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ENERGY UPDATE

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EVER DELIVER?

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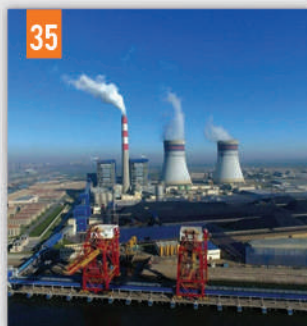
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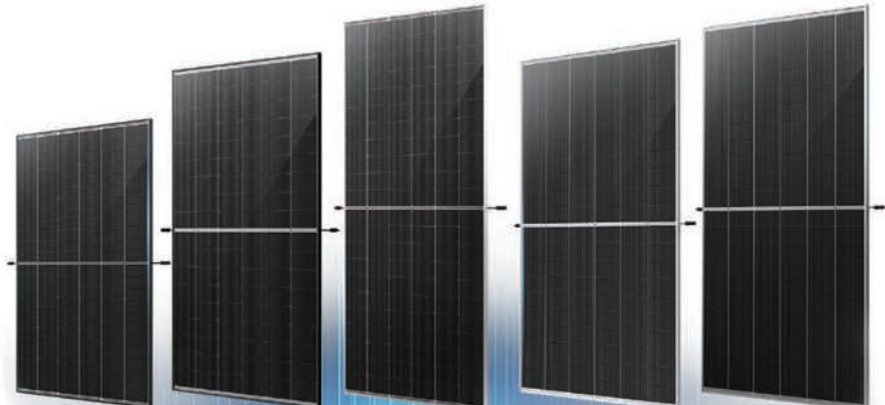


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FROM THE Editor's desk...

Austerity needed for public mercy

In view of the grappling economic crisis, the newly installed government of Pakistan needs to ensure an immediate and long standing austerity drive to rid the country of unnecessary expenses, luxuries, and corruption so as to stabilize the economy for the relief to inflated-hit nation.

In government affairs, austerity is part of an economic policy to reduce government's extra expenses and cover deficits besides providing relief to the people belonging to all sectors of life, including business class. Austerity needs to reduce expenses of elite people, particularly in government, to overcome economic crisis and reduce loan burden.

The newly established government needs to adopt a positive approach to reduce government expenses to a significant level so as to provide relief to the people undergoing torments of highest-ever inflation in the Pakistan history.

Covid pandemic, 2022 devastating floods, energy prices, and dollar rate hike have multiplied inflation, as a result, the government and private organizations have become unable to run their affairs. The government should reduce 70 percent of protocol vehicles for the President, Prime Minister, ministers and bureaucrats. The free electricity and petrol to them must also be abolished to save public money and save the economy of the country because their salaries are already high.

According to a report, the National Assembly was informed in Feb 23 that the foreign trips cost kitty about Rs70 million last year. It was also informed that Rs63.71 million were spent on the foreign visits of 23 members of the federal cabinet during the first nine months of the coalition government. As per the report, Coalition govt purchased eight vehicles for over Rs57 million while the foreign visits of the seven members of the cabinet under Mr Khan had cost the national exchequer Rs6.26 million.

The government had set the overall budget deficit target at 6.5% of GDP, or Rs6.9 trillion, for FY2024. The 7.6% deficit means that Pakistan will need to borrow Rs1.3 trillion more than what it had planned in June 2023. This deficit could be covered when effective and efficient austerity drive is launched.

According to a Jan 2024 report, the federal government's budget deficit widened by more than 50%, primarily due to a steep increase in interest payments that reached Rs4.2 trillion during the first half of the current fiscal year, casting doubt on the effectiveness of the International Monetary Fund (IMF) programme. The Rs4.22 trillion interest payments exceeded the net income of the federal government by Rs207 billion during the July-December period of this fiscal year, according to a report released by the Ministry of Finance.

The top bureaucrats' salaries are in millions of rupees and their free petrol, electricity and other facilities are a huge burden on the country's economy; therefore, it is the need of the hour to reduce them significantly as a mercy on the nation, particularly to the poor and middle classes.



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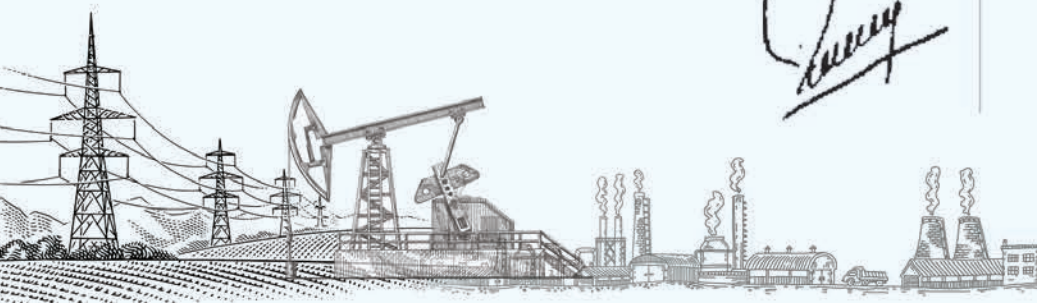
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LPG cylinders: track and trace system

Illegal manufacturers thrive on low quality material, putting lives at risk



Explosions occur usually during transport and users' locations. There are two main reasons for cylinder explosions – low quality manufacturing using inappropriate material; and damage and wear and tear during handling over a period of time.

Oil and Gas Regulatory Authority (Ogra) does try to control the menace of unauthorised manufacturing by issuing licences to LPG cylinder manufacturing companies after thorough checking and control over quality assurance procedures. But low quality manufacturing by unauthorised manufacturers goes on. We will in this space discuss as to what

cylinders in market. Retailers may also be buying cylinders from open market, which may be carrying these illegally manufactured cylinders. So, what to do?

First is increasing the rigour in control of operations and practices of LPG filling and marketing companies for preventing the influx of illegal cylinders. It goes without saying that illegal manufacturers should be identified and legal process be applied to them. Ogra has specified once in five years testing of cylinders which should be able to identify defective cylinders. Hydrocarbon Development Institute of Pakistan (HDIP) has been entrusted to test and certify compressed natural gas (CNG) cylinders with satisfactory results. Same can be done by HDIP for the LPG cylinders.

However, CNG cylinders cannot be manufactured by the unorganised sector as it involves heavy hick metal work, while LPG cylinders can be manufactured by the unorganised sector and control over the latter is not easy. Nevertheless, collaboration between Ogra and HDIP is desirable to control the illegal manufacturing of unsafe LPG cylinders. There is a new technology of track and trace system, which is being applied to track and trace cylinders. More expensive solutions even identify the location of cylinders.

This is being applied in industrialised countries. Even in our region, in India, some LPG companies have started using it. The cheapest solution is RFID-based, which is nothing but a normal barcode or QR code printed on a label. That label is pasted on the collar of cylinder appropriately. RFID can be scanned and data logged on a cloud system. This would reveal all data about that cylinder such as the name of manufacturer, date, testing, approval, ownership of cylinder, etc. ■

else can be done over and above existing controls and practices to improve safety issues in this respect. There are, reportedly, 10 to 12 LPG cylinder manufacturers who carry Ogra licence. As opposed to this, there are scores of illegal unlicensed manufacturers.

These manufacturers thrive on low prices and low quality material. They also economise on the thickness of steel. The question, however, is how do supplies from illegal manufacturers find their way to the market. LPG filling and marketing companies receive licence from Ogra. Do they buy these supplies and how to know about it if they do? There are third-party wholesalers also, which may or may not be registered. Most probably, they introduce the illegally manufactured

Syed Akhtar Ali



The writer is former Member Energy, Planning Commission and author of several books on the energy sector

Liquefied petroleum gas (LPG) cylinder safety situation is not very good in Pakistan. Every year, there are many cylinder explosions, leading to deaths and injuries. Ex-



Pakistan needs gas to glitter which Thar coal can provide

About 56% the electricity in the world is produced by combustion of this 'Black Gold' with China and India being the largest users; Pakistan has huge reserves of 175 billion tons coal at Thar

Dr Farid Malik

The writer is ex-Chairman Pakistan Science Foundation

In the 21st century, the universe we live in is going through an energy transition. While the West, after depleting most of their coal resources, is moving towards gas, and most developing countries, including Pakistan, are moving in the direction of coal. With the large discovery of natural gas in the year 1952, a bonanza of clean affordable energy was delivered to the people of the struggling republic.

At an estimated size of 12 TCF (Trillion Cubic Feet), it was one of the largest deposits of its times which was meant to last for over a century (1952 to 2052). Due to mismanagement, the reservoir was depleted in half of its mandated life (2002). Gas is now being imported from Qatar through international bidding.

First, it is liquefied (LNG), then re-gasified (RLNG) after it reaches its destination on the Karachi Port where it enters the extensive gas transmission and distribution network of the country operated by SSGC (Sui Southern Gas Company) and SNGPL (Sui Northern Gas Pipeline Company). Imported fuel creates serious security and sustainability concerns, which must be addressed.

In the recently concluded Paris conference on environment, Europe has decided to pull out from the use of the 'Black Gold' that fuelled the entire Industrial Revolution after the renaissance in Europe in the 17th century.

Till today, Pakistan remains to be a gas-fuelled country despite

huge reserves of coal at Thar (175 billion tons). Due to imported fuel, the circular debt has crossed Rs7 trillion mark (gas + power). Using the abundant deposits of this 'Black Gold', the country can switch over to a 'coal-based system' by using 21st century 'clean technologies'. Gasification is the way for an energy-starved nation. Change is the only factor that remains unchanged in the world driven by technology. Nations that understand these dynamics move forwards while rest stagnate and perish. In order to transport energy, the West decided to 'gasify coal'.

Most European countries produced 'town gas' (Co + H₂), which was then transported through pipeline. Coal and its gasification provided the much-needed energy to the West. With availability of natural gas in Russia and Ukraine, the European Union (EU) has now decided to use this energy resource combined with Green Energy. A transformation is on the way from the use of coal to gas.

With its depleted gas reserves, Pakistan is now moving in the direction of widespread use of abundantly available domestic coal at Thar. Mining challenges have been overcome. Two mines are now operational. Power generation has started. Coal continues to be the most used energy source to produce power. About 56% the electricity in the world is produced by combustion of this 'Black Gold' with China and India being the largest users.

Both countries have now started to gasify this resource for widespread use. India plans to convert 100,000 tons of coal to gas every year.

Above ground gasification is an established technology widely in use for about a century while UCG (Underground Coal Gasification) still remains a challenge for research-

ers in this area. Unfortunately, this unproven technology was applied at Thar which resulted in waste of precious time and energy. Commercial discipline and viability must be kept in mind for large-scale application, which was ignored in this case. The project is now under scrutiny and investigation.

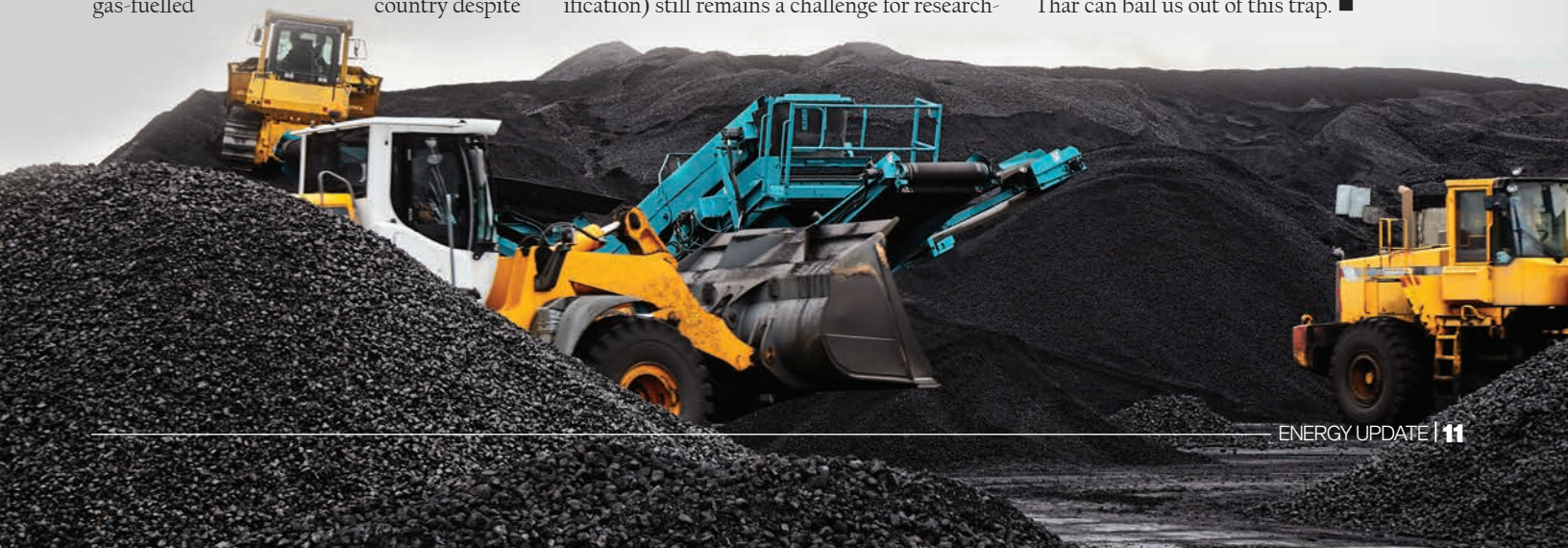
Pakistan is now ready to move from coal to gas by use of its own resource with application of proven above ground 'gasification' technologies. Samples from Thar were sent to South Africa where they have successfully 'gasified', paving the way for widespread use of this 'Black Gold'.

The heating or Calorific Value (CV) of gas produced is above the CV of currently used Sui Gas (920 versus 925 Btu per lb), which makes it readily useable in the current pipeline network of the country. In 1952, it was the discovery of the gas that changed our lives. Today, Thar coal can play the same role.

The slogan being 'Thar Badlay Ga Pakistan'. Inexpensive reliable energy is the way forward, which cannot be ignored. SNG (Synthetic Natural Gas) produced from this deposit can effectively replace the expensive, imported LNG (Liquefied Natural Gas).

Pakistan needs gas to glitter which the 'Black Gold' of Thar can provide. It is the gift of nature waiting to be exploited for its full potential. While the founding fathers gifted our generation with Sui Gas, Thar will be our contribution to the coming generations, our children and theirs.

The 175 tons of 'Black Gold' can cater to the energy needs of the nation for at least one century. Energy security is vital for the Islamic Republic of Pakistan to stand tall on its own feet. Debt is death for a developing country. Thar can bail us out of this trap. ■





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Will the power sector ever deliver?

Sector shenanigans have resulted in near existential threat to the country

Engr Tahir Basharat Cheema



The writer is B.E. (Elect), Dip. Pub. Admn, Dip. Bus. Admn., Cert. Statistical Sciences, M.B.A. and former MD PEPCO, former President I.E.E.E.P. Former Caretaker President I.E.E.E.P

The sector shenanigans have resulted in a near existential threat for the Country. Although, the situation has been in the news since long, but no one ever does anything to correct the continuing rot. The woeful part is that all governments in the past have vowed to change the faltering complexion altogether, but sadly everyone has added upon the woes. Probably, the political economy of the Sector is too great not to be reaped. Each dispensation at Islamabad has propagated plans for possible resurrection of the Sector; but, unfortunately, instead of any change these plans have failed to make any headway. Painfully, the oft repeated solution has been to raise the electricity tariffs with the hopes that soon all would be well. Now we are saddled with an exorbitant tariff which no one can pay. That the tariff make-up is trite and a vestige of the past is another burden to contend with.

Now that a new government is in the offing and that all political parties have promised to focus on the Power Sector, it is felt that the best for them would be to understand the issues from the most damning to fathomable ones. Hopefully, this time around the politicians will live up to their election promises. Besides, it is hoped that unnecessary kite-flying would be avoided.

Presently, the most deficient power policy and the ensuing plan (thoughtlessly updated too), are to be implemented by the governing Ministry of Energy through its Power Division. As the policy and the plan are basically looking towards sustainability of the sector alone without understanding the trite design and architecture which, whatever happens, will not allow any correction; hence, the first of the steps has

Chinese IPPs' Dues Soar to Record \$1.8 Billion

to be the priority redoing of both of these documents through a consultative process whereby practitioners are able to provide the needed advice.

