

MONTHLY

MAY 2026

ISSN 2309-6578

# ENERGY UPDATE



EXCITEMENT AROUND  
**KARACHI PORT**

PAKISTAN IMPORTED 50-GIGAWATT  
SOLAR PANELS WORTH  
**\$18BN IN FIVE YEARS: STUDY**

THE BIKE THAT COULD  
**SAVE BILLIONS**

## GROWATT

### All Your Needs for Solar and Energy Storage



Whole system solution



Enhanced safety with LFP



Smart O&M



Rs 600/-

[www.energyupdate.com.pk](http://www.energyupdate.com.pk)

Regd. # SC-1295



# ONE SYSTEM TOTAL POWER CONTROL

## INV-MS-GS215-2H3

Multi  
Fusion



Reliable



Intelligent  
Temperature  
Control



Safer

Scalable





# Jinko

2006 All In Solar 2026 Solar For All

## Better Low Light Performance

Jinko Tiger Neo 3 کم روشنی کے حالات میں BC Technology کے مقابلے میں زیادہ مؤثر توانائی پیدا کرتا ہے۔



Energy yield: 95%~98%

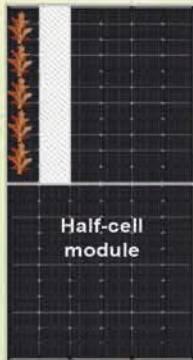
↑ 3%



Energy yield: 93%~95%

↓ 3%

## Improved Anti-Shading Behavior



Shading: ~63% Pnom



Shading: ~84% Pnom

Jinko Tiger Neo 3 ایٹمی شیڈنگ ٹیکنالوجی کے ساتھ پرانے طرز کے پنیلز کے مقابلے میں 20% بہتر کارکردگی فراہم کرتا ہے





Built to **Withstand**  
Every **CONDITION**



**LenoX**  
3.0 SERIES  
L-SP/TP - HYBRID  
SOLAR HYBRID INVERTER

**5 Years**  
Replacement  
**Warranty**

 **IP65**  
PROTECTION  
AGAINST DUST AND WATER



 **UAN 021 111 000 666**  
[www.ziewnic.com](http://www.ziewnic.com)

# CONTENTS



**12** Celebrating 20 years of Energy Update Magazine

Powering Pakistan's EV Future: Why DISCOs Must Lead the Charging Revolution. **Dr Naveed Arshad**  
Director, LUMS Energy Institute

**26**

**34** Policy Uncertainty Threatens Pakistan's Solar Momentum  
PSA Chairman **Waqas Moosa**

**36** How UAE's OPEC breakaway could redraw global energy power

**40** Thar's Climate Struggles Meet Sustainable Hope

**42** 1.8 billion people still lack drinking water worldwide

**60** The fault is not with sun but in power grid

**70** Pakistan's oil market is fuelling risis



# High Efficiency, Smart Performance Reliable Energy Solutions

SUN2000-330KTL-H1 | SUN2000-150K-MG0  
SUN2000-115KTL-M2 | SUN2000-50KTL-M3



0301 6765749  
Karachi

0300 8290375  
Lahore

0332 3318888  
Peshawar

0301-5717629  
Islamabad

0300-0222129  
Quetta



# Authorized Distributor of Global Brands



Office # 1018, 10th Floor, Al-Najeebi Electronic Market, Abdullah Haroon Rd, Saddar Karachi

0300 0222981  
Karachi

0300 8290375  
Lahore

0332 3318888  
Peshawar

0301-5717629  
Islamabad

0300-0222129  
Quetta

**Reliable.  
Efficient.  
Powerful.**



**Current Protection**



**Short Circuit Protection**



**Over Voltage Protection**



MODEL	NEXA 5.5kW	NEXA 7.5kW
DC Input Range	250 - 400V	250 - 400V
Output Voltage	220V	220V
Output Current	22A	28A
Operating Temperature	10-50 °C	10-50 °C
Rated Power	4500W	6500W

## FEATURES

- Current Protection
- Short Circuit Protection
- Over Voltage Protection
- Use With Solar Modules



# FROM THE Editor's desk...

## ENERGY UPDATE

Managing Editor  
**M. Naeem Qureshi**  
info@energyupdate.com.pk  
energyupdate@gmail.com

### Oil Price Nightmare Grips Pakistani Citizens

The surge in oil prices has emerged as one of the most pressing economic challenges for Pakistan, placing immense pressure on the general public, businesses, and the national economy. The ongoing conflict linked to Iran and tensions around the Strait of Hormuz have significantly disrupted global oil supplies, pushing international crude prices above \$120 per barrel. This global shock has directly translated into sharp increases in domestic fuel prices, intensifying inflation and economic instability across Pakistan.

Currently, oil prices in Pakistan are among the highest fuel prices in the country's history. The government, already dealing with fiscal deficits and external debt obligations, has limited capacity to provide sustained subsidies. As a result, the burden of rising oil prices is being felt across all segments of society. For common people, the most immediate impact is the rising cost of living. Fuel is a key input in transportation, and as petrol and diesel prices rise, the cost of essential commodities increases. Public transport fares have surged, making daily commuting more expensive for workers and students. At the same time, the prices of essential commodities such as vegetables, flour, milk, and other food items have increased. This has led to a significant erosion of purchasing power, particularly for low- and middle-income households.

The business sector is equally affected by rising oil prices. Industries face higher production costs due to expensive energy and transportation, which reduces profit margins and discourages expansion. Agriculture, a backbone of Pakistan's economy, is also suffering due to higher oil prices. Farmers rely heavily on diesel for operating tractors, water pumps, and other machinery. As diesel prices rise, the cost of cultivation increases, leading to higher food prices in the market. This creates a chain reaction, where increased agricultural costs translate into food inflation, further burdening consumers.

The impact of rising oil prices extends to almost every product and service in the economy. From construction materials such as cement and steel to everyday consumer goods, the cost of production and transportation has increased. Globally, high oil prices are contributing to inflation and economic instability. Major economies are facing rising fuel costs, which are affecting industrial production and consumer spending. In terms of future outlook, oil prices are expected to remain high in the short term due to ongoing geopolitical tensions, supply constraints, and uncertainty in global markets. If the conflict escalates or supply routes remain disrupted, prices could increase further, placing additional pressure on oil-importing countries like Pakistan.

Editor  
**Shujauddin Qureshi**

Chief Financial Officer  
**Ruqiya Naeem**  
ruqiya.nfeh@gmail.com

Chief Marketing Officer  
**Engr. Nadeem Ashraf**  
marketing@energyupdate.com.pk  
nadeem.event@gmail.com

Deputy Editor and Marketing Manager  
**Mustafa Tahir**  
mtmustafa92@gmail.com  
mustafa@energyupdate.com.pk

Marketing Consultant  
**Khalid Iqbal**  
hikhaid@live.com

Coordinator Lahore  
**Mohammad Asif**

Art Director  
**Rizwan Ahmad**  
rizwanahmed55@gmail.com

Advisors  
**Zafar Sobani**  
**Kalim. A. Saddiqui**  
**Sohail Butt**  
**Anwar Shahid Khan**  
**Raziuddin Razi**  
**Engr. Irfan Ahmed**

Circulation & Subscription  
**Zahid Ali**  
Alizahid210@gmail.com

**Shakeel Qureshi**

Overseas Correspondents  
**Arif Afzal – USA**  
**Hamza Naeem – Canada**  
**Waqar Khan – Abu Dhabi**

Legal Advisors  
**M. Nadeem Sheikh Advocate**

#### Monthly Energy Update

#309, Al-Sehat Centre, Hotel Regent Plaza,  
Shahrah-e-Faisal, Karachi-Pakistan.  
Tel: 021-3565 3676, 3521 3853, 35674570  
Email: info@energyupdate.com.pk  
Web: www.energyupdate.com.pk

REGISTRATION # DCO/DDO/LAW/CDGK-41/2006  
Published by M. Naeem Qureshi for Energy Update  
& Printed at Print Vision, Karachi Cell: 0333-2244586



# Signing Ceremony **2026** Strategic Cooperation

1.6GW Inverter & 1GW Battery



**1GW**  
BATTERY

**1.6GW**  
INVERTER



Call  
UAN 042 111 111 140

ORDER NOW

Website  
[www.fronus.com](http://www.fronus.com)





**Your Reliable Partner  
with Replacement Warranty**



**One Stop Residential and C&I Energy Storage Solutions**

Contact us: +92 370 3951185

[energy.itel-life.com](http://energy.itel-life.com)

itel Energy





**ENERGY  
UPDATE**

## *celebrations*

Two decades ago, Energy Update Magazine began its journey with a clear vision – to become a credible voice for Pakistan’s energy sector and a platform that connects industry, innovation, policy, and sustainability. Today, as we proudly celebrate our 20th Anniversary, I extend my heartfelt gratitude to everyone who has been part of this remarkable journey.

This milestone would not have been possible without the unwavering support of our valued readers, advertisers, industry leaders, corporate partners, contributors, government institutions, and dedicated team members. Your trust, encouragement, and collaboration have continuously inspired us to grow stronger and serve the energy community with commitment and professionalism.

Over the past twenty years, Energy Update has remained dedicated to promoting awareness, knowledge-sharing, and constructive dialogue across the power, oil & gas, renewable energy, environment, and sustainability sectors. We have witnessed transformational changes in the industry, and it has been our privilege to document, highlight, and support Pakistan’s evolving energy landscape.

I would especially like to thank our respected clients and partners who believed in our mission and stood beside us throughout this journey. Your confidence has motivated us to continuously improve and expand our reach. We are equally grateful to policymakers, regulators, associations, engineers, experts, and environmental advocates whose insights and

participation enriched our publication and events.

A special appreciation goes to our hardworking editorial, marketing, design, and event management teams whose dedication and passion have been the backbone of Energy Update. Their relentless efforts have enabled us to maintain the highest standards of journalism and industry engagement.

As we step into the future, we renew our commitment to promoting sustainable energy solutions, climate awareness, innovation, investment opportunities, and constructive industry dialogue. The global energy transition presents both challenges and opportunities, and Energy Update will continue to play its role as a responsible media platform supporting progress, sustainability, and national development.

On this memorable occasion, I sincerely thank Almighty Allah for His blessings and guidance throughout these years. I also thank every individual and organization who contributed to making Energy Update Magazine a respected name in the energy sector.

We look forward to continuing this journey together with renewed passion, stronger partnerships, and a shared vision for a sustainable and energy-secure future.

With deepest gratitude and warm regards,



**M. Naeem Qureshi**

Managing Editor  
Energy Update Magazine

## MESSAGES & FELICITATIONS

### Syed Murad Ali Shah

Chief Minister, Sindh

It gives me great pleasure to extend my warm felicitations to the management, editorial team, and readers of Energy Update on the occasion of its upcoming Annual Issue, which marks the 20th anniversary of this distinguished publication.



Over the past two decades, Energy Update has earned recognition as Pakistan's only regular print publication dedicated to the energy and renewable energy sector, making a meaningful contribution by consistently highlighting the developments, challenges, and opportunities shaping this vital national domain. Sindh is blessed with abundant energy resources — from the vast reserves of Thar Coalfield to Pakistan's only functional wind corridor, along with immense solar potential. The prudent and full exploitation of these resources can play a decisive role in enabling Pakistan to achieve self-reliance and long-term independence in meeting its energy needs.

In line with the spirit of the Eighteenth Amendment to the Constitution of Pakistan, the Sindh Government has taken important institutional steps by establishing the Sindh Transmission and Dispatch Company and the Sindh Electric Power Regulatory Authority to strengthen the provincial energy framework and help ensure uninterrupted and affordable electricity for domestic, commercial, and industrial consumers. Our government is also actively pursuing initiatives to expand solar energy access so that deprived communities and far-flung villages may light their homes and improve their lives without additional economic burden.

The Government of Sindh remains fully committed to harnessing the country's energy wealth for national progress, economic prosperity, and the well-being of our people. On this significant milestone, I once again congratulate Energy Update and wish it continued success in its valuable mission.

### Syed Muhammad Nehal Hashmi

Governor Sindh

On the occasion of the 20th Anniversary of Energy Update Magazine, I extend my warmest congratulations to the entire team for their remarkable contribution to Pakistan's energy sector over the past two decades. Energy Update has established itself as a credible platform for informed dialogue, industry insights, and the promotion of sustainable energy solutions. Its role in connecting policymakers, industry leaders, and stakeholders is commendable and essential for driving progress in this critical sector. Sindh, being the economic hub of Pakistan, holds immense potential in renewable energy, particularly in wind and solar resources. The provincial government remains committed to supporting initiatives that promote clean, affordable, and reliable energy for our people. I appreciate the magazine's continued efforts in raising awareness and encouraging innovation. I wish Energy Update continued success in its mission to inform, inspire, and contribute to a brighter and energy-secure future for Pakistan.

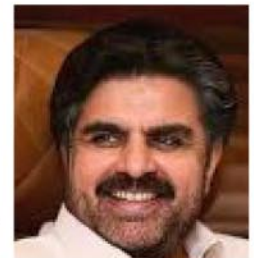


### Syed Nasir Hussain Shah

Minister for Local Government, Sindh

On the occasion of the 20th Anniversary of Energy Update Magazine, I extend my sincere congratulations to the entire team for their dedicated service in promoting awareness and informed dialogue within Pakistan's energy sector.

Over the past two decades, Energy Update has played a vital role in highlighting key challenges, opportunities, and innovations, while connecting policymakers, industry stakeholders, and the wider community. Such platforms are essential for guiding sustainable development and supporting effective decision-making. As Sindh continues to urbanize, the importance of energy-efficient infrastructure, sustainable municipal services, and environmentally responsible practices has become more critical than ever. The Local Government Department remains committed to advancing initiatives that improve public services while integrating clean and efficient energy solutions. I commend Energy Update for its valuable contributions and wish the team continued success in inspiring progress and supporting Pakistan's journey toward a sustainable and energy-secure future.



## Sardar Awais Ahmed Laghari

Federal Minister for Energy (Power Division)  
Government of Pakistan

On behalf of the Ministry of Energy (Power Division), I extend heartfelt congratulations to Energy Update magazine and its entire media team on the remarkable milestone of its 20th anniversary. Over the past two decades, Energy Update has established itself as a credible and dedicated platform for covering developments in Pakistan's energy sector, consistently highlighting critical challenges and opportunities while creating awareness among stakeholders and the general public. Its persistence, professionalism, and commitment to objective reporting have played a valuable role in fostering informed dialogue and promoting transparency. At a time when Pakistan is undertaking crucial power sector reforms to ensure long-term economic stability, including the transition towards competitive electricity markets, expansion of renewable energy, reduction of system losses, and deployment of advanced metering infrastructure, the role of responsible media partners becomes even more significant. Energy Update has contributed meaningfully in creating a positive and informed environment for all stakeholders, including consumers. I sincerely appreciate its efforts and wish the team continued success in the years ahead.



## Amir Iqbal

CEO,  
SECMC and Thar Foundation

On behalf of the SECMC team, I congratulate Energy Update on 20 years of excellence in publishing. The magazine has earned a reputation as the trusted voice in Pakistan's energy landscape, playing a critical role in highlighting challenges and opportunities to enhance the country's energy security. Recent geopolitical conflicts have underscored the need to accelerate our reliance on indigenous energy sources, shielding our economy from global supply shocks. As the backbone of national progress, the energy sector demands collective action from all key stakeholders. The success of Thar coal projects proves that transformative change is achievable when government, private entities and local communities work together toward a shared purpose. I am confident that Energy Update will continue to lead by showcasing global best practices in operational excellence, technology, people development and sustainability. I wish the team continued success in the years ahead.



## M. Zakir Ali

CEO  
Inverex Solar Energy

On behalf of Inverex Solar Energy, I extend my heartfelt congratulations to Energy Update Magazine on the remarkable milestone of its 20th anniversary. Over the past two decades, Energy Update has played a pivotal role in shaping industry dialogue through insightful reporting, credible analysis, and consistent coverage of developments across the energy sector. Its commitment to highlighting innovation, policy evolution, and emerging technologies has significantly contributed to greater awareness and progress within the industry. As Pakistan continues its transition towards sustainable and renewable energy solutions, platforms like Energy Update remain essential in informing stakeholders and driving meaningful conversations. This milestone is a testament to the dedication and professionalism of your entire team. We commend your efforts and look forward to your continued success in the years ahead, as you further strengthen your role as a trusted voice in the energy landscape. Warm congratulations once again on this outstanding achievement.



## Irteza Ali Qureshi

Managing Director, PARCO

I extend warm felicitations to Energy Update Magazine on the occasion of its 20th anniversary, marking a significant milestone. Over two decades, the publication has played a vital role in shaping informed dialogue, promoting innovation, and highlighting the evolving dynamics of Pakistan's energy sector. As we navigate a rapidly transforming energy landscape, the importance of collaboration, sustainability, and technological advancement has never been greater. Platforms like Energy Update continue to serve as valuable catalysts, bringing together industry, policymakers, and stakeholders to drive meaningful progress. I commend your commitment to excellence and insightful reporting, and look forward to your continued contribution in supporting a resilient, efficient, and sustainable energy future for Pakistan. Wishing you continued success in the years ahead.



## Mian Fahad

Director – Asian Countries  
Growatt New Energy Co., Ltd.



It is a distinct privilege to extend my heartfelt congratulations to the entire team at Energy Update Magazine on attaining this remarkable two-decade milestone. For twenty years, this publication has served as an authoritative voice, navigating the complexities of Pakistan's energy landscape with journalistic integrity and sectoral foresight. Reflecting on my own journey across the energy value chain – from engineering fundamentals to strategic commercial leadership – I have witnessed few platforms sustain such consistent relevance. My current role as Director for Growatt for Asian Countries allows me to engage daily with the very challenges and opportunities that Energy Update articulates so proficiently. The coming decade demands decisive action: accelerated renewable integration, intelligent storage adoption, and policy coherence. As an industry practitioner who has steered multi-million dollar portfolios through volatile markets, my conviction remains unwavering – the future belongs to agile, technology-driven energy ecosystems. Thank you, Energy Update, for documenting our collective progress. Here is to the next chapter of innovation, insight, and impact.

## Saleem Diwan

CEO, Diwan Internationals



On the momentous occasion of the 20th Anniversary of Energy Update Magazine, I extend my heartfelt congratulations to the entire team for two decades of excellence in promoting awareness, innovation, and dialogue within Pakistan's energy sector. At Diwan Group of Companies, we believe that true progress lies in creating value beyond business—empowering communities, supporting sustainable initiatives, and contributing to national development. Since 1993, our journey has been guided by integrity, innovation, and a strong sense of responsibility. Energy Update has played a vital role in highlighting key industry trends, fostering collaboration, and encouraging forward-thinking solutions. As Pakistan navigates its energy challenges and transitions toward sustainability, platforms like yours are more important than ever. We appreciate your continued efforts and wish you even greater success in the years ahead. May you keep inspiring progress, informing stakeholders, and shaping a brighter, energy-secure future for Pakistan.

## Syed Ammar Shah

CEO, Engro Vopak & Engro  
Elengy Terminals Limited



Congratulations to Energy Update on the completion of 20 years of service to Pakistan's energy sector. Over the years, Energy Update has earned a unique place in the industry by consistently bringing together policymakers, investors, industry players, and other key stakeholders on a credible platform, enabling meaningful dialogue that reflects the full breadth of Pakistan's energy ecosystem. Pakistan's energy sector has faced persistent challenges from global disruptions and changing demand, yet its resilience is most evident when stakeholders align around shared national priorities. Engro Corporation and Royal Vopak have invested over USD 230 million in Pakistan's marine energy infrastructure, handling 70% of chemical throughput, which is the backbone of industrial progress, and 50% of LNG and LPG imports via the marine route. Through safe and efficient terminal operations, these assets save Pakistan approximately USD 500 million annually, reflecting our longstanding belief in energy as a foundation for economic stability and long-term growth. None of this would have been possible without the continued support of the Government of Pakistan, our investors, customers, and stakeholders. We remain optimistic about Pakistan's energy future and remain committed to contributing responsibly, constructively, and always in the best interest of the country. Looking ahead, we are actively evaluating opportunities to expand LPG infrastructure, including refrigerated storage, and LNG trucking, to strengthen supply resilience and energy security. Energy Update remains our window into seeking industry foresights and access to like-minded and growth-oriented organizations.

## Stefan Gsänger

Secretary General,  
World Wind Energy Association



On behalf of the World Wind Energy Association (WWEA), I am delighted to congratulate Energy Update Magazine on its 20th anniversary—a testament to two decades of pioneering journalism in the energy sector.

Your work has been instrumental in fostering dialogue among industry leaders, policymakers, and innovators, especially during this critical juncture of global energy transformation. By championing renewable energy – from wind and solar to hybrid solutions – you have not only informed but inspired action toward a 100% renewable future, a mission WWEA holds dear. As the world races to address climate change while providing sufficient energy for all, platforms like Energy Update are indispensable in driving awareness, investment, and collaboration. Here's to many more years of impactful storytelling and shared progress. We at WWEA look forward to continuing our partnership in shaping a sustainable energy landscape for all.

## Mohammed Rajpar

Managing Director  
General Shipping Agencies



I extend my heartfelt congratulations to Energy Update magazine on the remarkable milestone of its 20th Anniversary. Over the past two decades, Energy Update has played a pivotal role in shaping discourse, sharing insights, and highlighting developments within Pakistan's dynamic energy sector.

Over time, I have come to appreciate the consistency and effort it takes to build something that truly adds value. Energy Update has been one of those platforms that people in the industry turn to, not just for information, but for perspective.

From where I stand in the maritime and logistics space, it is clear that Pakistan's future depends on how well our sectors connect and grow together. In that sense, your work quietly plays an important role in bringing that bigger picture to life.

Congratulations once again on this milestone. Wishing you continued strength and relevance in the years ahead.

## Adil Khattak

CEO  
Attock Refinery Ltd  
Attock Gen Ltd



On the occasion of the 20th anniversary of Energy Update, I extend my warm congratulations to the entire team for this important milestone. Over the past two decades, Energy Update has developed into a credible platform for dialogue and knowledge-sharing within Pakistan's energy sector. Attock Refinery Limited has, from time to time, participated in Energy Update's initiatives. It is a pleasure to now see the publication mark its 20th year, reflecting its continuity and sustained relevance over time. Our interactions have included interviews and participation in sectoral discussions. These engagements contribute to broader industry dialogue on the challenges and opportunities facing Pakistan's energy landscape. We wish Energy Update continued success in its efforts to inform and connect stakeholders across the energy sector. Best wishes for the years ahead.

## Engr. Faraz Muhammad Khan

Sales Strategy and Development Manager  
Jinko Solar Co., Ltd.



It is a profound privilege to extend my heartfelt congratulations to Energy Update Magazine on the auspicious occasion of its 20th Anniversary. For two decades, your publication has stood as a paragon of journalistic excellence within Pakistan's energy sector, providing the critical insights and industry updates essential for navigating today's complex energy landscape. I wish to express my sincere gratitude to Mr. Naeem Qureshi and his dedicated team for their unwavering commitment to professional integrity. The magazine's extensive circulation across every major industrial and engineering forum is a testament to its influence, and the exceptional response it receives underscores its status as a premier knowledge hub. As a global leader in the renewable energy sector, JinkoSolar remains dedicated to supplying the most reliable and efficient PV panels to the Pakistani market. We are honored by our continued association with Energy Update and look forward to further collaboration as we collectively drive the nation toward a sustainable and innovative future.

