GreenScape BANGLADESH

Specialized Publication On Infrastructure Industry Of Bangladesh

GREEN INNOVATION

MAY 2025 I 2nd Edition

ACI Motors

ECOFLOW

Power Out?
We're Not.

Stay powered through any outage. EcoFlow's smart backup systems keep your lights, Wi-Fi, and essentials running—quietly, cleanly, and reliably. Power your home with peace of mind.

/Ecoflowbd

+880 1313-762404

We Are The First

Chiller Manufacturer In Bangladesh

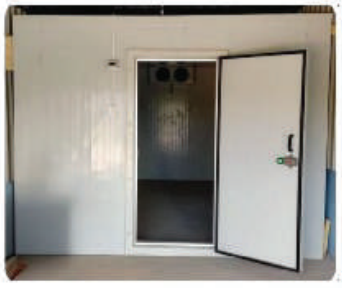
EARNEST™
Bangladeshi Brand Since 2010
An ISO 9001 : 2015

Your Trusted Partner in Delivering Energy-Efficient Cooling Solutions

Established in 2010, Earnest Engineering Works (Pvt.) Ltd. is a pioneering Bangladeshi company dedicated to providing expert solutions in the cooling and HVAC sector. In alignment with the country's national development goals, we serve a vital role in industrial growth by delivering energy-efficient Chillers, Cooling Towers, HVAC Systems, Cold Rooms, Freezer Rooms, Clean Rooms, Dehumidifiers, and complete industrial & commercial cooling solutions.

With a strong team of full-time and part-time professionals, along with an extended network of specialized consultants, we offer multi-disciplinary engineering services tailored to diverse industrial needs. Our commitment to quality, innovation, and client satisfaction has earned us a trusted reputation across Bangladesh.

At Earnest, we believe skilled expertise drives national progress—and we're proud to contribute to building a more sustainable and comfortable future.



Better Performance

Heavy-Duty & Durable

Excellence Quality

EARNEST ENGINEERING WORKS (PVT.) LTD.

+(88)02 4103333, +(88)-01848307357

manager.earnest@gmail.com

House: Nanakhi, Alipura Bazar, Sonargaon, Narayangonj

www.earnest.com.bd

Advisory Panel

Engr. Md. Hasmotuzzaman

Mostofa Azad Chowdhury

Ananta Ahmed

Editorial Panel

Editor
Quazi Rownaq Hossain

Publisher
Md Faizul Alam

Editorial Advisor
Abu Nayeem

Editorial Assistant
Fahmida Ahmed Monika

Brand Development
Anisur Rahman Khan
Umma Rokeya Nisha
Anwesha Das

Creative & Visualization
Md. Nurul Mustafa Zinat

Head of IT
Tanzil Islam Khan

For editorial and marketing queries, please contact
Phone: +8801708813469
E-mail: nisha@savorbd.com
Website: www.greenscapebd.com

GreenScape Bangladesh: Specialized Publication On Infrastructure Industry Of Bangladesh, 2nd edition, May '25 is published by Savor International Ltd. This publication is intended to be distributed among suitable readers and stakeholders of Infrastructure and associated industries.

Editorial

Welcome to the 2nd edition of GreenScape Bangladesh: Specialized Publication on Infrastructure Industry of Bangladesh, where we continue our quest towards advocating sustainable, innovative, and inclusive practices in infrastructure and construction.

In this issue, we look beyond borders through dedicated news pages on regional innovation in Asia and global innovation that will define the future agenda for the built environment. From climate-smart politics to groundbreaking engineering achievements, these stories inform and thrill us.

Our cover story showcases the incredible innovation in Bangladesh's domestic infrastructure industry. While the nation grapples with urbanization at a fast-growing rate, lack of resources, and exposure to climate threats, domestic players are pushing back with innovative ideas, grit, and a renewed sense of responsibility. Not only do their tales reflect progress, but they also reveal the untapped potential in our ecosystem.

We are thrilled to provide a strong Features section addressing key topics such as sustainable cooling, future energy storage, the emergence of floating power plants, the need for a national Smart Grid, and smart water solutions from international case studies. These perspectives are intended to equip professionals and policymakers with the information to guide us toward cleaner futures.

This edition also includes insightful interviews with business leaders, expertly chosen by Savor International Ltd., offering incisive analysis and strategic insight.

Our Impact pages uncover the power of waste-to-energy projects, and our Company Profile pages introduce the changemakers of sustainable change. We are especially proud to feature the visionary architect Marina Tabassum as part of our Women in Industry—a powerful symbol of design excellence and gender diversity in infrastructure.

Finally, our Offbeat section adds some levity with jokes and anecdotes from the world of infrastructure—because sustainability is not an excuse we cannot have a sense of humor!

We look forward to this issue informing, motivating, and inviting partnership. Your feedback and suggestions are invaluable to making GreenScape Bangladesh a mirror of the evolving nature of our profession.

TABLE OF CONTENTS
MAY 2025

ASEAN'S HYDROGEN TRANSITION:

Industry Growth, Economic Viability, and Future Prospects

Hydrogen is emerging as a crucial element in Southeast Asia's energy transition, driven by rising industrial demand and a shift towards cleaner alternatives. Between 2015 and 2021, hydrogen consumption in ASEAN's industry sector grew significantly, increasing from 3.27 million tons per annum (MTPA) to 3.75 MTPA. The ammonia and oil refining industries remain the primary consumers, with ammonia's share rising from 46% in 2015 to 49% in 2021, while oil refining's share declined from 37% to 32%. The methanol industry has also expanded its hydrogen use, reaching 15% in 2021, while demand from the iron and steel sector has dwindled.

ECONOMIC AND TECHNOLOGICAL DYNAMICS

Currently, the majority of hydrogen in ASEAN is produced using steam methane reforming (SMR), which remains more cost-effective than emerging blue and green hydrogen alternatives. However, this dynamic is expected to shift by 2040–2050, as electrolyser costs decline and renewable energy prices fall. By 2030, the cost of green hydrogen is projected to drop to $1.1–$2 per kg, and further to below $1 per kg by 2050, making it a viable alternative to traditional hydrogen production.

Green hydrogen's competitiveness depends on falling electricity costs, economies of scale, and technological advancements in proton exchange membrane (PEM) electrolysis. Meanwhile, carbon pricing and government incentives will play a crucial role in accelerating this transition. For instance, the cost of blue hydrogen-based ammonia could break even with SMR hydrogen at a carbon price of $30 per ton.

INFRASTRUCTURE AND INVESTMENT NEEDS

A transition towards decarbonised hydrogen in ASEAN will require massive infrastructure investments. Currently, major refineries in Indonesia, Thailand, and Singapore produce 30–70 KTPA of hydrogen, primarily for internal use. However, meeting the growing industrial demand for green hydrogen would necessitate 1,000–2,200 MW of peak solar PV capacity and 700–1,500 MW of electrolyser capacity per site.

While Australia, China, and South Korea are planning large-scale electrolyser facilities, Southeast Asia still lacks sufficiently large single-site solar PV, wind, or geothermal projects. Some notable developments include Singapore's Sunseap 7 GW solar PV project in Indonesia's Riau Islands and Anantara's 3.5 GW solar project. These projects indicate a regional push toward renewable-based hydrogen production, but further investments in storage, transport, and carbon capture technologies are necessary.

THE PATH FORWARD

ASEAN's hydrogen economy is at a turning point, with governments and industries exploring blue hydrogen as a near-term solution while gradually ramping up green hydrogen infrastructure. Fossil fuel companies may initially favor carbon capture and storage (CCS) technologies to limit costs, but the long-term goal remains a full transition to renewable-based hydrogen.

Beyond traditional industries, green hydrogen and ammonia could play a crucial role in power generation and transportation, particularly as a complementary fuel for coal and natural gas plants and as a low-carbon feedstock for synthetic fuels. However, achieving cost competitiveness will require public-private partnerships, subsidies, and carbon pricing mechanisms.

Despite current challenges, the region's hydrogen landscape is evolving, with green hydrogen projected to become economically viable by 2030 and dominant by 2050. A strategic mix of policy support, technological advancements, and infrastructure investment will determine how effectively ASEAN transitions to a hydrogen-powered future.

Image Credit: Internet

SINGAPORE TO BUILD WORLD'S LARGEST AUTOMATED PORT AT TUAS

Singapore is transforming Tuas Port into the world's largest fully automated shipping hub, integrating AI-driven logistics and consolidating its existing ports. Expected to be completed in the 2040s, the project aims to surpass Shanghai in capacity, reinforcing Singapore's role as a global trade leader.

The port expansion is a key component of Singapore's long-term strategy to enhance efficiency, reduce costs, and improve cargo handling. By leveraging automation and artificial intelligence, Tuas Port will streamline operations, increase shipping capacity, and optimize supply chain management.

Centralizing port activities at Tuas will help Singapore maintain its competitive edge in global maritime logistics. The project is also expected to contribute to sustainability goals, with smart technologies minimizing energy consumption and emissions.

As the world's second-busiest port, Singapore continues to invest in cutting-edge infrastructure to strengthen its status as a major shipping and trade hub.

Image Credit: Internet

K-WATER SECURES $15.7M DEAL TO ENHANCE BOTSWANA'S WATER MANAGEMENT

South Korea's Korea Water Resources Corporation (K-water) has signed a $15.7 million contract with Botswana's Ministry of Lands and Water Affairs to develop an advanced water management system in the southern African nation. This initiative aims to combat Botswana's chronic water shortages, worsened by climate change, droughts, and unpredictable rainfall patterns.

Focusing on the Limpopo River, a key water source near Gaborone, K-water will implement remote sensing and real-time monitoring over the next three years until 2028. A dedicated control center will also be built to oversee water levels and precipitation data.

Botswana has made water security a national priority amid growing concerns across Africa. Minister of Lands and Water Affairs Oneetse Ramogapi stressed the project's impact, saying, "The introduction of K-water's technology will help alleviate Botswana's water crisis and sustain economic growth."

K-water's partnership with Botswana dates back to 2017, with previous feasibility studies and a master plan. The collaboration accelerated after COP28 discussions in 2023, leading to K-water's appointment as the sole contractor.

K-water CEO Yun Seog-dae described the deal as a milestone, marking the company's first export of water management technology to Africa. He emphasized that this venture could open doors for further economic cooperation with African nations.

This project is set to enhance Botswana's water resilience, ensuring sustainable resource management and strengthening international partnerships in the water sector.

Image Credit: Internet

METRO PACIFIC WATER BEGINS CONSTRUCTION OF PHILIPPINES' LARGEST DESALINATION PLANT

Metro Pacific Water (MPW) has officially broken ground on the Metro Iloilo Desalination Facility, set to be the largest desalination plant in the Philippines. The P5.5-billion project aims to address Iloilo's growing demand for clean water, producing 66.5 million liters of potable water daily through advanced reverse osmosis technology.

The groundbreaking ceremony on February 21 in Barangay Ingore, La Paz, was attended by Iloilo City Mayor Jerry Treñas, Iloilo Governor Arthur Defensor Jr., MPIC Chairman Manuel Pangilinan, and Department of the Interior and Local Government Secretary Jonvic Remulla.

Once operational, the plant will provide a stable water supply to over 400,000 residents, reducing reliance on unpredictable freshwater sources like rivers and groundwater. MPW President Cristopher Andrew Pangilinan emphasized the project's role in ensuring water security, particularly during droughts.

Mayor Treñas highlighted Iloilo's economic growth, driven by BPOs and tourism, stressing the need for sustainable infrastructure. "With growth come great challenges, especially in securing a dependable water supply. This facility guarantees Iloilo's long-term water needs," he said.

The project is a joint initiative between MPW, French water management company SUEZ, and local construction firm Jemco. SUEZ will lead the plant's construction and operation, while Jemco will assist in its development.

MPW, a subsidiary of Metro Pacific Investments Corporation (MPIC), specializes in water and wastewater infrastructure across Asia, reinforcing its commitment to sustainable water solutions.

ASIA'S RENEWABLE ENERGY GROWTH FACES COAL DEPENDENCY CHALLENGES

Asia's renewable energy sector is expanding, but coal continues to dominate the region's power mix, according to a new report by the Energy Industries Council (EIC). The EIC Asia OPEX Report, released on November 19, highlights key trends in offshore wind, solar energy, and energy storage while underscoring the challenges posed by grid limitations, policy inconsistencies, and reliance on fossil fuels.

Offshore wind is emerging as a major growth area, especially in Taiwan, which added 1.5 GW of capacity in 2024 through projects like Changfang and Xidao Wind Farm (600 MW) and Changhua 1 and 2a Wind Farms (900 MW). However, regulatory hurdles and geopolitical risks discourage foreign investment across parts of Asia.

Solar energy is also expanding, with India leading installations and Gujarat's Khavda Solar Park reaching 2 GW. Floating solar is gaining traction in land-scarce regions like Taiwan and Southeast Asia, while Vietnam is shifting toward rooftop solar with a 50% penetration target by 2030. However, grid congestion and policy uncertainty caused a 40% drop in solar installations in 2023 before a rebound in 2024.

Despite progress, coal still supplies 41% of Asia's electricity, particularly in India, Vietnam, and Indonesia. The ASEAN region aims for 35% renewable capacity by 2025, but progress remains uneven.

The report calls for stronger policy coordination, grid investment, and financial incentives to accelerate Asia's clean energy transition and reduce coal dependency.

Image Credit: Internet

INTERVIEW

BUILDING BANGLADESH'S FUTURE

An Exclusive Interview with Eng. Bimol Chandra Roy

President of BACI
Managing Director of Next Spaces Ltd.

Eng. Bimol Chandra Roy has built an inspiring career in the construction industry—rising from project engineer to President of BACI and Managing Director of Next Spaces Ltd. With deep expertise in advanced foundation technologies, he's been a key figure in major infrastructure projects like the Rooppur Nuclear Plant, Ashuganj, and Rampal Power Plants.

In this exclusive interview, Eng. Roy shares his journey, the challenges and opportunities in Bangladesh's construction scene, and how Next Spaces is helping shape the future with innovation at its core.

You have had a remarkable journey, starting as a project engineer and rising to become the President of BACI and Managing Director of Next Spaces Ltd. What were some pivotal moments or decisions that shaped your career in the construction industry?

As a civil engineer, I have been involved in construction projects since the beginning of my career. My journey started with DAEWOO Corporation, a Korean company, where I worked on a railway workshop project in Parbatipur, Bangladesh. This was a unique experience, as the project involved both civil and electromechanical engineering.

In 1991, Bangladesh was hit by a devastating cyclone, severely damaging microwave communication systems. I joined a microwave tower project to build two new towers in Agrabad and Nandan Kanan, Chittagong, to restore communication infrastructure.

Following this, the government launched a coastal embankment project, funded by the World Bank, to protect coastal areas from future cyclones. I had the opportunity to work on these earth embankments, which were critical for disaster resilience.

My international experience began when I worked as a bridge engineer on a 105 km roadway construction project in Laos PDR, connecting Luang Prabang to Pakmong at the China border. Later, I moved to Kuala Lumpur, Malaysia, where I worked for over four years on high-rise building projects with DAEWOO Corporation.

Upon returning to Bangladesh in 1999, I was involved in major projects like UTC and The Westin Dhaka.
In 2014, we founded Next Spaces Ltd., and since then, we have been involved in major infrastructure projects, including:

- Ashuganj Power Plant
- Rooppur Nuclear Power Plant
- Rampal Thermal Power Plant

We specialize in hydraulic rotary piling, soil improvement, deep soil mixing, diaphragm wall technology, continuous flight auger, jet grouting, and advanced concrete technology. Each of these projects played a significant role in shaping my career and ultimately led to the formation of Next Spaces Ltd.

Additionally, I have been involved with BACI (Bangladesh Association of Construction Industry) for a long time, serving in various committees and leadership roles. In 2023, I was elected President of BACI, which has been a great honor.

Next Spaces Ltd. specializes in advanced deep foundation technology. How do you ensure that your company remains at the forefront of innovation in this specialized field?

My expertise in deep foundation technology began during my time working on overseas projects, especially in Kuala Lumpur. The technical requirements of modern infrastructure projects are now similar worldwide, and Bangladesh has already adopted many of these technologies.

Key infrastructure projects in Bangladesh today include:

- Deep basement technology
- Metro rail networks
- Nuclear power plants
- River-crossing tunnels
- Long-span bridges, flyovers, and elevated expressways

At Next Spaces Ltd., we have always focused on introducing innovative construction technologies to Bangladesh. For instance:

- In 2010, we introduced hydraulic rotary piling technology to the country.
- We pioneered deep soil mixing technology in the Rooppur Nuclear Power Plant project.
- We have also introduced jet grouting, stone columns, continuous flight auger (CFA), and diaphragm walls.
- Tunnel Boring Machine (TBM) technology is now available in Bangladesh, further enhancing our construction capabilities.

Our commitment to innovation ensures that we stay ahead in this highly specialized field.

Bangladesh's infrastructure development has seen significant growth in recent years. What do you see as the biggest challenges in the construction industry today, and how can these be addressed?

