

MONTHLY

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ENERGY UPDATE

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MONTHLY

ENERGY UPDATE

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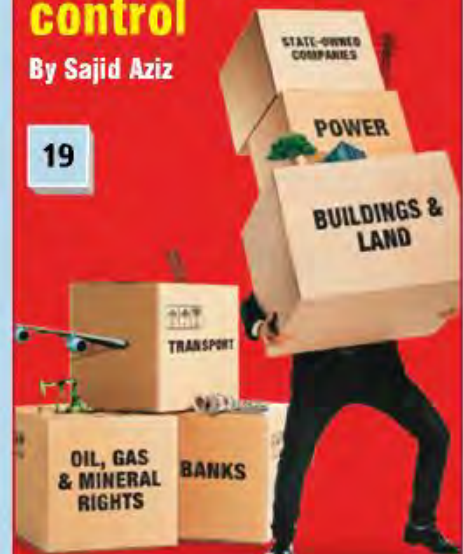
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From the editor's desk...

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Govt. fails to handle energy mess

Six months down the road, the PTL government has yet to show any significant performance in handling the energy mess. Inefficiencies in energy related sector are at the core of the twin deficit problem and the so-called policy makers have nothing concrete to demonstrate.

The energy related ministries and finance ministry combined have failed so far in handling the circular debt, and other energy related governance and management issues. At the time PTL assumed power, the energy circular debt was Rs1.2 trillion and now reports suggest that it is standing around Rs1.4-1.5 trillion. In 150 days, the toll has increased by an average Rs1.5-2 billion per day.

Did the government come unprepared? If six months are not enough, how many are? The talks of issuing Sukuk initiated 4 months ago and to-date no TFC or Sukuk has been issued. This could have happened in weeks. Dar in 2013 was spot on. An anchor to tackle the energy mess is missing.

Rs200 billion Sukuk is likely to be issued this week or the next. But government's indecisiveness and slow decision making is not the right recipe for reforming energy sector. The problem is that no one is taking onus, and collectively, they do not seem to have comprehended the gravity of the issue.

The challenges are big, but the government does not seem to have team to tackle the same. The focus is on fixing power sector thefts which is a small problem in bigger scheme of things. The energy management team is penny wise but pound foolish. The first step in resolving any mess is to work on the big hurdles, before delving into the petty matters. What is the fun in stopping a few billion rupees leakages when the buildup of circular debt is Rs1.5-2 billion per day?

There is an energy task force, and cabinet committee of energy, but no one is seemingly in control. The minister of Petroleum is the weak link - earlier he was the head of the CCoE, but now Asad has assumed the role.

The next step is to have right people at right place and coordination amongst relevant departments and ministries. How can you expect the NTDC in existing capacity to perform when the next year forecast on energy mix is out of proportion? The mismanagement in RLNG is simply due to lack of coordination of power and petroleum divisions within the so-called energy ministry. The power division does not give firm demand to petroleum and the latter does not import enough RLNG cargos.

This and other problems demonstrate lack of understanding and capacity constraints. For example, the idea of gas prices revision was right, but it should have been on averages instead of abrupt jump in bill on cut off slabs - such decisions require simple math and common-sense. Another example was sacking gas companies' board which is not a jurisdiction of executives in government - the gas problem was due to being presented incorrect demand by the petroleum ministry, but nobody was fired there. Now acting MDs are working in gas distribution companies. Similarly, top executives are missing in E&P companies.



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Circular debt reaching to an alarming level

■ By Sajid Aziz

Circular debt, which stood at Rs1.14 trillion during the tenure of the previous government, has now increased to Rs1.4 trillion. The energy sector's circular debt has reached Rs1,362 billion mark, of which Rs755bn is of the Power Holding Company Limited and Rs607bn of Standby Term Finance Facility loans.

The ever-mounting circular debt is once again haunting as the vicious circle goes on and on. This time the circular debt seems to cross all limits as the PTI government hasn't bothered to tackle this issue seriously.

"Circular debt generally arises out of high electricity losses (due to theft and inefficiencies in the distribution system) and inability to recover the total amounts billed to consumers by power companies," said an expert adding that this leads to a financial gap because of which the power sector fails to discharge its obligations towards fuel suppliers and banks. This in turn badly affects both the energy and financial sectors.

But, this is not the only reason to be blamed for such a grave situation as the government could be termed as the sole responsible for the massive debts failing to pay the debts accumulating with every passing day.

Circular debt, which stood at Rs1.14 trillion during the tenure of the previous government, has now increased to Rs1.4 trillion. The energy sector's circular debt has reached Rs1,362 bil-

lion mark, of which Rs755bn is of the Power Holding Company Limited and Rs607bn of Standby Term Finance Facility loans.

Secretary of Power Division, Irfan Ali while briefing the Public Accounts Committee (PAC) at its earlier meeting said that natural gas, Rs83.5 billion to oil-based companies, Rs450.5 billion to independent power plants, Rs28.6 billion to nuclear plants and Rs156.7 billion to the National Transmission and Dispatch Company/Wapda.

The official said that the power division had launched a drive to bring to book the elements involved in power theft both within the distribution companies and consumers. He added that an indiscriminate operation was being carried out against thieves and so far relevant police stations had been

a p -



proached to lodge 15,746 FIRs against 21,475 "thieves" and 11,356 of them had been registered.

According to him, at present total installed capacity is 33,836 megawatts (MW) and de-rated capacity 31,006 MW. Total hydel power production is 9,730MW and total generation by Gencos is 5,682MW of which 4,177MW is de-rated production. Total capacity of thermal plants run by IPPs is 15,186MW and their de-rated capacity 13,973MW.

Circular Debt was officially defined by the Economic Coordination Committee (ECC) of the Cabinet in 2014, in the following words: "The Circular Debt is the amount of cash shortfall within the Central Power Purchasing Agency (CPPA), which it cannot pay to power supply companies. The overdue amount is a result of: (a) the difference between the actual cost and the tariff determined by National Electric Power Regulatory Authority (NEPRA) which is the Distribution Company's loss over and collections under that allowed by NEPRA, (b) the delayed or non-payment of subsidies by government, and (c) delayed determination and notification of tariffs. It is the government's policy to reduce, limit to a certain amount which would be reduced over time, and eliminate the causes of the circular Debt." (National Power Tariff and Subsidy Policy guidelines 2014)

In simple words, the issue of Circular Debt is related to cash flows in the power sector, which are affected by the performance of the Distribution Companies (DISCOs) in terms of their collections and line losses as well as the decisions relating to tariff determination by the regulator (NEPRA) and subsidy budgeting.

The Cash flows, needed to run the power generation units, are to be collected from the consumers who can only be charged upto the extent of tariff determined by the Regulator, NEPRA. NEPRA determines eleven different tariffs for consumers of eleven DISCOs, depending on the conditions in each one of them.

The Government changes the determined tariff in two ways: It asks all the DISCOs to charge the lowest of these eleven tariffs, as uniform national tariff, the difference to be paid by government as subsidy. For Example: if the average tariff for all State owned DISCOs is Rs12 per unit and the minimum determined tariff for a DISCO is Rs10 per unit a Government would pick up the difference.

Secondly, in pursuance of its socio-economic objectives, the Federal Government (and in case of agricultural consumers, some provincial governments as well) further reduce this uniform tariff for certain categories of consumers (agricultural, industrial, FATA, Balochistan, AJK) and undertake to pay the difference as subsidies to the distribution companies (DISCOs).

NEPRA determines tariff for state owned DISCOs on two main assumptions (apart from others): 100% recoveries and a national average of line losses of 15.3%. Both these assumptions are not based on the ground realities in the country. The average recoveries in the past years (from 2007-2014) had been in the range of 88-89% and the line losses around 19%.

While we can see the impossibility of achieving the target of 100% recovery in Pakistan's current security and socio-economic conditions, it does not in any way absolve the DISCOs from their responsibility to strive to improve performance towards best possible targets of collections and losses, an expert observed.

Let's see how the things have changed (or remained the same) in the past two years and how have they contributed to the current surge in the Circular Debt?

There have been three major elements to this reduction in rise of Circular Debt, which otherwise was inevitable due to

deficient tariff: a) Improved performance by State-owned DISCOs in 2015 and 2016 with unprecedented high recoveries of more than 93% in 2015 and 2016 consecutively and line losses at all-time low of 17.9%. This reduced the gap of 15% in 2014 between NEPRA assumed and actual recoveries and line losses to 9.2% in 2016-17.

Previous studies have consensus that the circular debt is one of the major causes of electricity crises in Pakistan. However, scientific literature is silent at providing a mechanism to address the issue of circular debt in the context of energy sector of Pakistan.

