprehensive document that explains the right use of every brand asset. In order to achieve this, the Corporate Communications team undertook an in-depth audit of several marketing collaterals and communication documents. It was observed during the audit that different shades of red were used for different Thermax assets. An

extensive exercise was thus undertaken with the printing agency to define the 'Thermax Red'. Different shades of red were printed

on different types of paper and media to ensure the right shade of red appeared consistent across materials. Likewise, colours for the divisions were also documented.

Guidelines for placement of the logo, typography, illustrations, photography, creating brochures, presentations, social media posts and merchandise, among others, were formulated. Consequently, a set of all required brand guidelines was compiled, and the brand communication guide was developed in accordance. Ready-to-use artwork templates were created for different marketing collaterals to make sure that the right design language was followed consistently across all the communication channels.

The core team behind the BCG launch





MD and CEO
Ashish Bhandari
unveils the Brand
Communication
Guide

The launch event of the Brand Communication Guide was held on 4th July. Samina Khalid, Head, Corporate Communications, set the context of the event through a story highlighting the importance of brand value from a customer's perspective. MD and CEO Ashish Bhandari unveiled the brand communication guide and emphasised that it is everyone's responsibility to adhere to the brand guidelines and be an ambassador of the Thermax brand.

Guest speaker, Ameya Kapnadak, Head, Growth and Strategy functions, Interbrand – India, through illustrations, highlighted the best industry practices in brand communication and shared success stories of some global brands. Thereafter, Anuja Mulay, Assistant Manager, Corporate Communications, took the audience through the communication guide and gave a brief of the different sections.

Launch of the Brand Communication Guide

Speaking on the occasion, Samina Khalid said, "It was extremely important to ensure consistency in our brand elements, and so we needed a reference document. The colour palette, typography, fonts, graphic elements, wordmarks, symbols, brand tone and many other elements in this new communication guide will help to create a consistent communication channel for both internal and external communications. Now with the BCG in hand, we will be able to communicate our corporate ethos in a more effective way."

An array of Thermax-branded marketing materials was displayed at the event. It was well received by all sales and marketing professionals who attended.



Guest speaker, Ameya Kapnadak, Head, Growth and Strategy functions, Interbrand – India, highlights the importance of brand communication

Highlights of the BCG

- Ensuring the use of key statements like the brand promise in accordance with the guidelines - 'Conserving Resources, Preserving the Future.'
- Revised specifications for the colour of 'Thermax Red'
- Clear understanding of logo placement and usage
- Guidelines for all marketing collaterals
- Technical specifications for printing collaterals
- Ready-to-use templates for brochures, advertisements, pull-up banners, flyers, social media etc.
- Specifications for facility branding, outdoor promotions, packaging, merchandise etc.
- A go-to reference document for all employees and vendors



To download
your copy
of the brand
communication
guide

For access to the design
templates, please write to
anuja.mulay@thermaxglobal.com

The different
branding collaterals
on display



A glimpse into Annual Report 2021-22

The annual report has been a key document to capture the company's performance on business and financial fronts. The report provides key insights into how the company creates value in the short, medium and long-term for its stakeholders.

Since 2020, Thermax has adopted the Integrated Reporting approach in accordance with International Integrated Reporting Council's (IIRC) <IR> framework to provide comprehensive but concise information relevant to stakeholders. The format of the annual report has evolved over the years to facilitate a seamless reading experience for the stakeholders.

The annual report 2021-22 is based on the year's theme – 'Thermax For A Better Tomorrow'. It highlights major milestones, activities and happenings in the year that have contributed to building a better tomorrow. Aligned with our corporate philosophy, 'Conserving Resources, Preserving the Future', our commitment reaffirms our pledge to realise the future we envisage and work towards every single day.

The annual report is now available in an interactive pdf version.

To download a copy of the annual report

[Click here](#)

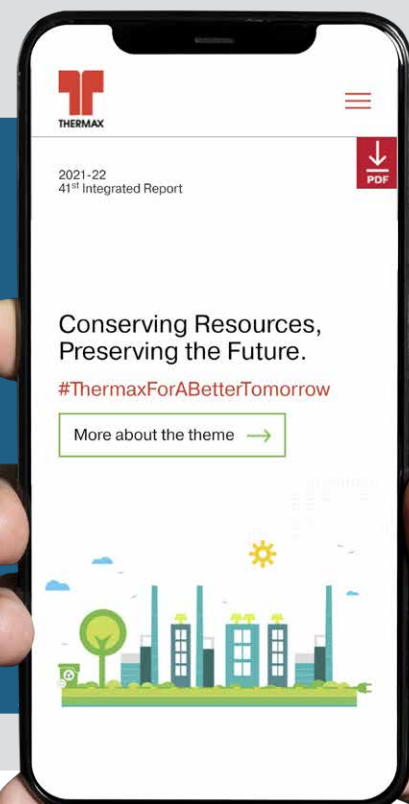
The annual report is also available in a digital format. The digital version is replete with animations and illustrations, making navigation over different tabs easier and more intuitive.

Some of the highlights of the digital report are:

- Better viewing experience
- User-friendly navigation
- Intuitive and contemporary design
- Easy content discovery

To view the digital report

[Click here](#)



An Evening to Remember!

It was after a long spell of Covid that Thermax hosted close to 200 people for the Thermax Annual Celebrations (TAC), held at JW Marriott, Pune, on 27th April. TAC was organised to recognise businesses, teams which demonstrated exemplary performances and individuals who exhibited the CLOCC (Customer, Lead, Own, Collaborate and Create) behaviours during the year. This was the first time ever that an awards and recognition ceremony of this magnitude was organised with much enthusiasm,

camaraderie and spirit.

The gala began with a context setting by MD and CEO Ashish Bhandari followed by a soulful live band performance. To amp up the event, fun games with the leadership teams were conducted that left all in

splits. Anu Aga, who was also present along with the leadership team, judged a few of the games. Subsequently, the award ceremony lit up the stage, where the crowd cheered for the awardees.

The event was infused with the theme of the year – 'Thermax



Industrial Products awarded as the Best Business Unit



Audience at the event

For A Better Tomorrow', which was reflected in every aspect of the event - from the stage décor to the giveaways to the photo booth and as well as the cupcakes! It was simply a sight to behold and get mesmerised by the extravagance.

The high octane event came to a closure with everyone networking, letting their hair down and grooving to the beats of the music played by the DJ and relishing the scrumptious buffet spread.



IP – WWS awarded as the Best Strategic Business Unit



A soulful performance by the band

A pat on the back!

Over the next few months, divisional and departmental award programmes followed the tone set by TAC within the organisation. Glimpses of some of the awards can be seen on the inside back cover.



Game time!

Expressions



Thermax is in a sweet spot, given that we have the power to make a difference; speed to market, talent, productivity, and innovation are essential ingredients to propel Thermax into a future-ready organisation.

In this edition of Fireside, I'd like to share a very important initiative that we've embarked on within Thermax; something we should have started a long time ago, but I guess it's better late than never.

You may have heard of the 'boiled frog syndrome'. If a frog is put into a bowl of water which is heated slowly, the frog may not realise that the temperature has increased, so much so that it's too late to jump out – so the frog dies. That's exactly what we're witnessing with climate change and our planet. We feel it's a very slow process, and so we have the luxury of time to continue as is. Coming back to the frog; if we were to put a frog into boiling water, it would jump out immediately, saving itself. Ashish, in his talk to our senior management, compared this to the auto industry, which knows that they do not have the luxury of time and therefore are constantly innovating,

changing, and transforming themselves in order to survive or, in some cases, thrive. Similarly, at Thermax, if we want a future-ready organisation that enables sustainable, profitable growth, we will only be able to do so, if we see the urgency of the situation and change the way we work.

With climate change, the world is focussing on energy transition and water management. External shocks like oil price increases or geo-political tensions are making India think and move rapidly towards energy security. Thermax is in a sweet spot, given that we have the power to make a difference; speed to market, talent, productivity, and innovation are essential ingredients to propel Thermax into a future-ready organisation.

So, where are we placed, and what do we need to do?

Thermax is a pretty complex organisation – we need to find ways to simplify our ways of working.

What's more concerning is our inability to pay market salaries, causing us to lose good people. Moreover, we are unable to attract talent from the outside, unless we pay a lot more. Our PAT for many years has been hovering around 4-5%, which is extremely low, making us vulnerable. Also, we have a large number of employees on Fixed Term Contract (FTC) across all SBUs and functions, where we need to rethink our policies.