Once the policy and the plan are corrected, then comes the issue of the governance structure viz. the non-professional Power Division. Here, the simplest solution would be posting of an experienced sector practitioner as one of the Additional Secretaries (a practice till 2013 when the all-powerful DMG / PAS took over), at least two technical Joint Secretaries and may be an equal number of Deputy Secretaries with due professional experience. Incidentally, this too was a practice in the past. The Federal Secretary can for the moment be a generalist, but very soon as a necessity, professionals have to be considered for the position. Along with the professional up gradation of the Ministry, the same general rule has to be applied to the Regulator NEPRA, PPIB and the CPPA(G). Without meeting this basic but cardinal requirement, there are no chances at all for the present and up-coming dispensation to ever deliver. On the other hand, the generalists holding the reins will cause obstacles than any succour, thus this change is first and the foremost to be implemented along with the professional redoing of the power policy and the current plan. That is, if at all we plan to correct the situation.

Besides, even more serious is the makeup of the independent directors on the GENCOs, the NTDC and the DISCOs BoDs. The prowess of such nominees has been downhill for the last decade or so, while reaching its nadir at present, when in great abundance junior politicians were notified by the government – specially, for the DISCOs. Such nominations are basically an affront to the sensibilities of people in the know of things. The sad part remains that whoever was responsible in the government for these nominations and that too in negation to the law of the land and the regulatory regime, probably, has no qualms. Incidentally, it has again been the AGP that has taken up the cudgel and billed most of the nominees to the DISCOs BoDs as un-qualified for such positions. This report relates to the performance audit of the boards of three DISCOs and which at present is under DAC proceedings.

If at all the power sector has to be resurrected, then such blatant intervention has to be curbed and instead the best of the best and also the most suitable of professionals, have to be nominated in the Boards – specially, when the management remains with the boards now. Besides, it is what the law of the land also decrees. All this is not difficult at all as experts are available and such persons would simply change the complexion of the boards in all sense. In case, the situation remains as it is, then there are no chances at all – specially, for the DISCOs to deliver. That, the GENCOs have degenerated into descript and decadent monoliths highlights the problem. That the NTDC is embroiled in countless procurement and contracting disputes further proves the above thesis that the present boards are most wanting to say the least. ■



Pakistan's outstanding dues to Chinese-backed power projects under the China-Pakistan Economic Corridor (CPEC) have surged to a record Rs493 billion or \$1.8 billion as of last month, marking a staggering increase of 77% within seven months.

The significant rise in dues during the caretaker government's tenure poses a serious challenge for Pakistan's economic ties with Beijing.

Sources revealed to The Express Tribune that by the end of January, Pakistan owed approximately Rs493 billion to Chinese power generation and transmission projects, up by Rs214 billion or 77% from June last year.

The primary cause behind this surge is attributed to the Power Division's failure to settle at least 90% of the monthly claims from these projects. For instance, in June, power plants submitted claims worth Rs110 billion, but the Power Division only settled around Rs60 billion, representing just 53% of the total claims.

Last month, China associated the approval of a \$600 million foreign commercial loan with Pakistan's prior settlement of debts owed to Chinese power plants. This unusual condition indicates growing discontent within Chinese circles.

Under the Energy Framework Agreement of the CPEC, Pakistan committed to establishing a revolving fund to deposit 21% of power payment invoices to safeguard Chinese firms from circular debt. However, instead of setting up the fund, Pakistan opened the Pakistan Energy Revolving Account

(PERA) with a Rs48 billion annual allocation in October 2022. Consequently, the debt owed to Chinese IPPs has soared to around Rs400 billion.

Despite the urgency of resolving the dispute, the government only allocated Rs4 billion to settle Chinese energy debts in February, suggesting a lack of urgency. This monthly allocation falls short of covering the monthly inflow, leaving the debt unresolved.

The breakdown of outstanding dues reveals that the Sahiwal power plant tops the list with Rs97 billion owed, followed by the Hub and Port Qasim coal-fired power projects with over Rs80 billion each, and the Thar Coal project with Rs79 billion.

The Chinese government has repeatedly raised concerns about these overdue payments through diplomatic channels. The situation has also hindered fresh lending from Chinese insurance company M/s Sinosure to Pakistan's power sector projects.

The looming debt crisis has raised alarms among Chinese businesses, impacting Pakistan's ability to secure new loans for vital projects like the Mainline-I railways project under the CPEC.

Moreover, overdue payments to various CPEC projects, including Engro PowerGen, Matiari-Lahore Transmission Line, and Karot power project, have further exacerbated the financial strain. The International Monetary Fund's recent rejection of Pakistan's Rs1.27 trillion circular debt reduction plan underscores the severity of the fiscal risks associated with the debt crisis. ■

Plan afoot to fully harness Sindh's clean power potential

Mehfooz Qazi,

Director, Sindh Solar Energy Project says up to 41,000 Megawatts of electricity is available in national grid



Naeem Qureshi

The Writer is Managing Editor of Energy Update and Environment Activist

Sindh will make efforts to tap the massive solar and wind energy potential of its Jhimpir-Gharo corridor to maximize green energy production in Pakistan so as to boost economic and industrial activities.

Mehfooz A Qazi, Project Director of Sindh Solar Energy Project, stated this in his latest conversation with the Energy Update. Following are important excerpts from his talk for our readers.

Energy Update: What is the present power sector scenario in Pakistan?

Mehfooz A Qazi: At present, up to 41,000 Megawatts of electricity is available in the national grid, which is sufficient enough to fulfil power demand in the country. The main issue we have been facing these days is the affordability of electricity. The power production based on imported coal and imported LNG has been costlier.

A single unit of electricity costs around Rs40 to Rs45 given the overall basket price of power in the country. The concerned consumers simply couldn't afford such a high cost of electricity. Our economy has been suffering

because of this situation. The national economy lacks sustainability due to high production costs of industries and joblessness. Our imports have been increasing. The easiest solution to this problem is that Pakistan should increase its reliance on green energy.

EU: What role Sindh could play in this regard?

Mr Qazi: The best wind corridor is available near Thatta in Sindh for maximizing green energy production in the country. If one looks at the solar map of Pakistan, the areas in Sindh, Balochistan, and the lower parts of Punjab are ideal for solar power production due to maximum solar radiation. The capacity factor of clean energy plants to be installed in the Jhimpir corridor crosses 50 per cent if we combine both the potential of solar and wind energy. This capacity factor matches the efficiency of a thermal power plant. The cost of renewable electricity will be around Rs 10 to Rs12, which is 25 per cent of the current basket power price in the country.

EU: What will be the advantages of utilizing solar and wind energy potential available in Sindh?

Mr Qazi: The Sindh Transmission and Dispatch Company has already been working on this option. It has been in search of such busi-

nesses. The biggest advantage in this regard is that Karachi's industrial areas, including Korangi and SITE, are located at the south of Jhimpir. A new industrial zone is being developed at Dhabeji under the CPEC regime.

The bigger Hyderabad Industrial Zone is also situated nearby and spreads on a vast area covering Kotri. Our economy will greatly benefit if cheaper electricity is available for so many industrial zones. Our industries will be able to decrease their production cost and generate job opportunities for unemployed people. Our economy will become prosperous due to such steps. We need sustainable energy for the sustainability of our economy as renewable electricity is a prerequisite for sustainable energy production.

EU: What is the future line of action to harness the clean energy potential of Sindh?

Mr Qazi: There are several international financial institutions always willing to support the launching of clean energy projects in Pakistan. The goods exported to the European markets get extra points if renewable electricity is used in their production. We want to implement this new plan to increase the affordability and sustainability of electricity produced in the country to make it economical for the concerned power consumers. ■



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Climate adaptation strategies for building sustainable future

Melting of glaciers in Pakistan's northern regions, particularly in the Himalayas and Karakoram ranges, is another stark indication of climate change

Dr Basharat Hasan Bashir



Writer is Executive Director, NAMF-USA, a 501(C)(3) Organization/Alternative Energy & Climate Change (Mitigation and Adaptation) Specialist

Pakistan, a country of diverse geographical features ranging from towering mountain ranges to expansive plains and coastal areas, finds itself at a critical juncture in its battle against the impacts of climate change. The nation confronts a myriad of challenges stemming from the changing climate, including the gradual melting of glaciers, unpredictable monsoon patterns, and rising temperatures. These challenges have far-reaching implications for Pakistan's ecosystems, economy, and the well-being of its people.

As the global community intensifies efforts to mitigate greenhouse gas emissions, it becomes increasingly evident that adaptation strategies are indispensable for coping with the unavoidable consequences of climate change. In this context, Pakistan has embarked on a journey to bolster its resilience against the adverse impacts of a changing climate. Through a combination of policy frameworks, technological innovations, and community engagement initiatives, Pakistan endeavours to confront the challenges posed by climate change head-on.

This article seeks to delve into Pakistan's ongoing adaptation efforts while shedding light on additional measures necessary to tackle one of the most pressing climate-related issues facing the country: flooding in regions

such as Baluchistan, Sindh, and Khyber Pakhtunkhwa (KPK). By examining the specific vulnerabilities of these regions and proposing targeted adaptation strategies, this article aims to contribute to the broader discourse on climate resilience and adaptation in Pakistan.

Understanding the Climate Change Context in Pakistan:

Pakistan's geographical diversity, encompassing towering mountain ranges, vast plains, and extensive coastal areas, underscores the complexity of its vulnerability to climate change. This diverse landscape is both a source of natural beauty and a significant factor amplifying the country's susceptibility to the impacts of a changing climate.

Rising temperatures present one of the most palpable manifestations of climate change in Pakistan. Across the country, temperature records are being shattered, leading to prolonged heatwaves and exacerbating heat-related illnesses. This rise in temperatures not only threatens human health but also places stress on ecosystems and agricultural productivity.

The melting of glaciers in Pakistan's northern regions, particularly in the Himalayas and Karakoram ranges, is another stark indication of climate change. Glacial melt contributes to increased water flow in rivers initially, leading to the risk of flooding, but ultimately poses a long-term threat of water scarcity as glacier reserves diminish. This phenomenon has significant implications for Pakistan's water resources, which are heavily reliant on glacier-fed rivers for irrigation, drinking water, and hydropower generation.

Unpredictable rainfall patterns further compound Pakistan's vulnerability to climate change. While some regions experience intensified rainfall and flash floods, others suffer

from prolonged droughts and water scarcity. These erratic weather patterns disrupt agricultural cycles, exacerbate soil erosion, and pose challenges for water resource management and infrastructure development.

These climate-related challenges have profound implications for various sectors of Pakistan's economy and society. Agriculture, as the backbone of the economy, is particularly vulnerable to climate variability and extremes. Erratic rainfall, heatwaves, and changes in temperature patterns can lead to crop failures, reduced yields, and livelihood insecurity for millions of farmers across the country. Additionally, water resources management becomes increasingly challenging in the face of dwindling glacier reserves and unpredictable river flows, impacting both rural and urban populations.

Human settlements, especially those in flood-prone areas and along the coast, face heightened risks from climate-related disasters. Flash floods, coastal erosion, and storm surges pose threats to infrastructure, livelihoods, and human lives, particularly in regions such as Baluchistan, Sindh, and Khyber Pakhtunkhwa.

In summary, Pakistan's vulnerability to climate change is intricately linked to its diverse landscape and is manifested through rising temperatures, melting glaciers, and erratic rainfall patterns. These climate-related challenges pose significant risks to agriculture, water resources, and human settlements, necessitating urgent adaptation measures to enhance resilience and mitigate the impacts of a changing climate.

National Adaptation Initiatives:

Pakistan has recognized the urgent need to address the impacts of climate change and has taken proactive steps to formulate compre-

hensive policies and strategies for adaptation. Central to these efforts are the National Climate Change Policy and the National Adaptation Plan (NAP), which serve as guiding frameworks to mainstream climate adaptation into development planning and enhance resilience across various sectors of the economy.

The National Climate Change Policy, launched in 2012, represents a milestone in Pakistan's approach to climate change adaptation. This policy provides a strategic roadmap for addressing the challenges posed by climate change and outlines key objectives, principles, and priority areas for action.

It emphasizes the importance of mainstreaming climate change considerations into all aspects of governance and development, integrating adaptation and mitigation efforts, and enhancing coordination among relevant stakeholders.

One of the key features of Pakistan's National Climate Change Policy is its focus on sectoral adaptation planning. The policy recognizes that different sectors of the economy, including agriculture, water resources, energy, health, and infrastructure, are uniquely vulnerable to the impacts of climate change and require tailored adaptation measures.

As such, it calls for the development of sector-specific adaptation plans to identify priority areas, set targets, and implement appropriate adaptation actions.

The National Adaptation Plan (NAP) process further complements the National Climate Change Policy by providing a framework for systematic, long-term adaptation planning and implementation. The NAP process involves a series of steps, including vulnerability assessments, identification of adaptation options, prioritization of actions, and monitoring and evaluation. By integrating climate change adaptation into existing development planning processes at national, provincial, and local levels, the NAP aims to build resilience across sectors and ensure that climate considerations are mainstreamed into decision-making processes.

In addition to these overarching policy frameworks, Pakistan has also undertaken various initiatives to enhance adaptive capacity and resilience at the grassroots level. These include capacity building and awareness-raising activities, community-based adaptation projects, and initiatives to strengthen early warning systems and disaster risk management mechanisms. By engaging local communities, civil society organizations, and the private sector in adaptation efforts, Pakistan aims to foster a culture of climate resilience and ensure that adaptation actions are context-specific, participatory, and sustainable.

Pakistan's national adaptation initiatives, anchored by the National Climate Change Policy and the National Adaptation Plan, represent a significant step forward in addressing the challenges posed by climate

change. By mainstreaming adaptation into development planning processes, enhancing coordination among stakeholders, and fostering community resilience, Pakistan is working towards building a more climate-resilient future for its people and ecosystems. However, continued efforts and investments are needed to effectively implement adaptation measures and mitigate the impacts of a changing climate.

Water Management and Agriculture:

Pakistan's economy is predominantly agrarian, with agriculture serving as a vital source of livelihood for millions of people and contributing significantly to the country's GDP. However, the agricultural sector is particularly vulnerable to the impacts of climate change, including erratic rainfall patterns, rising temperatures, and water scarcity. Consequently, adapting agriculture and water management practices to changing climatic conditions is imperative to ensure food security, enhance resilience, and sustain rural livelihoods.

Promoting drought-resistant crops is one of the key adaptation strategies being pursued in Pakistan. With increasingly unpredictable rainfall patterns and prolonged dry spells becoming more common, there is a growing emphasis on cultivating crop varieties that are resilient to drought and water stress. Through research and development initiatives, agricultural scientists are working to develop and disseminate drought-tolerant crop varieties that can thrive under limited water availability. These efforts aim to safeguard crop yields and buffer farmers against the adverse impacts of water scarcity induced by climate change.

Improving irrigation efficiency is another crucial aspect of water management in agriculture. Pakistan's irrigation systems, largely reliant on canal irrigation, are often inefficient, leading to water wastage and overexploitation of scarce water resources. In response, there is a concerted effort to modernize irrigation infrastructure, promote the adoption of water-saving technologies such as drip and sprinkler irrigation, and incentivize practices that promote judicious water use. By enhancing irrigation efficiency, farmers can optimize water use, minimize losses, and sustainably manage water resources in the face of increasing water scarcity.

Strengthening early warning systems for extreme weather events is essential for enhancing the resilience of agricultural communities. Climate change is expected to increase the frequency and intensity of extreme weather events such as droughts, floods, and heatwaves, posing significant risks to agricultural production and livelihoods. Early warning systems equipped with weather forecasting technologies and communication networks play a crucial role in alerting farmers to impending weather hazards, enabling them to take proactive measures to protect crops,

livestock, and infrastructure. By enhancing the accuracy, timeliness, and accessibility of weather information, early warning systems empower farmers to make informed decisions and build resilience to climate-related risks.

In addition to these measures, promoting sustainable land management practices, enhancing soil conservation efforts, and supporting climate-smart agricultural practices such as agroforestry and conservation agriculture are integral components of Pakistan's adaptation strategy for water management and agriculture. By adopting a holistic approach that integrates technological innovations, policy interventions, and community engagement, Pakistan aims to enhance the resilience of its agricultural sector and ensure food security in the face of climate change.

Disaster Risk Reduction:

Pakistan faces recurrent floods, particularly in Baluchistan, Sindh, and KPK, which require robust disaster risk reduction measures. Investments in infrastructure for flood protection, community-based early warning systems, and capacity building for emergency response are essential to minimize loss of life and property.

