Proceedings Report of the Seminar

Energy Security and Sustainable Industrial Growth:

Impact of Prosumer Regulations, Tariff Structure and War Crisis

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Deliberating on the Impact of Prosumer Regulations, Tariff Structure and War Crisis on Energy Security and Sustainable Industrial Growth in Pakistan, sharing the findings of ADS Research Study & Multi-Stakeholder Policy Dialogue

About ADS

Based in Islamabad, Alternate Development Services (ADS) is a research and capacity development organization with experience in climate, energy transition, environmental sustainability, and just transition pathways. Through its energy and climate work, ADS supports evidence-based policy dialogue on renewable energy, industrial decarbonization, and equitable development in Pakistan.

About Carbon Craft

The "**Green Growth Alliance (GGA)**", incubated by Carbon Craft, a UK-based firm with an office in Islamabad, is a private-sector-led platform designed to position Pakistan's textile sector as a buyer-trusted, low-risk sourcing destination. It brings together leading manufacturers to collectively solve systemic sustainability and competitiveness challenges. GGA translates industry intent into coordinated execution, backed by credible data, financing, and global market positioning.

Background and Rationale

Pakistan's textile sector sits at the center of the country's economy, exports, and industrial employment, but it is also one of the most energy-intensive sectors and among the most exposed to power cost volatility, grid unreliability, and rising compliance pressures. In recent years, rooftop solar has become an important response for many mills, offering a practical way to reduce electricity costs, improve energy security, and lower emissions. However, NEPRA's move from net-metering to net-billing under the Prosumer Regulations 2026 has changed the investment environment for industrial prosumers, especially textile firms that had begun to rely on rooftop solar as a core part of their decarbonization strategy.

To examine these changes, ADS has completed a focused study titled **"Impact of NEPRA Prosumer Regulations 2026: A Case Study for Textile Sector."** The study looks at how the new settlement rules affect project economic viability, payback, electricity bills, and overall investment decisions for industrial prosumers of different sizes. It also considers the broader implications for industrial decarbonization, rooftop solar adoption, and the future role of storage, aggregation, and grid integration in Pakistan's manufacturing sector. The findings are intended to support a practical policy discussion for NEPRA, DISCOs, industry stakeholders, and energy researchers.

The dialogue will also tend to analyze how the new rules interact with wider market reforms, especially the **Optional Time-of-Use (ToU) tariff system** proposed by PPMC for industrial consumers. Under this ToU mechanism, fixed charges have risen sharply and are now tied to 50% of sanctioned load or MDI, whichever is higher, while variable energy costs are lowered, especially during solar hours. The narrative behind the reform is that shifting load factors from around 45% to 70% can reduce per-unit costs and improve productivity while easing pressure on the grid and the duck curve. However, industrial representatives have raised important concerns. They argue that the mechanism may not work uniformly across industry types, especially where production is already shift-based, continuous, or tied to fixed operational hours. They also note that increased fixed charges, confusing definitions of sanctioned load, and quarterly recovery charges may weaken the intended incentive effect, especially for firms that cannot easily raise load. In their view, the ToU structure may be useful in principle, but it needs more careful tailoring to industrial realities.

In addition, the discussion will consider the role of **emission factors and the effective use of renewable energy on the grid** as an important part of Pakistan's industrial energy transition. As more industries integrate rooftop solar and other clean sources, it becomes increasingly necessary to understand not only how much renewable energy is being utilized, but also when and how it is best deployed to reduce emissions, support grid stability, and maximize system-wide efficiency. In this sense, the design of prosumer rules, tariff signals, and grid interaction mechanisms must also reflect the need for a smarter renewable mix delivering both economic and environmental value.

Another issue worth discussion is **energy security under conflict risk**, especially in the context of regional tensions such as the Iran-Israel war and possible Hormuz disruption. While this is not a core theme of the dialogue, it is relevant to energy security and consequently industrial decarbonization because conflict-driven energy shocks can raise fuel prices, disrupt imports, and increase the importance of domestic electricity planning, renewable self-reliance, and resilience. In that sense, rooftop solar, storage, and flexible industrial demand are not only decarbonization tools, but also part of a broader energy-security strategy.

Rationale for the Event

The proposed event will provide a timely platform to present the study findings and discuss what the Prosumer Regulations 2026 mean for the textile sector and wider industrial users. It will help translate technical results into a policy and industry conversation that is easy to understand, while also creating space for reflection on how the new regulatory framework can balance grid concerns with industrial competitiveness and clean energy transition goals, while also examining the Optional ToU tariff system for industrial prosumers, particularly its implications for fixed charges, and productivity incentives across different industrial operating patterns. The event will also create space to reflect on emission factors and the smart use of renewable energy on the grid, especially in relation to industrial decarbonization and system reliability. This will help framing rooftop solar not only as a cost-saving option, but also as a strategic asset for cleaner and more efficient grid planning. In addition, it will briefly evaluate the energy-security risks arising from the Iran-Israel war and possible Hormuz disruption, and how these shocks strengthen the case for domestic renewable energy, storage, and flexibility.

Objectives of the Event

The event aims to launch the study, share its key findings, and discuss the practical implications of NEPRA's prosumer reforms for textile mills and other industrial consumers. It will highlight how settlement design affects the economics of rooftop solar, identify the types of industrial users most affected, and discuss what this means for industrial decarbonization in Pakistan. The session will also discuss whether the proposed ToU mechanism can realistically work for different industrial categories, and what adjustments may be needed to make it more equitable and effective. It will also briefly highlight the importance of emission factors and the smart use of renewable energy mix on the grid in shaping industrial decarbonization and energy planning. It will further highlight how external energy shocks, such as the Hormuz crisis, reinforce the importance of industrial decarbonization and energy self-reliance. Finally, it will also encourage dialogue among regulators, researchers, and industry stakeholders on realistic policy options that support both grid stability and private investment in clean energy.