In the context of energy sector, it can be noted that the circular debt arises due to the prevailing amount of subsidy and bills payable by different departments of government. ■

Beautifully written by a Chinese revert sister (It is written for the killer who attacked Muslims in NZ)

YOU BLAME MUSLIMS
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TAKE THIS!!!!



things you, rather unfortunately, didn't get to learn.

Perhaps you didn't know that what you did made them Martyrs. And how you have single-handedly raised the statuses of our brothers and sisters in the eyes of their beloved Creator with your actions. And how, through your actions, they will be raised as the most righteous and pious of Muslims. Perhaps you didn't know that doing what you did, at the time and place you chose, it actually meant that the last words that escaped their lips were probably words of remembrance and praise of Allah. Which is a noble end many Muslims could only dream of.

Appreciate that you showed the world how Muslims welcome, with open arms, even people like yourself into our Mosques, which is our second home. Appreciate how you brought the Churches and communities together to stand with us Muslims. Appreciate that you made countless New Zealanders come out of their homes to visit the mosques nearest to them with flowers with beautiful messages of peace and love.

In the coming weeks, more people will turn up in the Mosques, a place you hate so much, fortified by the strength in their faith, and inspired by their fallen brothers and sisters. In the coming weeks, more non Muslims will turn up at the gates of mosques with fresh flowers and beautifully hand-written notes. They may not have known where the mosques in their area was. But now, they do. All because of you.

You may have achieved your aim of intended destruction, but I guess you failed to incite hatred, fear and despair in all of us. And while I understand that it may have been your objective, I hate to say that after all of that elaborate planning, and the perverse and wretched efforts on your part, you still failed to drive a divide among the the Muslims and non-Muslims in the world.

For that, I can't say that I'm sorry. (A Radiant Muslim)

Power sector's inefficiencies cost \$17.7 billion to national economy

Poor recovery, mismanagement given rise to alarming levels of debt

■ By Sajid Aziz ■

Power sector's inefficiencies cost the Pakistan's economy \$17.7 billion (6.5 percent of GDP) during the fiscal year of 2014/15, this is what the newly compiled report on power sector in Pakistan claims. The report has recently been unveiled by the World Bank. While underscoring the need of reforms to overcome distortions, report stressed on strict compliance.

"The full cost of distortions in the power sector is far greater than previously estimated on the basis of fiscal cost alone," the report, titled 'In the Dark: How Much Do Power Sector Distortions Cost South Asia', said. "Some of the

In Pakistan, hefty losses of electricity in distribution, along with poor recovery of overdue electricity bills, have given rise to alarming levels of debt in the sector and prompted repeated government bailouts



largest costs are upstream or downstream, making the case for a stronger prioritisation of power sector reform." World Bank Country Director for Pakistan Illango Patchamuthu while commenting, said that the country can boost economic growth and job creation by overcoming inefficiencies in its power sector.

"Reforms that address these distortions can make better use of existing facilities Patchamuthu said. "These need to focus on eliminating waste, promoting the shift towards cleaner energy and attracting private investments."

WB report revealed that the total losses in annual output attributable to power shortages amounted \$8.4 billion

in fiscal 2015 in manufacturing and services combined. "In Pakistan, where capacity growth lags GDP growth, only 80 percent of available capacity was operational in fiscal 2014. Losses in transmission and distribution add to the shortages," it added. "Pakistan loses about a quarter of electricity in the network for both technical and commercial reasons, well above the 10 percent international norm."

Official estimates said 99 percent of the population in the country has an access to grid electricity, but estimates based on census data and the number of connections reported by utilities suggest that access to grid electricity was

only about 74 percent in 2016 and up to 35 percent of the population may still live off the grid.

"In Pakistan, hefty losses of electricity in distribution, along with poor recovery of overdue electricity bills, have given rise to alarming levels of debt in the sector and prompted repeated government bailouts," the World Bank's report, authored by senior economist Fan Zhang said.

The report said the country has a two-tier gas market. "Imported liquefied natural gas is broadly charged at the full cost to consumers, but domestic gas was priced at roughly 36 percent of the international benchmark in fiscal 2016." The World Bank's report said several large gas development projects have been abandoned in Pakistan "because of the government's unwillingness to raise tariffs to allow cost recovery with reasonable returns".

"In Pakistan shortages of gas for power generation were made up through expensive imported oil, increasing both electricity costs and trade bills."

On climate change, the report said South Asia already experiences some of the greatest warming effects of black carbon emissions from residential kerosene lighting.

"The annual environmental cost of black carbon emissions from kerosene lighting is estimated at \$2.1 million in Pakistan." The report further said the impact of the lack of reliable access to electricity on households and firms is the largest source, costing roughly \$12.9 billion a year (4.8 percent of GDP) in Pakistan.

Inefficiencies, mismanagement and corruption in power sector is the reflection of prevailing corruption in every sphere of life that haunting the nation or the last many decades. The poor people of Pakistan were quite optimistic about the new regime, but the government led by Imran Khan that has completed half the calendar year and presented the supplementary budget already, has disappointed the nation in general.

The PTI government did nothing except raising the prices of everyday needs including electricity, gas, POL, etc. making common man's life even miserable. ■

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KPK Govt to tap massive renewable energy potential

The government of Khyber Pakhtunkhwa has decided to undertake a comprehensive plan to utilize the energy resources available in the tribal districts recently merged with the KPK province. This planning is being made while considering that the energy resources of the tribal districts recently merged with the KPK are in fact the true treasure of the tribal district merged with the KPK. In this connection, the KPK Energy Advisor Hamayatullah Khan has started visiting the merged tribal districts of the KPK in the light of the direction of Prime Minister Imran Khan and KPK Chief Minister Mahmood Khan.

In this connection, the Energy advisor of KPK undertook the first visit of merged tribal districts of Mohmand and Bajur. During the visit, the provincial Energy advisor was briefed about the available energy resources in the two tribal districts by the local district administration. The Deputy Commissioner of District Mohmand Ifrikhar Alam and Deputy Commissioner of District Bajur Usman Mehsud briefed the provincial advisor about the hydro resources available in their respective tribal districts that could be best utilized to undertake projects of renewable energy through the run-of-the-river system capable of producing clean electricity.

Speaking on the occasion, Mr. Hamayatullah Khan said that newly merged tribal districts of the province had abundance of energy resources as the provincial government had adopted a comprehensive plan to utilize them. He said that the scope of provincial Energy department and its subsidiary agencies would be expanded to the new tribal districts as their local offices would be established in the tribal belt. After successfully undertaking visit of the tribal districts, the provincial Energy advisor went to District Upper Dir and inspected the work being carried out there on 40 Megawatts Koto Hydropower project.

He said on the occasion that work on the Koto Hydropower project would be completed during the current year as it would ensure massive earning to the provincial kitty every year. He later also reviewed the pace of work on the 102 MWs Shigokach Hydropower project. Also present on the occasion was the area M.N.A Mahboob Shah. The



provincial Energy advisor also inspected the mini-micro hydropower project in Lower Dir where the local population organized a reception in his honour.

Speaking on the occasion, Hamayatullah Khan reiterated resolve of the present KPK government to complete a number of small, medium, and large energy generation projects in the province with complete success.

Those who accompanied him during the visit are Additional Secretary of KPK Energy Department Zafarul Islam, General Manager of Pakhtunkhwa Energy Development Organization, Engineer Bahadur Shah, Chief Engineer Zahid Akhtar Sabri, Engineer Qayyum Zaman, and Syed Habibullah Shah.

It should be mentioned here that KPK Government for the last five year has been undertaking the project of installing of 356 mini-micro hydropower plants to provide a perfect off-grid solution of electricity generation for faraway villages through renewable energy means. Out of these 356 mini-micro hydropower plants, 105 such small-scale renewable energy projects are being established in the Districts of Kohistan, Swat, and Shangla. As many as 93 of these projects have become operational. ■

Jahangir Tareen's firm gets preferential treatment



The controversy over a preferential treatment given to a bigwig of ruling party spread up in the electronics media as Economic Coordination Committee of federal government gave approval to the tariff of a renewable energy project near Karachi.

The media reported that the solar power project near Gharo in Sindh was being given preferential treatment for approval of its tariff when same approval has been pending for last one year or more for several renewable energy projects being installed in the country.

The share of alternative power projects in the national energy mix of the country has been limited as similar approvals and formalities have been pending with the federal authorities concerned. This issue has been raised on several occasions by Sindh chief minister and provincial Energy minister as the province has massive resources to generate renewable energy in the country.