Coastal Protection and Biodiversity Conservation:

Coastal areas are particularly vulnerable to sea-level rise and extreme weather events. Pakistan is investing in coastal protection measures such as mangrove reforestation to act as natural buffers against storm surges and erosion. Additionally, conservation efforts to protect biodiversity hotspots and ecosystems play a vital role in building resilience to climate change impacts.

International Collaboration and Financing:

Recognizing the transboundary nature of climate change, Pakistan actively engages in international cooperation initiatives. Collaborative efforts with organizations like the United Nations Development Programme (UNDP), World Bank, and Global Environment Facility (GEF) facilitate access to technical expertise and financial resources for adaptation projects.

Adapting to climate change thus requires a coordinated and multi-dimensional approach that addresses the specific challenges faced by different regions. While Pakistan has made significant progress in climate adaptation, particularly through policy frameworks and sector-specific initiatives, additional measures are needed to tackle the specific issue of flooding in Baluchistan, Sindh, and KPK. By investing in infrastructure, strengthening community resilience, and integrating climate considerations into land use planning, Pakistan can enhance its adaptive capacity and build a more resilient future for all its citizens. ■

CPEC undergoing transformative evolution

Dr Khalid Waleed



The writer, a research fellow at the Sustainable Development Policy Institute, has a doctorate in energy economics

The China Pakistan Economic Corridor (CPEC), a cornerstone of China's ambitious Belt and Road Initiative (BRI), is undergoing a transformative evolution. Marking its progression into a second, more sophisticated phase, CPEC 2.0 aims to refine and expand upon the achievements of its predecessor.

CPEC 2.0 symbolizes a strategic pivot from a purely infrastructure-centric approach to a more nuanced, holistic development model. This model emphasizes the interplay of technology, culture, and community, setting a precedent for future international cooperation initiatives.

The inaugural phase of CPEC, often referred to as the 'hardware phase', marked a significant milestone in the bilateral relations of China and Pakistan. During this period, the corridor saw substantial Chinese investment

flow into Pakistan, amounting to billions of dollars. This influx of funds primarily catalyzed large-scale energy projects, including the establishment of coal power plants, which played a pivotal role in addressing Pakistan's acute energy crisis.

The hardware phase's most notable accomplishment was the substantial reduction in energy shortages. Pakistan, which had been grappling with crippling power outages, experienced a remarkable turnaround, boosting energy supply.

However, this phase was not without its challenges. The rapid expansion in power capacity and long-term power purchasing agreements (PPAs) led to the financial instability of the energy sector – this brings to light the critical need for integrated planning and the software approach of development. Financial strains became apparent as the country navigated the complexities of managing large-scale foreign investments. Sustainability concerns emerged, particularly regarding the environmental impact of coal-powered energy projects.

These experiences underscored the importance of a more comprehensive approach to development, one that not only focuses on physical infrastructure but also considers eco-

nomie, environmental, and social sustainability. Transitioning from the infrastructure-heavy focus, CPEC 2.0 introduces a paradigm shift towards a 'software of development' approach. This phase is characterized by a strategic emphasis on fostering deeper, more meaningful connections between people, cultures, and communities. It signifies a move towards integrating human and cultural dimensions into the development process, thereby enriching the Sino-Pakistani collaboration with a more nuanced and holistic approach.

CPEC 2.0 prioritizes building strong China-Pakistan relations through cultural exchanges, educational initiatives and community involvement, shifting from infrastructure to people-centric development for improved living standards and job creation in Pakistan. It integrates Chinese manufacturing in Pakistan's Special Economic Zones (SEZs) to enhance local competitiveness through technology and skill transfer.

Emphasizing digital transformation, CPEC 2.0 focuses on developing digital infrastructure and smart cities, promoting Pakistan's digital economy and governance. The phase also addresses sustainability, emphasizing green development with renewable energy and sustainable urban planning. Additionally,



it fosters knowledge exchange and collaboration in science, technology, and education, building a foundation for shared innovation and advancement.

By integrating these 'software' elements of development, CPEC 2.0 aims to create a more sustainable, inclusive, equitable and forward-looking growth trajectory for Pakistan. This approach not only addresses the limitations of the initial phase but also sets a new standard for international development projects.

To bridge these two phases effectively, a rational policy roadmap is essential. This roadmap must focus on integrating the industry-energy nexus through CPEC, using a series of reforms and initiatives.

First, there is a need for an actionable plan to encourage Chinese investors in coal power plants to shift their investments towards renewable energy sectors through incentivization of repurposing and conversion of coal plant infrastructure to renewable energy alternatives. This can be achieved by tweaking China's Green Investment and Finance Partnership (GIFP) initiative to suit the unique context of Pakistan – to transform stranded Chinese investments into more functional and financially sustainable investments.

Another critical step is the involvement of Chinese investors in Pakistan's power transmission sector. This will ensure better integration of renewable energy into the national grid, enhancing energy security and sustainability. Learning from China's experience in the power sector, Pakistan can integrate its industrial manufacturing with the national grid, increasing the industrial share in energy consumption and reducing inefficiencies.

The concept of distributed generation is also crucial, especially in areas not well-served by the national grid. Renewable energy plants, particularly in the mining sector and SEZs, can ensure long-term, low-emission industrial development. Bringing Chinese expertise in wind and solar power equipment manufacturing to Pakistan's SEZs can initiate a green energy revolution in the country.

Energy efficiency is another area where Pakistan can greatly benefit from Chinese expertise. Implementing best practices from China across various sectors in Pakistan will contribute significantly to reducing energy waste and enhancing overall efficiency.

Another possible arena for Pakistan under CPEC 2.0 is to invite Chinese electric vehicle (EV) manufacturers to its SEZs, aiming to reduce its heavy trade deficit caused by

the transportation sector. This move towards electric vehicles could save Pakistan up to 30 per cent in transportation fuel costs, equating to a substantial \$300 million monthly or \$3.6 billion annually. These savings surpass the value of the IMF's standby arrangement programme, highlighting the significant economic and environmental benefits of this initiative.

Lastly, as indicated by economist Robert Solow's 'labour-augmenting technological processes', the second phase of CPEC should focus on building the capacity of Pakistan's labour force. This includes both productive and research labour, fostering a generation of industrial scientists, engineers and researchers. This approach aligns with the broader objective of sustainable industrial development.

CPEC 2.0 marks a strategic evolution from the infrastructure-intensive 'hardware phase' to a holistic 'software of development' approach, integrating technology, culture, and community to foster sustainable, self-reliant industrialization in Pakistan.

The success of this refined strategy hinges on a rational policy roadmap, focusing on industry-energy nexus integration, renewable energy transition, and capacity building to ensure a sustainable, inclusive growth trajectory for Pakistan. ■

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Circular debt once again in focus

Rampant induction of Independent Power Producers behind circular debt; agreements made with IPPs were neither sustainable nor viable

Farhat Ali

The writer is a former President, Overseas Investors Chamber of Commerce and Industry

Circular debt in the energy sector is a mystery which no government could so far unfold. Over the last two decades it has rolled over from one government to the other, wherein, each tried to arrest it through subsidies, tariff increase and superficial financial maneuvering. Nothing worked and each time it ballooned

more.

Circular debt had its hay days during the tenure of the PPP government of 2008 and the government of PML-N of 2013. With each roll-over the debt increased and so did its bite on the national economy. Today, its bites have crippled the economy with the circular debt at the end of January 2024 standing at Rs 5.7 trillion, with the power and gas sectors accounting for Rs 2.703 trillion and Rs 3.022 trillion, respectively. The gas sector had been sucked into the system by a woefully ill-performing power sector.

As talks begin between the IMF and Government of Pakistan resume, one of the major subjects of the talks is going to be around the solution for the mounting circular debt. The government is reported to have prepared a well thought-out plan to be presented to the IMF to resolve the issue.

The new plan relates to addressing the circular debt by rationalising tariffs, eliminate cross subsidies, and inject cash into the system. The proposal involves injecting Rs 645 billion into the system, which will be provided by the Ministry of Finance (MoF) as a supplementary grant.

The focus is to salvage from financial ruins the public sector enterprises in the gas and oil sectors, notably, Sui Southern Gas Company (SSGC), Sui Northern Gas Pipeline Ltd (SNGPL), Pakistan State Oil (PSO) and others. They were all blue chip companies till hit by the menace of the circular debt.

In the past, budgeted grants were used to settle the receivables which were piling up. The new plan will create a dual solution to the problem by addressing liabilities and receivables of the company at the same time. The budgetary grants will adjust the receivables and will also make sure that these grants go towards the power sector.

The new plan is more of the same as the governments has been doing since the last many years, viz, tariffs and subsidies adjustments and injection of the cash into the sys-

tem. To realistically comprehend the subject one has to go to the root cause and origin of the circular debt crisis and find out how it built up over the years.

Circular debt buildup primarily started with the rampant induction of Independent Power Producers (IPPs) on the landscape of power sector of Pakistan and its collateral effects on the entire energy sector of the country. Before that the terminology of circular debt in the energy sector was not much heard off.

The agreements made with the IPPs were neither sustainable nor viable as stand-alone. They were presumably driven by greed, vested interests and incompetence of the public sector. In the guise of power shortage in the country and the hype created out of it, the IPPs were pushed into the system while ignoring their financial viability and understanding at what cost the power would be available to the consumer. Added to the financial burden of the IPPs was the financial burden of the loss-making public sector enterprises in the power sector. The compounding of the two financial burdens sucked in the remarkably good performing gas and oil public sector enterprises in the supply chain, notably, SSGC, SNGPL and PSO.

Today, the whole supply chain in the energy sector is severely compromised, stressed and questionable - starting from the procurement, storage and distribution of fuel to the power plants in the public and private sector, the conduct and competence of the power transmission and distribution companies and the conduct of the consumer itself. Circular debt emerged from the flaws in each of the nodes of this seamless supply chain.

The sustainable solution to circular debt crises lies in recognizing and addressing each of the gaps in the system. The policy and opinion makers in the energy sector off and on expose the flaws in the system and recognize the main causes of circular debt; notably, the inadequate sector governance, theft and pilferage in the system, delays in tariff determination, lag in fuel price adjustments, insufficient revenue recovery from both government and private consumers, high transmission and distribution (T&D) losses, outstanding receivables in the books of multiple companies in the supply chain, including fuel suppliers, generation companies and transmission companies and the frustration of being stuck with the IPPs.

While the new plan may provide timely financial relief but the tangible gains lie in recognizing the inherent flaws in the energy sector supply chain and addressing them by inducing good governance and competence at every node of the energy sector supply chain. ■



Climate change negatively impacting poor countries

Pakistan among top countries at risk of climate-led disasters; small-island states facing threat of vanishing from the face of the earth due to sea level rise

Zile Huma

The writer is a University of Oxford graduate in Public Policy

The World Day of Social Justice is celebrated every year on February 20. The International Labour Organization (ILO) unanimously adopted the ILO Declaration on Social Justice for a Fair Globalization on June 10, 2008 and termed equal opportunities for development and seeking justice as important pillars for the prosperity of the nation.

Climate change is a global challenge that is creating problems of social justice in multiple ways. There are socioeconomic and geographical structural inequalities, and social injustice caused by climate crises is based on the exploitation of the global economic model. It has deepened the existing inequalities at the local and international levels.

Climate change is an outcome of the Industrial Revolution that led to the adoption of unsustainable patterns of economic growth and prosperity. The beneficiary countries of this revolution were a few countries in the Global North, which became rich. They are still enjoying financial growth and control over the world economic system at the expense of the poor countries of the Global South.

According to the UNDP, globally, 10 per cent of households with the highest per capita emissions contribute 34-45 per cent of global household greenhouse gas emissions, while the bottom 50 per cent contribute 13-15 per cent.

Climate change is negatively impacting poor countries whose contribution to global carbon emissions is negligible. For example, Pakistan's contribution to carbon emission is less than 1.0 per cent, but it is declared by

German Watch as among the top countries at risk of climate-led disasters. Many climate-led disasters have hit Pakistan in the last five years like floods in 2022, heatwaves, smog, and glacier lake outburst floods (GLOF).

According to the World Food Program, the following eight countries are facing severe food crises due to the negative impacts of climate change: South Sudan, Madagascar, Pakistan, Somalia, Sudan, Chad, Sahel (a region that spans across Africa from the Atlantic Ocean to the Red Sea and includes Burkina Faso, Niger and Mali) and the Dry Corridor (a region in Central America).

All of these countries are poor nations and challenges like food insecurity further deteriorate their economic conditions and create social unrest in these countries. Also, when they are still in the process of healing their economies hit by climate-led disaster, they face another calamity caused by climate change.

Climate change-led disasters badly hit vulnerable groups like women, children, differently-abled persons, transgenders and elderly persons. During the financial crises caused by climate change disasters, women and girls become victims of domestic violence due to tension; crime against women and girls also increases manifold. Women do not get appropriate health facilities during a climate-led disaster due to demolished health infrastructure and the diversion of human resources in relief efforts.

During an emergency, it is difficult to evacuate differently-abled and elderly persons. Their specific needs and care are ignored. Moreover, indigenous communities who have less role in policymaking and decision-making processes face the severe effects of climate change since they mostly depend on natural resources for their livelihood.

As the UN High Commissioner on Human Rights has noted, "emerging evidence suggests that the livelihoods and cultural identities of the more than 370 million indigenous peoples of North America, Europe, Latin America, Africa, Asia and the Pacific are already under threat."

Climate-led disasters make the poor even poorer, and they remain stuck in a vicious cycle of poverty. For example, due to financial crises caused by climate-led disasters, the poor can no longer afford to send their children to schools. So, one opportunity to educate their children to get better jobs is also lost, and they are pushed further into the poverty trap. Whereas rich people normally have diversified sources of earnings and savings in multiple forms to resist such calamities and can sustain financial losses.

Some decarbonization strategies can also adversely affect the poor class of a country. Transport companies will increase their fares to recover the cost of carbon tax.

Many countries are facing the brunt of climate change disasters due to their geographical locations. South Asian countries like Pakistan, India, and Nepal are located under the world's highest mountain ranges. This geographical location makes them vulnerable to glacier melting led by floods.

Similarly, small-island states are facing the threat of vanishing from the face of the earth due to sea level rise. According to the UNDP, between 2010 and 2020, human mortality from floods, droughts, and storms was 15 times higher in highly vulnerable regions, compared to regions with very low vulnerability.

Climate change is deepening the already existing socio-economic and political inequalities present within the states and between the states which is raising serious concerns of social justice and equity. ■



Pakistan to face more warming due to climate change

Mega cities Karachi and Lahore under risk of heatwaves and urban flooding

Report by Mansoor Khuhro

Scientists have repeatedly warned the climate change will bring more intense warming, floods and droughts in Pakistan's rural and urban areas, affecting socio-economic conditions of people of all classes. The poor and middle class will continue to suffer as usual while the landlords will face heavy financial losses due to possible devastation of their crops by floods, water scarcity and drought. Furthermore, the businessmen will suffer their losses in urban flooding and heavy rains triggered by the climate change.

However, these losses could be reduced if pre-planned efficient and effective measures are taken by the federal and provincial governments besides using international aid properly to tackle these losses. There is need to develop canal systems of Indus and other

rivers of Pakistan besides cleaning opening all natural waterways and drains in rural and urban areas.

In Pakistan due to huge urbanization and environmental changes, there is a dire need to focus on the quality of drinking water in the country. Moreover, the growing population, further accelerates the demand for safe drinking

water. In recent years, climate change-induced heavy rains caused flooding in Karachi, Lahore and many other cities and towns, damages houses, roads, factories and other business infrastructure.

The effects of global climate change in Pakistan are already evident in the form of growing frequency of droughts, floods, erratic weather behavior, changes in agricultural patterns, reduction in fresh water supply and the loss of biodiversity.

Pakistan's projected temperature increase is expected to be higher than the global average. Projected temperature increase in northern parts is expected to be higher than the southern parts of the country. The frequency of hot days and hot nights is expected to increase significantly. Pakistan's

rainfall projections indicate an increasing trend nationwide. An increasing trend in the rainfall over the Upper Indus Basin and a massively increase trend in the Lower Indus Basin still remains.