Being a 55 year old organisation has its drawbacks - we have many legacy procedures in place. We've tried to automate some, but by and large, we are quite a bureaucratic organisation, with slow internal customer processes. Some people have even mentioned that they're reminded of

a Government PSU! That's certainly not flattering! Let me mention that the government has improved many of its processes! We have a lot of paperwork – a myriad of signatures before an approval is granted; cash advances given to senior employees instead of corporate credit cards; plenty of software solutions which don't talk to one another and are not very user-friendly! I am glad HR is beginning to sort that out with the introduction of Darwinbox. We have a number of people doing repetitive, non value-added work, which can very easily be automated. That frees up people to do much more meaningful cerebral work for the organisation. Our enabling functions can become a lot more efficient, agile and internal customer facing, with strong Service Level Agreements (SLAs) in place, just like our businesses are compelled to, with external customers. I am very happy to see us launching Edge and Edge Live – digitalisation initiatives which will be a win-win for our customers and Thermax.

With the opportunities ahead of us, if we are to become a future-ready organisation, like the frog in boiling water, we need to jump ahead and move with speed and alacrity; become a lot more productive and quick in decision making; reduce the number of layers within each department. I would like to envision Thermax as a place where young employees have a broad canvas to explore, and where we are able to attract and retain the best people by paying and challenging them adequately.

Therefore, we have decided to start a project along with Accenture called 'Project Sprint' that will work to fundamentally change the way we operate. It's not about quick fixes but a 'change in mindset'. We would really want each one of you to reflect and become a 'champion for change'; a champion for questioning the status quo - asking 5 whys, till you get to the bottom of every course of action and then re-imagine or re-create a system that will allow Thermax to leap forward.

We're very happy to have Vikas Sharma lead this project - a veteran who understands Thermax, both products and projects. He's extremely process oriented, collaborative and a good listener. Vikas is a problem solver, knows how to get things done, has worked with a number of stakeholders, and has earned respect within the organisation and outside.

To partner, guide and support us, we are delighted to have Manish, Aditya and their team from Accenture. They have done this work umpteen number of times with many clients, with success.

The time frame to complete this exercise with Accenture is five months for the diagnosis and then nine months to implement. To make this a success, we will have to be open to any and every change; be transparent in everything we do; observe and listen to our customers (both internal and external). Management will have to positively accept change and refrain from making statements like "we can only do it this way in Thermax" or "why didn't you think of this earlier?"

I would like to envision Thermax as a place where young employees have a broad canvas to explore, and where we are able to attract and retain the best people by paying and challenging them adequately.

Benchmarking with other world-class organisations or even within our own businesses may allow us to deliver the same work with better quality, more speed, and fewer resources. Considering the level of growth, we are looking forward to redeploying excess bandwidth, which will mean working on upskilling and retraining

people who have the right attitude and the willingness to learn. Also, this may be an opportunity for employees who are interested in learning new skills and trying something different in their career.

It will require all of us to work together and be open-minded, to make this initiative successful. We will need to be analytical with regard to data and benchmarking but humane in our approach, without any impulsive decisions. We must also understand that technology is an enabler; not everything will be automated, and we certainly do not want to automate inefficient processes. Please do not be shy to ask what you think are the stupidest of questions; sometimes, what you may think is stupid, may have the best solution embedded.

So, to conclude:

- It's very important that we make Thermax a future-ready, forward looking, agile, productive, less complex, lean, and an effective organisation - where we can pay our people a lot better; attract and retain talent.
- Get people to work strategically. Make use of technology as an enabler, wherever need be.
- We must see strong SLAs for support functions and shared services so that we all can give our best in order to delight our external customers.

This is just the beginning – a change in mindset! I hope each of you is ready for this challenge. Look forward to everyone coming together to embark on this journey. There will be an end date with Manish and his team, but there is no full stop within Thermax – it's a continuum, where we hope you will constantly challenge the status quo to keep getting better and better in everything we do.

Warmly,

Meher

Up Close

"It's fun to disrupt yourself."

Mahesh Murthy, CTO and Head, RTIC, in a conversation with Priyanka Sarode, chronicles his life journey from India to the US and back to India. Through his lens, he gives us a vision of the future of RTIC. He speaks of his many interests and newly found passion.



It was an opportunity to get a glimpse into the personality of Dr. Mahesh Murthy, Chief Technology Officer and Head, Research, Technology and Innovation Centre (RTIC), as I visited the campus on one of the rainy mornings. 'A global citizen,' as Mahesh likes to call himself, is indeed a person of ideas, an optimistic strategist with a focussed vision for the research and development arm of the company, RTIC.

Though born in Tamil Nadu, Mahesh spent his formative years in Orissa. His father worked for the Steel Authority of India Limited (SAIL). Being fond of languages, or rather learning new things, he learned Oriya and Hindi in early childhood. Moving to Andhra Pradesh thereafter, he also learned Telugu and Sanskrit. Having moved to Tamil Nadu to pursue his Electrochemistry degree, he was able to reconnect with his roots. He says, "I began to appreciate our rich culture when I was exposed to global cultures, and I always tried to learn from them."

Having been influenced by the idea of pursuing education and a career abroad, Mahesh moved to the US in 1992 and completed his PhD in Chemical Engineering from the University of South Carolina. Post his graduation, he joined W. L. Gore & Associates Inc. based in Delaware, USA, where he had a successful stint of 19 years. After 10 years of working on technology at W. L. Gore, he realised that some of the research, unfortunately, did not create value for the customers and so did not serve the company's larger purpose. "This realisation was a eureka moment for me, and I decided to go back to academia to build new capabilities and to pursue a role change." It was in 2010 that Mahesh went for an Executive MBA from the University of Delaware.

What prompted him to return to India? The urge of doing something for the country was the reason that brought Mahesh back to India in 2015. "Coming to India was an experiment, but I had a long-term view that I wanted to make a difference. I knew the clock was ticking. Following 18 years of education in India, I spent 24 years overseas, after which I chose to spend the remaining 15 years of my career in India." He adds, "It's fun to disrupt yourself. Disruption is painful, but it makes you resilient. After returning home to India, the only motivation was for me to start over from scratch."

Before joining Thermax, Mahesh worked with Tata Sons for over five years for their grand experimental project on alternate energy aimed at leveraging synergies within the group.

He joined Thermax in April 2021. "It was serendipity that Thermax came to my attention," quips Mahesh. "Somewhere in 2017-18, I had a brief dialogue with Meher and Unny at one of the business conferences in Delhi. When the opportunity from Thermax knocked, I could recollect our 'friendly' conversation! The culture was an important factor when considering Thermax, and I really appreciate it. Moreover, it reflected the culture I had seen and embraced in the US, empowering people and channelling their freedom to produce valuable results."

R&D is considered to be the heart of any engineering company. What is your perception about R&D? He replies, "Firstly, R&D should be relevant and aligned to the company's vision. We need to convert our ideas into applications that can create value. We need cross-functional teams to succeed. We have technologists but very few who can connect with the market or to our internal customers – this connect has to be strong."

With RTIC getting a facelift, Mahesh wants to bring some key changes. He notes, "With the start-up culture catching up in large companies,

I wish to see the same replicated at RTIC, where we become bold to take innovative steps, are not afraid of failure, and are more agile." Further, he wishes RTIC to go beyond technology and impact the lives of customers and stakeholders.

Talking about what will drive change in RTIC in the coming years, he informs us about the five mission mode projects that they are currently working on. He observes, "The endeavour is in line with our vision of offering sustainable solutions in energy and the environment. This is anticipated to be a game changer in terms of energy transition." He elaborates, "Our mission mode programme 1 is developing low-cost flexible solar films. We aspire to be the pioneers in this technology and bring about global breakthroughs. As part of our next mission, we will be producing green hydrogen with the help of tie-ups with electrolyser manufacturers. We will also look at the best ways to produce low cost green hydrogen for a country like India. The third programme is on Energy Storage. We are working on emerging technologies that will enable us to store energy for a long duration in batteries. This technology will allow storing renewable energy in the daytime that can be utilised later." He continues, "Our fourth mission is on coal gasification, which will require CCUS (Carbon Capture, Utilisation and Storage) to be sustainable. Finally, our mission mode programme 5 focusses on water treatment and conservation. Water is undervalued today. The CDI (Capacitive Deionisation) project is aimed at developing high recovery, low energy consumption device for drinking and industrial water applications. "In comparison to a RO plant, CDI can generate about 80% freshwater from feedwater with minimum reject."