There has been tremendous growth in Bangladesh's infrastructure sector, with major projects like:

- Padma Bridge
- Metro Rail (MRT) projects
- Hazrat Shahjalal International Airport's Third Terminal
- Thermal and nuclear power plants
- Railway connectivity projects

However, despite this growth, the industry faces several challenges:

1. **High import duties and VAT:** The cost of construction materials is increasing due to high taxes and duties.
2. **Fluctuating material prices:** Price hikes in raw materials impact project costs and timelines.
3. **Limited domestic preference policies:** Local construction firms need better government support to compete with international companies.

To overcome these challenges, the government should introduce policy reforms, reduce tax burdens, and prioritize local firms in infrastructure projects.

As President of BACI, how can public-private collaboration be improved to accelerate Bangladesh's infrastructure development?

The private sector plays a crucial role in shaping Bangladesh's infrastructure. As the country undergoes rapid economic transformation, the demand for better connectivity and quality of life is increasing.

The government alone cannot meet the massive financial needs of large-scale infrastructure projects. The private sector can contribute capital, technology, and innovative solutions for cost-effective and timely execution.

Some key recommendations for enhancing public-private collaboration include:

- Creating clear policy frameworks that encourage private investment.
- Offering tax incentives and financial support for local construction companies.
- Promoting skill development and capacity-building programs for construction workers.
- Encouraging international partnerships to bring advanced technology and expertise to Bangladesh.

If properly supported, Bangladesh's construction sector can expand regionally and globally, enhancing the country's reputation in the global infrastructure industry.

Managing large-scale projects like bridges, power plants, and metro rail systems requires expertise and coordination. How do you ensure quality, timeliness, and safety in your projects?

Bangladesh has demonstrated its capacity for infrastructure development through landmark projects like the Teesta Barrage and Padma Bridge.

These projects show that we have the technical and financial ability to execute large-scale projects independently.

Today, local engineering firms own and operate global-standard technology used in countries like Malaysia and Singapore. For instance:

- In MRT Line-6, most equipment and subcontractors were sourced locally.
- Modern construction technologies like hydraulic rotary rigs, diaphragm walls, jet grouting, and concrete pumping systems are widely available in Bangladesh.

Technology adoption ensures higher quality, faster completion, and better safety standards, allowing Bangladesh to compete on a global level.

Looking ahead, what are your aspirations for Next Spaces Ltd. and the future of Bangladesh's construction industry over the next decade?

Bangladesh has already achieved major milestones in infrastructure development, including:

- MRT projects
- Hazrat Shahjalal Airport's Third Terminal
- The Elevated Expressway
- The Padma Bridge
- The Karnaphuli River-Crossing Tunnel

As the country continues its development trajectory, I believe this momentum will not slow down.

Image Credit: Internet

The government has ambitious plans for infrastructure, communication, housing, and industrial expansion. The private sector, with its technological expertise and skilled workforce, is well-equipped to meet future demands.

At Next Spaces Ltd., we are committed to supporting nationwide development and ensuring that Bangladesh's infrastructure sector remains strong, competitive, and innovative.

> The private sector plays a crucial role in shaping Bangladesh's infrastructure. As the country undergoes rapid economic transformation, the demand for better connectivity and quality of life is increasing.

GREEN POWER

FAHAD IBN ISLAM

Country Director - Bangladesh, Nepal and Bhutan, SEA
JA Solar Technology Co,. Ltd.

Strategic Vision & Leadership

How do you envision the growth of renewable energy in Southeast Asia, and what role do you see JA Solar playing in this transformation?

Southeast Asia, with its abundant sunshine and fast-growing economies, is emerging as a key player in the global shift to renewable energy—especially solar power. Government support across the region is helping the photovoltaic (PV) industry thrive, with demand expected to reach 4.5–7.4 GW in 2024 and potentially up to 12.9 GW in the coming years.

JA Solar, a global leader in PV technology, is playing a major role in this transition. In September 2023, the company partnered with Bangladesh's Paramount Group to supply 150 MW of modules for the country's second-largest solar plant. By March 2024, JA Solar also delivered modules for Bangladesh's first large-scale n-type project, totaling 48 MW. With strong performance and reliable products, JA Solar has expanded its presence across Southeast Asia and earned the EUPD TOP PV Brand award two years in a row—underscoring its impact and reputation in the solar industry.

Business Development & Partnerships

Can you share some key strategies you've implemented to drive business growth in Southeast Asia, and how have partnerships contributed to the success of your projects?

JA Solar's business growth strategy in Southeast Asia is focused on the following areas:

1) Establishing cooperative relationships with local and international partners:
JA Solar has partnered with China Energy Construction Group's Shanxi Electric Power Exploration Institute (SEPEC) to provide modules for a 257MW PV project in Vietnam, demonstrating JA Solar's strength in the development and production of high-performance PV products.

2) Signing strategic cooperation agreement:
JA Solar and BayWa r.e. signed a strategic cooperation agreement for solar module distribution in the Asia-Pacific region, which further strengthens the cooperation between the two parties in the Asia-Pacific distribution market.

3) Cooperation with large local renewable energy companies:
In 2024, JA Solar signed 600MW, 100MW and 45MW n-type module supply agreements with local large-scale renewable energy enterprises Aboitiz Group, PEKAT and Sunview in the Philippines and Malaysia respectively. These cooperation not only deepened JA Solar's layout in Southeast Asia market, but also demonstrated that its products and technical strength were recognized by the local market. JA Solar's products and technical strength are recognized by the local market.

Project Management & Implementation

How do you ensure solar projects remain on schedule and within budget, particularly in complex, multi-stakeholder environments?

JA Solar's strategies to ensure solar projects are completed on time and on budget include:

1. Project Management: Adopt rigorous project management processes and tools, such as Gantt charts, to monitor progress and resource allocation.
2. Risk Management: Identify and control project risks in advance through the HSSE program.
3. Communication and Coordination: Maintain effective communication with all stakeholders to ensure alignment of project objectives.
4. Quality Control: Implement strict quality control measures to avoid rework and delays.
5. Cost Control: Ensure that the project does not overspend through refined cost management and budget tracking

Technical Expertise & Innovation

How do you incorporate cutting-edge technology into your renewable energy projects, and what innovations do you foresee shaping the future of solar energy in the region?

JA Solar is committed to technological innovation and has introduced high-performance photovoltaic products such as DeepBlue 4.0 Pro, which integrate advanced photovoltaic technologies and materials. Considering the unique climatic conditions of Southeast Asia, JA Solar's products are specially designed to withstand high temperatures, high humidity and monsoons to ensure optimal performance under these conditions. For example, JA Solar supplied 48MW PV modules for the HKGE project in Bangladesh, which uses JA Solar's most advanced Deepblue 4.0 pro n-type modules, which are perfectly suited to the local environment with high temperatures, high precipitation, and a significant monsoon climate all year round, to maximize power generation of the power plant. Through in-depth analysis of the solar energy market, combined with years of experience in the industry, JA Solar foresees that solar energy technology will develop in the direction of higher efficiency and reliability in the future, including new high-efficiency photovoltaic technology and intelligent energy management.

Market Trends & Future Growth

What emerging trends do you see in the Southeast Asian solar market, and how is JA Solar positioning itself to capitalize on these trends?

The Southeast Asian solar market is experiencing strong growth due to supportive government policies, advances in solar technology, and growing awareness of environmental issues.JA Solar can expand its market share by partnering with these governments that are supportive of solar programs and taking advantage of the policy incentives and regulatory environment. In addition, many large multinational companies are purchasing solar energy through power purchase agreements (PPAs) to meet sustainability goals and reduce carbon emissions. In response to this trend, JA SOLAR can provide companies with customized solar solutions that are tailored to meet the needs of different customers.

Stakeholder Engagement & Communication

How do you approach stakeholder negotiations and ensure alignment of interests across governments, developers, and customers?

JA Solar is committed to making decisions in a scientific, standardized and transparent manner in order to protect the interests of shareholders and promote the healthy development of the company. The company has established a sound governance structure, and all directors act in accordance with the relevant rules and the rules set by the Special Committee to ensure the sustainable, healthy and sound development of the company. In addition, JA Solar performs its duties in strict accordance with the requirements of relevant laws and regulations, so that small and medium-sized investors can enjoy equal status and fully exercise their power to protect their rights and interests. At the same time, JA Solar takes the initiative to cooperate with many enterprises and organizations around the world, and actively participates in international initiatives and industry exchanges, including standard-setting and technology exchanges, so as to jointly promote the healthy development of the solar photovoltaic industry.

Sustainability & Long-Term Impact

How do you ensure that your solar projects contribute to long-term sustainability and positive community impacts, such as job creation and energy access?

JA Solar is committed to ensuring that its solar projects have a positive impact on long-term sustainability and communities, primarily through the following ways:

Creating jobs: contributing to the local economy by providing employment opportunities at project sites.

Providing Energy Access: Increasing the availability, affordability and reliability of energy access through solar projects.

1. Community Engagement: Working with the local community to ensure that the project meets and benefits the community's needs.
2. Environmental Responsibility: Implement environmental protection measures to minimize the environmental impacts of the project while increasing resource efficiency.
3. Social Responsibility: Enhance the skills of local residents and the community's ability to develop itself through education and training programs.

BANGLADESH'S GREEN INNOVATIONS
in Construction, Infrastructure, and HVAC Industries

Image Credit: Internet

INTRODUCTION

Bangladesh is undergoing a green transformation in its construction, infrastructure, and HVAC (heating, ventilation, and air conditioning) industries. As urbanization accelerates and climate change concerns intensify, the need for sustainable, eco-friendly development has never been greater.

Government initiatives, private sector innovations, and global sustainability standards have driven a shift towards energy-efficient buildings, green construction materials, and environmentally friendly infrastructures. Architects, developers, and engineers are adopting cutting-edge technologies to reduce carbon footprints, optimize energy use, and minimize environmental impact.

This cover story explores how Bangladesh is redefining sustainability in these sectors, highlighting key players, innovative projects, challenges, and successes.

SUSTAINABLE CONSTRUCTION:
The Rise of Green Buildings

The Shift Towards Green Architecture

The construction sector in Bangladesh is a significant contributor to carbon emissions, but a growing number of eco-conscious architects and builders are prioritizing green building principles. The Leadership in Energy and Environmental Design (LEED) certification and Bangladesh's own Green Building Code are pushing the industry towards sustainability.

Pioneering Architects & Firms

Several architectural firms and developers in Bangladesh are championing green building innovation:

- **VITTI Sthapati Brindo Ltd.** – Known for integrating passive cooling techniques and natural ventilation in designs, reducing energy dependency.
- **SHATOTTO** – Architecture for Green Living – Focuses on eco-friendly, locally sourced materials and designs that harmonize with nature.
- **Studio Morphogenesis** – Innovators in energy-efficient structures, rainwater harvesting, and solar power integration.

Pioneering Architects & Firms

- **Head Office of IDCOL (Infrastructure Development Company Limited), Dhaka**
  - LEED Platinum certified
  - Uses solar panels, rainwater harvesting, and insulated glass to minimize energy use
  - Reduces electricity consumption by 40% compared to traditional office buildings
- **Bay's Edgewater, Gulshan**
  - First residential green building in Bangladesh
  - Features solar power, double-glazed windows, and energy-efficient HVAC systems

- **Aga Khan Academy, Dhaka**
  - Built with eco-friendly bricks, energy-efficient insulation, and natural cooling methods
  - Incorporates large green spaces to reduce the urban heat island effect

GREEN INFRASTRUCTURE:
Sustainable Urban Development

Challenges in Sustainable Infrastructure Development

Building eco-friendly infrastructure in a developing country like Bangladesh presents unique challenges, including:

- High initial investment costs for green technology
- Limited awareness and expertise in sustainable design
- Need for policy support and incentives

Despite these barriers, public and private sectors are making strides in sustainable road networks, bridges, and urban planning.

Innovative Green Infrastructure Projects

- **Kanchpur, Meghna, and Gumti Bridge Upgrades**
  - First eco-conscious bridge projects in Bangladesh
  - Built using low-carbon concrete and energy-efficient lighting systems
- **Hatirjheel Integrated Development Project**
  - A landmark urban sustainability project
  - Incorporates water retention systems, eco-friendly transportation (water taxis), and green spaces
  - Significantly improved Dhaka's drainage system and reduced flooding
- **Purbachal New Town**
  - Designed as Bangladesh's first smart and green city
  - Features wastewater treatment plants, solar streetlights, and sustainable drainage systems


Image Credit: Internet


Image Credit: Internet

HVAC INDUSTRY:
Revolutionizing Energy Efficiency

The HVAC sector in Bangladesh is adapting to growing concerns over energy consumption and carbon emissions. With increased demand for air conditioning in urban areas, companies are turning to energy-efficient solutions to reduce their environmental impact.

Key Players Leading the Green HVAC Movement

Several companies are pioneering eco-friendly air conditioning and ventilation systems:

- **Super Star Group (SSG) –** Leading the way in solar-powered air conditioners.
- **General Air Conditioner Bangladesh –** Developing inverter-based cooling systems that reduce energy use by 30%.
- **Concord Group –** Installing geothermal cooling systems in large-scale projects.

Green HVAC Innovations

- **VRF (Variable Refrigerant Flow) Systems**
  - Reduces energy consumption by 20-30% compared to traditional systems.
  - Used in commercial projects like The Westin Dhaka and United City.
- **Solar-Powered Cooling**
  - Bay Developments Ltd. has integrated solar AC systems in premium apartments
- **Smart Ventilation Systems**
  - Bangladesh University of Engineering and Technology (BUET) is researching AI-powered HVAC optimization to minimize power wastage.

CASE STUDIES:

Green Construction & Infrastructure in Action

The Role of Government Policies

The Bangladesh government has played a pivotal role in shaping the country's green construction landscape. Initiatives like the "Sustainable Development Goals" (SDGs) and the "National Building Code" have created a regulatory framework that encourages the use of sustainable building materials, energy-efficient HVAC systems, and renewable energy. Alongside these policies, several incentives for green building practices have been introduced, including tax breaks and subsidies for green-certified projects.

As Bangladesh's economy grows, so does its environmental consciousness. The country's urban centers are experiencing unprecedented growth, with Dhaka alone adding more than 1.5 million people annually. Given this rapid expansion, the need for sustainable building practices and infrastructure projects has become imperative to reduce the carbon footprint and create livable urban spaces.

Case Study : The BRAC University Campus – Integrating Green with Learning

The BRAC University campus, located in Dhaka, is another shining example of green innovation in Bangladesh's infrastructure. The campus was designed to integrate renewable energy solutions while providing an environmentally friendly learning environment for its students. Developed by the renowned firm Shanta Properties, the campus features a host of sustainable features.

Project Overview:

The BRAC University campus utilizes solar energy for its power needs, reducing reliance on the national grid. The buildings are equipped with highly efficient insulation, reducing the need for air conditioning and enhancing energy conservation. Additionally, the campus' stormwater management system prevents flooding while recharging groundwater levels.

The design incorporates eco-friendly materials like low-VOC paints, bamboo flooring, and recycled steel in construction. The campus also boasts extensive green spaces, including rooftop gardens that reduce the urban heat island effect and provide spaces for relaxation.

Challenges:

The integration of renewable energy systems such as solar panels faced logistical challenges, particularly during installation. The campus was located in an area where space was limited, which made it challenging to position the solar panels efficiently. Additionally, ensuring the system's long-term effectiveness in Bangladesh's climate required careful planning.

Success and Impact:

Since its completion, the BRAC University campus has demonstrated that it is possible to create a world-class educational institution while maintaining sustainable practices. The campus has drastically reduced its energy consumption and carbon emissions, with solar energy accounting for 40% of its total energy use. This project has become a model for other universities in the country, highlighting the role of education in promoting sustainability.

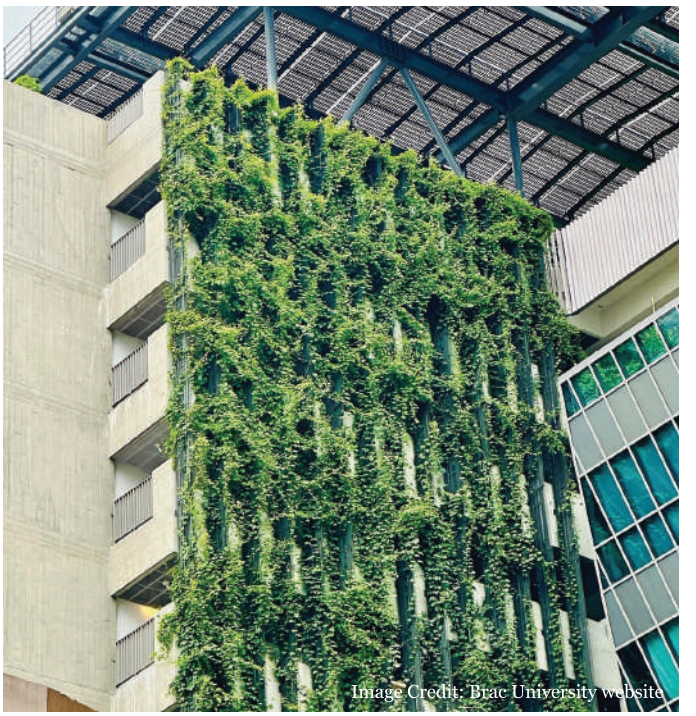


Image Credit: Brac University website

Case Study: Metro Rail (MRT Line 6) – Sustainable Transit

The Challenge

Dhaka, one of the world's most densely populated cities, faces severe traffic congestion and pollution. With millions of vehicles on the road, CO_2 emissions have surged, worsening air quality and climate change impacts.