## Saleem Shaikh

CEO  
Sindh Transmission and  
Despatch Company



On the occasion of the 20th Anniversary of Energy Update Magazine, I extend my sincere congratulations to the entire editorial and management team for this remarkable milestone. Over the past two decades, the magazine has distinguished itself as a reputable and authoritative platform, providing insightful reporting, comprehensive industry updates, and thoughtful analysis of developments across the energy sector. Your consistent commitment to high-quality journalism and informed discourse has played a pivotal role in enhancing awareness, fostering transparency, and supporting evidence-based decision-making among policy-makers, practitioners, and stakeholders. Such contributions are invaluable in navigating the evolving challenges and opportunities within the energy landscape. At Sindh Transmission & Dispatch Company, we recognize and appreciate the importance of credible platforms like yours in promoting sectoral dialogue and knowledge exchange. I wish Energy Update Magazine continued success and excellence in the years ahead, with many more milestones to come.

## Alan Xie

General Manager of the Asia Region and the Middle East and Africa Region) Jolywood



It is our great honor to participate in Pakistan's green energy transition. Over the past few years, together with our valued partner, Inverex, we have achieved remarkable progress in Pakistan. Our windproof modules have been widely recognized and well received by end users. These achievements would not have been possible without the strong support of our partners and EU Magazine. On the occasion of the 20th anniversary of EU Magazine, Jolywood would like to express our sincere appreciation for its contributions to advancing the green energy transition. Looking ahead, we wish EU Magazine continued success in the years to come. We also look forward to further strengthening our collaboration with EU Magazine and our partners to accelerate the green energy transition. Thanks.

## Zohair Naseer

Chairman – Badar Group



We extend our appreciation to Energy Update Magazine on its 20th Anniversary for its continued contribution to the industry and for providing a platform that highlights the future of energy. The global energy landscape is undergoing a fundamental shift, where resilience, sustainability, and technological excellence define leadership. In this transition, energy storage is not just a supporting component; it is the backbone of the renewable future. At Badar Energy, we are not merely adapting to this change, we are positioning ourselves to lead it. Built on the legacy of Badar Group since 1965, our focus has evolved toward creating a globally competitive clean energy enterprise. Through the establishment of Jiangsu Badar Energy, we have developed a powerful manufacturing and innovation base, delivering advanced lithium battery solutions across residential, commercial, and utility scale applications exceeding 10GWh capacity. Our ambition is clear and uncompromising: to establish Badar Energy as a dominant global force in energy storage defined by quality, scale, and innovation. Badar Energy — Powering the Future. Leading the World

## Hammad Aarora

General Manager Marketing  
Ziewnic Solar



A powerful milestone for Pakistan's energy industry! Heartfelt congratulations to Naeem Qureshi, the visionary founder of Energy Update Magazine, on completing 20 years of excellence. This incredible journey reflects unmatched dedication, industry leadership, and a relentless commitment to promoting the solar and energy sector in Pakistan. Your efforts have not just built a magazine — you have shaped an industry narrative. At Ziewnic Solar Energy, proudly recognized as Pakistan's No.1 solar energy brand, we share the same passion for innovation and leadership. With a complete product portfolio in IP21, IP54, and IP65, and our dominance in lithium battery technology, we are not just participating in the industry — we are leading it. Together, we power progress. Together, we build the future. Wishing Energy Update continued growth, greater milestones, and even stronger impact in the years ahead.

## Muhammad Haris

CEO, Tariq Electric Private Limited



On the occasion of the 20th Anniversary of Energy Update Magazine, I extend my sincere congratulations on two decades of excellence in energy journalism. Tariq Electric Private Limited is proud to be part of an industry shaped by your insightful reporting and dedication. May your continued commitment to advancing energy knowledge inspire generations to come.

## Muhammad Farhan Hanif

Chairman, Crown Group



I extend my sincere congratulations to Energy Update Magazine on its 20th Anniversary Edition, a remarkable milestone reflecting two decades of meaningful contribution to Pakistan's energy discourse. Pakistan's energy sector stands at a pivotal point, where the shift toward sustainability, innovation and energy efficiency is no longer a choice but a necessity. I firmly believe the future lies in renewable and decentralized energy systems that ensure long-term resilience and affordability. At Crown Group, we remain committed to driving this transformation through practical solar and hybrid solutions that support energy independence and industrial growth in Pakistan. I look forward with optimism to a future powered by collaboration, innovation and shared progress across the energy ecosystem.



**Our KIOSK substation & Solar Solutions including LV, MV, Transformer provides economical solution to meet the large scale commercial and industrial solar project requirements.**

## ADVANTAGES

- LV SIDE : FROM 400VAC UPTO 1150 VAC
- MV SIDE: 6.6 KV UPTO 33 KV
- REDUCED PROJECT COST AND TIME
- REDUCED EQUIPMENT AND CABLE SIZES
- ABB- TIER-1 EUROPE BRAND BREAKERS
- ABB TOUCH SCREEN DISPLAY



FOR QUICK DELIVERY, CONTACT US AT  
[info@tariqelectric.com](mailto:info@tariqelectric.com)

**ABB** 800-1150VAC  
CIRCUIT BREAKERS





## Syed Nadeem Arif

MD / CEO, EMC Pakistan Pvt Ltd

Celebrating 20 years of Energy Update is, in many ways, celebrating two decades of progress, dialogue, and transformation within Pakistan's energy sector. Since its inception, the magazine has consistently served as a vital platform for informed discourse, bringing together policymakers, industry leaders, technical experts, and practitioners under a shared objective of advancing sustainable and efficient energy solutions. Through its timely reporting, insightful analyses, and coverage of both conventional and renewable energy domains, Energy Update has not only documented the sector's evolution but has actively contributed to shaping it. Over the years, the publication has played a meaningful role in bridging information gaps, enhancing awareness on critical issues such as energy security, climate resilience, and technological innovation, and fostering a culture of knowledge sharing across the industry.

Its continued commitment to highlighting emerging trends, regulatory developments, and best practices has provided immense value to professionals, organizations, and institutions striving to navigate an increasingly complex energy landscape. This milestone is also a testament to the dedication and vision of the team behind Energy Update, whose consistency and professionalism have ensured the magazine's relevance and credibility over time. Special appreciation is extended to Mr. Naeem Qureshi for his leadership and unwavering commitment to building a platform that has become synonymous with excellence in energy journalism in Pakistan. As Energy Update enters its next chapter, we extend our sincere congratulations and best wishes for continued success. May the publication continue to inspire, inform, and lead the conversation on energy and sustainability for many years to come.



## Imran Zafar

CEO - Enercon Systems

Congratulations to Energy Update and the entire team, especially Naeem Qureshi sb, on your magazine's 20-year anniversary. You have truly set a benchmark for the industry. The magazine has become an icon in the energy sector, playing a responsible and impactful role in highlighting key industry issues while consistently providing valuable news and updates for consumers. Wishing you continued success in driving awareness and excellence in the energy domain.



## Ahmad Najeeb

Director

Albario Engineering Pvt. Ltd.

On behalf of Albario Engineering Pvt. Ltd., I extend my heartfelt congratulations to Energy Update Magazine on the remarkable milestone of 20 years of excellence in publishing. Over the past two decades, Energy Update has established itself as a credible and influential voice in Pakistan's energy sector. Its consistent efforts in covering the full spectrum of the energy portfolio—ranging from power generation and renewables to oil, gas, and infrastructure—have played a vital role in informing stakeholders, shaping dialogue, and promoting transparency across the industry. At a time when global energy dynamics are rapidly evolving and geopolitical uncertainties continue to impact supply chains, the importance of reliable, insightful, and forward-looking platforms like Energy Update cannot be overstated. Your contribution in highlighting challenges, showcasing opportunities, and connecting industry players has significantly supported Pakistan's journey toward energy security and sustainability. We particularly value your role in promoting innovation, local capacity development, and collaborative progress—all of which are essential for driving long-term transformation in the sector. Wishing the entire team continued success and many more years of impactful contribution.



## M. Farhan

CEO, SolarMax

On this remarkable milestone, I extend my heartfelt congratulations to the entire team of Energy Update Magazine on completing two decades of dedicated service to Pakistan's energy sector. Over the past 20 years, Energy Update has demonstrated consistency, professionalism, and a strong commitment to credible journalism. The magazine has played a vital role in highlighting developments across power, oil & gas, renewable energy, and climate, while providing a valuable platform for dialogue among industry stakeholders. This achievement reflects not only longevity, but also the trust and influence you have built within the sector. As the energy landscape continues to evolve, particularly with the growing focus on renewable and sustainable solutions, your contribution remains highly valuable. As a company committed to advancing clean energy in Pakistan, SolarMax appreciates the role Energy Update plays in shaping awareness and supporting industry progress. We wish you continued success and many more milestones ahead.



## Usama Qureshi

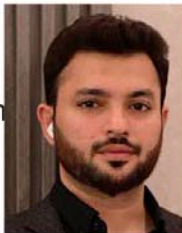
Vice Chairman  
Cnergyico Pk Limited



Congratulations to Energy Update on completing 20 remarkable years of excellence in energy journalism and industry engagement. Pakistan's energy landscape continues to evolve rapidly, shaped by technological transformation, and changing market dynamics. Currently, the international energy market is witnessing unprecedented volatility, uncertainty, and supply chain disruptions. In such a dynamic market, credible industry platforms such as Energy Update play a critical role in informing stakeholders, highlighting emerging trends, and encouraging constructive dialogue between policymakers and industry leaders. The ongoing global oil crisis has particularly demonstrated the strategic importance of the petroleum sector. Despite significant global uncertainty and Pakistan's exposure to international oil supply risks, the country has continued to maintain stability in fuel supplies. As Pakistan's leading downstream energy company, Cnergyico remains committed to strengthening the country's energy security through reliable oil refining, storage, and retail operations. With Pakistan's first and only deep-sea oil terminal (Single Point Mooring (SPM) facility), the nation's largest oil refining complex, and Byco's growing network of fuel stations, Cnergyico continues to play an important role in enhancing Pakistan's energy security and supporting uninterrupted fuel availability across the country. The strength in the supply chain which Pakistan has witnessed has been made possible through the coordinated efforts of the Government of Pakistan, regulators, oil refining and marketing companies, media outlets, and other stakeholders. In this ecosystem, Energy Update has served as an important and responsible voice. I commend the Energy Update team on this significant milestone and wish them continued success in the years ahead.

## Abdul Rehman

CEO, Aston Energy  
Deputy Convener, FPCCI CSR Com



On this remarkable milestone, I extend my heartfelt congratulations to the team of Energy Update Magazine on completing 20 years of excellence in the energy sector. Your journey reflects consistency, professionalism, and a strong commitment to credible journalism. Over the years, Energy Update has played a vital role in highlighting developments across Pakistan's power, oil & gas, renewable energy, and climate landscape, while fostering meaningful dialogue among industry stakeholders. My vision is to foster a progressive and sustainable energy ecosystem, while my mission remains dedicated to advancing responsible practices, fostering innovation, and driving collective growth within the sector. I extend my sincere wishes for your continued success, greater achievements, and many more milestones ahead.

## Taseer Hussain

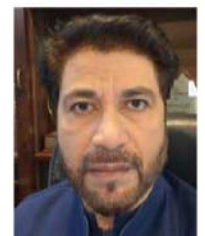
Director & Chief Executive  
Voltaic Power (Pvt.) Ltd.



Voltaic Power extends its sincere congratulations to Energy Update Magazine on achieving twenty exceptional years of dedicated service to Pakistan's energy sector. This two-decade journey has been characterized by profound transformation, navigating complex challenges from persistent power shortages and significant policy shifts to the burgeoning rise of renewable energy and the current national solar revolution. Throughout this period, Energy Update has consistently served as an indispensable, credible voice and a trusted authority for documenting these changes and actively shaping the industry conversation. As a leading contributor to Pakistan's solar transition, Voltaic Power is committed to delivering premium solar solutions with world-class technology and robust after-sales support, serving both residential customers in the south and commercial and industrial clients nationwide. We recognize that informed and transparent platforms, such as Energy Update, are crucial for cultivating the awareness, transparency, and market confidence necessary for a successful transition. We look forward to the magazine's continued leadership and bold reporting for the next many decades, promoting a brighter, cleaner energy future for the nation.

## Nisar A. Latif

CEO – Solar Sigma Ltd



On the 20th anniversary of Energy Update, I extend my sincere congratulations to a publication that has evolved into a trusted voice of Pakistan's energy sector. Since its launch, Energy Update has consistently demonstrated courage, remaining unbiased in analysis, truthful in reporting, and bold in raising critical issues, even during challenging times. Over the years, your team has not only spread awareness but shaped dialogue across Govt., industry, and global stakeholders, reaching thousands of experts locally and internationally. Your commitment to highlighting renewable energy, sustainability, and policy reform has contributed meaningfully to Pakistan's transition toward a cleaner energy future. Building a magazine into a respected platform requires vision, integrity, and persistence; the qualities your team has exemplified. This era demands your vision in shaping the new energy security policy with new geo-political dimensions. On Behalf of Solar Sigma Ltd. And its partner companies, I wish Energy Update continued success as a catalyst for innovation, truth, and progress in the energy sector.



**Anwar Naveed**

CEO, Fronus Solar Energy

On behalf of Fronus Solar Energy, I extend heartfelt congratulations to Energy Update on completing 20 successful years of excellence in energy journalism. Your consistent efforts in

highlighting industry developments and promoting awareness about sustainable energy solutions have made Energy Update a trusted voice in Pakistan's energy sector. We wish the entire team continued success and many more milestones ahead.



The poster features a large circular wreath made of various green plants and leaves. In the center of the wreath is the NFEH logo, which consists of a stylized sun or star symbol inside a circle, with the text 'NFEH NATIONAL FORUM FOR ENVIRONMENT & HEALTH WWW.NFEH.ORG' below it. The main text of the poster reads: '23RD ANNUAL ENVIRONMENT EXCELLENCE AWARDS JULY 2026'. Below this, a yellow banner contains the words 'RECOGNIZE | APPRECIATE | PROMOTE'. Underneath the banner, it says 'the responsible organisations that protect Sustainable Environment in Pakistan'. At the bottom, there is a dark green bar with logos for 'PARTNERS', 'ENERGY UPDATE', 'CSR CLUB PAKISTAN', 'CSR Update', and 'Publicity Channel'.

**23RD ANNUAL  
ENVIRONMENT  
EXCELLENCE  
AWARDS**  
JULY 2026

The prestigious annual awards; designed to

**RECOGNIZE | APPRECIATE | PROMOTE**

the responsible organisations that protect  
**Sustainable Environment in Pakistan**

PARTNERS

**ENERGY  
UPDATE**

**CSR  
CLUB  
PAKISTAN**

**CSR Update**

Publicity Channel

# WINDPROOF Module

**More durable | More reliable | More predictable**

n-type Fully-tempered One-stop Encapsulation Solution

BACKBONE Steel Frame+Transparent Backsheet+n-type TOPCon Technology



-  **Snowstorm Resistance**
-  **Hurricane Resistance**
-  **Hail Resistance**
-  **Burst Resistance**
-  **Lower Temperature Coefficient**
-  **Lower Operating Temperature**
-  **Lower Hot Spot Temperature**

Backbone  
Steel Frame

**3X**

Stronger  
than traditional  
aluminum frames

Pass  
**60m/s**

Wind Tunnel Test  
≈ Level.17 Typhoon

**Contact Us**

 [info@jolywood.cn](mailto:info@jolywood.cn)

 [www.jolywood.com](http://www.jolywood.com)

  @Jolywood Solar

# Global pressure on Pakistan's energy landscape

Dr Nadeem ul Haque | Shahid Sattar

At a time when global energy markets are under stress because of tensions involving Iran and the wider Gulf, Pakistan finds itself in a precarious position. LNG imports — once treated as a reliable balancing tool — are now uncertain, constrained and increasingly expensive. But while policymakers are quick to blame external shocks, the uncomfortable truth is that the crisis was already built into the system.

The current disruption did not create the problem. It merely exposed it. Over the years, Pakistan's energy policy has been shaped by fragmented decisions rather than coherent strategy. Instead of aligning domestic resources, imported fuels and infrastructure into a rational system, policymakers built a patchwork of contradictions. The result is an energy framework that does not optimise cost, does not reward efficiency and does not perform well under stress. Consider the most basic principle of any sane energy system: use the cheapest available resource first. Pakistan routinely violates this principle.

RLNG-based power plants such as Bhikki, Balloki and Haveli Bahadur Shah generate electricity at costs far above cheaper alternatives available within the system. These plants were designed as efficient combined-cycle units, and technically they are. But efficiency in isolation means little. In the context of Pakistan's actual energy mix, they have become symbols of distorted dispatch and poor planning.

## Why? Because cheaper alternatives exist

Wind power is cheaper. Local Thar coal is cheaper. Imported coal, in many cases, is also cheaper. Hydropower is cheaper still. Yet despite this obvious cost hierarchy, the system has repeatedly dispatched RLNG-based generation ahead of lower-cost options. That is not economics. It is inertia masquerading as policy. The reasons are well known. LNG contracts create pressure to utilise imported volumes. Fuel allocation systems are rigid. Transmission bottlenecks limit access to cheaper southern generation. And above all, the system lacks the discipline to enforce merit-order dispatch. The consequence is straightforward: Pakistan is producing expensive electricity while cheaper capacity sits idle.

Nowhere is this more evident than in the underutilisation of coal. Both local and imported coal plants have often operated below potential, not because they are inefficient, but because the system cannot — or will not — prioritise them correctly. Transmission bottlenecks, especially between the south and the main northern load centres, prevent cheaper generation from reaching demand where it is needed. As a result, the system defaults to more expensive alternatives and then complains about the cost. Wind power suffers a similar fate. Despite being among the cheapest sources of electricity

in the country, it is frequently curtailed because of poor forecasting, grid mismanagement and the inability of the system to absorb what it should have planned for in the first place. In a country where consumers still face high tariffs and periodic load-shedding, curtailing cheap renewable power is not merely wasteful. It is absurd.

### Then there is gas.

Pakistan has, at different times, curtailed indigenous gas production while continuing to import LNG at much higher cost. This inversion of logic has placed a heavy burden on foreign exchange, reduced the role of domestic supply and created long-term risks for local reservoirs. At one point, domestic gas fields were reportedly being shut in to the tune of hundreds of mmcf/d even while imported LNG was being injected into the system. That is the kind of policy choice that would be comic if it were not so expensive.

Fuel oil adds yet another layer to the confusion. Heavy taxation has rendered fuel oil-based generation uncompetitive at home, encouraging exports at distressed prices. Yet when LNG supply tightens or imported gas becomes unaffordable, fuel oil suddenly reappears as a fallback option. In other words, the system first undermines its own flexibility and then panics when it needs it. One could call it planning, but that would be generous.

All this is happening in a system that supposedly has surplus installed capacity.

This is perhaps the clearest sign that the real issue is not availability of power, but the failure to deliver it efficiently. Transmission constraints, distribution losses, theft, poor recovery, and circular debt all play their role. But at its core, this is a coordination failure. The country has resources. It simply does not use them sensibly.

LNG, in this context, must be understood correctly. It is not the villain of the story. It remains an important part of Pakistan's energy mix — a relatively cleaner and more flexible fuel that can help balance seasonal demand and provide support when needed. The problem is not LNG itself. The problem is the way it has been integrated into the system. Instead of being used strategically, it has been treated as a default option. Instead of complementing domestic resources, it has often displaced them.

But change does not mean dramatic gestures, contract theatrics or impulsive reversals. Pakistan must remain credible in international markets. The objective should be to improve flexibility gradually: better alignment of supply with demand, more responsive scheduling, more rational pricing and smarter use of LNG within a broader least-cost energy framework.

Yet while the state has been tripping over its own bad decisions, something remarkable has happened outside the formal policy structure.

Households and businesses have begun to solve part of the problem themselves.

Across Pakistan, rooftop solar has expanded rapidly, not because the government led the transition, but because consumers could no longer trust the grid. Faced with rising tariffs, unreliable supply and endless

policy confusion, households and firms have invested their own capital in self-generation. That shift matters — not only for private savings, but for the national energy balance.

On-grid solar reduces daytime demand on the electricity system, eases feeder loading, lowers technical losses and displaces imported fuel-based generation. Off-grid and hybrid solar go further, allowing households and firms to reduce or partially exit dependence on a failing supply system. In doing so, they create resilience from the bottom up.

This is especially important in the current geopolitical context. If energy flows through the Gulf are disrupted or LNG prices surge again because of instability involving Iran, Pakistan's exposure to imported fuel becomes a major macroeconomic risk. Every unit of electricity generated domestically through rooftop solar is a unit that does not depend on volatile international fuel markets. Put differently, distributed solar is quietly doing what energy policy should have done long ago: reducing the country's vulnerability to imported shocks.

Public ownership without accountability has produced exactly what one would expect: inefficiency protected at consumer expense. If a Disco cannot bill, collect, maintain and serve, then keeping it under state control is not public service. It is organised tolerance of failure.

Privatisation must therefore return to the centre of the reform debate — not as ideology, but as practical necessity. Where outright sale is politically difficult, private-sector management under strict performance contracts should be introduced, with hard targets for recovery, loss reduction, service quality and investment. The objective is not to change the signboard outside the office. The objective is to impose discipline where none currently exists.

More fundamentally, Pakistan must begin developing real energy markets rather than preserving administrative illusions. Open access, transparent wheeling, competitive bilateral contracting, clear network charges and eventual supplier choice are essential if the sector is to discover real prices and allocate resources efficiently. The goal should be to move away from a system where bureaucrats decide who generates, who pays and who absorbs the losses, to one where market signals reward efficiency and expose waste.

In that regard, the very recent amendments to the CTBCM-related consumer eligibility rules, which now allow bulk consumers to split their energy and capacity requirements between the supplier of last resort and competitive suppliers, are a laudable step in the right direction. Allowing this kind of hybrid consumption gives large users a practical bridge into the market instead of forcing an all-or-nothing jump. But one sensible amendment does not yet create a workable energy market. Pakistan still needs transparent wheeling and network charges, credible congestion management, enforceable bilateral contracts, genuinely non-discriminatory open access, supplier discipline, and distribution reform strong enough to prevent administrative discretion from suffocating competition before it begins. ■

# Forests employ 42 million people worldwide

## Women account for one quarter of the workforce

**Nawaz Khuhro**

**F**orests employ approximately 42 million people worldwide, with women accounting for one quarter of the workforce, according to new research from the Food and Agriculture Organization of the United Nations (FAO), the International Labour Organization (ILO) and the Thünen Institute of Forestry.

The Updated methodology to quantify forest-sector employment: Global and regional estimates presents fresh estimates that help close critical data gaps in global and regional forest-sector employment between 2011 and 2022.

The joint paper draws on annual data for the sector and its subsectors for 182 countries, representing 99 percent of the world's forest area. The

study also presents the first global sex-disaggregated employment estimates for the forest sector, revealing that women account for nearly 10.6 million jobs, or 25 percent of forest-sector employment, and highlighting persistent disparities between women and men across regions. The widest disparity was found in Europe, where 1.8 percent of men and only 0.5 percent of women were employed in the forest sector in 2022. By contrast, these disparities were narrower in Africa, the Americas and Asia.

“To help build a more sustainable and resilient forest sector, we need a clear picture of who works in our forests – and that starts with sex-disaggregated data,” said Zhimin Wu, FAO Assistant Director-General and Forestry Division Director. “Internationally comparable data on employment in the sector is essential for creating policies that protect both people and forests.”