The media urged the federal government to issue a clarification on the issue as the solar power project in Gharo-whose approval has been given-belong to a leader of ruling Pakistan Tehreek-e-Insaf. Such a clarification is most needed as the present ruling party claims complete transparency, accountability, and check and balance in every affair related to the governance. Whereas the present ruling party also claims that it facilitates investment in all sectors of the economy

including Energy sector as for the purpose it has been doing reforms to provide a level-playing field to the prospective investors without any discrimination).

The media had earlier reported that the JDW Group (which belongs to PTI leader Jahangir Khan Tareen) was setting up a 50 MWs solar PV power project in Sindh aiming to sell the generated electric power to K-Electric.

In this regard, JDW Group's subsidiary Gharo Solar (Private) Limited (GSPL) had earlier applied to the National Electric Power Regulatory Authority

(Nepra) for grant of generation license to the GSPL for its 50 MW solar PV power project at Deh Ghairabad, Mirpur Sakro, District Thatta in Sindh. The electric power generated from the generation facility of GSPL shall be sold to K-Electric and dispersed to the load center of K-Electric. The project shall be exclusively selling all energy generated to K-Electric Limited under a 25-year Energy Purchase Agreement (EPA).

JDW Group is also the main sponsor of the 18 MWs Harappa Solar Project, which is the first private sector solar independent Power Producer (IPP) in Pakistan and also first with single-axis tracking. Windforce (Private) Limited, a pioneering Sri Lankan renewable energy generation company, and Norwegian developer and financier of solar PV parks, Norsk Solar AS are also the key sponsors of the said facility. GSPL was issued a Letter of Intent (LoI) by K-Electric for initial development of the planned 50MW solar PV power plant and subsequently executed a term sheet with KE for continued development of the proposed project. According to the company, the project shall supply much-needed, affordable renewable energy to K-Electric's grid network spanning Karachi and surrounding areas of Sindh and Balochistan and shall enable continue the process of diversification of its sponsors into the power sector. The company had earlier said that since Nepra had discontinued upfront tariff regime, GSPL took the initiative of submitting an innovative and competitive tariff petition to Nepra, which is in final stages of processing. ■



#Environment Challenge

Here is new #environment challenge for all you bored teens. Take a photo of an area that needs some cleaning or maintenance, then take a photo after you have done something about it, and post it.

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Thar Coal Power Plant creates history

330 MW power plant goes on national grid



The pace of industrialization in Pakistan is dependent on continuous availability of the right quality and quantity of energy needed. At the present, every single industry is plagued with either a shortage of gas or low gas pressure. Units are closed on Sundays Line pack is not maintainable. Sudden pressure drops are rampant with gas wells depleting at an alarming pace and the down time of the industry has reached historic levels. On top of all this, the gas costs are escalating whereas they are coming down in the rest of the world. LNG is available as an alternate gas but at twice the price \$2 billion worth of gas is stolen every year from the gas distribution companies. UFG is at 15% on average i.e. amount of gas either stolen or lost through the system during transit from one point to the other. The Pakistani investor and industrialist is looking towards other avenues of returns in stocks and property. Is there a solution to all these issues with the gas supplies?

It was a watershed moment in Tharparkar when electricity from the first unit was successfully pumped into the system by Engro Powergen Thar (Private) Limited (EPTL), realizing the nation's dream of producing electricity through Thar coal. EPTL - the majority owned company of Engro Energy Limited, tested and energized the first unit of 330MW of the combined 660MW power plant - located in Thar Block II. The successful synchroni-

zation happened amidst presence of senior officials of the Company and from China Machinery Engineering Corporation (CMEC) - the EPC contractor of the project. The injection of the electrons produced for the very first time from Thar coal - regarded as the 7th largest coal reserve in the world with 175 billion tons of lignite coal - has redefined Pakistan's energy landscape and secured the country's energy future on an indigenous, native footing which will eventually relinquish Pakistan's dependence on foreign fuel mix.

EPTL - one of the early harvest projects of the China Pakistan Economic Corridor (CPEC) - commenced the construction of Pakistan's first 660MW power plant after the financial close of the project in April 2016. EPTL operates as a subsidiary of Engro Energy along with other sponsors that include HBL; Liberty and China Machinery Engineering Corporation.

The synchronization of the first unit of the power plant is a considerable achievement given that the project has

been constructed in a record time of under 3 years - as per schedule and projected costs, a feat in itself given the complexity of the project. EPTL power plant will utilize 3.8MTPA of coal supplied by Sindh Engro Coal Mining Company as both projects achieve their

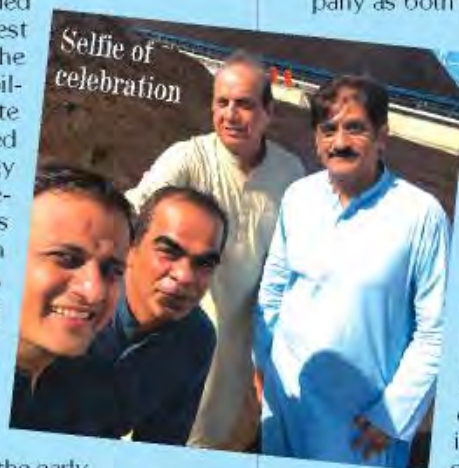
commercial operations date (COD) in June 2019

Together both the mining and power projects, managed by Engro Energy, will be able to bring average foreign exchange savings of up to USD 1.6 billion per annum thereby delivering on Company's promise of producing electricity which is from indigenous resources; is abundantly

available and is economical.

The 660 MW power plant of EPTL will use circulating fluidized bed (CFB) technology to burn coal. Post-COD, the plant will evacuate 660MW of electricity through a 282-km long 500 kV Double Circuit Quad-Bundle transmission line from EPTL plant to Matari in Sindh province. The power plant - although first for Pakistan to run on Thar coal - complies with all local environmental laws and

continued on page # 39



Inefficiency, theft or pilagerages?

Electricity and gas sector losses amount to \$3.28 billion

■ By Akbar Ali

The energy sector seems to be a double-edged weapon; if you don't have it, you suffer and if you have it and can't manage it properly, you may suffer more. This seems to have happened in Pakistan. The high cost of generation, and the transmission and distribution losses are taking a toll on Pakistan's economy. At 20 percent electricity sector losses and 13 percent gas sector losses, the total losses of electricity and gas sector amount to \$3.28 billion. No wonder then that there is a mounting circular debt of Rs1.3 trillion which may keep increasing as energy supplies and demand in these two sectors increase.

It can be safely said that these losses can be reduced to half, saving the economy \$1.64 billion per year. On the other hand, losses are a routine matter in this sector. Nepra recently reprimanded the NPCC/CPPAG for causing a loss of Rs24 billion (\$185 million) in just the month of January. Similar losses were caused in earlier months as well due to not running plants efficiently for one reason or the other.

However, some good news is coming out of the electricity sector; electricity thieves are being fined and booked. Both the minister and the Ministry of Power and DISCOs are taking interest and action in this respect. However, a structured and organised effort is still lacking. In the gas sector, though, a corresponding zeal appears to be missing. That may be due to a lot of instability in the sector. There was a gas crisis earlier as a result of which MDs of the two gas companies were removed. Then came the new gas tariff and its affordability issue and to top it all SNGPL issued unwarrantedly high bills. Prime Minister Inran Khan ordered an inquiry and as a result SNGPL has been asked to return the extra amounts charged by it. Some heads may



roll again. The SSGC has been facing similar instability for the last six to seven years with only acting MDs at the helm of affairs - and even those changing almost every year on average.

However, once stability returns, the gas sector appears to be ready to improve its performance for the following reasons. Ogra has issued a variable two parts UFG (UFG means unaccounted for gas losses) allowance a formula: 5 percent fixed and 2.5 percent variable performance dependent allowance. Currently, SNGPL losses are around 9.5 percent and SSGC losses are 17 percent. Ogra UFG allowance seems to be more relevant to SNGPL than to the SSGC, as 2.5 percent UFG incentive has no practical relevance on a loss level of 17 percent. The SSGC will have to do much more

beyond the ambit of the Ogra framework. However, as we will see, Ogra has issued a KPI system wherein it has issued 31 KPIs, which if implemented by the two companies can bring about UFG loss reduction beyond the 7.5 percent range. This is a welcome step by Ogra, which appointed a consulting company to prepare this system.

An important aspect of the KPI system is that it can be transferred to the management, and a performance measurement system of management and senior executives can be tied to it. A reward and punishment system can be linked to it, something unknown in the public sector. Senior management and executives now can be promoted or replaced or earn more emoluments or suffer if this system is practised.