The Solution

To combat this crisis, the government launched the MRT Line 6 project, Bangladesh's first mass rapid transit system powered by electricity. The metro system aims to reduce dependency on fossil fuels and cut emissions by 20%.

Implementation & Impact

Since its partial launch, the metro rail has already decreased traffic congestion, providing a cleaner and more efficient public transport system. The project also promotes green urban mobility, aligning with global sustainability goals.

Green Innovations in HVAC Systems: THE NEXT FRONTIER

The HVAC (Heating, Ventilation, and Air Conditioning) industry in Bangladesh is also undergoing a significant transformation, with a growing emphasis on energy efficiency and environmental safety. With the country's rapid urbanization, the demand for energy-efficient HVAC systems has skyrocketed. Local HVAC companies, like Carrier Bangladesh and Gree Bangladesh, are leading the charge in introducing innovative solutions to reduce energy consumption and improve air quality.

Energy-Efficient Technologies:

One of the key innovations in Bangladesh's HVAC sector is the use of Variable Refrigerant Flow (VRF) systems. These systems offer superior energy efficiency compared to conventional HVAC units by adjusting the flow of refrigerant based on demand. In addition, advanced filtration systems are being implemented to improve indoor air quality, a crucial factor given Dhaka's air pollution problems.

Moreover, many HVAC systems are being paired with smart technologies, allowing building managers to monitor and control energy usage remotely. By integrating sensors and real-time data, these systems ensure that heating and cooling are optimized based on occupancy levels and outdoor weather conditions.

Case Study: The Radisson Blu Dhaka

The Radisson Blu Dhaka, one of the leading hotels in the capital, made a significant investment in energy-efficient HVAC systems during its recent renovation. The hotel upgraded its existing air conditioning systems to high-efficiency VRF units, which have reduced its energy consumption by 30%. The project also included the installation of smart thermostats and humidity control systems to further optimize the HVAC performance.

The biggest challenge during this upgrade was ensuring that the new systems met the hotel's operational needs while minimizing energy use. Additionally, the installation process had to be carried out without disrupting guest services, requiring careful planning and coordination. Despite these challenges, the Radisson Blu Dhaka has reported significant savings on energy bills, which has offset the initial cost of the upgrade.

Image Credit: Internet

Bangladesh's construction, infrastructure, and HVAC industries are at the forefront of the green revolution. While challenges remain, technological advancements, policy support, and industry innovation are paving the way for a greener, more resilient future.

Embracing eco-friendly innovations will be essential for long-term sustainability and climate resilience, ensuring that Bangladesh continues to develop without compromising the environment.


Image Credit: Internet

REBUILDING LOS ANGELES:

A Fire-Resistant Future After Wildfire Devastation

Los Angeles is once again rising from the ashes after another wave of destructive wildfires. With over $250 billion in damages and thousands of homes lost, this disaster has highlighted the urgent need for smarter, more resilient rebuilding strategies. Instead of simply replacing what was lost, the city is taking a forward-thinking approach—prioritizing fire-resistant construction, better urban planning, and stronger policies to safeguard communities from future wildfires.

FIRE-RESISTANT HOMES:

Building for the Future

One of the most significant changes in the rebuilding process is the shift toward fire-resistant materials and designs. Traditional wood siding, asphalt shingles, and wooden fences, which have fueled past wildfires, are being replaced with noncombustible alternatives. New homes will be built with concrete and stucco exteriors, tempered glass windows that can withstand extreme heat, and fireproof roofing materials such as metal and clay tiles. Additionally, wooden decks and fences are being swapped out for nonflammable materials to further reduce fire risk.

Beyond materials, architectural design is playing a critical role. Creating defensible space—an area around homes that is clear of flammable vegetation—is now a standard requirement. Homeowners are also incorporating roof sprinkler systems and ember-resistant vents to prevent fires from spreading into homes. Smart technology, including advanced fire detection systems, is helping residents receive real-time alerts and take preventative action before flames reach their property.

SAFER URBAN PLANNING:

Rethinking Where and How We Build

Los Angeles is also taking a broader approach to fire prevention by rethinking how communities are planned. Buffer zones—open spaces designed to slow the spread of wildfires—are being established between residential neighborhoods and high-risk areas. At the same time, new housing developments are being strategically placed away from fire-prone hillsides and canyons, where wildfires have historically caused the most damage.

To further minimize risk, the city is limiting urban sprawl into wildfire-prone regions and focusing on denser, more centralized communities. Infrastructure improvements such as wider roads, expanded evacuation routes, and underground power lines are also being prioritized to enhance fire safety and emergency response capabilities.

POLICY AND FUNDING:

Making Fire-Safe Rebuilding Possible

To ensure homeowners and developers can implement these fire-resistant measures, California is providing financial and policy support. The state has expanded its FAIR Plan to offer wildfire insurance in high-risk areas, while grants and low-interest loans are available to encourage fire-resistant rebuilding. On the federal level, agencies such as FEMA and HUD are contributing disaster relief funds to help communities rebuild stronger and safer. Through fire-resistant construction, strategic urban planning, and policy-driven support, Los Angeles is not just rebuilding—it's redefining resilience. The city's new approach will help protect communities for generations to come, ensuring that future wildfires do not result in the same level of devastation.

European Heat Pump Sales Plummet by 23%, Triggering Job Losses

Heat pump sales across 13 major European markets fell by 23% in 2024, leading to thousands of job losses, according to the European Heat Pump Association (EHPA). The decline has been attributed to insufficient government support, economic struggles, and subsidized gas prices, leaving much of the industry's capacity idle.

The EHPA reported that sales dropped by 600,000 units, affecting 4,000 jobs in 2024. The sharpest declines were recorded in Belgium (-52%), Germany (-48%), and France (-24%). Japanese manufacturer Daikin announced temporary unemployment at its Belgian factory in response to falling demand.

In contrast, the UK was the only country to see growth, with a record 63% increase in sales. This was driven by government incentives, including the £42 million Heat Pump Ready programme and an additional £30 million for the Boiler Upgrade Scheme.

The EHPA warned that changes to support schemes have contributed to the downturn, impacting an additional 6,000 jobs. It also highlighted that gas and electricity taxes remain equal in most countries, making heat pumps less competitive.

Despite setbacks, the EHPA remains optimistic. "Consumers want clean heating and energy independence," said its director general, urging the EU Commission to prioritize heat pumps in the upcoming Clean Industrial Deal.

Norway currently leads Europe with 686 heat pumps per 1,000 households, but even its market saw a 10% decline in 2024.

Toshiba Carrier UK Unveils Eco-Friendly DAISEIKAI™ 10 Air Conditioner

Toshiba Carrier UK has launched the DAISEIKAI™ 10, a state-of-the-art air conditioner that combines performance, sustainability, and sleek aesthetics for superior home comfort. A part of Carrier Global Corporation (NYSE: CARR), Toshiba Carrier UK continues to drive innovation in intelligent climate and energy solutions.

The DAISEIKAI 10 is crafted using 43% recycled plastic, reinforcing Toshiba's commitment to home decarbonisation. It features advanced air purification technologies, including a Plasma Ionizer to eliminate airborne contaminants and an Ultra-Pure Filter, which captures up to 94% of harmful PM 2.5 particles such as smoke, viruses, and bacteria. The self-cleaning coil maintains efficiency, while an ultra-quiet mode ensures minimal noise disruption.

Designed for maximum efficiency, the unit uses motion tracking technology to direct airflow where needed. A WiFi-operated smart sensing control function app enables users to customise airflow settings. The air conditioner's "natural" design, featuring a PEFC-certified wood grille, aligns with its eco-friendly concept, offering a sustainable yet stylish appeal in wood or white finishes.

"The DAISEIKAI 10 reflects our dedication to air purification and climate control in an elegant, eco-conscious product," said David Dunn, Managing Director at Toshiba Carrier UK. Compatible with Single and Multi-Split Condensing Units, it offers built-in Wi-Fi and energy monitoring for real-time performance tracking.

Now available through Toshiba Carrier UK's network, the DAISEIKAI 10 reinforces Toshiba's role in sustainable air conditioning while supporting the UK's 2050 net-zero target.

Learn more at www.toshiba-aircon.co.uk

UK Water Companies to Benefit
FROM AI-POWERED PIPELINE MONITORING

Water companies across the UK will soon gain unprecedented insights into their underground infrastructure through a groundbreaking partnership between Network Plus and Datatecnics. This collaboration aims to enhance efficiency, sustainability, and predictive maintenance within the sector.

Network Plus will deploy Datatecnics' advanced sensing technologies, which use AI-driven decision-making to provide real-time monitoring of critical pipelines. By integrating cutting-edge hardware, software, and predictive analytics, the initiative will help water companies detect vulnerabilities before they escalate into major issues.

Kevin Fowlie, CEO of Network Plus, emphasized the importance of this collaboration in enhancing the digital maturity of utility companies. With over 5,000 employees and 80 regional depots, Network Plus delivers essential services across water, wastewater, gas, power, telecoms, and transport. Sam Atherton, Chief Strategy Officer, highlighted the partnership's role in future-proofing the UK's water infrastructure.

Datatecnics, known for its Foresight platform, offers AI-powered risk modeling tools that connect all water utility data. CEO Suhayl Zulfiquar described the partnership as a pivotal step toward innovation and resilience, ensuring easier access to next-generation digital water management technologies.

This partnership marks a significant advancement in the UK water sector, supporting data-driven decision-making and enhancing long-term infrastructure reliability.

UAE'S MOHAMED BIN ZAYED WATER INITIATIVE PARTNERS
with World Bank to Tackle Global Water Scarcity

The Mohamed bin Zayed Water Initiative and the World Bank have signed a Memorandum of Understanding (MoU) to accelerate innovation and investment in global water security. The agreement was signed by Ayesha Al-Ateeqi, Executive Director of the initiative, and Ousmane Dione, World Bank Vice President for MENA, during the World Governments Summit 2025.

This collaboration aims to address critical water security challenges by fostering sustainable water management solutions. Key areas of focus include enhancing water sustainability, boosting efficiency, and developing innovative financing mechanisms. The initiative will also engage public and private sectors, along with international organizations, to incubate and scale up groundbreaking water solutions.

Image Credit: Internet

Ayesha Al-Ateeqi emphasized that the partnership aligns with the initiative's mission to develop new solutions for water scarcity and strengthen international cooperation. Ousmane Dione highlighted the goal of promoting sustainable water management in water-stressed regions through innovations in irrigation, desalination, and water reuse.

The agreement formalizes both organizations' commitment to tackling water scarcity through joint projects, investment, and international cooperation, ensuring a more secure water future for generations to come.

Sweden Unveils One of Its
FIRST HYBRID SOLAR FARMS IN HALMSTAD

Image Credit: Internet

A pioneering hybrid solar farm has been unveiled in Halmstad, Sweden, marking a major step forward in the country's renewable energy sector. The facility, developed by Solarwork Sverige and Powerworks Energy, integrates both solar power and battery storage to enhance grid stability and efficiency.

Generating over 7,000 MWh of clean electricity annually, the 6.6 MWp installation features 11,928 bifacial PV modules and 20 Sungrow SG250HX string inverters. These high-efficiency inverters ensure seamless integration with bifacial panels, maximizing energy output.

Carl Kuylenstierna, CEO of Sperlingsholms Gods, the plant's owner, emphasized the importance of solar energy in Sweden's transition to sustainable power. "We generate electricity exactly when it's needed most—midday—at a low marginal cost," he stated.

To further optimize energy use, the farm incorporates a 4 MW/4.4 MWh battery energy storage system (BESS) using Sungrow's PowerTitan 1.0 technology. This AC-coupled system enables independent operation of the PV and battery storage, improving flexibility and reliability.

"Sungrow's solutions are ideal for the Nordic climate," said Fredrik Lyckvind, CSO at Powerworks Energy. "The liquid-cooled technology reduces operating costs and ensures long-term stability."

As Sweden accelerates its renewable energy transition, the Halmstad hybrid solar farm sets a precedent for future sustainable energy projects.

Qualitas Energy Acquires

250 MW WIND PORTFOLIO IN GERMANY

Qualitas Energy, a global renewable energy investment platform, has acquired a 250 MW wind energy portfolio in Germany, strengthening its position in the country's clean energy market. The portfolio includes four wind farm projects in Saxony-Anhalt, Hesse, Lower Saxony, and Baden-Württemberg, with a total of 37 planned turbines in advanced development stages.

Once operational, the wind farms will generate enough electricity to power over 166,000 households, equivalent to a city the size of Duisburg. This acquisition follows Qualitas Energy's recent additions, including a 32-turbine wind farm near the North Sea coast and seven wind farms with a 173 MW repowering potential across Germany.

The deal marks the company's largest transaction since its 2023 acquisition of DunoAir's 1.4 GW onshore wind development business. Supported by its €2.4 billion Qualitas Energy Fund V, the company is accelerating its investments in Germany's wind sector.

"Wind power is one of the most cost-effective and reliable sources of electricity, and we are committed to leveraging its full potential," said Johannes Overbeck, Co-CEO of Qualitas Energy Germany.

With over 250 employees across six locations, Qualitas Energy continues driving Germany's energy transition and decarbonization goals through strategic wind power investments.

Image Credit: Internet

SUSTAINABLE COOLING:

10 Things to Know in 2024

Image Credit: Internet

As the world heats up due to climate change and urbanization, the demand for cooling-whether in homes, offices, or industrial spaces-has surged dramatically. However, traditional cooling methods, particularly air conditioning, contribute significantly to carbon emissions and energy consumption. The need for sustainable cooling solutions has never been more urgent.

Here are 10 key things to know about sustainable cooling in 2024:

- **Cooling Demand is Skyrocketing**
  According to the International Energy Agency (IEA), cooling accounts for nearly 10% of global electricity consumption. By 2050, demand for air conditioning is expected to triple, making it a major driver of greenhouse gas emissions if not addressed sustainably.
- **Energy-Efficient ACs Are a Game Changer**
  Not all air conditioners are the same. Next-generation ACs, such as those using inverter technology and variable refrigerant flow (VRF) systems, can reduce energy consumption by 30-50% compared to conventional units. The Kigali Amendment to the Montreal Protocol is also phasing out high global warming potential (GWP) refrigerants in favor of climate-friendly alternatives.
- **District Cooling is Transforming Urban Centers**
  Instead of individual buildings relying on separate cooling units, district cooling systems (DCS) provide centralized cooling for entire neighborhoods. Cities like Dubai, Singapore, and Stockholm have successfully implemented DCS, cutting energy consumption by 50% compared to conventional air conditioning.
- **Passive Cooling is a Cost-Free Solution**
  Buildings can stay cool without air conditioning by incorporating passive cooling strategies:
  - White or reflective roofs to reduce heat absorption
  - Cross-ventilation design for natural airflow
  - Green walls and rooftop gardens to absorb heat
  - High-performance insulation to reduce heat gain

  Architectural innovations in tropical and desert regions have proven that passive cooling can cut energy use by up to 70%.
- **Renewable Energy-Powered Cooling is on the Rise**
  The combination of solar energy and cooling is gaining momentum. Solar-powered air conditioning systems and thermal storage cooling solutions are already being deployed in hot climates. For example, India has launched the Energy Efficient Cooling Program, promoting solar-assisted cooling for homes and businesses.

- **Smart Cooling Technology Reduces Waste**
  AI-powered thermostats and smart building management systems optimize cooling by adjusting temperatures based on occupancy, humidity, and external weather conditions. This can reduce energy consumption by up to 40%, according to a study by Lawrence Berkeley National Laboratory.
- **Nature-Based Cooling Solutions Are Effective**
  Urban forests, wetlands, and green roofs can reduce local temperatures by up to 4°C (7°F). Cities like Singapore and Melbourne are expanding green infrastructure to create cooler microclimates and mitigate the urban heat island effect.
- **Sustainable Cooling is Critical for Public Health**
  Extreme heat kills more people than hurricanes or floods. Sustainable cooling solutions are not just about comfort—they save lives. The World Health Organization (WHO) has emphasized the need for climate-resilient cooling in urban planning.
- **Cooling as a Service (CaaS) is a Business Model of the Future**
  Instead of owning and maintaining AC systems, businesses and institutions are leasing cooling services from companies that provide energy-efficient cooling on demand. This model is already being tested in Latin America and Southeast Asia, reducing upfront costs and ensuring efficient energy use.
- **Global Policies are Driving the Shift**
  Governments worldwide are implementing minimum energy performance standards (MEPS), carbon pricing, and cooling efficiency regulations. The Global Cooling Pledge, launched at COP28, aims to cut cooling-related emissions by 68% by 2050.