From Mahesh's collection of bird photography

What is the timeframe for the realisation of these goals? "I have envisioned a three year yardstick – by 2025, we should see the implementation of the five mission mode taking shape – the engine should be cranking up by then, and post five years, by 2030, we should see the engine humming i.e. we should start delivering the results as per the mission."

Despite being a technocrat professionally, Mahesh is a nature lover and an avid gardener at heart. He had cultivated some vegetables while he lived in the US. He, with his wife Indhu, a chemical engineer too, has visited about 30 national parks in the US. His interest in photography has led him to a new-found passion for birding. "If you look with a keen eye, it's so interesting to observe the unique features of every bird, and the fascinating gamut of colours. It's an all-new world when you pay attention to the detail!" he exclaims.

When it comes to sports, he is a big fan of cricket and enjoyed watching the game of basketball and US football when in the US. Music keeps him recharged. "I am open to learning and enjoying new things in life. I am not picky and I am open to new experiences all the time," he smiles and articulates another life lesson for us to ponder!

Round up

Heating leadership team interacts with vendor partners **Heating India Vendor Meet 2022**



Vendors with the leadership, materials and sourcing teams from Heating division at the vendor meet

Heating SBU's Divisional Sourcing Group (DSG) organised a two-day vendor meet on 8th and 10th June. This came after a gap of three years owing to the Covid-19 pandemic and the subsequent restrictions.

On the occasion, the leadership team of Heating SBU, including SBU Head, Hemant Joshi, and PU Heads - Vikrant Chitale, Dipankar Ghosh and Bharat Pathak discussed the current business scenario, the challenges to stay competitive

and the importance of effective collaboration between the business and its vendors to address these challenges and grow together. Among the many exchanges between the leadership team and the vendors, a few were around best procurement practices, safety and quality.

As part of the event, select green channel vendors who have completed 10 years as the business's trusted partners were felicitated. Green channel vendors are those identified

and trusted to be self-certified suppliers who ensure quality without being checked by Thermax's quality teams.

Also, 15 of our branding partners were recognised for their contribution to Process Heating business during this meet.

With an impressive turnout of 130 vendor teams from across the country and positive feedback from our partners, the event was a successful one.

CBG's big breakthrough in the beverage industry

This quarter proved to be a major breakthrough for the Channel Business Group with respect to the orders received from the beverage industry. Majority of them came in from bottling giants in the industry.

The group received orders worth Rs. 5 crore for offerings in boilers and steam accessories. This achievement reflects establishing us as the preferred brand for our customers.

Kudos to the team!

Representative image



Enviro sets foot in the Middle Eastern oil & gas market

With over four decades of experience, the Enviro division of Thermax has extensive technical know-how in industrial air pollution control equipment. This expertise led the Air Pollution Control (Enviro) unit to recently win a contract from a process engineering company in France to set up a Flue Gas Desulphurisation (FGD) system for a leading oil refinery in Kuwait.

The contract involves design, engineering, manufacturing and supply of the FGD system for their Sulphur Recovery Unit (SRU). The caustic-based scrubbing FGD system will control SO_x emissions arising out of SRU during the acid sweetening process and help the refinery meet stipulated emission norms.

This project will mark Thermax's entry into Kuwait and the entire Middle Eastern oil & gas market.

Representative image



Successful commissioning of cogen plants for chemical majors

Projects and Energy Solutions, Thermax's EPC arm, recently synchronised a 20 MW captive cogeneration plant for a leading specialised chemical and fibre company in Gujarat, India. The project scope included 85 TPH Circulating Fluidised Bed Combustion (CFBC) boiler, six cell air cooled condensers and Electrostatic Precipitator (ESP) along with other balance of plant. The customer appreciated the team's efforts in smooth and successful commissioning in the challenging times.



The 20 MW captive cogeneration plant synchronised in Gujarat, India



The 4.9 MW captive cogen plant synchronised in Visakhapatnam, Andhra Pradesh

In another successful commissioning, the P&ES division synchronised 4.9 MW captive cogeneration plant for a leading API and specialty chemical manufacturer in Visakhapatnam, Andhra Pradesh, India. The project comprises of a 45 TPH Thermax make Atmospheric Fluidised Bed Combustion (AFBC) boiler and ESP, along with other balance of plant like fuel and ash handling plant, water treatment plant, electrical and instrumentation system etc.

Collaboration beyond business

It is said that the best collaborations create something bigger than the sum of what each team can create on their own. Recently, Khushboo Bhatia, CEO, TOESL, was invited by one of its key customers, an alumina major, to address their women employees at their plant in Belagavi, Karnataka.

To promote culture building and attract diverse talent, the customer organised 'Women Achievers Interaction Series' and invited Khushboo as a speaker to share her insights on her journey of becoming a leader.

Sharing her success mantra, Khushboo implored her audience to have a dream and to persevere in achieving that while being rooted in reality. She left them with the advice to be in the present as the efforts made today will result in opportunities and success tomorrow.



Khushboo Bhatia, CEO, TOESL, is felicitated by women employees at one of our customer sites in Belagavi, Karnataka

Thermaxians strike a pose!

International Yoga Day celebrations

The International Yoga Day celebrated on 21st June is a reminder to pay heed to our physical, mental and spiritual well-being. In keeping with the theme of the day - 'Yoga for Humanity' - and to encourage our employees to participate in yogasanas and exercises, a contest - #ThermaxYogaChallenge was posted on our social media pages.

A bunch of enthusiastic Thermaxians struck their favourite yoga pose and described its benefits. The winners made it to our Instagram stories!

Let's take a look at our sporty participants...



The yoga wave was observed at TBWES, Savli manufacturing facility too. Professional yoga trainers were invited as the training faculty, and employees practised various yogasanas under their guidance.



Ajay Nawalkar from P&ES - SPP strikes the sirsasana or headstand pose



Priyanka Patil from TBWES - OEM strikes the hanumanasana pose



Veerendra Rasela from TBWES - EXIM strikes the utkatasana pose



Employees at TBWES, Savli participate enthusiastically



An installation spree for the heating division

Fluidised bed boilers commissioned for a leading tyre manufacturer

2 units of 35 TPH, 12 bar pressure fluidised bed boilers were successfully commissioned for one of the oldest and largest Indian tyre manufacturers for their unit in Trichy, Tamil Nadu, in the month of June.

Steam requirements for the tyre manufacturing process are successfully being catered to by the two boilers. These boilers were installed along with the electrostatic precipitator, an eco chimney, and air and fuel handling systems.



Site image of the 2 units of 35 TPH, 12 bar pressure fluidised bed boilers

Reciprocating grate boiler for a renowned tyre and tube manufacturer

A 6 TPH reciprocating grate boiler designed to run on biomass briquettes/Indonesian coal was recently commissioned for a tyre and tube manufacturing company belonging to a multinational Indian conglomerate in Coimbatore, Tamil Nadu.

The boiler was supplied and installed on a turnkey basis along with a bag filter for pollution control, and fuel and air handling systems.



Site image of the 6 TPH reciprocating grate boiler

High capacity thermic fluid heater commissioned for a chemical major

A natural gas fired heater (Thermopac) was successfully installed for a chemical major, a subsidiary of one of the Fortune 500 companies recently. This unit was supplied, installed and commissioned on EPC basis at the customer's plant in Singapore.

The unit is running successfully and responding to the continuous operational requirements of the customer's process.



Thermopac commissioned for a chemical major in Singapore

Recognising Innovators

Innovation Day 2022

Thermax continues to focus on innovation as part of the business and as an industry leader, has been a strong advocate of this culture. After two years of virtual celebrations, Innovation Day, this year, was celebrated offline at Thermax Learning Academy on 11th May. 'Technology Day' has been rebranded as 'Innovation Day' to reflect the importance of innovation at Thermax in improving customer experience. This change also includes the introduction of awards for non-technical functional domains.

The Chief Guest on the occasion was Prof. Aniruddha Pandit, Vice-Chancellor, Institute of Chemical Technology (ICT) Mumbai. He, in his address, stressed the importance of insistence and innovation. He said, "Imagine the kind of innovation you possessed when you were a child. Formal education has somehow robbed us of the spirit of innovation. One needs to be observant of the surroundings to develop solutions to people's problems."