The forest sector contributes to national economies and sustainable development by creating jobs, generating economic value and supporting environmental sustainability. Building on earlier joint work, FAO, ILO and the Thünen Institute of Forestry have developed a new methodology – the Forest Employment (FEM) model – to improve the availability and consistency of forest-sector employment data. The model generates annual, sex-disaggregated estimates for the forest sector and its subsectors, providing more robust evidence base for policy and analysis.

The study estimates that the forest sector employed at least 42 million people worldwide in 2022 – around 1.2 percent of total employment – representing a decline of approximately 3.1 percent compared to 2011. Asia continues to account for the largest share of forest-sector employment in total employment (around 1.4 percent). In Europe, the share declined slightly, from 1.3 percent in 2011 to 1.2 percent in 2022. Africa saw fluctuations – starting at 1.2 percent in 2011, peaking in 2016, and decreasing to 1.0 percent by 2022 – while employment levels in the Americas remained relatively stable at around 0.8 percent, with minor fluctuations following the COVID-19 pandemic.

Across the sector, wood and wood product manufacturing remains the largest source of employment, accounting for approximately 58 percent of total forest employment, followed by forestry and logging, and pulp and paper manufacturing. The FEM model was developed in the context of FAO's Global Forest Resources Assessment (FRA) 2025, with the assistance of the European Union.

Compared with previous estimates, the FEM model introduces several methodological improvements, including annual estimates instead of three-year intervals, and the use of country-specific socioeconomic and demographic characteristics, labour-market indicators and forest-sector variables to estimate missing data. ■



# COMPLETE POWER SOLUTION

Lithium Batteries + Smart Inverters

Energy Storage  
Inverter

**6kW**

IP65 Protection

Lithium-ion  
Battery

**LD 52**

51.2v - 5.12kWh



**3.6ms**  
Switch Over Time

**6000**  
Life Cycles



Call  
UAN 042 111 111 140

ORDER NOW

Website  
[www.fronus.com](http://www.fronus.com)



Exclusive Interview with  
**Dr Naveed Arshad**  
 Director, LUMS Energy Institute



## DISCOs can spearhead expansion of electric vehicle charging infrastructure

In an exclusive interview with Energy Update, Dr Naveed Arshad highlights how power distribution companies can unlock new revenue streams while accelerating electric mobility across Pakistan.

### Engr. Nadeem Ashraf

**A**s Pakistan navigates a decisive shift towards sustainable energy, the role of power distribution companies (DISCOs) is rapidly evolving beyond conventional electricity supply. In this exclusive conversation with Energy Update, Dr Naveed Arshad underscores a critical yet underexplored opportunity: DISCOs can spearhead the expansion of electric vehicle (EV) charging infrastructure across smaller cities and highways, transforming it into a viable and much-needed revenue stream.

With solar energy surging and battery storage on the horizon, Pakistan stands at the cusp of a major energy

transition—provided its distribution networks step up to enable the future of mobility.

**Energy Update: Dr Arshad, could you begin by telling us about the LUMS Energy Institute and its core mission?**

**Dr Naveed Arshad:** The LUMS Energy Institute was established in 2018 in response to a clear gap in Pakistan's energy landscape—there was a lack of independent think tanks and R&D centres dedicated to the power sector. Our primary objectives are to improve planning within the power sector and enhance the management of the national grid. Alongside this, we are deeply committed to building human resource capacity within the energy sector.

Today, the institute employs over 50 full-time professionals and actively collaborates with the government, private sector, and various industries. We are engaged in multiple research initiatives aimed at addressing systemic challenges in Pakistan's power sector and providing evidence-based solutions.

**EU: Pakistan has seen a remarkable rise in solar energy. How do you assess this trend?**

**Dr Naveed Arshad:** The growth of solar energy in Pakistan has been nothing short of exponential. In just a few years, solar penetration has increased from around 2 per cent to nearly 25 per cent of total electricity generation—this is a transformative shift.

Looking ahead, I believe battery storage will follow a similar trajectory. By 2028, we are likely to see a substantial increase in battery storage capacity. Consumers with existing solar systems can integrate storage relatively easily with minor upgrades, such as inverter enhancements.

This trend is particularly important for industries. Given the high cost of grid electricity, many industrial players are turning to solar-plus-storage solutions as a matter of economic survival. Reliable and affordable energy is essential for maintaining competitiveness.

**EU: What role do you see for government policy in advancing battery storage in Pakistan?**

**Dr Naveed Arshad:** The government is working on policies to promote advanced battery technologies, including encouraging local production. Initially, we may see battery assembly in Pakistan, followed by gradual localisation of key components such as battery cells.

This is a crucial step toward reducing import dependency and building a domestic value chain. However, policy must be complemented by effective implementation—particularly through alignment with DISCOs.

**EU: You mentioned DISCOs. How can they leverage the rise of battery storage?**

**Dr Naveed Arshad:** Our research has identified more than 70 beneficial applications of battery storage systems, with approximately 70 per cent directly linked to grid operations. This presents a significant opportunity for DISCOs to enhance efficiency, manage peak demand, and reduce technical losses.

Instead of perceiving decentralised energy systems as a threat, DISCOs should view them as an opportunity to modernise and diversify their operations.

**EU: Let's turn to electric vehicles. Why has EV adoption remained limited in Pakistan?**

**Dr Naveed Arshad:** The primary barrier has been the lack of reliable charging infrastructure. Pakistan introduced its first EV policy in 2019, but it fell short largely because this issue was not adequately addressed.

EV adoption depends heavily on accessible and affordable charging. Electricity tariffs for EVs must be competitive with petrol, and infrastructure must be widespread enough to support intercity travel.

**EU: What role should DISCOs play in expanding EV charging infrastructure?**

**Dr Naveed Arshad:** DISCOs are central to this ecosystem. Unfortunately, they have not yet recognised EV charging infrastructure as a viable revenue stream.

For EVs to succeed, especially for long-distance travel, we need a network of charging stations along highways and in smaller cities. Currently, travelling from Karachi to Lahore in an EV is nearly impossible due to the lack of infrastructure.

Some private companies have stepped in, establishing stations in towns like Sukkur and Moro. However, many rely on diesel generators rather than grid electricity due to a lack of DISCO support—undermining both cost efficiency and environmental benefits.

**EU: What are the consequences of this lack of DISCO support?**

**Dr Naveed Arshad:** The consequences are significant. Generator-based charging increases costs, making EVs less attractive to consumers.

As a result, many users adopt a hybrid approach—using EVs for local travel while retaining petrol vehicles for longer distances. This dual dependency slows the transition to clean transport.

**EU: How can DISCOs turn this challenge into an opportunity?**

**Dr Naveed Arshad:** DISCOs need to fundamentally rethink their role. By investing in EV charging infrastructure, they can unlock a sustainable new revenue stream.

This includes providing grid connections to charging stations, developing fast-charging networks along highways, offering competitive EV tariffs, and partnering with private sector stakeholders. These measures would not only accelerate EV adoption but also increase electricity demand in a structured and profitable way.

**EU: Finally, what is your vision for Pakistan's energy and transport future?**

**Dr Naveed Arshad:** Pakistan stands at a pivotal moment. The convergence of solar energy, battery storage, and electric mobility presents a pathway to a cleaner and more resilient energy system. However, this transition requires coordinated action.

DISCOs must move beyond their traditional roles and embrace innovation. By enabling EV infrastructure and integrating modern energy solutions, they can drive both economic growth and environmental sustainability.

**Conclusion**

The road to a sustainable future in Pakistan is not merely about adopting new technologies—it is about reimagining institutions and their roles. Electric vehicles represent far more than a shift in transportation; they symbolise cleaner air, reduced dependence on imported fuels, and a greener economy.

If supported by a robust, affordable, and accessible grid-powered charging network, EVs can become the backbone of Pakistan's mobility landscape. The responsibility now lies with DISCOs to seize this moment—not as passive electricity suppliers, but as active enablers of a cleaner, smarter future. By investing in EV infrastructure today, they are not just powering vehicles—they are powering a sustainable tomorrow.

# Excitement around Karachi Port

Tariff cuts of up to 60 per cent and the introduction of volume-linked rebates have incentivised shipping lines: fiscal incentives announced in March have further supported a modest uptick in activity at local ports; handling sustained surges will require further infrastructure upgrades

**Afshan Subohi**

The world appears to be rediscovering Pakistan as it plays a mediating role in easing regional tensions and helping avert global recession. Disruptions to key sea routes and rising risks at established regional shipping hubs have begun to divert attention and some traffic towards the country's underutilised ports. Fiscal incentives announced in March have further supported a modest uptick in activity at local ports.

According to port operators and private sector sources tracking recent trends, tariff cuts of up to 60 per cent and the introduction of volume-linked rebates have incentivised shipping lines, boosting throughput at Pakistani ports by stimulating trade flows and improving the maritime sector. While hard data is not yet available, anecdotal evidence points to a noticeable increase in vessel calls, with a rising number of ships at anchorage and growing demand for ancillary services such as bunkering.

The government announced a comprehensive package of fiscal incen-

tives, effective March 18, 2026, to enhance the regional competitiveness of its ports. Measures include tariff and cargo discounts, notably up to a 60pc reduction in port tariffs for vessels carrying at least 50pc transshipment cargo, and a 50pc discount on wet cargo charges for large container ships at Karachi and Port Qasim. 'To fully leverage Pakistan's coastline, we need deeper drafts, expanded berthing and storage capacity, and sustainable use of marine resources, alongside greater digital integration'

The minimum transshipment threshold has been lowered to 7.5pc, while the base discount has been raised to 20pc, with additional tiered incentives. Further measures include a 5pc discount for green shipping, a 60pc concession on dry bulk exports, a 50pc reduction in transshipment charges at Port Qasim, and approval of a new ferry service connecting Pakistan with Iran and Gulf Cooperation Council (GCC) countries. Experts believe that timely measures, meaningful reforms and enhanced port capacity could finally allow Pakistan to harness



the natural advantage of its geography.

This is not the first time Pakistan has abruptly come into global focus. Following the Soviet invasion of Afghanistan in 1979 and again after 9/11 in 2001, the country swiftly moved into the West's strategic orbit. In both instances, inflows of dollars fueled short-term growth spurts, but these proved unsustainable amid weak policies and fragile political and economic structures.

This time may be different. The goodwill appears to stem from Pakistan's own diplomatic positioning rather than from external shocks, and the country is not under direct military rule as it was in earlier phases. Still, outcomes will hinge on the leadership's ability to convert this moment into durable gains. "From being labelled as a dangerous, near-failing state, Pakistan has, for now, earned recognition as a responsible nation committed to peace. It has also, at least temporarily, addressed a long-standing concern of the private sector, which viewed the country's image as a key deterrent to investment," an analyst said, requesting anonymity.

"With sustained effort and reform, undertaken in close consultation with the private sector, Pakistan could shift towards a more durable growth trajectory," he added. Retired Rear Admiral Moazzam Ilyas, Chairman of Port Qasim Authority (PQA), said the fiscal incentives announced by the government have already led to an increase in vessel calls and transshipment activity, with both Port Qasim and Karachi Port recording higher throughput. "To fully leverage Pakistan's coastline, we need deeper drafts, expanded berthing and storage capacity, and sustainable use of marine resources, alongside greater digital integration. Under the leadership of Minister for Maritime Affairs Junaid Anwar Chaudhry, port authorities have also facilitated transshipment cargo on GCC-bound routes," he noted.

He added that while Pakistani ports have demonstrated resilience during recent Gulf disruptions, handling sustained surges will require further infrastructure upgrades. "The influence of competing hubs and shipping

lines' preference for established transshipment routes in South Asia has constrained Pakistan's potential so far. That said, improvements in bunkering, digitisation and fiscal incentives are gradually positioning our ports for a stronger regional role," he added.

M H Lodhi, Managing Director of Monsoon Winds Maritime Services, echoed the PQA chairman's view that the March incentive package has already delivered measurable gains. He noted that Karachi Port recorded a sharp surge in transshipment volumes in March, handling about 11,000 twenty-foot equivalent units (TEUs), far exceeding the 8,300 TEUs handled in all of 2025. Global lines, such as Hapag-Lloyd and OOCL, have added or planned calls, indicating early traction. Port Qasim has also seen steady growth, supported by available capacity of over 8,000 TEUs and additional yard space.

However, Mr Lodhi cautioned that much of the spike reflects temporary diversion due to Gulf disruptions rather than structural demand. Sustained volumes would strain the existing systems because of limited yard space, infrastructure gaps, congestion risks, high turnaround times and a lack of off-dock integration. He termed the moment a strategic opportunity to convert short-term gains into durable growth by addressing bottlenecks, to compete with established hubs like Dubai and Salalah. "The incentives worked tactically, but becoming a regional hub requires deeper structural and policy reforms," he concluded.

Muhammad Rajper, Managing Director of General Shipping Agencies, said that while firm data is unavailable, each additional vessel brings in roughly \$50,000 to \$75,000 in port dues. "Unconfirmed reports suggest around 10 vessels called at Pakistan's three ports recently," he noted. He stressed the need to actively market Pakistani ports to international shipping lines. "Capacity is not the constraint. The issue has been rigid custom procedures, though these are now easing, and the heavy subsidies offered by Gulf ports, which have made competition difficult," he added. ■



# Fuel crisis response is working, now policy must protect households

## Reducing fuel use is only the first step; managing the cost impact on households is the real test

**Dr Maryam Hafeez**

The writer is an Assistant Professor at the Pakistan Institute of Development Economics (PIDE)

**I**n response to rising global fuel prices, Pakistan has introduced a range of adaptive measures, including hybrid work arrangements, online classes, reduced office attendance, and free intra-city public transport to curb fuel consumption rather than absorb external price shocks. These are necessary short-term solutions. However, another next challenge is to manage the cost pressures that always come after the increase in fuel prices.

The recent increase in fuel prices has triggered far-reaching effects that extend well beyond the transport sector. This increase in fuel and diesel prices quickly transferred to the food prices, logistic prices and household budgets.

When transport costs rise, the cost of moving goods also goes up and ultimately consumers will also feel this burden. Without the targeted protection measures, this pass through effect of increase in fuel prices places a serious pressure in households with fixed incomes.

The main problem for today is not how to cut back on fuel usage, but rather how to prevent households from getting effect by inflation caused by rising fuel prices.

Currently, the main focus is to restrict mobility. The next step of policy development must be focused on protecting workers from losing purchasing power when their wages do not adjust with the rising cost of living.

In order to respond effectively, A practical policy response requires dividing support into clear income groups.

First, lower-income households require direct protection. This protection can be provided through a temporary rashan support program funded through the Benazir Income Support Program (BISP) specifically to those most vulnerable families that are affected by rising transport and food costs. Since BISP program already has a targeting system, it can be quickly deliver support without creating new systems. Fuel shocks should not cause food insecurity for already low income households.

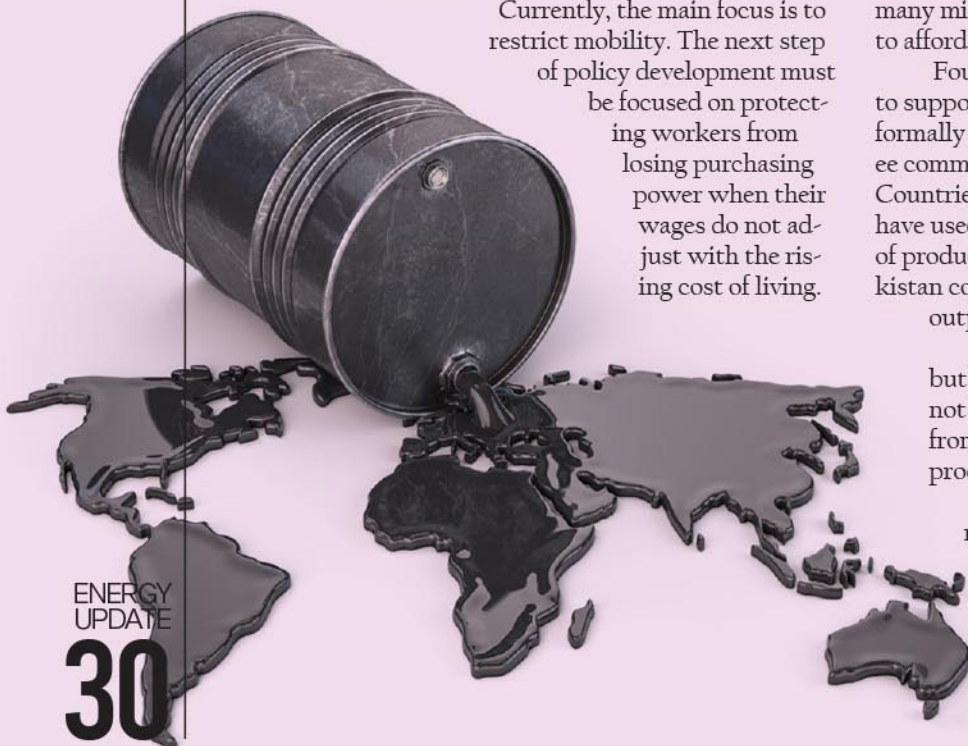
Second, employees in lower government grades (BPS 1-16) and similar private sector workers who must attend offices daily should receive commuting support. Hybrid work reduces costs for desk-based employees, but support staff, clerical workers, and operational employees continue to face rising transport expenses. A temporary commuting allowance for mandatory attendance roles would ensure that fuel saving policies do not unfairly burden those who have no choice but to travel.

Third, fixed salary earners in both public and private sectors require relief to cope with rising living costs. Salaried employees cannot easily adjust their income when expenses rise. Temporary tax relief or cost adjustment measures for increased living costs won't only allow workers to maintain purchasing power, but will also prevent middle income earners from becoming silent losers of fuel adjustment policies, without making these adjustments, many middle income earners will find themselves unable to afford basic necessities.

Fourth, policy should encourage the private sector to support national fuel saving efforts. Organizations that formally adopt hybrid work models and reduce employee commuting could be offered limited tax incentives. Countries such as the United Kingdom and Singapore have used such incentives to promote flexible work as part of productivity reform. Similar targeted incentives in Pakistan could reduce commuting demand while supporting output-based work practices.

These measures should be seen not as subsidies but as economic stability measures. The objective is not to control fuel prices, but to prevent rising costs from de stabilizing household finances and workplace productivity.

Pakistan has taken the right first step by reducing fuel demand. The next policy step must ensure that the burden of adjustment does not fall disproportionately on those with the least flexibility. Managing fuel shocks is not only about saving fuel it is about protecting workers, supporting productivity, and maintaining economic stability. ■





LEADING IN PAKISTAN FOR  
**POWER PERFORMANCE**

Powering Pakistan Since 2007 – 20 Years of Proven Performance

INSTALLED NATIONWIDE

30+ CUSTOMERS CARE CENTRE'S

TRUSTED BY THOUSANDS



[www.solarmax.pk](http://www.solarmax.pk)

[f](#) [@](#) [v](#) [in](#) /solarmaxofficial



**OKASHA**<sup>®</sup>  
Make your life Smart

**HOME  
AUTOMATION**

UPGRADE TO A  
**SMARTER LIFESTYLE  
TODAY**



Advanced  
Home Security



Intelligent  
Automation System



Control Anytime,  
Anywhere



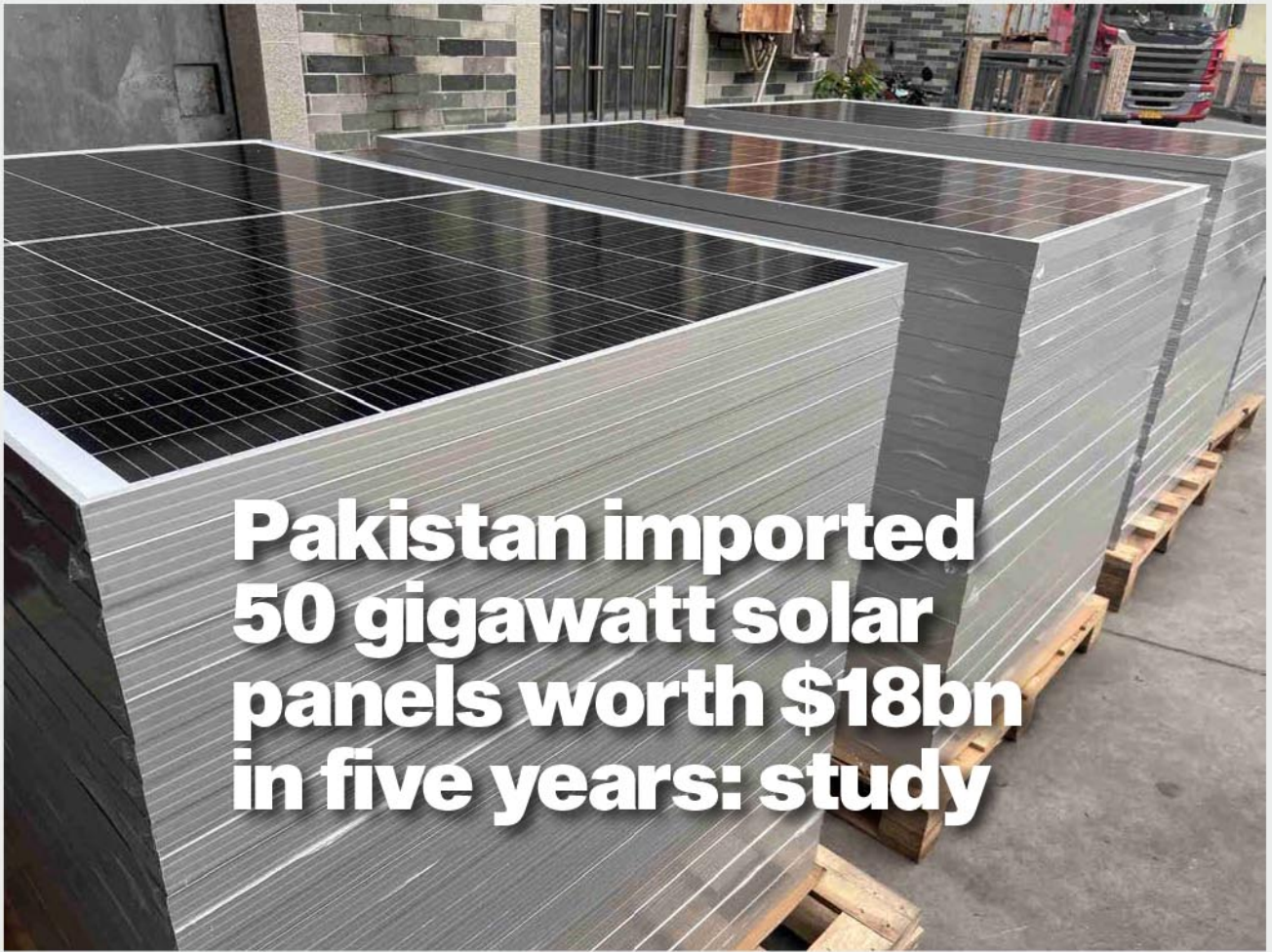
Energy-Saving  
Smart Solutions

[www.okashasmart.com](http://www.okashasmart.com)



FREE DELIVERY  
ALL OVER PAKISTAN





## Pakistan imported 50 gigawatt solar panels worth \$18bn in five years: study

Boom in renewable energy has protected seven million households and many big businesses against energy price shocks and geopolitical risk, think tank Renewables First says

**Salman Siddiqui**

**P**akistan imported over 50 Gigawatt (GW) of solar panels at an estimated cost of almost \$18 billion in the past five years, a volume equivalent to the country's entire grid capacity, a study has said. The boom in renewable energy has protected seven million households and many big businesses against energy price shocks and geopolitical risk, it added.