Conclusion

Sustainable cooling is no longer optional—it is essential for a livable future. With rising global temperatures and increasing demand for air conditioning, the world must shift towards energy-efficient, climate-friendly cooling solutions. Whether through advanced technology, passive design, or nature-based solutions, the future of cooling must be smarter, cleaner, and more sustainable.

Sources

- International Energy Agency (IEA), The Future of Cooling Report, 2024
- World Health Organization (WHO), Climate and Health Risks, 2024
- United Nations Environment Programme (UNEP), Cooling Action Plan, 2024
- Lawrence Berkeley National Laboratory, Smart Cooling & AI Efficiency Study, 2023
- COP28, Global Cooling Pledge, 2023

SPACE-BASED SOLAR POWER:

The Future of Clean Energy or an Unrealistic Dream?

By Jane Marsh

Image Credit: Internet

As global energy demand rises and the push for carbon-neutral solutions intensifies, researchers and governments are exploring innovative alternatives to traditional power generation. One such idea is space-based solar power (SBSP)—a concept that involves capturing solar energy in space and transmitting it wirelessly to Earth.

While SBSP presents promising advantages, such as an uninterrupted energy supply and decentralized distribution, it also comes with significant technical, financial, and regulatory challenges. As scientists and policymakers weigh its feasibility, the debate over SBSP's potential continues.

The Advantages of
SPACE-BASED SOLAR POWER

Uninterrupted Energy Production

Unlike terrestrial solar farms, which rely on clear skies and daylight hours, SBSP operates in space, where the sun shines continuously. This means no energy is lost due to night time cycles or cloud cover. According to a report by the U.S. Department of Energy, this could lead to a dramatic increase in solar energy efficiency, as traditional systems on Earth can lose up to 30% of their potential output due to atmospheric interference.

Energy Access for Remote and Disaster-Stricken Areas

SBSP could revolutionize energy accessibility by wirelessly transmitting power via microwaves or lasers to remote locations. According to a study by the European Space Agency (ESA), such technology could provide electricity to disaster zones, isolated communities, and even space colonies without the need for complex infrastructure.

Reduced Dependence on Fossil Fuels

With global efforts to reduce carbon emissions, SBSP offers a promising alternative to fossil fuels. Unlike nuclear or hydroelectric power, it does not pose environmental risks such as radioactive waste or habitat destruction. A study by the National Renewable Energy Laboratory (NREL) found that transitioning to SBSP could help countries meet climate goals while improving energy security.

Scalability and Energy Independence

SBSP systems could be expanded modularly, allowing for gradual investment and development. Countries with limited natural resources for renewable energy—such as those with low wind or solar exposure—could achieve energy independence by harnessing power from space.

The Challenges of
SPACE-BASED SOLAR POWER

High Initial Costs and Infrastructure Needs

Building an SBSP system requires launching massive satellites, constructing large ground-based receiving stations (rectennas), and developing reliable wireless energy transmission methods. A 2023 NASA study estimated that a full-scale SBSP system capable of producing gigawatts of power could cost hundreds of billions of dollars. Even smaller-scale projects would require significant financial investment.

Technical and Safety Concerns

SBSP involves beaming energy wirelessly via microwaves or lasers, raising safety concerns. The International Telecommunication Union (ITU) has warned that improperly directed energy beams could interfere with existing satellites or pose risks to humans and wildlife. Additionally, space debris and potential collisions in Earth's crowded orbit present additional challenges.

Political and Regulatory Barriers

The deployment of SBSP will require international agreements on space resource management, orbital positioning, and frequency regulation. The United Nations Office for Outer Space Affairs (UNOOSA) has stressed the need for comprehensive policies to ensure fair and responsible use of space-based energy. Without clear regulations, SBSP development could face significant geopolitical hurdles.

Long-Term Maintenance and Sustainability

Maintaining massive solar arrays in space presents a logistical challenge. Unlike terrestrial power plants, which can be repaired on-site, SBSP satellites would require robotic maintenance or expensive crewed missions. Researchers at the Japanese Aerospace Exploration Agency (JAXA) have emphasized the need for self-repairing materials and autonomous servicing robots to reduce long-term operational costs.

The Future of
SPACE-BASED SOLAR POWER

Despite these challenges, governments and private companies continue investing in SBSP research. Japan, China, and the U.S. have announced pilot projects, and the UK Space Agency has committed funding to explore SBSP's feasibility. Some experts believe that with advancements in robotics, space manufacturing, and wireless transmission, SBSP could become a viable part of the global energy mix within the next few decades.

While SBSP remains an ambitious goal, ongoing innovation could determine whether it becomes a game-changing energy solution or remains an unattainable dream.

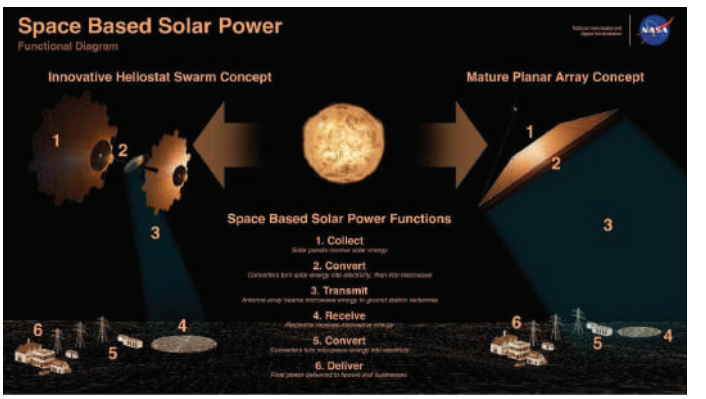


Image Credit: NASA

FEATURE

SMART GRID:

Why Bangladesh Needs It So Badly

Bangladesh's power sector has undergone significant transformation in the past two decades, with electricity coverage increasing from around 47% in 2009 to nearly 100% today. However, this achievement comes with challenges such as frequent power outages, grid inefficiencies, and high transmission losses. In a country with a rapidly growing economy and increasing energy demands, a Smart Grid is no longer an option but a necessity.

A Smart Grid is an advanced electricity network that integrates digital technology to enhance efficiency, reliability, and sustainability. It allows for two-way communication between power suppliers and consumers, real-time monitoring, and better integration of renewable energy sources like solar and wind.

The Current State of Bangladesh's Power Grid

Despite remarkable improvements, Bangladesh's power grid still suffers from:

- High Transmission and Distribution Losses: In 2023, Bangladesh reported system losses of around 11%, which is significantly higher than developed nations where losses range from 3% to 5%.
- Frequent Load Shedding: Due to supply-demand imbalances, blackouts are common, affecting industries, businesses, and households.
- Dependence on Fossil Fuels: Over 60% of Bangladesh's power comes from natural gas, and the rising fuel import bills are straining the economy.
- Lack of Renewable Energy Integration: Although Bangladesh has ambitious renewable energy targets, integrating solar and wind power into the existing grid remains a major challenge.

A Smart Grid can address these problems by optimizing electricity distribution, reducing wastage, and improving overall efficiency.

Why Bangladesh Desperately Needs a Smart Grid

Managing the Growing Demand for Electricity

Bangladesh's energy demand is expected to grow by 70% by 2040, driven by urbanization, industrialization, and economic expansion. The current grid infrastructure is outdated and struggles to handle peak loads, leading to frequent load shedding. A Smart Grid would allow better demand-side management through smart meters and AI-driven load forecasting, ensuring electricity is distributed efficiently based on real-time demand.

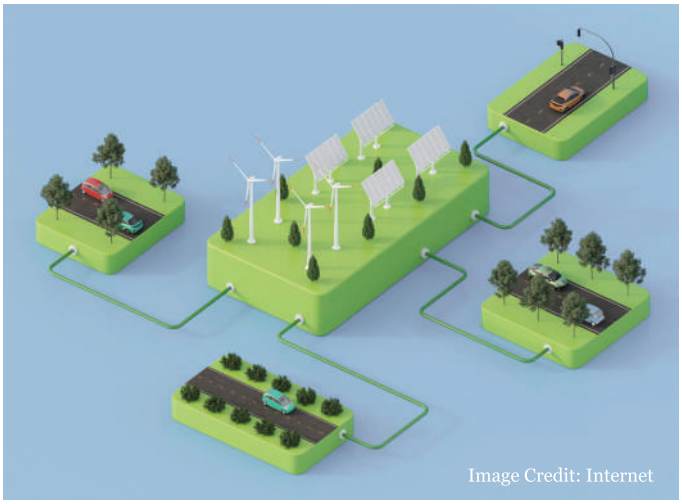


Image Credit: Internet

Reducing Power Wastage and Improving Efficiency

Table 1: Comparison of System Losses (%) in Various Countries

Country	Transmission & Distribution Losses (%)
Bangladesh	11%
India	18%
USA	6%
Germany	4%

A Smart Grid would reduce transmission losses by using real-time monitoring systems that detect faults, illegal connections, and energy theft—problems that currently account for a significant percentage of Bangladesh's power losses.

Boosting Renewable Energy Integration

Although Bangladesh aims to generate 40% of its electricity from renewable sources by 2041, integrating these sources into the national grid is difficult. Unlike traditional fossil fuel power plants, renewable sources like solar and wind are intermittent—they don't produce a constant output.

A Smart Grid can balance supply and demand by using AI-driven energy storage management, ensuring solar energy produced during the day is stored and used during peak hours. This would significantly reduce Bangladesh's dependence on expensive fossil fuel imports.

SuryaLogix®

Renewable Energy Solutions

SuryaLogix is a leading product development company offering smart and scalable solutions for the renewable energy sector. We specialize in IoT, AI, embedded systems, and wireless communication to create centralized platforms for monitoring, control, and asset management.

PV-DG/FUEL SAVE CONTROLLER+ DATALOGGER

IRRADITION + MODULE + AMBIENT TEMPERATURE SENSOR(3 IN 1 OUT)

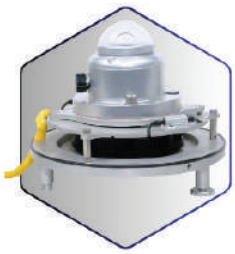
SURYALOG PORTAL

WEATHER STATION

SURYALOG SCADA

SURYALOG EMS

BESS CONTROLLER

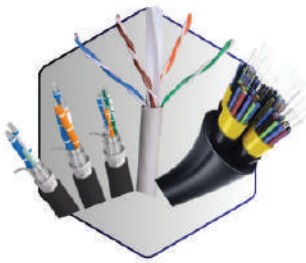


PYRANOMETER

MFM METER

LI-ION UPS

SURGE PROTECTION DEVICE (SPD)



CABLES

CURRENT TRANSFORMER (CT)

ENCLOSURE

+91-9022101652
+880 1792-005698
dnyaneshwar.pawar@suryalogix.com

Strengthening Energy Security and Reducing Blackouts

Frequent power outages disrupt businesses, affecting industrial productivity and economic growth. A Smart Grid can detect potential failures before they occur, enabling preventive maintenance and reducing unplanned blackouts. Countries like South Korea and China have successfully used grid automation to improve reliability and reduce downtime.

Lowering Electricity Costs for Consumers

Consumers in Bangladesh often face high electricity bills due to inefficiencies in power generation and distribution. With smart meters, households can monitor their energy usage in real-time and adjust consumption accordingly.

For example, dynamic pricing models can encourage consumers to use electricity during off-peak hours when tariffs are lower. This reduces overall demand stress on the grid while helping consumers save on their electricity bills.

Case Study: India's Smart Grid Initiatives

India, a neighboring country with a similar energy demand pattern, has made significant strides in Smart Grid adoption.

- In Gujarat, smart metering and AI-driven demand management reduced power losses from 26% to 10% in five years.
- India's Smart Grid Mission (ISGM) has helped integrate over 5 GW of solar power into the national grid.
- In Delhi, power outages dropped by over 60% after implementing real-time fault detection and automation.

Bangladesh can learn from India's experience and implement similar measures to modernize its own power grid.

Image Credit: Internet

Challenges in Implementing a Smart Grid in Bangladesh

Despite its advantages, Smart Grid deployment in Bangladesh faces several hurdles:

- High Initial Investment: Setting up Smart Grid infrastructure requires billions of dollars in investment. However, the long-term benefits far outweigh the initial costs.

  Lack of Skilled Workforce: Implementing and maintaining Smart Grid technology requires engineers and technicians trained in AI, IoT, and data analytics.

  Cybersecurity Risks: A digitized grid is vulnerable to hacking and cyber threats. Bangladesh must invest in strong cybersecurity measures to protect its energy infrastructure.

  Regulatory and Policy Barriers: The government must establish clear policies to encourage Smart Grid adoption, including incentives for private sector participation and foreign investment.

The Path Forward: Smart Grid Roadmap for Bangladesh

To make the transition to a Smart Grid, Bangladesh must follow a structured roadmap:

Short-Term (0-3 Years)

- Install smart meters for large industrial and commercial consumers.
- Conduct pilot Smart Grid projects in major cities like Dhaka and Chattogram.
- Train a skilled workforce in digital energy management.

Medium-Term (3-7 Years)

- Deploy AI-driven energy management systems for real-time load balancing.
- Improve grid automation to detect and fix faults remotely.
- Strengthen cybersecurity to protect the power infrastructure.

Long-Term (7+ Years)

Achieve nationwide Smart Grid deployment, covering all households and industries.

Integrate 50% renewable energy into the national grid by 2041.

Establish a regional energy-sharing network with India, Nepal, and Bhutan for energy stability.

Bangladesh is at a critical juncture where energy demand is rising, fossil fuel dependence is becoming unsustainable, and climate change threats are increasing. A Smart Grid is the only viable solution to ensure a stable, efficient, and sustainable energy future.

By adopting AI-driven energy management, real-time monitoring, and renewable energy integration, Bangladesh can reduce power losses, lower costs, and strengthen energy security. While challenges exist, government support, private sector investment, and international collaboration can make Smart Grid implementation a reality.

Sources

- Bangladesh Power Development Board (BPDB) Reports (2023)
- International Energy Agency (IEA) – Global Energy Outlook (2024)
- Smart Grid Initiatives in India – Ministry of Power, India (2023)
- Renewable Energy Prospects for Bangladesh – Asian Development Bank (2024)

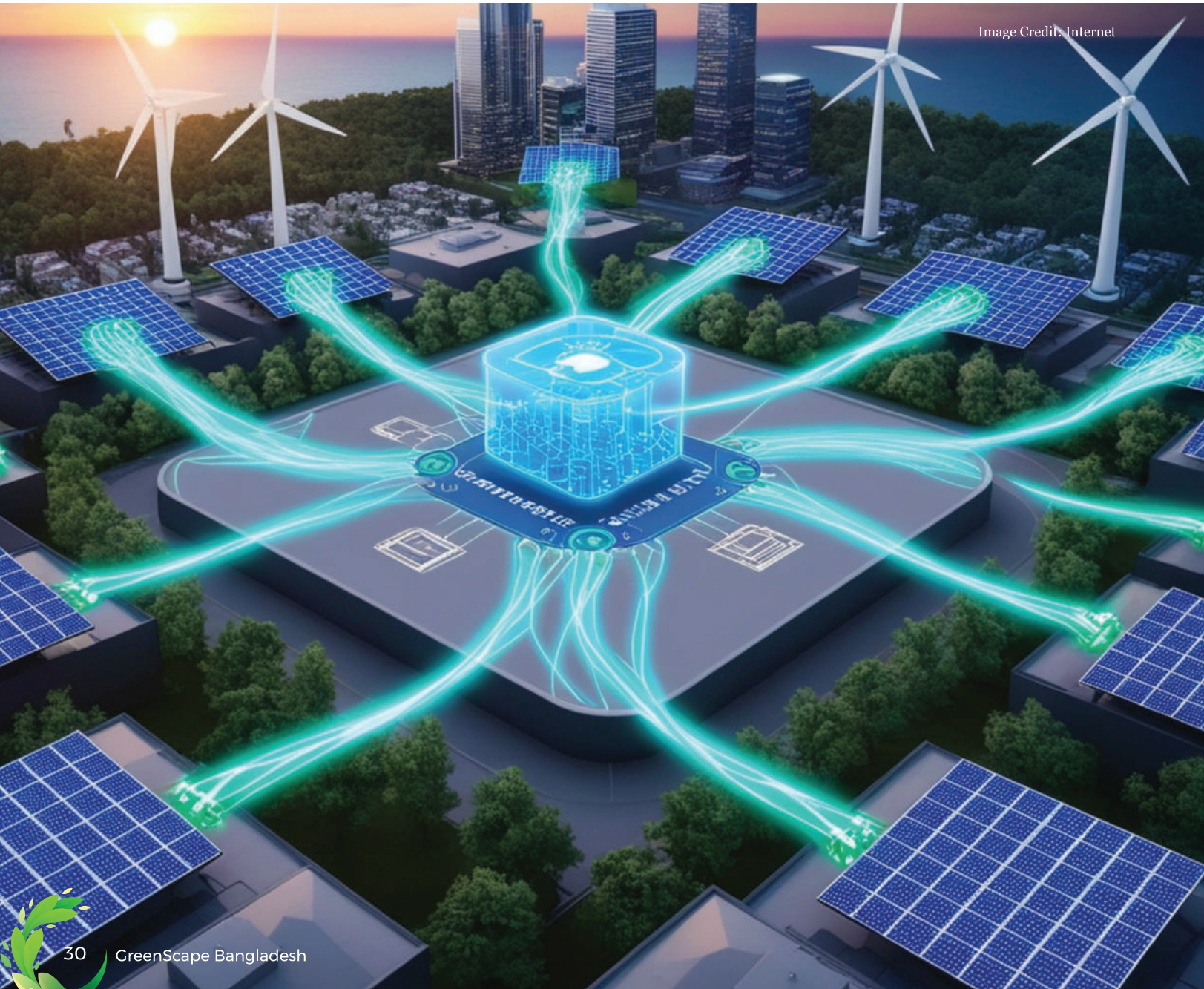


Image Credit: Internet

EXPOSITIONS & CONFERENCES

HVAC & REFRIGERATION LIVE 2025

Dates: April 9–10, 2025

Venue: ExCeL London, UK

Details: A premier UK event focusing on HVACR technologies, featuring live demonstrations, expert-led sessions on sustainability, and networking opportunities for professionals across sectors like healthcare, transportation, and manufacturing.