Chief Guest Prof. Aniruddha Pandit plants a sapling during the inauguration ceremony

....And the winners are:

Dr. N. D. Joshi Innovation Award 2021-22

Division	Innovation Title	Team Members
TBWES	Development and deployment of heat and power solution for 2G biorefinery to achieve zero waste discharge through lignin firing and to preserve our environment by displacing fossil fuel used for power and steam generation	C. R. Subramaniam B. V. Kamalekar Jalindar Gaikwad Ajinkya Bhide K. Naveenraja S. Venkatachalam

Best Proof of Concept Award 2021-22

Division	Innovation Title	Team Members
RTIC	Demonstration of coal gasification and syngas cleanup technology for high ash Indian coal and conversion to fuel grade methanol	Shriraj Misal Sukumar Poojari Digambar Patil Sumit Aitawade Kishor Chaudhari Kiran Chauhan
Heating	Digital twin of a grate fired boiler and advanced control of boiler using digital twin technology	R. S. Jha Rohit Khindri Ravikumar Gorre
RTIC	THVAC technology proof of concept and demonstration on European coach/bus application.	Sachin Gunjal Dattatray Mule Pandurang Sathe Sandeep Patil
Enviro	Design and development of 10 mg/Nm ³ emission electrostatic precipitator for pellet application	Sandeep Kadam Milind Domgaonkar Suresh Bhatiya Rahul Golande Sajid Shaikh

Best Innovative Function Award 2021-22

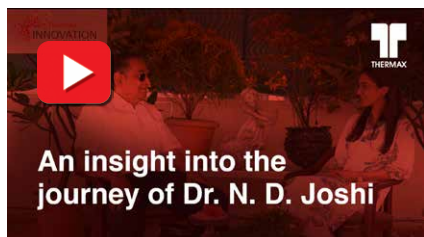
Division	Innovation Title	Team Members
RTIC & WWS	Integrated cross-functional approach for TRL & MRL - CDI product development	Dr. Pushpendu Chand Dr. V. Kalyanraman Rajesh Sonekar
Corporate HR L&D	PepsiCo Training Programme - The Saga of Success	Rukhsana Shaikh Santosh K. Atish K
TBWES, Savli	Capability enhancement by design and development of compact SAW m/c fixture for inside (confined space) tube sheet to shell welding	Himansu Vyas Gajendra Sinh Rathod Krupal Patel Milin Shah
Cooling	Marketing campaign: 'Zero We Go - For Our Planet'	Sharanya Vijayarangan Nikhil Saya Usha Velladurai Vipin Nair



Chairperson Meher Pudumjee felicitates Dr. N.D. Joshi

A sustained interaction between industry and academia is important to fuel innovation."

Dr. Mahesh Murthy, EVP, CTO and Head, RTIC, set the context of the event. Awards in three categories viz. Dr. N. D. Joshi Innovation Award, Best Proof of Concept Award and Best Innovative Function Award were given away by the Chief Guest Prof. Aniruddha Pandit, Chairperson



Meher Pudumjee, Director Pheroze Pudumjee, MD and CEO Ashish Bhandari, and Dr. N. D. Joshi, former R&D Head, Thermax.

A short film citing the journey of Dr. N.D. Joshi was released on the occasion. He was interviewed by Lea Pudumjee. Dr. N.D. Joshi urged Thermaxians to be with customers and face the challenges.

"Innovation is about solving customer pain points," he opined.

Setting a precursor to the event was a virtual global talk series

where industry experts spoke on sustainability and driving energy transition in current times. M. D. Nazeeruddin, Professor, EPFL, Switzerland; Dr. Asit Das, Head of Refinery, R&D, Reliance – Jamnagar; Dr. Nigel Holmes, CEO, Scottish Hydrogen and Fuel Cell Association; Prabodha Acharya, SCO, JSW Group; Dr. Vilas Tathavadkar, CTO, Hindalco Industries Ltd., and Antonio Carrillo (Group Head of Climate and Energy, Holcim Ltd.) were among our esteemed speakers.

The event, hosted by Research, Technology, and Innovation Centre (RTIC), was well received with a large turnout and online participation.



Winners of the Dr. N. D. Joshi Innovation Award – TBWES for development and deployment of heat and power solution for 2G biorefinery, seen with Dr. Mahesh Murthy, Ashish Bhandari, Prof. Aniruddha Pandit, Dr. N. D. Joshi, Meher Pudumjee and Pheroze Pudumjee



Winners of the Best Proof of Concept Award – RTIC for demonstration of coal gasification



Winners of Best Innovative Function Award – RTIC and WWS for CDI product development

Being One with Nature

World Environment Day celebrations

As a leading energy and environment solutions provider, 'care for the environment' remains integral in all that we do. This year too, World Environment Day was celebrated with much gusto by Thermaxians on 5th June. In line with the theme of



MD and CEO Ashish Bhandari observes the exhibits

the day – 'Only One Earth', Thermax observed a week-long celebration with a variety of activities.

A sapling plantation drive was held across Thermax factory locations and customer sites, wherein we collectively planted more than 2,500 saplings. MD and CEO, Ashish Bhandari actively participated in the plantation drive and other activities held at the Chinchwad factory on the occasion. To instil the need of saving the planet in the future generation, employees' children were also invited to the plantation drive. As a part of the event, Thermax partnered with several like-minded NGOs.

Talking about the celebration, Vipin Upadhyay, Head, Corporate HSE, said, "It was overwhelming to see the enthusiastic participation by Thermaxians in various activities and promoting community awareness. The young ones expressed willingness to nurture the planet, and I hope they contribute towards restoring the ecosystem by imbibing eco-friendly behaviour in their day-to-day lives."

As a precursor to the event, online activities like an environment quiz contest, digital collage making contest, theme-related photography and e-pledge were conducted.

Ashish Bhandari with students at the plantation drive

Catching them young!

Earth Day special - Zero We Go Junior

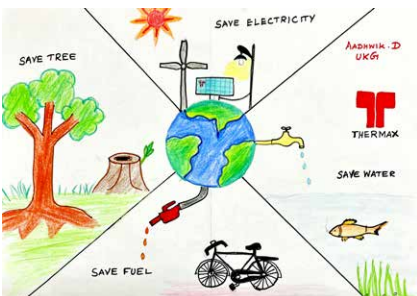
While grown-ups restore the environment by inventing and adapting sustainable solutions, it's imperative to educate and encourage younger generations to be active participants in climate

change action. Thermax Cooling turned this conviction into action by broadening the ongoing sustainability campaign with 'Zero We Go Junior', a new initiative to empower the next generation to restore the environment.

As a part of the campaign, the Cooling division conducted an art competition with children on the occasion of Earth Day 2022 with the theme 'Pollution-free Planet'. Many students between the age group of 5 to 12 came forward and

showed their care for the environment using paints and brushes.

The best artworks were rewarded with surprise gifts to encourage the young ones to keep pursuing their knowledge on climate change issues.



Knit Tech 2022: Meeting demands of the textile industry

Thermax exhibited its diverse portfolio at the 16th edition of Knit Tech 2022, Asia's largest knitting technology trade fair, held at Tirupur Exhibition Centre, Tirupur, India. The same was organised by Hi-Tech International Trade Fair India Pvt. Ltd. from 3rd to 6th June.

Thermax had the opportunity to participate and present its range of heating, steam, air pollution control, chemical and water and waste solutions that can help in meeting the growing demands of the textile industry.

The event received overwhelming participation, with more than 24,700 customers visiting from all parts of India.

Thermax representatives showcase our solutions for the textile industry



The Thermax team



Thermax presents at IDA's national seminar

The Indian Dairy Association (West Zone) organised a national seminar on 'Ideate. Innovate. Succeed.' at The Grande-C, Bombay Exhibition Centre, Mumbai on 13th April. Thermax took the opportunity to present on the topic – 'Energy efficient cooling, heating and water solutions for the dairy industry'.

Snehalkumar Suryawanshi, National Sales Manager, Absorption Cooling; Arzan Elavia, Regional Senior Sales Engineer, Heating; Gauri Kaveeshwar, Business Development Manager, Western Region, and Mahavir Chavare, Territory Manager, Channel Business Group, presented their respective topics for the dairy segment.