However, as per the study, the development has continued to surge the price of power for those households and small and medium-sized enterprises (SME) that continue to drive electricity from the grid due to lack of finances and/or space to install solar equipment on rooftops in the country.

Speaking at the launch of the study titled 'Mapping Pakistan's Distributed Energy Finance', at Karachi School of Business and Leadership (KSBL), on Friday, Ahtasam Ahmad, Energy Finance & Climate Tech Lead, Renewables First, said the government and the power plants integrated in the national grid were having some three to five years to make the power affordable from the national grid.

"The upcoming cheaper battery storage systems are going to make the national grid almost completely

irrelevant for hundreds of thousands of households and businesses running on solar power and multiplying the power crisis for the grid dependents," he said. The price of power from the national grid has continued to rise, as drop in demand for electricity from the system has kept surging capacity payment (fixed cost of maintaining ideal power plants) and circular debt.

Ahmad said the demand for the grid power goes significantly down during the broader daylight everyday when consumers use solar power. "They mostly continued to depend on grid power during morning and night timings." However, people are now installing battery storage systems to avoid the expensive grid power during morning and night timing as well, according to Ahmad.

A participant from the audience, who introduced himself as an engineer, said, "the cost of the latest sodium-based battery storage stand almost half compared to lithium batteries in use at present". "The cut in cost is expected to further reduce consumers' reliance on grid power going forward," he said. Renewables First officials said the study showed out of the over 50 GW imported solar panels, a total of 38 GW worth \$13.6 billion was found in use in the country as of 2025. The breakdown suggests 16.6 GW (almost 44% of the total solar installed capacity) was installed in the residential areas, showing

households were leading the solar consumption among all.

Another 9.9 GW (26%) of the solar system was installed in the industrial sector, some 8.1 GW (21.3%) in the commercial sector and 3.3 GW (8.7%) worth of solar panels were found in use in the agriculture sector in Pakistan. The remaining 10-12 GW out of the total imported solar panels were believed to be in godowns of solar dealers and/or installed in far flung areas, a climate expert added.

Despite the boom in solar consumption, the transition to clean energy has been deeply unequal. Access has been almost entirely concentrated among high-income households and large businesses – those who can absorb high upfront capital costs without financing support. Low-to-middle-income households and SMEs (which contribute nearly 40% in Pakistan's economic growth) have been largely left behind.

Naveen Ahmed, Green Finance Lead, Renewables First, said for millions of households and SMEs, clean energy remained financially out of reach not because demand was absent, but because of limited access to financing. She said banks in Pakistan were managing deposits worth \$140 billion. "However, the formal financial sector has extended merely around \$300 million in financing for solar systems." According to her, the gap in financing is not a result of insufficient capital in the system, but structural weaknesses in credit intermediation.

The two officials argued the solar loan remained a major hurdle for most customers due to lack of collateral with them. Solar consumers, they added, could repay loans from monthly savings to be earned through utilisation of cheaper solar power and generating the electricity in surplus to be inducted into the system.

Mutaher Khan, Head of Insight Lab, KSBL, said banks should adopt a separate reporting system for solar and other clean energy financings unlike they report the financings in general to industries, commercial and agriculture sectors. The separate reporting would help better understand the lending landscape in the energy sector, he added. Bankers, academics, and energy experts from the audience argued the national power grid system would remain intact despite continuous cut in reliance on the system due to rising power tariff from the grid.

## Iran without sanctions: Pakistan's \$36b upside

**P**akistan shares a 900-kilometre border with one of the world's largest energy endowments: 208 billion barrels of proven oil — about 12 per cent of global reserves, the third largest in the world — and nearly 1,200 trillion cubic feet of natural gas, the second largest after Russia. Combined, this resource base carries an estimated market value of around \$20 trillion.

The 900-km border is the most under-traded, under-piped, under-utilised asset Pakistan has. What can move across it? One: crude oil — 8-10 million tonnes a year, worth \$4-6 billion. Two: diesel, petrol, furnace oil — \$2-3 billion. Three: LPG, ethane, naphtha — \$1-2 billion. Four: fertilizer and downstream chemicals — \$1-2 billion. Five: cross-border electricity — 1,000-2,000 MW, worth \$1-1.5 billion. Total tradable energy basket: \$9-14 billion a year.

Red alert: Pakistan's most valuable corridor is not blocked by geography—it is blocked by policy. What can be piped? Natural gas — 750 to 1,000 mmcf through the Iran-Pakistan pipeline — replacing imported LNG and saving \$5-7 billion a year. Refined fuels through product pipelines — diesel, petrol — cutting logistics costs and import leakages by another \$1-2 billion. Add it up: \$6-9 billion annually. Not from new discoveries. From moving molecules more intelligently.

How can the 900-km border be monetised? Start with Gwadar — storage, blending, transshipment — a \$1-2 billion opportunity. Add transit: Iran-Pakistan-China flows, pipelines and trucking corridors, another \$2-3 billion annually. Then the real prize — petrochemicals. Feed cheap ethane, LPG, and naphtha into fertilizer, plastics, and polymers. Export more. Import less. That's \$5-8 billion. Add it up: \$8-13 billion a year.

Add it up. At the low end: \$9 billion plus \$6 billion plus \$8 billion — \$23 billion a year. At the high end: \$14 billion plus \$9 billion plus \$13 billion — \$36 billion a year. A \$23-36 billion opportunity. The menu is large. Execution has been negligible. Red alert: This is not theoretical. This is not distant. This is sitting on a 900-km border. Pakistan's balance-of-payments problem is, at its core, an energy problem (annual energy imports \$20-25 billion). Every dollar saved on LNG, oil, and diesel is a dollar earned. Stack those savings — gas substitution, crude discounts, imported electricity — and they begin to behave like revenue. This is Pakistan's energy arbitrage margin. Remember: Pakistan does not run out of rupees — it runs out of dollars. And those dollars leave for three things: oil, LNG, and petroleum products. Why hasn't Pakistan monetised the 900-km border? Three reasons. One: sanctions risk — banks, insurers, and contractors step back. Two: contract credibility — investors fear policy reversals and payment delays. Three: fragmented decision-making — multiple ministries, regulators, and provinces, each with veto power.

Red alert: Capital does not wait. It walks away. The day sanctions lift, capital will not queue — it will race. China will move from Gwadar inward. Turkey will position itself as a westward hub. Gulf players will secure upstream stakes. The first mover captures the corridor. The late mover pays transit. What does Pakistan need to do? Pakistan needs three decisions. One: ring-fence energy contracts with sovereign guarantees. Two: create a single-window authority with binding timelines. Three: pre-negotiate pipeline, refinery, and grid agreements before sanctions lift. Yes, sanctions may persist. Yes, geopolitics can shift. But Pakistan must prepare for upside, not just manage downside. Countries that wait for certainty miss opportunity.

Total impact: up to \$36 billion — roughly 10 percent of Pakistan's GDP. That's nearly one-tenth of the entire economy. That's equivalent to most of Pakistan's annual export earnings. That's a large chunk of total federal revenues. This is not a marginal opportunity—it is a balance-sheet event. Pakistan is not energy-poor. It is policy-poor. Fix the 900-km border — and the dollars will follow.



## Policy Uncertainty Threatens Pakistan's Solar Momentum

PSA Chairman **Waqas Moosa** warns that inconsistent policies risk slowing down one of Pakistan's most promising energy transformations

**Mustafa Tahir**

Pakistan's solar sector stands at a defining crossroads. On one hand, rising electricity tariffs, persistent loadshedding, and volatile fuel prices have accelerated the adoption of renewable energy solutions across the country. On the other, abrupt policy shifts—particularly the transition from net metering to net billing—have introduced uncertainty, raising concerns among investors and consumers alike.

In this exclusive conversation with Energy Update Magazine, Waqas Moosa, Chairman of the Pakistan Solar Association, shares critical insights into the evolving solar landscape. He highlights the economic benefits of distributed solar, the growing importance of battery storage, and the urgent need for stable, forward-looking policies to ensure long-term energy security for Pakistan.

**Q1: How do you assess the current solar market situation in Pakistan?**

**Waqas Moosa:** The long-term outlook for solar adoption in Pakistan remains extremely positive. We are very bullish on the sector due to its immense untapped potential. Renewable technologies like solar and wind are enabling energy independence, both at the national and

household levels. Solar systems, especially when integrated with battery storage, empower consumers with greater control over their energy needs.

This shift has largely been driven by rising electricity tariffs, persistent loadshedding, inadequate transmission infrastructure, and volatile fuel prices. However, the broader economic benefits must not be overlooked. Distributed solar capacity has already helped Pakistan buffer external shocks, particularly import uncertainties. Studies suggest that solar adoption has saved nearly \$12 billion in LNG imports over the past five years, while fossil fuel imports declined significantly between 2022 and 2024.

**Q2: What impact has the shift from net metering to net billing had on the market?**

**Waqas Moosa:** The abrupt transition from net metering to net billing has significantly shaken investor confidence. The retrospective implementation and rushed timeline created confusion across the market. As a result, we have seen a rapid shift toward hybrid solar systems and a surge in demand for battery storage solutions.

This trend, if not managed properly, could become detrimental to the national grid. Globally, we have seen cases like Lebanon, South Africa, California, and Australia, where similar policy missteps contributed to a “utility death spiral.” Pakistan must learn from these examples and

adopt informed, stable policies.

If uncertainty persists, consumers will continue to move away from the grid entirely. Recent taxation measures on solar components are counterproductive—they generate minimal revenue but discourage solar adoption, ultimately increasing reliance on costly fuel imports. These policies also contradict national frameworks such as the National Electricity Plan and other strategic initiatives.

### Q3: How critical are battery storage systems for Pakistan's solar future?

**Waqas Moosa:** Battery storage has become an essential component of modern solar systems. It plays a key role in stabilizing the grid by flattening the “duck curve” and improving transmission efficiency. Under the net-billing regime, storage is increasingly necessary to ensure viable payback periods for consumers.

With Pakistan's peak-time tariff structure, stored energy allows users to offset expensive electricity consumption, making solar investments more financially attractive. While residential and small-scale users are rapidly adopting storage solutions, large-scale adoption remains limited due to high costs.

A major challenge is the lack of local manufacturing for advanced batteries, making the sector heavily dependent on imports. Fluctuating duties and taxes further hinder growth. Again, inconsistent fiscal policies remain the biggest barrier to widespread battery adoption.

### Q4: What is your perspective on NEPRA charges and the growing burden on consumers?

**Waqas Moosa:** There is a clear contradiction in the regulatory approach. While authorities acknowledge ongoing issues like illegal loadshedding, they simultaneously discourage solar adoption through policies such as net billing and increased taxation.

Blaming solar energy for circular debt is misleading. The real issues stem from decades of systemic inefficiencies, mismanagement, and structural weaknesses in the power sector. Solar is not the problem—it is part of the solution. Instead of penalizing consumers seeking relief, the government should encourage solar adoption and remove unnecessary financial barriers. What we need is a stable, data-driven policy framework developed in genuine collaboration with industry stakeholders. This will not only protect consumers but also strengthen grid stability.

### Q5: What is your outlook on the future of the solar industry in Pakistan?

**Waqas Moosa:** The future of solar in Pakistan is undoubtedly strong, but it depends heavily on policy stability. The shift toward hybrid systems is already underway, and demand will continue to grow. However, policymaking must be proactive and forward-looking rather than reactive. Pakistan is already burdened with high generation costs, expensive infrastructure, capacity payments, and circular debt. Solar has proven its ability to reduce these pressures. If current adoption trends continue without restrictive taxation, the country could save up to \$18 billion by 2026.

We must also learn from past mistakes. For instance, delayed investment in electric mobility has increased our exposure to fuel price volatility. Similarly, revenues from petroleum and climate levies should be ring-fenced for renewable energy investments.

The way forward lies in promoting renewable financing schemes, community solar projects, and public access to solar technology. Programs like those supported by the World Bank in Sindh demonstrate how solar can drive both energy and economic independence.

Ultimately, removing taxes on solar and investing in clean energy is not just an economic decision—it is a matter of national energy security and long-term prosperity.

## ENERGY UPDATE

M A G A Z I N E



1 year subscription  
(12 issues)

Rs. **6000/-**  
including courier charges

For

**Subscription &  
Advertisement**

VISIT FOR LATEST NEWS

 [www.energyupdate.com.pk](http://www.energyupdate.com.pk)

 [info@energyupdate.com.pk](mailto:info@energyupdate.com.pk)

# Oil order disrupted

## How UAE's OPEC breakaway could redraw global energy power

**M. Naeem Qureshi**

Writer is Managing Editor Energy Update

The United Arab Emirates' decision to withdraw from OPEC and its broader coalition OPEC+ marks a defining moment in the evolution of global energy politics. Far from being a procedural shift, this move signals a deeper transformation—one that could recalibrate power balances within the oil-producing world, reshape pricing mechanisms, and open new strategic avenues for energy-importing nations like Pakistan and India.

At first glance, the timing of the UAE's announcement appears almost paradoxical. Global oil markets are already under strain due to intensifying geopolitical tensions in the Middle East, particularly around the strategically vital Strait of Hormuz—through which a significant portion of the world's oil supply flows. These disruptions, coupled with ongoing regional conflicts, have already injected volatility into energy markets. As a result, early assessments suggest that the UAE's exit may not trigger an immediate or dramatic spike in oil prices. The market, in many ways, has already priced in instability.

However, to focus solely on the short-term impact would be to miss the broader significance of this development. The real story lies in the medium- to long-term consequences, where the UAE's decision could fundamentally weaken the cohesion and influence of OPEC itself.

For decades, OPEC has functioned as a cartel designed to regulate oil production among member states, thereby stabilising prices and safeguarding producer interests. By allocating production quotas, it has ensured a delicate balance between supply and demand. Yet, this very mechanism has also been a source of tension—particularly for ambitious producers like the UAE, whose production capacity far exceeds its allocated quotas.

With an estimated production capacity of around 4.5 million barrels per day, the UAE has long been constrained by OPEC-imposed limits that reportedly capped its output far below potential. This mismatch between capacity and quota has been a persistent irritant. By stepping outside the OPEC framework, the UAE now gains full sovereignty over its production policy, with the flexibility to scale output up to 1.5 million barrels daily—or beyond—on its own terms. This newfound autonomy is not merely an economic decision; it is a geopolitical statement.

The UAE's exit underscores a subtle but significant shift in regional alignments. Traditionally seen as closely aligned with Saudi Arabia—the de facto leader of OPEC—the UAE is now signalling a more independent trajectory. This move may also be interpreted as a response to regional security concerns, particularly perceptions of insufficient collective support against threats attributed to Iran. In this context, energy policy becomes

intertwined with national security and diplomatic positioning. Moreover, the UAE's growing proximity to the United States and its expanding ties with Israel reflect a broader realignment that extends beyond oil. Energy, in this sense, becomes both a tool and a symbol of geopolitical reconfiguration.

One of the most immediate institutional consequences of the UAE's departure is the potential weakening of OPEC's collective bargaining power. With one of the world's major producers stepping away, the cartel's ability to enforce discipline among remaining members could erode. This is particularly significant given that OPEC countries collectively control between 75 to 80 per cent of global oil reserves and account for roughly one-third of global production.

The strain, however, may be felt most acutely by Saudi Arabia. As the informal leader of OPEC and the primary architect of its production strategies, Riyadh now faces the challenge of maintaining cohesion within a potentially fracturing alliance. The burden of stabilising prices and ensuring supply consistency could increasingly fall on Saudi shoulders, exposing it to greater economic and political pressure.

In the short term, volatility remains the dominant theme. Rising oil prices—already influenced by conflict and supply chain disruptions—continue to exert pressure on economies heavily dependent on imported energy. For Pakistan, which sources up to 90 per cent of its oil imports from Gulf countries, this volatility translates into higher costs for electricity, transportation, and essential commodities. The ripple effects are felt across the economy, contributing to inflationary pressures and fiscal strain.

The situation is further complicated by broader geopolitical developments, including military tensions involving the United States, Israel, and Iran, as well as disruptions in key maritime routes. These factors have already pushed energy prices upward, placing additional burdens on fragile economies. Yet, beyond this immediate turbulence lies a more promising horizon.

For Pakistan and India, such a shift could open the door to diversified supply sources, improved negotiating leverage, and more favourable long-term agreements. Reduced dependence on a single bloc of suppliers could enhance energy security and provide a buffer against future shocks.






There is also a strategic dimension to consider. Pakistan's recent financial interactions with Gulf states—including the repayment of significant obligations to the UAE and subsequent support from Saudi Arabia—highlight the intricate web of economic and political relationships that underpin energy trade. As these dynamics evolve, Islamabad may find opportunities to recalibrate its partnerships in ways that better align with its economic interests. ■



# At the top

## Mobil Pegasus™ Gas Engine Oils



 <b>Products for Natural Gas Engines</b>				
Product	 Oil Drain Interval	 Wear Protection	 Oxidation/ Nitration Resistance	 Engine Cleanliness/ Deposit Control
Mobil Pegasus™ 1107	● ● ● ●	● ● ●	● ● ● ●	● ● ● ●
Mobil Pegasus™ 1005	● ●	● ●	● ● ●	● ●
Mobil Pegasus™ 805	●	● ●	● ●	● ●
Mobil Pegasus™ 705	●	● ●	●	● ●

**Application:**

**Trusted by leading engine manufacturers -**

Compatible with:

Caterpillar, Waukesha, Jenbacher, Wartsila

**Mobil Pegasus™ 1005 SAE 40 - Maximise your engine's performance today**



Proven performance in the field.



Engineered for reliability. Backed by experience.



Trusted by leading OEMs worldwide.



Marketing Alliance of ExxonMobil Lubricants & Specialties  
Marketers of ExxonMobil Chemicals

**For queries:**

info@mal.com.pk  
111-840-840

# How Pakistan can power the AI economy with Thar energy

Through capacity payments, billions of rupees flow annually to power producers regardless of actual consumption

**Shamsul Islam Khan**

The writer is a former Vice President KCCI, Commodities & Energy Expert, an independent economic analyst & Innovative solutions

Pakistan is paying for electricity it does not use. Through capacity payments, billions of rupees flow annually to power producers regardless of actual consumption, while consumers bear rising electricity tariffs including fixed charges, yet circular debt continues to swell. At the same time, the world is entering an era defined by artificial intelligence—an industry whose most critical input is not just talent or capital, but energy.

This convergence presents Pakistan with a rare strategic opportunity: to transform surplus electricity, particularly from Thar coal, into a globally competitive AI and digital export economy—while simultaneously easing the burden on domestic consumers.

The Thar coal ecosystem already hosts over 3,000 megawatts of mine-mouth, base-load power generation, with potential for further expansion. Unlike imported fuels, Thar offers price stability and one of the lowest marginal costs of electricity in the country. Yet, a portion of this capacity remains underutilized, even as the government continues to pay for it.

Instead of treating this as a burden, Pakistan can convert it into a revenue-generating asset.

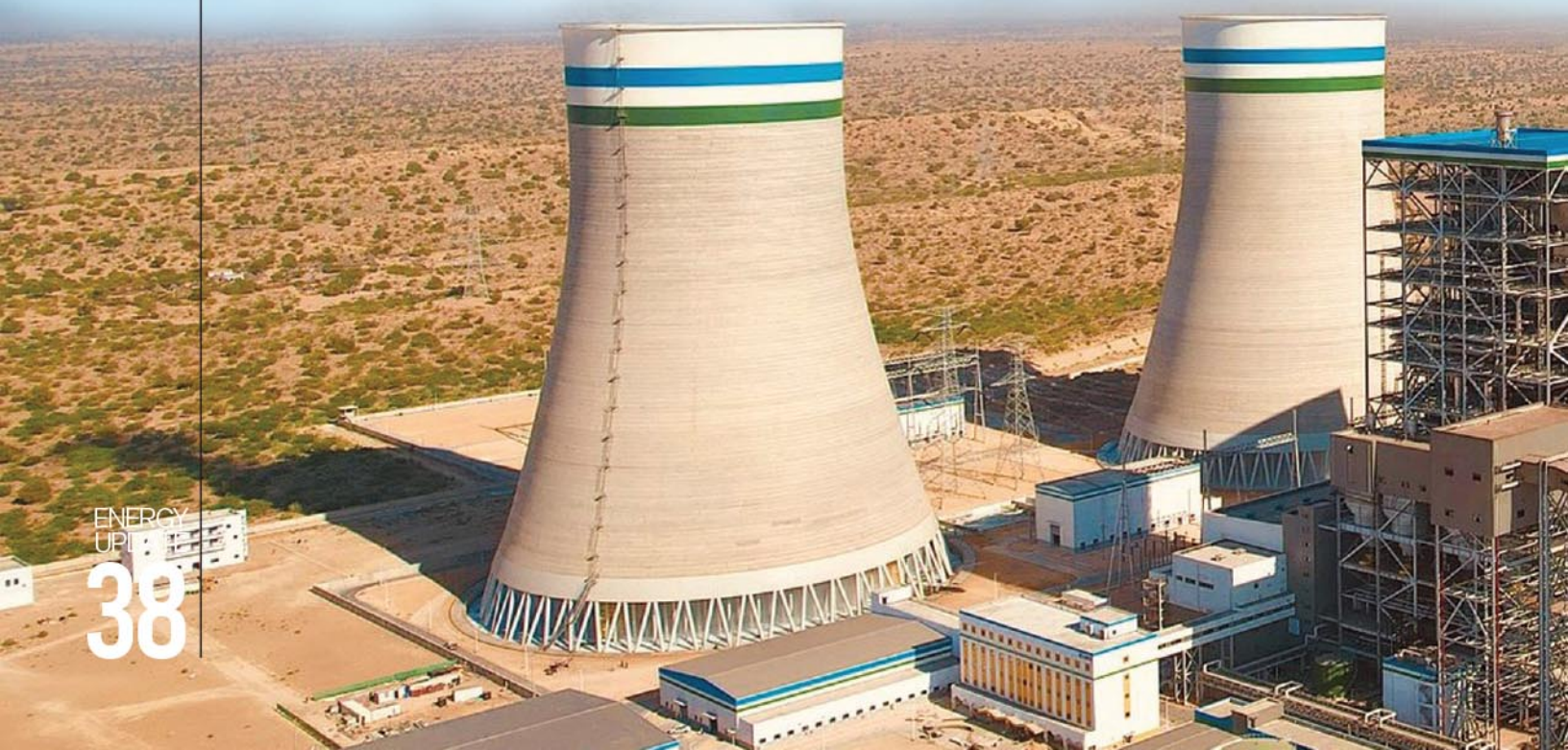
The proposal is to develop energy-anchored digital and AI parks, beginning along the Thar transmission corridor and eventually extending to mine-mouth locations. Electricity to these digital parks can be supplied direct without the need for inefficient DISCOs where most of the transmission losses occur.

These parks would offer long-term, competitively priced electricity—ideally in the range of USD 0.05 to USD 0.06 per kWh—under dollar-denominated contracts. This can attract data centers and compute-intensive industries seeking stable and affordable energy.

