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Sindh Govt Orders Completion of University Road Construction Within 90 Days as BRT Red Line Project Accelerated

By Manzoor Shaikh

The Sindh government has ordered the completion of ongoing construction work on Karachi's busy University Road within 90 days while approving a series of major decisions aimed at accelerating progress on the Bus Rapid Transit (BRT) Red Line project, one of the city's most significant urban transport initiatives.

The decisions were taken during a meeting of the Sindh Cabinet chaired by Chief Minister Murad Ali Shah, where an important summary presented by the Transport and Mass Transit Department regarding the BRT Red



Line Lot-2 project received formal approval.

During the meeting, the cabinet expressed concern over delays and unsatisfactory performance in the execution of the project and decided to terminate the earlier joint venture agreement responsible for the construction work. In order to speed up completion of the project, the cabinet approved handing over the remaining work to Frontier Works Organization on an emergency basis.

Officials briefing the cabinet informed participants that BRT Red Line Lot-2 covers a major 12.85-kilometer stretch from Numaish Chowrangi to Mosamiyat, passing through one of Karachi's busiest traffic corridors.

Chief Minister Murad Ali Shah directed authorities to accelerate all construction activ-

Contd on page 2

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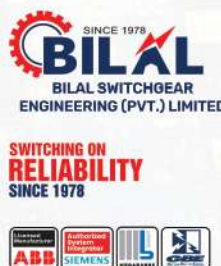


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PPL Signs Agreements for Eight Offshore Exploration Blocks Under 2025 Bid Round

Pakistan Petroleum Limited has signed Production Sharing Agreements (PSAs) and exploration licences for eight offshore exploration blocks awarded under the Pakistan Offshore Bid Round 2025, marking a major step toward reviving offshore hydrocarbon exploration in the country after nearly two decades.

According to information shared by the company with the Pakistan Stock Exchange (PSX), the agreements were signed on May 20, 2026, in the presence of the Federal Minister for Petroleum, following the provisional award of the offshore blocks announced in November 2025.

PPL stated that the newly awarded portfolio includes two operator blocks — Ghoro Creek and Kochi Creek — while the company is also participating in six partner-operated offshore blocks, including Bin Qasim South, Ketu Bandar, Behr, Zarrar, Offshore Deep D and Sapat Bandar.

The company said the offshore blocks are located in the Indus and Makran offshore basins adjacent to the coastal areas of Sindh and Balochistan, regions considered highly prospective for oil and gas

Pakistan's energy sector at a time when the country is seeking to reduce dependence on imported energy and strengthen indigenous resource development. In its filing, PPL

Energy sector experts believe offshore exploration offers substantial long-term potential for Pakistan due to geological similarities between parts of the Indus Basin and other hydrocarbon-rich offshore regions of the world. However, they noted that offshore drilling remains technically complex and requires large-scale investment and advanced exploration technologies.

Pakistan's offshore exploration sector has witnessed limited activity in recent years, with no major commercial offshore discoveries despite earlier drilling campaigns. The government has been attempting to attract fresh investment in the sector through new bidding rounds, policy incentives and regulatory support aimed at encouraging exploration companies to undertake offshore operations.

As one of Pakistan's leading exploration and production companies, PPL is expected to work with local and international partners in evaluating the offshore acreage and carrying out exploration programmes under the newly executed agreements. - ER



exploration.

The signing of the agreements formally launches the next phase of offshore exploration activities under the Pakistan Offshore Bid Round 2025 and is being viewed as an important development for

described the development as a significant move toward unlocking Pakistan's offshore hydrocarbon potential and reviving exploration activity in offshore basins that have remained largely dormant for almost twenty years.

Tariq Glass to Establish Value-Added Manufacturing Facility at QABP-SEZ

Tariq Glass Industries Limited has announced that it has received formal approval from the Authority of Quaid-e-Azam Business Park - Special Economic Zone for entry as a Zone Enterprise at the industrial zone.

According to the company, approximately 10.41 acres of land have been allocated for the establishment of a new manufacturing facility dedicated to value-added glass and

allied products.

The proposed project is part of the company's broader

capabilities and strengthening its footprint in the value-added glass sector.

growth, improve production efficiency and contribute to the development of Pakistan's manufacturing sector through advanced glass processing and allied industrial activities.

Following the approval, Tariq Glass Industries Limited will now proceed with the completion of the required regulatory, administrative and operational formalities related to the construction, development and commissioning of the proposed plant.

The company further said that the disclosure has been made in compliance with applicable legal and regulatory requirements. - ERMD



strategic expansion and diversification plans aimed at enhancing its manufacturing

The company stated that the upcoming facility is expected to support industrial

Sindh Govt Orders Completion of University Road Construction

Contd from page 1

ities on University Road and ensure completion within the next three months. He also set deadlines for the completion of mixed traffic lanes to help restore normal traffic flow and reduce inconvenience to commuters.

The chief minister instructed departments concerned to expedite work on underpasses, elevated structures and drainage systems so that Karachi's key artery could be restored as soon as possible. He observed that the completion of the BRT Red Line project would significantly reduce traffic congestion and improve public transportation facilities in the metropolis.

The BRT Red Line is considered one of Karachi's flagship mass transit projects aimed at modernizing urban transportation and reducing dependence on private vehicles. The project is designed as a dedicated bus rapid transit corridor extending from Model Colony to Tower, connecting major educational institutions, commercial centers and residential areas through an environmentally sustainable transport system.

Spanning approximately 26 kilometers, the Red Line project is expected to serve hundreds of thousands of passengers daily. The system will feature dedicated bus lanes, modern stations, pedestrian bridges and advanced transport management systems. It is also Pakistan's first BRT project planned to operate on biogas-powered hybrid buses, making it an environmentally friendly initiative intended to reduce carbon emissions and urban pollution.

The corridor passes through densely populated and high-traffic zones including University Road, one of Karachi's most important educational and commercial routes. However,

er, prolonged construction work over the past several years has caused severe traffic disruptions, damaged roads, drainage issues and public frustration among commuters, traders and residents.