Expected Outcomes

The event is expected to build awareness of the study among key stakeholders, generate informed discussion on the industrial impacts of the Prosumer Regulations 2026, and support wider understanding of how net-billing affects rooftop solar economics. It will also help identify practical policy directions for NEPRA, DISCOs, and industry to support a more balanced and investment-friendly transition. The event

is expected to generate practical feedback on the Optional ToU tariff design and its likely impact on industrial consumers. The dialogue will further encourage discussion on emission factors and how a smarter renewable mix can be integrated into the grid to support both emissions reduction and energy security. It will also deepen stakeholder understanding of how energy-security shocks can influence industrial decarbonization choices and the urgency of resilient, locally generated clean power.

Proceedings

The consultation began with the recitation of verses from the Holy Quran.

Mr. Amjad Nazeer (CEO, ADS)

Mr. Amjad Nazeer opened the dialogue by noting that Pakistan's rooftop solar and industrial tariff landscape is now being reshaped more by regulatory design than by panel prices, and that the choices made at this stage will determine whether distributed energy becomes a tool for industrial resilience or a missed opportunity for competitiveness, emissions reduction, and energy security. He said ADS's recent textile-sector publication shows that settlement design is now the decisive factor in whether rooftop solar remains financially viable for industrial consumers at different scales, and cautioned that smaller firms may struggle under the NEPRA prosumer regime unless supporting measures such as storage, aggregation, and flexible market arrangements are put in place. He emphasized that the textile sector is not a marginal part of the economy, contributing *54.70% of total exports in Jul-Sep 2024* and *53.46% in Jul-Jun 2025*, while the World Bank notes that industry accounted for *37% of Pakistan's total energy consumption* and *73% of coal consumption in 2020*.

He further explained that NEPRA's Prosumer Regulations 2026 have replaced the earlier net-metering framework and changed the settlement basis for distributed generation connected to the grid, with industrial consumers no longer receiving the same one-to-one export compensation that previously supported rooftop solar investment. According to him, this shift directly affects project economics, payback periods, bill savings, and future expansion decisions, particularly for firms already moving toward solar as part of their decarbonization strategy. He also noted that the Optional Time-of-Use tariff may help some industrial users, but its design must be aligned with real industrial operating patterns, especially for continuous and shift-based production systems, and should not depend on assumptions that all industries can easily shift load.

Mr. Nazeer also highlighted the importance of emission factors and smarter renewable integration, saying that as more industries add rooftop solar and other clean sources, attention must shift from only how much renewable energy is installed to how effectively it is used within the grid. He noted that Pakistan's broader energy mix still remains heavily fossil-based, and that grid integration, flexible demand, storage, and smart dispatch are increasingly important if renewable growth is to deliver real emissions reduction and system reliability. He added that energy security must also be viewed through the lens of geopolitical risk, since conflict-related shocks such as possible Hormuz disruption can quickly raise fuel prices and affect industrial planning. In this context, he said, rooftop solar, storage, and flexible demand should be seen not only as decarbonization tools, but also as practical resilience measures for Pakistan's industrial future.

Session I – Implications of Prosumer Regulations for Textile Industry of Pakistan

Mr. Muhammad Usman Bin Ahmed (ETO, ADS)

Mr. Muhammad Usman Bin Ahmed presented the main findings of ADS's study, explaining that Pakistan's rooftop solar sector has entered a critical policy transition, where the real issue is no longer panel prices but the design of settlement rules and market incentives. He noted that NEPRA's Prosumer Regulations 2026 have shifted the framework from net-metering to net-billing, reducing the value of exported electricity and changing the economics of industrial rooftop solar. He said this shift has direct implications for industrial prosumers, especially in the textile sector, where electricity costs, grid unreliability, and international pressure for low-carbon production are already shaping investment decisions. He also highlighted that the textile industry remains central to Pakistan's exports and industrial employment, contributing around *8.5% of GDP, nearly 60% of exports, and 30–40% of industrial employment*, while also being highly energy intensive, consuming around *7–8 TWh per year* and generating roughly *1.45 MtCO₂e annually*.

Mr. Usman explained that the earlier success of rooftop solar was driven by a combination of falling module prices, rising tariffs, weak grid reliability, and favorable net-metering rules, which together enabled many firms to recover their investments quickly. He pointed out that rooftop net-metered consumers grew from *under 1 GW around 2020 to nearly 8 GW by 2025*, reflecting how strongly the old policy framework had supported adoption. However, under the new system, exported units are no longer offset on a one-to-one retail basis, and the settlement value has fallen sharply. He also noted that Pakistan's industrial electricity rates now reach around *PKR 40–50 per kWh*, compared with earlier benchmarks of roughly *PKR 26 per kWh*, while *17–18% transmission and distribution losses* further inflate costs. According to him, these factors make energy policy directly relevant to trade competitiveness, especially when global buyers are increasingly demanding cleaner and lower-carbon supply chains.