SAFE HVACR & COLD CHAIN 2025

Dates: May 15–17, 2025

Venue: International Convention City Bashundhara (ICCB), Dhaka, Bangladesh

Details: Bangladesh's leading exhibition on HVACR and cold chain solutions, showcasing over 300 exhibitors. The event targets professionals in construction, logistics, food, pharmaceuticals, and smart building sectors.

ACCA 2025 CONFERENCE & EXPO

Dates: March 24–27, 2025

Venue: Kalahari Resort, Greater Austin, Texas, USA

Details: A comprehensive event for HVACR contractors, offering educational sessions on leadership, finance, and technical topics, along with an expo featuring innovative HVACR products and services.

BUILDING INNOVATION 2025

Dates: May 19–21, 2025

Venue: The Ritz-Carlton, Tysons Corner, McLean, Virginia, USA

Details: An interdisciplinary conference organized by the National Institute of Building Sciences, focusing on advanced building technologies, resilience, and sustainability, with sessions offering AIA and ICC credits.

SAFE HVACR & COLD CHAIN

SAFE HVACR & Cold Chain 2025, now in its 10th edition, is Bangladesh's only dedicated exhibition on Heating, Ventilation, Air-Conditioning, Air-Filtration & Purification, Refrigeration Systems, and Cold Chain Management. From May 15-17, 2025, the event will take place at the International Convention Center, Bangladesh (ICCB), bringing together industry leaders, professionals, and innovators to explore the latest technologies, solutions, and services shaping the future of HVACR and cold chain systems.

As Bangladesh continues its rapid urbanization and sees major investments in commercial, residential, and industrial projects, the demand for efficient and sustainable HVAC systems has never been greater. With one of the highest GDP growth rates in South Asia and a population of over 170 million, Bangladesh offers immense business opportunities in the air conditioning, ventilation, and cold chain sectors. The government's push for green building technologies further drives the need for advanced, energy-efficient, and smart HVACR solutions.

SHOW REVIEW

MIDDLE EAST ENERGY 2025:
Charting a Sustainable Future from Dubai

Image Credit: Internet

During April 7-9, 2025, Middle East Energy (MEE) transformed the Dubai World Trade Centre into the region's biggest and most lively hub for energy business, policy, and innovation. In its 49th iteration, the event again proved why it serves as a cornerstone for the energy sector, not only in the Middle East and Africa but globally.

With more than 1,600 global exhibitors hosted across 16 exhibition halls, and over 40,000 energy professionals visiting from 90+ nations, this year's iteration was bigger, more international, and more forward-looking than ever. Empowered by the UAE Ministry of Energy and Infrastructure, the event offered a distinctive platform where public and private sectors, influencers, and thinkers converged to address one critical challenge: the shift to a cleaner, smarter, and more resilient energy future.
Key Issues and Points of Discussion

One of the general themes that repeated during the three-day conference was the need for energy transition and accelerating the rollout of renewable energy, energy efficiency, and storage technology. Points kept returning to grid decarbonization, climate-resilient infrastructure finance, and how the region might transition to diversified energy supplies without compromising on security or growth.

The much-awaited Middle East Energy Leadership Summit brought policymakers, CEOs, and international experts together to focus on regional paths to net-zero. Concurrently, sessions on the Intersolar & ees Middle East Conference and Battery & eMobility Zone featured solar innovation, battery technology, and a fast-evolving electric mobility landscape.

Speaking points emphasized that clean energy isn't just a technical transition—political, fiscal, and societal too. Emerging top themes included:

- Decentralized energy and grid innovation
- Green hydrogen as a feasible solution for industrial decarbonization
- The growing importance of AI and digital solutions in maximizing energy systems
- Public-private partnerships to deploy renewables at scale
- Inclusion and gender equality in the energy workforce

New Additions and Innovations

This year witnessed the first time the Battery Show Middle East took place, which filled an entire hall and highlighted energy storage. From solid-state batteries to intelligent charging systems in one, the stands were stunning and leading-edge. It was the first experience for many with commercially available battery solutions crafted specifically for the regional climate and grid configuration.

Some other stand-out points included

- Grid-interactive smart buildings and AI-driven energy management systems
- New floating solar technologies designed for desert and coastal environments
- Compact, modular renewable power units for off-grid rural deployment
- Advancements in bi-directional EV charging and its impact on urban grid resilience

Who Attended and Why It Mattered

Attendees varied from the whole value chain—energy ministers, private developers, city planners, startup entrepreneurs, climate activists, and engineers. Blue-chip blue-bloods such as Siemens, Schneider Electric, Huawei, Hitachi Energy, and Trina Solar showed their new portfolios, with high attendance by African and South Asian energy delegations securing the show's growing global relevance.

What characterized the 2025 edition was the genuine feeling of sectoral collaboration. Governments were no longer talking about plans, but policies in progress. Corporates and startups were not merely showcasing ideas; they were discussing signed pilots and funded programs. The academics and research institutions took an active part in workshops, highlighting the need for localized innovation.

Final Takeaway

Middle East Energy 2025 was not just an exhibition—it was a snapshot of where the world's energy sector stands, and an opening onto where it's going. While the challenges that are coming are gargantuan, the conversation in Dubai was solution-focused, cooperative, and willing to get big.

The show managed to balance ambition with pragmatism, highlighting how innovation, policy, and people can collaborate to create a sustainable energy future. In a region that has long lived on oil, such events as MEE herald a new era—a world where clean, smart, and inclusive energy is no longer a choice, but a necessity.

Image Credit: Internet

POWERING PROGRESS:

A Trusted Partner in Energy Solutions

Energypac Engineering Limited, headquartered in Dhaka, Bangladesh, has carved out a commanding presence in the global power and energy sector. With over four decades of experience and a remarkable track record of delivering more than 500 successful projects, Energypac has become synonymous with reliability, innovation, and turnkey excellence.

As a multinational engineering and technology company, Energypac stands out for its comprehensive portfolio that spans from the design and manufacture of advanced power products to end-to-end implementation of critical power transmission and distribution infrastructure. Their capabilities are demonstrated across a vast range of voltage levels—33kV, 132kV, 230kV, and even 400kV—making them a trusted partner for high-stakes energy needs.

Among the standout offerings from Energypac are their:

- **Distribution Transformers (both Oil-Filled and Cast Resin variants):** Engineered for optimal performance and reliability in various grid and industrial applications.
- **Power Transformers:** Designed for large-scale power distribution, delivering consistent and efficient energy transfer.
- **Switchgear Panels and Outdoor Vacuum Circuit Breakers:** Vital for modern power management, offering enhanced safety, compact design, and operational flexibility.
- **Step Voltage Regulators:** Ensuring voltage stability, especially in fluctuating grid environments.
- **Instrument Transformers and Busbar Trunking Systems:** Crucial for measurement, control, and efficient electrical distribution.
- **Disconnectors & Bypass Switches:** Supporting maintenance and operational control in high-voltage systems.

Energypac doesn't just manufacture power products—they build the future of energy with a focus on quality, sustainability, and client-centric solutions. Their reputation as Bangladesh's leading turnkey solution provider in power transmission projects is not just a claim; it's an achievement grounded in years of engineering excellence and innovation.

Company Details:
Energypac Engineering Limited
Head Office: Dhaka, Bangladesh
Industry: Power, Energy, Engineering, Construction, Technology

With a commitment to powering a brighter tomorrow, Energypac continues to be the backbone of energy infrastructure not only in Bangladesh but across borders.

> As a multinational engineering and technology company, Energypac stands out for its comprehensive portfolio that spans from the design and manufacture of advanced power products to end-to-end implementation of critical power transmission and distribution infrastructure.

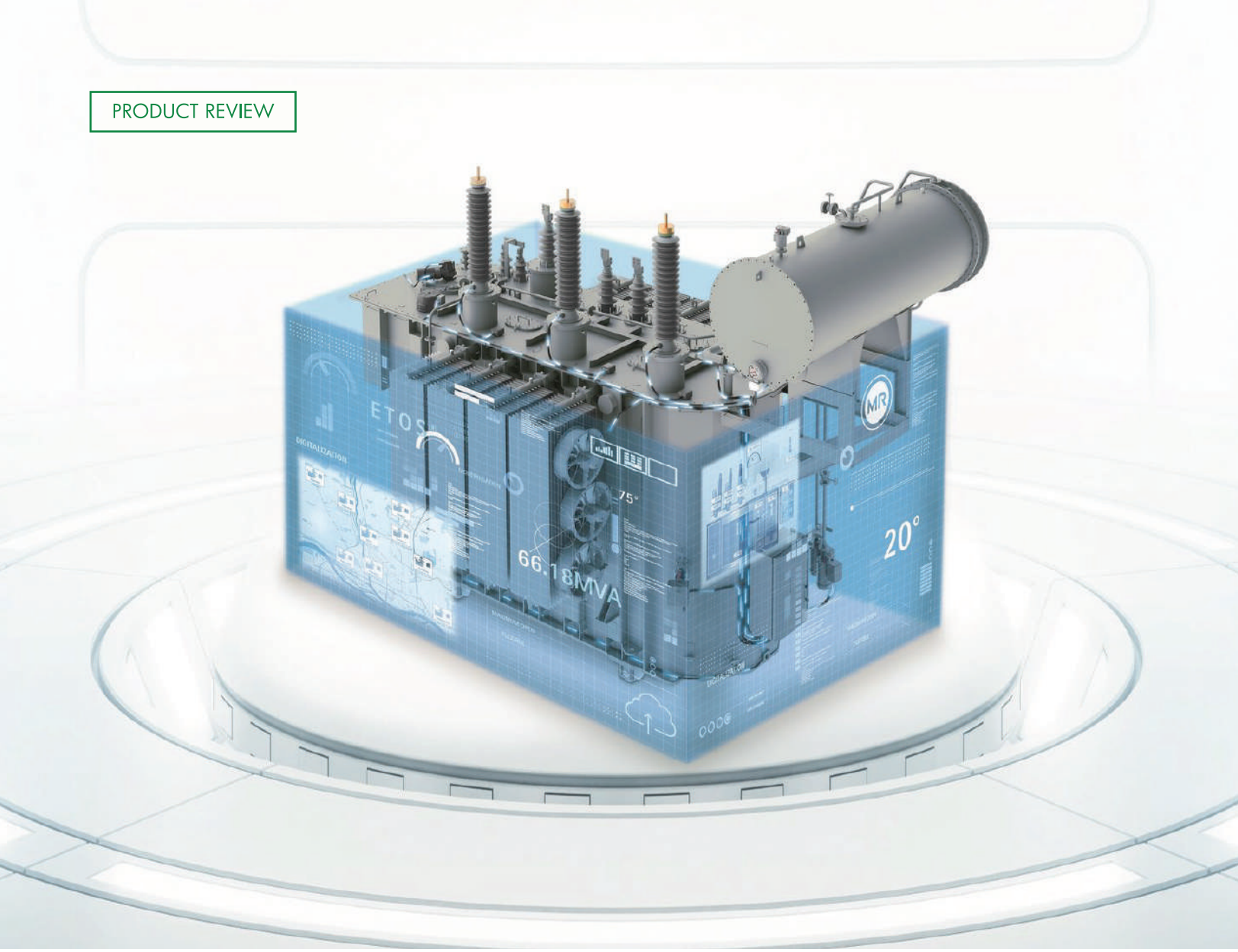
Power
Transformer

Distribution
Transformer,
Cast Resin

Distribution
Transformer,
Oil Filled

Outdoor Vacuum
Circuit Breaker

PRODUCT REVIEW



REVOLUTIONIZING TRANSFORMER MANAGEMENT:

A Closer Look at ETOS® by Reinhausen

In an era where digitalization is reshaping the energy sector, Reinhausen Asia-Pacific Sdn. Bhd. is taking transformer technology to the next level with ETOS® – Embedded Transformer Operating System. Headquartered at Level 11, Chulan Tower, No. 3 Jalan Conlay, 50450 Kuala Lumpur, Malaysia, the company introduces the first truly open operating system* for power transformers—a game-changer in both performance and operational intelligence.

ETOS® is not just a monitoring tool; it's a comprehensive digital brain for transformers, engineered for reliability, integration, and adaptability. This modular hardware and software system enables utilities and industries to seamlessly monitor, control, and regulate their transformer assets in real time. The openness of the platform allows for manufacturer independence and easy connection with third-party sensors and data sources, making it highly versatile and future-proof.

Key Benefits of ETOS®:

- **One System, One Partner:** Simplifies coordination, procurement, and support.
- **Manufacturer-Independent:** Works across a wide range of equipment vendors.
- **Flexible Integration:** Easily integrates into existing or new digital infrastructures.
- **Modular Design:** Scalable hardware and software to suit different needs.
- **Cyber-Secure:** Built with maximum protection in mind for critical infrastructure.
- **Retrofit Ready:** Designed not only for new transformers but also for upgrading existing ones.
- **Optimized Maintenance:** Enables data-driven insights for efficient operation and extended transformer life.

With ETOS®, Reinhausen bridges the gap between traditional transformer operation and the demands of modern grid management. Its emphasis on open architecture and cybersecurity, along with its retrofit capability, makes it a forward-looking solution for utilities aiming to digitize their asset management without overhauling their entire infrastructure.

Company Info:
Reinhausen Asia-Pacific Sdn. Bhd.
Level 11, Chulan Tower
No. 3 Jalan Conlay
50450 Kuala Lumpur, Malaysia
Email: PengYong.Looi@my.reinhausen.com
Website: www.reinhausen.com
(http://www.reinhausen.com)

In a world that demands smarter energy systems, ETOS® delivers the intelligence, flexibility, and security modern grids require. Reinhausen isn't just offering a product—they're delivering the future of transformer management.

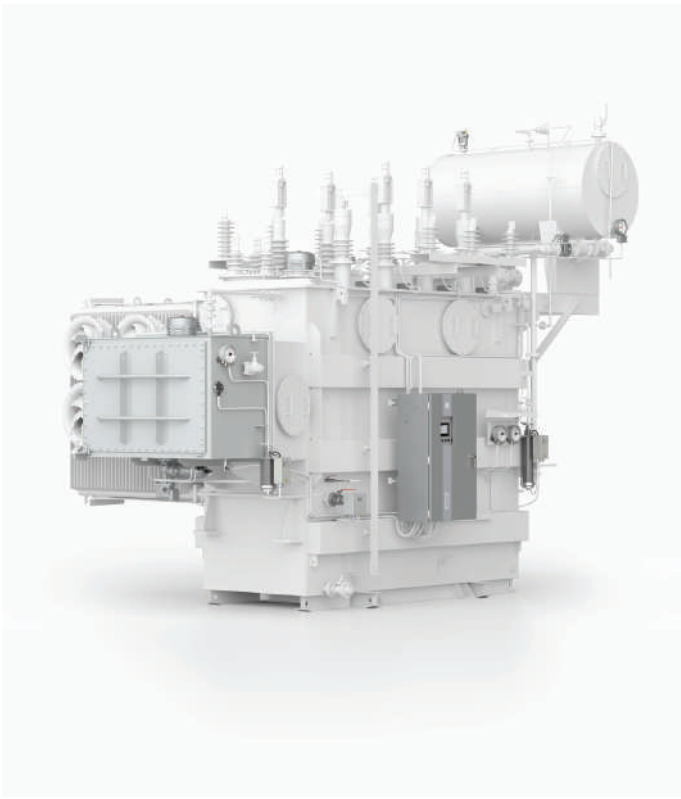


Image Credit: Internet

AZIZ TRADE & ENGINEERING LIMITED (ATEL):
Your One-Stop Cold Chain Solution

Company Overview

Aziz Trade & Engineering Limited (ATEL) is a leading provider of high-quality HVAC (Heating, Ventilation, and Air Conditioning), refrigeration, and cold chain solutions in Bangladesh. Established over one and a half decades ago, ATEL has built a strong reputation for delivering innovative and reliable products and services across various industries, including commercial, industrial, and marine refrigeration, supermarket equipment, solar energy, and industrial insulation.