Urban planning experts believe the project, once completed, could transform Karachi's transportation landscape by offering a faster, safer and more affordable commuting option while easing pressure on the city's over-stretched road network.

Apart from transport-related decisions, the Sindh Cabinet also approved four important summaries related to higher education and technical training. The meeting further approved the Sindh Technical Education and Vocational Training Authority (STEVTa) Amendment Bill 2026.

The provincial government also decided to strengthen monitoring and governance in the technical education sector, emphasizing the importance of modern vocational training and skill development to create employment opportunities for youth.

Officials stated that improving technical education and transport infrastructure simultaneously is essential for Karachi's long-term economic growth and urban development. The government believes that investments in public transport, infrastructure modernization and professional training will help address mobility challenges while also improving employment prospects for young people across Sindh.

The latest decisions reflect the Sindh government's attempt to fast-track delayed infrastructure projects amid growing public concern over traffic congestion and urban management issues in Karachi, Pakistan's largest commercial city. ■

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Pakistan, Alibaba Sign Strategic Agreements to Promote Digital Economy and SME Growth

Prime Minister Shehbaz Sharif visited the headquarters of Alibaba Group in Hangzhou, where he was received by Alibaba Chairman Joe Tsai.

Senior Pakistani ministers, government officials and top executives of Alibaba Group attended the meeting.

During discussions, Joe Tsai appreciated Pakistan's constructive role in promoting regional and global peace and acknowledged the government's commitment to digital transformation, technological innovation and creating a conducive environment for international investment.

Prime Minister Shehbaz Sharif highlighted Pakistan's potential in the fields of digital economy, e-commerce, artificial intelligence, fintech, cloud computing and innovation-driven entrepreneurship. He reiterated the government's resolve to empower Pakistani youth through technology, skills development and global partnerships.

On the occasion, the Prime Minister and Alibaba Chairman witnessed the signing and exchange of several strategic agreements and MoUs between Alibaba Group and Pakistani public and private sector organisations aimed at accelerating Pakistan's digital transformation and technological advancement.

Under a special initiative of the Prime Minister, Alibaba Group also agreed to sign a comprehensive strategic framework agreement with

the Government of Pakistan. The framework focuses on promoting artificial intelligence, cloud solutions, digital trade, SME empowerment, fintech and healthcare innovation.

Among the major agreements signed, Ignite and Alibaba Cloud agreed to collaborate on developing localized AI models for Urdu and regional languages, launching nationwide skills development programmes for 500,000 individuals,



and co-hosting AI hackathons and innovation initiatives.

In the healthcare sector, DAMO Academy and Sky47 agreed to deploy AI-powered disease screening systems in major Pakistani cities, while DAMO Academy and Ignite will jointly develop embodied intelligence capacity-building programmes at Pakistani universities.

To support SME growth and e-commerce expansion, Alibaba and SMEDA agreed to

onboard at least 2,000 Pakistani SMEs onto a dedicated "Pakistan Pavilion" that will provide AI-powered business tools and improved access to international markets.

Meanwhile, Koko Tech announced plans to introduce a Buy Now, Pay Later (BNPL) solution in Pakistan with an initial investment of \$3 million aimed at promoting financial inclusion and digital commerce.



Prime Minister Shehbaz Sharif termed the agreements a significant milestone in strengthening Pakistan-China economic and technological cooperation. He expressed confidence that the partnerships would open new avenues for investment, innovation, employment generation and digital transformation, while helping position Pakistan as an emerging regional hub for the digital economy.

Haroon Akhtar Khan witnessed the signing

of a Memorandum of Understanding (MoU) between Small and Medium Enterprises Development Authority (SMEDA) and Alibaba Group aimed at enhancing digital trade and expanding global market access for Pakistan's small and medium-sized enterprises (SMEs).

Speaking at the signing ceremony, Haroon Akhtar Khan said the government, in line with the vision of Shehbaz Sharif, was undertaking comprehensive measures for the digital transformation of the SME sector. He stated that connecting Pakistani businesses with international markets through e-commerce platforms remained one of the government's major priorities.

He said the collaboration with Alibaba Group would create new opportunities for youth, entrepreneurs and startups, while also contributing to the promotion of exports and digital commerce in Pakistan. He added that the SME sector was the backbone of the national economy and the government remained committed to encouraging investment, exports and industrial growth through business-friendly policies.

Haroon Akhtar Khan described the partnership between SMEDA and Alibaba Group as an important step towards strengthening Pakistan's digital economy and improving international business connectivity.

Secretary Industries and Production Saif Anjum and senior officials of the ministry were also present during the signing ceremony. - ER

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Pakistan Cables Partners with Legal Aid Society to Promote Legal Awareness and Women's Empowerment

Pakistan Cables Ltd. signed a Project Agreement with the Legal Aid Society (LAS) to conduct legal awareness and capacity-building sessions for the female staff of the Company.

This collaboration aims to foster an

inclusive workplace culture by educating employees on legal frameworks that protect and empower women. The initiative leverages the expertise of LAS to move beyond awareness and promote practical understanding of rights, justice, and dispute resolution.

community legal clinics for marginalized women, extending the impact of the partnership beyond the workplace and into the wider community. Pakistan Cables remains committed to promoting inclusion, wellbeing, and responsible corporate citizenship, while continuing to support initiatives that contribute meaningfully to people and communities in Pakistan.

platforms such as SLACC and NAZ Assist, LAS has reached over 87 million people, responded to 550,000+ legal queries, and supported over 3,000 cases nationwide. LAS is an ISO 9001:2015 certified organization and ensures ethical, transparent, and Shariah-compliant practices across its programs, positioning it as a trusted partner for inclusive and responsible corporate engagement.



inclusive workplace culture by educating employees on legal frameworks that protect and empower women. The initiative leverages the expertise of LAS to move beyond awareness and promote practical understanding of rights, justice, and dispute resolution.

Training fees will be channeled as a corporate donation to support LAS's

About Legal Aid Society

Founded in 2013, the Legal Aid Society (LAS) is a leading legal empowerment organization in Pakistan, working to expand access to justice and promote rights awareness for underserved communities, particularly across Sindh. LAS delivers an integrated model combining legal awareness,

free legal support, and institutional engagement through partnerships with government, private sector, and community stakeholders. Operating through community-based interventions and technology-enabled

porate engagement.