Turning to the case study, Mr. Usman shared that ADS modeled large, medium, and small textile mills under twelve scenarios to assess the impact of the policy shift on annual bills, levelized cost of electricity, NPV, IRR, ROI, and simple payback. He said the results clearly show that net-metering remains the strongest option for project financeability across all mill classes. In the actual demand case, net-metering produced lower LCOE, higher NPV, stronger IRR, and shorter payback periods than net-billing for all three mill sizes. He noted that for large mills, NM reduced LCOE to about *6.692 PKR/kWh*, compared with *16.548 PKR/kWh* under NB nominal, while annual bills shifted from a net export value of around *PKR 20.66 million* under NM to a positive bill of about *PKR 13.31 million* under NB. For medium mills, the same pattern held, with NM LCOE at *7.448 PKR/kWh* against *18.284 PKR/kWh* under NB nominal. For small mills, NB also raised LCOE sharply and reduced the economic buffer that had previously supported investment.

He further emphasized that the financial shock is not uniform across scales. In the actual demand case, large mills saw NPV fall from *5.31 million-$ under NM* to *3.05 million-$ under NB*, while IRR dropped from *54.45% to 30.54%*, and payback increased from *2.84 years to 4.26 years*. Medium mills showed a similar but slightly more balanced pattern, while small mills remained the most exposed to policy change. Mr. Usman noted that in the low-demand and export-heavy scenarios, NB caused very large revenue losses because exported electricity was being valued far below retail import prices. He stressed that this is why the design of settlement rules matters more than panel cost alone: the same system can be highly viable under net-metering and materially weaker under net-billing.

He also explained that demand profile matters greatly. Moving from low to actual to high demand generally improved IRR and shortened payback for all mill categories, but the benefits varied by settlement type. High self-consumption and lower on-peak exposure significantly improved the viability of rooftop solar under both regimes, while low self-consumption combined with high TOU exposure produced the weakest

results under net-billing. He noted that ADS's model showed *large mills reaching IRR levels of about 32.21% under high self-consumption NB*, while small mills could rise from *28.10% to 37.49%* if self-consumption improved. He added that battery storage can improve performance by shifting solar use into more valuable hours, but storage alone cannot fully restore the value lost under net-billing unless it is supported by compensation for dispatch or time-differentiated export credits. In his view, the most effective mitigation measures are higher self-consumption through scheduling, pooled or park-level storage, aggregation and virtual power plants, and better load-management tools for industrial users.

He further referred to the public hearing on the Prosumer Regulations, noting that stakeholders expressed different positions on the reform. DISCOs supported lower export credits and tighter technical controls, while industry representatives called for phased implementation, stronger grandfathering, clearer hosting-capacity data, and access to aggregation, wheeling, and B2B solutions. Mr. Usman also discussed international examples, including California, Germany, and Victoria, to show that when export credits are reduced, markets can still remain viable if alternative value streams such as virtual power plants, peer-to-peer trading, and flexibility services are enabled. He cautioned that if Pakistan only reduces export compensation without creating new market pathways, the result may be slower rooftop adoption, weaker investor confidence, and a disproportionate burden on smaller consumers.

Concluding his presentation, Mr. Usman said that the policy challenge is to balance DISCO revenue recovery with investment certainty, industrial competitiveness, and the country's clean-energy goals. He recommended time-differentiated export credits, a transparent Value-of-Solar study, stronger rules for aggregation and VPPs, concessional finance for SME battery storage, and a more data-driven approach to hosting-capacity management instead of blunt caps. He stressed that the transition from net-metering to net-billing will be sustainable only if it is accompanied by credible mitigation measures that preserve rooftop solar's role in industrial decarbonization, energy security, and export competitiveness.

Session II – Current Tariff structure, Renewable Mix on the Grid and Industrial Energy Security

Dr. Syed Ali Abbas Kazmi (HOD Electrical Engineering – Power (EEP), USPCAS-E, NUST)

Dr. Syed Ali Abbas Kazmi said that the debate around Pakistan's industrial energy transition must begin with the economic reality facing rooftop solar adopters after the shift from net metering to net billing under the NEPRA Prosumer Regulations 2026. He noted that, under the earlier net metering arrangement, the average payback period for industrial solar projects was around *2.75–3 years*, whereas under net billing and gross metering it rises to approximately *4.75–5 years*. He further explained that the internal rate of return for large and medium premises has dropped significantly, from about *49–58% under net metering* to around *29–30% under net billing*. In his view, this shows that the new settlement regime has materially changed the investment case for industrial prosumers, especially textile mills that had begun treating rooftop solar as a core part of their cost-reduction and decarbonization strategy. He added that while net metering had strongly encouraged rapid solar growth and delivered attractive cash-flow benefits, it also created challenges for utility revenue recovery and cross-subsidy management. By contrast, net billing may improve financial sustainability for the power sector and better align with broader transition trends, but it also reduces the attractiveness of solar investment for industry unless supported by clearer policy design and stronger grid integration.

Dr. Kazmi then turned to the **Optional Time-of-Use (ToU) tariff mechanism** for industrial consumers, explaining that the concept is based on shifting energy prices according to *time of use*, with *peak/evening hours* carrying *higher tariffs* and off-peak or daytime hours carrying *lower tariffs*. He noted that the

mechanism has been designed as an optional multi-slab ToU arrangement for industry, supported by higher fixed charges to recover capacity costs, three ToU slabs with comparatively lower variable energy charges, and smart meters for opting consumers. According to him, the policy objective is to incentivize industries to shift demand away from peak hours, improve capacity utilization, reduce stress on the grid, and make better use of daytime solar generation. However, he cautioned that this structure may not work equally well for all industrial categories, particularly those with continuous processes, shift-based operations, or limited flexibility in operating hours. He emphasized that while the reform is well-intentioned, its success will depend on how realistically it reflects industrial operating patterns, sanctioned load issues, and recovery of fixed network costs. He concluded that Pakistan needs a tariff and prosumer framework that protects grid stability while still preserving the economic logic of industrial solarization and long-term competitiveness.

