

eWASTE MANAGEMENT

PUBLISHED FROM BANGALORE

NOVEMBER, 2021

siliconindia

BUSINESS OF SERVICES

SILICONINDIA.COM

IN MY OPINION

NIDHI GROVER,
SENIOR DIRECTOR
- CONSULTING,
CAPGEMINI INVENT

CXO INSIGHTS

GAUTAM DAS,
CO-FOUNDER & CEO,
OORJAN CLEANTECH



SHASHANK SONI,
CFO & DIRECTOR

ECO RECYCLING

RESOURCE RECOVERY THROUGH
RESPONSIBLE RECYCLING

₹150



DREAM IMAGINE BELIEVE

Your partner for
Business Technology
Consulting & Solutions

Thinkinfinit Technology & Consulting

 India : + 91 4425971099

 Contact@thinkinfinit.co.in

 www.thinkinfinit.net



Thinkinfinit
where the mind connects



Optimize IT Operations with Next-gen Platform

for deeper visibility of IT infrastructure

**Network
Monitoring**



**Log
Management**



**IT Service
Management**



sales@motadata.com | +91.79.2680.0900 | www.motadata.com

siliconindia

Vol 10 • Issue 09 - 03 • November, 2021

Publisher Alok Chaturvedi
 Managing Editor Emmanuel Christi Das
 Assistant Editor Ananth V

Editorial Team

Aveek Pal Chaudhuri Mandvi Singh
 Rajan Sarma Rajesh P
 Komal Banchhor Abantika Bhattacharjee

Correspondents

Sambit Satpathy Subhadarshani Mohanty

Group Art Director

Ashok Kumar

Visualisers Mohana Krishnan
 Vetrivel S

VP - Sales & Marketing Virupakshi Pattar
 GM - Sales & Marketing Rohit Kumar

Anupreethi Danila.D Chandar Thyagaraj
 Felisha Rita

Advertising Managers

Noida

Ashu Sethi Garima Anand

advertise@siliconindia.com

Editorial queries

editor@siliconindia.com

Circulation Manager Magendran Perumal

To subscribe

Visit: www.siliconindia.com/subscribe/
 or send email to subscription@siliconindia.com

Cover price is Rs.150 per issue.

Printed and Published By Alok Chaturvedi on behalf of Siliconmedia Technologies Pvt. Ltd. and Printed at Precision Fototype Services at Sri Sabari Shopping Complex, 24 Residency Road Bangalore-560025 and Published At No. 124, 2nd Floor, Surya Chambers, Old Airport Road, Murugeshpalya, Bangalore-560017.

Editor Alok Chaturvedi

Copyright © 2021 Siliconmedia Technologies Pvt. Ltd. All rights reserved. Reproduction in whole or part of any text, photography or illustrations without written permission from the publisher is prohibited. The publisher assumes no responsibility for unsolicited manuscripts, photographs or illustrations. Views and opinions expressed in this publication are not necessarily those of the magazine and accordingly, no liability is assumed by the publisher.



HAPPINESS STARTS FROM HOME



**GOLD LOAN
MSME LOAN
BUSINESS LOAN
LOAN AGAINST PROPERTY**

TOLL FREE  **1800 4253 990**

CIN : U65990MH1986PTCO40897 www.indelmoney.com

**INDEL
money** 
We care for your needs

CONTENTS

IN MY OPINION



12

DIGITAL TO GREEN, INFORMATION TECHNOLOGY IS AT THE FOREFRONT OF SUSTAINABLE TECH REVOLUTION

NIDHI GROVER,
SENIOR DIRECTOR - CONSULTING,
CAPGEMINI INVENT

COVER
FEATURE
PG 14

SHASHANK SONI,
CFO & DIRECTOR

ECO RECYCLING

RESOURCE RECOVERY THROUGH
RESPONSIBLE RECYCLING

CONTRIBUTORS

CXO INSIGHTS



18

ENVIRONMENT SUSTAINABILITY AND HARNESSING THE POTENTIAL OF SOLAR POWER IN INDIA

GAUTAM DAS,
CO-FOUNDER & CEO,
OORJAN CLEANTECH



23

SMART CITIES CALL FOR SMART BUILDINGS

GAURAV BURMAN,
VP & COUNTRY PRESIDENT,
75F INDIA



27

AUTO LPG CONVERSION FOR 2 & 4-WHEELERS COULD BE A TIPPING POINT IN COMBATING POLLUTION & SURGE IN FUEL PRICES

SUYASH GUPTA, DIRECTOR GENERAL,
INDIAN AUTO LPG COALITION



31

HOW SMART DESIGN IDEAS ARE LEADING THE TREND OF SMART OFFICES

SAMMEER PAKVASA,
MD,
ELEGANZ INTERIORS



32

SOLAR-POWERED COOLING SOLUTIONS IN INDIA

MONIKA SINGH,
DIRECTOR,
EXALTA

IN FOCUS

08

8 WAYS TO FIND INVESTORS FOR YOUR STARTUP

10

BITCOIN PAYMENT SERVICES

LAST WORD



34

THE FLOURISHING INDUSTRY - FACILITY MANAGEMENT

VANDANA KAUSHAL,
HEAD - ADMINISTRATION,
MERCER

siliconindia 10 MOST PROMISING E-WASTE MANAGEMENT SOLUTION PROVIDERS - 2021

FEATURED SOLUTION PROVIDERS:

22 CEREBRA

26 E-WASTE SOCIAL

29 PRITHVI CLEANTECH

30 VANS CHEMISTRY

IN FOCUS

8 WAYS TO FIND INVESTORS FOR YOUR STARTUP

By *si Team*

Starting a business venture is one of the most thrilling decisions anyone can make. Many people revere entrepreneurs for their resilience, discernment, and overall courage. Although social media has painted a glamorous picture about starting and owning a business, there is a lot more than what meets the eye. One of the most significant hurdles entrepreneurs face when starting is raising enough capital for their venture. There are countless expenses to consider when starting a business. Coming-up with these funds can be a tall order for a sole entrepreneur. Even so, business owners can benefit immensely with the help of investors.

Furthermore, regardless of how great your idea or product is and how much your business has grown, it will eventually require more funding. Still, finding a suitable investor to provide financial aid to your venture isn't a walk in the park. Fortunately, there are plenty of avenues that business owners can use to find investors. For instance, some platforms let investors view and fund business projects. You can sign-up to Angels Partners today and connect with 40,000+ investors. Even so, some businesses may still have trouble getting the appropriate funding. Here are some of the best ways to find investors for your startup to help those who may have difficulty finding them.

UTILIZE FUNDRAISING PLATFORMS

For those who may think that raising funds is not enough, remember that GoFundMe, one of the biggest online fundraising platforms, has made over three billion dollars since its inception. Fundraising platforms are also known as crowdfunding sites. Over the years, these websites have become more sophisticated. Plenty of accredited investors and financial institutions such as banks are prevalent on such platforms, searching for new ways to dispense capital. Even so, there is a learning curve involved, as not all fundraising platforms are the same. Here is a quick look at some of the most common ones.

DONATION-BASED PLATFORMS

With donation-based fundraising platforms, donors usually don't expect the money back. When you use such sites to

find funding for your project, anyone can donate money towards your venture. For this reason, many charitable organizations and non-profits also use donation-based fundraising platforms to get financial assistance.

EQUITY CROWDFUNDING

Equity crowdfunding is the complete inverse of donation-based crowdfunding. With these fundraisers, investors or donors provide financial aid in exchange for some ownership in the country. In most cases, investors get equity in the form of shares.

SOCIAL MEDIA

Apart from the wheel, the internet is considered one of the greatest inventions of humankind. Its byproduct, social media, can be an excellent tool for businesses to gain much-needed traction. For this reason, social media can be an indispensable tool for attracting investors. What's more, there are plenty of tools available to help you through the process. Therefore, you don't have to rely solely on your know-how to get the attention of your desired investors. Furthermore, direct messages are also powerful when you're seeking financial aid. You can reach-out to suitable investors through their social platforms, making it easy to connect and pitch your business idea.

GET YOUR PRODUCTS & SERVICES NOTICED

What many greenhorn entrepreneurs fail to acknowledge is that having a good customer base reduces the reliance on investors. For this reason, getting enough notoriety for your products will place you in a better position for sourcing outside funding. Moreover, given that investors are just as eager to make money as entrepreneurs, they're more likely to get behind a business with a considerable client base.

ATTENDING & PARTICIPATING IN CORPORATE EVENTS

Brand awareness is paramount to get more traction for your business and attract investors and customers alike. Therefore, bagging a suitable investor is mainly pegged on getting noticed by them. Attending and participating



in corporate events is perhaps the most sure-fire way to achieve this. Such functions will provide you with an opportunity to interact with potential investors and pitch your business idea. You can also go the extra mile and attend functions that may attract potential investors, even if they're not formal.