Insightful management can make good use of it and broaden its application in their domains. Nepra and the power division should consider introducing and adopting such a planning and performance monitoring system. With a combined Ministry of Energy, although working in compartments and isolation, it might be easier to borrow rules and practices. Power-sector people including Nepra would note that there is a lot of similarity.

The power sector may have to learn another thing from the gas sector, and that is in the area of smart meters. There is a controversy in the power sector regarding the role of smart meters and in their project structure. The current project as prepared by ADB consultants involves installing smart meters in two of the more efficient DISCOs of IESCO and LESCO, ignoring companies like PESCO, MEPCO, SEPCO and HESCO

which need the device more due to their higher T&D loss percentages. There is an argument, and rightly so, that smart meters at consumers' premises would not be able to capture all kinds of theft, especially upstream of meters.

An alternative proposal is to install smart meters on distribution transformers which can identify defaulter regions at much lesser cost, covering all DISCOs in Pakistan. In order to be effective, 35 million smart meters may have to be installed which may cost \$5-6 billion and almost a decade to implement. The alternative scheme of installing smart meters on distribution transformers may require installation of less than one million meters and possibly all large consumers may be covered as well. The current project cost of installing smart meters in IESCO and LESCO, and that too only partially, may be enough for completing the distribution meters cov-

erage in all of Pakistan.

What is the relevance of the gas sector and what lessons are to be learnt by the power sector in this respect? Amazingly, the gas sector is already convinced that installing smart meters on the consumer end may be a costly and impossible idea in the objective situation of the country. The gas sector is installing smart meters on their TBS stations, an equivalent of distribution transformers in gas distribution. They are segmenting and introducing even smaller segments to be able to identify and monitor defaulter segments, whether of theft or physical leakages.

This is the simple logic that some in the power sector are unable to accept and digest. Is it incapacity or lack of understanding at the top? Secretaries take time in coming to grips as they come from a variety of departments. Should Nepra take notice? Unfortunately, there are new people there, no chairperson and some of the members' positions have not been filled yet. Only the ADB has the wherewithal to solve the problem. They can arrange a review by a third party. Nonetheless, the power division and Nepra may have much to learn from the gas sector and Ogra. I have been arguing for the merger of Nepra and Ogra - as is the norm in many countries. The proposal was accepted in the corridors but conditional on the merger of the two ministries; the latter has been done already. A lot of people are praying for reversion to the unmerged status. ■

The writer is a former member of the Energy Planning Commission and author of 'Pakistan's Energy Issues: Success and Challenges'.

Power sector entities owe Rs132b to SNGPL, SSGC

The outstanding dues of Sui Northern Gas Pipeline Limited (SNGPL) and the Sui Southern Gas Company (SSGC) against power sector entities have surpassed Rs132 billion. Out of the total outstanding dues, Rs 53.71 billion is principal amount while Rs 78.62 billion is interest. The receivables of Pakistan's two state-owned gas companies against Independent Power Plants (IPPs), Wapda and K-Electric have surpassed 132.323 billion.

According to the documents, the total receivables of SNGPL as of as of February 1, 2019 were Rs 35.700 which includes the principal amount of Rs 20.967 billion and the interest of Rs 14.733 billion. Similarly, the total receivable of SSGC is Rs 96.623 billion which includes Rs 32.740 billion principal amount and the remaining Rs 63.883 billion was interest. Ironically the interest of SSGC against K-Electric and Wapda is almost double than the principal amount.

Both the SNGPL and SSGC have already informed the government that the outstanding dues of hundreds of billions of rupees was weakening their financial health and making their operations difficult. According to the documents K-Electric owes the highest amount of the Sui companies outstanding dues which is Rs 90.078 billion to SSGC, which includes Rs 29.652 billion principal amount and Rs 60.436 was interest, said the documents. Water and Power Development Authority/PEPCO which owes Rs 17.1 billion to the SNGPL and SSGC, followed by the IPPs. The Water and Power Development Authority/PEPCO owes Rs 10.68 billion to SNGPL and Rs 6.517 billion to SSGC.

In IPPs Liberty Power owes the highest amount of Rs 3.986 billion to SNGPL, which includes Rs 2.254 billion principal and Rs 1.732 billion is interest. Engro Energy owes Rs 2.187 billion to SNGPL which includes Rs 1.847 billion principal amount and Rs 340 million interest. Orient Power, another IPP, owes Rs 2.696 billion to SNGPL which includes Rs 1.021 billion principal amount and Rs 1.675 billion interest. The newly established RLNG based power plant of Haveli Bahadur Shah owes Rs 1.6 billion which is the principal amount and doesn't include the interest. Similarly RLNG based Balokli Power plant also owes Rs 1.182 billion to SNGPL which is only the principal amount and is not included the interest. Sapphire Electric owes Rs 802 million to SNGPL which includes Rs 397 million principal amount and the remaining is interest. Colony Mill owes Rs 315 million and Said power owes Rs 546 million to SNGPL. ■

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SNG: The Obvious Choice

■ By Dr. Kazi Kamal

The pace of industrialization in Pakistan is dependent on continuous availability of the right quality and quantity of energy needed. At the present, every single industry is plagued with either a shortage of gas or low gas pressure. Units are closed on Sundays Line pack is not maintainable. Sudden pressure drops are rampant with gas wells depleting at an alarming pace and the down time of the industry has reached historic levels. On top of all this, the gas costs are escalating whereas they are coming down in the rest of the world. LNG is available as an alternate gas but at twice the price \$2 billion worth of gas is stolen every year from the gas distribution companies. UFG is at 15% on average i.e. amount of gas either stolen or lost through the system during transit from one point to the other. The Pakistani investor and industrialist is looking towards other avenues of returns in stocks and property. Is there a solution to all these issues with the gas supplies?

The good news is yes!! A solution does exist. It's called Simulated Natural Gas (SNG). What is the SNG offering the industrialists? Benefits of SNG to the Industries: SNG is a direct replacement for natural gas, the same amount of energy feeds an appliance using natural gas or SNG. Even though SNG is heavier, less will flow through the appliance orifice per unit of time, switching fuels and changing over from natural gas to SNG is simple, automatic or manual use of valves are possible, both are simple procedures, equipment operators will not recognize a difference using SNG versus natural gas, the per unit cost of power generation through captive power is the same as achieved through natural gas, SNG can be used as a fuel or a process gas. This means one can use it as a burning fuel or input fuel for the process, capacity increase is very easily achieved by simply increasing the number of tanks, OGRA safety parameters are met and there is no licensing required, LPG, the base of the SNG system is freely available.

Off grid units can be installed where piped gas is not available. Industrialists can save huge security deposits demanded by utility companies as well as land costs in cities.



Units can be run 24/7 and 365 days a year. Sunday closure is not applicable as SSGC gas is not used in SNG.

The SNG can act as a main feed, a backup feed or a peak shaver (used at times of high demand or low line pack). The feeding and stopping of SNG in place of natural gas can be fully automated. Burners operating on SNG require no pressure adjustments and the measured and observed combustion. More than 10 years of performance with proper maintenance and following the OEM recommendations.

All this sounds too good? It is really. Let's understand, the concept now.

The SNG Concept: Basically, natural gas is mostly Methane. LPG is mostly Propane. Propane is twice the price of methane and has twice the heating capacity or mmbtu of methane. The solution is in mixing compressed air with propane by equal proportion that makes its heating value and cost equal to natural gas.

Wobbe Index :

If any hydrocarbon gas has a similar Wobbe Index value to any other hydrocarbon gas this means: they need same amount of air for combustion, their products of combustion are alike and their heating capacities are alike.

Both natural gas and SNG have similar Wobbe Index values, Although propane

has a higher density but it also has higher mmbtu values too, When these values are put in the Wobbe index formula, both SNG and natural gas match exactly in their values.

Space needed: A typical system with a single storage tank takes up approximately a 30' x 80' area (2400 sq. feet). Components of the SNG system: A basic SNG System includes: Storage tank: To store the liquid SNG. Tank loading facility: Allows refilling the storage tank. Process Pump: Transfers liquid SNG to the vaporizer. SNG Plant: Vaporizer and Blender - vaporizes the SNG and blends in air. Piping and Tie-in: Links everything together and SNG: as input gas.

These basic elements are installed/required adjacent to the facility on level ground.