With a commitment to professional excellence and technological advancement, ATEL has positioned itself as a trusted partner for businesses and individuals seeking energy-efficient and sustainable solutions. The company collaborates with globally renowned brands and manufacturers, ensuring that its customers receive world-class products and services tailored to their needs.

Mission and Vision

Mission: To provide high-quality HVAC, refrigeration, and cold chain solutions that enhance comfort, efficiency, and sustainability for customers across Bangladesh.

Vision: To be the leading provider of innovative and energy-efficient solutions in the HVAC and refrigeration industry, contributing to the country's economic growth and environmental sustainability.

Core Competencies

ATEL specializes in the following areas:

HVAC Solutions

ATEL offers a complete range of HVAC equipment, including air conditioners, package units, and Variable Refrigerant Flow (VRF) systems. Partnering with YORK, USA, a globally recognized brand with over 130 years of experience, ATEL provides energy-efficient and reliable solutions for residential, commercial, and industrial applications.

- Product Range:
  - Wall-mounted, ceiling-mounted, cassette-type, and ducted air conditioners
  - Package units (6.5 Ton to 50 Ton)
  - VRF systems with DC inverter compressors, offering energy savings of up to 50%.

Supermarket Refrigeration

ATEL supplies a comprehensive range of supermarket refrigeration equipment, including service counters, island cases, multideck cases, and walk-in chillers and freezers. Partnering with BONNET NEVE, France, ATEL delivers energy-efficient solutions that help supermarkets reduce operational costs while maintaining optimal product freshness.

Industrial Refrigeration

ATEL provides industrial refrigeration solutions for various sectors, including seafood, dairy, meat processing, and cold storage. The company offers industrial compressors, evaporative condensers, and processing equipment with cooling capacities ranging from 45 kW to 7600 kW.

Marine Refrigeration

ATEL specializes in marine refrigeration systems, offering robust and customized solutions for ships and vessels. Products include marine condensing units, shell and tube condensers, and chilled water tanks, designed to withstand harsh marine environments.

Cold Room and On-Site Insulation

ATEL provides insulated panels and on-site insulation services for cold storage facilities, ensuring optimal temperature control and energy efficiency.

Commercial Refrigeration

Partnering with LIEBHERR, Germany, ATEL offers a wide range of commercial refrigeration equipment, including upright chillers, curved glass freezers, and parlor freezers.

Genuine Spare Parts and Auxiliaries

ATEL serves as a hub for original spare parts and controls, ensuring the longevity and optimal performance of HVAC and refrigeration systems.

Key Products and Brands

ATEL collaborates with globally renowned brands to deliver high-quality products:

- YORK, USA: HVAC systems, including air conditioners and VRF systems
- BONNET NEVE, France: Supermarket refrigeration equipment
- BITZER, Germany: Industrial compressors and condensing units
- LIEBHERR, Germany: Commercial refrigeration equipment
- Honeywell: Refrigerants and consumables

Commitment to Sustainability

ATEL is committed to promoting sustainability through energy-efficient solutions and environmentally friendly practices. The company's VRF systems, for example, offer significant energy savings, while its refrigeration solutions are designed to minimize environmental impact.

Customer-Centric Approach

ATEL's success is built on its customer-centric approach, which includes:

- Technical Expertise: A team of highly skilled professionals providing expert advice and support.
- After-Sales Service: Comprehensive maintenance and repair services to ensure the longevity and optimal performance of products.
- Training and Capacity Building: Regular training programs for customers and partners to keep them updated on the latest technologies and best practices.

Global Partnerships and Local Expertise

ATEL's strong partnerships with global manufacturers, combined with its local expertise, enable the company to deliver customized solutions that meet the unique needs of its customers. The company's investment in capacity building and professional development ensures that it remains at the forefront of technological advancements in the HVAC and refrigeration industry.

Future Outlook

As Bangladesh continues to experience economic growth and urbanization, the demand for HVAC and refrigeration solutions is expected to rise. ATEL is well-positioned to meet this demand, with plans to expand its product portfolio, enhance its service offerings, and strengthen its presence in both urban and rural markets.

Contact Information

Corporate Office:
House-16, Road-1, Block-B, Niketan, Dhaka-1212, Bangladesh
Tel: 880-2-58811194, 9858228
Email: aziztrade@azizco.com
Website: www.atelbd.com

Branch Office:
102, Agrabad C/A, Chittagong, Bangladesh
Tel: 880-31-714852
Fax: 880-31-710234
Email: atelctg@azizco.com

Image Credit: Internet

GROWATT

Smart Energy for a Green Future

Company Overview

Growatt, founded in 2011 by a group of pioneers in the global photovoltaic (PV) industry, is a leading provider of distributed energy solutions. Headquartered in Shenzhen, China, Growatt has rapidly grown into a global powerhouse, specializing in sustainable energy generation, storage, and digitalization. With a mission to build a green and sustainable future, Growatt designs, develops, and manufactures a wide range of products, including PV inverters, energy storage systems, electric vehicle (EV) charging solutions, and smart energy management systems.

Today, Growatt is recognized as the global No. 1 residential inverter supplier and one of the top four suppliers of PV inverters and hybrid inverters worldwide. The company's innovative solutions are deployed in over 180 countries, serving millions of customers and contributing to the global transition to renewable energy.

Key Achievements and Milestones

- Global No. 1 Residential Inverter Supplier: Growatt holds the leading position in the residential inverter market, offering high-quality, reliable, and efficient solutions for homeowners.
- Top 4 PV Inverter Supplier: Ranked among the top four global suppliers of PV inverters, Growatt is a trusted partner for commercial and utility-scale solar projects.
- 3.8 Million+ PV Inverters Shipped: As of March 2024, Growatt has shipped over 3.8 million PV inverters globally, demonstrating its strong market presence and customer trust.
- 700,000+ Storage Inverters Shipped: Growatt's energy storage solutions have been widely adopted, with over 700,000 units shipped to date.
- 2.9 Million+ Cloud Users: Growatt's smart energy management platform connects over 2.9 million users, enabling real-time monitoring and optimization of energy systems.
- 1,100+ R&D Engineers: With a dedicated team of over 1,100 R&D professionals, Growatt continuously innovates to deliver cutting-edge technologies and products.
- 4.6% Revenue Invested in R&D (2022): Growatt's commitment to innovation is reflected in its significant investment in research and development, ensuring the company stays ahead in the competitive renewable energy market.

Product Portfolio

Growatt offers a comprehensive range of products designed to meet the diverse needs of residential, commercial, and utility-scale customers:

- PV Inverters
  Growatt's PV inverters are known for their high efficiency, reliability, and advanced features. Key product lines include:
  - Residential Inverters: Models like the MIN 2500-6000TL-X and MIC 750-3300TL-X offer maximum efficiency, compact designs, and flexible monitoring options.
  - Commercial Inverters: The MID 25-40K TL3-X and MAX 50-70KTL3-X LV/MV series are designed for commercial applications, featuring high efficiency, smart diagnostics, and scalable configurations.
  - Utility-Scale Inverters: The MAX 185-253K TL3-X HV series supports large-scale solar plants, offering high power output, intelligent string monitoring,

and advanced grid management capabilities.

- Energy Storage Systems

  Growatt's energy storage solutions provide flexible, safe, and efficient energy management for residential and commercial applications:

  - ARK LV Battery System: Offers modular capacity options from 2.5kWh to 25.6kWh, with excellent safety features and easy installation.
  - ARK HV Battery System: Designed for commercial and industrial applications, with capacities ranging from 7.88MWh to 25.6MWh.
  - APX HV Battery: A high-voltage battery system compatible with Growatt's hybrid inverters, offering flexible capacity options and long lifespans.

EV Charging Solutions

Growatt's EV charging products support the growing demand for electric vehicles, offering fast, reliable, and smart charging solutions.

Smart Energy Management Systems

Growatt's smart energy management systems, such as the ShineMaster and Smart Energy Manager (SEM-E), enable users to monitor, control, and optimize their energy consumption in real time. These systems support multiple inverters and storage devices, providing a seamless energy management experience.

Technological Innovation

Growatt's success is driven by its relentless focus on innovation and technology. The company has achieved numerous technological breakthroughs, earning recognition from industry leaders and organizations:

- 187+ Patents: Growatt has obtained over 187 patents, showcasing its commitment to innovation and intellectual property.
- Awards and Recognitions:
  - PHOTON Lab Double A+ Rating (2014) for the 20KTL3-HE inverter.
  - TÜV Rheinland Quality Award (2018) for the MAX 80K commercial inverter.
  - pv magazine Award (2020) for the MIN-XH inverter.
  - Solar Power World Top Products in the US (2021) for the MIN-XH-US inverter and ARO-XH battery.

Growatt's advanced manufacturing facilities, with an annual production capacity of 3.1 million inverters and 400,000 battery packs, ensure high-quality products that meet global standards.

Global Presence and Market Reach

Growatt's products are installed in over 180 countries, supported by a robust network of sales and service offices worldwide. The company has established a strong presence in key markets, including:

- Europe: Growatt is a leading supplier of residential and commercial inverters in countries like Germany, the Netherlands, and Spain.
- Americas: The company has a growing market share in the US, offering high-performance inverters and storage solutions.
- Asia-Pacific: Growatt is a trusted partner for utility-scale solar projects in countries like Vietnam, Thailand, and China.
- Africa: The company is expanding its footprint in Africa, providing reliable energy solutions for off-grid and grid-tied applications.

Commitment to Sustainability

Growatt is committed to building a sustainable future by enabling the widespread adoption of renewable energy. The company's products and solutions help reduce carbon emissions, enhance energy efficiency, and promote energy independence. Growatt's focus on sustainability extends to its manufacturing processes, which prioritize energy efficiency and environmental responsibility.

Customer-Centric Approach

Growatt's success is built on its customer-centric approach, offering:

- Online Smart Service (OSS): A platform that enables retailers, installers, and EPCs to manage and maintain solar power systems efficiently.
- Localized Support: Growatt provides localized service and support through its global network of offices and partners, ensuring timely and effective customer assistance.
- Training and Education: The company offers training programs to equipment installers and partners with the knowledge and skills needed to deliver high-quality installations.

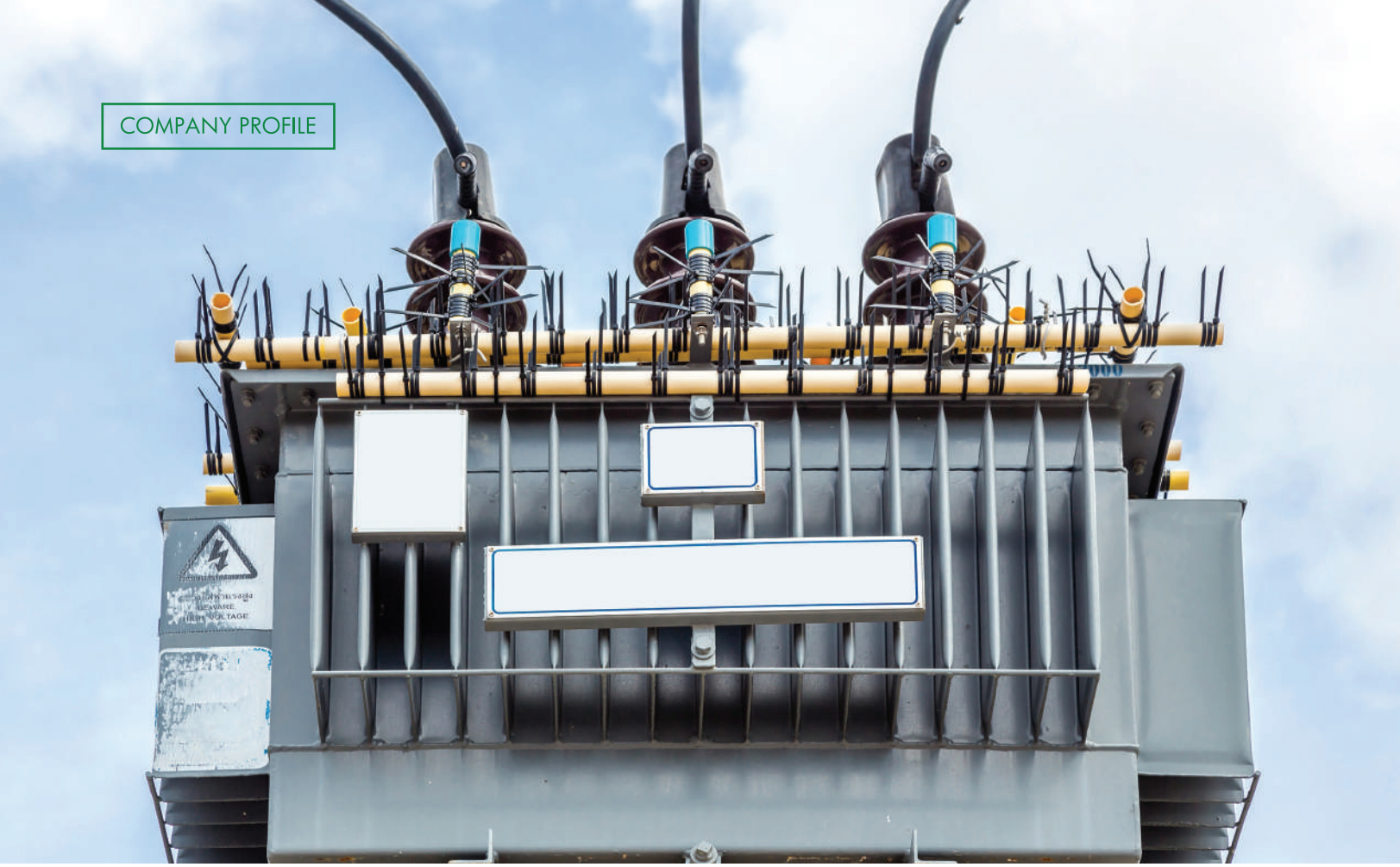
Future Outlook

As global demand for renewable energy grows, Growatt is well-positioned to lead the shift toward a sustainable future. The company plans to expand its product range, boost technological capabilities, and strengthen its global presence. With a focus on innovation, quality, and customer satisfaction, Growatt aims to stay at the forefront of the distributed energy revolution.

Contact Information

Corporate Office:
Shenzhen Growatt New Energy Co., Ltd.
A-1355, Bldg. 1, Energy Innovation Park, Shenzhen, China
Phone: +86 755-2747-1900
Email: info@growatt.com

Bangladesh Office:
Rasheduzzaman (Raju)
Bangladesh Country Manager
Phone: +8801737-368082
Email: rashed.raju@growatt.com



PASHA TRANSFORMERS LTD

Powering Bangladesh with Quality and Innovation

From its humble beginnings in 1984, Pasha Transformers Ltd. has emerged as a significant force in Bangladesh's engineering and power industry. As a key member of the Pasha Group, the company has carved a niche for itself as a manufacturer of a wide array of power solutions, including single and 3-phase distribution transformers, 33/11 KV power transformers, HT and LT switchgears, power factor improvement plants, and distribution panels.

Pasha Transformers Ltd. has earned a reputation for quality and innovation, driven by the vision and dedication of Pasha Group's founder, Mr. Kamal Pasha, and the expertise of its workforce. The company's commitment to high standards and innovative manufacturing technology is evident in its production of single-phase distribution transformers, designed for durability even in harsh environments. The company emphasizes that its products meet the stringent requirements of both local and international standards.

Pasha Transformers Ltd. plays a vital role in supporting the electrification efforts of key organizations such as the Rural Electrification Board (BREB), Bangladesh Power Development Board (PDB), Dhaka Electric Supply Authority (DESA), and Dhaka Electric Supply Company (DESCO). The company utilizes high-quality raw materials and modern technology to produce special-purpose transformers for various commercial applications.

Pasha Transformers Ltd. prides itself on the longevity, robust construction, and ease of maintenance of its products. The company is committed to continuous quality improvement, aiming for customer satisfaction. To foster customer confidence, Pasha Transformers Ltd. offers extended warranty periods and provides cost-effective solutions tailored to individual customer needs through its fully equipped design wing. The company also has a team of experienced employees focused on meeting customer and market demands.

The leadership team at Pasha Transformers Ltd. includes Ahmed Samir Pasha as Managing Director and Tanvir Pasha as Director.