Pakistan has been consistently ranked amongst the top ten most vulnerable coun-



tries to climate change, mostly because of the impacts on the Indus system. The Indus river system is the lifeline of Pakistan, in more ways than one. More than 80% of Pakistan's arable land is irrigated by the waters of the Indus. Nine out of the ten largest cities in Pakistan are situated within 50km or less of the waters of the Indus. The degradation of the Indus Basin presents a precarious economic, social, ecological as well as demographic challenge to Pakistan as a developing country.

The Living Indus Initiative aspires to transform the Indus Basin into a thriving system by repairing and restoring the natural resources and ecosystems that are resilient in the face of climate change, thus advancing Pakistan's commitment to SDG Goal 13 on Climate Action. The Initiative proposes a diverse set of 25 interventions to initiate coordinated executive efforts to restore the

health of the Indus Basin in Pakistan with particular focus on water, ecology, biodiversity, and agriculture sectors. The ecological restoration of the Indus Basin under LII will require indicative investment of between \$ 11 billion to \$16 billion (from public, private and development sector) in the short to medium term in the next 10-15 years' time.

In May 2022, a severe heatwave was recorded in Pakistan and India. The temperature reached 51°C. Climate change makes such heatwaves 100 times more likely. Without climate change heatwaves, more severe than those who occurred in 2010 are expected to arrive 1 time in 312 years. Now they are expected to occur every 3 years.

The 2022 floods submerged one third of the country, affecting 33 million people, half of whom were children. The floods damaged most of the water systems in affected areas, forcing more than 5.4 million people to rely solely on contaminated water from ponds and wells.

Pakistan is highly vulnerable to climate change. As with the changing climate in South Asia as a whole, the climate of Pakistan has changed over the past several decades, with significant impacts on the environment and people. In addition to increased heat, drought and extreme weather in parts of the country, the melting of glaciers in the Himalayas has impacted some of the important rivers of Pakistan.

Pakistan is also facing sea level rise due to melting of glaciers, floods and rainfalls on its land and other parts of the world. Three coastal cities in Pakistan's Sindh province, including the country's financial capital Karachi, are feared to be submerged by 2060 if the current trends of sea erosion in the Indus delta and coastlines continue unchecked.

While Badin and Thatta would drown by 2050, Karachi, a sprawling city of over 20 million people, would go under by 2060 if solid preventive actions are not taken as per international standards. Three cities of Sindh, Karachi, Badin and Thatta, are under direct threat due to sea levels rising. This needs timely mitigation measures. Many coastal areas in Badin and Thatta had already been submerged due to rising sea level.

Furthermore, city temperatures are also on the rise in Pakistan. The Karachi

temperature in last 60 years has risen by three degree centigrade, which is harmful for the citizens' health. Nawabshah city of Sindh also remains among the hottest cities of Pakistan in the warm weather. Pakistan also needs to grow more forest to protect its citizens from heat waves as A severe heat wave with temperatures as high as 49 °C (120 °F) struck southern Pakistan in June 2015. It caused the deaths of about 2,000 people from dehydration and heat stroke, mostly in Sindh province and its capital city, Karachi.

Pakistan's greenhouse gas (GHG) emissions are less than 1% of the world total, and GHG emissions per person, at 2 tonnes per year, are less than half the global average. In 2015 GHG emissions totalled 408 million tonnes of CO₂eq; of which 43% was from agriculture in Pakistan; and 46% from energy in Pakistan, such as burning fuel for heat, to power transport, and generate electricity.

Agricultural GHG are mostly methane and nitrous oxide. Methane comes from belching cattle, sheep and goats; manure management; and rice cultivation. Nitrous oxide is mainly from agricultural soils due to the application of synthetic fertilizers, farmyard manure, and crop residue mixes after burning.

Climate change is a global phenomenon which has been identified as one of the biggest threats to humanity in the 21st century. Pakistan is one of the most vulnerable countries to climate change despite being a low carbon emitter. Pakistan is at risk of extreme weather variations and unexpected occurrences. The gradual

increase in air and soil temperature will cause water scarcity, while recurring heatwaves will intensify the situation and worsen droughts.

Climate change mitigation and adaptation, which is a national priority in Pakistan, should be implemented with letter and spirit. The policy actions to combat the climate change should further be supported by development of Implementation Framework. Climate and Green Budgeting should also aim at using budgetary tool to achieve environmental and climate goals. Incorporating green budgeting in Public Financial Management (PFM) cycle, will be instrumental in tracking and monitoring climate related. ■



Efficient service necessary for climate resilience

Absence of constitutional protection to LGs has weakened Pakistan's economy

Ali Tauqeer Sheikh

The writer is an Islamabad-based climate change and sustainable development expert

ALL politics is local. The nature of the local polity sets the direction of national policies. In fact, the poor quality of local governance has determined the quality of electoral processes and the misplaced national development discourse.

Candidates are elected or re-elected based on their ability to deliver on local issues. How would the PTI, PML-N, PPP, and MQM, the four political parties that have bagged the most seats at both the national and provincial levels, change the ugly realities on the ground? How would they translate their mandates to deliver local development, described interchangeably as municipal or environmental services?

Efficient and transparent service delivered at the constituency level is a necessary building block for climate resilience. Ideally, the elected representatives will need to climate-proof their mandates to serve their constituents and the feeble national reform

agenda.

The big challenge for newly elected assemblies is to transform their respective mandates and craft a clear reform roadmap for equitable, low-carbon, and climate-resilient development. Each of these political parties has stalwarts in its ranks to reach out to his or her counterparts in other parties and broker a non-partisan consensus.

In Pakistan, consolidation of the democratic dispensation and building climate resilience are intertwined. It will be a sustained effort spread over several years, but the functioning of the new national and provincial governments and effectiveness of their opposition groups will hinge on two foundational actions: i) form local government and governance structures, ii) accept, adopt, and accelerate the institutional reform agenda. Let's take a look at them:

Formation of local government and governance structures: The absence of constitutional protection to LGs has weakened the foundations of Pakistan's economy, institutions, human resource development, and the physical environment. Democracy cannot consolidate or deliver without the national and provincial assemblies getting trained human resources from the lowest rung of

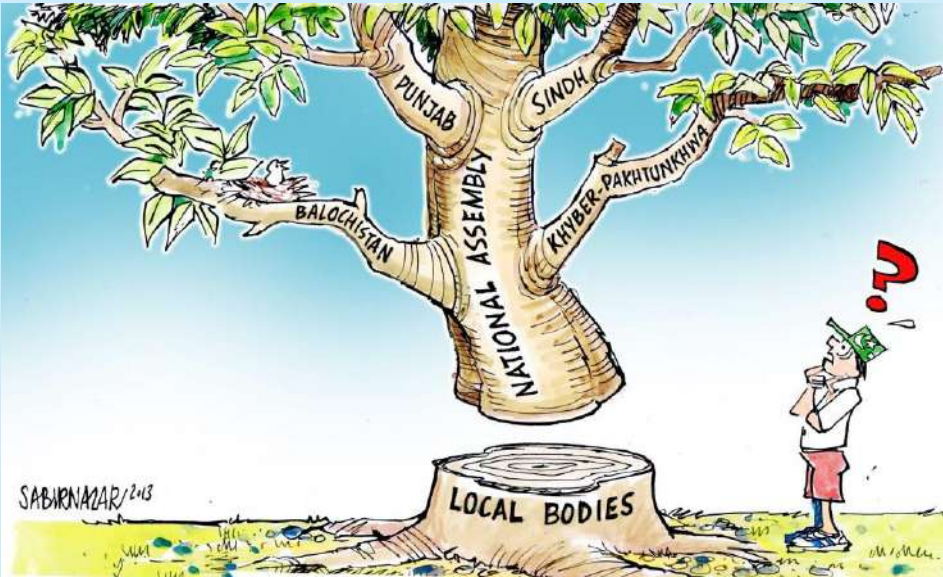


society.

LG institutions are the first line of defence against climate-triggered disasters, ranging from floods, droughts, heatwaves, and glacial outbursts to snowstorms, mudslides, urban flooding, and tropical storms. Every district faces at least two of these climate-induced disasters. At any given time of the year, it is likely that the country would be grappling with at least two climate-triggered extreme weather events in two or more different regions of the country.

Efficient and transparent service at the constituency level is necessary for climate resilience. This climate vulnerability at the community level is made worse by the absence of local institutions at the district, tehsil, and union council levels. Health, education, clean drinking water and sanitation, town planning for waste collection, pavement of streets, the provision of streetlights, footpaths, and storm drains, have all become orphan functions over the years, as has the protection of playgrounds, parks, parking spaces, and communal lands and wetlands.

Herein lies the genesis of Pakistan's



worsening indicators in health, education, climate vulnerability, and economic growth. Instead of increasing budgetary allocations at the national and provincial levels, we need to first stop bleeding at the local level.

These are all provincial functions and the election results have given a strong mandate for action to these political parties in the provinces. Instead of usurping the rights and functions of LGs, they can prioritise LG elections in their respective provinces. The split mandate at the federal level can be leveraged to adopt a new Charter of Democracy that can help the provinces prioritise the devolution of powers, transferring finances to local levels, and strengthening institutions for climate resilience.

On its part, the federal government can help devise new mechanisms. It can become a champion for the formation of local government and governance structures. The issue can be accelerated by bringing it up in a meeting of the Council of Common Interests for national consensus.

There will hardly be any better use of a hung parliament than utilising the weaknesses of a coalition government to agree on a new magna carta. The last time the CCI was used for such a higher purpose was when the PTI from KP, PPP from Sindh, PML-N from Punjab and BAP from Balochistan signed the National Water Policy and Pakistan Water Charter in 2018.

Accept, adopt and accelerate reform agenda: The new government will need to build upon several ongoing national initiatives and global commitments. It will, for example, have no option but to immediately strike a follow-up agreement with the IMF. This is important, among other reasons, for the continuity of financial discipline and reforms that have been initiated, including the implementation of Climate-PIMA, the IMF checklist for climate-related institutional

reforms at the federal level.

A bigger challenge for the incoming government will, however, be to accept and own the urgency of institutional reforms rather than undertaking them reluctantly, grudgingly, and half-heartedly. The secret recipe for the success of these reforms rests on speed and consistency of action. Pakistan has already dragged its heels on reforms that were first initiated in the early 1990s. The delays have cost the economy, society, and environment dearly.

A coalition government offers opportunities to create a consensus for a long-aspired-to charter of economy, to ensure continuity and accelerate institutional and economic reforms. The fleeting references to this have so far not articulated how it will make society more inclusive and equitable, and contribute towards reducing climate vulnerabilities.

The charter must recognise that Pakistan's climate-smart planning is overly weak. Policy planning documents need climate-proofing. The Public Sector Development Programme can be paused, as it has more often than not funded maladaptation and vulnerability. Its design and purpose need to be re-envisioned. Poor documentation has failed to increase Pakistan's ability to access climate-smart investments and finances.

None of Pakistan's sectoral policies and plans have been climate-proofed and made investment-ready. The national climate policy and adaptation plan, and the Nationally Determined Contributions are neither costed nor prioritised.

In a risk- and reform-averse environment, these are ambitious directions. But the climate-proofing of electoral mandates will merely entail implementing our existing national policies and ongoing international commitments. After all, climate-proofing electoral mandates is essential to reduce existential risks to the country. ■



SSGC

SSGC eyes substitution plan amid depleting reserves

EU Report

Sui Southern Gas Company Limited (SSGC) is awaiting the government's approval signal to create a cost-effective gas import substitution of over \$1 billion a year. This strategy involves reutilising closed wells and encouraging exploration firms to discover tight gas. The move comes as imported gas (Liquefied natural gas) has become unaffordable due to massive rupee devaluation in recent times.

While briefing journalists at his office, SSGC Managing Director Imran Maniar highlighted the challenges associated with completing international gas pipeline projects. Projects like the Turkmenistan-Afghanistan-Pakistan-India (TAPI) and Iran-Pakistan (IP) lines are proving to be "very, very tough". Additionally, gas prices through these pipelines have risen beyond domestic consumers' purchasing power.

Maniar stated that supplying low-cost indigenous gas to industries is no longer feasible for SSGC. Therefore, blending imported gas (LNG) has been proposed as a way forward. Furthermore, the supply of gas to SSGC from local fields is projected to further deplete to 500 mmcf (million cubic feet per day) in the next four years, declining over 30% by 2028 from the current 720 mmcf, he added.

The gas marketing firm was receiving 820 mmcf from local fields this time last year, marking a 12% reduction to date. This decline is attributed to depleting domestic reserves of oil and gas, with no significant discoveries in the past two decades. Maniar revealed that SSGC has identified closed wells with the potential to supply a total of 200 mmBtu (million British thermal unit) in the system. Reactivating these wells could save \$80 million a month and \$1 billion annually in gas imports, he said. ■

Amended Oil Refining Policy finally notified



Adil Khattak, Chairman, Oil Companies Advisory Council

says the policy will enable oil refineries to undertake major upgradation projects

The Amended Oil Refining Policy was finally notified on February 23, 2024 after its approval by the Cabinet on February 15, 2024 as recommended by Cabinet Committee on Energy (CCOE) in its meeting of February 6, 2024.

The policy originally notified on August 17, 2023 has now been amended after taking into consideration genuine concerns of the refineries on some of the clauses. The amendments were made after intense and prolonged consultation among the government, refineries, independent financial and legal advisory firms.

When contacted Adil Khattak, Chairman, Oil Companies Advisory Council (OCAC), and Chief Executive Attock Refinery Ltd, stated that the policy would enable the oil refineries to undertake major upgradation projects to not only to comply with Euro - V specifications but also increase production of deficit products of petrol and diesel by 99% and 47%, respectively, and also reduce production of furnace oil by 78%, which because of drastically reduced demand in recent years often results in storage constraints forcing the refineries to reduce capacity utilization.

The refineries upgradation will bring in investment of US\$5-6 billion which will not only result in cleaner environment-friendly fuels but also ensure major savings of precious foreign exchange. Mr. Khattak further said that The Refineries Upgradation Policy would surely be termed as the most important achievement of the care taker government, and it is hoped that it would be implemented in its true letter and spirit.

The policy, which took more than four years in the making, mainly due to changes in the governments and bureaucracy, was initiated by Nadeem Babar as Special Advisor to the then Prime Minister, supported throughout by Shahid Khaqan Abbasi in his various capacities and the final credit for taking on board all stakeholders after due diligence and independent professional input goes to Muhammad Ali, the outgoing minister for energy.

Mr. Khattak also pointed out that OGRA and Directorate General Oil role has been pivotal in formulaion of the Policy and will remain so in successful implementation of the Policy. ■

Sindh Government and World Bank to invest \$100m in renewable energy projects

Salman Siddiqui

The Sindh government has partnered with the World Bank to initiate renewable energy ventures, aiming to generate approximately 300MW of electricity through solar and wind projects. Mehfooz Qazi, Director of Alternative Energy for the Sindh Government, announced the \$100 million investment during a seminar titled 'Significance of Renewable Energy for Karachi & Export Industry: Cost of Inaction.'

These projects, including solar, wind, and waste-to-energy initiatives, are geared towards environmental preservation and combating natural disasters. Qazi highlighted the importance of such ventures in providing low-cost energy and addressing Pakistan's inflationary challenges.

The collaboration between the Sindh government and K-Electric on alternative energy projects was also noted. Hammad Ali from Renewables First emphasized the potential cost savings of transitioning to renewables,

citing missed opportunities and losses incurred due to previous reliance on thermal power generation.

Former NEPRA chairman, Tauseef Farooqi, emphasized the necessity of a competitive market mechanism in the energy sector to lower costs and enhance efficiency. Somanul Haq from Net Zero Pakistan highlighted the growing demand for Renewable Energy Credits (RECs) and the urgency for industries to transition to cleaner energy sources to remain competitive in global markets.




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Green energy transition not a win-win for all

More equitable mechanisms must be created to move the world toward a net-zero future

Syed Mohammad Ali

The writer holds a PhD from the University of Melbourne and is the author of *Development, Poverty and Power in Pakistan*, available from Routledge

Over the past few years, we have seen growing calls for phasing out carbon and making a just energy transition. While the last climate moot in Dubai hesitated to endorse the need for a complete phase-out of carbon, consensus was finally reached on transitioning away from Earth-warming fossil fuels. While a more drastic deadline to abandon fossil fuels would have been more desirable, this past December was the first time that we have seen global consensus concerning the need to eventually move away from the use of oil, coal and gas to meet our ever-growing energy needs.