MAKE USE OF STARTUP ACCELERATORS

Another great way to find investors for your business is by signing-up for a startup accelerator program. In simple terms, a startup accelerator program helps budding entrepreneurs build solid startups through mentorship and

WHAT MANY GREENHORN ENTREPRENEURS FAIL TO ACKNOWLEDGE IS THAT HAVING A GOOD CUSTOMER BASE REDUCES THE RELIANCE ON INVESTORS

other assistance. There are plenty of startup accelerator programs that accept serious entrepreneurs. Although you need to be accepted into such programs, the benefits are well worth the effort. Typically, after attending such

programs, you'll have an opportunity to pitch your business idea to a group of investors. If you're accepted to join a startup accelerator program, you'll be well equipped to handle investor pitches and presentations.


TRY A DIFFERENT APPROACH

While most investors are usually genuinely interested in your business, the bottom line is their ultimate consideration. For this reason, instead of cold calling investors and begging for financial aid, you can try a different approach. For instance, you can choose to ask for advice as a hopeful entrepreneur. Doing this will help you build a relationship with the potential investor before you pitch your idea.

BLOGGING

Although many people are aware of the power that blogs and websites have, not many people are harnessing it. One way of doing this is blogging about your business and the thought process behind every choice you make. Doing this will enable potential investors to understand your business. Another way is by interacting with blogs made by these investors or engaging with them in blogs that they follow. Such an approach will help you slowly gain their interest before you can pitch your business venture.

PITCH YOUR RETURN ON INVESTMENT (ROI)

When looking to win over investors, you need to sell them your idea. One of the most effective ways to do this is by explaining how your investors will personally gain from funding your project. While it's tempting to want to talk about your business in length, it would be more productive to tell the investors what is in it for them. 

IN FOCUS

BITCOIN PAYMENT SERVICES

By si Team

The most famous cryptocurrency, Bitcoin, is considered one of the most secured money on the internet. Like any other money, you can use Bitcoin to buy and sell goods and services safely without releasing any private information about your account or wallet. Transactions involving other cryptocurrencies such as Litecoin are also on the rise. Many businesses are taking advantage of the rising acceptability and surge in the value of cryptocurrencies by accepting them as payments for their goods and services. This means you can simply make payments for things like coffee by scanning the shop's QR code with your phone. You can also buy things like a high-end laptop from a company by using Bitcoin as payment. Platforms such as Bitcoin Prime already allow trading of cryptocurrencies, so it's understandable that a system that allows you to make Bitcoin payments should arise. This article aims to explain how you can make payments with Bitcoin and how the process works.

WHAT IS A BITCOIN PAYMENT SERVICE?

This service allows businesses and other establishments to receive Bitcoin payments for their goods & services. It works in the same way as regular making payments with your credit or debit card, addition to some unique features to Bitcoin. Just as with a credit or debit card, there is a payment service system working behind the scenes in Bitcoin payments to verify and process your payments. The payment service makes sure the transaction is secure and recorded while transferring the essential details of the transaction. It authenticates your credentials to allow the transfer of your money to the correct entity and sending a confirmation alert to all parties involved. It behaves as the middle man between the payer & receiver and processing payments by recording all transactions on the public ledger. One should be thankful to blockchain technology. Merchants can therefore receive payments both physical at a location or online without the parties involved worrying about the process involved.

HOW DOES BITCOIN PAYMENT SERVICE WORK?


All the known Bitcoin payment services provide platform merchants to receive payments. These include services offered by working with e-Commerce sites like Shopify, Magento, and PrestaShop. There are also solutions for



making payments via point-of-sale (POS) systems such as DC POS and SoftTouch. Individuals can also make direct payments via known billing platforms such as Invoice Ninja and Host Bill.

There are also solutions for receiving Bitcoin donations via donor services such as Targeted Victory and NationBuilder. Developers can gain access to already written functions and code libraries in both iOS and Android SDKs. They can also get ready-made functions in programming languages such as PHP, Perl, and Java allowing Bitcoin payments through portals and applications. Merchants can begin receiving Bitcoin payments by signing up for Bitcoin merchant services through any transaction platform worldwide.

BITCOIN PAYMENT STEPS: A CUSTOMER CAN MAKE BITCOIN PAYMENTS BY FOLLOWING THE GIVEN STEPS -

1. They can make Bitcoin payments at the checkout point on a site, app, or in-store.
2. They pay the appropriate amount at the present exchange rate during the time of the transaction.
3. The Bitcoin payment service then converts the Bitcoin received into any currency of your choice to prevent any loss due to volatility.
4. The money is then added to your account. It is finally credited into your bank account depending on the frequency of you choosing at the assigned threshold limit.
5. The payment service also sends all the essential details securely to the blockchain network, so that the transaction can be verified and added to the public ledger.
6. With cryptocurrencies becoming more popular, making a payment with Bitcoin and other cryptocurrencies will become even more accessible. The world is seeing a dramatic change where digital currencies will soon become the order of the day. 



**You need it.
We move it.**

Even in a digital world, products must be shipped every day. And no matter how high your ambitions are, we are here to ship them for you. Around the corner, across the country or maybe to another continent. We support your organisation by providing innovative solutions for transport and logistics that help your business develop and expand.

Visit [dsv.com](https://www.dsv.com) or simply call us at +91 22 71 99 90 00 and get things moving.



Air Freight

Main services

- Full charter
- Part charter
- On-board courier
- Consolidation
- Back-to-back



Sea Freight

Main services

- Full container load
- Less than container load
- Non-containerised load
- Buyer's consolidation services
- Break bulk

OUR BRANCHES

Ahmedabad +917949009000; **Bangalore** +9108061799000; **Chennai** +914471444000; **Cochin** +914842377383; **Gandhidham** +912836297950; **Gurgaon** +911247199900; **Hyderabad** +914045570000; **Jaipur** +911412389169; **Kanpur** +915122304439/40/41; **Kolkata** +913330027100; **Ludhiana** +911612622652; **Mahipalpur** +911126783303; **Mumbai** +912271999000; **Pune** +912071119000; **Tirupur** +914212243755; **Tuticorin** +914614550036; **Vadodara** +912653088156; **Visakhapatnam** +918912735066/2595066; **Zirakpur** +911762525777

For more information, please contact your local DSV office or email us at info@in.dsv.com



Global Transport and Logistics

IN MY **OPINION**

DIGITAL TO GREEN, INFORMATION TECHNOLOGY IS AT THE FOREFRONT OF SUSTAINABLE TECH REVOLUTION

By Nidhi Grover, Senior Director - Consulting, Capgemini Invent

Holding PG Diploma in Finance from Management Development Institute, Nidhi has been associated with Capgemini for over eight years now, prior to which she had worked with corporates such as Cognizant, Dell Services, and Langham Capital.

The COVID pandemic has forced organizations to consider the larger and wider impact they have on the environment. Increasing focus on environment, social and governance (ESG) metrics is driving greater awareness of the carbon footprint of each organization. One function that has historically escaped close scrutiny and evaluation on its carbon footprint is Information Technology (IT).

Enterprise IT— across data centers, networks, user devices, and applications – is responsible for dramatically significant carbon emissions. For instance, in terms of comparison, it is estimated that the carbon footprint of a major cloud computing solution provider is equivalent to having 64,000 cars on the road for a year. With growing adoption of big data and AI, data centers themselves represented one percent of the world's energy demand in 2019, majority of which are still powered with fossil fuels, denoting the rising environmental footprint of enterprise IT.

In addition, over 50 million tons of e-waste is generated each year, and this figure is rising. Only 15-20 percent of this waste is currently being recycled. Against this backdrop, there is a strong case for designing innovative technology solutions to reduce the environmental footprint of an organization (IT for Sustainability), in addition to reducing the environmental impact of IT itself (Sustainable IT).

LEVERAGING IT SUSTAINABILITY TO DRIVE ENERGY EFFICIENCY

The potential for ESG initiatives across the end-to-end value chain for large organizations is significant. Emerging digital technologies such as IoT, AI, ML, blockchain, and others, enable real-time data-driven automated decision-making capabilities, which in turn drive energy efficiency, water consumption optimization, waste management and reduced greenhouse gas (GHG) emissions.



Nidhi Grover

Google is a pioneer in tech-based sustainability solutions. It has launched interactive air pollution maps that measure and combine real-time air pollution information with Google Maps. Google's Project Sunroof promotes renewable energy consumption by determining economic viability of installing solar panels at a specific address using Google geo-data.

For CXOs, the short-term concerns are the investments involved and data security controls. In the long run,

operational efficiency and financial savings outweigh investments. Additionally, sustainable measures help in establishing employee and customer attractiveness, leading to a favorable brand image. It is becoming a norm (a legal mandate in some countries) to monitor and publish extensive metrics on sustainability and carbon footprint of organizations in regulatory documents and financial reports.

REDUCING THE ENVIRONMENTAL FOOTPRINT

Enterprise IT contributes greatly to energy consumption, carbon emissions and electronic waste creation. Across Enterprise IT, there are multiple levers that can be employed to reduce impact on the environment.