About Pakistan Cables Ltd.

Founded in 1953, Pakistan Cables is the premier and most reputable wires and cables manufacturer in Pakistan. Being the first and oldest wires and cables manufacturer listed on the PSX since 1955, it has the largest geographical footprint in Pakistan with presence in over 200 cities and towns. It is also a member company of the Amir S. Chinoy group. It is ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 certified and various cables type tested by KEMA, Netherlands. The Company's science-based emission reduction targets are validated and approved by SBTi. It is also a signatory of the UN Global Compact and net zero commitment. To learn more about Pakistan Cables Ltd. - PR

Atlas Battery Appoints Mansoor Jamil Khan as CEO

Atlas Battery Limited has appointed Mr. Mansoor Jamil Khan as the Chief Executive Officer (CEO) of the company for a period of

three years with effect from May 21, 2026.

Mr. Khan holds a Bachelor of Engineering degree in Mechanical Engineering from NED University of Engineering & Technology and an Executive MBA from Institute of Business Adminis-



three years with effect from May 21, 2026.

The appointment was approved by the Board of Directors during its meeting held in. Prior to his elevation as CEO, Mansoor Jamil Khan was serving as the Chief Operating Officer of the company. He is regarded as an experienced engineering and management professional with more than two decades of diversified experience within the Atlas Group.

During his professional career, he has held several key leadership positions in Quality Assurance, Production, Engineering and Projects, Research and Development.

tration.

He has also completed a number of executive development programmes, including the Advanced Management Program from Harvard Business School as well as Executive Management Programmes in Japan under the Association for Overseas Technical Cooperation and Sustainable Partnerships (AOTS).

The company said the appointment reflects its continued focus on strengthening leadership and advancing operational and strategic growth initiatives in Pakistan's battery and energy storage sector. - ER

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Pakistani Engineering Academics Honoured by Romanian University for Global Research Contributions

Three distinguished Pakistani engineering academicians from Sindh have been awarded the prestigious title of “Invited Professor, Associate at University of Oradea” by the University of

Samo, Dr. Bhawani Shankar Chowdhry and Dr. Aneel Kumar through separate diplomas issued by the Romanian university.

According to the university, the awards were granted in recognition of the professors’ decades-long services in higher education, advanced engineering research and promotion of

tions spanning more than three decades in various engineering disciplines including machine design, energy technology, thermodynamics, mechanics of machines, manufacturing technology, fluid mechanics, energy policy and management, lubrication and friction, and strength of materials.

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Meanwhile, Mehran University of Engineering and Technology Professor Emeritus and Pro-Vice Chancellor Dr. Bhawani Shankar Chowdhry was honoured for his extensive contributions in information and communication technology, embedded systems, artificial intelli-

and Romania. Academic circles regard him among the leading engineering researchers and educators in the country.

Similarly, MUET Pro-Vice Chancellor and Meritorious Professor Dr. Aneel Kumar received the distinction for his research and teaching contributions in civil engineering and geot-

The diplomas were awarded by the Rector and the President of the Senate of the University of Oradea on the recommendation of the Council for Doctoral Studies.

Academic, engineering and research communities across Pakistan, particularly in Sindh, have welcomed the international recognition and described it as a proud



Oradea in recognition of their outstanding academic, research and international collaboration contributions in diversified engineering fields.

The honour was conferred upon Dr. Saleem Raza

global academic cooperation between international universities.

Dr. Saleem Raza Samo, who currently serves as Vice Chancellor of Quaid-e-Awam University of Engineering, Science and Technology, was acknowledged for his academic and research contribu-

The Romanian university also recognised his role in strengthening international academic collaboration and promoting research partnerships among universities. Dr. Samo has previously served as Pro Vice Chancellor, Dean and Professor at the Faculty of Mechanical, Energy and

gence, Internet of Things (IoT), computer engineering and smart technologies.

The university noted that Dr. Chowdhry has played a significant role in advancing engineering education, research innovation and international academic partnerships between Pakistan

technical engineering fields. His work includes sub-soil investigations, shallow and deep foundation design, mechanical and chemical soil stabilization, contamination migration through porous media, and eco-friendly sustainable construction materials.

moment for Pakistan’s engineering education sector. Experts believe such honours strengthen Pakistan’s global academic standing and highlight the growing contribution of Pakistani universities and researchers in international scientific and engineering collaboration. - ER

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Committed to supporting the country's transition toward sustainable energy, Emerging Green partners with globally recognized brands such as AIKO and SUNGROW to deliver efficient, durable, and high-performance solar products



that meet modern energy demands. The company's

portfolio includes advanced solar panels and industrial



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DAIKIN Conducts HVACR Awareness Session for Final Year Mechanical Students at GCT Rawalpindi

Industry-academia collaboration aims to prepare future engineers for the cooling and refrigeration sector

By Muhammad Azeem Siddiqi

DAIKIN held a product awareness session on air conditioning systems for final year students of the Mechanical Department at Government College of Technology (GCT) Rawalpindi.

The program brought industry professionals face to face with future engineers

asked questions about installation practices, troubleshooting common faults, and the skills employers look for when hiring young engineers in the Heating, Ventilation, Air Conditioning, and Refrigeration sector.

The program was built to close the gap between textbook learning and real industry practice. Final year students often step into the workforce without enough exposure to the tools and systems used by leading manufacturers. Sessions of this



ing team and shared interest in running similar programs through the academic year.

The HVACR sector in Pakistan continues to grow as commercial construction, retail spaces, and residential demand for energy efficient cooling expand. Trained engineers remain in short supply, and partnerships between manufacturers and technical institutions help fill that gap.

Both sides agreed that ongoing collaboration between industry and technical colleges is the most direct way to build a skilled workforce ready for the demands of the modern cooling and refrigeration market.



preparing to enter the HVACR field.

The session walked students through the DAIKIN

kind offer that exposure in a focused setting.