The previous year, at the climate summit in Cairo, wealthy countries had reluctantly agreed to provide resources for countries and communities facing the brunt of environmental pollution and injustices, which they have done little to cause. While a 'loss and damage fund' has now been created, initially being hosted by the World Bank, the approximately half a billion dollars of funding that has been allocated for addressing the recurrent climate havoc being caused around the global south is nowhere near enough.

Richer countries have long been promising to help the global south leapfrog to the use of greener technologies so that they do not emulate the dismal emissions record of the industrialised world which has led us to the current climate crisis. However, little aid has been provided for such purposes, and as a result, large countries such as India

have become amongst the leading emitters of greenhouse gases in the process of boosting economic growth.

Providing a sustainable level of energy for the ecologically intensive lifestyles of the well-off and overcoming the energy poverty of those still struggling to catch up amidst the growing threats caused by climate change, is not going to be easy.

The singular pursuit of green energy has also caused unanticipated problems. Consider, for instance, the food inflation caused due to the demand for corn ethanol and soy biofuel, which worsen food inflation and hun-

ger, and in fact are proving to be an inefficient way of producing energy as well. However, other alternatives such as solar power have become much more pervasive and cost-effective. Yet, the need for raw materials to power solar batteries and to make batteries for electric vehicles has led to the re-creation of colonial era extractive industries for raw materials used in the production of green technologies. The horrible conditions of men, women and children toiling away in the cobalt and copper mines in the Democratic Republic of Congo to meet the demand of Chinese and western companies which supply raw materials essential for a green transition is a glaring example of how adoption of green technologies is not necessarily good news for everyone.

Further, the creation of carbon markets enables major emitters to purchase credits to emit carbon, and for entrepreneurs to secure carbon offsets by undertaking activities such as forestation which enable carbon to be sequestered. While such market-based mechanisms promise to provide win-win solutions for all, they have in fact led to the creation of exclusionary schemes which can further marginalise local communities whose lives and livelihoods depend on natural resources such as forests.

More equitable mechanisms must be created to move the world toward a net-zero future. Such mechanisms, be they formulated via multilateral, bilateral or national level efforts, must be anchored in notions of justice and equity, as well as meaningful collaboration. Otherwise, we risk seeing the repackaging of top-down and market-driven solutions, which will place a further burden on already struggling segments of society and serve to exacerbate already stark inequalities in the name of saving the planet. ■



Huawei Fusionsolar shines bright at Solar Pakistan Expo, Acknowledges partners' excellence

At the highly anticipated Solar Pakistan Expo, Huawei Fusionsolar stole the spotlight with the immense support of their Partners Bahum, Dewan and AE Solar, with its cutting-edge inverters, captivating the majority of attendees with their innovative features and functionality, who showcased their synergy with Huawei Fusionsolar in advancing solar energy solutions.

The event reached its pinnacle when Huawei Fusionsolar hosted a gala dinner to express gratitude to their esteemed partners and clients for their outstanding contributions throughout the year. This gesture underscored Huawei's commitment to fostering strong relationships and rewarding excellence within its network.

In a heartfelt message, the Huawei Fusionsolar team extended warm appreciation to all partners and visitors for their unwavering support and active participation. Their collective efforts not only elevated the expo but also heralded a promising future for solar energy innovation and collaboration.



Gwadar Power Plant at an impasse



Nasir Jamal

The future of the long-stalled Gwadar power plant remains uncertain as it appears to have reached yet another impasse a year after the previous Shehbaz Sharif administration had given the go-ahead to execute the project on imported coal as originally planned.

The 300-megawatt power project has failed to make any headway despite it being listed as a “fast track project” under the multi-billion dollar China Pakistan Economic Corridor (CPEC) back in 2015 on account of many reasons, including but not limited to the Covid pandemic, Pakistan’s economic and dollar liquidity problems, and overall slowdown in work on CPEC schemes. Various concepts have been discussed and shelved since its conception, including proposals to shift it on LNG and Thar coal as alternative cheaper fuels and to replace it with a solar plant of equal capacity because of fuel price considerations, as well as on social and environmental grounds.

Reports suggest that Islamabad agreed to the project sponsor’s argument to adhere to the original project plan of running the plant on imported coal as the Joint Cooperation Committee (JCC) on CPEC, whose approval is essential for making a change in the original plans, didn’t approve of the suggestion to amend the project to shift it to local lignite or replace it with renewable energy. There are speculations that the project will be shelved since it has not achieved financial close as yet.

The use of Thar coal was rejected on the grounds of the logistical difficulty of transporting it to nearly 1,000km away from the mines, which would require heavy investments in

infrastructure as well as changes in plant technology. Besides, shifting the plant to Thar coal would mean treating this as a new coal project and China has taken a stand not to support new coal projects. The port city of Gwadar currently operates on electricity imported from Iran, which until now is limited in volume and cannot support industrial investments in the region. The Chinese authorities say they had “scrutinised the plant from every angle, including the environmental one, and tried to look at alternatives and found (imported) coal as the only feasible fuel”. They say the coal-fired power plant will cater to the port city’s base load, which is central to the CPEC initiative.

Ever since the decision to revive the project was made at a high-level forum of JCC hosting talks on CPEC-related cooperation between Pakistan and China, the power-sector regulator, National Electric Power Regulatory Authority (Nepra), in July last year, has revised the overall cost of the project as well as tariff in response to the tariff modification petition by Chinese firm, CIHC Pak Power Company (Pvt) Limited (CPPCL). The project cost was raised by 145 per cent in rupee terms from Rs42 billion to Rs103bn, according to Nepra. But it came down to \$358.3 million from the previous \$399.5m in dollar terms. The 30-year levelised tariff was increased by 182pc to Rs22.34 per kWh from Rs8.92 on account of the huge depreciation in the reference exchange rate from Rs105 to a dollar to Rs287 since May 2019 when CPPCL had filed the first tariff modification petition.

The per unit tariff also saw a downward revision in dollar terms from 8.49 cents to 7.78 cents. The Nepra decision seems to have not been received well by the company, which had sought a \$82m increase in engineering

procurement and construction (EPC) cost alone from \$321m to \$403m, besides enhanced project development and sponsor’s cost by more than \$37m to \$47.9m. It may be pointed out here that Nepra, which had announced the original tariff in December 2018, has twice re-determined it for the project in 2019 and 2023 on review petitions by the sponsors. The firm is obviously not happy with the latest Nepra determined tariff and wants it to be “increased to make the project viable”. It is still not clear if the company will accept the Nepra determined tariff and start construction even after the third tariff determination, a Business Recorder report on January 19 quoted anonymous Pakistani officials as saying. The report further claimed that the company had filed a fresh tariff modification petition in December 2023 for an upward revision in Nepra’s last determination of the overall project cost and tariff on the lines of the previous one.

In its latest request, CPPCL has also requested an additional three-year extension in the already extended Financial Close (FC) date from January 2024 to January 2027, with a commercial operations date of 33 months from the FC date, anticipated to be in 2030.

Apparently sensing that CPPCL isn’t ready for early implementation of the project to complete it by December 2025, as decided jointly by the Pakistani and Chinese authorities at the time of reviving the project on imported coal, the caretaker government was reported on January 19 to have “constituted an inter-ministerial committee to review the progress of the Gwadar power project and suggest a way forward to expedite it or suggest an alternative source of power supply to Gwadar area” if the Chinese company fails to deliver within the agreed timeframe. This has triggered speculations that the project would be shelved since it has not achieved financial close as yet.

Most energy sector experts like Dr Khalid Waleed, who works for an Islamabad-based advisory firm, Sustainable Development Policy Institute, argue that imported coal is a bad recipe for Pakistan, given its current account deficit and the recent experience of a huge price rise for imported coal going up to \$460 per tonne or even more in 2022. The imported coal was available at \$109 per tonne when the project feasibility was first conducted in 2017. “In this case, the country’s poor external account state could be subject in future to global coalition price shocks due to another import-dependent source of power generation,” he maintains.

However, if viewed from the sponsor’s point of view, the imported coal project is much simpler to implement. Besides, it can earn more income from buying coal from South Africa or Indonesia under long-term contracts or even booking the whole mines over the project life at a discounted price. ■

Courtesy Daily Dawn

How to cope with inflated gas, power bills

Arshad H Abbasi

Writer has an extensive experience of working on water and power issues in Pakistan and Afghanistan

For the second time in two months, the government has raised gas prices by 45% to help gas companies that are struggling financially due to debt from subsidies and to meet requirements set by the IMF to be eligible for the next round of loans. This rise in gas prices will augment the already high inflation. The domestic sector stands at second in terms of gas use in the country, with the power sector standing first. It is noteworthy here that the circular debt has ballooned to about Rs2.3 trillion (\$8.9 billion), contributing to inflated electricity bills.

The question that rises here is whether there is a workable technological solution to avoid gas and electricity. Technically speaking, it is possible. Let's examine the fundamentals of energy before presenting the solution. Wood, coal and biomass have always been the primary energy sources for humans. It is called primary energy as it is taken straight from the environment. Natural gas, LPG and oil became the primary sources of energy in the early 1900s.

Nonetheless, the transition away from fossil fuels and towards renewable energy began in the late 1990s. However, it picked up pace following the adoption of the Paris Agreement, an international climate change treaty, in 2015. To cut the emissions of all greenhouse gases, nations chose to implement the global net zero emissions policy. As a result, there is a first stage shift away from gas stoves, which is being fueled by worries about health risks, air pollution and the climate crisis. Thus, over 68% of Americans and 50% of Europeans cook on electric stoves.

Pakistan plans to reduce its estimated emissions by 50% overall by 2030, setting an ambitious cumulative conditional target. How can this goal be accomplished? A roadmap does not exist. In Pakistan, a system known as net-metering, which enables homeowners with solar panel systems to connect to the grid, is a godsend that can aid in achieving this goal. But instead of government pressure, consumers are being forced to install solar panels in record time due to an extraordinary increase in



electricity prices. Consider the rapid growth of net-metering: as of June 30, 2023, there were 56,427 net-metering consumers in the CPPA-G system, up from 37,769 on the same date in 2022.

In Pakistan, standard-size photovoltaic panels exceeding 600 watts are widely installed, and recent advancements in photovoltaic technology have resulted in average panel conversion efficiencies exceeding 23%. The percentage of households that use electricity is greater than 45%. What happens if even 30% of consumers switch to solar energy? Not only is it a catastrophe, but Pakistan as a whole and the power sector will completely collapse. But does it matter to the decision-makers? The answer so far is a big no.

Let's now measure the effect of net metering on the electricity industry's financial stability, using the production of electricity in December alone as a benchmark. With a total installed capacity of 35,042 MW, the amount of electricity generated in December 2021 was 8827 million units; however, in December 2023, with an installed capacity of roughly 40000 MW, only 7726 million units were generated. Thanks to NEPRA. This cutback in the quantity of electricity taken from the national grid resulted in a significant capacity payment, which is a crucial component of the circular debt. By sending additional electricity units to the national grid through net metering, domestic consumers are also contributing to the circular debt.

Using November 23 as an example, net-metering consumers sent 35 million units to the national grid. This indicates that in terms of basic energy conversion, 119420 MMBtu of gas was technically wasted. Theoretically, 3412 Btu is equal to one unit of electricity. The amount of heat needed to raise one pound of water's temperature by one degree Fahrenheit is known as one Btu.

Let's examine the pinnacle of indiffer-

ence: on November 23, Pakistan LNG Limited (PLL) imported 99026 MMBtu of LNG for \$14 per MMBtu, having a total import value of \$1.5 billion. By switching from importing large amounts of LNG to using electricity for cooking and heating, Pakistan can save more than \$4 billion a year by adopting a net-zero model. Remember that in July 2023, just as Pakistan was about to go into default, the IMF provided it with a \$3 billion short-term financial package. If the country had switched from gas to electricity for domestic consumers' cooking and heating, they could have saved even more money. The largest benefit of this change, however, would have been an additional \$2 billion in savings on the front of circular debt.

This idea came to me a year ago when I created my own net-zero home model. In it, I heat my home with an AC inverter, geysers and an electric stove in the winter. I then sent OGRA a petition to have it replicated nationally. Following a tense discussion, nearly two months ago, OGRA sent my working paper to the ministry for implementation, instructing me to take the case to the ministry on my own. However, I'm tired right now. In any case, I only see it as a national service and not as my business venture.

The biggest issue facing Pakistan, in my opinion, is institutional failure, which has caused the country's economy to collapse and turned it into a global charity. Still, the IMF has to take responsibility for this. One of the IMF's primary responsibilities is to support its members with climate change challenges that directly affect economic growth through macroeconomic and fiscal policies. This simple one-click transition decision can be made when the IMF incorporates climate considerations into its lending as well. If not, the Ministry of Energy may need to take decades to make this decision. Otherwise, the world community cannot afford instability in the fifth most populous nuclear-power nation. ■

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Renewable energy: Solution to energy crisis

Moin M Fudda

The writer is a solar licence generator and a founder of Group "Save the Planet via Green Energy"

The power sector of Pakistan has remained under severe stress for more than two decades. To fill the gap between supply and demand, the government introduced three Power Polices in 1994, 2002 and 2015 and signed long-term agreements of up to 25 years with 79 IPPs (independent power producers).

According to a report by an inquiry committee headed by Muhammad Ali, former Chairman of the SECP (Securities and Exchange Commission of Pakistan) and now the Minister of Energy, IPPs earned 17% rate of return in US\$ which at the time of submission of report in April 2020 worked out to 27% and now owing to adverse exchange rate, annual return in PKR has crossed 50%.

A review of two imported coal-based power plants established under the 2015 Policy revealed that one plant had recovered 71% of the investment in two years whereas the other had regained 32% of investment in only one year.

To reduce the dependency on thermal fuel, in 2015 the government decided to increase the share of renewable energy from 9% to 30% by 2030. Regrettably, following the same policies, the government again signed long-term agreements indexed to US\$ with Solar IPPs.

At the same time to tap the Solar Energy, Nepra (National Electric Power Regulatory Authority) issued Net Metering Regulations whereby Roof-Top Solar Generator could sell the excess supply to the Discos at the National Average Power Purchase Price (NAAP) without any infrastructure costs and zero-line losses.

Net metering was first introduced in the US in 1969 and since then it is available in sixty countries. In most countries after sunset electricity meters run in reverse to offset the excess energy supplied during the day and balance if any, is carried forward and then finally adjusted in the monthly bills.

Additionally, to promote greenhouse gas emissions, some countries provide tax incentives. On the other hand, Net Metering growth in Pakistan has been slow due to differentials in off-peak and peak rates and no adjustment thereof. Thus, till date Roof-Top Solar Generators' share in the Renewable Energy is less than 1%.