Pasha Transformers Ltd.'s product range is diverse, encompassing:

- Power Transformers (33/11KV, 3MVA to 20MVA)
- Distribution Transformers (11/.415KV)

- HT Switchgear (VCB/LBS)
- LT Switchgear (160A to 6300A)
- Power Factor Improvement Plants (PFI)
- Single Phase Transformers (5KVA to 100KVA)
- SPC Poles
- Single Phase Energy Meters

The company's commitment to quality is further demonstrated by its type test certification for 10/14MVA (ONAN/ONAF) 33/11KV Power Transformers from independent laboratories, ISO 9001 certified quality management system, and emphasis on staff expertise. Pasha Transformers Ltd. also provides technical support, free samples, and highly customized production capabilities.

Pasha Transformers Ltd. operates with a team of highly qualified and experienced technical personnel, including engineers, technicians, laborers, supervisors, and quality managers. The company's quality control department ensures thorough inspection throughout the production process, supported by a Total Quality Management (TQM) program and a strong R&D department. Notably, the R&D team has developed super low loss CRGO transformers designed to withstand load variations and meet stringent customer requirements.

Pasha Transformers Ltd.'s vision is to become a leading manufacturing company through innovation, efficiency, and quality, while establishing long-term client relationships, focusing on innovative solutions, and setting global benchmarks for product quality and customer satisfaction. The company is also committed to sustainable growth, profitability for stakeholders and employees, and contributing to the growth of the power sector and the nation's progress.

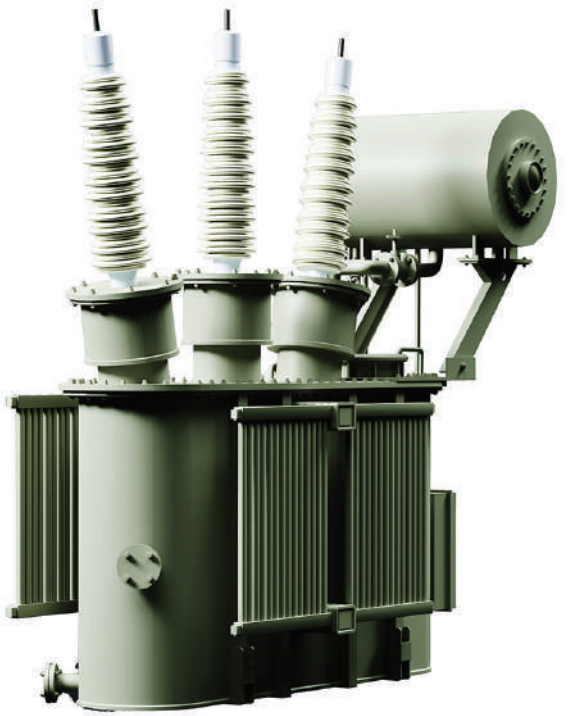
The company's mission involves creating high-quality products and services through TQM, building strong customer relationships, fostering a professional and motivated team, expanding its global presence, creating an efficient work environment, and achieving overall cost leadership.

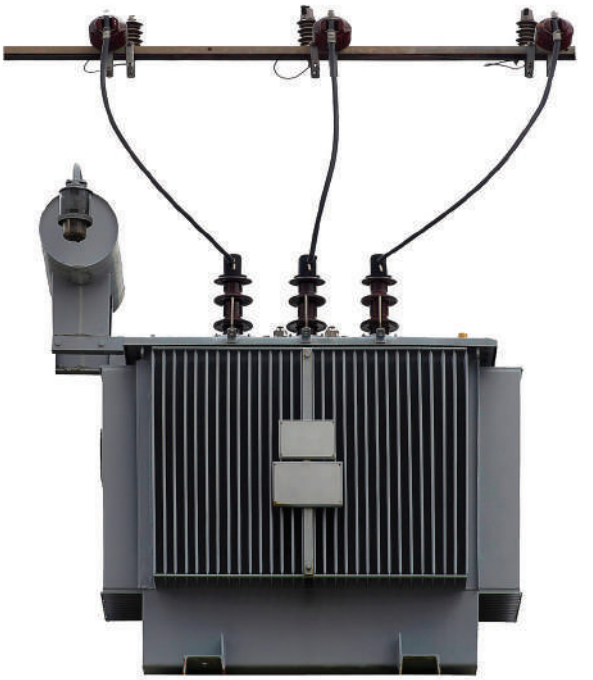
Pasha Transformers Ltd. utilizes a comprehensive range of testing equipment, including insulation resistance testers, winding resistance testers, ratio testers, and various loss testers, to ensure product quality and performance.

Company Addresses

Corporate Office Address: Pasha Transformers Ltd., South Avenue Tower (2nd Floor), House # 50, Road # 3, Gulshan Avenue, Gulshan-1, Dhaka-1212, Bangladesh.

Factory Address: Pasha Transformers Ltd., Plot 1665-1672 Nayapara, Shailat Bazar Road, Mawna, Sreepur, Gazipur, Bangladesh.





SPECIAL REPORT

TURNING TRASH INTO POWER

Southeast Asia's Waste-to-Energy Revolution

Image Credit: Internet

INTRODUCTION

Southeast Asia is experiencing rapid urbanization, leading to an unprecedented increase in waste generation. The region's urban population is expected to reach nearly 400 million by 2030, straining existing waste management systems. Landfills remain the dominant method of waste disposal, but with limited land availability and growing environmental concerns, they are no longer a sustainable solution. Simultaneously, the demand for electricity is set to double by 2040, creating an urgent need for alternative energy sources.

Waste-to-energy (WtE) technology, which converts waste into electricity, is emerging as a viable solution to tackle both waste management and energy security challenges. Many Southeast Asian nations are investing in WtE projects to reduce landfill dependence, generate renewable energy, and promote environmental sustainability.

This feature explores how countries across the region are embracing WtE technology, the progress they have made, and the challenges they face.

COPENHAGEN, DENMARK

The Bicycle Utopia

Indonesia, Southeast Asia's largest economy, is also one of its biggest waste producers. The country generates approximately 175,000 tonnes of waste daily, with much of it ending up in landfills. Recognizing the need for an alternative, Indonesia has initiated multiple WtE projects.

A significant milestone was the Bantargebang WtE facility in Jakarta, launched in 2017 and operational by 2019. The plant processes 100 tonnes of waste daily, generating 700 kWh of electricity. Another major development is the Sunter WtE

plant in Jakarta, which, once completed, will process 2,200 tonnes per day (tpd). The government is also working on 12 additional WtE plants in major cities like Surabaya and Bekasi, expected to generate 234 MW of electricity using 16,000 tpd of waste.

MALAYSIA:
Entering the WtE Market

Malaysia's waste management system has long relied on landfills, but WtE is gradually gaining attention. The country's first WtE facility, located in Tanah Merah, Negeri Sembilan, is expected to process 1,000 tpd and generate 20–25 MW of power, enough to supply 25,000 households.

Another significant project is the Jeram WtE plant in Selangor, which will be one of the largest incinerators in the country once completed in 2022. Additional WtE plants are planned in Johor, Kedah, and Melaka, signaling Malaysia's growing commitment to sustainable waste management.

MALAYSIA:
Entering the WtE Market

Another significant project is the Jeram WtE plant in Selangor, which will be one of the largest incinerators in the country once completed in 2022. Additional WtE plants are planned in Johor, Kedah, and Melaka, signaling Malaysia's growing commitment to sustainable waste management.

SINGAPORE:
A Pioneer in WtE Innovation

Singapore has been at the forefront of WtE development since 1979 when it opened the Ulu Pandan incineration plant. Today, the country operates four major WtE facilities—Tuas, Senoko, Tuas South, and Keppel Seghers Tuas Plant (KSTP)—collectively generating 259 MW of electricity daily.

Tuas South is the largest, handling 3,000 tpd of solid waste. Singapore is also constructing two new WtE facilities: the TuasOne plant (3,600 tpd), set for completion in 2021, and the Integrated Waste Management Facility, with a massive 5,800 tpd capacity. The government continues to invest in WtE as a key pillar of its sustainable waste strategy.

THAILAND:
Expanding WtE Capacity

Thailand currently disposes of nearly 50% of its waste in landfills, but WtE is gaining traction. The government has introduced incentives, including subsidies and tax breaks, to encourage the adoption of incineration, gasification, and fermentation technologies.

A key move was increasing the power purchase quota for WtE projects under the Power Development Plan 2018–2037 from 500 MW to 900 MW. As of now, Thailand has 33 operational WtE plants with a combined power generation capacity of 283 MW, and more are expected to come online.

MYANMAR:
A New Entrant in the WtE Sector

Myanmar took its first step into WtE in 2017 with the opening of a 760 kW plant in Yangon, capable of treating 60 tpd of waste. A second WtE project is under development at the Htein Pin landfill, expected to process 1,000 tonnes of waste daily. This plant will produce 30 tonnes of compressed natural gas, 40 tonnes of liquefied carbon dioxide, 180 tonnes of derivative waste fuel, and 250 tonnes of compost, demonstrating the potential of WtE beyond electricity generation.

THE PHILIPPINES:
Scaling Up WtE Efforts

The Philippines established its first WtE plant in 2018 in Lapu-Lapu City, Cebu. The facility generates 3 MW of power, with 1 MW used for its own operations. More projects are in the pipeline, including a facility in Puerto Princesa City, Palawan, which will use 110 tpd of waste to generate 5.5 MW of electricity.

Another major plant worth PhP 2.5 billion is being developed in Davao City's Tugbok district. The facility will process 600 tpd and is expected to be operational by 2021, reflecting the country's growing commitment to WtE solutions.

VIETNAM:
Unlocking WtE Potential

Vietnam currently sends more than 70% of its waste to landfills, but WtE is increasingly seen as a solution. Experts estimate that with sufficient WtE infrastructure, the country could generate around 6 billion kWh of electricity from waste by 2050.

Existing WtE plants include the Nam Son facility in Hanoi, which generates 1.93 MW, and the Go Cat waste-handling project in Ho Chi Minh City, producing 2.4 MW. Moving forward, Vietnam plans to expand its WtE capacity significantly in Hanoi, Ho Chi Minh City, and the Mekong Delta region.

CHALLENGES IN
WtE Implementation

Despite the promise of WtE technology, several challenges hinder its full-scale adoption in Southeast Asia:

- Lack of Coordination: Many countries face difficulties coordinating waste collection, sorting, and transportation, which affects plant efficiency.
- Improper Waste Sorting: A significant issue in the region is the lack of proper waste segregation, making it harder for WtE plants to function effectively.
- Environmental Concerns: Incineration releases pollutants, including dioxins and ash, raising concerns about air quality and public health. Protests from local communities often delay or halt projects.
- Financial Barriers: WtE projects require substantial investment, and funding remains a challenge for many governments. Private sector participation is crucial for scaling up these initiatives.

DHAKA'S WASTE-TO-ENERGY INITIATIVE:
A Sustainable Solution for Urban Waste Management

As one of the most densely populated and rapidly growing cities in the world, Dhaka faces significant waste management challenges. With limited landfill space and increasing environmental pollution from open-air garbage disposal, the city is turning to waste-to-energy (WtE) as a sustainable solution. The Dhaka Waste-to-Energy Power Plant Project, spearheaded by the WtE Power Plant North Dhaka Private Limited, is a landmark initiative aimed at addressing these critical issues. Approved in December 2023, the $481.3 million project is supported by a $100 million financing from the New Development Bank (NDB).

The project involves the construction of a 3,000-ton-per-day waste incineration facility, featuring four incineration lines of 750 tons per day each and two 35 MW turbo-generator systems. Additionally, a 6-km transmission line will connect the facility to the state-owned power grid, ensuring efficient electricity distribution. This initiative is not just about managing waste; it aligns with Bangladesh's long-term power sector master plan, which aims to generate 10% of the country's electricity from renewable sources by 2041.

By converting municipal solid waste into electricity, the Dhaka WtE project will significantly reduce air, water, and land pollution, while also contributing to energy security and sustainability. With China Machine Engineering Corporation leading the project's construction, the facility is expected to become a model for other cities in Bangladesh, paving the way for a cleaner and greener urban future.

THE ROAD AHEAD
Sustainable WtE Strategies

To maximize the benefits of WtE technology while addressing its challenges, Southeast Asian countries must take the following steps:

- Improve Waste Sorting Infrastructure: Governments need to enforce strict waste segregation policies and invest in modern sorting facilities to enhance plant efficiency.
- Adopt Advanced WtE Technologies: Moving beyond traditional incineration to cleaner methods such as gasification and anaerobic digestion will reduce environmental impact.
- Enhance Public-Private Partnerships (PPPs): Encouraging collaboration between governments and private companies can accelerate WtE project development.
- Strengthen Environmental Regulations: Establishing stringent emission standards and monitoring systems will help mitigate pollution concerns.

CONCLUSION

Waste-to-energy technology is becoming a crucial part of Southeast Asia's urban infrastructure, helping nations tackle their growing waste crisis while generating much-needed electricity. Countries like Singapore and Thailand have made significant progress, while others, including Myanmar and Vietnam, are just beginning their WtE journey.
Despite the challenges, the potential of WtE in Southeast Asia remains immense. With better waste management practices, improved coordination, and sustainable technology adoption, the region can transform its trash into a valuable energy resource, paving the way for a cleaner and more energy-secure future.

Image Credit: Internet

MARINA TABASSUM: ARCHITECTURE

as an Act of Grace and Resistance

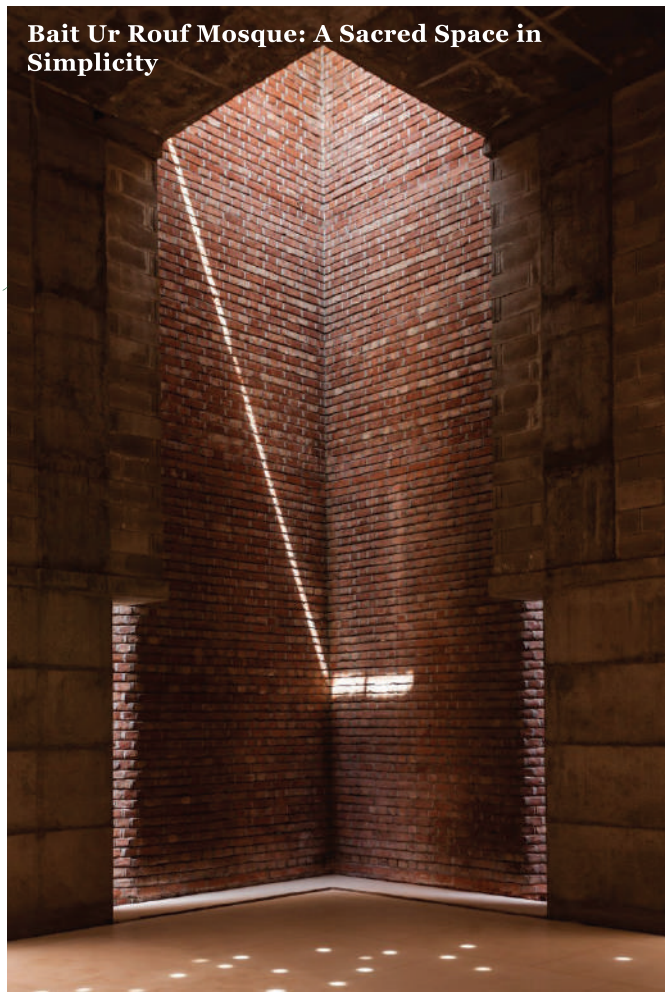
In the fast-paced era of global architecture, few names summon the same quiet confidence as Marina Tabassum. Architect, yes, but more notably, she is a philosopher of space—a visionary who understands that the spaces we inhabit are not just structures, but carriers of identity, memory, and resilience. From Bangladesh's flood-ridden villages to the Harvard corridors, Tabassum has paved the way that remaps the potential of architecture if it is rooted in history, empathy, and the environment.

This vision brought her onto TIME magazine's 2024 100 Most Influential People list just recently. She was named an "Innovator"—a testament to her deeply human research on climate-resilient architecture and her tireless advocating for sustainability and cultural responsiveness in design.

A Life Built in Layers

Marina Tabassum was born in Dhaka, Bangladesh. She came of age in a country perpetually balancing between goodness and danger. She graduated from the Bangladesh University of Engineering and Technology (BUET) in 1995 with an architecture degree. Shortly thereafter, she co-founded URBANA, an office that began to investigate how architecture could be employed by communities rather than capital alone.

In 2005, she set out on her own to form Marina Tabassum Architects (MTA)—a tiny, research-driven practice based on her belief that great architecture should grow out of the earth and the lives it touches. She avoids spectacle, avoids the height competition and glass walls. Instead, she turns to earth, to brick, to air and light.



Bait Ur Rouf Mosque: A Sacred Space in Simplicity

Nowhere is Tabassum's philosophy more concisely realized than at the 2012 Bait Ur Rouf Mosque, in a modest residential neighborhood on the outskirts of Dhaka. Commissioned as a gift to her grandmother, this mosque defies the conventional vocabulary of Islamic architecture—no minarets, no domes, no gold filigree calligraphy, no marble.