Mr. Subayyal Najeeb (Program Manager, Green Growth Alliance, Baghbaan Environmental Services Ltd.)

Mr. Subayyal Najeeb presented on *"Emission Factors and Smart Usage of Renewable Mix on the Grid"* and framed the issue as a strategic competitiveness question for Pakistan's textile sector, not only an environmental one. He explained that textile manufacturers are increasingly being pushed toward verified emissions reporting under regimes such as CBAM and California's SB 253, and warned that if Pakistan continues to rely on default global factors and fragmented reporting, the sector could face a projected *US$1.2 billion carbon-tax liability by 2028*. He noted that the real challenge is to move from "compliance as a cost" to "market access as a survival strategy," where low-emission performance directly supports export competitiveness.

He argued that Pakistan should develop a *sector-wide, Pakistan-specific emission factors database* rather than leaving each manufacturer to commission isolated studies. According to his presentation, individual Tier-2 emission-factor studies can cost *US$80,000–150,000* per mill, while a shared pre-competitive database could reduce verification costs by around *70%* and provide a buyer- and auditor-accepted data backbone for the industry. He further said that the problem is not only one of data, but of policy allocation: if Pakistan's grid already contains a significant zero-carbon base, then a more precise sector-specific grid emission factor can help ring-fence cleaner electricity for export-oriented industry and improve the credibility of industrial decarbonization claims. In this regard, he contrasted a national grid average emission factor of about *0.51 kg CO_2/kWh* with an industrial baseload value of about *0.32 kg CO_2/kWh*, arguing that smarter renewable mix allocation can turn carbon performance into a market advantage rather than a reporting burden.

He concluded that collaboration is the key enabling infrastructure for this transition. In his view, a shared national emission-factor system, aligned with policy support and industry participation, would allow manufacturers to strengthen buyer trust, lower verification costs, and improve readiness for future climate-linked trade requirements.

Panel Deliberation on Economic Revitalization and Industrial Transition

Moderator: Mr. Talha Khan, (CEO, Carbon Craft)

The panel deliberation, moderated by **Mr. Talha Khan**, formed one of the most engaging segments of the event and focused on Pakistan's broader economic emergency, the future of industrial competitiveness, and the need for more adaptive and collaborative policy responses. Mr. Khan steered the discussion with a series of pointed questions to the panelists on the structure of industrial zones, the practical role of carbon accounting, the future of public-private partnerships, and the policy shifts required to support both exports and employment. He repeatedly encouraged panelists to move beyond broad diagnoses and speak to practical, implementable solutions that could help Pakistan's industry respond to the current crisis.

He began the discussion by asking whether Pakistan's existing Special Economic Zone (SEZ) model is still fit for purpose, or whether a more decentralized and agile approach would better serve the country's industrial needs. He also asked what kind of institutional and regulatory changes would be required to make industrial clustering more inclusive for SMEs, and whether smaller, sector-specific zones could deliver faster results than large, heavily bureaucratic developments. Through these questions, Mr. Khan set the tone for a solution-oriented discussion that linked industrial policy with ground realities.

Mr. Muhammad Fauz ul Azeem (Sustainability & Chemical Management Lead, Interloop)

Mr. Talha Khan next turned to the question of carbon accounting and asked how global sustainability requirements are changing the competitive landscape for Pakistani exporters. On being asked whether carbon data is becoming a market-access issue rather than just a CSR issue, Mr. Muhammad Fauz ul Azeem said that carbon accounting is now a commercial necessity. He explained that exporters can no longer treat emissions reporting as a voluntary environmental add-on, because mechanisms such as the EU's *Carbon Border Adjustment Mechanism (CBAM)* are increasingly tying trade access to environmental performance. He warned that if Pakistan does not prepare, the textile sector could face serious future exposure, including a projected *US$1.2 billion carbon-tax liability by 2028*.

When Mr. Talha asked whether industry is prepared to respond to these pressures, Mr. Fauz ul Azeem said that most firms are still at an early stage and that the sector needs more structured support to develop reliable emissions data, transparent reporting systems, and stronger alignment between energy use and export strategy. He added that a transition toward greener industrial energy is no longer optional if Pakistan wants to protect its export base. In his view, carbon accounting must be built into industrial practice as part of a broader effort to lower the carbon intensity of exports and improve buyer confidence.

He further noted that carbon compliance is not just about meeting regulations, but about avoiding costly overpayment and data gaps. Mr. Fauz ul Azeem pointed out that individual Tier-2 emission-factor studies can cost around *US$80,000–150,000* per manufacturer, whereas a shared regional database could reduce verification costs by around *70%*. He stressed that carbon accounting must therefore move from a corporate obligation to a shared competitiveness strategy. In his view, firms that cannot quantify and manage their carbon footprint may gradually lose ground in international markets, while those that adopt transparent reporting systems will be better positioned to retain buyer trust and market access.