The seminar was attended by over 200 customers from across India, and our topics were well appreciated.



Thermax representatives at the seminar

Engaging with iron ore pellet manufacturers



The Thermax team at the customer engagement event, Raipur

Thermax's Air Pollution Control (Enviro) team participated in a customer engagement event at Raipur, Chhattisgarh, for iron ore pellet manufacturers on 16th April. The Enviro team interacted with major pellet producers from across India and demonstrated its ability to offer companies pollution control solutions that can significantly reduce emissions from pellet applications.

As an expert in particulate emission control with more than 40 years of experience, Thermax received an encouraging response at the event and saw over 100 visitors visiting our kiosk.

Leaders speak at the Global Sustainability Congress Series - Water & Waste

The Economic Times Global Sustainability Congress Series - Water & Waste, co-powered by Thermax, was held on 29th June. The Times Group conclave titled 'Reducing Water & Waste Stress by 2050' concluded with an impressive turnout of over 350 attendees from various industries.

Pravin Karve, President, TBWES and P&ES, and Vishal Mehra, SBU Head, WWS, along with other speakers from the ministry and reputed companies, participated in the virtual panel discussion. Pravin Karve discussed the critical role that water management plays in the face of rapid urbanisation, industrialisation, climate change, and increasing water pollution. Vishal Mehra emphasised important facts related to the water industry as well as sustainable solutions in water and wastewater treatment to conserve the precious resource.

It was a successful event that raised awareness about water, an issue of vital importance in today's world.



Virtual panel discussion

Thermax @ Paperex 2022

Paperex 2022 – a Hyve event, an internationally renowned exhibition and conference focussing on paper, pulp, and allied industries, was held from 10th to 13th May.

The Thermax team, including Thermax's Air Pollution Control (Enviro), TBWES and Cooling businesses interacted with major paper industry participants and demonstrated our offerings.

While the Enviro division presented Flue Gas Cleaning Systems (FGCS) for particulate and gaseous emissions from non-renewable plastic waste, TBWES showcased its expertise in waste-to-energy solutions for non-recyclable solid waste and process waste. The Cooling division had on display ultra low temperature hot water chiller and steam fired vapour absorption machines used in various applications of the paper and pulp industries.

The event was well received and attended by over 1,000 visitors.



The Thermax team interacts with visitors at the exhibition

Exhibiting our offerings @ Int'l Rice Grain Pro-Tech Expo



Interaction with customers at the booth

Thermax displayed its wide range of solutions for meeting the growing needs of the rice industry at the 23rd International Rice Grain Pro-Tech Expo - India's most preferred and largest international exhibition on rice and grains held in Ludhiana, Punjab from 10th to 12th June.

Heating and Steam Engineering divisions showcased their offerings for the industry segment in the Punjab belt. The Heating division presented process heating solutions, including biomass and rice husk fired CombiPac boiler and an IIoT solution for the process heating equipment, while Steam Engineering displayed steam traps, valves and related accessories.

The event saw a footfall of about 1,500 visitors.

Limelight

Kshitij Sharma clinches gold in Football Nationals

Kshitij Sharma of TBWES-OEM, Procurement, represented Maharashtra in the National Football Tournament at 2nd Khelo Masters Games 2022 held at Thyagaraj Stadium, New Delhi from 30th April to 3rd May, and won the gold medal. Kshitij is a part of Pune Senior Masters Football team, which won at the 2nd Maharashtra State Masters Games Championship held in November 2021.

Mr. Anurag Singh Thakur, Minister for Sports and Youth Affairs

inaugurated the mega sports event that saw participation from 23 states and union territories.

The winners were felicitated by Mr. Ram Singh Rathor, President, Khelo Masters Games Foundation (KMGF).



Kshitij Sharma being felicitated by Mr. Ram Singh Rathor, President, KMGF

Heartiest congratulations to Kshitij and his team on this prestigious win!

The Maharashtra team sports its winning medals post the win



Bakhtawar Battiwalla appointed Chair of IASAP's Pune Chapter

Bakhtawar Battiwalla from Administration has been appointed as the Chairperson of the Pune Chapter of the Indian Association of Secretaries and Administrative Professionals (IASAP), a non-profit organisation that promotes professional excellence among secretarial and administrative professionals. Since joining the association in 2010, Bakhtawar has bagged laurels and risen up the ladder. She was elected as the Hon. Treasurer of IASAP in 2018 and subsequently as the Vice Chairperson in 2020. She also won the Regional Secretary of the Year Award in 2010 and was nominated for the National Best Administrator Award.



Bakhtawar Battiwalla

We wish her the best in her new pursuit!

Nethra Anand releases her debut novel



Nethra Anand presents the book to Chairperson Meher Pudumjee

Nethra Anand, daughter of Anand Iyer, Head, Corporate EXIM, has released her debut novel – Wand meets Flute.

Being her lockdown work, the novel draws parallel and a striking comparison between the timeless epic Mahabharata and Harry Potter so that the present generation can relate to the older epic better. Readable by a lay audience,

Nethra, in this book, attempts to narrate the story as a conversation between a grandmother and her grandson. To convey the story in an engaging and effective way, illustrations are used wherever possible.

Learnings from the Mahabharata are infinite and unending. Thus, even though it is intended for children aged eight to 16, it is suitable for people of all age groups.



Diversity and Inclusion

Making a difference!

Life is not always fair. But if you are in a privileged position to uplift someone, you can certainly make a difference. Thermax took the first step towards inclusion and created a positive impact in the lives of two differently abled individuals – Anju Nikalje (speech and hearing impaired) and Aarti Sonawane (hearing impaired) when they were recruited in the canteen facility of Thermax Chinchwad factory on 19th April.

Talking about the diversity and inclusion initiative, Jasmeet Bhatia, Chief Human Resources Officer, said, “Diversity and inclusion should not be viewed as an initiative for organisations; rather, it should be a normal way an organisation exists. In the same way that we see people of all ethnicities and genders all around us, organisations should have an equally diverse representation. The absence of D&I is something that's not normal, and we need to identify and fix that.”



Vijay Siyak, Group Head, Employee Relations, Maharashtra, who has been instrumental in implementing this initiative, informed, “This diversity and inclusion initiative is directed towards inclusion of differently abled individuals and women empowerment. The recruitment of the differently abled candidates was done via Youth4Jobs, a non-profit organisation that works to provide employment opportunities for specially abled individuals.”

As acceptance is vital for the sustainability of this initiative, Youth4Jobs organised a sensitisation workshop at the factory where employees were given basic



Sensitisation workshop conducted by Youth4Jobs for factory employees



Aarti and (below) Anju serve food to employees in the canteen

sign language training. A POSH (Prevention of Sexual Harassment) training session was also held by the contractor.

The ER team conducted a role assessment survey to determine

reflective safety jackets for easy identification. We have also set up visual sirens at various locations, including washrooms, so that they will be notified with glowing sirens in the event of an emergency. They

also have been assigned a 'buddy' who can help them in need."

Vijay added, "We also undertook an accessibility audit of the premises. Keeping in mind the needs of the female employees, we have introduced some infrastructural changes like setting up of a changing room for them."

Anju and Aarti were trained by

Youth4Jobs. Aarti loves being on the job and said, "It has been a pleasant experience. The people here are very supportive. The fact that I am self-reliant makes me feel satisfied."

Anju expressed, "This is my first job, and I am very happy to be here. I now have my family support that makes me feel empowered."

Anju and Aarti have been working with immense sincerity and dedication, and the canteen staff has appreciated their work skills. Pravin Wagh, Supervisor, Chinchwad factory, said, "I have been very impressed with their work skills. I have never had to repeat instructions; they understand and do their jobs very well. I am glad to have their assistance with the canteen services."

"Without everyone's support, this initiative wouldn't have survived, and we are grateful that we have come together to support it wholeheartedly. This is the first step, and we are considering hiring more specially abled candidates for



Changing room set up for women employees

which areas could be suited for the differently abled candidates and in which areas we could improve women representation. Thereafter, two differently abled women candidates and 15 other women employees were recruited in different roles, including housekeeping, canteen services and gardening.