Surprisingly, someone in the Power Division felt that since cost of electricity generated through Hydro and new Wind

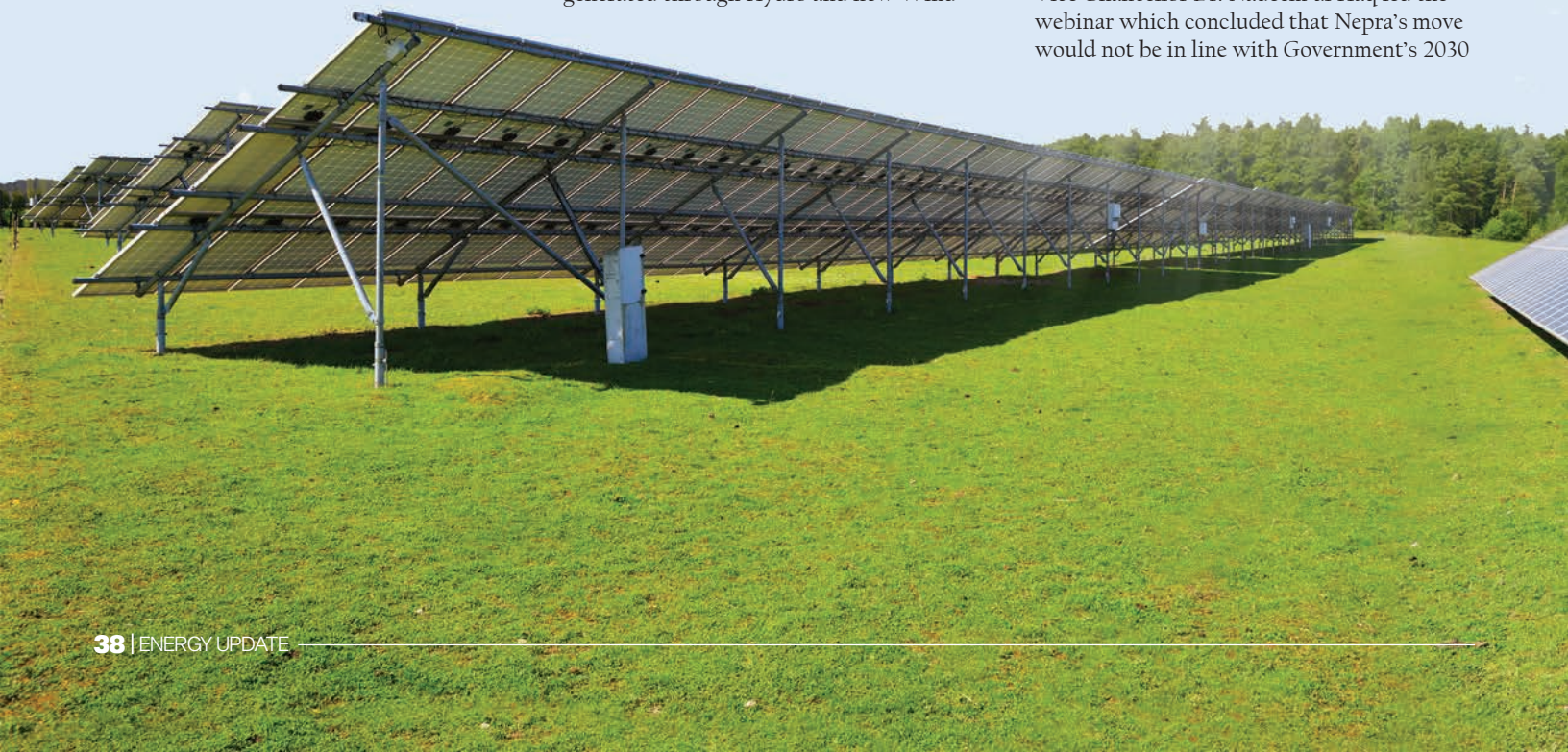
Power Plants is less than Rs 10 p/u, the NAPP of Rs 19.32 p/u by DISCOS from Net Metering consumers should be reduced.

Thus, upon receipt of a request from Power Division Nepra thought that it could be done simply by changing the word in its licensing Regulations from NAAP to NAEPPP (National Average Energy Power Purchase Price) and on 21st September 2022 issued a notice calling a public hearing on 27th September 2022.

Instead of performing its duty to educate customers about the pros and cons of the amendment, it can be seen from the video of the hearing available with Nepra that it took the side of Power Division and pressed extremely hard for an amendment. But to the Authority's surprise participants, including this writer, were fully prepared to oppose this move both on account of promotion of Green Energy and the in terms of 7-years licenses it has been issuing to Solar Generators which are linked to NAAP.

It was argued that if the GoP is unable to renegotiate the terms of contracts with IPPs, which are indexed to US\$, then why target Roof Top Solar Generators, who are being paid in PKR for a payback period of 5 to 7 years.

Prior to the public hearing and with quality research by a PIDE (Pakistan Institute of Development Economics) team, its Vice Chancellor Dr. Nadeem ul Haq led the webinar which concluded that Nepra's move would not be in line with Government's 2030



vision of Renewable Energy.

Whereas after the hearing Engineer Abdul Jabbar, who was also acting in public interest, managed intervention by the President of FPPC&I (Federation of Pakistan Chambers of Commerce and Industry) against this move.

Therefore, finally, on 10th of February 2023, Nepra decided against any amendment in the Net Metering Regulations. A decision signed by the Chairman and three members of the Authority stated that economic benefits of Net Metering in terms of displacement of costlier electricity, saving of foreign exchange and incurring minimal losses cannot be ignored coupled with a low quantum of less than 1% of Net Metering Units.

In view of the above, instead of paying attention to an irrational move by the Power Division, honourable Prime Minister and ministers of Finance & Energy are requested to consider following submissions:

Net Metering Regulations may please be amended to provide adjustment of excess units supplied during off-peak hours with peak hours through running of reverse meters as it is prevailing in a number of countries.

This will to some extent compensate the Roof-Top Solar Installers for the lesser price compared with the CPPA rate, they are selling the units to the DISCOS. Also, at the same time it will discourage, on the one hand, the use of batteries which are unfriendly for the environment and on the other the government will save foreign exchange through reduced imports of batteries.

With zero-line losses and no infrastructure costs associated with the export of Solar Units and given that Roof-Top Solar Generators having no nationwide platform to argue their case, they rely on Nepra for protection of their rights. Therefore, Nepra must periodically review the NAPP and its last revision of 14th July 2023 from Rs 19.32 to Rs 22.95 being illegally held in abeyance by the Power Division must be notified.

Solar Generators be given an option to donate the excess units to needy people as well as to the mosques/madrasas and NGOs and at the same time as provided in the Net Metering Regulations, GST should be charged on Net Units as opposed to Gross.

A sound long-term policy free from flawed as seen in previous power policies be introduced for manufacturing of Solar Panels and Inverters through joint ventures. Countries such as Turkey, India and Bangladesh are ahead of us, and we need to learn from their experience.

Since Russia's invasion of Ukraine, for energy security countries in Europe have invested heavily in Solar. Chinese companies are working 24/7 and even during New Year holidays to cater for increasing demand of over 40GW of Solar Panels.

Just Spain added a record 4.5GW of solar capacity, registering an increase in solar energy output from 16% in July 2022 to 24% in July 2023.

According to a report published by Reuters on 7th August 2023, even in cooler and less sunny western countries such as Belgium, solar energy has covered more than 100% of the extra energy needed during midday spikes in power demand.

Pakistan is endowed with year-round sunny weather and therefore it is about time the Power Division, which due to its flawed policies has placed a huge burden of circular debt and capacity payments on the country's economy, be stopped forthwith from interfering in the management of Renewable Energy.

Instead, it is hoped that the recently established Special Investment Facilitation Council (SIFC) will also include Renewable Energy in its scope so as to enhance the quantum of Net Metering from 1% to 10% in the next 3 to 5 years. ■

Tata Group shows robust performance

EU Report

Tata Group has once again made headlines by achieving a remarkable milestone with a market capitalization exceeding \$365 billion (over Rs30,20,000 crore). This valuation surpasses the GDP of countries such as Pakistan, estimated at nearly \$341 billion, and Ukraine, around \$173 billion. Notably, the second-largest company in India, Tata Consultancy Services, holds a valuation of \$170 billion, approximately half the size of Pakistan's economy. The impressive growth in the Tata Group's market capitalization is attributed to the exceptional performance of several Tata companies. Over the past year, at least eight Tata entities have witnessed their wealth more than double, fueled by strong returns from Trent, Tata Motors, Titan, TCS, and Tata Power. Among these companies are TRF, Trent, Benaras Hotels, Tata Investment Corporation, Tata Motors, Automobile Corporation of Goa, and Artson Engineering. Additionally, Tata Capital, slated to launch its initial public offering (IPO) by year-end, is valued at ₹2.7 lakh crore. ■

WAPDA to divert Swat River

The Water and Power Development Authority (Wapda) is going to divert Swat river at the under-construction Mohmand Dam in April this year, as the diversion system of the project is steadily heading towards completion in accordance with the timelines. Wapda Chairman Engr Lt-Gen (retd) Sajjad Ghani on Tuesday visited the Mohmand Dam, being constructed over Swat river in Mohmand district of Khyber-Pakhtunkhwa and inspected the spillway, diversion tunnels and the power house at the construction sites. At present, construction work is continuing on 12 sites, the authority said in a press release. The chairman also presided over a progress review meeting at the project office and received a briefing on diversion scheme, concreting and slope stabilisation at the spillway, slope excavation. The meeting was also briefed on the support works at the power house, excavation at the irrigation tunnels, construction of structures across the irrigation canals and finishing works at the permanent access roads located on both right and left banks of the river. ■





Navigating Economic Turbulence

Challenges ahead for Pakistan's future government

Mustafa Tahir

The Writer is Deputy Editor of Energy Update

In the aftermath of general elections in Pakistan, where no single party emerged as the clear winner, the country's future government faces a daunting array of economic challenges that demand urgent attention, according to financial experts.

With independent candidates, largely supported by former Prime Minister Imran Khan's party Pakistan Tehreek-e-Insaf (PTI) securing over 100 National Assembly seats, the political landscape remains in flux. As top political factions scramble to form coalitions to secure a majority, the incoming government must prepare to confront a host of economic hurdles from day one.

Pakistan, home to over 241 million people, grapples with macroeconomic instability marked by low gross domestic product (GDP), high inflation, and a weakened national currency, causes significant financial

hardships to a substantial portion of the population. Additionally, challenges such as low tax collection and political instability further exacerbate the economic predicament.

"There will be no honeymoon period for the new government," asserts Zafar Moti, CEO of Zafar Moti Capital Securities, emphasizing the need for immediate action. Pakistan is currently under a \$3 billion short-term International Monetary Fund (IMF) program, with negotiations expected for a long-term stabilization facility after the program's expiration next month.

Among the myriad challenges awaiting the new government, negotiating a larger IMF program for balance of payment stabilization and bolstering the central bank's foreign exchange reserves are immediate priorities, notes Arif Habib Limited.

Khurram Schehzad, CEO of Alpha Beta Core (ABC), underscores the pressing need to address Pakistan's mounting debt obligations, which include approximately \$75 billion for foreign debt servicing over the next three years. The central government's debt has surged to Rs65.2 trillion (about \$233 billion) as of December 2023, posing a

significant burden.

Managing the energy sector effectively is another critical challenge identified by Schehzad. This involves ensuring the supply of affordable energy to the right sectors while navigating complex distribution issues.

Furthermore, tackling Pakistan's burdensome tax regime is imperative. Schehzad highlights the need to reduce corporate tax rates gradually, eliminate the 10 percent super tax, and alleviate the tax burden on businesses and the salaried class. Proposals include reducing corporate tax rates from 29 percent to 20 percent over three years and slashing turnover taxes.

Incentivizing tax compliance through lower tax rates and gradually reducing the sales tax from 18 percent to 13 percent over three years are among the suggestions to enhance tax efficiency.

As Pakistan's future government prepares to take the reins, these challenges underscore the imperative for decisive and comprehensive economic policies to navigate the nation through turbulent times and pave the way for sustainable growth and prosperity. ■



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Pakistan's economy – way forward for 2024-25

Jawad Majid Khan

The writer is President & CEO, Bank Makramah Limited

Our fiscal deficit on day one of compiling the federal budget is around PKR 7.5 trillion. With the FBR revenue of PKR 9.4 trillion and total resources of approximately PKR 12.4 trillion, just two expenses of PKR 7.3 trillion of debt repayment and nearly PKR 5.4 trillion of NFC take away the entire resource.

It is noteworthy to mention that the debt servicing budget for the next financial year might be in excess of PKR 9 trillion. The high level of grants/subsidies, defence expenditure, pay & pensions, cost of running the government and PSDP (public sector development programme) are all financed through additional unproductive debt, and the debt trap including the circular debt is like a crocodile jaw that's ever expanding.

On the external front, the outstanding payables in FY 2024 amount to approximately USD 24.6 billion; Pakistan has already paid USD 5.4 billion, USD 12.4 billion is expected to be rolled over, while USD 6.8 billion is to be paid during the remaining period, external debt liability for the next year is expected to exceed USD 25 billion.

This repayment timeline coincides with the expiry of the USD 3 billion of IMF programme on 30th of March. At this stage we cannot afford an inability to renew the programme – even delays or uncertainty can push us back to the same

concerning levels of the first half of 2023.

This shall further lead to the already negative investor confidence and the overall macro-economic outlook.

The actionable measures, after the IMF, include getting hold of whatever we can from the friendly countries in form of debt roll-overs or the investments promised through SIFC (special investment facilitation council)

forum.

In my opinion the scope of SIFC and the deliverability has to be decisive, specifically with regards to the timelines of the investment inflows and projected feasibilities, ensuring hybrid foreign currency-based returns – that is the number one challenge: keeping in view our devaluation patterns for the last one decade or otherwise getting into the dollar based returns on equity, resulting into another circular debt situation.

SIFC must have a short-, medium- and long-term agenda. There should not be more than 20 to 30 targeted projects that need to be delivered within a calendar year with realistic expectations and business feasibilities.

In this regard privatization of SOEs (state-owned enterprises), the way interim government has done with PIA and FWBL are the best examples and must continue with the same zeal and speed. This must simultaneously be done for the power/energy sectors, railways and the oil & gas sectors on a war footing.

The third focus should be to look within, with a documented USD 340 billion economy, I have a concerted view that a bigger economy is in the informal sector, including a substantial pocket of cash dollars that can be galvanized without being in the radar of IMF's so-called amnesty schemes.

Now let's focus on the budgetary deficit; there are a few practical solutions that we must have the political will to undertake for our people and beloved homeland as the deficit can be reduced

either by increasing revenues or curtailing expenditures.

The 18th Amendment needs adjustments: either the provincial financial awards for the local governments have to be in place in six months, otherwise the provincial share of the NFC has to be amended. The provinces if don't deliver on local governments' actual formulation, and along with cutting down to fifteen ministries, and generating at least 20-25% of their own revenues, then the overall share of NFC award shall have to deduct the debt repayment on proportional terms with the federal government.

While Pakistan has one of the lowest Gross National Savings Rates (GNSR) in the world, at around 11% (Bangladesh at 34%, India at 30%, and Iran at 38%), due to reasons already explained in my previous article.

We need to launch a full-fledged sukuk market that shall not only increase our GNSR multifold but also has the capacity to at least finance 70-80% of our PSDP.

Recent example to substantiate this claim is the Islamabad Metro Sukuk at PSX for PKR 30 billion that was over-subscribed and attracted over PKR 470 billion. We can actually make sukuks for almost every sector and can realistically generate an additional PKR 1 trillion towards financing the deficit and borrowing.

We can launch dollar sukuks, inviting foreign and domestic investments, including mines and minerals, tourism, transport & railways, and ports & shipping sukuks, etc. This can actually help in the reprofiling of the large domestic debt and circular debt.

Interest rates against domestic borrowing should be negotiated and brought down by 5-6%. Moreover, policy rate pegged with inflation needs to be revised with the IMF (International Monetary Fund). We shall be saving more towards the deficit by lowering financial cost.

With GOP being the largest domestic borrower, resulting in almost zero or negative growth in private sector credit and directly impacting the GDP growth, this measure shall also help in poverty alleviation and support the lowest income group.

It is pertinent to mention that we need to increase local confidence with regard to Pakistani Rupee. Buying dollars as an investment against devaluation has to be discouraged, as that drives down the local currency further. An SBP scheme guaranteeing against PKR devaluation by around 7-8% can motivate people to make savings in home currency instead of converting to USD.

FBR's (Federal Board of Revenue's)

reformation with some more realistic adjustments as recommended by the interim finance minister can actually work, which is a need of time. One of the most important reforms is to keep policy and administration separate so as to avoid the existing conflict of interest.

We can actually increase the direct tax revenue multifold by implementing 10% ushar on agriculture produce that on average is USD 68-70 billion per annum, making us the seventh largest producer of agriculture in the world.

It is to be noted that the 5% of individuals holding 62% of agriculture land, who also control the intermediaries, have flour, sugar, rice and textile mills, and are always a part of every government and power structure, need to be taxed. Retail tax of the top 20% retailers along with real estate tax on the files being held for six months, alone can contribute a substantial amount to the exchequer.

Reducing the size of federal government to not more than 12-15 ministries and slashing the grants and subsidies by 30% is another recommendation. Farm-to-market reforms by inviting the foreign and domestic investors/banks towards creating cottage-based industry, storage facilities, and value addition of exports should be on top priority, along with emphasis on mines & minerals, tourism, documentation of economy and financial inclusion should be the top focus areas for the next government and SIFC.

We must ensure a national consensus on economy, enabling the incoming government with the support of SIFC to deliver upon these challenging recommendations that could actually finance and plug our fiscal deficits within a couple of years. ■



Aramco Refinery likely to join CPEC Framework

EU Report

The government is considering the inclusion of the \$10 billion Saudi Aramco refinery project within the framework of the China Pakistan Economic Corridor (CPEC).