Even a modest first phase of 100 megawatts can generate USD 150 to USD 200 million annually in export revenues. Over a decade, scaling to 1,000 megawatts or more could yield USD 1.5 to USD 2 billion per year from Thar alone, with national potential reaching USD 3 to USD 5 billion annually as additional zones come online.

However, the real opportunity lies not in selling electricity, but in value addition through compute and artificial intelligence.

Globally, AI infrastructure is becoming energy-constrained. Training large models and running inference workloads require enormous, continuous power. Countries that can provide reliable, low-cost energy will emerge as hubs for AI compute. Pakistan, through Thar, can



position itself as one of the most cost-efficient destinations for this rapidly growing industry.

To capture this opportunity, the strategy must evolve across three layers:

### **Attract international data center operators – One-window Facilitation**

The first layer is infrastructure monetization. Pakistan should attract international data center operators by offering power, land, and connectivity through a genuine one-window facilitation system. Initial projects should be located near well-connected nodes such as Matiari, ensuring access to both the national grid and fiber routes linked to Karachi, Pakistan's primary internet gateway.

### **Compute ownership – GPU clusters**

The second layer is compute ownership. Pakistan must move beyond hosting foreign infrastructure and begin developing its own compute capacity—particularly GPU clusters tailored for AI workloads. This can be achieved through public-private partnerships and incentives for domestic investors. Owning compute ensures that a larger share of value remains within the country.

### **Tax-free AI-driven export services**

The third layer is AI-driven export services. With compute capacity in place, Pakistan can build an ecosystem of AI development, data processing, and digital services—ranging from model training and inference to software platforms and data analytics. At this stage, each unit of electricity generates multiples of its original economic value.

Importantly, this strategy delivers direct benefits to domestic consumers.

By converting surplus capacity into dollar-denominated revenue, the government can recover a portion of its fixed power costs externally rather than loading them onto local tariffs. This reduces upward pressure on electricity prices for households and industry. In addition, improved utilization of base-load plants enhances system efficiency, lowering the overall cost per unit of delivered electricity.

This also enables a more rational solarisation strategy.

Pakistan's current rooftop solar trend, while beneficial for individual consumers, risks undermining grid economics by shifting costs onto non-solar users and reducing utilization of already-paid-for base-load capacity. A more balanced approach would encourage:

Daytime solar adoption for self-consumption

Grid integration through net billing rather than excessive net metering

Alignment of solar generation with industrial and digital demand

Energy-anchored digital parks can act as anchor consumers, absorbing excess generation and stabilizing the grid. This creates space for solar to grow sustainably without distorting tariffs or increasing inequity among consumers.

Execution will determine success. Fiber connectivity must be treated as critical infrastructure, with a dedicated and redundant corridor linking Karachi to Thar. Policy stability is essential; investors require long-term certainty in tariffs, taxation, and foreign exchange repatriation. Security and governance must be addressed proactively to build confidence among global players.

The geopolitical environment further strengthens Pakistan's case. As costs rise and uncertainties grow in parts of the Middle East, companies are increasingly seeking alternative locations for digital and AI infrastructure. Pakistan can position itself as a lower-cost, energy-secure, and strategically neutral destination.

The country already possesses the key ingredients: surplus power, a growing IT talent base, and geographic proximity to major markets. What is needed is integration—a coherent framework that aligns energy policy with digital and industrial strategy.

Pakistan has already invested in the energy. The next step is to convert that energy into computation—and that computation into global value. Transforming idle electrons into AI-powered dollar earnings is no longer just an opportunity. It is a national imperative. ■



# Thar's Climate Struggles Meet Sustainable Hope

NFEH's Earth Day visit to Islamkot highlights the stark realities of climate change alongside a growing model of resilience, community empowerment, and public-private collaboration in Tharparkar.



**Ruqiyah Naeem**

In the far reaches of southeastern Tharparkar, where the desert stretches endlessly under a relentless sun, survival itself is an act of endurance. Each summer, temperatures rise beyond tolerable limits, drying up water sources, shrinking grazing lands, and pushing already vulnerable communities to the brink. In recent years, the intensifying effects of climate change have made these seasonal hardships even more severe—turning what was once cyclical adversity into a prolonged crisis.

It was against this stark backdrop that the National Forum for Environment & Health marked Earth Day 2026 with a significant visit to Islamkot, offering not only a glimpse into the region's struggles but also a compelling vision for its future.

## A Land Tested by Climate Extremes

The Thar Desert is no stranger to harsh conditions, but climate change has intensified its vulnerabilities. Rainfall patterns have become increasingly erratic, droughts more frequent, and heatwaves longer and more severe. For the scattered villages and nomadic communities that define Thar's social fabric, these changes are not abstract scientific concerns—they are lived realities.

Agriculture, the backbone of Thari livelihoods, is almost entirely rain-fed. When the monsoon fails, crops such as millet and guar cannot survive, leading to food shortages and economic distress. Livestock—often the only financial asset for many families—suffers from water scarcity and lack of fodder, resulting in devastating losses.

Healthcare challenges further compound these difficulties. In remote settlements, access to basic medical facilities remains limited. Malnutrition—particularly among children and women—continues to be a persistent issue, especially during drought years. Extreme heat also increases cases of heatstroke, dehydration, and water-borne diseases, placing immense strain on already fragile healthcare systems.



## Witnessing Change: NFEH's Visit to Islamkot

The NFEH delegation, led by Muhammad Naeem Qureshi, visited Islamkot with a mission to observe and evaluate ongoing development efforts. What they encountered was a model striving to balance industrial progress with environmental responsibility and social uplift.

At the centre of this transformation are initiatives led by the Sindh Engro Coal Mining Company and the Thar Foundation. Over nearly a decade, these organisations have worked to integrate large-scale coal mining with sustainability measures—an approach often considered difficult, if not contradictory.

Their efforts are further supported by institutions such as the Indus Hospital, which has played a critical role in improving healthcare access in the region.

## Sustainability in Action

Among the most notable initiatives is the gradual shift toward cleaner energy practices within mining operations. The introduction of electric dump trucks to replace diesel-powered fleets reflects a conscious effort to reduce carbon emissions—an important step in a region already under climate stress.

Equally significant is the Thar Million Tree Programme, under which more than 1.3 million trees have been planted. In a desert landscape, this is no small achievement. The plantation of native species helps com-

bat desertification, provides shade, improves soil quality, and supports local biodiversity.

Solarisation efforts have also transformed daily life. Villages, schools, and healthcare units now benefit from solar-powered electricity, while reverse-osmosis plants provide clean drinking water—addressing one of the most critical needs in Thar. Innovative solutions such as converting food waste into compost, and using underground water for fish farming and bio-saline agriculture, demonstrate how environmental challenges can be turned into economic opportunities.

### The Human Dimension: Empowerment and Inclusion

Beyond infrastructure and technology, the true measure of development lies in its impact on people. One of the most inspiring aspects of the Thar initiatives is their focus on community empowerment.

Women—traditionally confined to domestic roles in many rural settings—are now being trained as heavy vehicle drivers, marking a significant step toward gender inclusion. Education initiatives, supported by organisations like the The Citizens Foundation and the Shahid Afridi Foundation, are equipping young people with the skills needed to break the cycle of poverty.

For nomadic communities, often beyond the reach of conventional development programmes, these efforts offer pathways to stability and opportunity.

### The Role of NGOs and Philanthropy

While the work of SECMC and the Thar Foundation is commendable, the scale of challenges in Thar demands a broader coalition. NGOs and charitable organisations have a critical role to play in expanding the reach of development initiatives.

From mobile health units to community-based education programmes, there is immense potential for innovative, localized interventions. Collaboration among organisations can prevent duplication and ensure efficient use of resources. Moreover, NGOs serve as vital bridges between communities and policymakers—amplifying local voices and ensuring inclusive, responsive development strategies.

### Public-Private Partnerships: A Model for the Future

One of the most compelling aspects of the Thar initiative is its emphasis on public-private partnership (PPP). By bringing together government bodies, private companies, and non-profits, this model leverages the strengths of each sector. The government provides policy and regulatory support, the private sector contributes investment and technical expertise, and NGOs ensure community engagement and social development. Together, they create a holistic framework capable of addressing complex challenges. In regions like Thar, where underdevelopment is deeply entrenched, such collaboration is not just beneficial—it is essential.

### Challenges That Remain

Despite encouraging progress, significant challenges persist. Climate change continues to threaten water security and agriculture. Sustaining afforestation efforts in a desert environment requires long-term commitment and com-



munity ownership.

Healthcare access, while improved, must expand further to reach remote populations. Similarly, economic diversification is necessary to reduce dependence on climate-sensitive livelihoods.

### A Vision of Hope

As the NFEH delegation concluded its visit—marked by cultural performances, a visit to a historic Hindu temple, an agro-farm in Nagarparkar, and the scenic beauty of the Karoonjhar Hills—the experience left a lasting impression.

Thar, often portrayed as a land of hardship, revealed itself as a region of resilience, cultural richness, and untapped potential.

The Earth Day visit was more than a ceremonial occasion; it was a reminder that sustainable development is not an abstract ideal but a tangible reality when vision, commitment, and collaboration align.

In the face of intensifying climate challenges, Thar offers valuable lessons—not only for Pakistan but for the world. It demonstrates that even in the harshest environments, a future can be built that is sustainable, inclusive, and empowering.

The Earth Day ceremony in Islamkot was addressed by SECMC General Manager CSR Farhan Ansari, NFEH President Naeem Qureshi, General Secretary Ruqiya Naeem, and Vice President Nadeem Ashraf, who emphasised the importance of community-led sustainable development alongside expanding industrial activity. ■

UN World Water Development Report 2026

# 1.8 billion people still lack drinking water worldwide

Women and girls spend 250 million hours per day on water collection; fewer than 20% of formal workers in water utilities worldwide are women; gender inequalities continue to undermine global water security, disproportionately affecting women and girls; World Bank or multinational corporations are likely to play pivotal roles in the coming decades in shaping capital flows and international financing standards

**M Nawaz Khuhro**

**G**overnance of water resources, access, distribution, services and provision has profound implications for people's rights, resilience, livelihoods, health and well-being, and for sustainable development as a whole. This is particularly true for women, girls, gender-diverse people and their households and communities, says UN World Water Development Report 2026.

The report says 1.8 billion people still lack drinking water on premises, with women and girls responsible for water provisioning in two-thirds of households. Women and girls spend 250 million hours per day on water collection, over three times more than men and boys, in 53 countries with available data. This points to the ongoing failure of water governance to reach everyone – particularly marginalized communities with inadequate resources, services and infrastructure. Women and girls often shoulder the responsibility for water provisioning and management in such contexts.

Gender-based inequalities related to the access, use, management and governance of water resources – including water supply and sanitation services – have hindered progress towards fulfilling the human right to water and most Sustainable Development Goals. The *Water for All People: Equal Rights and Opportunities* report provides a comprehensive, evidence-based summary of the linkages between, and progress towards, water and gender equality. It describes how normative and policy frameworks translate into problem analysis, programme design principles and strategic action implementation in the water domain, pinpointing solutions for the benefit of all.

Women's rights to and control over water resources and access to and benefits from water often remain unrealized. Recognized gender gaps separate the realization of water rights and everyday water responsibilities. Gender mainstreaming and the incorporation of women and other marginalized groups into water governance can be far from the norm (Acevedo-International normative and human rights frameworks have contextualized the primordial importance of water governance

Gender inequalities continue to undermine global water security, disproportionately affecting women and girls. While they are often responsible for collecting and managing household water, they remain underrepresented in water governance, leadership and technical roles. The United Nations World Water Development Report 2026: *Water for All People – Equal Rights and Opportunities* highlights how unequal access to water and sanitation services impacts health, education, livelihoods and safety. Today, 2.1 billion people still lack safely managed drinking water, and women and girls spend an estimated 250 million hours every day collecting water.

The report examines how climate change, water scarcity and disasters are intensifying these inequalities and calls for stronger action to ensure equal rights, participation and opportunities in water management.

By promoting inclusive water governance, gender-responsive policies and improved data, the report outlines practical steps to close gender gaps and advance progress towards sustainable water management and the Sustainable Development Goals. Fewer than 20% of formal workers in water utilities worldwide are women. The health and environmental impacts of industrial and mining-related water pollution can disproportionately affect women. Business and industry can promote gender equality in water use by championing policies and practices rooted in sustainability, equity and inclusivity. Industry, business and energy | 55 adoption of water-efficient technologies and supporting capacity-building initiatives for women in water-dependent sectors can collectively reduce negative impacts on communities and the environment (Coles and Wallace, 2005). Promoting

women's empowerment economically and socially is also vital. This can be fostered by offering training, encouraging women's leadership in water governance and supporting women's participation in water-related entrepreneurship. Incorporating considerations about women into environmental and social impact assessments, and consulting with women in planning and advocating for legal frameworks that guarantee women's rights to water are critical steps towards more inclusive water governance.

The connection between water and jobs is receiving increasing attention. Many jobs depend on water and the water sector is struggling to attract, train and retain human resources in many parts of the world. The latter is particularly true for women's participation, including in management and leadership positions. According to a World Bank study, the share of women employees in water utilities at the global level was 17.7%. In general, the trend has been towards increasing women's participation. However, differences between organizations, localities and types of employment can be significant.

Across the world, it is women and girls who most often carry the daily weight of water insecurity. In more than 80% of rural households without direct access to water, they are responsible for collecting it, walking long distances, and managing its use. Women remain largely excluded from decision-making processes in water institutions holding less than 30% of management and technical positions in the water sector globally.

While some water utilities have close to 40% of women employees, there are some entities and locations with no female staff. Of the companies sampled by the World Bank, 32% had no female engineers, even if, in the water services sector, women appeared to be slightly better represented in management positions than in other sectors. Countries such as Indonesia show it is possible to progress towards achieving gender equality in the drinking water, sanitation, and hygiene (WASH) sector employment, particularly in positions such as community sanitation and health work. However, progress seems difficult for senior roles, where challenges include ensuring a work-life balance with family responsibilities and bias against women in management positions. The Arab region is one of the most water-scarce regions globally, with 19 out of 22 Arab states meeting official definitions of water scarcity and 13 states meeting definitions of absolute water scarcity.

World Bank or multinational corporations are likely to play pivotal roles in the coming decades in shaping capital flows and international financing standards. However, safeguards are necessary to prevent loans and investments from deepening already high indebtedness and dependence on developed countries. The current system of indebtedness already limits fiscal autonomy in many developing countries. ■



# STDC

Sindh Transmission & Dispatch Company (Pvt.) Limited

# PGC

Provincial Grid Company

**Transmitting Energy From  
Generation To Generations**

**Connecting generations, empowering  
industries, and lighting up every corner  
of SINDH, one kilowatt at a moment.**



3rd Floor, State Life Building No. 03, Dr. Ziauddin Ahmed Road, Karachi. (Pakistan)

021-111-777-832 info@stdc.com.pk www.stdc.com.pk



www.facebook.com/STDCL.Co



www.instagram.com/stdc.pl



www.youtube.com/Sindh Transmission & Dispatch Company

# Huawei Pakistan Digital Week 2026

## Advancing the Future of Smart Energy and Digital Infrastructure

Islamabad once again became the center of technological innovation as it hosted Huawei Pakistan Digital Week 2026, a landmark event showcasing the company's latest breakthroughs in the industry. The event brought together industry leaders, energy experts, policymakers, and technology enthusiasts to explore the next phase of Pakistan's digital and energy transformation.

A major highlight of the exhibition was Huawei Digital Power's FusionSolar ecosystem, featuring advanced battery energy storage systems (BESS) for both commercial and residential applications. The solutions demonstrated how integrated solar and storage technologies are enabling reliable, efficient, and sustainable power delivery across diverse energy needs.

The event also showcased Huawei's latest data center innovations and UPS (Uninterruptible Power Supply) systems, emphasizing high efficiency, resilience, and intelligent energy management for critical infrastructure. These solutions are designed to support Pakistan's rapidly growing digital economy by ensuring stable and secure power for mission-critical operations.

Live demonstrations and technical sessions highlighted key advancements in smart string inverter technology, intelligent monitoring, grid integration, and hybrid energy management systems. Experts discussed how these innovations are helping industries transition toward cleaner, more reliable, and digitally



managed energy ecosystems.

Industry stakeholders praised Huawei's continued focus on innovation, particularly its role in accelerating renewable energy adoption and strengthening digital infrastructure across Pakistan.

Overall, Huawei Pakistan Digital

Week 2026 served as a powerful platform for collaboration and knowledge sharing, reinforcing the growing importance of smart energy systems, data-driven infrastructure, and sustainable technology solutions in shaping Pakistan's future energy landscape.

# The bike that could save billions

## Ammar H Khan

The author is an assistant professor of practice at the School of Business Studies, IBA, Karachi

Ammad has been delivering food in Karachi for six years. His bike, a machine so ubiquitous in Pakistan it might as well be a national symbol, burns through five litres of petrol a week. When oil prices spiked in March 2026, his fuel bill jumped by nearly a third overnight. He does not own the bike. He pays daily rental to a fleet owner and splits whatever margin remains between revenue and costs. Some nights, after fuel and rental, he clears less than Rs500. He has heard about electric bikes. He asks the same question everyone in his position asks: how does one pay an upfront cost for an electric bike?

That question is the crux of Pakistan's electric motorcycle problem. The economics are not in dispute. An electric motorcycle running on 1.4 kWh of charge per trip costs Rs40 in electricity versus Rs300–325 in petrol for the same 60 km. Annual operating savings run around Rs70,000 per bike, enough to pay back the price difference in under two years.

Pakistan has 30.52 million registered motorcycles, consuming roughly 3.2m metric tonnes of petrol annually, translating to roughly \$2.5 billion in import costs from this single vehicle class alone. The arithmetic for switching is overwhelming. The barrier is not the numbers. It is the sticker price of an entry-level electric bike when the buyer has no savings, no credit history, and no government programme to bridge the gap.

## What Vietnam did

In 2022, Vietnam had a motorcycle fleet problem that looked a lot like Pakistan's, with 45m registered two-wheelers, a petrol import bill climbing with every crude price cycle, and an economy in which the motorbike was less a transport choice than a survival instrument. VinFast launched its VF electric scooter at around \$500, comparable to an entry-level petrol equivalent.

With battery swap stations, every electric bike charged converts an idle capacity payment from a fiscal liability into productive revenue

The government simultaneously removed registration tax on electric two-wheelers, mandated that ride-hailing platforms



transition their fleets to electric, and provided a targeted purchase subsidy for the first tranche of buyers. Within two years, electric two-wheelers crossed 15 per cent of new sales. The key difference between Vietnam then and Pakistan now is not technology, cost, or consumer willingness, it is policy execution.

**The swap model**

The objection most frequently raised against electric motorcycles in Pakistan is the charging infrastructure. Where do riders charge if they live in a one-room rental with shared wiring? The answer — operational at scale across Southeast Asia — is the battery-swap station.

Pakistan has 46,605 MW of installed generation capacity. Peak summer demand reaches 28,000–30,000 MW. The structural surplus, the capacity for which the country pays around Rs2 trillion in annual capacity charges regardless of whether a single electron is generated, is 16,000–18,000 MW.

**Amjad’s answer**

Back in Karachi, Amjad’s question — who pays the first cost? — has a workable answer. It involves three mechanisms that do not require inventing anything new. The first is fleet conversion. Pakistan’s food delivery, logistics, and ride-hailing platforms operate tens of thousands of motorcycles through fleet-owner intermediaries. A government programme offering zero-duty import of electric two-wheelers for registered commercial fleet operators, combined with a Rs15,000-20,000 per-unit purchase subsidy funded from the Petroleum Development Levy (PDL), would trigger immediate fleet conversion at scale.

This would literally be the first reasonable use of PDL, which is currently being used to bridge the budget deficit. Within twelve months of programme launch, a credible commitment to fleet conversion could put 300,000-500,000 electric bikes on the road.

The second is a scrappage scheme for individual riders. Pakistan has approximately 9.4m motorcycles over 10 years old; disproportionate fuel consumers running on degraded engines. A structured exchange offering Rs10,000-15,000 trade-in credit on an old petrol bike toward the purchase of a new electric unit would accelerate fleet turnover for precisely the income segment that can least afford the upfront cost. The fiscal cost at 500,000 exchanges per year, Rs7.5bn annually, is a fraction of the fuel import savings it generates.

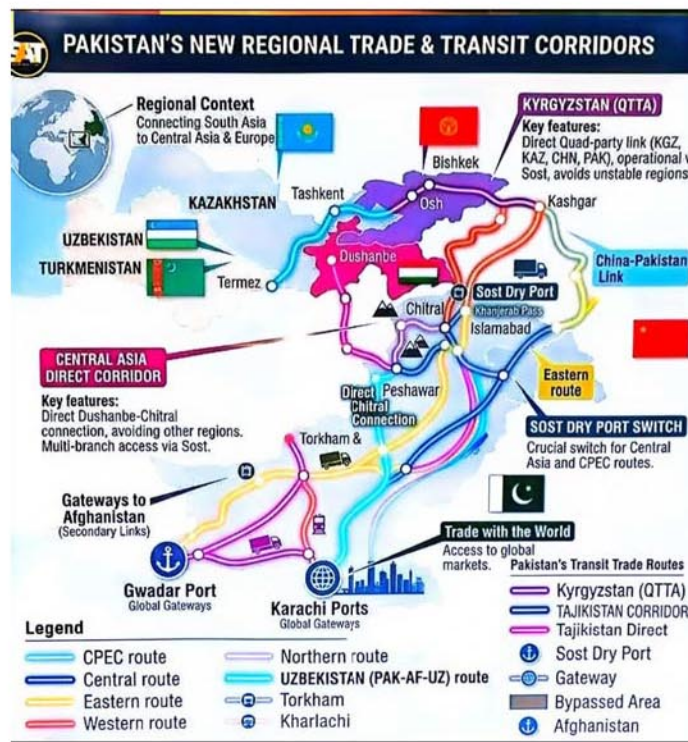
The third most crucial element is a standardised battery. Pakistan needs to adopt interoperability standards for electric two-wheelers, or any relevant configuration dominant across Southeast Asia, which mandates interoperability across all manufacturers. Without this, battery-swap networks fragment by brand and never achieve the density that makes them viable. With it, a private sector swap network can emerge without a single rupee of public capital for infrastructure. ■



**Tarbela Project to Reduce 565,905 tonnes of carbon emissions**

**EU Report**

The Tarbela 5th Extension Hydropower Project (T5) has achieved a significant milestone in Wapda’s engagement with international carbon markets. The project is expected to reduce approximately 565,905 tonnes of CO2 emissions annually, contributing to a total reduction of 5,659,053 tonnes over a fixed 10-year crediting period. The verification process for the project has commenced and, upon completion, the project will be registered with the Global Carbon Council (GCC). This will make T5 Pakistan’s first hydropower project to achieve GCC registration. The progress has been made possible with technical support from the World Bank and through the successful completion of key milestones, including project submission and the engagement of GCC-approved international verifier, namely IGAI Technologies, Spain. ■



This Order allows goods from other countries to pass through Pakistan to Iran by road, provided such goods remain in transit and are not sold within Pakistan, the traders furnish a financial security equivalent to applicable duties, all movements are regulated under the Customs Act, 1969 and FBR procedures, and the transportation is carried out only through designated routes such as Karachi, Gwadar and Taftan, with the overall objective of facilitating trade with Iran while safeguarding government revenue.