With data at the core of every business, energy consumption of data center operations and subsequent energy requirements for cooling have increased significantly. Google, for instance, has leveraged AI/ML technology to reduce 40 percent energy consumption on cooling mechanism and 15 percent reduction on overall energy consumption in data centers. With this, most Google data centers are approximately 50 percent more energy efficient than others in the market. With tech giants such as Amazon, Microsoft, and Google achieving this level of energy efficiency for their data centers, it builds a clear case for organizations to move their data to cloud.

THE ABRUPT, AND HARSH, NATURE OF THE PANDEMIC HAD CREATED SIGNIFICANT CONCERN INITIALLY DUE TO ITS IMPACT ON SUSTAINABLE IT

Adopting the principles of a circular economy is vital for sustainability and reducing business risk and increasing profitability. Apple retrieved 61 million pounds of reusable raw materials from discarded iPhones using cutting-edge

robotics. For e-waste management in other industries, organizations need to procure energy-efficient hardware with a trade-in or trade-up option at the end of the asset lifecycle. Another alternative is choosing a trusted and reliable recycling partner to dispose or recycle hardware while meeting regulations (particularly removing data from devices).

PRIORITIZING SUSTAINABLE IT FOR THE FUTURE


During the COVID-19 pandemic, it was IT that led the fast-paced digital revolution, enabling remote working and digital collaboration. Consequently, tech giants are expected to demonstrate similar leadership in the Green (IT) revolution too. Globally, they are spearheading this revolution with specific use cases which could inspire other sectors.

Closer home, cleantech startups and new-age tech companies in India are driving innovative sustainable IT solutions. Flipkart, with its acquisition of Jeeves and F1, is recycling old devices and has created an independent platform for refurbished devices. Additionally, there are re-commerce startups like Budli for IT hardware waste management, specifically recycling and refurbishing electronic devices, thus lengthening the lifecycles of devices.

Another example is an IIT-alumni setup/IIM-incubated cleantech company called Skilancer Solar, which provides robotic automation and AI-driven solar panel cleaning solutions without water and manual intervention. There are also building-energy management solution startups like Podnet that claim to save up to 40 percent energy with AI and IoT.

Outside these small pockets of innovation, prioritizing sustainable IT in India still needs a significant push. Globally, CXOs have cited implementation challenges as a major reason for not prioritizing Sustainable IT initiatives. Lack of expertise and advisory for identification of correct use cases, implementation costs and impact on business continuity are the biggest challenges perceived by the C-suite.

THE WAY AHEAD

The abrupt and harsh nature of the pandemic had created significant concern initially due to its impact on Sustainable IT. However, the pandemic is now being seen as a humbling experience and an emphatic reminder of the criticality of Sustainability, of which Green IT is a key component. Sustainable IT, led by the tech industry, has the potential to steer the world towards resolving environmental challenges. With a clear strategy and roadmap in place, not only will Enterprise IT's environment footprint become greener, but smart and emerging technologies can be leveraged to drive critical innovations in sustainability as well. 



COVER FEATURE

**MR. SHASHANK SONI,
CFO & DIRECTOR**

siliconindia 10 MOST PROMISING
E-WASTE MANAGEMENT
SOLUTION PROVIDERS - 2021

ECO RECYCLING

RESOURCE RECOVERY THROUGH RESPONSIBLE RECYCLING

BY LALRINDIKI SAILO

Any waste management is a service to the Nature & Society, proper waste management in some parts of the World and other way round in the rest has the same adverse impact Globally. Air & Water does not flow as per the boundaries of the respective Nations but move around the Globe like a free bird. Polluted air & water in one or more countries, hampers health of every human being & other life, the level of impact may vary but for sure.

Whether e-waste collection & disposal is really a big challenge? When a few hundred companies can produce electrical & electronic devices which is eventually equal to the quantum of e-waste then why can't a couple of thousand e-waste recycling facilities can collect & process this waste to Reproduce Natural Resources for onward consumption. As per my calculation, we just need 2000 Recycling Facilities Globally to process 25,000 MT each to address the entire quantum of e-waste generation of 50 million MT. And if you go by the recent announcement of a joint venture in India, this JV proposes to process 200,000 MT of e-waste per annum, in that case, we just need only 250 facilities globally.

I admit that there is something wrong in the above ideal model, otherwise how come most of the e-waste in the developed countries goes in to land fill and similarly most of the e-waste is being handled in a polluted manner in the developing countries? When I further analyzed, I found the following two reasons:

THE CLARITY: I AM NOT RESPONSIBLE FOR RECYCLING:

It is either Government or Producers or Recyclers are responsible.

THE CONCERN: WHY DO I PAY FOR RECYCLING?

It's the Government and/or Producers should pay for collection & recycling. We all need clean air, clean water & hygienic food and the funny part is, we keep paying for all these, which were literally available at no cost. Had we paid for the disposal of our wastes, there would not have been any need to pay for clean air & water!! If it sounds theoretical, please rethink.

ECORECO IS COMMITTED TO KEEP ADOPTING THE BEST GLOBAL PRACTICES TO MEET ESG & SDG OBJECTIVES

If we talk more precisely about E-waste Generation, Collection & Extraction of all the ingredients from the present 3.2 million MT of e-waste generated annually in India, we may notice the following unique features - Informal Methodologies are very deeply rooted in India, reach of informal workers is unmatched, their domain understanding is extensive, they just focus on monetary gains, caring for environment is not their cup of tea, they don't care of compliances, they strongly believe that they can't be uprooted, and they don't believe in skilling, integration & formalisation.

The above reasons drive 95 percent plus e-waste to their door steps. Generators are also very happy, because they get higher price for their e-waste. Finally, both of

them (buyer & seller) does not pay for environmental compliances & taxes.



THE EFFORTS TO TRANSFORM TECHNOLOGY TRASH TRADE IN INDIA:

- E-waste Management Rules became completely effective in 2018.
- Having globally accepted concept of Extended Producers' Responsibility.
- With Targets & Deposit Refund Scheme.
- Bulk Consumers are responsible to maintain records of e-waste generation & disposal.
- More than 400 entities registered with SPCBs, to provide one or all the services from collection till recycling.
- With an overall capacity of 10,00,000 MTPA to process.
- Quantum of e-waste collection increased almost 10 times in the last three years!
- Most of the e-waste is being collected by the participants serving to Producers.

A LOT IS YET TO BE DONE:

- There is a need of Technical & Financial criteria for Dismantlers/Recyclers, in absence of that SPCBs are unable to restrict permission to every applicant.
- Government to provide subsidized Land and Loan from SIDBI to the formal sector.
- Strict implementation of EPR Target & verification of supporting documents.
- Digitization of the collection/dismantling & recycling documentation-Block Chain Technology may be used for the same, right from Production till Recycling.
- GST on purchase of e-waste should be equal to the finished goods sold by the recyclers, to avoid evasion by the Kabadies.cess.



- To provide Recycling & Waste Management an Industry Status and provide Production Linked Incentives for E-Waste Recycling.

ECO RECYCLING LTD (ECORECO),

India's first and leading professional E-waste Management Company that has set industry benchmarks time and again with its innovative and environment friendly disposal practices, provides an end to end seamlessly integrated solution for e-waste management to Multinational Companies (MNC), Indian Multinational Corporates (Indian MNC), Retailers, Bulk Consumers, Original Equipment Manufacturers (OEM), Government Departments, Households, Educational Institutions and all other entities willing to discard their e-waste in an environment friendly manner. Ecoreco is being recognized as the leader and a 'go to' firm in the Indian e-waste management industry. Ecoreco has established market leadership through its innovative ideas, pan-India reach, on-site services and seamless movement of e-waste from the door step of the client till the last ritual of the hazardous waste and that is the reason why customer



says "Ecoreco Karwaya Kyai" (a synonym to e-waste recycling).

To meet the international standards and globally accepted best practices, Ecoreco imported technologies from US, Europe and Japan. It is equally proud to share that, Ecoreco has developed its in house technologies for recovery of Precious & Rare Earth Metals from the complicated e-waste also invented an awarded winning Recycling on Wheels Facilities for Data Destruction and Lamp Recycling for on-site and off-site services amongst other value-added services. Today, Ecoreco boasts of a unique business model that has evolved to meet changing customer needs and regulatory requirements of India's e-waste management industry. 

CXO **INSIGHTS**

ENVIRONMENT SUSTAINABILITY AND HARNESSING THE POTENTIAL OF SOLAR POWER IN INDIA

By Gautam Das, Co-Founder & CEO, Oorjan Cleantech

Gautam was awarded 'CEO of the year in solar sector by ET Now and World CSR' in Feb '20. Prior to co-founding Oorjan, Gautam worked at Citibank & Citigroup for 15+ years. In his last role at Citi as Director, Treasury - Citibank India, he was heading Treasury business across consumer & SME segments.



Economy and the environment have to go hand in hand for sustainable growth. We have paid the price for economic growth at the cost of the environment, resulting in irreversible damages. Global warming and escalating pollution levels have endangered our future. Climate change and natural calamities are becoming new normal!