Industry-oriented training plays a key role in shaping



range of air conditioning products, their working principles, energy efficiency standards, and the technology

the career path of engineering graduates. Direct interaction with manufacturers helps students understand



that powers modern cooling systems. The team also explained how inverter technology, refrigerants, and

market expectations, product standards, and the pace at which technology in the field is moving.



smart controls have changed the way cooling is delivered in homes, offices, and commercial spaces.

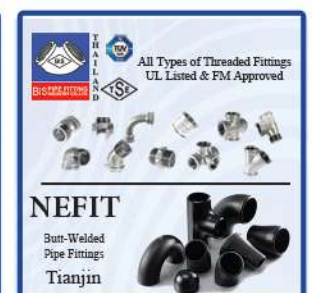
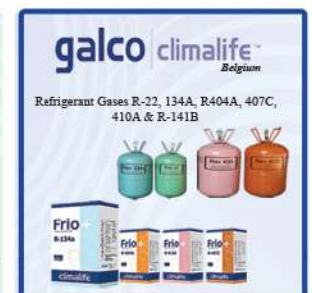
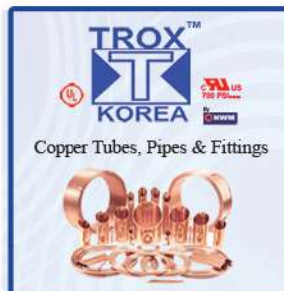
Students took an active part in the discussion. They

DAIKIN thanked the management of GCT Rawalpindi for the invitation and for opening the campus to such collaboration. The faculty welcomed the visit-

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Agriculture Review



Pakistan, China Discuss Agricultural Mechanization and Technology Cooperation

Rana Tanveer Hussain and Haroon Akhtar Khan visited major Chinese agricultural equipment manufacturers and technology firms in Changzhou, Jiangsu Province, as part of Pakistan's efforts to promote agricultural mechanization and modern farming practices through enhanced cooperation with China.

During the visit, the Pakistani delegation held detailed meetings with the management of Changfa Group, a leading Chinese manufacturer of tractors, harvesters, diesel engines and agricultural machinery. Discussions focused on expanding cooperation in farm mechanization, introduction of advanced agricultural equipment in Pakistan, and exploring opportunities for joint ventures and local assembly of machinery to support farmers and improve agricultural productivity.

The Chinese company briefed the delegation on its modern manufacturing systems and technological advancements in the agriculture sector. Both sides discussed various proposals aimed at ensuring the availability of affordable and efficient machinery for Pakistani farmers and encouraging the adoption of modern farming techniques across the country.

During the visit, a Memorandum of Understanding (MoU) was also signed between Kingsbridge Ventures and Changfa Group to explore future cooperation in agricultural machinery production, technical collaboration, and phased localisation initiatives in Pakistan.

Officials said the proposed partnership is expected to strengthen Pakistan's farm mechanisation efforts and con-

tribute toward improving agricultural productivity, food security and rural economic

growth-driven growth, rural industrial development and investment opportunities. Chinese

ence in modernising agriculture through mechanisation, innovation and industrial support systems.

Speaking on the occasion, Federal Minister Rana Tanveer Hussain said modern agricultural machinery was essential for increasing crop productivity, reducing production costs and ensuring sustainable food security in Pakistan. He said the government was committed to promoting international cooperation and attracting investment for the modernisation of Pakistan's agriculture sector.

SAPM Haroon Akhtar Khan said Pakistan was

focused on creating a conducive environment for investment, technology transfer and industrial cooperation in sectors linked with agriculture and manufacturing. He noted that partnerships with Chinese companies would help strengthen local industrial capacity, promote localization of agricultural machinery and support long-term economic development through innovation and advanced technology. - ER

The visit is being viewed as part of broader Pakistan-China cooperation aimed at modernising Pakistan's agriculture sector and improving efficiency through mechanisation, industrial collaboration and technology transfer. - ER



development.

The delegation also visited StarCharge Group, where discussions were held on smart energy technologies and their possible applications in agricultural infrastructure, energy-efficient systems and rural development projects in Pakistan.

In separate meetings with Mayor Zhou Wei and senior officials of the Changzhou Municipal Government, both sides exchanged views on agricultural innovation, technology

officials shared their experi-

Khan said Pakistan was

Govt Reviews Wheat Stocks, Rules Out Any Shortage in Country

Rana Tanveer Hussain chaired the 12th high-level meeting of the National Wheat Oversight Committee to review wheat procurement operations, carry-forward stocks,

demand and supply conditions, and the overall food security situation in the country.

The meeting was attended by senior officials of the Ministry of National Food

Contd on page 9



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Govt Reviews Wheat Stocks, Rules Out Any Shortage in Country

Contd from page 8

Security and Research, provincial agriculture secretaries, representatives of Pakistan Agricultural Storage and Services Corporation (PASSCO), and other relevant stakeholders.

During the session, participants conducted a detailed assessment of wheat stocks currently held by public sector agencies, ongoing procurement activities across provinces, and inter-provincial wheat movement aimed at ensuring uninterrupted supply throughout the country.

Officials briefed the meeting that sufficient wheat reserves are presently available at the national level and that ongoing procurement operations are expected to further strengthen strategic buffer stocks in the coming weeks. The committee also reviewed domestic consumption requirements, market trends, and measures being taken to maintain price stability.

Speaking during the meeting, Fed-

eral Minister Rana Tanveer Hussain stated that there was currently no wheat shortage in the country and that national reserves were adequate to meet consumption needs. He rejected reports suggesting any shortfall, terming them baseless and inconsistent with official data.

The minister emphasized that the

The committee was informed that coordinated efforts between federal and provincial authorities were helping maintain smooth wheat supply and effective market management. Officials noted that inter-provincial coordination was also being strengthened to avoid logistical disruptions and ensure timely transportation of wheat to deficit areas.

The meeting further reaffirmed the government's commitment to protecting both farmers and consumers through a balanced procurement and distribution policy. Participants stressed that maintaining adequate reserves and ensuring transparent procurement mechanisms remained essential for long-term food security and market confidence.