SNG vs LNG :

LNG is also slow and expensive to import, process and supply. It is possible that LNG may be stolen enroute through pipes or lost partly. How much does it cost :

The minimum Capex involved in the project for MW power requirements is approximate Rs.20 million, and goes up to 500 million, varies in different load requirements and also based on : System manufactured in USA, system manufactured in South Korea, size of system (Load Requirement), capacity of storage

facility, area of gas distribution. SSGC and SNGPL use SNG to supply natural gas substitute to end users :

SSGC is mandated to install SNG Plants on 27 locations in Sindh and Baluchistan and SNGPL stands responsible to establish 30 sites in the identified locations in Punjab.

The purchase and sale of SNG is de-regulated in Pakistan.

Typical uses of SNG in industrial applications: Electric generators, gas turbines, gas fired boilers, gas fired industrial and commercial ovens, moulding machines, gas burners. Any other equipment / application using the Natural Gas as feed

Safety, Health and Environment (HSE): The plants are installed under strict compliance HSE rules by NFPA,

Explosive and Environment. The SNG Supply Chain (INPUT)

PSO, FONGAS, Hascol, Burshane, Pak Gas, PARCO are few of the main suppliers for the input i.e. SNG, local technology expert.

The Installation, Commissioning, operations and maintenance including Engineering and design of these plants is fully done by local engineering firms and does not require any foreign expert at any stage for the above jobs, other than supply of processing plants.

The ultimate Challenge - High CAPEX

One and only challenge for the potential Users is the Capital Expenditure, since a large part of plant is being imported from USA and / or South Korea

and accessories from Europe. The high capital cost involved in the project restrains the industrialist / users to opt for this option, although after installation, the plant pays back its cost in terms of Money, efficiently and control over production very effectively.

Opportunity for the Banks / Lenders: The bank / financial institutions may come up for Financing of CAPEX of the plant and can partner the end user for supply of this plant. The bank can choose its mode of financing for this asset based lending / investment.

If bank prepares a specific product with attractive terms for the buyer, there is a very good potential. The ultimate positive side is rapid industrialization and employment of youth and increase in the GDP of the country. ■

Energy Sector Recommendations

■ By Dr. Kazi Kamal

Govt mainly focuses on generation of energy. That is a losing argument. It's something that we are already doing. The real failure is in the visualisation of all its parts. Synergy is lacking. Generation is one part of it. So is transmission. So is distribution. Investments in transmissions are lacking and only 14000 MW can be transmitted regardless of generation, so what is the use of the generation without upgrading all the three parts? Some initial transmission private companies are coming in agreed but its efficient transmission that will make or break the generation of power attempts.

NEPRA is a calculator not a regulator. Although it is authorised to indulge each and every part of all power producers it remains like a football offside referee. Calling only when the rules are flouted. Regulator in the true sense must be efficient and independent. It's neither. As a result, the country suffers. It delays the tariff determination; it delays fuel adjustment decisions. Resultantly cash flow gaps appear in utility companies. Plus, ridiculous targets of 100% payments is only possible in utopia NEPRA insists on it. Furthermore it's insistence on unrealistic line losses again deprived the utility companies of cash and then adds to circular debt.

IPP contracts have to be renegotiated. They are the best deals ever envisioned by anyone to an investor. Life time no income tax. Sales tax not payable on

imports of plants. Dollar based and inflation indexed capacity payments are insane. Even the equity was like 20:80 (debt). Audits reveal that the amounts paid and calculated are totally non aligned by the designated Govt department responsible for purchasing power from them.

Gas: Worst domestic meters on the planet under SSGC which a world bank study claimed could be opened by a housewife with her knife and manipulated. Why? Digital meters should be used to stop theft and maintain consumption records

2) 15% gas stolen and utility companies fail to stop it. The logic of not allowing them more than 6.5% in their tariff is not enough as the 9% is lost in the air and it's a national loss.

Ogra follows govt. line and wants to prevent bankruptcy of the two utility companies whereas they are super inefficient and without Govt help would be broke. Ogra has to do the right thing not the popular thing. Out of 16000 km lines in SSGC network only 40% are of plastic that don't crack. Govt should ensure that all lines are turned to plastic ones so that there are no holes and line pack is maintained.

3) SNG Stimulated Natural Gas systems should be introduced in industries that use propane (LPG) and air mixture. This will reduce the gas costs instead of the escalation of RLNG. This way industrialisation will also happen where

there is no piped gas. All far flung areas should be provided with bio gas in place of piped gas which is sufficient for their needs without cost ineffective long winded paying out of piping to sell gas to areas that can't pay the bills

Water: Comprehensive plan should be developed to balance the base load generation capacity all year long by the construction of suitable reservoirs at par with the requirements of agricultural water trends all year round. Water projects are always delayed and run into years of late completion increasing the costs multifold. A mechanism should be ensured that delays beyond Contractor controls should restrict their payments and a separate independent body be created to look after all under construction projects to ensure their timely completion and saving the tax payer money. Small run of the mill hydropower units in Pvt sector are the meantime solutions till the bigger ones come into play.

Renewables: This is the future. Nothing else. The govt still has outlandish tariff rates out of synch with the world. The time taken by NEPRA for tariff and other procedural matters be simplified and wind water, solar and all others be given survival terms for quicker investments and bank loan categories. Like in India without enabling the manufacturing possible of renewable equipment parts e.g. the wind mills etc. the cost will not come down and as a consequence the cost will not reduce. ■

PTI Govt following the footsteps of PPP, PML-N

Many power plants may go into IPP's control

By Sajid Aziz

The PTI government that is being run topsy-turvy under Imran Khan's leadership, is contemplating privatization of almost all the remaining public sector industrial or commercial organisations. These units were left over by the previous regimes led by Benazir, Zardari and Nawaz Sharif. Some of the organisations included in the list were not either lucrative or could not be sold or peanuts due to labour unions' pressure or under supreme court's order.

The public sector units that have been selected to be thrown away to some favourites include: SME bank Limited, First Women Bank Limited, 1223 MW Balloki Power Plant, 1230 MW Haveli Bahadur Power Plant, Mari Petroleum Limited (divestment of remaining shares), Jinnah Convention Centre, Islamabad, Lakhra Coal Mines (now Lakhra Coal Development Company) and Services International Hotel, Lahore. Organisations to be privatised in the second phase are: House Building Finance Corporation, National Investment Trust Limited (NITL), National Insurance Company (NIC), Pakistan Reinsurance Company (PRC), State Life Insurance Corporation (SLIC), Oil and Gas Development Corporation Limited (OGDCL), Pakistan Petroleum Limited (PPL), Government Holding Private Limited (GHPL), Pakistan Mineral Development Corporation (PMDC), Faisalabad

Electric Supply Company Limited (FESCO), Islamabad Electric Supply Company (IESCO), Lahore Electric Supply Company (LESCO), Gujranwala Electric Power Company Limited (GEP- CO), Multan Electric Power Company Limited (MEPCO), Peshawar Electric Supply Company Limited (PESCO), Hyderabad Electric Supply Company Limited (HESCO), Quetta Electric Supply Company Limited (QESCO), Sukkur Electric Power Company (SEPCO), Kot Addu Power Company (KAPCO), Jamshoro Power Generation Com-



pany Ltd - JPCL (GENCO- I), Central Power Generation Company Ltd - CPGCL (GENCO - Lakhra Power Generation Company Ltd - LPGCL (GENCO - IV), Northern Power Generation Company Ltd - NPGCL (GENCO - III), PIA-IL (Roosevelt Hotel, NY & Scribe Hotel, Paris), National Fertilizers Corporation, its units and subsidiaries, State Engineering Corporation, National Shipping Corporation (PNSC), Telephone Industries of Pakistan, Haripur (TIP), Pakistan Telecommunication Co. Ltd. (PTCL)

National Book Foundation (NBF).

Majority of the units that were put on sale are from energy sector including Discos and some power projects that were initiated and started production during past regimes. It means selling some important power plants and strategic organizations in power sector, the nation would be on mercy of cruel IPPs.

According to Privatisation Commission, the negotiations are on with half a dozen companies from Russia and China to run the Pakistan Steel Mills (PSM) under public-private partnership and increase its capacity from 1.1 million to 3.5 million per year. The committee was informed that the Pakistan International Airlines (PIA) and the PSM have so far racked up combined losses of around Rs600 billion, of which the PIA losses stand at around Rs400 billion.

Financial year 2007-08 was the last year when the PSM posted profit of Rs9.5 billion. It ran into losses both in the PML-N and the PPP eras. Since then, its finan-

cial health has deteriorated. In June 2015, it was closed. The mills' current total losses are around Rs200 billion. Secretary Privatisation Rizwan Malik said that the government had decided to PIA and PSM are in the list.

He said, "The steel mills will be sold on public-private partnership, to enhance its production capacity from 1.1 to 3.5 million tonnes per year."