Mr. Ali Ahsan (Research & Analysis Manager, Pakistan Solar Association)

On being asked about the limitations of the current SEZ model and the policy environment for private investment, Mr. Ali Ahsan said that the main challenge is not a lack of ideas, but a lack of predictability. He emphasized that frequent changes in taxation, tariffs, and regulatory direction discourage long-term capital expenditure and make it difficult for investors to commit with confidence. Responding to Mr. Talha Khan's question on whether smaller industrial zones could be more effective, he expressed support for the idea of *Small and Medium Zones (SMZs)*, arguing that they would be more agile, more practical, and better suited to the current structure of Pakistan's industrial base than large, slow-moving SEZs. He also noted that industrial policy should provide at least a ten-year horizon if it expects meaningful private-sector participation.

Mr. Khan then asked whether the private sector sees enough incentive in the current governance structure to co-invest in industrial parks and related infrastructure. In response, Mr. Ahsan said that the success of such models would depend on credible shared governance, where the private sector can take a lead role while the state provides oversight, facilitation, and policy consistency. He added that Pakistan's middle-tier industry would benefit most from an environment that rewards efficiency, flexibility, and continuity rather than waiting for large-scale state-led projects to deliver results.

Mr. Ahsan further noted that policy consistency matters because industry is being asked to invest at a time when energy costs and compliance pressures are both rising. He said that a ten-year policy horizon is not a luxury but a requirement if the private sector is to commit to new industrial infrastructure, especially in sectors that are already facing electricity cost pressures of around *PKR 40–50 per unit* and increasing pressure from global markets. He added that if Pakistan wants to retain export competitiveness, the policy environment must reward efficiency and continuity rather than penalize firms through uncertainty.

Dr. Muhammad Sanaullah (Professor, UAF)

Mr. Talha Khan then asked Dr. Sanaullah whether a shift toward smaller and more specialized industrial zones could realistically improve competitiveness and employment generation. On being asked this, Dr. Sanaullah said that smaller and more localized industrial zones would likely be more practical than large SEZs because they require lower infrastructure overhead and can be established more quickly. He explained that this model would be particularly useful for SMEs, which often struggle to enter large investment-heavy development frameworks. He also noted that cluster-based zones can create stronger industrial ecosystems, where waste from one unit can become a useful input for another, thereby improving efficiency and reducing costs.

He added that the logic of SMZs becomes stronger when one considers the country's current industrial stress and the need for faster, lower-cost development models. In his view, the country cannot wait for large, slow-moving zones to deliver results when smaller, specialized clusters can be built with better coordination and lower upfront costs. He also emphasized that vocational training and research support must be aligned with the actual requirements of these clusters if they are to contribute meaningfully to economic recovery and job creation.

Dr. Syed Ali Abbas Kazmi (Associate Professor, USPCAS-E, NUST)

Mr. Talha Khan also asked Dr. Syed Ali Abbas Kazmi about the role of research, digital systems, and sustainability reporting in strengthening industrial competitiveness. On being asked how industries can respond to the growing importance of traceability and emissions transparency, Dr. Kazmi noted that digital

ledgers and transparent carbon reporting are becoming essential for maintaining competitiveness in global textile and manufacturing markets. He said that the shift is no longer optional, particularly when buyers are increasingly asking for verified data on emissions and supply-chain performance.

Dr. Kazmi also linked the discussion to the grid and energy transition, noting that Pakistan's broader energy structure still leaves industry exposed to fossil-fuel dependence, even as the country has significant renewable potential. He argued that public support should not be limited to regulation alone, but should extend to research institutions and innovation hubs within industrial clusters. These, he said, could help firms respond to carbon-reporting requirements while also building practical technical capacity. He added that if the country wants to move from fragmented compliance to credible industrial transformation, then data systems and research support must become part of the industrial policy framework.

Mr. Amjad Nazeer (CEO, ADS)

Mr. Talha Khan then asked Mr. Amjad Nazeer how the current economic emergency should shape Pakistan's industrial response. On being asked whether the country should prioritize import substitution or export growth, Mr. Nazeer argued that while import reduction may provide short-term relief, the real solution lies in stronger export-led growth. He said that Pakistan's total exports stood at *US$30.675 billion in FY2023-24*, but that export growth must be value-added and high-performing if the balance of payments is to improve sustainably. He added that industrial zones should not only be seen as production spaces but also as employment zones, particularly in a country where industry still plays a major role in jobs and foreign exchange earnings.

When Mr. Talha raised the issue of administrative inefficiency and the long-standing "one-window" challenge, Mr. Nazeer said that digitalization of approvals and reduced human intervention in regulatory processes are essential if corruption is to be curbed and ease of doing business is to improve. He stressed that Pakistan's economic emergency requires "war-footing" interventions, especially in industrial policy, regulatory reform, and private-sector confidence. He also noted that the textile sector's centrality to exports, combined with rising energy and compliance pressures, makes it imperative to move quickly from debate to implementation.

Conclusion of the Panel

In his concluding remarks, Mr. Talha Khan summarized the discussion into three clear priorities. First, he noted the need to *restructure* industrial development by shifting attention toward more practical and agile SMZ-type models. Second, he stressed the importance of *standardizing* carbon accounting to protect market access and strengthen export competitiveness, especially as CBAM-type requirements intensify. Third, he highlighted the need to *collaborate* by moving from a regulator-regulated relationship toward a genuine partner-partner dynamic between the state and the private sector. He concluded by noting that the panel's recommendations should be treated not as distant aspirations but as immediate necessities if Pakistan is to navigate its current economic crisis and create a more resilient industrial future.