The National Wheat Oversight Committee also reviewed future planning related to strategic reserves and discussed measures aimed at improving efficiency in storage, procurement and supply chain management to safeguard the country against any possible food security challenges. ■



government remained fully committed to ensuring food security, stable wheat prices, and uninterrupted availability of wheat across all provinces. He directed the relevant departments to closely monitor procurement operations, improve transparency in stock reporting, and ensure timely administrative decisions to prevent artificial price fluctuations in the market.

ٹھیک اپنے تعلقات کریں زندگی کے کوئی معافی بھی ہوں
یہ ہی بہتر ہے، آؤ بات کریں یہ نہیں بس کہ دن کو رات کریں
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مل کے ہم ڈھونڈیں مشکلات کا حل جن سے واضح یہ ہو کہ ہم ہیں غلط
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حل طلب کوئی مسئلہ نہ رہے ڈھیر قرضہ اتارنا ہے ہمیں
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Fortnightly Engineering Review

AI Precision in Engineering Projects: Sustainability and Scalability

Engr. Dr. Muhammad Nawaz Iqbal

AI is revolutionizing engineering projects through its ability to deliver highly accurate designs, execution, and monitoring.

Modern engineering systems use predictive intelligence to process millions of variables, minimize human error, and increase operational efficiency. Precision is one of AI's key advantages, as it helps reduce material waste, improve energy efficiency, and allocate resources according to project requirements, thereby promoting sustainability. This integration also enhances scalability, enabling engineering models to expand across various sectors, cities, and national infrastructures while ensuring quality and sustainability.

AI technology combined with sustainable design has given rise to adaptive design solutions that can adjust and respond to environmental conditions. By continuously monitoring climate conditions, structural stress, and energy performance, intelligent algorithms can make recommendations to help prevent failures. This predictive adaptability provides resilience to engineering systems operating in uncertain environments, particularly in rapidly urbanizing societies with growing infrastructure demands. AI systems can continuously learn and improve project performance over time, creating a cycle of sustainable innovation.

tion.

The precision of AI has significantly improved the development of green infrastructure by enabling data-driven and resource-optimized solutions. Engineers are

carbon emissions, and promote long-term ecological balance.

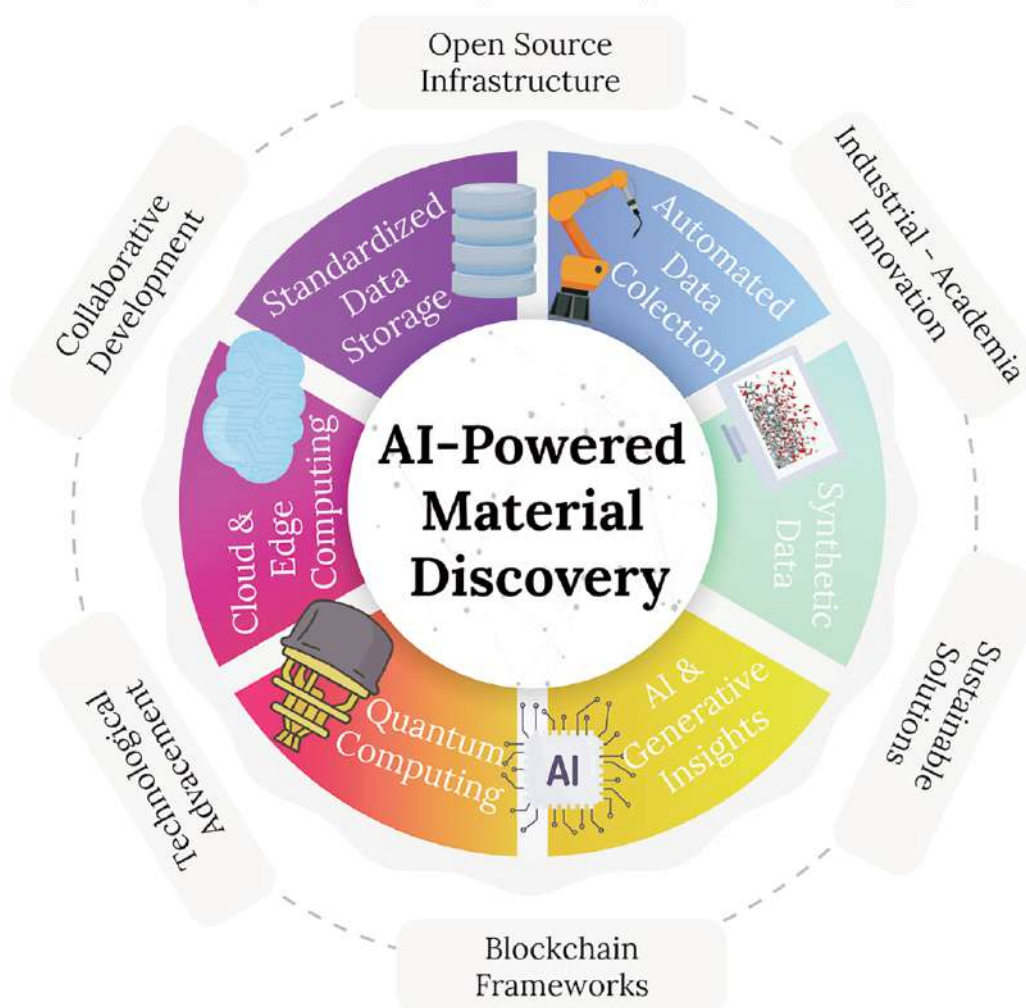
In addition, scalable AI architectures enable these sustainable practices to be replicated across various regions, resulting

such as material inspection, structural analysis, and quality assurance, and are capable of handling more complex operations than traditional systems. This accuracy not only saves project time but also

reduces resource consumption and workplace inefficiencies. As a result, engineering firms can undertake projects at multiple sites without compromising sustainability.

The digital twin — a virtual replica of physical environments powered by artificial intelligence — is revolutionizing sustainable engineering. Through digital environments, engineers can forecast maintenance needs, evaluate environmental impacts, and optimize operational performance without making physical modifications. Digital twins help reduce energy losses, extend infrastructure lifespan, and support proactive decision-making, all of which play a crucial role in achieving sustainability goals. They are also highly scalable, allowing integration into smart cities and industrial ecosystems.