However, among other more than a dozen public sector enterprises, PIA has been put off the list of privatisation programme and the government is making hectic efforts to bring this national flag carrier into a profitable entity.

He further said that in next one and a half years, the government would give seven public entities in private hands that include SME bank Limited, First Women Bank Limited, 1,223 MW Balloki Power Plant, 1,230 MW Haveli Bahadur Power Plant, Mari Petroleum Limited (divestment of remaining shares), Jinnah Convention Centre, Islamabad, Lakhra Coal Mines (now Lakhra Coal Development Company) and Services International Hotel, Lahore.

The privatization secretary, while briefing the parliamentary panel, said that the government has decided to privatise around four-dozen state-run entities in two phases.

Secretary Privatization, further said that the government has recently delisted 15 entities of the privatization list and Pakistan Steel Mills and PIA are also included in that list. Pakistan Steel Mills' running under PPP mode, the Ministry of

Industries and Production would execute that process and in discussion with the Chinese and Russian Companies. Aviation division is also working hard on the re-structure of the PIA.

The entities which have been delisted of the privatization program are National Bank of Pakistan, Industrial Development Bank Limited (IDBL), Trading Corporation of Pakistan (TCP), Pakistan State Oil Company Limited (PSO), Sui Northern Gas Pipelines Limited (SNGPL), Sui Southern Gas Company Limited (SSGC), Civil Aviation Authority (CAA), Utility Stores Corporation of Pakistan (USC), Pakistan Steel Fabricating Company Limited, National Highways Authority (NHA), National Construction Limited (NCL), Printing Corporation of Pakistan (PCP) and Pakistan Railways and its allied facilities, factories, workshops etc.

It's really a point concern that organizations which are to be privatized in second phase. These are some of the most important organizations, and they can all become profitable, just by changing the staff and a little bit of investment. i.e. just take PTCL the only reason they suck is because of their incompetent staff. Same is the case with IESCO, LESCO, PESCO etc, line losses and theft are the issues. Government doesn't take strict stance against them because it would hurt their vote bank. It's condemnable that PTI took a cowardice approach to deal with such things and following the footsteps of PPP and PML-N that have looted and plundered the strategic national assets. ■

PSO reports profit of Rs4.2 billion in 1st half of 2019

The Board of Management (BOM) of Pakistan State Oil Company Limited (PSOCL) has reviewed the performance of the Company for first half of the financial year 2019 (1HFY19) in its meeting held on February 16, 2019.

The challenging economic trend in the country fueled by rupee devaluation and adverse balance of payment position resulted in negative growth of 27% in the cumulative liquid fuel market with negative contribution of white oil and black oil of 12% and 60% respectively. Black oil volumes have been impacted significantly due to power production shift towards RLNG in the country, based on a GoP decision. Despite the challenging economic scenario, PSO lead the liquid fuel market in 1HFY19 with an overall market share of 40.9% (increase of 0.7% market share vs.



Sept 18 quarter). In spite of soaring outstanding receivables (inclusive of LPS) from the Power Sector, PIA and SNGPL as of December 31, 2018 which stood at Rs. 325 billion (September 30, 2018: Rs. 310 billion), PSO maintained the sensitive

supply chain by importing 48% of total industry imports and up lifting 36% of total refinery production in the country. The economic down trend and reduction in overall market size has impacted the Company's profitability. During the period under review, the Company reported Profit after Tax (PAT) of Rs. 4.2 billion. Major reasons for reduction in PAT as compared to same period last year are lower gross profit mainly due to dip in sales volume of black and white oil, higher inventory loss due to reduction in international Oil prices, increase in finance cost due to sharp hike in discount rate by SBP and higher average borrowing levels vs. same period last year, lower interest income from power sector and foreign exchange loss on account of PKR devaluation. ■

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What's behind gas shortage?

■ EU Report ■

What is going on? What's behind this sudden and acute shortage of natural gas. Well, as they say, it's complicated.

The proximate cause is that winter has ramped up demand and supply has not kept up. But that is not the whole story. First, let's be clear that Pakistan has not, overnight, run out of gas. The gas is there. But we cannot produce it. To understand why, we first need to understand some basics of oil and gas production: Oil and gas are hydrocarbons and they occur naturally deep in the ground in what are called fields or reservoirs. There are two basic types of reservoirs. One type has mainly gas in it. The Sui and Kandhkot fields are of this type. The other type contain both oil and gas. The Nashpa and Adhi fields are examples of this type.

In reservoirs which contain both oil and gas, the fluid coming out of the ground is processed in a plant known as a gas oil separation plant. This, as the name suggests, separates the gas from the oil. The gas is delivered by pipeline to the gas distribution companies - SNGPL and SSGC. The oil is sent to oil refineries by truck or pipeline. The oil refineries convert crude oil to furnace oil (a type of fuel), petrol and the likes. Furnace oil is sent on to power stations to generate electricity.

Pakistan produces gas from both types of reservoirs. Much of it comes from the mainly gas type such as Sui, and the remainder from the oil and gas type such as Adhi. The gas reservoirs, such as Sui, are continuing to supply gas normally. The present gas crisis is related to the second type of reservoirs - the ones that produce both oil and gas.

In this case the operators of these fields, companies such as PPL and OGDCL, have been obliged to cut back on oil production. And when they cut back on oil, the result is an automatic reduction in gas production because both are produced together. And this is why there is a shortage of gas today.

The oil producing companies - PPL and OGDCL - have reduced oil production because the refineries, to whom they supply oil, have cut back on their production, because they are not able



to sell their furnace oil to power plants. Why? Because circular debt has left the power plants with no money to buy the furnace oil. And so the refineries are also operating at well below capacity. Some of them have said they may have to shut down if the situation continues. So to add to the gas crisis we may well soon have a fuel crisis.

The import of Liquefied Natural Gas (LNG), while useful and necessary, has ironically contributed to the problem. This is because not much has been done about integrating LNG supplies with the existing national pipeline network. Not to mention putting in place the necessary distribution and control system to optimize availability at all points. The absurd consequence of this poor integration is that on some days output from Sui is actually reduced to accommodate imported LNG into the system!

It should be clear from the above that managing the country's highly interconnected petroleum ecosystem is not a simple job. The Prime Minister has blamed the gas distribution companies - SNGPL and SSGC - for the gas shortage and ordered an enquiry into their managements. He's clearly been misinformed. The gas distribution companies can only supply the gas they get. If they don't get it, they can't be held responsible for not supplying it.

All the main protagonists of the industry - oil and gas producers (PPL, OGDCL etc), distribution companies (SNGPL, SSGC), oil refineries, and power stations - are doing what they should be doing, and cannot be reproached for the present crisis. The failure is of planning and regulation. This task falls squarely on the shoulders of the Petroleum Ministry - or the Petroleum Division as it's now called.

Unfortunately, the Petroleum Division is run by civil service officers who have zero knowledge or experience of the oil and gas industry. It is unrealistic to expect them to manage such a specialized, highly integrated ecosystem. The present crisis is proof of their abject failure.

And here we really have a problem. Unfortunately, the Petroleum Division is run by civil service officers who have zero knowledge or experience of the oil and gas industry. It is unrealistic to expect them to manage such a specialized, highly integrated ecosystem. The present crisis is proof of their abject failure.

But in some sense they also cannot be blamed. They are only doing, or trying to do, the job that they've been tasked to do. The fault is in the system. It puts singularly unqualified people in positions which they are woefully unprepared to occupy.

The challenge for the Prime Minister

is to understand this basic issue. The solution, surprisingly, is not difficult. What he needs to do is to cut through the red tape and put in the position of Secretary Petroleum a qualified industry professional who has worked his or her entire life in the oil and gas industry. And who has a solid understanding of this highly technical business. There will be those who whisper in the PM's ear that he cannot do this. But he can. And he must. The people of Pakistan have elected him so that he can think outside the box. He would make a grave error if he allows himself to become hostage to his own bureaucrats.

Finally, it is important to appreciate that the current crisis, ultimately, is a manifestation of decades of neglect in the search for new oil and gas in Pakistan. For much of Pakistan's history

Exploration and Producing (E&P) companies made little or no effort to search for new resources. PPL, for example, relied on its sole asset, Sui discovered by the British in 1952, thinking that it would last forever.

It was only when an overseas Pakistani, with international Oil and Gas experience was recruited as CEO, four years ago, that the company started to make a serious effort to find new resources. An effort that is only now starting to pay off.