Kirti Naik, Executive, ER, said, "Our major concern was to ensure the safety of the differently abled workers while moving in the factory premises. So, we have provided them with



The women force

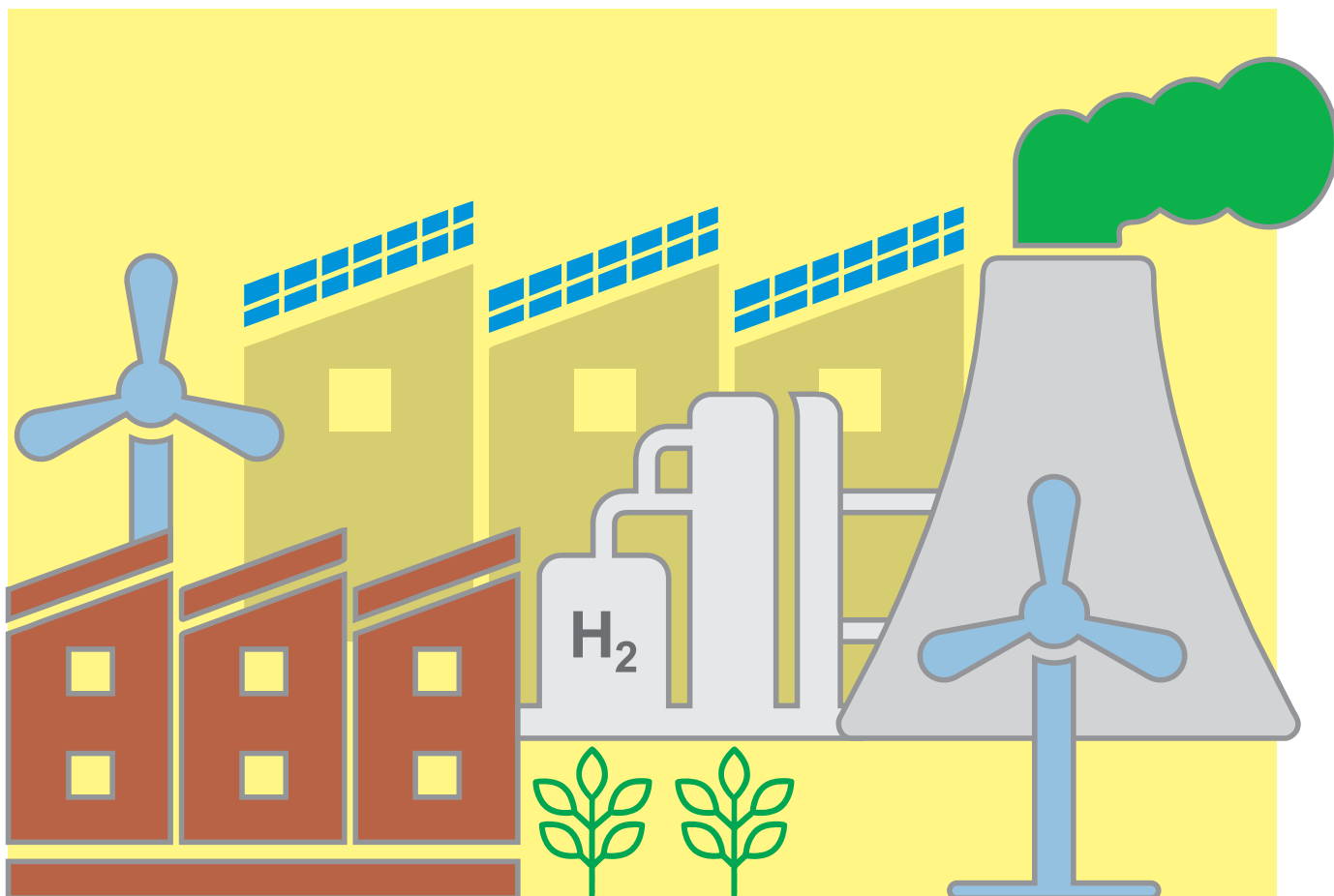
different positions. We feel a sense of responsibility towards them, and our aim is not only to recruit but help them grow in their career," commented Vijay.

Madan Kulkarni, Factory Manager, Chinchwad, seconded the initiative and said, "It has been a gratifying experience, and we have received positive feedback from everyone. They truly value their job and have been working with sincerity. The help and support they have received from their colleagues have given them the confidence to work."



A session on POSH training

Signposts



Green gases can help in the shift from fossil fuels to electricity

But there will always be more to do

.....
The below article gives an overview of the trends in the adoption of renewable energy sources in the industrial sector. It also discusses how switching to renewables and integrated technologies can play a vital role in power generation and in helping us achieve the net-zero-emissions goal.
.....

Using electricity to do things currently done with fossil fuels means generating more of it. If all America's cars were EVs and Americans drove as far in them

as they drive today, the country's power consumption would rise by 28%. If just two of Germany's largest industrial sites – the Ludwigshafen complex run by BASF, a chemicals

goliath, and the Duisburg plant run by ThyssenKrupp, a steel giant – were to run on currents not hydrocarbons, the country's electricity consumption would be

increased by 15% at a stroke, says Klaus Schmitz of Arthur D. Little, a consultancy.

That is a daunting prospect for developing countries which do not have the capacity to meet today's demand. It is less worrying for countries like America, Germany and Japan, where new capacity is affordable, and grids are getting more sophisticated. But it is still a huge challenge. And there are still difficult decisions to be made about what is electrified directly and what is electrified indirectly with green hydrogen.

The cost of making hydrogen from renewables is high. But it is also plunging. The falling cost of renewable energy itself is being amplified by improvements in the technologies of hydrogen manufacture – notably the electrolyzers in which water molecules are torn apart to make hydrogen and oxygen. Electrolyzers are ripe both for innovation and for economies of scale. They may well be the next technology to shoot down a precipitous cost curve in the way that solar cells and batteries have. Emma Champion of Bloombergnef, a research firm, predicts that by the end of this decade, green hydrogen will be cost-competitive with hydrogen from fossil fuels, even if it is made without carbon capture and storage (ccs).

And it will keep going. Vinod Khosla, a venture capitalist with a long-standing interest in climate change, expects cheap renewables

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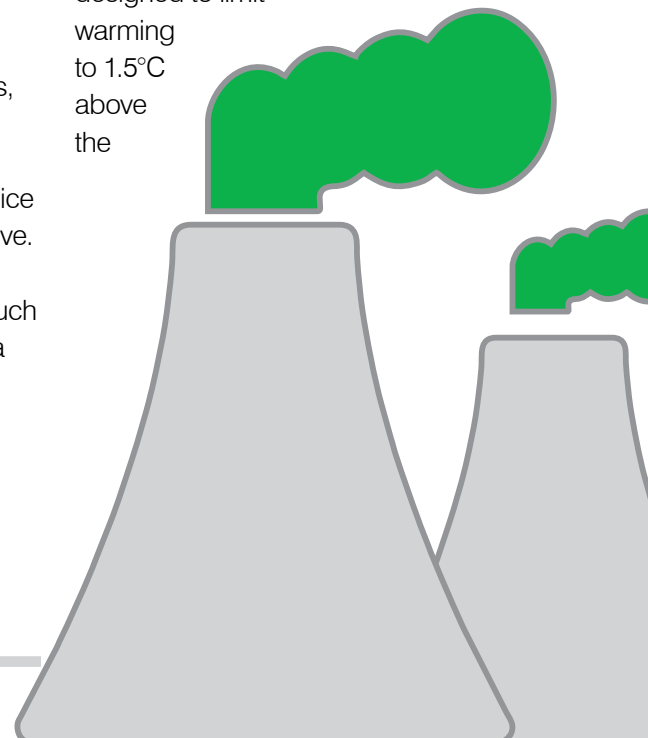
making cheapish hydrogen will lead to a booming market for the stuff. "If this path starts to work, our needs for electricity will grow hundreds of percent over our current forecasts for 2040, making solar even cheaper," he predicts.

Such hydrogen will not, though, be a one-for-one replacement for natural gas in all applications. In high temperature turbines, it makes sense. In domestic boilers, it generally does not. Going from a natural gas-fired boiler to a hydrogen-fired one may sound nice and likely to be minimally disruptive. But using electricity to make hydrogen to burn in a boiler is much less efficient than using it to run a heat pump.