AI-driven precision engineering is transforming renewable energy systems through enhanced forecasting accuracy and operational management. Intelligent algorithms analyze weather patterns, energy usage behaviors, and equipment performance to optimize renewable energy generation and distribution. This reduces inefficiencies in energy storage and transmission



now able to model several environmental scenarios before construction begins and select the most sustainable design options with greater accuracy. These simulations minimize unnecessary construction, reduce

in standardized yet flexible engineering solutions. Smart automation in engineering projects has also improved scalability by automating manual tasks. AI-driven robotic systems provide greater consistency in tasks

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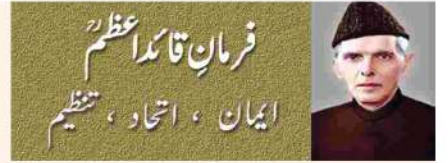
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AI Precision in Engineering Projects: Sustainability and Scalability

Contd from page 10

while supporting the large-scale adoption of solar, wind, and hydroelectric energy. As a result, AI enhances the reliability of sustainable energy systems both locally and globally.

AI applications in construction engineering have introduced intelligent material management systems that help minimize environmental waste. Machine learning systems calculate the exact quantity of materials required for each stage of a project, thereby preventing overproduction and reducing contributions to landfill sites. Furthermore, AI systems can identify recyclable materials and recommend eco-friendly alternatives that maintain structural integrity while minimizing environmental harm. These innovations facilitate scalable construction aligned with circular economy principles.

AI precision also plays a major role in energy-efficient transportation engineering by optimizing traffic systems, logistics networks, and infrastructure usage. Intelligent transportation systems (ITS) utilize real-time mobility data to reduce traffic congestion, fuel consumption, and greenhouse gas emissions. Scalable AI platforms also enable autonomous mobility ecosystems capable of accommodating growing urban populations without placing excessive strain on existing infrastructure. Through predictive traffic management, engineering initiatives can contribute to the development of more sustainable and efficient transportation environments.

To ensure engineering scalability, AI-powered risk management strategies are becoming increasingly important for proactively predicting operational challenges before they escalate into serious issues. Predictive analytics can identify structural weaknesses, environmental risks, and maintenance problems with a high degree of

accuracy. This proactive approach minimizes project downtime, reduces repair costs, and enhances infrastructure resilience.

This precision benefits sustainable engineering projects by reducing the need for emergency interventions, thereby lowering material consumption and environmental impact. Water resource engineering is also being transformed by AI-powered sustainability frameworks that incorporate intelligent monitoring and conservation systems. AI-powered smart sensors can detect leaks, predict water usage, and optimize water distribution networks in real time. These systems reduce resource losses and ensure equitable distribution among growing populations. They are flexible enough to be implemented by municipalities and industries without major infrastructure modifications, promoting water-saving engineering practices.

AI precision in manufacturing engineering is helping create sustainable production environments through intelligent process optimization. Advanced algorithms continuously monitor production variables, reducing energy consumption, emissions, and inefficiencies. Such systems can automatically adjust manufacturing parameters to maintain product quality while minimizing environmental impacts. Consequently, scalable AI-driven manufacturing floors are becoming essential for industries pursuing sustainable growth in highly competitive global markets.

AI tools in civil engineering have strengthened disaster resilience through predictive environmental modeling and real-time monitoring systems. AI can analyze geological, meteorological, and structural data to predict risks such as flooding, earthquakes, and infrastructure failures. This predictive capability enables engineers to design scalable and sustainable structures capable of withstanding environmental

uncertainties. Resilience engineering, driven by artificial intelligence, will continue to play an increasingly important role in safeguarding communities and economies amid growing climate threats.

Smart city ecosystems — integrating transportation, energy, waste management, and communication systems into unified intelligent platforms — represent the foundation of sustainable urban engineering and are closely connected to AI's transformative influence. These interconnected systems continuously fine-tune resources and adapt to changing urban demands. AI precision enables cities to operate efficiently with minimal environmental impact, while scalable digital infrastructure allows rapid expansion without compromising sustainability goals.

In engineering projects, ethical sustainability is becoming a crucial aspect of AI precision. As AI systems play an increasingly important role in engineering design, there is a growing need for engineers to consider the environmental and social implications of these technologies. Scalable engineering innovations must positively impact society by ensuring transparency, equitable resource distribution, and environmentally responsible automation practices. This ethical integration strengthens public confidence and supports the long-term sustainability of engineering development.

As AI precision in engineering continues to advance, it is doing far more than improving efficiency and accuracy; it is ushering in a new era of intelligent, scalable, and sustainable innovation. AI systems incorporate predictive intelligence, automation, and adaptive learning to enhance the efficiency, resilience, and sustainability of engineering systems worldwide.■

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We walk the path Ibrahim showed,
A road where love and faith together
flowed.
A sacred call, a holy way,
Revived by our Prophet ﷺ every Eid-ul-
Adha day.

“Pray and Sacrifice,” our Lord declared,
A sign that true believers always bear.
Not blood nor meat ascends above,
But hearts filled with His fear and love.

The Prophet ﷺ held this deed so dear,
A lasting Sunnah for every believer.
With blessed hands, he sacrificed each year,
To remain with Allah forever near.

Though schools may debate Wajib or Sun-
nah,
Its value remains high in the sight of Allah.
If Allah gives wealth in sufficient measure,
Then honor this act with love and grateful
pleasure.

The oxen, goat, cow and camel we sacrifice,
Are symbols of Allah we must recognize.
When lined for His sake in humble display,
His Holy Name is magnified that day.

And when they fall upon their side,
Eat thereof and let the poor be supplied.
Feed the needy who ask aloud,
And those who silently do without.

Qurbani is more than flesh and bone,
It breaks the pride we proudly own.
It cuts through greed, the race for fame,
And teaches us to praise and magnify His
Name.

It feeds the poor and brings them delight,
It refreshes the hearts of every upright.
A gift of thanks for all we own,
For every seed our Lord for us has grown.