The harsh reality is that our gas fields such as Sui, Marri and Kandhkot are reaching the end of their producing lives. The gas crisis we see today will only get worse whenever the system is stressed. So it is absolutely critical that activity in the E&P industry is ramped up sharply. This will involve radical improvement in

the regulatory regime and culture. It will necessitate enticing back overseas Pakistani E&P professionals, who work for some of the largest and most successful Oil and Gas companies in the world, and giving them the responsibility to revamp the sector.

The need to bring these professionals back cannot be overstated. The lack of activity in the E&P sector over the past decades has meant that we've not been able to develop local talent who can understand and address the challenges, and are familiar with the leading edge technology needed in today's world to find new oil and gas resources.

There are more, possibly many more, Suis and Kandhkots out there. Let's find them. We will be much better off than relying on imported, expensive and unreliable LNG. ■

Excessive usage of plastic daily affecting human's life

Daily worldwide production of plastic tops over a thousand metric tons and it's ubiquitous in our lives from water bottles to grocery bags. But many scientists, including the World Health Organization, are questioning its impact on humans, as they find oceans, farmers' fields, and food products drowning in tiny plastic particles called microplastics.

Despite plastic's omnipresence, governing bodies mismanage its disposal, as Esther Garrido-Gamarro of the U.N. Food and Agriculture Organization (FAO) explains to Food Tank. "Between 1950 and 2015 only 9 percent of plastics were recycled, 12 percent incinerated, and the remaining 79 percent stored in landfills or released directly into the environment."

Instead of biodegrading, plastic persists for hundreds, even thousands of years, breaking down into particles as tiny as the flu virus. And it isn't just the physical fragments that can cause harm; toxins added during manufacturing and organic pollutants gathered during air and water travel also accumulate in ecosystems.

Marine systems bear much of the burden. "As a result of mismanaged waste, around 9 million tonnes of plastic entered the marine environment in 2010," says Ms. Garrido-Gamarro to Food Tank. Of the marine species crucial to global fisheries, she states that "microplastics...[have] been recorded in

twelve out of the twenty-five most important." Although research is still in its infancy, the FAO notes that the physiology, metabolism, growth, and reproduction of marine life that eats or otherwise



draws in microplastics may be impacted.

Microplastics also infiltrate the soil, in part from sewage-based fertilizers and plastic field coverings. Chelsea Rochman, Assistant Professor at the University of Toronto, writes in the journal *Science* that "the current evidence suggests that microplastic contamination is as ubiquitous on land and in freshwater as in the marine environment." And as an article in *Scientific American* observes, this puts the health of the soil—including the crops, organisms, and water residing within it—in jeopardy.

Human harm could indirectly be caused by microplastics compromising the quality and quantity of food production. With so many unknowns, those in the food industry are anxious about their livelihoods and customer health. Keith

Reid, an oyster farmer on Vancouver Island, supports continued research. "It's something as an industry we need to know," he says in an article by the CBC. "Are there microplastics in our oysters? And if there are, what levels are safe?"

The direct human health impact remains unclear. Dr. Philipp Schwabl, a researcher from the Medical University of Vienna who recently found microplastics in human stool, sat down with Food Tank to explain. "Our study is the first to give evidence that microplastics are also ingested by humans...we found microplastics in all stool samples," he says. While a single study is not definitive, Dr. Schwabl's work raises concern and reason for further research. "Animal studies have shown that ingested microplastics can be found in liver, lymph, and blood. If the same is true for humans...[this] needs to be investigated."

Technology and even bacteria may be useful to reverse some of the damage. In the long-term, Ms. Garrido-Gamarro suggests pushing for "improved governance at all levels as well as behavioral and system changes, such as a more circular economy, more sustainable production, and...review [of] existing regulatory frameworks." For the time being, experts urge consumers and industry to reduce plastic consumption, reuse when possible, and use proper disposal. ■

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Murtaza Wahab, advisor to CM on Law, promises legislative interventions to strengthen Consumer Protection Law

The Sindh Government will do legislative intervention wherever it is required to strengthen the system of consumer rights protection through the Sindh Consumer Protection Act-2014.

The assurance was held out by the Sindh Information and Law Advisor Barrister Murtaza Wahab while speaking at a seminar titled "Role of consumer courts in protecting consumers". It was jointly organized by the Helpline Trust and National Forum for Environment and Health in connection with World Consumer Rights' Day.

He said that being the provincial Law advisor, doors of his office were always open if someone wanted to approach the government to further strengthen the Sindh Consumer Protection Act-2014 and to make the process of seeking relief from the consumer courts easier.

He said that the 29 consumer courts



He said that Helpline Trust would provide full assistance to the aggrieved consumers if it was approached in seeking guidance or help in filing of a case in the consumer court against a defective

participation in the Consumer Councils.

Keynote speaker at the seminar, former Senator and federal Information minister Javed Jabbar said that consumers, apart from demanding their rights



established in each district will have staff appointed in keeping with the directives of the Supreme Court and amendment to that effect has been approved by the Sindh Cabinet.

Abdul Hamid Maker, founding trustee of Helpline Trust, informed establishment of consumer courts in Sindh took around five years since passage of Sindh Consumer Protection Act-2014.

service or product.

Helpline Trustee Afia Salam, who moderated the event, offered the assistance of the organization to the Government in spreading awareness and training people in getting redressal through the consumer courts. She also informed the Advisor about the message of Justice Majida Razvi, another trustee of Helpline Trust, in assisting the government through

from the State, should remember their obligations to the State by way of paying taxes. He also urged for developing a culture of responsible consumerism in order to avoid social and economic injustice to the people living below the poverty line.

Speakers at the seminar included representatives of traders and manufacturers. Munir Qureshi of Siddique Tin Plate, S Irfan Ahmed of PharmEvo, and Azam Shakeel of English Biscuit Manufacturers spoke about the prevailing malpractices and cautioned consumers to be aware of the hazards to their health and well-being. They welcomed the promulgation and operationalization of the law as this would serve as a redressal mechanism to the manufacturers as well as users as ultimately all citizens are consumers. ■



Dialogue initiated to enable Karachi's consumers to get KPK's cheap hydroelectricity

- HIMAYAT ULLAH KHAN

Exclusive interview of
Advisor on Energy to
the Chief Minister KPK

■ By Naeem Qureshi

The Government of Khyber Pakhtunkhwa and privatized power utility of Karachi the K-Electric have initiated the process of dialogue to explore the possibility of supplying cheaper hydro-based electricity being produced in KPK in surplus to Karachi through the transmission infrastructure of NTDC, says the Advisor to KPK Chief Minister on Energy and Power", Himayat Ullah Khan.

In an interview to the Energy Update, the Advisor said that the option of KPK Government and the K-Electric joining hands to initiate a joint venture of hydro-based IPP at any of the suitable sites of Khyber Pakhtunkhwa is also being explored. He continues to say that.....



Energy Update: What is the roadmap of the present KPK Government in the energy sector?

Himayat Ullah Khan: Our roadmap is very much clear. We will utilize this sector in such a manner that it will lead to three types of achievements: economic growth, revenue generation for the government and employment opportunities for the youth.

The KPK has been in a state of turmoil for last 30 years or so because of the Afghan war, refugees from across the Durand Line and unabated terrorist activities. Our economy has been in near shambles. All the social and human indicators including literacy, health, and employment have been showing the downward trend. We don't have the money. Our budget of the current year stands at Rs550 billion out of which the province generates only Rs80 billion. Out of it, Rs40 billion is generated through tax collection while almost an equal sum is received through the systems of net hydel profits and royalties of oil and gas.

We are used to generate hydroelectricity at the cost of Rs4 to Rs7 per unit while the same electricity after being fed to the national grid is purchased by our industry at Rs18 per unit. We are planning to supply this cheaper electricity to our own industries after bypassing the grid. We have floated this idea before the Sarhad Chamber of Commerce & Industry and Gadoon Amazai Industrial Estate as they are very enthusiastic about it. We will go for an open competition for this under PPRA (Public Procurement Regulatory Authority) rules. The provincial government has also given its consent for the idea. We have hired a consultant for doing the power purchase agreement in this regard. We will create a model for such a system of direct electricity sale as afterwards the industry of the entire Pakistan will resultantly come to us. We will establish our own transmission company. In the meantime, we will utilize the existing lines of Peshawar Electric Supply Company under the concept of wheeling. The hydroelectricity always needs base-load power generation as we will get the same from the existing transmission network of the PECO.

The PEDO (Phatunkhwa Energy Development Organization) will pursue

the option of cheap electricity as it will become an engine of our economic growth.

EU: What is your planning regarding oil and gas resources of KPK?