# STOCK AVAILABLE NOW!

SH10T - SH25T

SBH100 - SBH400



High Voltage Hybrid Inverters & Batteries



Smart  
&  
Robust



Lower  
Cost



Safe  
&  
Reliable



Efficient  
&  
Flexible

# Built for Pakistan's Summer: itel Energy Defines 100% Grade A Energy Storage

## EU Report

**G**lobal supply chains are currently reeling from geopolitical conflicts and tightening fuel supplies, sending shockwaves through the broader energy sector. Locally, Pakistan finds itself at a critical inflection point in 2026.

Summer in Pakistan brings more than just soaring temperatures; it brings the inevitable reality of crippling load shedding. While families desperately seek reliable backup power just to get through the sweltering days and nights, industries face a harsher economic threat. Every sudden power-cut risks operational downtime, forfeited orders, and permanent damage to expensive manufacturing equipment. Simply installing solar panels isn't enough, as they only generate power during the day. The real bottleneck to surviving this energy crisis is high-capacity storage; a robust battery system that captures daytime energy to provide an unwavering, stable power supply exactly when the grid collapses.

### The Blueprint of Reliable Storage: How to Choose

Choosing the right battery means looking beyond surface-level specifications. To guarantee genuine The Core Cells (100% Grade A): The foundation of a reliable battery is the cell itself. A genuine Grade A cell is brand-new, rigorously tested, and fully traceable from the factory line. Unlike repurposed or Grade B alternatives, 100% Grade A cells guarantee their true stated capacity and a maximized cycle life. Most importantly, they are engineered to deliver highly stable performance without degrading, even under punishing high temperatures.

**The Intelligent System (BMS):** Premium cells require a smart "brain" to manage them. A high-quality battery utilizes a certified Battery Management System (BMS) that actively protects the unit from overcharging, severe discharging, overheating, short circuits, and abnormal currents. During a Pakistani summer, where batteries endure extreme heat, unstable grid voltage, and heavy daily load shedding; this active system acts as a critical shield (by adding 50 plus built-in protections), keeping the battery operating safely and efficiently under the most demanding conditions.

**Service & Warranty Assurance:** A battery's true value is ultimately measured by the brand standing behind it. High-tier engineering should always be backed by robust after-sales support and strong brand responsibility. Only brands with absolute confidence in their technical architecture can guarantee long-term performance. By pairing 100% Grade A cells with advanced BMS technology, itel Energy backs its solutions with exclusive limited-time warranty offers and dedicated local support, ensuring your investment is secure for years to come.



### The 100% Grade A Standard

At itel Energy, genuine performance and safety are evaluated on three dimensions: 100% Grade A Cells Inside. While the market is frequently flooded with cheap, repurposed Grade B or C alternatives - often scrapped or defective units that suffer from short lifespans and pose severe fire or swelling hazards. We refuse to compromise. A genuine Grade A lithium cell is a brand-new, high-quality cell that meets strict standards across four key areas: performance parameters, production history, traceability with QR code, and safety. We exclusively utilize fully traceable, brand-new cells that pass stringent tests such as puncture, extrusion, and overcharging.

Our solutions are engineered ecosystems. We pair these premium cells with an Intelligent Battery Management System featuring over 50 active protection functions. Physically, we utilize an advanced anti-expansion design with pre-tensioned steel strapping to effectively suppress cell swelling under high-temperature summer conditions.

Because our 100% Grade A architecture delivers low, stable internal resistance, our batteries maintain exceptional capacity retention even after 6,000 cycles. To ensure you can confidently navigate this summer's energy demands, itel Energy is backing these specific technical features with exclusive, limited-time warranty offers alongside our standard replacement coverage. When you invest in 100% Grade A Cells, you are investing in genuine power, long-term savings, and total peace of mind.

"When we say 100%, we mean every unit and zero compromises. From top-tier brand-new cells with complete traceability, rigorous cell-to-pack testing to dedicated after-sales care, itel Energy delivers the long-term peace of mind Pakistani deserve." — Technical Head, itel Energy Pakistan. ■

IEEEP's 40th International Symposium

# Engineers sound alarm over technical decline in Pakistan

Engineering Development Board, Pakistan Engineering Council, and Higher Education Commission are aligning Pakistan's engineering education and industrial output with global benchmarks: moot told



## EU Report

At a time when Pakistan's energy and industrial sectors are under mounting strain, the Institution of Electrical & Electronics Engineers Pakistan has issued a blunt and urgent call: put qualified engineers and domain specialists in charge — or risk deepening systemic failure.

Speaking at the 40th Multi-topic International Symposium-2026 in Karachi, IEEEP leadership laid bare what it described as a structural flaw at the heart of governance: the continued appointment of generalist bureaucrats to run highly technical ministries, regulators, and public sector institutions. IEEEP President Tahir Basharat Cheema did not mince words. He argued that civil servants, while vital for administration, lack the specialised expertise required to manage complex sectors such as energy, engineering, and industrial development. "Technical ministries must be led by professionals with deep domain knowledge," he stressed, calling the current model "unsustainable and ineffective".

The criticism was particularly sharp for regulators like the National Electric Power Regulatory Authority and Oil and Gas Regulatory Authority, where, according to Cheema, the absence of seasoned sector practitioners has undermined performance. The consequences, he warned, are visible across the energy landscape.

Pakistan's infrastructure, he noted, reflects decades of stagnation. Distribution transformers still rely on designs dating back to the early 20th century, while much of the grid system traces its origins to the 1960s. For IEEEP, this is not merely a technological lag—it is a governance failure rooted in the absence of qualified decision-makers. Key institutions have not been spared from criticism. The Private





Power and Infrastructure Board, responsible for facilitating independent power producers, was cited as falling short of expectations. Meanwhile, the once-prominent Pakistan Council of Scientific and Industrial Research is now struggling with severe funding shortages, limiting its ability to sustain even basic operations, let alone drive innovation.

For Cheema, the irony is striking. The principle of placing specialists in technical roles—established globally more than a century ago—remains largely ignored in Pakistan. The result, he suggested, is a persistent cycle of inefficiency, outdated systems, and policy inertia. The symposium also turned its focus to industrial revival. Karachi Centre Chairman Navid Akram Ansari urged the government to prioritise “Made in Pakistan” procurement across public sector organisations, arguing that such a policy could stimulate domestic manufacturing and improve quality standards. He further called for the removal of duties on imported raw materials to enhance global competitiveness and advocated the establishment of internationally accredited testing laboratories nationwide.

Ansari emphasised the role of institutions such as the Engineering Development Board, Pakistan Engineering Council, and the Higher Education Commission are aligning Pakistan’s engineering education and industrial output with global benchmarks. IEEEEP, he said, stands ready to support reforms through stronger academia-industry linkages and enhanced research initiatives.

A critical gap was highlighted in higher education. In his keynote address, Professor Tahir Mahmood revealed that only 12.4 per cent of Pakistan’s more than 250 universities maintain formal placement bureaus—an essential bridge between graduates and industry. Without these mechanisms, he warned, employability suffers and industrial growth weakens.

The symposium, featuring over a dozen research presentations in electrical and electronics engineering, ultimately raised a fundamental question: can Pakistan compete in a rapidly advancing world while entrusting its most technical domains to non-specialists? IEEEEP’s answer is clear—and urgent. Without a decisive shift towards expert-led governance, the country risks not only falling behind but entrenching the very inefficiencies it seeks to overcome. ■

## Sindh CM unveils plan for affordable power through provincial grid



### EU Report

Sindh Chief Minister Syed Murad Ali Shah has outlined an ambitious plan to generate and distribute affordable electricity through a provincial transmission and distribution framework, aiming to provide relief to domestic consumers and boost industrial growth across the province.

He shared this vision while meeting Danish Ambassador Maja Dyrberg Mortensen at the CM House, where both sides discussed strengthening bilateral cooperation, investment opportunities, renewable energy, and environmental sustainability. The chief minister said the Sindh government was actively working on projects to produce low-cost electricity and deliver it efficiently through its own transmission company. “Our objective is to ensure affordable electricity for households and industry alike by improving generation efficiency and reducing line losses,” he said, adding that cheaper power would directly translate into public relief and enhanced economic activity.

Murad emphasised that Sindh was keen to play a proactive role not only in power generation but also in distribution, particularly to ensure that underserved and industrial areas receive uninterrupted and cost-effective electricity. Highlighting the province’s renewable energy potential, the chief minister said Sindh possessed vast opportunities in wind energy, especially along its coastal belt. He noted that the development of the wind corridor and associated projects could transform Sindh into a regional hub for clean energy.

Ambassador Mortensen expressed a strong interest in Sindh’s renewable energy sector, particularly wind energy, and reiterated Denmark’s commitment to supporting environmentally sustainable projects. She noted that collaboration in green energy could open new avenues for investment and strengthen economic ties between the two sides.



# Deep-Sea Mining: The Emerging Frontier of Global Resource Competition

Demand for critical minerals such as lithium, manganese, cobalt, and nickel has surged to unprecedented levels; establishing a dedicated Deep Sea Mining Authority would enable effective coordination among key institutions

## Dr Aneela Khan

The author is a Research Fellow at National Institute of Maritime Affairs

As the world races toward a green energy future and the rise of advanced technological industries, the demand for critical minerals such as lithium, manganese, cobalt, and nickel has surged to unprecedented levels. These resources form the backbone of electric vehicles, renewable energy systems, and next-generation technologies. Yet, land-based reserves are dwindling, increasingly difficult to replace, and geopolitically concentrated in a few regions, creating a mounting sense of urgency and vulnerability. Against this backdrop, the gaze of states and industries is turning seaward i.e. toward the vast, dark, and largely uncharted depths of the ocean. In this unfolding frontier, deep-sea minerals are no longer a distant possibility but are rapidly emerging as the new arena of global resource competition, where economic ambition, technological power, and strategic interests converge.

The seabed hosts three primary types of mineral resources: polymetallic nodules, cobalt-rich ferromanganese crusts, and polymetallic sulphides. Polymetallic nodules, found on abyssal plains such as the Clarion-Clipperton Zone in the Pacific Ocean, are formed through the slow accumulation of manganese and iron-rich layers over millions of years. Polymetallic sulphides are located along mid-ocean ridges, where metals like copper, zinc, and gold precipitate around hydrothermal vents. Meanwhile, cobalt-rich crusts develop on underwater mountains, such as those in the Prime Crust Zone in the Western Pacific, through the gradual deposition of cobalt, manganese, and iron.

The exploration and exploitation of these mineral resources is defined by international law. Under the United Nations Convention on the Law of the Sea (UNCLOS), coastal states exercise sovereign rights over seabed minerals within their Exclusive Economic Zones (EEZ). Beyond these limits lies “the Area beyond National Jurisdiction,” designated as the common heritage of mankind and regulated by the International Seabed Authority (ISA), established in 1994 and headquartered in Kingston, Jamaica. No country can claim exclusive mining rights in these international waters without an ISA-issued contract.

To date, the ISA has issued approximately 32 exploration licenses, each valid for 15 years. Nineteen of these

licenses relate to polymetallic nodules, with seventeen located in the Clarion-Clipperton Zone. Eight licenses have been granted for polymetallic sulphides in regions such as the Southwest Indian Ridge, Central Indian Ridge, and Mid-Atlantic Ridge, while five licenses cover cobalt-rich crusts. These contracts are held by around twenty countries, including major powers such as China, Russia, France, India, and Japan, as well as smaller island states like Nauru, Cook Islands, and Kiribati.

Among these, China has established itself as a leading actor, holding five exploration licenses. Three of these are managed by the China Ocean Mineral Resources Research and Development Association (COMRA), covering polymetallic nodules, sulphides, and cobalt-rich crusts across key ocean regions. Additional licenses are held by China Minmetals Corporation and Beijing Pioneer Hi-Tech Development Corporation Limited. India, too, has made notable advances. Its Ministry of Earth Sciences oversees deep-sea mining governance, and the launch of the Deep Ocean Mission in 2021 reflects its strategic commitment to the blue economy. India currently holds three exploration licenses in the Central Indian Ocean Basin, Indian Ocean Ridge, and Carlsberg Ridge. Notably, in September 2025, India secured a license for polymetallic sulphide exploration in the Carlsberg Ridge, a geologically significant boundary between the Indian and Arabian tectonic plates.

The United States, however, follows a different path. As it is not a party to UNCLOS, it does not participate in the ISA framework. Instead, it regulates seabed activities through its own domestic legislation, the Deep Seabed Hard Mineral Resources Act, with licenses issued by the National Oceanic and Atmospheric Administration (NOAA). In 2025, the U.S. accelerated its deep-sea mining ambitions through an executive order, followed by finalized regulations in January 2026. While actively exploring in the Clarion-Clipperton Zone and along its coastlines, these unilateral actions have drawn criticism for undermining the multilateral governance framework and lacking international legal legitimacy.

Yet, beneath the economic promise lies a growing environmental debate. The deep sea constitutes nearly 90% of the marine environment and plays a critical role in regulating the Earth’s climate, including carbon absorption and oxygen production. Recognizing the potential risks, the International Union for Conservation of Nature (IUCN) called in 2021 for a moratorium on seabed mining until adequate environmental safeguards are in place. To date, thirty-eight countries have supported calls for a ban or moratorium,

citing concerns over irreversible environmental damage, biodiversity loss, and long-term ecological disruption.

Despite the issuance of exploration licenses, commercial mining has not yet commenced due to the absence of finalized “Mining Codes.” In 2021, Nauru triggered the “two-year rule,” requiring the ISA to complete exploitation regulations within a specified timeframe. However, this deadline has passed without resolution. The 31st session of the Legal and Technical Commission (LTC) of the International Seabed Authority, held from 23 February to 6 March 2026, made technical progress on draft exploitation regulations, particularly on environmental standards and reporting. However, key issues such as liability, inspection mechanisms, and standards remain unresolved and have been deferred for further intersessional negotiations.

For Pakistan, the evolving deep-sea mining landscape presents both a challenge and an opportunity. The country supports the ISA’s mandate and upholds the principle that seabed resources are the common heritage of mankind. It advocates for strong environmental safeguards, equitable benefit-sharing, and technology transfer before commercial exploitation begins. However, Pakistan currently lacks exploration licenses and a comprehensive national policy in this domain. Under the Rules of Business 1973, engagement with the ISA is handled by the Ministry of Defence.

To move forward, Pakistan must adopt a proactive and coordinated approach. Establishing a dedicated Deep Sea Mining Authority would enable effective coordination among key institutions, including the Ministry of Energy, Pakistan Mineral Development Corporation, Ministry of Maritime Affairs, Geological Survey of Pakistan, Ministry of Climate Change, National Hydrographic Office, Ministry of Science and Technology, National Institute of Oceanography, and National Institute of Maritime Affairs. Such an institution would streamline decision-making, ensure compliance with international obligations, and integrate scientific, environmental, and policy perspectives. At the same time, Pakistan must enhance its diplomatic engagement to secure representation on the ISA’s Legal and Technical Commission. Investment in emerging technologies such as Remotely Operated Vehicles (ROVs) and advanced environmental monitoring systems is equally critical. Most importantly, Pakistan must act swiftly to secure an exploration block; failure to do so risks marginalizing the country in an increasingly competitive and strategically significant domain.

In a world where resource security is rapidly becoming a defining element of geopolitical power, deep-sea mining represents more than an economic opportunity; it is a strategic imperative. For Pakistan, timely action today will determine whether it emerges as a participant or remains a spectator in this new frontier of global competition. ■



# DIPLOMATIC ENCLAVE



Australian High Commissioner to Pakistan Timothy Kane met with the Chief Minister of Punjab to discuss cooperation in education, skills development, climate resilience, agriculture, and trade, reinforcing strong Australia–Punjab partnership.



Prime Minister Muhammad Shehbaz Sharif presenting shields for Saudi Leadership to Ambassador of KSA at 6th Paigham e Islam Conference held in Islamabad.



German Ambassador H.E. Inna Lepel is at the 1st EU-Pakistan Business Forum with her team to strengthen the business relations between Pakistan and Germany.



Chinese Ambassador to Pakistan, Jiang Zaidong called on the Deputy Prime Minister and Foreign Minister Senator Mohammad Ishaq Dar at MoFA.



Strong international participation with ambassadors from multiple countries joining industry leaders and institutions, including FMO, to explore opportunities in agri-food, water, and climate cooperation. Engagements with Finance Minister Muhammad Aurangzeb and SAPM on Industries and Production Haroon Akhtar Khan highlight growing momentum for deeper EU–Pakistan economic collaboration.



Strengthening Pakistan–Tajikistan economic cooperation – a productive meeting between Ambassador of Tajikistan Mr. Yusuf Sharifzoda and Pakistan’s Minister for Commerce Mr. Jam Kamal Khan, focusing on trade, investment, logistics, and expanding bilateral business ties.



Restoring sight, transforming lives in Pakistan – proud to support The Fred Hollows Foundation’s impact with the leadership of Australian High Commissioner Timothy Kane.



High Commissioner H.E. Tarik Ali Khan met with Managing Director, National Grid Company of Pakistan Limited, Engr. Altaf Hussain & CEO of the Independent System and Market Operator, Syed Imtiaz Hussain Shah to discuss opportunities for Canadian clean energy experts & companies.

# FUELING NATIONAL ECONOMY THROUGH RELIABLE PERFORMANCE FOR ALL STAKEHOLDERS



**Attock Oil Company discovered oil in the Potohar belt in 1915, well before discovery of oil in the Middle East. A 2,500 bpd oil refinery, the first in the region, was set up in 1922 at Morgah village, Rawalpindi.**

**Today ARL is a 53,400 bpd state-of-the-art refinery and has the distinction of being the only refinery in Pakistan utilizing 100% indigenous crude oil. ARL meets most of the oil demand in northern Pakistan, including the Armed Forces, Railway, IPPs and general public.**



## **ATTOCK REFINERY LIMITED**

ISO-9001:2015 | ISO-14001: (2015) | OHSAS-18001: (2007) | ISO-17025 (2005) Certified & Implemented ISO-50001 Energy Management System

[www.arl.com.pk](http://www.arl.com.pk)

Glorious Past... Promising Future

# SOLAR PAKISTAN 2026 PICTORIAL GLIMPSES



**M. Zakir Ali CEO Inverex Solar Energy  
with Solar Fraternity**



**Glimpse of Solis Stall**



**Mian Fahad Director – Asian Countries  
Growatt New Energy Co., Ltd. with his team**



**Solis launching of new product**



**Team Diwan International**



**Diwan International organized a networking dinner**



**Crown Solar stall visit by Chief Guest**

ORGANIZED  
BY



**Mr. Saleem Tanoli CEO Fakt  
during inauguration of Exhibition**



**Mr. Saleem Diwan CEO Diwan with Team Trina Solar**



**Group Photo of Ziewnic team with organizers**



**Glimpse of Growatt New Energy Co., Ltd. stall**



**Launching of the exhibition**



**AE power stall visit by Chief Guest**



**M. Zakir Ali CEO Inverex presenting  
cheque to cricketer Usman Khan**



Become a Sponsor at

# Solar & Storage Expo 2026



A leading industry event connecting top solar and energy stakeholders, innovators, and solution providers under one roof.

**10** **11** **12** | **JULY 2026**

 Expo Center Lahore

Exclusive sponsorship slots are filling fast.  
Secure your place before they're gone!



Connect with Industry Leaders



Expand Your Network



Showcase Your Products & Solutions



Maximize Brand Visibility



Drive Business Opportunities



BOOK YOUR SPONSORSHIP TODAY!  
**0321 0988876**

 [expo@pakistansolarassociation.org](mailto:expo@pakistansolarassociation.org)

 [www.pakistansolarassociation.org](http://www.pakistansolarassociation.org)

# EMC PAKISTAN PRIVATE LIMITED



**EMC Pakistan Private Limited** is a multidisciplinary consulting firm specializing in **Environmental Engineering and Health & Safety Management**. We offer comprehensive services that address environmental, health, and safety concerns for both public and private sector organizations.

EMC is registered with the **Pakistan Engineering Council (PEC)** and brings together a team of highly qualified professionals with extensive experience across diverse sectors. Our expertise integrates environmental engineering solutions with effective management practices, ensuring sustainable and compliant outcomes for our clients.

## **PORTFOLIO OF OUR SERVICES**

- Environmental Studies ( IEE, EIA and ESIA)
- Implementation of management systems
- Design, Fabrication Installation and Operation of WWTPs
- Technical, Financial, and economic feasibility studies
- Energy Efficiency, Energy Conservation and load management
- Land & Topographical Survey
- Sub Soil Investigation
- Environment, Health and Safety Audits
- Resettlement Action Plan & Land Acquisitions
- Project Managements, evaluation and monitoring
- Supply and demand analyses of energy resources
- Public / Stakeholders consultation hearing
- Processing of CDM projects
- CAD applications Including GIS Mapping

### **KARACHI**

Suite No. 502, 503, 5th Floor, Anum Estate,  
Main Shahrah-e-Faisal, Opp.  
Duty Free Shop, Karachi, Pakistan.  
Tel: +92-21-34311466, +92-21-34321717,  
Fax: 92-21-34311467  
Email: mail@emc.com.pk,

### **Lahore**

Office No. 501, 5th Floor, High-Q Tower Plot  
No.1, Gulberg V Jail Road Lahore.  
Tel. No: +92-423-5135389  
Email: mail@emc.com.pk

### **ISLAMABAD**

Suite No. 403, 4th Floor,  
Green Trust Tower, Jinnah Avenue, Sector F6,  
Blue Area, Islamabad. Tel: +92 51 8744155, +92 51 8744055  
Email: mail@emc.com.pk,



Website: [www.emc.com.pk](http://www.emc.com.pk)

ORGANIZED BY

**ENERGY  
UPDATE**

2<sup>ND</sup> CONFERENCE ON  
**SINDH ENERGY  
DIVERSITY**

FROM RESOURCES TO RESILIENCE:  
SINDH'S NEXT ENERGY CHAPTER



**THU 18<sup>TH</sup> JUNE**

Movenpick Hotel, Karachi

[www.energyupdate.com.pk](http://www.energyupdate.com.pk)

Rapid degradation of land mass worldwide is a looming threat to food security; desertification and land degradation have afflicted almost 30 percent of land area of the world and one-sixth of the world's population.

**Naseer Memon**

The writer is a senior adviser on water governance at the Sustainable Development Policy Institute.

**L**and is a primary resource for growing grains. Rapid degradation of land mass worldwide is a looming threat to food security. According to United Nations Environment Programme about 70 percent of dry land used for agriculture worldwide has been degraded. Desertification and land degradation have afflicted almost 30 percent of land area of the world and one-sixth of the world's population. The impact is more severe in Asia—home to almost 60 percent of global population—where about 22 percent of dry land is affected by desertification and land degradation. The continent has 1.34 billion hectares of agriculturally-productive dry land, which amounts to 70 percent of total dry land area of the world.

Globally, more than 100 countries, including Pakistan, are affected by desertification; prone to loss of soil fertility and biodiversity and faltering land productivity.

The UN intervened in 1994 by introducing the Unit-

ed Nations Convention to Combat Desertification to arrest the pace of land degradation. The convention aims to mitigate the impact of land degradation and protect land to secure food, water, shelter and economic opportunities for the present generation as well as posterity. Pakistan signed the convention in 1994 and ratified it in 1997. It is a legally binding framework to address desertification and its effects.

Pakistan is among the countries most severely affected by desertification and land degradation: 80 percent of its land area is arid or semi-arid; two-thirds of its spiralling population depends on dry land for their livelihood, mainly through agriculture and livestock. Pakistan developed its first National Action Programme to combat desertification in 2002; the latest was developed almost a decade ago. According to the NAP, more than 71 percent of the land in Pakistan falls in two categories: Class VII and Class VIII, representing poor forests/ rangeland soils and soils unfit for agriculture, respectively. This poses a serious challenge for the needs of a burgeoning population.