From Ibrahim's trial to Mina's plain,
Its message shall forever remain:
Submit to Allah, trust His way,
And obey Him come what may.

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ملگڑھ انسٹیٹیوٹ آف ٹیکنالوجی میں کیریئر سیشن کا انعقاد

سافٹ ویئر، آرٹی فیشل انٹیلی جنس اور CIT کے طلبہ نے بھرپور شرکت کی
جدید ٹیکنالوجی کے اس دور میں طلبہ کیلئے بے شمار مواقع ہیں، شاہد جمیل

علی گڑھ انسٹیٹیوٹ آف ٹیکنالوجی میں
معلوماتی کیریئر سیشن کا انعقاد کیا گیا جس میں
سافٹ ویئر، آرٹی فیشل انٹیلی جنس اور CIT
کے طلبہ نے بھرپور شرکت کی، سیشن کے مقرر
ڈیجیٹل مارکیٹنگ وای کامرس
ٹریڈ سید فرقان عظیم تھے،
سیشن کے ایجنڈا میں انٹر
پریشرپ مائنسٹریٹ
سوچ، تخلیقی صلاحیت اور مسئلہ
حل کرنے کی مہارت (بفری
لائنگ اسکلز اور ڈیجیٹل مواقع (مہارتیں،
پلیٹ فارمز اور کمائی کے طریقے) اور طلبہ کے
لیے ایک واضح روڈ میپ (ابتداء سے ترقی تک
مرحلہ وار رہنمائی) شامل تھے،
پرنسپل علی گڑھ انسٹیٹیوٹ شاہد جمیل نے کہا
تقریب دی۔ ■



پاکستان میں 18 سال بعد سمندر میں تیل اور گیس کی تلاش دوبارہ شروع

ماری انرجیز نے 18، اوجی ڈی سی ایل اور پی پی ایل نے 8، 8 بلاکس حاصل کر لیے، ابتدائی مرحلے میں 82
ملین ڈالر خرچ ہو گئے، وفاقی وزیر پٹرولیم، دستخطی تقریب سے خطاب

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دستخط، ماری انرجیز 18، اوجی ڈی سی ایل اور
پی پی ایل نے 8، 8 بلاکس حاصل کر لیے،
ابتدائی سروے امید افزا ثابت ہوئے پر ایک
ارب ڈالر تک سرمایہ کاری متوقع، آغاز میں
دستخط کیے، جن سے ابتدائی سروے امید افزا
ثابت ہونے کی صورت میں ایک ارب ڈالر
تک کی سرمایہ کاری متوقع ہے۔
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تقریب میں شرکت کی۔ جو بحیرہ عرب میں
رہے ہیں۔ پاکستان کے پاس دو لاکھ بیسی
ہزار مربع کلومیٹر سے زائد سمندری حدود پر
مشتمل آف شور خط موجود ہونے کے باوجود،
قیام پاکستان سے اب تک وہاں صرف اٹھارہ
کنوین کھودے گئے ہیں، ایک ایسی صورتحال
جسے حکومت تیزی سے بدلنے کی خواہاں ہے۔
سمندر میں تلاش کا یہ نیا مرحلہ ایسے وقت



82 ملین ڈالر خرچ ہو گئے۔ وفاقی وزیر
پٹرولیم علی پرویز ملک نے دستخطی تقریب سے
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IEEE Student Branch Launched at BBS-UTECH Khairpur Mirs

In a landmark development for technical education in upper Sindh, the Institute of Electrical and Electronics Engineers (IEEE) Sukkur Subsection officially inaugurated the IEEE Student Branch at Benazir Bhutto Shaheed Uni-

versity of Technology and Skill Development (BBS-UTECH) on May 14, 2026.

The inauguration was accompanied by an extensive IEEE Awareness Session titled "IEEE Awareness Session and Alignment of Activities with UN SDGs", which drew an enthusiastic participation of engineering

technology faculty members, final-year researchers, and students.

Strategic Vision Backed by University Leadership
The establishment of the IEEE Student Branch and the successful organization of the awareness session were made possible through the leadership and support of Prof. Dr. Rasool Bux Mahar, Vice Chancellor of BBS-UTECH Khairpur

ority of the university's research roadmap.

The IEEE Sukkur Subsection leadership also expressed gratitude to Vice Chancellor Dr. Mahar for supporting innovation and academic collaboration.

IEEE Awareness Session

The session began with a keynote address by Prof. Dr. Abdul Sattar Saand, Chair of the IEEE Sukkur Subsection (R10, Karachi

is a gateway for the youth of Khairpur Mirs to contribute to global engineering research," Dr. Saand said during his presentation.

Focus on UN Sustainable Development Goals
A key highlight of the session was the focus on aligning engineering activities with the UN SDGs.

Dr. Saand explained how IEEE platforms and digital resources could help

focused on climate action and water management challenges in Sindh. Participants explored how IoT sensors, computational engineering, and predictive technologies could support efficient water management systems and climate-resilient infrastructure under SDG 6 and SDG 13.

Official Opening Ceremony
Following the aware-

computational infrastructure for the student branch to support cross-disciplinary research, coding competitions, and technical activities.

With the activation of the branch, BBS-UTECH students will now have access to IEEE international project funding opportunities, competitions, travel grants, technical collaboration with industry experts,



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Mirs.

In his remarks, Dr. Mahar reiterated the university's commitment to transforming technical education by bridging the gap between local academic talent and international professional standards. He highlighted that aligning engineering projects with the UN Sustainable Development Goals (SDGs) remains a core pri-

Section). He emphasized the importance of professional societies in developing economies and said the new student branch would connect students of Khairpur Mirs with global innovations, mentorship, and research opportunities.

"The establishment of this Student Branch at BBS-UTECH is not merely an administrative milestone; it

students work on renewable energy, resilient infrastructure, and technological innovation under SDG 7 and SDG 9.

The session also highlighted the role of IEEE in promoting quality technical education (SDG 4) through access to webinars, international conferences, and continuous learning platforms.

In addition, discussions

ness session, the official opening ceremony of the IEEE BBS-UTECH Student Branch was held. Faculty members from the university's engineering technology departments appreciated the support extended by the IEEE Sukkur Subsection.