This is time to act before it escalates and impacts our future further. Electricity is a basic need for economic growth, but unfortunately it directly impacts the environ-

ment. Traditional sources like fossil fuel are not commercially and environmentally feasible. In addition, fossil fuel is diminishing at an alarming rate. The good news is, renewable energy is a feasible alternative. Solar energy is the answer to these challenges and the world can be much greener without sacrificing economic growth.

India is blessed with abundant solar radiation. As per Ministry of New and Renewable energy (MNRE), about 5000 trillion kWh energy is incident on the land area per year with most of the regions receiving 4 to 7 kWh/m²/day

solar energy. According to the National Institute of Solar Energy (NISE), India's current solar potential is about 748 GW (assuming three percent of the wasteland area that can be covered with solar panels). This potential is yet to be harnessed to its fullest. Solar photovoltaic (PV) has huge scalability in India, and can be effectively expanded. Solar energy being abundant, is one of the most secure energy sources and ensures energy security. Hypothetically, out of the total solar energy incident in India, even if a small fraction of it is captured effectively, we can meet the country's entire power requirement.

To achieve India's renewable energy potential, the Government of India (GOI) has already set a target of 175 Gigawatt(GW) of renewable energy by 2022 and out of which 100 GW is to be achieved by solar power. Out of this 100 GW, 35.13 GW has already been achieved. Furthermore, the government has an ambitious target of achieving 450 GW of renewable energy by 2030. With this kind of announcements, it is clear that the policy structure in India is towards adopting renewable energy and obtaining maximum benefit out of it.

ONE OF THE PRIMARY REASONS BEHIND THE GROWTH OF INFLUENCER MARKETING WHEN IT COMES TO BEAUTY AND SKINCARE STARTUPS IS THAT MORE AND MORE PEOPLE ARE CHECKING BEAUTY, SKINCARE AND STYLE ON SOCIAL MEDIA PLATFORMS LIKE INSTAGRAM, YOUTUBE AND FACEBOOK

Furthermore, the Government of India has launched various schemes to encourage power generation across Utility, Industrial, Commercial and Residential sectors. Open access policies for captive as well as utility scale Solar parks, Sustainable Rooftop Implementation for Solar Transfiguration of India (SRISTI), Viability Gap Funding (VGF) etc. are just a few examples. Recently, MNRE also announced One Sun One World One Grid initiative (OSO-WOG), which will ensure the supply of electricity across countries. The concept behind this plan is that 'The Sun Never Sets' and globally, it is always constant at any given point of time in some geographical location. And India be-




ing in the middle, can contribute significantly to making the vision into reality. For this, creation of two zones is proposed, one from far East (including countries like Myanmar, Laos, Cambodia, and others) and other being far West (the Middle East and African Region). With such initiatives, India will help itself as well as other countries to go green and reduce the Greenhouse Gases (GHGs) level and maintain environmental sustainability.

Typically, installing a one Megawatt (MW) solar photovoltaic power plant is equivalent to the plantation of 49,000 teak wood trees i.e., equivalent to mitigating 31,000 tonnes of Carbon Dioxide. With such benefits to the environment and potential to reduce ongoing climate change, it is very essential to encourage the installation of solar power plants.

With the current COVID-19 crisis in the backdrop, we need to keep a balance between our dependency on local and global supply of products and service. India's mission revises the focus on becoming self-reliant by promoting businesses and manufacturing goods locally. Adoption of solar energy will fuel the mission, while facilitating sustainable growth. Implementation of solar energy policies has been a challenge. Authorities and ecosystem partners are required to work together to make the ecosystem evolve fast and forward looking.

Adoption of solar energy transforms multiple problem areas into opportunities. This would fuel a sustainable economic growth, boost up made in India mission and create employment while making the world greener.

Solar is commercially viable and environmentally responsible! Just go for it. 



siliconindia 10 MOST PROMISING E-WASTE MANAGEMENT SOLUTION PROVIDERS - 2021

With the advent of technology, electronic products are getting upgraded quickly, which in turn is resulting in the growing problem of e-waste accumulation. e-waste management is highly prioritized in developed countries, whereas developing countries mostly are replicating the methods of developed countries and are mostly unsuccessful in this, which is worsening the problem. Lack of investment, lack of technically skilled human resources, lack of infrastructure and absence of appropriate legislations specifically dealing with e-waste are some of the problems faced by developing countries in this sector.

It is estimated that 50 million tons of e-waste was generated in 2018 globally. In 2016, the Ministry of Environment, Forest and Climate Change (MoEFCC) released the updated E-waste (Management) Rules, which came in supersession of the E-waste in India (GOI, 2016). There is an increase of 5-10 percent every year in the total volume of e-waste generated globally. In India, the volume of e-waste generated is 146,000 tons per year, excluding the imported waste.

India, being one of the biggest recipients of e-waste from developed countries, there is an urgent need to adopt effective strategies to encourage re-use, refurbishing or recycling e-waste in specialized facilities to prevent environmental contamination and human health risks. As per the reports of world Economic Forum, India ranks 177 amongst 180 countries and is amongst the bottom five countries on the Environmental Performance Index 2018. It also ranks fifth among the top e-waste producing countries and recycles only less than two percent of the e-waste produced annually, which is mostly done by unorganized sector.

Understanding the huge risk posed by e-waste to humans, animals and environment, in this issue, siliconindia brings you a list of '10 Most Promising E-Waste Management Solution Providers - 2021' who have proved themselves in this sector. These platforms were selected after a comprehensive examination by industry CEOs, VCs, CXOs, veterans and siliconindia editorial team. We truly expect these businesses to meet your needs and reduce the burden of e-waste generated in our country every minute.

10 MOST PROMISING E-WASTE MANAGEMENT SOLUTION PROVIDERS - 2021

COMPANY	MANAGEMENT	DESCRIPTION
Adatte E Waste Management Mew Delhi adatte.in	Praveenkumar Sundararaju, Co-Founder	Offering e-Waste management services that include processing the entire hazardous printed circuit boards waste within and for India in an eco-friendly way
Cerebra Integrated Technologies Bangalore cerebracomputers.com	V Ranganathan, Managing Director	An E-waste recycling solution provider and R2 (Responsible Recycling) certified company with India's largest government certified e-waste recycling and refurbishing plant facility at Narasapura, Kolar District
Eco Recycling Mumbai ecoreco.com	B.K.Soni, Chairman & MD	India's first and leading professional E-waste Management company that has set industry benchmarks time and again with its innovative & environment-friendly recycling practices
E-Waste Social Bangalore ewaste-social.com	Iram M, Founder	A comprehensive e-waste solution provider actively promoting eco-friendly reuse & recycling of electronics by connecting companies or anyone who has an inventory of electronic waste to sell, and for recyclers of electronic waste to buy
Hulladek Recycling Kolkata hulladek.in	Nandan Mall, Founder	Offers a comprehensive solution for handling corporate and domestic e-waste while complying to all rules and regulations
Prakruthi Recycling Bangalore prakruthirecycling.com	Ullas Das, Senior Manager	A KSPCB certified company specializing in maximizing the value recovery for clients while providing environmentally responsible recycling processes along with the IT assets management
Prithvi Clean Tech Ghaziabad prithvicleantech.com	Ankur Tyagi, Director & CEO	One of the biggest Li-ion battery waste management services providers in India
Saahas Zero Waste Bangalore saahaszerowaste.com	Wilma Rodrigues Founder & CEO	Bringing together nature, people and technology to provide the most impactful waste management solutions that maximize resource recovery
VANS Chemistry Bangalore vanschemistry.org	Venkatesha Murthy, Founder	A one-stop solution provider for all E-Resource requirements such as integrated recycling, recovery and refining
Z Enviro Industries Hyderabad zenviroindustries.com	Mohammed Abdul Mujeeb Qadri, Director	One of the oldest certified collector and dismantler with focus on protecting the environment by encouraging people to dispose their e-Waste through proper means

Cerebra: Driving a Digital Revolution through Circularity

The thriving IT and communication sectors have enhanced the adoption of electronic equipment and modern technologies exponentially. Faster up-gradation of electronic products is compelling consumers to discard obsolete electronic products quickly, which, in turn, adds to E-waste to the solid waste stream. Today, E-waste has become a grave concern in India that calls for significant emphasis on recycling E-waste and effective E-waste disposal mechanisms. According to research, the Indian E-waste management sector forecasts to project a CAGR of 8.24 percent in volume and 14.25 percent in revenue during the period 2021 - 2026. These circumstances have initiated a race among several E-waste recycling companies willing to claim a larger portion of the pie in the market. Walking on the same line, Cerebra – an E-waste recycling solution provider and R2 (Responsible Recycling) certified company – started its work in 2013 in an E-waste recycling facility at Narasapura, Kolar District. It is one of the largest government certified E-waste recycling and refurbishing plant facilities in the country.