Major causes of land degradation in Pakistan include soil erosion by wind and water, water logging

# CONSERVING LAND

and salinity, soil contamination due to excessive use of petrochemicals in the agriculture sector, deforestation, drought, inadequate freshwater flows to delta and urban land conversion.

According to official data, wind erosion has affected some 3-5 million hectares; and its intensity is increasing at an alarming pace. Erosion by water is an even bigger menace. Indus watershed mountains, some 40-50 million years old, are geologically young formations. Torrential flows descending from the mountains cause extensive abrasions. Estimates suggest that about 11 million hectares are affected by water erosion. Water erosion also has negative consequences for dams and canals. Unavoidable silting means dams have short lives. Sedimentation of canals restricts water and land use efficiency.

Before the advent of modern irrigation in the late 19th Century in the Indus Basin, some 400 million tonnes of sediments would reach the Indus delta every year. This has now decreased to about 30-40 million tonnes. A large quantity of sediment now gets trapped in reservoirs, canal network and farms. Rapid deforestation in watershed areas triggers devastating floods in valleys and exposes more soil to erosion.

The twin menace of water-logging and salinity has emerged as a serious threat to productivity and sustainability of farmland. A report of the Pakistan Council of Research in Water Resources claims that approximately 3.3 million hectares of irrigated land is severely affected by surface salinity. Another recent report of the Food and Agriculture Organisation says that 6.67 million hectares of agricultural land in Pakistan has been affected by soil salinity and sodicity.

Pakistan has a scant forest cover of only 3-5 per-

cent—among the lowest in Asia. The country also has an alarming rate of deforestation: the forest cover is shrinking by 3 percent and woody biomass declining by 5 percent annually. According to the Global Forest Watch, in 2020, Pakistan had 1.4 million hectares of natural forest, extending over 2 percent of its land area. Between 2001 and 2024, Pakistan lost 8 percent of its tree cover. Khyber Pakhtunkhwa, including the merged tribal districts, had the highest tree cover loss of 9,100 hectares during the period.

Conversion of green land to urban built-up areas is another perilous practice. Annual growth rate of the urban population in Pakistan is approximately 2.4 percent as of 2023-2024. This puts enormous stress on agriculture and forest land in the vicinity of urban centres. Islamabad is a pertinent example of this. According to a study conducted by researchers of the Karakoram International University, Gilgit, built-up area of Islamabad has increased five-fold in four decades from 10.7 percent in 1979 to 52.4 percent in 2019. During the same period, forest land shrunk to almost half. Between 2009 and 2019, the city witnessed a sharp increase in its population from 0.77 million to 1.1 million.

Pakistan is currently setting land degradation neutrality targets for 2030. After developing a robust policy framework, the country is now setting ambitious action-oriented targets focused on effective land governance to monitor and reverse land degradation. An important dimension of the programme is its focus on gender-responsive land-use planning. Rural women's close relationship with land merits their leadership role in stewardship of land and its products. From planning to execution, empowered women leadership has the potential to halt and reverse unbridled land degradation in Pakistan.

# FOR THE FUTURE

# The fault is not with sun but in power grid

Over the past two years, Pakistan has witnessed what global observers have termed a 'silent solar revolution'

**Dr Khalid Waleed**

The writer has a doctorate in energy economics and serves as a research fellow at the Sustainable Development Policy Institute (SDPI)

**T**he fault is not with our sun but in our electricity grid. Pakistan is not short of energy. It is short of alignment between when power is produced and when it is needed. What appears as scarcity each evening is, in truth, a design failure playing out on a daily schedule.

The decision to impose approximately 2.25 hours of loadshedding during peak evening hours is not, in essence, about scarcity of capacity. Pakistan today stands with an installed generation capacity exceeding 40,000+MW, while peak demand rarely crosses 30,000MW. In classical economic terms, this is not a supply constraint but a coordination failure. The system has capacity in abundance, but not at the right time, not at the right price, and increasingly, not in the right form.

The official justification is familiar. By curtailing demand during peak hours, the government aims to avoid dispatching expensive thermal generation, particularly residual fuel oil (RFO)-based plants,

where generation costs can exceed Rs45 per unit. Without such measures, authorities estimate that tariffs could have increased by Rs5–6 per unit. In that sense, loadshedding is being used as a price control instrument, a blunt but politically expedient tool.

Yet, as the old idiom goes, one cannot cure a chronic ailment with temporary bandages. What is unfolding is not merely a short-term response to a global oil shock triggered by geopolitical tensions in the Strait of Hormuz. It is the manifestation of a deeper paradox: Pakistan's energy transition is advancing faster at the household level than at the policy level.

Over the past two years, Pakistan has witnessed what global observers have termed a 'silent solar revolution'. By 2025–26,



rooftop solar installations, both net-metered and off-grid, are conservatively estimated in the range of 12-16 GW formally, with significantly higher effective penetration when informal installations are included. This expansion has been largely financed by households and small businesses, without sovereign guarantees or concessional finance. In effect, while the state was busy drafting plans, the market quietly rewrote the script.

The impact has been tangible. Pakistan's reliance on imported RLNG, which once accounted for nearly 30-40 per cent of power generation in 2022, is projected to decline to around 10-15 per cent in 2025-26. This is not merely a statistical shift; it represents a structural easing of external vulnerability. In a world where energy supply chains are increasingly weaponised, reducing dependence on imported fuels is not just an economic decision, it is a strategic necessity.

A closer reading of PSDP allocations reveals a persistent bias toward expansion over optimisation. Tarbela 5th Extension alone absorbs about Rs84 billion, with Dasu at Rs10.9 billion and Mohmand at Rs3.5 billion, alongside smaller hydropower schemes. These are sound long-term investments, but poorly aligned with today's peak-hour constraints. Hydropower is seasonal and offers little relief during evening demand surges, meaning current system stress remains unaddressed.

On the thermal side, allocations of roughly Rs500 million for conservation and Rs4.4 billion for Jamshoro coal further reflect legacy thinking. Grid upgrades exist but remain fragmented. More critically, there is no meaningful allocation for battery storage – the missing link in a renewable-heavy system. Distribution investments improve monitoring, not flexibility.

A modest reallocation within the PSDP could have changed the equation entirely. Redirecting even 10-15 per cent of large hydropower or coal-linked allocations toward distributed and grid-scale storage would have provided immediate relief. A national 'battery incentive scheme', aligned with rooftop solar, could have transformed millions of households into micro-storage units, effectively flattening the peak curve.

Instead, the budget seems to have doubled down on inertia.

This disconnect is further compounded by regulatory signals. The evolution of net metering regulations under National Electric Power Regulatory Authority, (Neptra) particularly the move toward lower buyback rates for new consumers, reflects an attempt to protect grid

revenues rather than optimise system efficiency. While the concern over rising capacity payments, now exceeding Rs2 trillion annually, is valid, the response risks undermining the very transition that is reducing import dependence.

The contradiction becomes sharper when viewed through the lens of fiscal policy. A carbon levy on petroleum products, introduced under IMF-supported reforms, aims to discourage fossil fuel consumption. Yet, solar equipment faces taxation and storage, arguably the most critical enabler of renewable integration, remains largely unsupported. It is a policy mix that manages to chase two hares and catch neither.

From a political economy perspective, this is not accidental. Pakistan's power sector is bound by long-term power purchase agreements (PPAs), many of which are dollar-indexed and structured on a take-or-pay basis. These contracts create fixed cost obligations that do not adjust easily to declining grid demand. As more consumers adopt solar, the burden of these costs is redistributed among fewer users, leading to higher tariffs and accelerating the shift away from the grid, a classic utility death spiral.

Breaking out of this cycle requires a shift not just in policy, but in mindset. First, the PSDP must evolve from a generation-centric to a system-centric framework. Allocations should prioritise storage, flexibility and demand-side management over additional capacity.

Second, battery storage must be treated as critical infrastructure. Pakistan's indigenous sodium resources offer a unique opportunity to develop a localised battery ecosystem, reducing import dependence while creating industrial spillovers. Third, legacy thermal assets must be managed through a structured transition. Early retirement, repurposing or hybridisation can reduce fiscal burdens while maintaining grid stability.

Fourth, policy coherence must be restored. Fiscal measures, regulatory frameworks and climate commitments must move in tandem, rather than at cross purposes. Finally, consumers must be reimaged as active participants in the energy system. The rise of prosumers is not a threat; it is an opportunity to decentralise resilience and reduce systemic risk.

As the current crisis unfolds, it offers a valuable lesson. Loadshedding, in this context, is a symptom of insufficient foresight. The system has the resources, the technology and, increasingly, the public willingness to transition. What it lacks is alignment, between budget and reality, between planning and practice and between short-term expediency and long-term vision.

Because in the end, energy policy is not just about generating power. It is about generating confidence. And that, unlike electricity, cannot be load-managed. ■

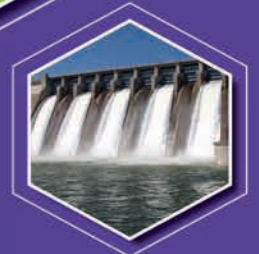


**Albario Engineering (Pvt) Ltd.**  
 ENERGY • INFRASTRUCTURE • INNOVATION

Albario Engineering Group is working as a one window solution provider in the fields of Energy, Technology, Industrial Solutions and Infrastructure Development.

## Core Areas of Expertise

- Engineering, Procurement & Construction – EPC
- Electro-mechanical Contracting
- Manufacturing of Transformers
- EV Charging Solutions
- Renewable Energy (Solar, Wind & Hydro)
- Oil & Gas
- Gas Engine Spares & Services
- Operations & Maintenance
- Plant Maintenance / Turnarounds
- Upgradation & Rehabilitation Services
- Civil & Infrastructure Development
- Design, Inspection & Testing Services



## Power in Numbers



**10,000+ MW**

Power Plants Installed



**2000+ MW**

10+ Years Experience in Iraq



**6000+ MW**

Reliable O&M Services



**1200+**

Outages Performed



**5000+**

Skilled Manpower



**500+**

Equipment Supplied



info@aepl.com.pk



www.aepl.com.pk



91-C, Model Town, Lahore, Pakistan



# THE BEST **SOLAR** COMPANY

Quality is our Identity

• Lithium Batteries

• Hybrid Inverters

• Solar Wires



# Sindh in the sun and energy transition

From under 1 GW of solar imports in 2018 to over 51 GW by early 2026, Pakistan achieved one of the fastest consumer-led energy transitions on record

**Ziana Shakil**

The writer is a research associate at Partners in Development and Consultancy (PIDC)

**B**y February 2026, Pakistan had quietly avoided over \$12 billion in oil and gas imports that would otherwise have been needed to meet domestic demand, with a further \$6.3 billion in projected savings by year's end. This is the cumulative result of citizens taking matters into their own hands: buying cheap Chinese solar panels, wiring up their rooftops and stepping off a grid that had failed them for decades.

From under 1 GW of solar imports in 2018 to over 51 GW by early 2026, Pakistan achieved one of the fastest consumer-led energy transitions on record. While the government is credited with maintaining a zero-rated tax regime on solar PV imports from 2013 until mid-2025, the real architects were households priced out of grid electricity, businesses protecting themselves from crippling loadshedding, and a dramatic fall in Chinese manufacturing costs that made rooftop solar cheaper per unit than grid power.

All of these factors came together to drive this change. In villages across lower Punjab and upper Sindh, studies found that nearly 50 per cent of households have already solarised -- sharing panels across families, charging fans and lights at the end of a long farming day.

The geopolitical implications remain stark. In 2024, Pakistan ranked third globally in LNG dependence on Hormuz-transiting cargoes as a share of total consumption, and fifth for oil. Solar has quietly changed that calculus. As rooftop panels spread, demand for LNG has fallen, long-term import contracts have been renegotiated and some shipments diverted. Pakistan is less exposed today, not because of any energy security doctrine, but as a result of distributed energy sovereignty, built panel by panel.

No province stands to benefit more from this revolution than Sindh and at the same time, no province has more at stake if it is reversed.

Sindh is not merely a passive beneficiary of Pakistan's solar boom; it is the country's renewable energy heartland. The Jhimpir-Gharo wind corridor in southern Sindh alone carries an economically viable wind potential of 11 GW, with theoretical estimates exceeding 50,000 MW. Wind speeds averaging above seven meters per second have already attracted over 36 independent wind farms, contributing 1,845 MW to the national grid and yet the corridor remains underutilised, held back by transmission bottlenecks.

Every unit of clean energy produced in Jhimpir or Thatta is a unit that doesn't require burning imported LNG through a chokepoint that geopolitics can close at any moment

On solar, the picture is equally promising. The World Bank has channeled USD 100 million into the Sindh Solar Energy Project, covering utility-scale generation, rooftop



systems on public buildings, and solar home systems for off-grid communities. The Sindh government announced plans in 2024 to distribute 200,000 subsidized solar systems to low-income households. A 100 MW hybrid wind-solar project in Jhimpir - the first under Sindh's own provincial regulator, SEPRA - is in active financing discussions, while Oracle Power's 1.3 GW renewable complex in the same corridor received environmental approval in 2024. Such examples indicate projects in motion.

The significance for Sindh runs deeper. The province bore close to 70 per cent of Pakistan's total damage and losses from the 2022 super floods, with 2.8 million hectares of cropland inundated. Sindh contributes less than one per cent to global emissions yet absorbs a wildly disproportionate share of climate consequences. Unlocking this potential at scale -- solar, wind and the storage infrastructure to back them -- is also a climate finance imperative for Sindh.

Every unit of clean energy produced in Jhimpir or Thatta is a unit that doesn't require burning imported LNG through a chokepoint that geopolitics can close at any moment. And every megawatt of renewable capacity Sindh adds strengthens its case for a fair share of international climate finance, from the Green Climate Fund to the IMF's Resilience and Sustainability Facility (RSF), resources the province urgently needs to rebuild and future-proof.

Pakistan's solar boom has been a quiet climate finance success, driven by millions of households, farmers and businesses investing their own capital in distributed renewable energy. This bottom-up transition made rooftop solar both accessible and transformative. This is also why Nepra's February 2026 Prosumer Regulations are cause for concern. By shifting all solar users from net metering to net billing -- and slashing the buyback rate for surplus electricity from Rs25.32 to Rs8.13 per unit -- the regulator has fundamentally altered the economics of rooftop solar.

In Sindh, where the grid has historically been weakest, the climate impacts most severe and the renewable potential most abundant, this grassroots energy transition is more than a national story. It is Sindh's most credible path towards energy security and climate resilience. It therefore warrants a policy framework that protects and sustains its growth.

# Sindh govt, K-Electric move to design targeted subsidy for low-income consumers

## EU Report

Sindh Chief Minister Syed Murad Ali Shah has directed the Energy Department and K-Electric to jointly develop a targeted subsidy mechanism aimed at reducing electricity costs for vulnerable consumers in Karachi, while improving supply reliability in low-income areas ahead of the summer season.

The directive came during a meeting held at the Chief Minister's House with K-Electric leadership, including Chairman Shahryar Chishti and CEO Syed Taha, and senior provincial officials such as PSCM Agha Wasif and Energy Secretary Shuhab Ansari. Expressing concern over prolonged and increasing load-shedding in underprivileged localities, the chief minister stressed that the hardship faced by low-income households must be urgently addressed through practical and sustainable solutions.

"We want load-shedding to be reduced, especially in low-income areas, and a viable mechanism should be developed so that poor communities are not burdened with long outages," he said. The chief minister directed the formation of a dedicated committee comprising the Commissioner Karachi, Secretary Energy, and the CEO of K-Electric. The committee will prepare recommendations for a targeted subsidy framework, along with proposals to ensure uninterrupted and affordable electricity supply to disadvantaged neighbourhoods.

During the meeting, discussions also focused on long-term energy affordability. The chief minister highlighted the importance of reducing generation costs through local energy resources, particularly encouraging the use of coal from the Thar Coalfield as a potential source of cheaper electricity. He suggested that low-cost power generated from Thar could be supplied to K-Electric for distribution to low-income areas at affordable rates, ensuring both sustainability and relief for end consumers.

Separately, the meeting also explored the possibility of structured cooperation between the Sindh government and K-Electric for supplying competitively priced electricity to industrial zones, aimed at supporting productivity and reducing operational costs.

Chairman K-Electric Shahryar Chishti assured full cooperation, stating that sustainable relief for consumers depends on the availability of low-cost power generation and efficient distribution mechanisms. The meeting concluded with a broader review of energy sector collaboration between the Sindh government and K-Electric, focusing on affordability, continuity of supply, and protection of vulnerable consumer segments.





# GENERAL SHIPPING AGENCIES (PVT) LTD

THE PORTS & SHIPPING EXPERTS | [www.gsa.com.pk](http://www.gsa.com.pk)



**BIMCO**

MEMBER SINCE 1982



FOUNDING MEMBER SINCE 1976

**ITIC**

SPECIALIST  
PROFESSIONAL  
INDEMNITY  
INSURANCE

COVERAGE SINCE 1985

ORGANIZED BY

**ENERGY  
UPDATE**

PAKISTAN'S PREMIER EVENT

3RD INTERNATIONAL

# SOLAR POWER CONCLAVE & SOLAR TECHNOLOGY EXCELLENCE AWARDS

STRATEGIC PARTNER



PRIVATE POWER &  
INFRASTRUCTURE BOARD  
MINISTRY OF ENERGY (POWER DIVISION)  
GOVERNMENT OF PAKISTAN



SECURING PAKISTAN'S  
ENERGY FUTURE VIA  
HYBRID SOLUTIONS

**8<sup>th</sup> SEPTEMBER, 2026**

NISHAT HOTEL, LAHORE



[www.energyupdate.com.pk](http://www.energyupdate.com.pk)

# PAKISTAN'S OIL MARKET IS FUELLING CRISIS

Govt must let prices reflect costs and replace blanket subsidies with targeted cash support

**Dr Ali Salman**

The writer is founder and CEO of the policy research institute of market economy, an independent economic policy think tank

**W**hen war returns to the Middle East, oil stops being a commodity and becomes a headline. The latest bout of conflict has again injected fear into energy markets, lifted freight and insurance costs, and pushed crude benchmarks upward. For Pakistan, an oil-importing country with a chronically tight external account, that global surge has quickly translated into fresh price hikes at the pump – and with them, the familiar anxiety about inflation, transport costs and the government's next move.

Since March 1, the price of diesel has gone up by 37.7% and that of petrol by 37.3%, which is a historical high. Pakistan State Oil (PSO) has recently reported that the premium it paid on diesel is now over \$35 per barrel, a steep rise from a range of \$5-10 per barrel.

The temptation, as always, is to 'manage' the problem by freezing prices, squeezing margins and announcing blanket relief. That is why the government initially announced it would absorb price hikes through price differential claims (PDCs). By now, the Oil and Gas Regulatory Authority (Ogra) has processed Rs38 billion to oil marketing companies to adjust their cost and price at the pump. Thankfully, the government has now announced the discontinuation of any amount of fuel subsidy, as PDCs were piling up every day. The reason we have not witnessed any queues at petrol pumps is that the government has largely followed market signals.

**The shock is global; the damage is local**

When the state fixes retail prices below cost, it is effectively asking someone – an oil mar-

keting company, a dealer or the treasury – to absorb the loss. Firms respond by cutting supply, delaying imports and running down inventories; the government responds by delaying payments, adjusting levies or rationing by administrative order. The result is predictable: uncertainty, rent-seeking and a bigger hole in public finances. In other words, the oil shock is unavoidable; the chaos is a choice.

### The familiar policy trap: discretion over rules

Pakistan's downstream petroleum market is neither fully controlled nor genuinely competitive. It is a hybrid where private operators bear operational risk, but the government keeps the steering wheel. That mix encourages lobbying and improvisation instead of efficiency and investment. It also produces a set of interventions that sound consumer-friendly yet usually backfire.

Price freezes and "absorption" delay the shock, then force a larger jump later – while encouraging hoarding in anticipation. Levy gymnastics, treating fuel taxes as a plug for revenue shortfalls, turn prices into a political knob, not an economic signal. Uniform pricing without choice means that if every station sells at the same price, consumers cannot reward efficiency, and firms cannot compete on cost or service.

The alternative is not "no government" but rules over discretion: let prices reflect costs, let competition discipline margins, and let the state focus on oversight and targeted relief instead of managing pump prices day to day.

### How a freer market can solve (or at least shrink) the crisis

First, prices prevent shortages – even in a crisis. Higher prices are painful, but they ration scarce supply to its highest-valued uses and signal suppliers to bring more fuel. When prices can adjust, imports arrive, stocks are released and demand moderates. When prices are blocked, the adjustment happens through queues, closures and a black-market premium that hurts the poor most.

Second, competition beats committees. In a more open market, companies and dealers compete on procurement, logistics, quality control and service – and yes, sometimes on price. Some variation across locations is normal because transport costs differ. What matters is that consumers can choose, and inefficiency is punished through lost market share rather than rescued through lobbying. Third, predictable rules build resilience. Pakistan needs more storage, better pipelines and modern retail infrastructure. Those investments happen when firms believe costs will be recovered under clear rules.

Fourth, markets reward better risk management. When firms carry real price risk, they improve procurement, diversify contracts and explore risk-hedging where feasible. When the government socialises risk through blanket subsidies and delayed payments, inefficiency is protected – and the taxpayer becomes the insurer of last resort.

### What the state should do (and stop doing)

First, reaffirm commitment to automatic pass-through of international prices and exchange rate movements on a transparent schedule. The government has wavered from this commitment, but it has returned to the right path.

Second, open the market to real competition by

easing entry and letting firms compete on logistics, storage and retail – while enforcing quality and metering standards. Fixing profit margins may not be in favour of consumers; it may benefit the industry.

Third, strengthen competition oversight to deter collusion and protect consumers – especially when volatility is high. Take strict action against hoarding done for price hikes.

Fourth, stop using fuel as a revenue shock absorber; pursue broad-based taxation and spending discipline instead of hiding deficits in pump prices. Decrease reliance on the petroleum development levy (PDL). Fifth, replace blanket subsidies with targeted cash support for low-income households and essential public transport, time-bound and fiscally budgeted. On this account, federal and provincial governments have already announced reasonable measures.

### Conclusion

Free markets do not eliminate volatility; they organise the adjustment so that scarcity shows up as a price signal, not as a shortage. In a crisis, that difference is not academic – it is the line between order and panic. ■

## WAPDA Awards Rs640 Million Contract for Schools Construction at Seo Village



WAPDA has awarded a contract worth Rs640 million for the construction of two government schools at Seo Village in Upper Kohistan District of Khyber Pakhtunkhwa Province.

It is worth mentioning here that WAPDA is establishing a primary and a high school in this far-flung and backward area under the 'Local Area Development Programme' of Dasu Hydropower Project as its Corporate Social Responsibility. The contract signing ceremony was held at the Project office today. DG (Social Safeguards) Dasu Hydropower Project Maj Tariq Mehmood (Retd) and a representative of the Construction firm signed the contract on behalf of their organizations. The ceremony was also attended by Chief Engineer (Contracts) Salman Akram, along with other officials of Dasu Hydropower Project. As per the contract, both schools - to be completed in two years - will house the latest classrooms, computers and science laboratories equipped with modern gadgets, and staff rooms.