Instead, it is a simple, brick-clad cube left to the mercy of the elements. The dappled light that filters through geometric perforations, the cross-ventilation that naturally ventilates the prayer hall, and the earthy color scheme all make it a sanctuary of simplicity. It was awarded the Aga Khan Award for Architecture in 2016, one of the most prestigious awards in the profession.

What overwhelmed the award committee was the manner in which the mosque, built with meager resources, lifted the spirit. It proved that profound beauty could be the result of restraint, that architecture could be religious without spectacle.

Building for a Drowning World

Marina Tabassum's work is not confined to the symbolic or to the sacred—she is highly practical, highly political. In a country like Bangladesh, where climate change is not an abstraction but a lived everyday reality, she has taken on the urgent task of designing climate refugee housing.

.

Her Khudi Bari initiative—light, pre-fabricated bamboo and corrugated metal houses—is a rebuff to the increasing displacement caused by floods and erosion in the south delta. Her homes are affordable, easy to build, and mobile—built for dignity, not handouts.

That is what caught TIME's attention. In a world hastening to respond to environmental collapse, Tabassum is already building futures—strong, rooted, and responsive.

"Her practice responds to one of the greatest challenges of our time—designing for climate change-displaced people," TIME said in their 2024 profile of her.

A Global Voice, Rooted in Dhaka

While her work has taken her from Harvard to Zurich to teach, Marina Tabassum remains rooted in Dhaka. She works out of a tiny studio not by accident, but by design. Amidst a global culture obsessed with expansion, she wants to be close to the process. All her work begins in listening: to the ground, to people, to history.

She has also served as Academic Director at the Bengal Institute for Architecture, Landscapes and Settlements and visiting professor at BRAC University, encouraging the next generation of South Asian architects to find their strength in local knowledge and indigenous forms.

In 2021, she became the first South Asian woman to receive the Soane Medal from the Sir John Soane's Museum in London. The roll call of past winners is a Who's Who of architectural giants like Kenneth Frampton and Denise Scott Brown. The honor cemented her place in the global pantheon—but hers is a distinctive voice.

Breaking the Mold: A Woman at the Helm

Architecture has always been a man's job, at least in South Asia. Marina Tabassum is trying to change that in deed as much as in example. Her own practice is manned and maintained by women; her teaching emphasizes empowerment over technique. She teaches new female architects to trust their gut, their roots, their story.

In her own gentle insurrection, she has declined to follow the usual corporate formula. No glass skyscrapers, no heartless property investments. Instead, she selects projects that have cultural, environmental, or humanitarian significance—spaces that count, that serve, that last.

A Living Legacy of Grace

Marina Tabassum's architecture isn't just buildings—it is acts of hope, of defiance, of beauty. Whether she is designing a mosque full of filtered light or a house that might be swept away by floodwaters, her buildings ask one singular question: What does it mean to care?

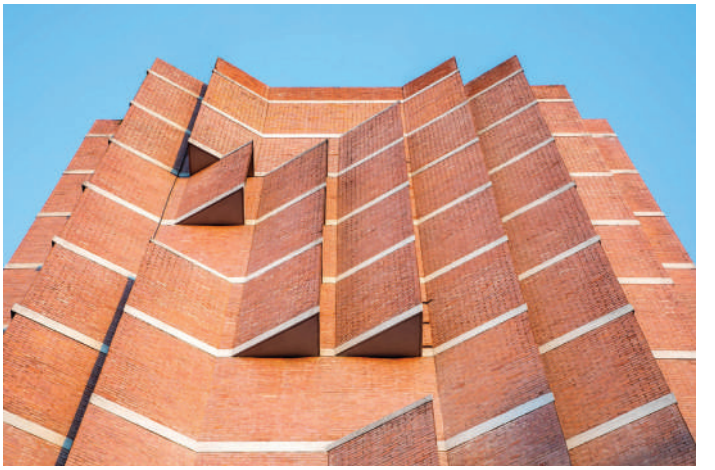
Her listing on TIME's 100 Most Influential People is not a recognition of her talent alone—it's a recognition of her values. In an era of ephemeral fashion and loud assertions, she builds with humility, with forbearance, with purpose.

"Architecture," she says, "should be an actof service—something that uplifts, shelters, and inspires."

In Marina Tabassum, the world has gained not only an architect but a compass.

Sources

TIME 100 Most Influential People 2024 – Marina Tabassum
Aga Khan Award for Architecture – Bait Ur Rouf Mosque
Soane Museum – Soane Medal 2021: Marina Tabassum
The Financial Express – Tabassum's TIME 100 Recognition



LIGHT READ

Image Credit: Internet

Concrete Laughs

ANECDOTES AND FUN FACTS

from the Infrastructure Industry

The infrastructure industry might seem like a world of serious business—bridges, roads, tunnels, and towering skyscrapers. But behind the steel beams and concrete mixers, there are plenty of funny stories, strange mishaps, and unexpected innovations that make this industry more amusing than you'd expect.

The Bridge That Went Nowhere

Infrastructure projects are known for their complexity, but some get derailed in the most baffling ways. One of the most famous cases is the "Bridge to Nowhere" in Alaska. The U.S. government allocated $398 million to build a bridge connecting Ketchikan to a sparsely populated island. However, after public backlash over wasteful spending, the project was scrapped—except for one tiny problem. They had already built the access road! Today, that road sits in the middle of nowhere, leading to absolutely nothing, a concrete reminder of how infrastructure planning can go hilariously wrong.

The Airport with No Planes

If you think over-budget infrastructure projects are a problem, look no further than the Berlin Brandenburg Airport. Originally scheduled to open in 2011, the airport suffered from endless design errors, faulty fire systems, and misplaced escalators. By the time it finally opened in 2020—nine years late and billions over budget—some of its technology was already obsolete. It became a global punchline, with locals joking that its best use was as a film set for futuristic sci-fi movies.

The Accidental Leaning Tower of San Francisco

Most people know the Leaning Tower of Pisa, but did you know San Francisco has its own version? The Millennium Tower, a luxury residential skyscraper, started sinking right after it was built in 2009. By 2022, the 58-story building had tilted over 22 inches, leading to million-dollar lawsuits, frantic engineering fixes, and some very nervous homeowners. Engineers scrambled to stabilize it, but the situation was so bad that realtors started marketing its luxury condos as having "built-in gravity training."

The Great Cement Truck Disaster

Construction sites can be unpredictable, but no one expected what happened in Cleveland, Ohio, in 2019. A fully loaded cement truck crashed into a highway overpass, dumping tons of wet concrete onto the road below. The result? A perfectly paved section of highway—just in the wrong place! Traffic was halted for hours while workers jackhammered their accidental masterpiece.

The Mystery of the Infinite Road Construction

Have you ever noticed that some roads are always under construction? There's a running joke in Chicago that Interstate 90 is actually a long-term science experiment testing how long construction workers can keep digging before they find dinosaur fossils. Similarly, in Boston, residents joke that the "Big Dig" (a massive highway tunnel project) took so long—from 1991 to 2007—that kids born at the start of the project were already driving by the time it was finished.

Image Credit: Internet

Final Thoughts: A Mix of Genius and Comedy

The infrastructure industry is responsible for shaping the modern world, but as these stories prove, it's not always smooth sailing (or paving). Whether it's a skyscraper that leans, a bridge to nowhere, or roads that seem permanently under repair, these stories remind us that even the most serious industries have their share of laughs, quirks, and unexpected comedy.

THE WORLD'S TOP 10 SMART CITIES

Where Tech Meets Urban Magic

Image Credit: Internet

VIENNA, AUSTRIA

The Eco-Friendly Innovator

Vienna has been rocking smart urban planning for years, with green buildings, digitalized public transport, and tons of renewable energy initiatives. The city also has a strong focus on citizen engagement, meaning locals actually get a say in how their city develops. Plus, with its blend of historic charm and modern tech, Vienna proves that old-world beauty and cutting-edge innovation can go hand in hand.

OSLO, NORWAY

The Green Giant

Oslo is a city that takes sustainability seriously. It's on a mission to become carbon-neutral by 2030, with electric buses, wireless charging roads, and a ban on cars in its city center. If you're a fan of nature and innovation, Oslo is basically a dream city—where the air is fresh, the public transport is silent (because, you know, electric vehicles), and even the trash collection is high-tech.

COPENHAGEN, DENMARK

The Bicycle Utopia

Imagine a city where bikes outnumber cars—that's Copenhagen! This Danish gem is one of the world's most bike-friendly places, with smart traffic lights that adjust to cyclists' speeds. The city also leads in renewable energy, smart lighting, and digital services, making everyday life easier, cleaner, and greener.

LONDON, UK

The Digital Powerhouse

London is a city that blends history with high-tech innovation. With AI-powered traffic systems, smart surveillance, and 5G connectivity, the city is making life smoother for its nearly 9 million residents. Plus, London's extensive use of open data platforms helps businesses and citizens make smarter choices about everything from transport to energy usage.

Image Credit: Internet

NEW YORK CITY, USA

The City That Never Powers Down

New York is the ultimate tech playground, with smart grids, AI-driven waste management, and one of the most connected public transport systems in the world. The city is also investing big in climate resilience, using tech to combat rising sea levels and extreme weather. And, let's be honest—nothing says "smart city" like ordering a coffee from a robot barista in a fully automated store.

PARIS, FRANCE

The Future of Urban Mobility

Paris is not just about croissants and romance—it's also a leader in smart transportation and sustainability. The city has self-driving electric buses, AI-powered parking systems, and ambitious plans to go carbon-neutral by 2050. It's also developing smart sensors to monitor pollution, noise, and waste, making sure the City of Light stays, well... lit in the best possible way.

SINGAPORE

The Smartest Island in the World

Singapore is basically what happens when you turn an entire country into a smart city. With facial recognition street cameras, driverless taxis, and an AI-powered urban planning system, Singapore is decades ahead of most places. The city even has a nationwide digital identity system, meaning you can access everything from banking to healthcare with just a single login.

Image Credit: Internet

DJDC
东劲集团
DONGJIN GROUP

SOLAR ENERGY

Our high-quality solar systems are designed to provide you with clean, reliable energy while reducing your carbon footprint

Increase the value of your home or business

Low maintenance and long-lasting

Reduce your carbon footprint

+880 170 121 2866 www.djdcbd.com Natore Tower S#3 R#2 Uttara, Dhaka 1230

AMSTERDAM, NETHERLANDS

The Digital Dreamland

Amsterdam isn't just about pretty canals and tulips—it's also a tech paradise. The city uses open data, AI, and IoT to manage traffic, waste collection, and energy use efficiently. Plus, Amsterdam is experimenting with floating homes and AI-driven flood control systems to prepare for the future. Bonus points for having one of the best smart bike-sharing programs in the world.

Image Credit: Internet

SHANGHAI, CHINA

The High-Tech Metropolis

Shanghai is what happens when you give 22 million people access to cutting-edge urban tech. The city has facial recognition payment systems, AI-powered healthcare, and one of the most advanced metro networks in the world. It's also home to China's ambitious "15-minute city" plan, where residents can access everything they need within a short walk or bike ride.

SEOUL, SOUTH KOREA

The Smartest City on the Planet

At #1, we have Seoul, a city where 5G is everywhere, AI manages public safety, and traffic lights talk to your car. The South Korean capital has invested billions into smart homes, automated services, and real-time data tracking for everything from pollution control to disaster response. If you want to see the future of cities, just take a walk through Seoul—it's already here.

Image Credit: Internet

Final Thoughts: The Future is Now

Smart cities are no longer just a concept—they're here, and they're changing the way we live, work, and interact with our environment. From AI-driven urban planning to green energy solutions, these cities are proving that technology and sustainability can go hand in hand.

So, which smart city would you want to live in?

SAVOR EXPO

THE LARGEST **INTERNATIONAL EXHIBITION** on **SAFE HVACR** and **COLD CHAIN**

10th SAFE & HVACR COLD CHAIN

Date: 15 16 17 May, 2025

ICCB, Kuril, Dhaka, Bangladesh

Organized by

SAVOR INTERNATIONAL LIMITED

Sponsors

WALTON Air Conditioner · ELITE · GREE · KONKA · Carrier · bonton · Haier · SUPREME AIR CONDITIONING · Esquire Electronics Ltd

Knowledge Partners

Power Cell · ASHRAE Bangladesh Chapter · BRAMA · ISIB TURKISH HVAC-R · BAEIA

Media Partner

GreenScape

Event Partner

POSTMASTER

SAVOR EXPO

Follow Us On : | www.savorbd.com

SAFECON

A SHOWCASE OF SAFE & SUSTAINABLE INFRASTRUCTURE

The Largest INFRASTRUCTURE Exhibition in Bangladesh

10th BUILDEX 2025 | BPLX

10th RENEX-2025 | 10th WaterEx 2025 | IEMX2025 Construction & Power Infrastructure Equipment & Machinery Expo

Date: 29 30 31 May, 2025

ICCB, Kuril, Dhaka, Bangladesh

Organized By

SAVOR INTERNATIONAL LIMITED

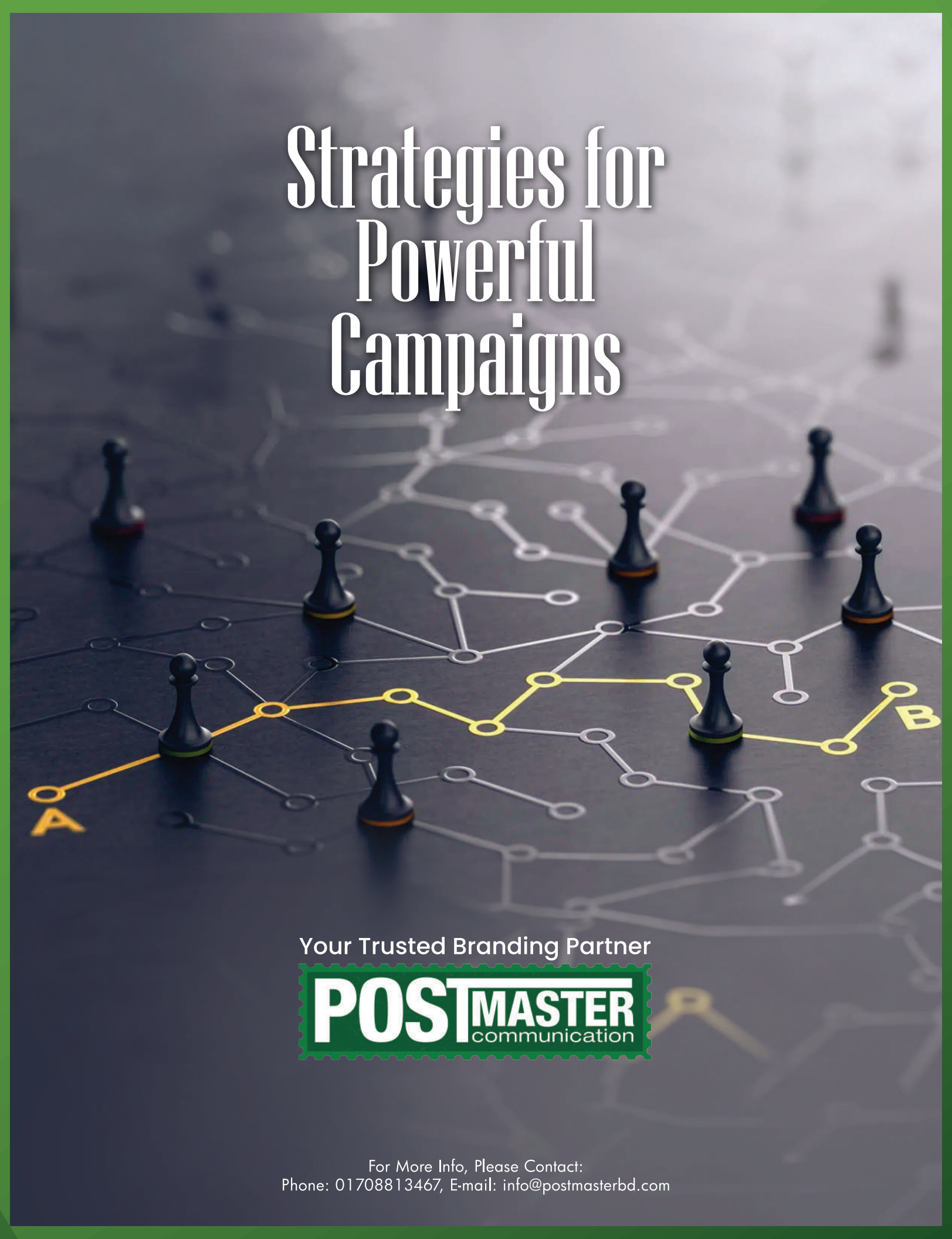
Knowledge Partners

Power Cell | BUET | BMCCI | IDCOL | WonderWorx | AIN | ABMEAB

Event Partner

POSTMASTER

Strategies for Powerful Campaigns



Your Trusted Branding Partner

POSTMASTER communication

For More Info, Please Contact:
Phone: 01708813467, E-mail: info@postmasterbd.com