Cerebra firmly believes in a driving philosophy — Circularity, which means not just manufacturing but also buying back products that have reached the end of life, recycling E-waste, and refurbishing to make it as good as new. This process helps extend device life and enables the company to make available technology at a fraction of the cost. SMBs, banks, call centres, entrepreneurs, schools, and colleges can now afford to go digital. Cerebra's sole objective is to achieve zero landfills and build up a pollution-



V Ranganathan,
Managing Director

free, greener, and cleaner world. “We believe it is a social responsibility besides the vast potential. E-waste can potentially harm us, our environment, our future, and our dear & loved ones. We have set up one of the largest E-waste recycling facilities in India, intending to become a leading player in making this change possible on a global scale,” says V Ranganathan, Managing Director, Cerebra Integrated Technologies Ltd.

Cerebra's Journey towards Success


Derived from the word Cerebrum, Cerebra began operations in Bangalore in May 1992 to manufacture personal computers and solutions built around PCs. The company witnessed tremendous growth in the last three decades and metamorphosed from a pure hardware brand to dominating brand name in IT, electronics manufacturing, and sustainability services. In recent years, Cerebra has made great strides in the recycling and refurbishing realm. With professional management and state-of-the-art infrastructure, the company is witnessing aggressive growth in the recycling business, thus takes pride in calling itself a Zero Landfill recycling/refurbishing company.

Cerebra also invest in its electronics manufacturing business to cater to the growing requirement of the local manufacturing under the Make in India campaign. The company plans to create more factories that focus on responsible recycling, thus playing a crucial role in formalizing the recycling industry.

Apart from E-waste recycling, Cerebra is looking at battery recycling to cater to the EV revolution, plastic recycling to meet the ever-growing requirement for recycled plastic, and automobile recycling with the auto scrappage policy getting implemented in India. Under E-waste recycling, in addition to the dismantling facilities, the company focus on building a world-class refinery to recover and refine metals from the PCB boards. Cerebra plans to play a major role in reducing India's reliance on global players for metal extraction and be the pioneer in that space, thus creating jobs and saving the foreign exchange reserve for the exchequer.



Cerebra's sole objective is to achieve zero landfills and build up a pollution-free, greener, and cleaner world

The company plans to work on newer technologies and better the extraction percentage to recover rare earth metals locally. With eyes set on establishing recycling factories in the Middle East, Europe, and the US Cerebra aims to be a prominent global player in this business. 

CXC **INSIGHTS**

SMART CITIES CALL FOR SMART BUILDINGS

By Gaurav Burman, VP & Country President, 75F India

Gaurav has handles diverse portfolios in his career including Product Management, Alliances, Channel Sales, and Enterprise Sales, to name a few.



Cities consume nearly 75 percent of global energy resources and account for 80 percent of the emissions. By 2050, it is anticipated that 66 percent of the world's population will be living in cities. In addition to these, cities are also faced with new challenges such as severe budget constraints, high occupant expectation and the need to attract jobs and investment. To be more efficient, sustainable, livable, and attractive, cities need to become smarter.

Up until now, the conversation around smart cities has been focused on technology and its impact on infrastructure, i.e. the use of technology such as big data and ICT to better manage urban assets such as public transit, parking meters, utilities and so forth. But it's time to change the conversation! A truly smart city, in my opinion, focuses on its occupants and aims to achieve three goals - to improve the quality of life, economic competitiveness, and sustainability.

Smart buildings go a long way in achieving all these goals, and more. Smart buildings help better manage and monitor assets, reduce energy costs and carbon footprints, and shape the world around us. Controlled air temperature, personalized lighting, remote security, and streamlined processes are all within reach with smart building technology.

WHY MAKE BUILDINGS SMART?

Leveraging cutting-edge technologies, such as the IoT (Internet of Things), M2M, Edge Computing and intelligent data analytics, smart buildings can enhance the Occupants' Experience (OE) and create more attractive, desirable places to work. The experience of the building users can be personalized to their individual preferences, while real-time data and predictive analytics work together to optimize his/her workspace all year round. It can also track and improve occupant health,



Gaurav Burman

performance, and productivity which is imperative for any business considering employees are the biggest asset of any growing company.

At the same time, in a smart building, the Building Intelligence System helps sustain optimal levels of performance, thereby making them highly efficient and improving the Operational Efficiency (OE) of the building. New sensors and controls have succeeded in creating dynamic, grid-integrated buildings which are now operating at minimal energy consumption levels. Smart buildings respond to real-time operating conditions—whether that means automatically turning off the lights when a conference room is empty, lowering the thermostat when the temperature outside rises, or even diagnosing a system malfunction and rectifying it immediately to enable buildings to operate at peak efficiency.

SMART BUILDINGS MAKE CITIES SMARTER

Smart Buildings are flexible enough to adapt to the ever-changing occupant needs, intelligent enough to factor in external & internal conditions, proactive in course-correcting to bring efficiencies and at the same time, are highly efficient to meet the energy saving targets. The promise of smart buildings is incredible—made possible by robust, reliable technology.

Here are the top four trends in Smart Buildings, brought on by the integration of technology, that make

Smart Buildings integral to the development of smart cities.

FIRST, INTEROPERABILITY IS BECOMING THE NEW NORMAL IN SMART BUILDINGS

Thanks to IoT simple, ubiquitous connectivity of all devices in the building is possible. The myriad devices and systems in a building function in harmony, whereas big data analytics and cloud computing, enable these devices to predict, monitor, course-correct and control the behavior of the building. New connections are happening, not just between devices in a system, but among systems in a building and buildings in a portfolio. The avalanche of data coming in from buildings is being converted into useful, actionable information with the help of smart algorithms and big data analytics.

SECOND, THE INFORMATION LOOP - FROM THE GRID TO PLUG

The ability to get truly granular is now possible with Smart Buildings. Deployment of IoT, makes operations in a building visible and transparent – from the performance of the grid where energy losses are usually high to the end application, even determining how and where energy can be saved. Facility managers are able to visualize better what's happening across their footprint and make educated decisions to correct and improve conditions.

Today's Smart grids allow energy distribution to be managed in real-time based on immediate data rather than historical patterns of power usage as was done earlier. Together with smart meters, it could noticeably reduce a business's energy costs and improve their sustainability credentials.

THIRD, BUILDING MANAGEMENT GOES MOBILE

An integrated system where devices are in constant conversation with each other means simplicity, flexibility and


improved control. While mobile apps that provide 'monitoring alerts' for individual devices in the buildings have been around for a few years, IoT takes it to the next level. A facility manager can now not only monitor and manage various devices in a single view but can control them all from his mobile.

FOURTH, BUILDINGS ARE BECOMING MORE PEOPLE-CENTRIC

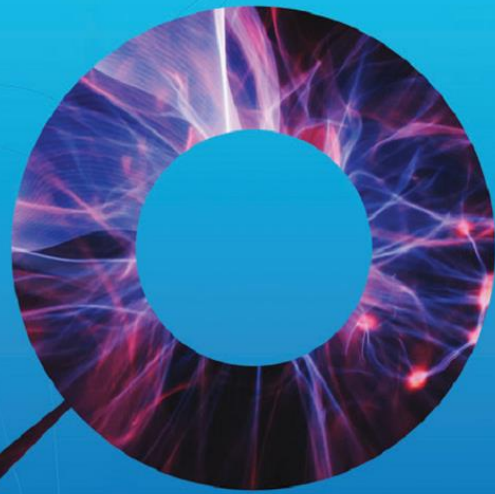
Smart buildings enable flexible, adaptable, and efficiently managed spaces. The demands and comforts of the occupants become the prime focus thereby improving occupant well-being and

SMART BUILDINGS HOLD PROFOUND POTENTIAL, AND THERE IS NO DENYING THAT TECHNOLOGY LIKE IOT AND EDGE COMPUTING ARE BREATHING NEW LIFE INTO BUILDINGS, WHETHER NEW OR OLD

productivity. In fact, a study by Sodexo estimates that the impact of a comfortable indoor environment on employee productivity is as high as 15% as it affects employee health, cognitive abilities, problem-solving capabilities, concentration, and ability to innovate.

Smart buildings hold profound potential, and there is no denying that technology like IoT and edge computing are breathing new life into buildings, whether new or old. The impact of buildings on the everyday lives of people is being redefined. They are no longer mere physical structures but are slowly starting to define the quality of life of the citizens and the entire city. 

**a trusted advisor
for all your IT needs**



“ A virtual CIO delivering complete end to end assistance and strategies that a full-time CIO will provide, but at a fraction of the cost ”

- *IT Consulting* • *Project Management*
- *IT Implementation* • *IT System Management*
- *Process Improvement* • *IT Audit*
- *IT Strategy* • *IT Budgeting* • *IT Policies.*

Kochi - Monlash Business Centre, 4th Floor,
Metro Pillar#327,Kalamassery, Ernakulam,
Kerala - 682 033, India.