# Petroleum levy, circular debt, and inflation

Gas sector circular debt is estimated at around Rs 3.2 trillion, bringing total energy sector circular debt to over Rs 5 trillion; without structural reforms, Pakistan will continue to oscillate between petrol price shocks and momentary relief

**Dr Ikramul Haq & Huzaima**

The writers are lawyers, adjunct faculty at Lahore University of Management Sciences and members of the advisory board of Pakistan Institute of Development Economics

Pakistan's daily diesel demand hovers around 16,000 metric tonnes. Local production stands at 14,000 MT, suggesting local production covers approximately 87 per cent of diesel demand at normal times... For the record, Pakistan's ex-refinery prices are set at import parity (meaning local refineries are paid as if they had imported the fuel from the international market, regardless of their actual production cost)... During the current crisis with diesel at Rs 520 per litre ex-pump and crude at elevated but lower levels, the refinery margins have almost certainly exploded. 'Refineries set for Rs22bn windfall', Dr Farrukh Saleem, *The News*, April 7, 2026.

"Governments that cannot tax the rich eventually tax the necessities of the poor." This enduring observation captures the essence of government's latest fiscal strategy vis-à-vis imposing petroleum levy of Rs 160.61 per litre on high speed diesel (HSD) when its domestic production is 87 percent. The quote above shows that it not merely a pricing adjustment but a catastrophic shift in fiscal policy—one that places the burden of fiscal mismanagement and failure of Federal Board of Revenue squarely on ordinary citizens.

On April 3, Prime Minister Shahbaz Sharif, in a televised address, reduced price of motor spirit from Rs 458 per litre to Rs 378 per litre by reducing PL by Rs 80 per litre. This brought marginal relief to a segment of consumers, though the deeper structural issues faced by energy sector persist.

Many fear that the relief announced by the prime minister may be short-lived, as the reduction in PL reflects tactical fiscal adjustment rather than structural reform. Beneath the surface lies a fragile system where petroleum pricing, electricity tariffs, circular debt,

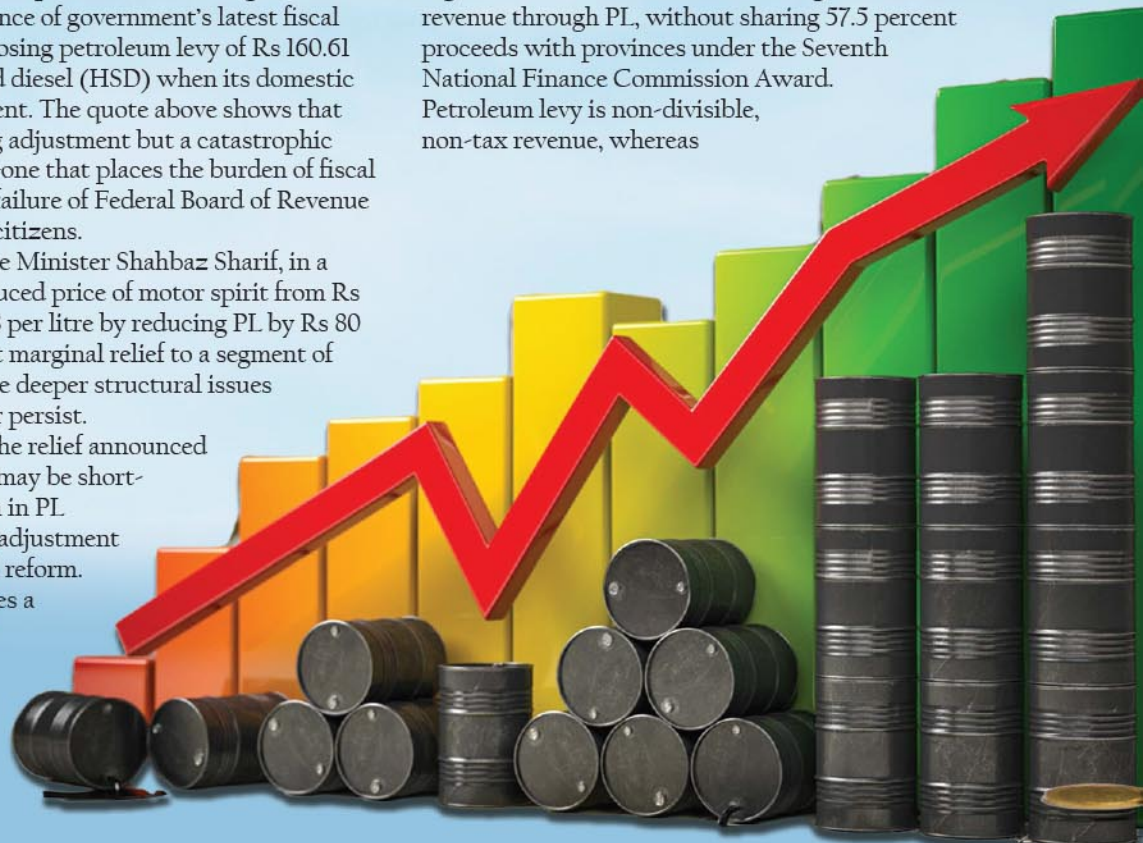
fiscal deficits and IMF conditionalities are intrinsically linked.

On April 1, petroleum prices were pushed to unprecedented levels after the petroleum levy climbed to Rs 160.61 per litre from Rs 105.37 per litre: HSD price rose from Rs 335.86 to Rs 520.35 per litre and motor spirit (MS) from Rs 321.71 to Rs 458.41 per litre.

High fuel prices raise logistics costs, shrink industrial margins and weaken export competitiveness. Manufacturers either pass on costs, fuelling inflation, or scale down operations, slowing economic activity. When fuel becomes expensive, the entire economy slows down—effectively braking the engine of growth to a stall.

Petroleum pricing in Pakistan has evolved into a fiscal management tool rather than an energy policy instrument. Temporary reductions often precede future increases, reflecting structural weaknesses in fiscal governance.

The political economy of petroleum pricing has become particularly complex, as the government made petroleum products zero-rated under the general sales tax regime. This has enabled the federal government to retain revenue through PL, without sharing 57.5 percent proceeds with provinces under the Seventh National Finance Commission Award. Petroleum levy is non-divisible, non-tax revenue, whereas



GST is a tax to be shared with provinces.

This arrangement, however, is under pressure from the International Monetary Fund, which is reported to be pressing Pakistan to restore 18 percent GST on petroleum products. If GST is restored and PL stays, consumer prices will rise. Else, petroleum levy will have to be reduced, shrinking the federal fiscal space. Either option intensifies fiscal stress.

The FBR is already struggling to meet its revenue targets. The 9-month shortfall has reached Rs 610 billion. Restoration of GST may raise nominal revenue but also cause inflation, reduce consumption and slow economic activity. Simultaneously, reduction in PL will cut non-tax revenue. The government therefore faces pressure on both tax and non-tax fronts. This fiscal dilemma illustrates the central role petroleum pricing now plays in Pakistan's economic management.

Equally troubling is the manner in which the federal government has progressively acquired unlimited authority to impose petroleum levy, raising serious constitutional concerns. Traditionally, petroleum levy was subject to statutory ceilings approved by the parliament. The Finance Act 2024 continued this practice by allowing petroleum levy up to a maximum of Rs 70 per litre. The Finance Act 2025 omitted the Fifth Schedule to the Petroleum Products (Petroleum Levy) and Climate Support Levy Ordinance, 1961, which prescribed maximum limits. Simultaneously, it amended Section 3, granting the federal government unrestricted authority to determine petroleum levy at any rate through executive notification.

This represents unbridled delegation of legislative power over a major public revenue source. The amendment was made through a money bill, raising serious constitutional concerns. Under the constitution, money bills limit Senate oversight. Granting unlimited executive authority through a money bill for a non-tax levy undermines bicameral parliamentary scrutiny. This development also affects fiscal federalism. PL is not part of the divisible pool under NFC Award. Increasing reliance on PL therefore reduces provincial revenue share and centralises fiscal power. This evolution of petroleum levy into an open-ended fiscal instrument represents a major shift in Pakistan's fiscal governance that raises serious constitutional concerns.

Meanwhile, electricity generation continues to depend heavily on imported fossil fuels, including furnace oil, LNG and coal. When global oil prices rise,

generation costs increase automatically. Under long-term contracts, the government must pay capacity payments to independent power producers (IPPs), many of which are indexed to the US dollar. These payments are fixed and must be made irrespective of electricity consumption.

In recent years, payments to IPPs have increased sharply. Government disclosures indicate that for major IPPs alone payments rose from about Rs 487 billion in fiscal year 2022-23 to over Rs 923 billion in 2023-24. Overall capacity payments across the power sector are now estimated at around Rs 1.8 to Rs 2 trillion annually, making them one of the largest fiscal burdens. These payments rise further when oil prices increase because fuel cost adjustments and dollar indexation increase payable amounts.

Pakistan's circular debt has become a chronic structural problem. Power sector circular debt, which declined to Rs 1.614 trillion by June 2025, has again risen to around Rs 1.9 trillion, reflecting persistent structural weaknesses. Gas sector circular debt is estimated at around Rs 3.2 trillion, bringing total energy sector circular debt to over Rs 5 trillion.

Inflation has historically responded strongly to fuel price increases. Temporary reductions in fuel prices rarely fully reverse inflation, as electricity tariffs and gas prices remain elevated. Thus, petroleum pricing has become one of the primary drivers of inflation in Pakistan. Reduction in PL for motor spirit only for a limited period provides temporary relief but does not address structural weaknesses in energy sector, as Pakistan continues to oscillate between price hikes and temporary reductions. This cycle reflects structural weaknesses in energy governance, fiscal management and contractual obligations.

Rising oil prices increase capacity payments, expand circular debt and fuel inflation. At the same time, statutory amendments granting unlimited authority to impose petroleum levy have weakened parliamentary oversight and increased reliance on indirect taxation. Energy pricing decisions influence growth, inflation, fiscal deficit and federalism simultaneously. Without structural reforms, Pakistan will continue to oscillate between petrol price shocks and momentary relief. The political economy of petroleum pricing has thus become central to Pakistan's economic future. ■



# Resilience as power

For decades, Iran has been portrayed as a constrained state: heavily sanctioned, economically squeezed, and militarily outmatched



## Syed Asad Ali Shah

The writer is a former managing partner of a leading professional services firm and has done extensive work on governance in the public and private sectors

There are moments in history when outcomes force us to rethink the very meaning of power. The recent war imposed on Iran is one such moment. For decades, Iran has been portrayed as a constrained state: heavily sanctioned, economically squeezed, and militarily outmatched. On February 28, 2026, joint US-Israeli airstrikes killed Supreme Leader Ali Khamenei and other senior commanders. The expectation was clear: under sustained pressure, Iran would fracture.

That did not happen. What unfolded instead was a

demonstration of resilience so disciplined and strategy so calibrated that it has compelled a fundamental reassessment of how power operates in the modern world. Cut off from global systems for decades, Iran had little choice but to build internal capability across its economy, military architecture and governance structures. The result is durability under stress.

Despite the assassination of its Supreme Leader and other important leaders, sustained strikes and serious economic strain, the Iranian system did not collapse. Command structures held. Decision-making remained coherent. Public messaging stayed composed. Most strikingly, succession was rapid and seamless. This suggests a system that had deliberately anticipated such shocks and prepared for them: dispersed command, pre-planned succession and institutions hardened by decades of external

pressure. It is a level of institutional foresight extraordinarily rare in modern statecraft.

Wars are no longer decided solely by territory gained or destroyed. Increasingly, they are shaped by control over the critical systems that underpin the global economy. In this conflict, that system was the Strait of Hormuz. Before the war, approximately 25 per cent of the world's seaborne oil trade and 20 per cent of global LNG passed through this narrow passage. From early March, Iran effectively closed it – choking off an estimated 12 to 15 million barrels of crude per day. The International Energy Agency described the resulting disruption as "the greatest global energy security challenge in history", surpassing even the 1970s oil crisis. Brent crude rose nearly 30 per cent from pre-war levels; WTI was up more than 40 per cent; Dubai crude hit a record \$166 per barrel on 19 March. At the strait's entrance, 426 tankers sat stranded.

Iran did not stop there. It selectively permitted vessels from China, Russia, India, Iraq and Pakistan to transit – using the chokepoint as diplomatic currency. For Pakistan, the costs were immediate and severe. The country imports more than 80 per cent of its oil needs, holds only around 20 days of reserves, and relies on Qatar – whose LNG output was cut 17 per cent by Iranian strikes on Ras Laffan, with repairs expected to take up to five years – for the bulk of its gas. LNG shipments to Pakistan fell



from twelve in January to just two in March, the first full month of the war. Fuel prices recorded the largest single increase in the country's history. Emergency austerity followed: a four-day workweek, school closures, and the deployment of naval assets to escort tankers through the disrupted strait.

Yet Pakistan was not only a casualty of this conflict but one of its most consequential actors. Prime Minister Shehbaz Sharif's two-week ceasefire proposal, developed through sustained subtle diplomacy, became the framework President Trump accepted hours before his self-im-

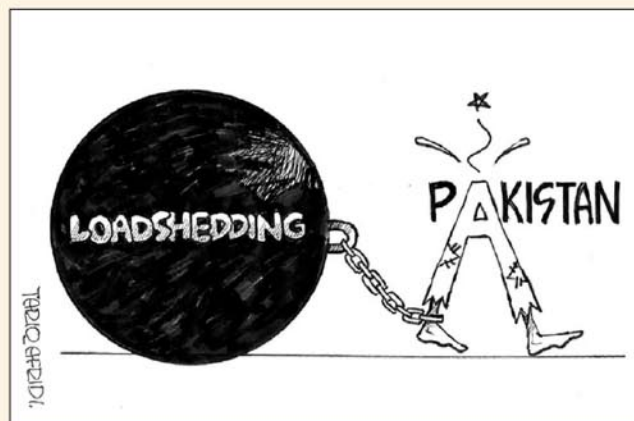
posed deadline. Iran's foreign minister credited Pakistan publicly. Analysts noted that the urgency driving the deal "appeared more pronounced on the US side" – a detail that speaks directly to the shifting power dynamics at the heart of this conflict.

For the US, the implications are uncomfortable. American military capability remains the strongest in the world, but power is measured by the ability to translate capability into outcomes. On that measure, this conflict raises difficult questions. There was no regime change, no restructuring of Iran's strategic posture, no demonstration of uncontested control. Leadership compounded the damage. President Trump threatened that "a whole civilization will die tonight" – then reached a ceasefire hours later. He declared on March 9 that Iran's military had been destroyed and the strait had reopened; neither was true. He demanded Nato help reopen the strait while simultaneously threatening to leave the alliance.

Each episode of overreach followed by retreat eroded the credibility on which deterrence depends. Domestically, opposition to the conflict grew. Internationally, allies appeared cautious and reluctant. The perception of unpredictability began to overshadow the projection of strength. Analysts noted that the push for negotiations ultimately originated in Washington, not Tehran. That asymmetry of urgency – that it was the world's pre-eminent military power which blinked first – tells its own story about the shifting geometry of power.

What this conflict reveals is a fundamental shift in how power operates. Resilience is no longer passive; it is a constructed capability, built through institutions, deliberate planning, and the ability to absorb shocks without losing coherence. Leverage over critical systems – energy routes, supply chains, financial networks – can outweigh conventional force superiority. And leadership that remains composed under extreme pressure will consistently outperform leadership that substitutes rhetoric for strategy.

Iran did not emerge unscathed. It absorbed significant military, human and economic damage. But it demonstrated the ability to endure, adapt and shape the strategic environment in its favour – exercising effective control over the world's most important energy chokepoint, while a Pakistani prime minister brokered the ceasefire in Islamabad. The unthinkable was not that Iran would win a conventional war. The unthinkable was that it would absorb the full force of a superpower, remain composed and emerge with greater leverage than it began with. That is precisely what has happened. ■





**ENERCON SYSTEMS  
INTERNATIONAL  
PVT. LTD.**

# ENGINEERING A CLEANER, GREENER WORLD THROUGH SMART ENERGY SOLUTIONS

Powering Intelligent Energy Ecosystems



## GENERATOR SYNCHRONIZATION

Enercon is a pioneer in Generator Synchronizing Controls with 50 years of experience delivering continuous, standby, and mission-critical applications.



## BESS EMS / MICROGRID

Seamless integrating of Battery Energy Storage, Generators, Grid, Solar and Wind Energy to achieve optimization, economization, reliability and availability of power for uninterrupted operations.



## BUILDING ENERGY MANAGEMENT

Intelligent control & integration of pumps, motor, chillers, AHUs, climate control sensors, fire alarm and others sensors to achieve Energy optimization, specific climate conditions and safe and reliable operations.



## POWER QUALITY

End-to-end power quality services. From site survey and monitoring to reporting, recommendations, and implementation, ensuring clean, reliable, disturbance-free power.

## ENERCON HISTORY

Enercon is a premium and leading energy solutions brand with over a decade of presence in Pakistan, backed by 50 years of global presence delivering advanced, sustainable, and customized power and control solutions, successfully completed projects across diversified industries from Oil & Gas, textile, Commercial complexes, Packaging and other manufacturing industries.

## WHAT DIFFERENTIATES ENERCON?

- ✓ 50 years of customized engineering experience.
- ✓ 08 Regional offices for local delivery as per global standards.
- ✓ 4,000 plus satisfied customers across Asia.
- ✓ 15,000 plus successful projects proving technical excellence.
- ✓ 100 plus Engineers sharing knowledge for continuous improvement.

## CONTACT US TODAY!



+92 213 4325252 / 54



+92 333 0792875



[www.enerconsys.com](http://www.enerconsys.com)



[sales@enerconsys.com](mailto:sales@enerconsys.com)



## Future Is Here Now

No.1 Technical Expert and Leader company For BESS  
(Battery Energy Storage System) Proven Deployed Technology



**CONTACT US**

Technology Partner  
**NSDS**  
[www.nlds.ae](http://www.nlds.ae)

☎ 0344-7652777  
☎ 051-5421006

🌐 [www.solarsigma.com](http://www.solarsigma.com)  
✉ [info@solarsigma.com](mailto:info@solarsigma.com)



**24/7**  
AFTER SALES  
SERVICE



## SOLAR IS EASY TO INSTALL RELIABILITY IS NOT!

*SOLAR ADOPTION IN PAKISTAN IS GROWING FAST BUT WHAT HAPPENS AFTER INSTALLATION IS OFTEN IGNORED.*

A solar system isn't a one-time setup. It requires ongoing monitoring, technical support, and performance optimization. Without proper after-sales service, even the best systems can underperform.

Crown Solar Energy addresses this gap with 24/7 after-sales support ensuring immediate assistance, consistent performance, and complete peace of mind.

Because solar isn't just about installation it's about long-term reliability.

### CROWN SOLAR ENERGY

Powering your present  
Protecting your future.





engro elengy terminal



engro vopak terminal

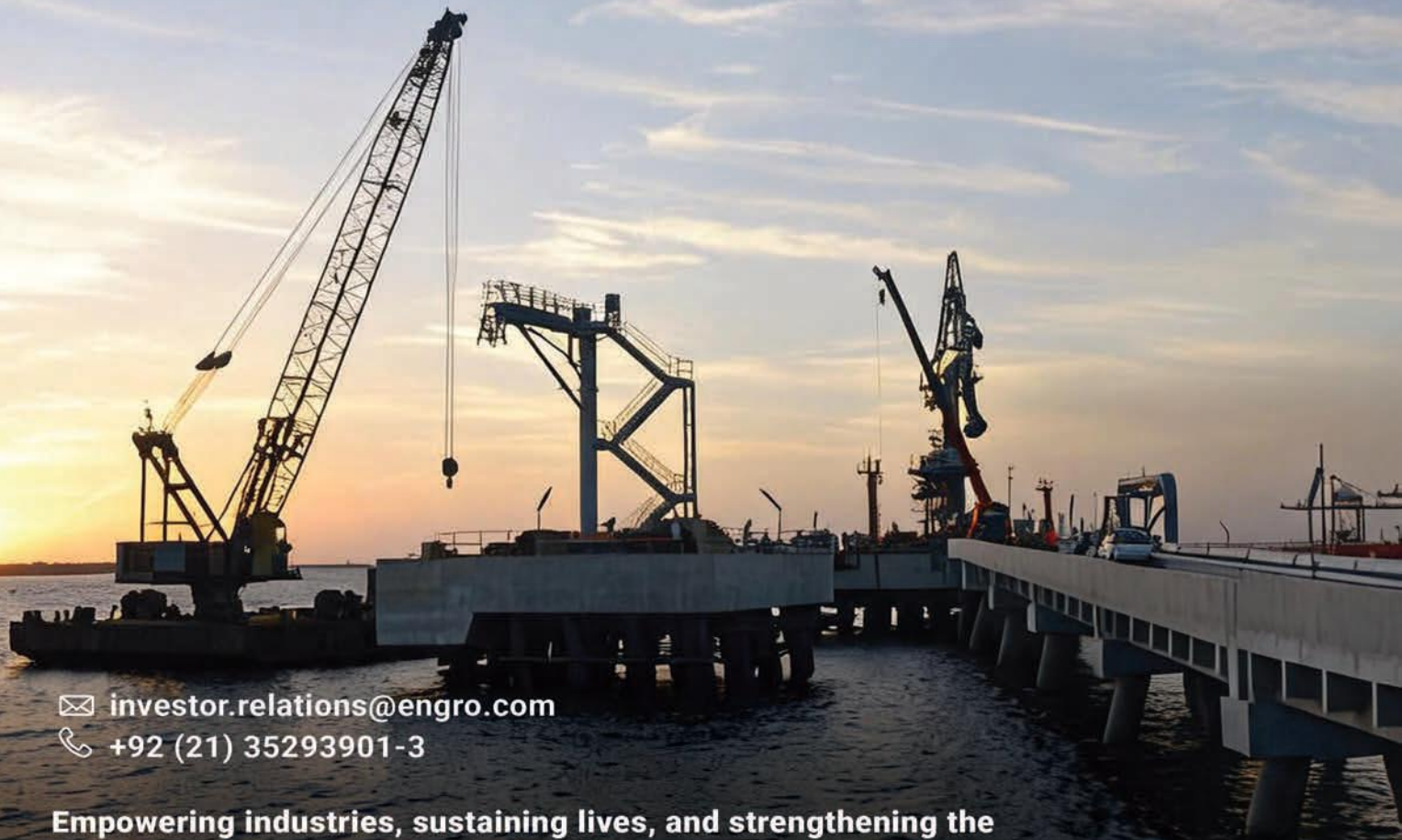
## when energy flows, Pakistan grows

Pakistan's path to economic growth and a better life for its people depends on systems that keep industry moving, energy flowing, and progress possible. Engro's Terminals stand as part of that ecosystem, translating national ambition into reality.

Every day, they help keep homes lit, factories running, and businesses connected – contributing ~15% of Pakistan's daily gas requirements, ensuring that energy flows without interruption.

Beyond energy, their role extends into the essential materials that indirectly shape modern life – from food and medicines, to the infrastructure, goods, and services that define a growing economy.

**This is where infrastructure creates impact.**



✉ [investor.relations@engro.com](mailto:investor.relations@engro.com)

☎ +92 (21) 35293901-3

**Empowering industries, sustaining lives, and strengthening the foundations of national growth.**

# Fusionsolar

Explore FusionSolar Solution for  
Electricity Saving in Modern Agriculture



Scan the QR code to  
enter the official website