According to well-informed sources within the Petroleum Division, a meeting held on December 22, 2023 between Pakistan's Deputy Ambassador in Beijing and key officials from Sinopec Engineering Group (SEG) discussed Aramco's proposal to involve Sinopec as a technical and equity partner in the Greenfield refinery and petrochemicals project.

The SEG expressed willingness to move forward after being briefed on the Greenfield Refinery policy incentives approved by the federal cabinet in April 2023.

As a result, the Petroleum Division requested the Power Division to include the Saudi Aramco Refinery Project in the agenda of the forthcoming meeting of the Joint Working Group (JWG) on Energy.

The Memorandum of Understanding (MoU) for exploring investment opportunities in the Refining and Petrochemical sector was signed between Pakistan and Saudi Arabia on February 17, 2019. Despite initial enthusiasm, Saudi interest waned due to the COVID-19 pandemic and economic uncertainties in Pakistan.

Following demands from Saudi Aramco, the Greenfield Refinery Policy 2023 was approved, providing incentives to foreign investors, including a 7.5% diesel and gasoline deemed duty for the project's lifespan.

Despite efforts to de-risk project investment by involving Chinese contractors and forming a local consortium, concerns were raised by the Saudi side regarding the capability of the consortium and proposed Chinese participants.

In the latest development, Aramco conveyed its shift in policy towards petrochemical complexes, signaling its inability to invest in a fuel-based refinery in Pakistan. However, Aramco expressed expectations for Sinopec's involvement as an equity investor, along with providing engineering, procurement, construction, and operations management (EPC plus O&M) services. While demand for petrochemical products exists in Pakistan, it may not be sufficient for a large-scale plant, prompting Aramco to seek collaboration with Sinopec for investment viability. ■

Solar Pakistan Exhibition

SolaX Power's Cutting-Edge energy storage solutions Shine

EU Report

SolaX Power, as one of the global leader in renewable energy solutions, proudly announces the successful participation in the prestigious Solar Pakistan Exhibition held from February 27-29, 2024. Renowned for bringing together industry experts in the solar and renewable energy sector, the event provided a platform for SolaX to showcase its commitment to sustainable energy solutions.

With escalating electricity costs and an unreliable grid supply in Pakistan, SolaX's newly launched energy storage products offer a timely and effective solution to address the growing demand for captive solar solutions in the country.

Among the highlights of SolaX's exhibition was X1/X3-IES (3-15kW) Integrated Energy Storage System. With a modular design and plug-and-play functionality, the X1/X3-IES system boasts a lightning-fast installation process, requiring just 30 minutes to set up. It supports up to 200% PV oversizing, 200% PV input, and a maximum of 20A DC input per MPPT, ensuring that the system operates at peak efficiency. What's more, X1/X3-IES system takes energy management to the next level with its AI-Driven features. Smart Schedule, Intelligent Loads Management, and Smart Scene capabilities allow for unparalleled control and customization, ensuring that energy is allocated and utilized efficiently in accordance with user preferences and demands.

For businesses looking to embrace solar energy on a larger scale, SolaX presented the X3-ULTRA (15-30kW) commercial energy





storage inverter. It is designed to seamlessly integrate with all types of PV panels, allowing for a maximum 36A DC input per MPPT. This ensures optimal performance and compatibility with a wide range of solar setups. Achieving an impressive 200% PV oversizing, X3-ULTRA ensures that every ounce of DC energy is harnessed efficiently. With dual battery ports, X3-ULTRA provides the freedom to connect batteries either separately or in parallel, offering flexibility in energy storage configurations. This adaptability makes it a versatile solution


for varying energy storage needs.


Pakistan has significant potential for solar energy generation due to its abundant sunlight throughout the year, making it an ideal location for harnessing solar power. SolaX is thrilled to have been part of Solar Pakistan 2024, where leaders and visionaries converge to shape the future of energy. SolaX remains committed to driving innovation in the solar industry, and our showcase at this event reflects our dedication to providing sustainable, efficient, and intelligent energy solutions. ■


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Pakistan plans to lay 81km gas pipeline

EU Report

In a significant development, Pakistan has announced plans to proceed with the long-pending gas line project within its territory in two phases. The initial phase involves laying an 81-kilometer segment of the pipeline from Gwadar, where Iran has already established its part of the pipeline originating from the gas field.

The decision received approval from the Special Investment Facilitation Council (SIFC), which endorsed the strategy to prioritize the construction of the 81-kilometer stretch out of the total planned pipeline span of 781 kilometers, ultimately connecting to Nawabshah. The Petroleum Division is set to seek administrative clearance from the federal cabinet for the construction of this segment, with financing to be arranged through the Gas Infrastructure Development Cess (GIDC) board under the supervision of the finance ministry.

Initially, the 81-kilometer pipeline will link Gwadar to the IP gas line project, facilitating the utilization of gas resources in Gwadar itself. Iran has extended a deadline of 180 days to Pakistan, now set until September 2024. Failure to respond positively could prompt Iran to initiate Paris-based International



Arbitration, seeking a penalty of \$18 billion. However, Iran has also expressed willingness to collaborate with Pakistan, offering legal and technical expertise to develop a mutually beneficial strategy before the deadline expiration. Previously scheduled talks between Iranian and Pakistani experts were postponed due to tensions between the two nations, but now with the restoration of normalcy, discussions

are expected to resume.

Following SIFC directives, the Petroleum Division is tasked with involving the Ministry of Foreign Affairs to facilitate the proposed visit of the Iranian delegation to Pakistan. Coordination committees from both countries will work together to devise a viable strategy for the successful implementation of the project. ■

Pakistan's Economy Grapples with De-Industrialization

Khalid Mustafa

In Islamabad, Pakistan, a concerning trend of de-industrialization is gripping the economic landscape, characterized by a steady decline in industrial capacity, manufacturing output, and employment opportunities. Since the second quarter of FY24, industrial power consumption—an essential gauge of manufacturing activity—has been on a downward trajectory, signaling underlying challenges in the sector.

A primary driver of this downturn is the relentless escalation of power tariffs for industrial consumers, currently averaging around 17 cents/kWh. These soaring tariffs have emerged as a defining feature of Pakistan's energy sector, exerting immense pressure on energy-intensive

industries, pivotal to the nation's economic backbone.

The direct correlation between electricity costs and production expenses profoundly impacts competitiveness and profitability. With energy prices soaring, manufacturers face heightened operational costs, limiting their ability to pass on these expenses to consumers without risking market share loss to cheaper imported goods. Consequently, profit margins are squeezed, hindering the ability of local industries to compete both domestically and globally. Furthermore, the exorbitant energy costs act as a deterrent to investment in the industrial sector, discouraging both local and foreign investors. The uncertainty surrounding energy prices, exacerbated by frequent tariff adjustments and fuel price fluctuations, inhibits long-term planning and capital infu-

sion into new or existing industrial ventures. This persistent uncertainty fosters a climate of reluctance towards industrial investment, fueling a gradual but perceptible trend of de-industrialization.

The underlying causes of Pakistan's high power tariffs are complex and multifaceted, stemming from structural inefficiencies within the energy sector and broader economic challenges. The country's heavy reliance on imported fossil fuels for its energy mix exposes it to global price volatility, while transmission and distribution losses, coupled with rampant theft, further inflate electricity costs. These systemic inefficiencies perpetuate the burden on consumers, amplifying the challenges faced by Pakistan's industrial sector in navigating the competitive landscape. ■

Courtesy: The News

Special Investment Facilitation Council's significant decisions

Engr Irfan Ahmad

The Special Investment Facilitation Council (SIFC) has recently made significant decisions regarding the energy projects and economic initiatives, according to renowned newspaper reports. The latest is to cancel all Letters of Intent (LoIs) for category-III wind projects, except for the 300MW projects designated for K-Electric (KE).

The Private Power and Infrastructure Board (PIIB) has asked KE to submit an interim investment plan for National Electric Power Regulatory Authority (NEPRA) approval. It has also sought confirmation from KE regarding the evacuation/ procurement of power from Category-III wind projects through competitive bidding by PIIB. The Request for Proposal (RfP) documents for these projects will be prepared by PIIB.

The KE, as the off-taker for Category-III projects in Sindh, is required to share/ provide the draft Energy Purchase Agreement (EPA) for inclusion in the RfP documents before finalising them and submitting them to NEPRA for approval. The KE being the Purchaser, the Government Guarantee will not be available to the 300MW new projects. With shrinking GDP it is not possible for the Government to provide further guarantees to the projects which have been capped to certain percentage



of GDP by the IMF.

Though SIFC's intervention to resolve these long pending Cat III wind projects is most welcome, there is still a confusion regarding how the competitive bidding is to be held. One logical approach could be for the PIIB to fix a reasonable benchmark tariff considering that per Grid Code 2023 network support will have to be provided by the new projects. The lowest bid tariff below the benchmark tariff should then be applied to all the 300MW projects to be evacuated by KE.

The implementation of Grid Code 2023 will not be of much help unless the existing network constraints are removed by National

Transmission & Dispatch Company (NTDC). The fragile network is already substantially responsible for excessive and increasing curtailment of wind power projects since last year resulting in a National loss which is now beyond the economic viability of these projects.

Now since the projects are to be commissioned by 2026, PIIB should look into maximizing local value addition (LVA) to save dollars and invigorate the local industry. With concrete towers, local EBoP and the civil works LVA of up to 70% can be achieved. The almost doubling of the economic life of the wind projects by using concrete towers can bring the LCoE down to 3 US Cents per kWh. ■

Overbilling scams

Neptra issues directives to KE, Discos

EU Report

The National Electric Power Regulatory Authority (Neptra) issued directives on Friday to XWDiscos and K-Electric following their failure to provide a satisfactory reply to the inquiry report it furnished after widespread overbilling complaints in July-August 2023.

The regulator received complaints nationwide about excessive and incorrect billing by distribution companies, affecting consumers due to delays in meter readings and other

issues. The protected tariff status for some users changed to non-protected due to billing errors in these two months.

Despite a hearing on September 13, 2023, distribution companies failed to justify the errors, leading to an inquiry by Neptra professionals. The committee's report, published on December 4, 2023, revealed violations by all distribution companies. Despite this, companies did not address issues, prompting the Authority to initiate legal proceedings on December 22, 2023.

Replies from companies were deemed unsatisfactory. An independent committee formed by the Ministry of Energy submitted

its report dated December 26, 2023, outlining areas for improvement was received by Neptra on February 12, 2024. The Authority, believing violations occurred, opts to issue a directive for redress instead of immediate fines, prioritising consumer interests.

Now, on Friday, Neptra issued directives to XWDiscos and K-Electric to address issues of consumers and act against those involved in overbilling scams. It directed DISCOs to adhere to recommendations outlined in the inquiry report and GOP inquiry report, particularly focusing on the replacement of defective meters older than two months (July and August 2023).

Trina solar

spearheads solar revolution in Pakistan

Unveils latest innovations at Solar Pakistan Exhibition



EU Report

Trina Solar, a global leader in smart PV technology and energy storage solutions, is at the forefront of Pakistan's burgeoning solar energy market. With the nation's increasing demand for reliable and cost-efficient electricity, Trina Solar anticipates substantial growth opportunities driven by recent reforms and technological advancements.

According to Bloomberg New Energy Finance (BloombergNEF), Pakistan's solar imports surged to USD\$1.11 billion in 2023, equivalent to approximately 4GW of modules. This trend aligns with the country's push for solar integration, evidenced by the release of framework guidelines by the Private Power and Infrastructure Board (PPIB) to streamline solar projects.

Trina Solar's optimism is fueled by its strategic focus on reducing the Levelized Cost of Energy (LCOE) through technological innovation. The company's introduction of high-power modules, such as the 210mm n-type i-TOPCon Advanced technology, resonates with Pakistan's preference for efficient modules, marking a transition to the 700W era. Highlighting its impact, Trina Solar has spearheaded projects across residential, commercial, industrial, and utility-scale sectors in Pakistan. Notable installations include Fecto-Cement's 5MW project in Islamabad and Asif Rice Mills's 4MW rooftop project in Larkana.

Dave Wang, Subregional Head of Trina Solar Asia Pacific, emphasizes the company's commitment to empowering diverse entities across Pakistan, stating, "Our mission 'Solar Energy for All' drives us to deliver industry-leading modules, enabling customers to achieve grid parity."

Wang underscores the significant financial benefits for households and businesses, especially amidst rising electricity prices and power blackouts. He illustrates potential savings for a residential household investing in a solar system, showcasing the economic viability of solar energy.

Trina Solar's presence is most prominent in major cities like Islamabad, Karachi, and Lahore, driven by increased awareness and installer availability. The company is set to showcase its latest innovations, including the Vertex N range of 210mm modules and TrinaStorage Elementa 2, at the Solar Pakistan exhibition in Lahore.

Among the innovations on display is the Vertex N 720W module, designed for utility projects, featuring advanced technology tailored to withstand Pakistan's diverse climate. TrinaStorage Elementa 2, a 4.07MWh energy storage system, underscores the company's commitment to providing comprehensive renewable energy solutions.

Trina Solar's initiatives signify a milestone in Pakistan's renewable energy journey, reaffirming its position as a total solutions provider for sustainable energy. ■

SIFC seeks progress on wind energy projects

EU Report

The Executive Committee of the Special Investment Facilitation Council (SIFC) has issued directives to the Private Power and Infrastructure Board (PPIB) to expedite the competitive bidding process for 300 MW of category-III wind projects within a week. This move comes as part of efforts to enhance Pakistan's renewable energy sector and reduce dependency on imported fuels.

While category-III solar projects are deferred pending the finalization of the Indicative Generation Capacity Expansion Plan (IGCEP) and Transmission System Expansion Plan (TSEP), the focus remains on advancing wind energy initiatives. The decision follows concerns raised by stakeholders about the slow progress in renewable energy projects despite previous approvals.

The absence of new wind or grid solar projects since 2017 in Pakistan contrasts with significant advancements made by neighboring countries like India and China. Stakeholders highlight the potential benefits of installing 10,000 MW of wind and solar projects, estimating potential savings of \$2-3 billion annually in fuel import bills.

The discontinuation of the ARE-2006 policy in 2017 and challenges posed by subsequent policies have hindered the development of future wind and solar projects. Despite the approval of tariffs for thirteen wind and solar projects by NEPRA between January and August 2020, progress has been sluggish, delaying potential investments totaling \$600 million. ■



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Controversy surrounds Gabral-Kalam Hydropower Project Bid

Arshad Aziz Malik

The Khyber Pakhtunkhwa (KP) government has initiated an investigation into alleged manipulation and fraud in the bidding process for the Rs40 billion Gabral Kalam 88MW hydropower project, following complaints received regarding the awarding of the contract.

A letter from the KP Energy Department has instructed the Pakhtunkhwa Energy Development Organisation (PEDO) to conduct a thorough investigation, ensuring transparency and adherence to established procedures within a specified timeframe.

The project was slated to be awarded to the M/s Gabral Kalam Hydro-Power (GKHP) Consortium, comprising Guangdong Yuantian Engineering Co. Ltd. of China and RMS (PVT) Limited of Pakistan. However, concerns have been raised regarding the consortium's eligibility, bid pricing, and allegations of submitting a fake bank guarantee for a project in Sindh.

The complainant has questioned the consortium's experience and the unusually low bid, particularly in light of rising material costs for hydropower projects. Suspicions were raised when discrepancies were noted in the translation of bid figures from Chinese to English.

Moreover, allegations of fraudulent activities involving both companies in the consortium have surfaced, with RMS (PVT) Limited previously found guilty by the Public Accounts Committee and the Sindh High Court.

In response, a spokesman for RMS (PVT) Limited refuted the allegations, labeling them as baseless attempts to discredit the bidding process. He defended the consortium's bid as responsible and economical, contrasting it with the opponent's significantly higher bid. The spokesperson also dismissed the fake guarantee allegation, citing legal proceedings that purportedly cleared the company of any wrongdoing. However, the investigation continues, with the KP government committed to ensuring transparency and fairness in the awarding of the Gabral-Kalam hydropower project contract. ■

Indian dam construction stops water flow to Pakistan

EU Report

According to Indian media reports, after the construction of Shahpur Kandi Barrage in Kashmir, the flow of water from the River Ravi towards Pakistan has been completely halted. The Shahpur Kandi Barrage, constructed near the Punjab and occupied Kashmir border, implies that the region will now benefit from 1,150 cubic feet of water, which was previously allocated for Pakistan. This water will be utilized for irrigation purposes, potentially benefiting 32,000 hectares of land in the Kathua and Samba districts. The Shahpur Kandi Barrage project was deemed crucial for water supply and electricity generation in India, facing numerous challenges over the past three decades, but it is now nearly completed. According to reports, India and Pakistan signed the Indus Waters Treaty in 1960, under which India controls the waters of the Ravi, Sutlej, and Beas rivers, while Pakistan has control over the Indus, Jhelum, and Chenab rivers. With the completion of the Shahpur Kandi Barrage, India will be able to utilize the waters of the River Ravi more effectively, indicating that the water previously flowing towards Pakistan from the old Lakhwar Dam. ■

OGDCL announces major gas discovery in Khairpur

EU Report

The Oil and Gas Development Company Limited (OGDCL) has announced a significant breakthrough in its exploration efforts with the discovery of gas and condensate at the Kharo-1, a well drilled in the Khewari exploration license area, located in Khairpur district of Sindh province.