<u>Session III – Economic Backlashes due to Geopolitical Crisis and Fuel Dependance</u>

Mr. Asif Javed (Associate Research Fellow, SDPI)

Mr. Asif Javed said that Pakistan's industrial economy is highly exposed to global oil shocks, and the recent escalation in oil prices has again underlined this vulnerability. He noted that international oil prices had remained broadly stable in 2025 in the range of *$55–75 per barrel*, but surged sharply in *March 2026*, crossing *$100 per barrel*. He explained that oil is not merely a fuel commodity, but a core input into electricity, transport, and industrial production, so a sudden increase immediately transmits into higher costs

across the economy. Citing the PIDE scenario analysis, he pointed out that if oil rises from *$80 to $160 per barrel*, Pakistan's *oil import bill* could increase from *$17.8 billion to $35.6 billion*, the *overall import bill* from *$56.5 billion to $74.3 billion*, the *trade deficit* from *$24 billion to $41.8 billion*, and inflation from 7.1% to 11.1%. He added that petroleum products already account for around *30% of total imports*, and every *$10 per barrel* increase in oil prices raises Pakistan's annual oil import bill by about *$2 billion*.

He further stated that Pakistan's energy structure remains vulnerable because of heavy dependence on imported fossil fuels and thermal-based power generation, which makes sectors such as textiles particularly sensitive to geopolitical disruptions and fuel price volatility. According to him, the impact on industry is immediate: total production cost rises, profit margins shrink, export competitiveness weakens, and the risk of order cancellations and reduced capacity utilization increases. He also noted that industrial electricity consumption from the grid has stagnated, reflecting a structural shift toward captive generation and solar adoption in response to rising tariffs and supply constraints.

Mr. Javed then turned to the external trade implications of conflict risks, especially the possibility of disruption in the Strait of Hormuz and wider instability in GCC economies. He noted that Pakistan's *trade deficit widened by $27.8 billion during Jul–Mar FY26*, about *23% higher year-on-year*, while exports fell by around *8%* and imports rose by *6.6%*. He added that Pakistan's textile exports to Middle Eastern markets remain important, but the region's economic slowdown and geopolitical uncertainty could weaken demand further. Quoting the presentation's scenario estimates, he said that if the Strait of Hormuz remained closed, Pakistan could face an export decline of *$700 million to $1 billion* in the short term and *$1.5 billion to $2 billion* in the longer term; if war destabilizes GCC economies, the decline could still range from *$500 million to $800 million* short term and *$1 billion to $1.5 billion* long term. He also noted that the World Bank expects regional GDP growth to slow from around *4% in 2025 to 1.8% in 2026*, which may further squeeze export growth. In conclusion, he emphasized that geopolitical tensions and oil shocks are not isolated risks, but factors that directly affect industrial competitiveness, trade performance, inflation, and overall economic stability in Pakistan, and therefore require a stronger shift toward energy security, domestic renewable sources, rooftop solar, storage, and trade diversification.

Mr. Amjad Nazeer (CEO, ADS) – Vote of Thanks and Closing Remarks

In his vote of thanks and concluding remarks, Mr. Amjad Nazeer expressed appreciation to all speakers, panelists, and participants for their thoughtful contributions throughout the dialogue. He noted that the discussions had clearly shown that Pakistan's industrial energy future now depends on the quality of its policy choices, especially in relation to prosumer regulations, tariff design, and the role of renewable energy in supporting industrial competitiveness. He thanked the panelists for offering practical insights on the implications of net-billing, the Optional Time-of-Use tariff, emission factors, and the need for smarter grid integration, and appreciated the moderator and organizing team for steering the conversation in a focused and constructive manner.

Mr. Nazeer said that the event had successfully brought together different perspectives on a set of interconnected challenges facing Pakistan's industry, economy, and energy system. He briefly summarized the key messages emerging from the discussion: that rooftop solar must be supported through stable and investment-friendly regulation; that industrial tariffs must be designed in line with real operating conditions; that carbon accounting and credible emissions data are becoming essential for export access; and that geopolitical shocks and oil price volatility make energy security a strategic national priority. He added that

the way forward lies in stronger collaboration among regulators, industry, researchers, and development partners to build a more resilient, competitive, and sustainable industrial future for Pakistan.

Participants

The launch and consultation was attended by over 25 participants, bringing together senior academics, ADS & USPCASE researchers, policymakers and development advisors, industry compliance managers, civil society representatives, students, and media.

Media Coverage

The Express Tribune

THE EXPRESS TRIBUNE

TODAY'S PAPER | APRIL 27, 2026 | EPAPER

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'Solar energy key to industrial survival'

Experts call for stable policies, grid, net billing reforms

Khawar Randhawa | April 22, 2026 | Less than a minute read

FAISALABAD: Representatives of Pakistan's textile industry have called on the government to accelerate the transition towards green energy, particularly solar power, to ease pressure on the national grid and manage seasonal energy demand fluctuations.

Speaking at a seminar titled "Deliberating on the Impact of Prosumer Regulations, Tariff Structure and War Crisis on Energy Security and Sustainable Industrial Growth in Pakistan," industry stakeholders warned that recent regulatory shifts from net metering to net billing could discourage solar investments in the industrial sector.

They said the change may push businesses towards costly battery energy storage systems (BESS) instead of more practical tariff-based solutions.

Participants also raised concerns over policy uncertainty in the energy sector, including slow progress on reforms such as the Competitive Trading Bilateral Contract Market (CTBCM) and the Independent System Market Operator (ISMO).

They expressed limited optimism regarding ongoing power sector privatization efforts, stressing that affordable and uninterrupted energy remains critical for Pakistan to remain competitive with regional textile exporters including India, Bangladesh, and Vietnam.