The university administration also announced dedicated lab space and

and leadership opportunities at local and regional IEEE levels.

The event concluded with the presentation of an honorary shield to Prof. Dr. Abdul Sattar Saand by the university administration, marking the beginning of a new chapter in the technological and engineering landscape of Khairpur Mirs. - PR

Data centers are driving up power bills—a new study looks at how bad it could get

New research suggests electricity demand from data centers and cryptocurrency mining is likely to increase power costs in some parts of the country by up to 57% by 2030, with a national average increase of 6%-29%.

Electricity demand related to data centers is also likely to increase CO2 emissions by up to 28% by 2030, relative to a future with no data center growth, according to the analysis from North Carolina State University, Carnegie Mellon University, the University of Pittsburgh and the University of Toronto. The paper, "Power System Costs and Emissions from Data Center and Cryptocurrency Mining Expansion in the United States," is published in the journal *Environmental Research Letters*.

"Power demand in the U.S. was relatively flat for almost 20 years," says Jeremiah Johnson, corresponding author of a journal article on the work and an associate professor of civil, construc-

tion and environmental engineering at North Carolina State University. "But in the past couple of years we've seen a significant increase in power demand, due largely to data centers and—to a lesser extent—cryptocurrency mining."

"We wanted to understand the implications of this increased demand," Johnson says. "What new power infrastructure will need to be built? Where? How will these systems be operated? What will that mean for the cost of electricity? And what will it mean for carbon emissions?"

The researchers drew on recent research to estimate data center and cryptocurren-

cy power demand through 2030, and then made use of computational modeling tools to forecast what technologies would be used to generate that power.

"Specifically, we used an energy system optimization model," says Anderson de

energy demand while complying with existing laws and regulations."

"The optimization model we used for this work was designed to focus on electrical power generation," says Johnson. "We were able to look at energy supply and

made progress in reducing carbon emissions over the past 20 years, but the increased demand will essentially erase a lot of that progress," says Johnson.

"We also found that electricity costs will increase by an average of 6-29% nation-

increases depend on where new data centers are built," Johnson says. "For example, price increases in Virginia jump due to substantial expansion of data centers. If the data centers are distributed more broadly across the country, Virginia won't be hit as hard. Prices will still go up for everyone, but the expense will be spread more evenly across the country."

"There is a great deal of uncertainty regarding the cost of installing new natural gas turbines and the cost of natural gas itself," Johnson says. "But regardless of fuel cost and the cost to build new natural gas plants, we still see substantial increases in electricity cost and CO2 emissions."

"The public and policymakers need to be aware of these near-term challenges—2030 is less than four years away," says Johnson. "Our findings highlight the need for regulators and utilities to make informed decisions about near-term power generation, and for government officials at all levels to make informed decisions related to the construction of data centers." -- TX



Queiroz, co-author of the paper and an associate professor of civil, construction and environmental engineering at NC State. "An energy system is the full supply chain that delivers energy to people. And optimization models are tools that can be used to search for the least expensive ways to plan, maintain and operate energy systems in order to meet

demand on an hourly level for 26 regions of the power grid, covering the lower 48 United States."

One key finding from the optimization model is that increased demand will lead to increased carbon dioxide emissions from electricity generation, by up to 28% over the next three and a half years.

"The power sector has

ally. However, those prices could increase by as much as 57%, depending on where you are in the country."

Those electricity price increases would be most pronounced in Virginia, eastern North Carolina, Pennsylvania, Maryland, Delaware, New Jersey, west Texas, Ohio, West Virginia and New York.

"But those future price

Huawei touts new chipmaking technology to sidestep US restrictions

Chinese tech giant Huawei said on Monday it had developed a new way of making semiconductors that could get around its US-enforced lack of access to the most advanced chip-making equipment.

Huawei has in recent years been at the center of a geopolitical standoff after Washington warned its equipment could be used for espionage by the Chinese government, an allegation the firm denies.

Sanctions since 2019 have cut Huawei's access to components and technologies made by the United States and some of its allies—including the lithography machines used to make the world's most advanced chips.

But on Monday the head of Huawei's semiconductor division He Tingbo said that the company will be able to produce next-generation 1.4-nanometer (1.4nm) chips by 2031.

Taiwan's TSMC, the industry leader, has projected it will be able to do the same by 2028.

Cutting-edge chips that can train and power artificial intelligence systems are a

crucial and highly sensitive element of the technology rivalry between the United States and China.

The computing power of chips has increased dramatically over the decades as makers cram them with more microscopic electronic components.

back on top?" He said in a presentation to the International Symposium on Circuits and Systems (ISCAS) in Shanghai.

She said the new technique came about through a shift in how chipmaking has historically been conceptualized.

"Moore's Law" is a principle developed

He on Monday proposed "the Tau Scaling Law", or "Her's Law", by which instead of optimizing for space, designers optimize for the time taken for the various elements making up a chip to communicate.

This overcomes a key challenge facing Moore's Law that Intel sums up as: "You can make something smaller and smaller... until you can't".

US sanctions have meant that "these challenges arrived earlier and are tougher" for Huawei, He said.

"Our solution is feasible and affordable. The performance of the new chip can fully compete with that of the other path," she said.

Huawei's next iteration of its Kirin chip, set to launch in the autumn, will be the first ever to fully adopt an architecture called "LogicFolding" based on the new principle, the company said.

The Tau Scaling Law "underscores the

company's ambition to lead rather than follow in the global chip race," said George Chen, Partner and Chair of Digital Practice at The Asia Group.

"Even without a new product launch today, Huawei's intent is clear—and its trajectory will likely heighten US concerns." TX



Huawei's announcement suggests it might have sidestepped the need for extreme ultraviolet lithography (EUV) machines, which have been considered crucial for mass manufacturing chips of 5nm or under.

"Over the past six years, I have often been asked... how did you survive and come

by Intel co-founder Gordon Moore which states the number of transistors—devices regulating the flow of electricity—on a chip doubles every two years.

A higher density of transistors results in a smaller chip or one the same size with faster processing power.