**It combines informed,
technical imagination with
the conservatism of good
engineering**

Electric heat pumps are, in effect, air conditioners that run in reverse. The energy they use does not heat things up directly. Instead, it moves heat from one place to another, and moving heat can be more effective than producing it. A heat pump that heats a house using warmth from the ground beneath it can produce 400 W of heating for every 100 W of electricity consumed. Retrofitting houses with heat pumps can be costly and inconvenient, and the workforce needed to do so at scale does not exist. But it still seems more sensible than burning hydrogen, a process which always releases less energy than making the hydrogen required in the first place. For living spaces, workspaces and industrial processes requiring 'low grade' heat, which is to say, temperatures below that of boiling water, heat pumps look like the way to go.

This is a tall order. In a scenario designed to limit warming to 1.5°C above the



In a scenario designed to limit warming to 1.5°C above the preindustrial level produced by IRENA, a UN body devoted to renewable energy, the number of industrial heat pumps will have to rise from fewer than 1 m in 2019 to 35 m in 2030 and 80 m in 2050.

preindustrial level produced by IRENA, a UN body devoted to renewable energy, the number of industrial heat pumps will have to rise from fewer than 1 m in 2019 to 35 m in 2030 and 80 m in 2050. In buildings, it calls for growth from 53 m in 2019 to 142 m in 2030 and 290 m in 2050.

For high grade heat, above 500°C, hydrogen probably has the edge. And it will have other niches, too. One of the reasons that the chemicals and steel industries are locked into fossil fuels is that they make use of their chemistry – the way the carbon and hydrogen inside them react with things – as well as the energy stored up in them. Making iron from iron ore and then steel from iron requires chemistry as well as heat, and the steel industry has grown up relying on fossil fuels for both.

At a factory in Toledo, Ohio, Cleveland-Cliffs, the biggest supplier to the American automobile industry, uses natural gas to remove the oxygen from iron ore, producing briquettes of direct-reduced iron (DRI). Hydrogen can do much the same job. Lourenco Goncalves, the firm's boss, says that replacing 30% of the natural gas with hydrogen would be easy if the plant had a

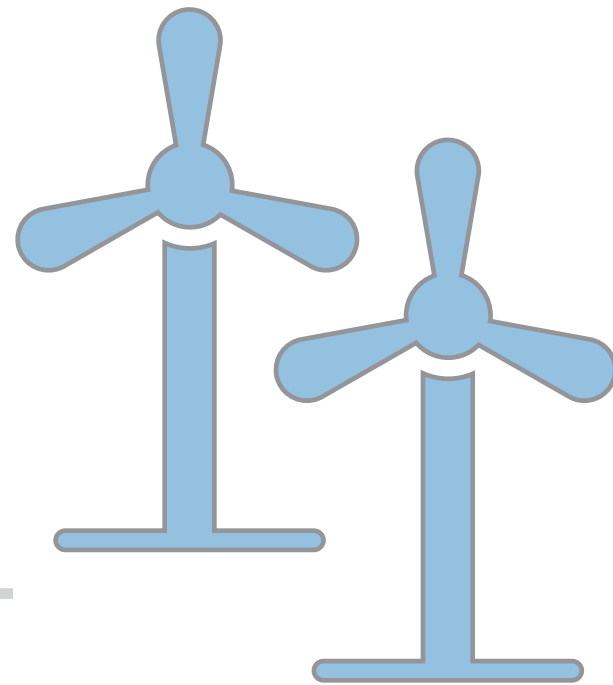
reliable hydrogen source, and 70% could be achieved with limited modifications, slashing emissions by over 1 m tonnes a year. Going hydrogen-only would be harder, but such plants are quite possible.

The DRI made in Toledo still goes into coal-fired blast furnaces. But it could be put into electric-arc furnaces (EAFS), which melt iron with electricity. The addition of some carbon to turn the iron to steel is still necessary; heat produced by fossil fuels is not. In the net-zero-emissions scenario published by the IEA in May around two-thirds of primary steel production in leading industrialised countries used the hydrogen DRI-EAF route by 2050. India's Tata Steel said last year that it would use this approach to green steel at a big plant in the Netherlands.

For a sense of the multifaceted, and integrated approach to energy infrastructure that climate action makes necessary and technology makes possible, come back to Berlin. Reuter West, one of the largest generators on the 50 Hertz grid, is a large coal-fired plant operated there by Vattenfall, a Swedish firm. By 2030, the firm hopes to have it running on natural gas and be hydrogen-ready. The

district heating system, which relies on the plant's hot water, will be augmented with heat pumps. Hot water will be used for energy storage too, in the form of a giant vacuum flask which can hold 56,000 tonnes of water at a couple of degrees below boiling.

Like all the paths forward in this report, the project is constrained by the history of what came before. It combines informed, perhaps idealistic, technical imagination with the kick-the-tyres conservatism of good engineering. It depends on the integration of technologies, old and new, to control immense flows of power, and it is a work in progress.



Voices



It's time to act on mental health

Recently, I read a news article on all the serious issues the world is facing today. Out of all those, mental illness is the topic that is least discussed and is turning into a bigger crisis than anything else. It affects our physical health, relationship health, professional health and everything. It all starts in our minds first.

World Health Organisation's mental health report says mental illness affects nearly a billion people, and if left untreated, it can lead to premature death and reduced economic productivity.

Anxiety, depression - the most common mental illnesses:

There are nearly a billion people worldwide with mental health conditions, and 82% of these people live in very low and middle-income countries where mental health services are largely absent.

Impact of Covid:

Pandemic-related economic stress and lockdowns contributed to an increase in mental health disorders. Countries that reported the highest number of deaths have also reported a significant increase in the cases of mental illness.

Mental illness is more prevalent in high-income countries:

High-income countries reported relatively higher cases of mental illnesses. Most cases are observed to be more prevalent in the Americas, Europe, Western Pacific, and South East Asia. A severe mental illness can shorten one's lifespan by 5 to 10 years.

It is disappointing to learn that the global average expenditure on mental health in the budget is only 2%! This is a wake-up call for all the countries. It's time to take mental health seriously.

Our role:

The responsibility to mitigate the impact of mental illness starts with us. Together, we can eliminate stigma, build awareness, and be advocates for mental health.

Ask someone how they are doing. Let them answer honestly and show that you are genuinely interested in their response.

Small steps like these can help people feel cared for and contribute to their mental well-being.

Let us remember - we are all in this together!



Bhushan Belkhede, Chemical



Zero

Liquid Discharge

Water treatment: the key to water conservation

Have you ever wondered why Earth is called the blue planet? It's because water covers about 70% of its surface. Considering this amount of water available, it seems obvious that it is abundant. However, 97% of the Earth's water is saline consisting of 1,335 million km³, and 2% is frozen freshwater locked up in glaciers, polar ice caps, soil etc. and is unavailable for use. As a result, there is only 2,04,000 km³ of freshwater available for consumption, which is about 0.5 to 1% of the total freshwater available.

Water is mainly used for agriculture, industry, and domestic purposes.

Globally, freshwater withdrawals in 2017 totalled 3,880 km³, of which India drew 647 km³. It is estimated that industrial activities require between 2 and 20% of the total amount of water. According to one of the references, India uses 14 km³ of water for industrial purposes, 48 km³ for domestic, and 586 km³ for agricultural purposes. The demand for water in agriculture exceeds 80% of total consumption; therefore, it is

crucial to increase water efficiency. As agriculture runoff is a non-point source, its treatment and reuse are difficult. Sewage can be reused, and it can become one of the sources of water. However, in our country, only 1/3rd of sewage is treated. The discharge of untreated wastewater pollutes natural water bodies. Due to the growing demand and limited availability of water, India, China, and a few European and African countries are expected to experience water scarcity by 2025.

In case of scarcity, water supply to industries would be restricted. Considering the rising water demand in India, an additional 7 km³ of water could be made available even if 50% of wastewater is recycled by industries. This volume is equivalent to more than five years of water requirement of New Delhi.

Lack of uniform distribution of water resources across the globe, erratic climate changes, and poor water conservation and management strategies are major causes of water scarcity. It is expected that water scarcity can be physical, where there is not enough water available to meet the demand, or economic, where there is enough water available but not the proper means to produce desirable water quality.

Hence, industries must achieve and sustain wastewater recycling to the maximum extent possible. Ideally, Zero Liquid Discharge (ZLD) of all liquid streams should be targeted. There are many factors affecting the effluent treatment process, such as changing effluent quality and quantity, different combinations of constituents from various manufacturing processes, and uncertainty about the effectiveness of conventional treatments.