Thrissur - Capital Towers, 1st Floor, Patturaikkal,
Thiruvambady (PO), Kerala - 680022, India

Mobile: +91 90483 95555
Email: support@itconsultant.in
www.itconsultant.in | www.skybertech.in



E-Waste Social: Dedicated towards Devising an Environmentally Sustainable Society

Technology has become an essential part of our lives. We love to upgrade ourselves; whether it's the latest smartphone or a laptop, we will not rest in peace until we possess the best possible gadgets available in the market. No doubt our lives have become a lot easier, but do you wonder what happens to your old gadgets that are conveniently dumped at the nearest garbage pile? Well, they eventually become 'electronic waste' or 'E-waste' or 'E-scrap'. In today's times, it has become a luxury to own more than one television set or Smartphone. Besides this, several corporate companies worldwide throw away huge quantities of old equipment and replace them with new ones, adding to the e-waste menace. Electronic waste is emerging as a serious public



As an end-to-end e-waste aggregator, the organization aims to turn today's waste into sustainable resources for tomorrow

health and environmental issue in India. India is the fifth-largest electronic waste producer in the world; approximately two million tons of e-waste is generated annually and an undisclosed amount of e-waste is imported from other countries around the world. Thus there is an urgent need for deploying recycling techniques to improve the efficacy of the large

volumes of e-waste management in India.

Significantly, E-Waste Social is a Bangalore-based start-of-the-art electronic waste aggregator, associating organizations with E-waste recyclers. The organization was founded by Iram M and Aditya Mehta. Iram is an experienced professional skilled in Business Development, Customer Relationship Management, and Project Management along with a demonstrated history of working in the education management industry. Aditya is a proven leader, strategist, and visionary with 16+ years of experience in creating ecstatic customers by delivering unparalleled technical solutions and services. Aditya, an IIMB alumnus, is a high-impact leader with a solid history of identifying and implementing business analysis solutions and services. E-Waste Social is a for-purpose, for-profit enterprise that is focused on providing an end-to-end B2B web and app auction platform and a seamless solution for e-waste recyclers, refurbish producers, generators, OEMs, and logistic partners. It offers a total e-waste management solution as a part of its adulation for cleaning society.


E-waste Management Solution for a Better Future

E-Waste Social strives to keep e-waste out of landfills through safe handling practices and partnerships with businesses who engage in responsible e-waste disposal and sales. The platform enables Corporates, Companies, Institutions, or anyone who has an inventory of electronic waste to sell, and



Iram M,
Founder

for recyclers of electronic waste to buy. As an end-to-end e-waste aggregator, the organization aims to turn today's waste into sustainable resources for tomorrow. It provides a holistic solution to e-waste problems connecting companies with e-waste recyclers.

The organization is occupied with taking care of reusing waste electronic equipment in an eco ameliorating way. E-Waste Social's SAAS-based offering helps companies with decision-making on retain, refurbish, and recycle strategies for electronic assets by providing actionable insights. It is also engaged in assisting corporates to reduce carbon footprint, certification and fulfillment of ERPs, and achieving CRS through the value chain. The firm partnership with United Nations Global Compact reinforces its mission to achieve UNSGDs of a clean environment, sustainable cities, and communities, responsible consumption and production, Industry innovation, and infrastructure. "Our mission is to create wealth out of waste and thereby a sustainable future for generations to come," concludes Iram M. 

CXO **INSIGHTS**

AUTO LPG CONVERSION FOR 2 & 4-WHEELERS COULD BE A TIPPING POINT IN COMBATING POLLUTION & SURGE IN FUEL PRICES

By Suyash Gupta, Director General, Indian Auto LPG Coalition

Extremely focused in accomplishing his goals, Suyash has been contributing to the Automotive and CV industry for 29+ years in the verticals of business operations, market penetration, and key account development.



Suyash Gupta

The rise in prices of petrol and diesel in recent days and weeks has once again amplified the need to pay attention to our vehicular fuel policy while also raising questions on our approach to address pollution-related issues. Now that the unlock phases have begun to almost fully kick-in and the all-round vehicular mobility nearly returns to pre-Covid levels, not withstanding the fear of the incoming third wave – air pollution, a perpetual challenge for policymakers is set to rear its head again.

However, instead of persisting with petrol and diesel, widely known for their debilitating and even life-threatening gas-emissions, if the authorities considered cheaper and more environment-friendly alternative fuels such as auto LPG, we would not only be adopting a more appropriate vehicular fuel option, but also be breathing cleaner air. For a country which has nearly 300 million vehicles including on its roads, the urgency to convert those existing vehicles to those suitable for running on auto LPG can never be overstated. What's more, there can't be a more opportune time than now, when the humanity is confronted with the worst public health crisis in recent memory. That the corona virus primarily infects the lungs just as noxious emissions from petrol and diesel do underlines the pressing exigencies of the time.

PETROL TOUCHING RS.100/LITRE MARK

In recent weeks and months, there has been a

dramatic and relentless rise in the fuel prices. With state capitals witnessing steep hikes in petrol prices to an unprecedented Rs.100/litre, several tier-II & III cities have also gone the same way, resulting in a squeeze on the pockets of the common man who has already been troubled enough due to the pandemic-driven economic slowdown.

POLLUTION AN ABIDING CHALLENGE: STUDY ATTRIBUTES COVID TO AIR POLLUTION

Frequently ranked as one of the most polluted countries in the world, hosting a large number of globally most polluted cities, pollution has been a policy nightmare for authorities particularly, air pollution. Despite their best efforts, truly tackling air pollution has remained a pipedream. Since 2019, individual cities have taken an initiative towards resolving their air pollution woes under the National Clean Air Programme (NCAP). Although it's too early to make a judgment, it is safe to say that we are still too far off the mark. Given the relatively dominant impact of vehicular pollution or transport-driven factors, one practicable way to make a start is by addressing vehicular emissions. A recent study has pointed-out a direct link between the prevalence of PM_{2.5} emissions, possibly the most dangerous vehicular discharge, and Covid cases and deaths. In other words, areas already high in air pollution are more susceptible to Covid infections and after-effects.

AUTO FUEL EMISSIONS, A COLOSSAL PROBLEM

As mentioned earlier, India has a 300 million-strong fleet of two-wheelers and four wheelers plying on its roads. In an estimate, a regular passenger vehicle emits about 4.6 metric tons of carbon dioxide per year. Imagine the extent of the damage by the combined impact of all the passenger vehicles (and other vehicles) in the country. And this is only CO₂. The hydrocarbons, Particulate Matter (PM), Carbon Monoxides (CO) and many similar deadly emissions can all in combination wreak havoc on a country's environment.

HOW AUTO LPG CONVERSION CAN BE A TURNING POINT NOW


First, converting existing number of two-wheelers and four-wheelers, which are huge in number, into auto fuel-enabled vehicles would immediately yield enormous benefits from the environmental standpoint. The sharp reduction in petrol and diesel-driven hydrocarbons, particulate matters, Carbon Monoxide (CO) and greenhouse gases such as CO₂, methane and many others can bring instant relief to millions of Indians subjected to their toxic effects on a daily basis. Given the direct correlation between these emissions and several cardio-vascular, respiratory, lung-related diseases

and other life-threatening malignancies such as cancer, this would also relieve an already overstretched health infrastructure in the country while saving precious lives. It is noteworthy that with a zero Global Warming Potential (GWP), auto LPG far outshines vehicular greenhouse gases such as methane and CO₂ which have a GWP of 25 and 1 respectively. Equally notable is the fact that auto LPG has near-negligible emissions for PM and Nitrogen oxides (NO), extremely toxic from the human health standpoint. In fact, exhaust emissions of vehicles running on auto LPG as compared to those running on petrol emit 75 percent less CO, 85 percent less hydrocarbons, and 40 percent less NO, while causing 87 percent less ozone depletion.

According to latest emission tests, tailpipe emissions were found to be lower than even BS-VI-compliant petrol vehicles, which illustrates the imperative to initiate auto LPG conversion immediately. Second, in light of the skyrocketing petrol and diesel prices, auto LPG, which is nearly 50 percent cheaper than traditional fuels would pave the way for a lower pricing regime in general in the economy. The inextricable linkage between transportation costs and the cost of a final product or service, it would help the end-consumers and the broader economy in a substantive way.

Third, since there is limited availability of auto LPG vehicles, the mass uptake of LPG conversion kits can also generate new business opportunities and employment. In that context, the government must relax the Type Approval Norms which would give an impetus to the retrofit market. In addition, the government must also reduce GST rates on conversion kits and bring the latter under a lower slab. From the point of view of businesses, remember that the installation costs for auto LPG refueling stations are 5-6 times lower than CNG.

Fourth, auto LPG conversion can pave the way for a smooth driving experience. Not only the fuel's high-octane content ensures faster ignition, but also rules-out knocking and loud noise. As such, due to negligible residual deposits, they involve low maintenance costs. It has been estimated that an engine running on auto gas has a life twice that of a petrol engine with running costs being nearly 40 percent cheaper than petrol. What's more, an LPG conversion kit allows a vehicle to run on both petrol and auto LPG.

And fifth, the policy push to auto LPG conversion would help India cement its position as a responsible power which has the courage and the foresight to address domestic environmental, vehicular and health issues at the same time. In addition to the recent ethanol-blended petrol policy, the scrappage policy and green tax, the auto LPG conversion initiative would further take the country towards meeting its Paris Agreement commitments. 