THE EXPRESS TRIBUNE

TODAY'S PAPER | APRIL 29, 2026 | EPAPER

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Can solar save textile industry?

Policy tweaks, particularly shift to net billing, impeding further solar adoption

Naeem Ahmad | April 27, 2026 | 5 min read

APTMA has been constantly blaming the FBR for its lack of commitment in implementing the agreement it signed with the textile industry regarding the resumption of zero-rated tax regime. PHOTO: FILE

FAISALABAD: Pakistan's textile sector, the backbone of its export economy, is once again at a crossroads. This time, the challenge is not just about global competition or market access, but about energy, its cost, reliability, and sustainability.

At a recent multi-stakeholder dialogue in Faisalabad, industry leaders, researchers, and policymakers gathered to examine how shifting energy policies, global conflicts, and regulatory changes are reshaping the future of industrial growth in Pakistan. The seminar, titled "The Impact of Prosumer Regulations, Tariff Structure and War Crisis on Energy Security and Sustainable Industrial Growth in Pakistan," brought into sharp focus a critical question: can Pakistan transition to renewable energy, particularly solar, fast enough to remain competitive in a rapidly evolving global market?

The News

INTERNATIONAL THE NEWS

Friday April 17, 2026 | Lahore Edition

4 NATIONAL

Textile industry calls for stronger policy support to accelerate green energy transition

By our correspondent

FAISALABAD: Representatives of the textile industry have urged the government to actively support a faster transition to green energy, particularly by encouraging solar adoption to reduce pressure on the national grid and manage seasonal demand fluctuations.

Speaking at a seminar titled "Deliberating on the Impact of Prosumer Regulations, Tariff Structure and War Crisis on Energy Security and Sustainable Industrial Growth in Pakistan," participants noted that the shift from net metering to net billing may discourage industrial solar investment and push businesses toward costly battery energy storage systems (BESS), rather than more viable tariff solutions. Industry stakeholders also raised concerns over policy uncertainty, including slow progress on power sector reforms such as CTBCM and ISMO, and expressed limited optimism regarding energy privatisation. They stressed that uninterrupted and affordable energy is essential for Pakistan to remain competitive with regional textile exporters such as India, Bangladesh, and Vietnam.

The seminar, organized by Alternate Development Services (ADS) in collaboration with Green Growth Alliance (GGA) and Green Corporate Alliance (GCA), highlighted that the ongoing regional energy crisis has reinforced the urgency of reducing reliance on fossil fuels and accelerating renewable energy adoption. ADS CEO Amjad Nazeer emphasised the need for timely and consistent energy policies, warning that delays could undermine economic gains. Experts noted that recent regulatory changes have altered the investment landscape for industrial solar users, calling for a balanced policy framework that supports both grid stability and industrial growth.

Dr Syed Ali Abbas Kazmi of NUST highlighted structural issues in Pakistan's energy sector, noting that rising tariffs, high financing costs, and policy inconsistencies are increasing risks for industry while reducing investment returns. He warned that without reforms, industrial growth could slow further. Pakistan Solar Association representative Ali Ahsan said solar adoption will continue to grow in Pakistan despite uncertain tariff and regulatory policies, driven by declining trust in consistent and affordable power supply from the government. Panelists from industry, academia, and business bodies called for a national carbon accounting system and stronger industry-academia collaboration to improve data quality and support decarbonisation efforts. They also emphasised linking industrial zones with renewable energy parks and promoting indigenous solutions.

Experts further noted that global compliance requirements, including carbon regulations, are becoming essential for maintaining access to international markets. They stressed that solarisation, energy efficiency, and supply chain compliance are no longer optional but necessary for business survival. The seminar concluded with a consensus that promoting renewable energy, particularly solar power, is essential to reduce costs, meet global environmental standards, and enhance Pakistan's export competitiveness.

PEF DELEGATION VISITS UAF: A delegation of the Professional Education Foundation (PEF) visited the University of Agriculture Faisalabad (UAF) and conducted a two-day career counselling session for scholarship awardees.

The delegation, comprising PEF COO Jawaid Faruqui and Alumni Association Manager Sameer Imtiaz, called on UAF Vice Chancellor Prof Dr Zulfiqar Ali at his office. Director Financial Assistance & University Advancement Dr Nazia Ehsan and Assistant Director Waqar Akbar Khan were also present. During the meet-

Climate Call

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BLOG

Textile Sector Urges Policy Support For Green Transition And Solar Adoption

By Naeem Ahmad • April 17, 2026

FAISALABAD: It is imperative to introduce supportive policies to facilitate industries' transition to solar energy in order to reduce pressure on the national grid and manage fluctuations in electricity demand.