The ongoing technological advancements and augmentation in manufacturing processes are changing the composition of wastewater. Thus, efficient industrial wastewater treatment plays a critical role in water quality management. It is possible to treat a wide range

of effluents by integrating conventional and new technologies.

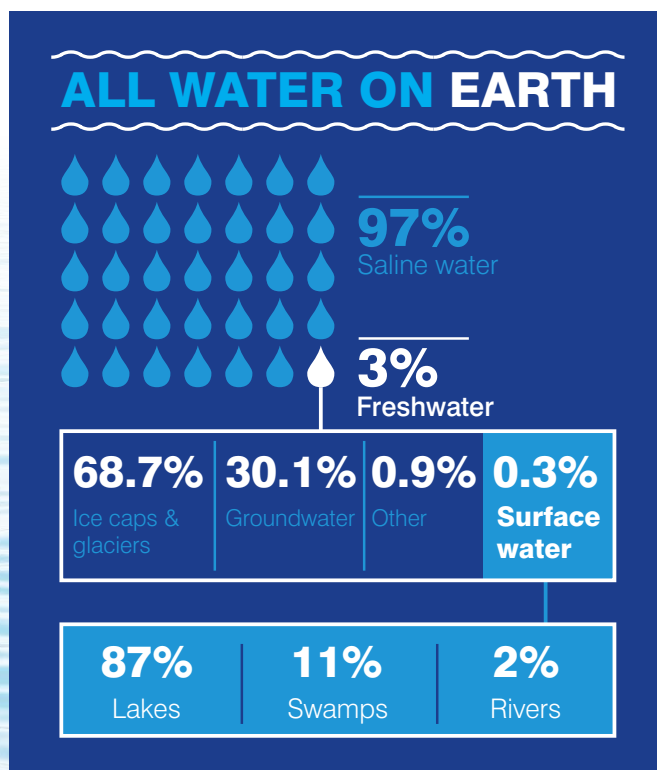
For example, conventional treatment can reduce organic constituents and inorganic solids from coke oven wastewater, whereas novel adsorbents can reduce source-specific constituents. Thus, such hybrid treatment would help to recycle tough-

to-treat wastewaters. ZLD is considered an emerging alternative to reduce the water demand of the industry. As the name indicates, 'Zero Liquid Discharge' eliminates all liquid waste from the system. In ZLD, wastewater is treated, reused, and the residues are concentrated and disposed of in solid form. Bioprocesses and membrane filtration-based solutions are adopted for the treatment of industrial wastewater. Thermal technologies like multi effect evaporator (MEE) and mechanical vapour recompression (MVR) are used to concentrate inorganic constituents. This helps the industries to maximise water recovery.

There are a multitude of measures that citizens, industries, and authorities can adopt to bring about a notable change in the water conservation scenario. The first step, however, is to acknowledge that water is a valuable resource and implement water reuse on an organisational as well as individual level. Every drop counts!



Nandan Prabhune and Sayali Jadhav, Water and Waste Solutions



WHERE EVERY PICTURE TELLS A STORY!

Working with Thermax for the last 12 years has given me the opportunity to visit different sites in India. Enroute to these locations, I came across many picturesque landscapes – rivers, roads, bridges, and fields. Eventually, a few of these became destinations for leisure travel. These simple locales captured in picture form from my cellphone camera are glimpses of India - a land that I have come to admire for its beauty which is majestic in stature and form, yet humble and welcoming.

These albums were screened by Sayali Jadhav and Shruti Bhomle from WWS, who also convinced me to write about my rendezvous with places. I am sharing some of these pictures and the associated stories with you.



Clicked post take off heading south, the picture presents an aerial view of Pune city in clear weather. One can trace city landmarks starting from the centre of the picture, which is a river confluence. A series of bridges across river Mutha and open grounds can be used as coordinates to locate places of interest. Having lived in this city my whole life, I am awed by how it changes shape and form with the passage of time and yet manages to hold onto its core!



Located on the river Sharavati in Shivamogga district, Karnataka, Jog falls has a height of 830 feet and is at its best during rains. The picture, however, was taken in late winter when the crowd was sparse. Here, one can enjoy a peaceful time by the riverbed (a good descent of 1,400 steps from the waterfall) in the company of birds flying across a beautiful rainbow! A drive through the Sharavati river basin will take one to Honnavar where the river meets the sea.

Already planning your next outing here?



Captured on a quiet winter morning from the banks of Pushkarghat in Rajahmundry, Andhra Pradesh, this bridge is spread across the river Godavari. At a length of 2.7 km, it's one of the longest railway bridges in India. Incident rays in the wee hours of the morning have lit up the bridge in natural harmony against the vast expanse of river Godavari. It could be the perfect backdrop for a patient painting!



This is a 360-degree view of urban Vijayawada, Andhra Pradesh, from Gandhi hills next to the railway station. A brisk walk uphill takes one to this vantage point from where the whole of Vijayawada illuminates in the evening skies just as the sun is about to set. The Prakasham barrage on river Krishna along with the neighbouring mountains, add colour to this urban landscape of emerging India.



A beach in the heart of Chennai metro – Marina – can be best experienced in the early hours of the morning. No better way to start your day than a walk along this beautiful, quiet beach!


Beautiful locales are all around us. One needs to pick the right time and the right place to discover the beauty that lies within seemingly mundane landscapes. Nature comes to life once we start appreciating what is around us.

Nandan Prabhu, Water and Waste Solutions

Slice of Life

One grain at a time: Assam's rice seed library for climate resilience

Annapurna Library in Assam is one with a difference. Instead of books, it stores seeds of traditional rice varieties. These traditional varieties have traits that can protect the farmers and people of Assam from the impact of climate change on food security.



In the foothills of the eastern Himalayas in Assam, Mahan Chandra Borah, is racing against time to stock up nearly-extinct and rare indigenous rice varieties, one grain at a time, in his unique seed library - to help secure

genetic diversity for climate resilience.

Borah's 'Annapurna' library is 'Northeast India's first indigenous seed saving library' that seeks to collect and promote the cultivation of heirloom rice landraces of the region in the wake of climate change. A history graduate-turned-farmer, he started the seed bank about 12 years ago from Meleng in Assam.

"I started with three varieties. Now I have 250 varieties of rice, mostly from northeast India," Borah said. "These traditional rice types can withstand extreme climatic variability such as floods, drought etc. But they are not cultivated extensively nowadays due to preference for

hybrid or high yielding varieties (HYVs)."

Annapurna is now a sister library of the California-based Richmond Grows Seed Lending Library.

"The basic idea is that you plant the seeds, let some germinate, then return some of these next generation seeds for others to borrow," states the Richmond Grows website.

Annapurna is the only listed sister library from Asia.

Source: india.mongabay.com



The feeling of getting lost inside a mall is known as the Gruen transfer

We've all heard how casinos are designed to deliberately disorient visitors, causing them to lose track of time and where exactly they are. But did you know that there's a similar strategy behind the design of shopping malls as well? Officially known as the 'Gruen transfer,' this phenomenon was named after Austrian architect Victor Gruen, who identified how an intentionally confusing layout could lead to consumers spending more time and money in a shopping venue (though he would later disavow the approach).

Source: bestlifeonline.com



And this pun picture



"Tell us something we don't know."

Source: Facebook

Going 'Out' of bounds!

After nearly two years, it was that time of the year again to take a break from work and enjoy in the lap of nature. Different divisions chose their favourite destinations for a two-day outbound in the outskirts of Pune. The outbounds were marked with a theme-based gala, games, stand-up comedy, cultural performances, some dancing and spending quality time with teammates. It also included the annual awards distribution.



TBWES - Pune team @ Fariyas Resort, Lonavala



Enviro team @ Fountain Hotel, Mahabaleshwar



CBG team @ Brightland Resort & Spa, Mahabaleshwar



WWS team @ Grand Victoria The Fern Resort & Spa, Panchgani



TBWES - Savli team @ Hotel Hilltone, Mount Abu



BTG team @ Radisson Blu Resort & Spa, Alibaug



Finance and Secretarial team @ Grand Victoria The Fern Resort & Spa, Panchgani



Heating Annual Awards @ JW Marriott, Pune



Steam Engineering team @ Fort Jadhavgad, Pune

Experience & Explore



Our New HRMS for Employee Lifecycle



Redefined Employee Experience



Enriched User Interface



Increased User Engagement



Voice Bot



Multi Device Accessible Digital System