Prithvi Cleantech: Boosting a Sustainable Environment with Advanced Li-ion battery Waste Management



A sustainable environment is the need of the hour. Initiatives that boost the same are being taken globally. Although no initiative is enough at this moment to transform the face of the environmental issues that the world is dealing with, small steps count and businesses need to take them immediately. Contributing to the environment and having an environment friendly business is crucial at every level and to do the same, one of the most effective processes to adopt is recycling e-waste. An unimaginable amount of li-ion battery waste is produced every year by a number of businesses globally and if these wastes can be recycled, it will certainly contribute to a better and sustainable environment. To help businesses Prithvi Cleantech offers its unparalleled li-ion battery recycling services. “Our motto is to help businesses become eco-friendly, transform electronic resources into reusable products and make the earth a better place,” says Ankur Tyagi, Director, CEO, Prithvi Clean Tech.

Prithvi Cleantech is one of the biggest and most successful organizations in the business of Li-ion battery recycling. It collects li-ion battery (mobile phone, laptop) battery scrap from service center, local scrap

dealers from different states and recycle these with its patented process and recover blackmass (cobalt, aluminum, lithium, copper) to provide it Li-ion battery manufacturers in Korea, Japan and US. The company has recently got its first Li-ion battery recycling license in UP and NCR.

The company is one of the most sought partners for li-ion battery recycling as it has its own fleet of containers and trucks that works as tie-ups with a plethora of leading logistics companies. This is done to support its initiative of returning back the basic commodities to them. Prithvi Clean Tech understands that a sustainable environment and initiatives that boost the same is the need of the hour. Thus it works with the mission to keep electronic waste from ending up in




Keeping utmost faith on the potential of the 3Rs, Prithvi Cleantech strives to offer the best to its clients

and around in local landfills. “We aim to transform li-ion battery recycling completely and give them new shape, i.e make them into useful resources. We use innovative and completely environment-friendly technologies to do the same,” he adds.

Keeping utmost faith on the potential of the 3Rs, Prithvi Cleantech



strives to offer the best to its clients. The company endeavours to become a world-class organization by offering the highest quality services & solutions to power unmatched management and recycling of li-ion battery waste. Protecting the mother earth from pollutants and industrial wastes is of utmost importance to the company and to do the same it harvests resources in a natural way. It employs environmental friendly techniques to accomplish its goals and vision; it adds value to the things that people throw away and adds fuel to a sustainable environment. Customer satisfaction is also on the company’s priority list and with a team of experienced professionals it ensures to educate clients on every step and offers the best services available in the market.

“We are in planning to set up the five ton per day EV 2-wheeler li-ion battery recycling plant in UP by Jan 2022. With more and more businesses eyeing at adopting eco-friendly measures, we are expecting a multi-fold growth in the upcoming months and years,” Ankur concludes. 

VANS Chemistry: Redefining e-Waste Recycling with a Touch of Global Finesse

Between FY18 and FY20, India's e-Waste generation rose by nearly 43 percent. Today, India is the third-biggest e-Waste generator behind the US and China. Still, most companies and stakeholders remain largely unaware of the adversity of the situation and continue to grapple with basic problems of e-Waste management. VANS Chemistry, headquartered in Singapore with an Integrated e-Waste Recycling facility in India is one company that has been implementing global best practices to help bridge the gap between stakeholders- e-Waste Generators, recyclers, Consumers and Policy makers in India. VANS Chemistry is a one-stop solution provider for all E-Resource requirements. The company operates on certain key principles such as preservation of natural resources, protection of IP, reclaiming of valuable resources & strategic metals and lastly but most importantly putting it back into the Indian supply chain to create Sustainability on e-Waste Management. VANS Chemistry is the second company in Asia awarded with R2v3 Certification, which is one of the most stringent standards for Responsible Recycling. They are also certified with ISO 9001, 14001 & OHSAS 45001.

VANS Chemistry is led by Venkatesha Murthy (Venky), a Global Icon, holding a strong academic background and extensive industrial experience and exposure in the international market. He has 25 years of working relationship with multinational companies involved in EEE Product manufacturing, Precious metals, Plating, Mining and Technology development. His vision and professionalism have resulted in VANS. He was awarded 'NRI of the Year' and selected by Recycling International, Europe at its TOP 100 Professionals who are contributing and ruling the Recycling Industry Globally. And he is selected as a VICE Chairman of SERI, (R2) US and his strong drive towards environmental sustainability has prompted VANS as a company to adopt the highest standards of pollution control and health safety standards.

World-class e-Waste recycling backed by state-of-the-art technology

"We strongly believe that Research and Development



Venkatesha Murthy,
MD

are necessary for business expansion and to be the leading institution in the development of frontier technology," says Venky. VANS Chemistry therefore has a dedicated team to innovate new technologies, customize the processes and implement techniques for the recovery of strategic & rare earth metals from the most complex materials and treat process waste that contains intricate contaminants. VANS Chemistry's technological solution includes a complete package that helps the clients in control and treat Air,


Water and Soil pollution.

VANS Chemistry can also assist organizations by developing and implementing effective management and certification systems which will help enhance the credibility, reliability and marketability of their business, worldwide. When clients approach VANS, the team internally analyzes the data, conducts extensive research and investigation. Based on these results, the team at VANS then decides on the service that should be designed, delivered, priced and marketed.

As a part of its service portfolio, the company also offers expert advice & consultancy services on a wide spectrum of activities across the waste management industries including Recycling and Refining of e-Waste, Battery, Automobile Catalyst, Semiconductors, Jewellery, Mining, Dental and more.

At the forefront of e-Waste Recycling

The company's business operations are guided by strongly rooted values in environmental protection, and it aims to lead by example through the practice of Corporate Social Responsibility. The company seeks to achieve continuous improvement in the development of advanced technology through its Research and Development.

In the future, the company hopes to fortify global efforts towards environment conservation and become a knowledge partner to transform informal sectors so they do not lose their 'bread and butter'. "Waste is also Value and the lifespan of the resources can be extended through the Circular economy model and we also hope to help India develop metal security and walk the path toward the Government's vision of new India," concludes Venky. 

HOW SMART DESIGN IDEAS ARE LEADING THE TREND OF **SMART OFFICES**

By **Sammeer Pakvasa, MD, Eleganz Interiors**



A strategist and visionary entrepreneur, Sammeer comes with over two decades of experience in the fit-out industry who is now currently leading one of the pioneering interior solution company of the country.

With smart technology has taken over the world in the last few years, almost each and every aspect of modern life has now been transformed forever. Be it smart gadgets, smart homes, or smart cars, the focus on using technology to enhance convenience has now opened up a whole gamut of possibilities for almost every industry. Hence, it should come as no surprise that most corporates are increasingly transforming their offices into smart offices, to make the most efficient use of the space. Innovative design ideas, utilising unique concepts, help such smart offices achieve a mix of comfort, safety, and warmth, while also being utilitarian and aesthetically pleasing. A few of the common features of such offices are:

IOT DEVICES

The advancements in connected devices have today given rise to the Internet of Things, a concept where almost each and every device in the office is interconnected and can function intelligently. Be it doors with motion sensors, windows with temperature and light sensitive blinders, or more, IoT devices have today made corporate life much more efficient. It helps cut down on the energy usage costs and facilitates greatly enhanced convenience for the employees. In addition to this, such devices are also able to collect data on general office

usage to adopt more intelligent, conservation practices.

SMART LIGHTING

One of the biggest reasons for high electricity bills and the wastage of energy is leaving lights on even when not in use. Hence, smart lighting has proven to be the best way to avoid wasteful depletion of resources, by intelligently switching lights off, when not in use, and on again, when the sensors detect presence. In addition to this, many such devices also have the capability of dimming lights or increasing the brightness, depending on the available light in the room, which is extremely useful in conserving power and promoting responsible energy usage.

BIOPHILIC DESIGNING

Yet another aspect of smart office designs, which is rapidly gaining in popularity, biophilic designing utilises the power of nature to introduce a healthier and more relaxing environment in an office space. By integrating indoor plants, creepers, and lots of open views, along with natural lighting, it helps breathe fresh air into the concrete buildings. This, in fact, has been proven to be highly effective in acting as a stress buster for employees, and even prevent physical ailments and diseases, which often accompany sitting in a closed office space all day, every day.

WIRELESS CHARGING IN TABLES/DESKS

Wireless charging is now a popular facility being used by many modern offices, which not only help reduce the clutter of a million different wires and cords but also helps save energy usage, as well. When desks or tables in such offices are fitted with wireless charging technology, one only needs to place their smartphones, laptops, tabs, and the like, on their surface, to have them start charging. Once the devices have been charged fully, the power is cut off automatically, reducing wastage of power. As such, these tables and desks help improve efficiency significantly, while also improving the aesthetics of the office environment.

INTELLIGENT CLIMATE CONTROL

One of the biggest inconveniences that many employees face in modern offices is the temperature. With central air conditioning being common in almost all offices, nowadays, regulating the temperature every time it gets too cold or too hot becomes a huge bother. As such, AI-equipped intelligent temperature control is today rapidly gaining acceptance in corporate organisations for a way to reduce energy consumption, while also facilitating comfort and convenience for their employees. **81**

CXO **INSIGHTS**

SOLAR-POWERED COOLING SOLUTIONS IN INDIA

By Monika Singh, Director, Exalta

As the head of project to the development of solar product manufacturing, supply & consultation and installation services, Monika contributes for the sectors of healthcare, infrastructure, telecom, robotics and aviation.