Business Recorder

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BUSINESS & FINANCE PRINT EDITION: 2026-04-17

Faster transition to green energy: Textile industry seeks govt's support

Published April 17, 2026 | Updated April 17, 2026 06:16am

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By Press Release

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Jang

صنعتوں کو سولرائزجی پر منتقل کرنے کیلئے موثر اور معاون پالیسیاں متعارف کروائی جائیں، ماہرین

THE DAILY JANG LAHORE

فیصل آباد: پائیدار صنعتی نمو پر زیرو مرر یگولیشنز، ٹیرف سٹرکچر اور جنگی بحران کے اثرات کے موضوع پر منعقدہ سیمینار سے امجد نذیر، ڈاکٹر علی عباس کاظمی، طلحہ خان، ڈاکٹر ثنا اللہ، سہیل نجیب، آصف جاوید اور محمد عثمان بن احمد و دیگر اظہار خیال کر رہے ہیں۔

Jang e-paper

صنعتوں کو سولرائزجی پر منتقل کرنے کیلئے موثر اور معاون پالیسیاں متعارف کروائی جائیں، ماہرین

17 اپریل 2026

فیصل آباد (شہباز احمد) حکومت قومی گرڈ پر دباؤ کم کرنے اور بجلی کی طلب میں اتار چڑھاؤ سے نمٹنے کے لیے صنعتوں کو سولرائزجی پر منتقل ہونے کے لیے مؤثر اور معاون پالیسیاں متعارف کروائے۔ ٹیکسٹائل انڈسٹری، ایڈیمیا اور تحفظ ماحولیات کے ماہرین نے یہ مطالبہ "پاکستان میں توانائی کی حفاظت اور پائیدار صنعتی نمو پر زیرو مرر یگولیشنز، ٹیرف سٹرکچر اور جنگی بحران کے اثرات" کے موضوع پر منعقدہ سیمینار میں کیا ہے۔ سیمینار کا انعقاد آل ٹیکسٹائل ڈیولپمنٹ سروسز نے گرین گروتھ الائنس اور گرین کارپوریٹ الائنس کے اشتراک سے کیا تھا۔ ماہرین نے کہا ہے کہ نیٹ میٹرنگ سے نیٹ بلنگ کی جانب تبدیلی صنعتوں کی حوصلہ شکنی کر رہی ہے اور انہیں بجلی کی مسلسل فراہمی کے لیے مہنگے بیٹری سٹوریج سسٹمز میں سرمایہ کاری پر مجبور کر رہی ہے۔

Links

1. https://climatecall.pk/textile-sector-urges-policy-support-for-green-transition-and-solar-adoption/
2. https://e.jang.com.pk/detail/1063084
3. https://e.jang.com.pk/lahore/17-04-2026/pic/10_04.jpg
4. https://tribune.com.pk/story/2604972/can-solar-save-textile-industry
5. https://tribune.com.pk/story/2604064/solar-energy-key-to-industrial-survival
6. https://www.brecorder.com/news/40416823
7. https://www.linkedin.com/posts/energytransition-prosumerregulations-industrialdecarbonization-ugcPost-7450881904834355200-5Yrx?utm_source=share&utm_medium=member_desktop&rcm=ACoAACXX-AsBTiy3R2v0WOc5jrPoer2h1FS35g0

Annex I


Deliberating on the Impact of
Prosumer Regulations, Tariff Structure & War Crisis
on
Energy Security and Sustainable Industrial Growth
in Pakistan


Green Growth Alliance
Alternate
GCA
Deliberating on the Impact of
Prosumer Regulations, Tarrif Structure & War Crisis
on
Energy Security and Sustainable Industrial Growth
in Pakistan


$1.2 Billion
The Projected Carbon Tax Liability
for Pakistan Textiles by 2026


Rising Oil Prices: The Trigger for Industrial
West Inn

Agenda

"Deliberating on the Impact of Prosumer Regulations, Tariff Structure and War Crisis on Energy Security and Sustainable Industrial Growth in Pakistan"

Alternate Development Services (ADS)
Green Growth Alliance (GGA), Carbon Craft
Green Corporate Alliance (GCA)

Venue: Zircoon Hall, West Inn Hotel, Faisalabad
Date: 15-04-2026
Time: 3:00 PM – 7:30 PM

Time	Session	Speaker
3:00 – 3:20 PM	Registration & Agenda Setting	Participants arrival and networking
3.20 – 3.30 PM	Recitation of Holy Quran	–
3:30 – 3:50 PM	Introductory Session and Contextual Development	**Mr. Amjad Nazeer** (CEO, ADS)
3:50 – 4:30 PM	**Session I**: Main Presentation – Study Findings	**Muhammad Usman Bin Ahmed** (ETO, ADS)
4:30 – 4:45 PM	Expert Talk on Current Tariff structure and Industrial Energy Security **Session II**: Optional ToU Tariff System for Industrial Prosumers: Design, Incentives & Industry Response	**Dr. Syed Ali Abbas Kazmi** (Associate Professor, USPCAS-E, NUST)
5:10 – 5:25 PM	Emission Factors and Smart usage of Renewable mix on the grid.	**Subayyal Najeeb** (Program Manager, Green Growth Alliance, Baghbaan Environmental Services Ltd.)
5:15 – 6:00 PM	Panel Deliberation: Prosumer Regulations, ToU Tariffs, Renewable Mix & Energy Security	Moderator: **Mr. Talha Khan** (CEO, Carbon Craft) **Mr. Muhammad Fauz ul Azeem** (Sustainability & Chemical Management Lead, Interloop) **Dr. Syed Ali Abbas Kazmi** (Associate Professor, USPCAS-E, NUST) **Dr. M. Sanaullah** (Professor, UAF) **Mr. Ali Ahsan** (Research & Analysis Manager, PSA)
6:00 – 6:20 PM	**Session III**: Economic Backlashes due to Geopolitical Crisis and Fuel Dependance	**Mr. Asif Javed** (Associate Research Fellow, SDPI)
6:20 – 6:50 PM	Q&A Session	Open discussion with participants
7:00 – 7:15 PM	Vote of Thanks & Conclusion	**Mr. Amjad Nazeer** (CEO, ADS)
7:15 PM onwards	Dinner	Networking and informal discussion