Following rigorous drilling and testing operations conducted with OGDCL's proprietary expertise, the Kharo-1 well reached an impressive depth of 3,762 meters. Subsequent testing procedures registered promising results, showcasing a flow rate of 14.3 million standard cubic feet per day (MMSCFD) of gas, complemented by 93 barrels per day (bbls/d) of condensate.

These exceptional results were obtained at a 32/64-inch choke size, with a wellhead flowing pressure (WHFP) of 2,737 pounds per square inch (psi), originating from Massive



sand strata of the Lower Goru Formation.

The successful discovery at Kharo-1 underscores OGDCL's steadfast commitment to strategic exploration practices. Leveraging expertise and cutting-edge technology, the company continues to unlock the vast potential of Pakistan's energy resources.

With OGDCL holding a 95% working

interest in the Khewari Block, and Government Holdings Private Limited (GHPL) as a joint venture partner with a 5% working interest, this discovery is a testament to OGDCL's pursuit of energy security and sustainability. The discovery not only enhances OGDCL's hydrocarbon reserves but also holds the promise of bolstering the national energy landscape.

Sunova Solar

unveils groundbreaking solar innovations, pioneering transformative shift in Pakistan's energy sector



In a historic event held in Lahore, Pakistan, Sunova Solar, a leading global provider of renewable energy solutions, unveiled groundbreaking Tier-1 Solar products, signaling a transformative shift in the nation's energy landscape. With over 260 distinguished guests in attendance, including industry luminaries such as Mr. Tauseef, former chairman of NEPRA, and visionary Usama Khalid Malik, Director of Strategic Projects, the occasion showcased Sunova Solar's unwavering commitment to innovation and sustainability.

Guided by Vincent Zhou, the dynamic CEO of Sunova Solar, attendees witnessed the unveiling of two remarkable modules boasting power ranges of up to 590 W and an astonishing 705 W respectively. These cutting-edge modules, featuring a double-glass, bifacial design, represent a significant advancement in sustainability, harnessing sunlight from both above and below through ingenious light reflection technology.

But the excitement didn't end there. Sunova Solar also introduced a game-changing bifacial 615 W module, engineered to perfection with sleek rectangle cells, offering unmatched power generation performance.

With Pakistan's increasing demand for renewable energy solutions, Sunova Solar's offerings are poised to revolutionize the market. From residential rooftops to expansive industrial landscapes, these products cater to diverse needs, promising to usher in a new era of green power. With Engr. Usama Ahsan leading as Country Director for Pakistan, the future of solar energy in the region looks brighter than ever before.

Established with a vision to reshape the global energy landscape, Sunova Solar has been a trailblazer in innovation since its inception. Focused on sustainable and efficient solutions, the company continually pushes the boundaries of solar technology. The launch in Lahore marks another milestone in Sunova Solar's quest to empower nations with clean, renewable energy sources. As the world moves towards a more sustainable future, Sunova Solar remains steadfast in leading the solar energy revolution.

The event also featured addresses by Engr. Faiz Bhutta, Energy Expert, M. Naeem Qureshi, Managing Editor Energy Update, and Yasir Soomro, Sales Manager at Sunova. ■

OGDCL and ISGS agree to collaborate for strategic underground gas storage project

The Oil and Gas Development Company Limited (OGDCL) and Inter State Gas Systems (Private) Limited (ISGS) have agreed to collaborate for the development of the Strategic Underground Gas Storage (SUGS) Project to address the challenge of surplus gas management in Pakistan.

A Memorandum of Understanding (MoU) was signed between OGDCL and ISGS on Thursday at the OGDCL House in Islamabad. The parties will evaluate potential opportunities in developing SUGS at OGDCL fields to enhance the country's energy infrastructure and ensure efficient utilization of gas

resources.

The SUGS Project is a critical initiative designed to establish storage facilities for surplus gas, particularly during off-peak seasons when demand is low relative to supply in the Pakistani market. Through the SUGS Project, OGDCL and ISGS aim to mitigate these challenges by creating storage capacity and facilitating gas swapping arrangements with other stakeholders in the industry on commercial basis.

Subject to technical and commercial feasibility, project involves the development of withdrawal wells, compressors, and connecting pipelines and construction of storage facil-



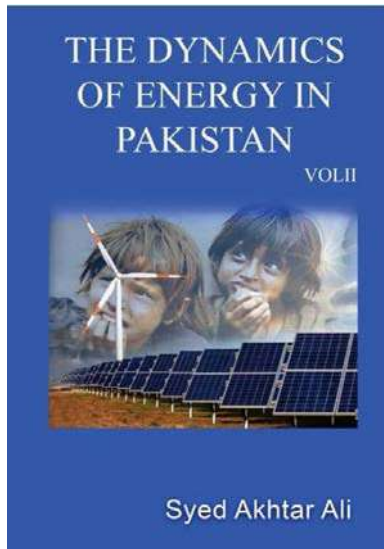
ities capable of accommodating up to 15 billion cubic feet (BCF) of gas, equivalent to five cargos, sufficient for a period of two months.

Book Review: "The Dynamics of Energy in Pakistan"

Syed Akhtar Ali

"The Dynamics of Energy in Pakistan" offers a profound examination of Pakistan's energy sector, addressing its myriad challenges and opportunities within a concise narrative. Against the backdrop of rising oil prices, Ali skillfully dissects the complex dynamics influenced by both global events and local economic conditions, advocating for unconventional solutions such as importing oil from Russia. He emphasizes the necessity of a stabilization fund to manage oil and gas price fluctuations, stressing the importance of international cooperation in addressing energy crises in developing countries.

Ali meticulously scrutinizes various aspects of the petroleum sector, including pricing mechanisms, subsidies, and the deregulation debate, while advocating for transparency and regulatory improvements. He explores diverse strategies to address winter gas shortages, from long-term contracts to alternative energy sources like biogas, highlighting the urgency of a swift solar program. Beyond fossil fuels, Ali delves into the prospects of Thar Coal and envisions a hydrogen-based carbonless economy, emphasizing the transition towards sustainability through renewable energy adoption, electric vehicles, and competitive electricity markets. He underscores



the importance of diversified energy strategies and the broader economic impact of resource utilization. Ali's discussion extends to environmental concerns like smog in Punjab, proposing innovative solutions such as converting rice stubble into bio-pellets and addressing air pollution in the construction sector. The Dynamics of Energy in Pakistan provides a comprehensive overview, offering pragmatic solutions and a vision for a sustainable energy future.

'Khairpur gas discovery to stabilize economy'

EU Report

Malik Khuda Baksh, Leader of Petroleum and CNG Industry has said that the discovery of new oil and gas reserves in district Khairpur has been declared as a guarantee of the stability of Pakistan's economy. Mr Baksh said that Oil and Gas Development Company (OGDCL) had discovered new oil and gas reserves in Sindh. The good news has been given to the people of Sindh and those deposits had been discovered in Khairpur district of Sindh. He said that in Khairpur, Khairwell-I was drilled up to 3,762 meters from where it was estimated to get one crore 43 lakh cubic meters of gas per day while 93 per day barrels of crude oil will also be obtained. It should be noted that even before this, OGDCL discovered extensive oil and gas reserves from Dars West Well No. 2 in Tando Allahyar District of Sindh. He said that in Sindh, it is the special grace of Allah that 6.57 million cubic feet of new gas reserves were discovered in Deharki even before this, while gas reserves had been discovered three times in Deharki.

Cnergyico plans \$1 Billion refinery upgrade

Cnergyico Ltd. aims to resolve a prolonged dispute over unpaid Rs47.5 billion petroleum levy (PL) on petroleum products while embarking on a massive overhaul of its refinery, investing over \$1 billion. The move aligns with the new Oil Refining Policy, aimed at modernizing Pakistan's oil refining sector, the company announced on Friday. Amidst challenges, including pending receivable claims of approximately Rs60 billion from government-controlled entities, Cnergyico has struggled to provide upfront payments for a portion of the Petroleum Levy. Nevertheless, the company ensures regular payment of current levies collected for 2023 - 2024. The Oil Refining Policy, driven by recommendations from the Special Assistant to the Prime Minister (SAPM) on Finance, presents a solution to settle the petroleum levy issue while encouraging refinery upgrades. Cnergyico is actively collaborating with the government to finalize a settlement deed in compliance with the policy, seeking a resolution in the national interest. With the introduction of the new policy, Cnergyico plans to modernize its oil refining complex near Hub, Balochistan, capable of processing up to 156,000 barrels per day (bpd) of crude oil. The company intends to invest over \$1 billion in the upgrade, aligning with the policy's objectives. This investment will significantly boost Cnergyico's production of Euro-V compliant Motor-Gasoline (Petrol) and High-Speed Diesel while reducing Furnace Oil output.

KE, Hub Power Company strike deal

EU Report

In a significant move towards sustainable energy solutions, K-Electric (KE) and Hub Power Company Ltd have recently inked a memorandum of understanding (MoU) to delve into the potential for adopting affordable electricity through the conversion of the Hub plant to locally sourced Thar coal. Aligned with KE's strategic vision to integrate power generation from domestic resources into its energy portfolio, this collaboration signifies a pivotal step towards leveraging Thar coal-based projects for power generation. The Hub power station, boasting a capacity of 1,292MW with four units of 323MW each, has been operating on residual fuel oil since its establishment in 1997, maintaining commendable operational standards. Expressing his views, KE Chief Executive Moonis Abdullah Alvi emphasized the company's commitment to transitioning away from imported fossil fuels towards indigenous sources, thereby fortifying the resilience of the power value chain. Echoing this sentiment, Hubco CEO Kamran Kamal underscored the significance of the proposed conversion to coal in reducing dependency on imported fuels. This strategic collaboration not only underscores the commitment of both entities towards sustainable energy practices but also highlights their collective efforts towards fostering energy security and self-reliance.

SOCIAL AND BUSINESS ROUND UP



Conference on Sustainability held in Lahore. MD PPIB Shah Jehan Mirza & other speakers are seen on this occasion.



GM Diامر Basha Dam project WAPDA and Director BD Consulting Firm sign the services agreement of Project Area. CEO Basha Dam & other also present.



Governor Punjab Baligh ur Rehman visits Royal Solar Stall at Solar Pakistan Lahore.



Convener Malik Khuda Baksh addressing the 1st meeting of FPCCI Central Standing Committee on Energy. Committee members are also present.



Jollywood and Inverex organized reception in Honor of Lahore Qalandars team.



Trina Solar has setup stall at Solar Pakistan. A picture of Team Trina Solar taken on this occasion.



Goodwe organized a meetup for their clients in Lahore. Group photo of all participants.



Ali Majid GM Longi welcome Governor Punjab at stall of LONGi.

examination like the Pakistan Telecommunication Authority, Pakistan Electronic Media Regulatory Authority, etc mainly because the regulatory functions are different from commercial operations and are primarily meant for the efficient functioning of imperfect markets.

The consolidated report further reveals that 31 state-owned commercial companies caused colossal losses of Rs730 billion in FY2022. The National Highway Authority is the leading loss-making SOE, which caused a loss of Rs168.5 billion, followed by the Peshawar Electric Supply Company which suffered a loss of Rs102 billion. PIA was the third-biggest loss-making entity, causing a loss of Rs. 97.5 billion to the national exchequer in 2022.

Privatization in Pakistan has faced several hurdles, including political opposition. Privatization efforts have often faced resistance from political parties, labour unions, and other stakeholders who fear job losses, reduced benefits, or loss of control over SOEs. Complex legal frameworks, bureaucratic hurdles, and unclear regulations further slow down or even halt privatization processes in the country.

Corruption within the privatization process potentially undermines public trust and confidence. Lack of transparency in decision-making, bidding processes and asset valuation leads to allegations of favouritism hindering successful privatization outcomes in the country.

Economic instability, market volatility, and investor uncertainty are other factors which deter potential buyers from participating in privatization processes. Weak investor confidence, particularly due to concerns about political stability, security risks, and macroeconomic challenges, can limit the success of privatization efforts. Critics argue that privatization may lead to increased costs, reduced accessibility, or decreased quality of essential services such as health-care, education, and utilities, disproportionately affecting vulnerable populations.

The most important thing which hinders the process of privatization in Pakistan is the resistance from management and employees of SOEs. They resist privatization due to fears of job loss, changes in working conditions, or loss of influence and power. This resistance can manifest in strikes, protests, or sabotage, complicating the privatization process.

Addressing these hurdles requires a comprehensive approach that includes clear legal frameworks, transparent processes, stakeholder engagement, anti-corruption measures, and efforts to mitigate social and economic impacts. Additionally, building investor confidence, promoting competitiveness, and improving governance are essential for successful privatization outcomes in Pakistan. ■

General elections and economy

Low forex reserves unlikely to allow govt to accelerate economy in near future

Dr Fahd Rehman

The writer has worked at SDSB, Lahore University of Management

Elections have been held according to the announced date, which has ended the uncertainty surrounding the electoral process.

Initially, the election campaign remained slow owing to the lingering uncertain political situation as the country had been in the grip of rumours that the tenure of caretaker setup will be extended by considering the security and economic situation.

The campaign picked up momentum in the last 15 days. Despite these odds, the turnout of voters remained high as compared to the previous elections.

Elections provide an opportunity to the voters to choose their candidates who are willing to address their issues. If selected candidates do not fulfil their promise, they will vote out those candidates in the next polls.

Since candidates belong to a particular political party, performance of the party is judged based on the commitments made in the previous elections.

Being at the helm of affairs, the party may appease its voters by addressing certain issues. If the issues remain unaddressed, it will provide an opportunity to the opposition party to come to power.

Through the recent elections, the voters reacted to bring their favourite candidates to power. Like previous elections, the results of the current elections are not being trusted. Apart from a couple of political parties, others are of the belief that the process and outcome have been rigged.

These parties are either staging protests, blocking roads or raising hue and cry on the digital, print and social media. A few losing candidates has accepted defeat while others are challenging results in courts of law.

Some of the losing politicians have announced their retirement. However, the heightened expectations are not allowing the system to move forward. The mandate

remained divided among the mainstream political parties. None of the parties got a simple majority in the lower house of parliament.

In the emerging situation, a coalition of political parties will form the government. Although the election manifestos of the political parties are different, they will attempt to reach a compromise.

This compromise will somehow reflect the convergence of their interests in the short term. However, the expected political stability could not be achieved. All this happened in the midst of macroeconomic stability. Under the standby arrangement (SBA), macroeconomic stability has been achieved to some extent. The rupee-dollar exchange rate appreciated to 280 in the last couple of months. Current account deficit (CAD) has reduced which, in turn, required net borrowing of around \$750 million from July to December 2023.

The official foreign exchange reserves have been hovering around \$8 billion since July 2023. In addition, acceleration in prices has slowed down slightly to 29%. Despite this stability, political situation is far from normal.

The economy has been operating well below its potential owing to foreign exchange constraints. The low foreign exchange reserves will not allow the upcoming government to accelerate the economy in the near future.

The government has to fulfil the commitments of the SBA to get the remaining \$1.1 billion. Moreover, it will require dollars to meet the external contractual liabilities and has to negotiate a new programme to further stabilise the economy. In a nutshell, timely elections are the symbol of continuity of democracy. The people of Pakistan deserve felicitation, who have exercised their right to vote through polls.

They have to accept the results of elections in the spirit of democracy. The acceptance and patience of the people will allow the politicians to deliberate on a range of possibilities and reach a consensus. Last but not least, the upcoming government will face many challenges, which will require indigenous thinking and solution. Let us see how things unfold in future. ■



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