The radiations from the sun are enough capable of producing heat which causes chemical reactions or generating electricity. In the current times, solar energy has become the most attractive renewable energy source that is inexhaustible supply, environment friendly. Solar energy can be best used in the form of electricity and so are the major players doing it. The solar thermal cooling solutions are the best use of it currently. The cooling process is driven by solar energy and converted to thermal energy and used further. It involves various processes like absorption, adsorption, and desiccant cycle, and electrical energy. This is a sustainable means of cooling that uses different principles and functioning.

In March 2019, The Government of India had launched India Cooling Action Plan (ICAP), keeping the fast-developing industry in view with a time horizon of almost

20 years which highlights India's action plan for reducing refrigerant transition, cooling demand, enhancing and better technology across the sector. Earlier, India had a target of 20GW capacity for 2022 which has already been achieved four years ahead of the schedule. If we look at the current market, the cooling demand is set to rise in the future in our country as it is a cross-sectoral growth and an essential part of economic growth. A major part of cooling demand depends on refrigeration-based cooling across different sectors like buildings, refrigeration, cold-chain, transport. According to the International Energy Agency (IEA), refrigeration and air conditioning (RAC) cause 10 percent of the global CO₂ emissions.

If we talk about the dynamic Indian consumer market, the air conditioning industry in India is growing at a rapid rate and that is directly proportional to the rise in

BY HARNESSING THE SOLAR POWER OR INNOVATION, INDIA SONG WITH THE REST OF THE WORLD WILL BE ABLE TO PROVIDE ACCESS TO COOLING TO ALL WITHOUT WARMING THE ENVIRONMENT

the middle-class population, rising number of houses & buildings. To make it an environment-friendly market, solar-powered cooling solutions can be an effective means, but that again calls for revamping the market, which is going to be a tedious process. According to the World Health Organization by 2050, more than 255,000 people would die of extreme heat waves annually. And if go by the statistics, of the 2.8 billion people living in the hottest parts of the world, only 8 percent have air conditioners (ACS). It has been reported that access to comfort cooling is critical for many communities around the world and

deploying entry-level air conditioners, which typically consume a lot of energy and could possibly be one of the largest end-use risks to our climatic conditions. As per statistics, the direct and indirect emissions from room ACs could contribute to as much as a 0.5 degree Celsius increase in global warming by 2100. It's a vicious circle, where AC units impact our health and climate at large.

As per World Economic Forum, India has only five percent of the global annual emissions from room ACs presently, India is predicted to account for over 25 percent of annual emissions globally by 2050 due to the unprecedented rise in comfort cooling demand, particularly in the residential sector. Taking the lead, EESL has recently announced that they are partnering with BSES, a utility in Delhi, for a 12-month pilot program that will look at deploying ACs that are 40 percent more efficient and are priced comparably to the three-star ACs. As per the report, the pilot program would cater to around 2.5 million residential and institutional consumers in Delhi and around.

By harnessing the solar power or innovation, India song with the rest of the world will be able to provide access to cooling to all without warming the environment. **si**

SUBSCRIBE NOW!

Now you can also subscribe through credit card visit <https://www.siliconindia.com/subscribe/>



The siliconindia is a monthly Magazine. Take advantage of this special offer and get 12 issues for only ₹1800

I would like to subscribe* to siliconindia for 1 year (12 Issues) at ₹ 1800

I am enclosing the cheque/DD No. _____ Dated _____ for ₹. _____ or

Bank _____ Branch _____ drawn in favour of SILICONMEDIA TECHNOLOGIES PVT LTD

My personal mailing details (IN BLOCK LETTERS): NAME _____

DESIGNATION _____ COMPANY NAME _____

ADDRESS _____

_____ CITY _____ STATE _____ PIN _____

TELEPHONE _____ EMAIL (Mandatory) _____

Age in years _____ Experience _____ Industry _____ Education _____

How did you come to know about siliconindia ? _____

Payment acceptable in cheque/DD favouring:
Siliconmedia Technologies Pvt.Ltd, No.124, 2nd Floor, South Block, Surya Chambers, Old Airport Road, Bangalore 560017

FOR 1 YEAR
₹1800
ONLY

siliconindia

This offer is valid in India only. Allow 2-3 weeks for processing your subscription. Kindly mention your name and address on back of the cheque/DD. Cancellation/ Refunds are not allowed.
Subscription Helpline - P Magendran Tel:+91 80 46442190 or email at subscription@siliconindia.com

LAST WORD

THE FLOURISHING INDUSTRY – FACILITY MANAGEMENT

By Vandana Kaushal, Head - Administration, Mercer

Vandana, an acknowledged facility management professional, holds an extensive experience of working with leading companies like LG Electronics, EXL Service, HCL, Aviva, with currently at Mercer.

Facility management is seen in new light for the past couple of years and has attracted professionals to make this function impactful and valuable. The holistic approach of facility management influences financial health of organization, employees experience, health & wellness, sustainability, security and much more. This role requires focusing on all aspects of organization and hence brings a larger responsibility on the shoulders of a facility manager. The facility managers are responsible for enabling the work environment that is best suitable for business delivery.

This function has evolved in many ways in the past few decades and its contributions play a key role in devising strategies for the success of an organization. There are international forums which advise of new trends in this area and are knowledge sharing platforms. This has not only helped in bringing international standards into practice but has standardized many processes & policies across organizations and the country.

FM activities are relevant to the various aspects and dimensions of organizations. This means that managers need to have thorough understanding of how the organization works and people's expectation to create & implement FM strategy, planners need to

understand all dimensions of the organization. Four basic dimensions can be posited- the purpose of the organization, its vision, mission, objectives, core competency & goals; the processes of work, operations & projects; the environmental context, organizational behavior, culture & market, and the product(s), infrastructure, property & facilities.

FACILITY MANAGEMENT IS LARGELY RESPONSIBLE FOR CONGENIAL WORK ENVIRONMENT FOR PEOPLE, FOR BEST BUSINESS OUTPUT

A clear understanding helps shape appropriate FM strategy & plans, and supports the use of the processes & operations most suited to each organization in its existing property & facilities.

Johnson & Scholes emphasize that each aspect in itself is important, but none is adequate alone. The manager who aspires to manage or influence strategy must be able to see a larger



picture. A perception of the whole rather than just the parts, is critical.

Importantly known as the framing foundation of an organization that binds together any businesses' functional upkeep, facilities management is an integral component within any business. Responsible for the overall management of an organization, it has contributed to a bigger and wider horizon of benefaction beyond its visible aptitude.

Another area with which facility management is associated is HSE and Sustainability. The need of the hour is health and safety of the employees who are the assets of an organization. The facility management is largely responsible for congenial work environment for people, for best business output. Sustainability is of key importance for many organizations. LEED certification, Low carbon footprint and Green building status is the key requirement for many organizations. **SI**

High performance, benchtop versatility.

Discover the new R&S®RTP oscilloscope (4 GHz to 8 GHz):

- Realtime de-embedding
- Multiple instruments in one
- Smallest footprint

Oscilloscope innovation. Measurement confidence.

www.rohde-schwarz.com/RTP



A-27 Mohan Co-Operative Industrial Estate, Mathura Road, New Delhi-110044, www.rohde-schwarz.co.in Email: sales.rsindia@rohde-schwarz.com
Phone: +91-11-42535400, Fax: +91-11-42535433, Toll Free No: 18001029425, Bangalore: +91-80-41780400 | Hyderabad: +91-40-40003200 | Mumbai: +91-22-26743848

OUR CHANNEL PARTNERS

Bangalore & Tamil Nadu: Conet Technologies Pvt. Ltd., +91-9611209000 jay@conet.in; **Telangana & AP:** Inox Technologies, +91-9848044122 prasanth.kumar@inoxtechnologies.com;
Vizag: Field Tech Engineers & Contractors +91-9849796997 fieldtecheng@gmail.com; **Gujarat:** Measurement & Control, +91-9898574436 naynesh@measurement-control.com;
Maharashtra: Reinvent Technologies, +91-9820621968 sales@reinventindia.com; **Karnataka:** Technocomm Instruments Pvt. Ltd., +91-9880859795 ganapati@technocommgroup.com;
Delhi & NCR: Balaji Enterprises, +91-9810507219 balajitmi@gmail.com; **Delhi & North India:** SPI Engineers Pvt. Ltd., +91-9810157421 marketing@spiengineers.com; **MP & Chhattisgarh:** Khandela Electronics, +91-9826011741 sales@khandela.com

RNI. REG. NO.: KARENG/2012/65438

GET SHIT DONE

Is your current agency driving you nuts with the "SHIT" game?
Let us help you flip over to the "IT" game.

Try us for FREE!

info@visualbest.co
+91 9354442732
www.visualbest.co