Khan: As of now we produce 60 per cent oil and 20 per cent natural gas being produced in Pakistan as we are getting only the benefit of royalty. Our company (Khyber Pakhtunkhwa Oil and Gas Company) has obtained a block that is called Lakki Block. We have acquired its data. We will start the seismic survey there from September 2019 and onwards. By July 2020 we will be in a position to decide whether to do drilling there for the project or not.

KPK worth \$ four billion as this estimate doesn't include the newly merged tribal district that are more richer in hydrocarbon resources. The volume of gas reserves we have is roughly double. We have demanded the federal government to give us three more blocks as we have duly identified these three other blocks. We are the only provincial government having its own oil and gas company. We want to start joint ventures with the national oil and gas companies. We also want foreign investment in this sector. We want to become a stakeholder in this sector. We want to enter into a joint venture so to dilute our risk while doing such an energy project. We are on the right trajectory.

EU: Tell us progress on your plan to install micro hydropower station across the KPK?

Khan: This plan was initiated in the previous government of the former chief minister Pervez Khattak. We initiated construction of 397 mini-micro hydropower stations at different locations of KPK. Out of these, 324 of these stations have been completed. The plan to build another 24 such stations has been dropped as the sites suggested for their construction were found not feasible for such a hydro-based project. Rest of the mini-micro power plants are being constructed. This is a very good concept as it provides the perfect off-grid power supply solution. This serves as a very ideal option for energizing a few dozens of houses in a remote village. The terrain and geography of our province is very much suitable for doing such an off-grid energy project owing to plenty of hill sites and water bodies. This merely requires installation of a turbine and establishment of a community-based organization (CBO). Install the turbine at the suitable site and hand it over to the CBO to run and manage the project. We are shortly handing over the completed 324 projects of mini-micro hydropower station to such CBOs as we have inserted the necessary amendments in the law to create provision for it so to handover these assets of the government to the communities related to them. These communities will run and maintain these projects on their own. These micro hydropower stations have been designed to generate electricity ranging from 15 KWs to 800 KWs that would be enough for a few dozens of houses in a village.

Furthermore, we are doing the solar power projects also as an off-grid solution for the area where grid-based electricity could not reach or for the localities affected due to the issues

of electricity load-shedding and power theft. Such localities will be solarized. We are doing solar power projects for 100 villages, 8,000 schools, and 170 basic health units. This project will be further with the K-Electric.

We have started our negotiations with the KE. We intend to sell the cheap electricity available with us to the KE. The same cheap electricity, which is being produced in the KPK.

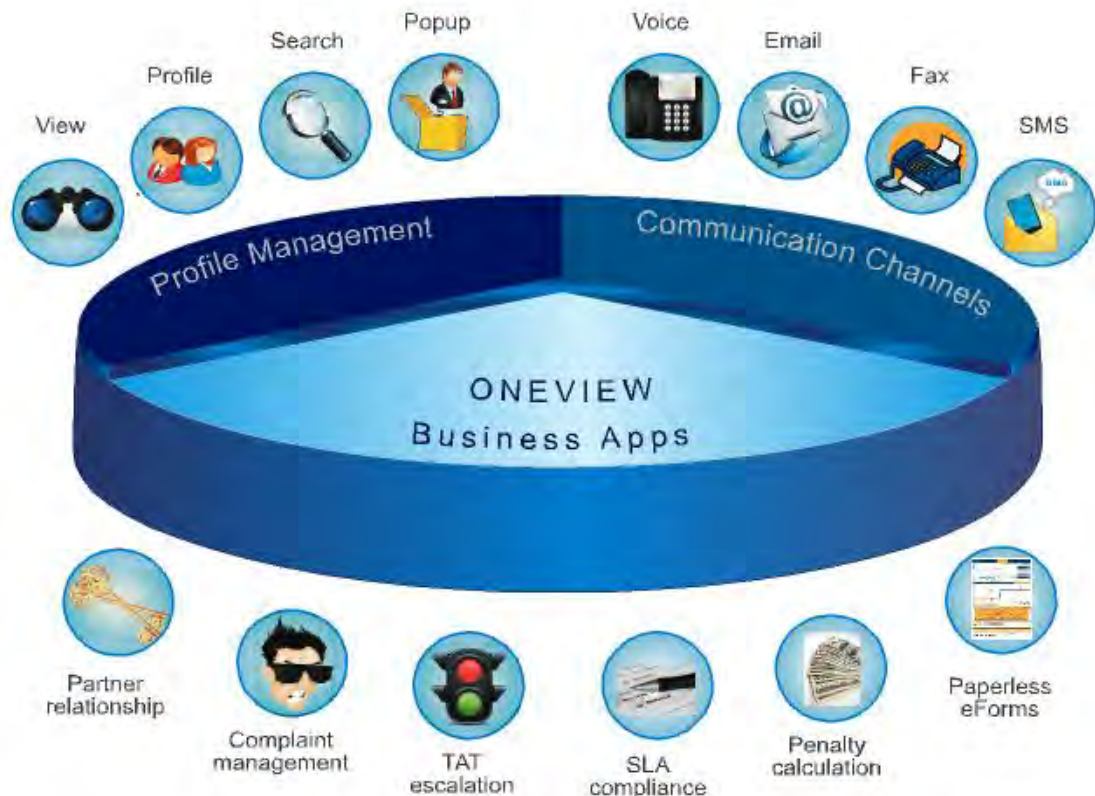
We have initiated the dialogue for the purpose. The federal government is of the concept that there is surplus electricity in the country so they don't purchase electricity from us. Then obviously we are looking for alternative sources and buyers. One of the plans is to set sell our electricity to the industry and secondly we have approached the KE. We are exploring two options. Given our existing capacity of electricity generation and the additional 100 MWs, which will be available to us in 2019, we plan to hook it into the system of NTDC through wheeling while the electricity we dispatch from here will be drawn in Karachi from the same transmission network of the NTDC. In the initial discussion they are very keen about this idea.

The second option we are exploring is that the KE should do investment in the energy sector with us. The KE should pool in money with the KPK government to form an IPP. We are ready to give them the site to do the project. We will start a joint venture with them. Through it they could easily produce 400 MWs to 500 MWs of hydroelectricity as it could easily be transmitted to Karachi through the transmission network of the NTDC. We could do a project in this regard with the K-Electric under the Public-private partnership mode. It could be possible that the 650 MWs electricity the KE draws from the NTDC would no more be required by it as the same power supply will be available from us. We will get the payment for this electricity sale, the NTDC will get the wheeling charges for this transmission, while the KE will be hooked to a resource of cheaper electricity. This in turn will also be beneficial for the consumers of the KE if they are supplied power supply at as low rate as Rs 6 to Rs 8 per unit cost of electricity. The city of Karachi being economic and industrial hub of the country is likely to see exponential growth in its electricity demand if our economy grows. The entire Pakistan depends on Karachi as Karachi belongs to all of us. Such a system will have a good impact on the cause of national integration as well as Karachi is dependent upon KPK while in turn the KPK relies on Karachi. What more do you want for this cause. We have identified a site for 500 MWs hydropower project with them under the IPP mode as we are ready to hand it over to the KE. We are willing to invest in this project as being an IPP. This will break the monopoly in the system that is responsible for much of the problems in the energy sector in the present times. The existing system could not give solution to our problems. I would rather quote here Albert Einstein that problems cannot be solved with the same mindset that created them.

The new Matiari-Lahore transmission line will be the ideal network for such transmission of electricity from the KPK to Karachi. The Matiari is closest to Karachi as further transmission of electricity from there to our port city would not be an issue for anyone. ■



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Karachi to host world's first zero-emission mass transit service - Malik Amin Aslam

An exclusive interview of Advisor to Prime Minister, on Climate Change

The city of Karachi will become the world's first metropolitan site to host the zero-emission mass transit bus system, which consume cow waste of the city, as this project has recently been approved by the Green Climate Fund (GCF), this was stated by Malik Amin Aslam, Advisor to Prime Minister Imran Khan on Climate Change, during an exclusive interview with Energy Update (EU) he says that:

■ By Naeem Qureshi



Energy Update: What is the progress on Green Pakistan initiative launched by the Prime Minister last year?

Malik Amin Aslam: We have been doing planning for this project. It is difficult to carry out the project for next five years if there is no proper planning for it. We have set a big target of tree plantation and have taken on board the provinces with us. Some 30 to 40 meetings have been held with the representatives of the different provinces. The provinces have prepared their PC-I of the project on basis of these meetings. They have fully owned the target as ownership of the target has now grown up to around six billion trees. Our first phase will last for next two years. The target of this phase will be divided among the provinces like for instance the target of Sindh and Khyber Pakhtunkhwa will be two billion each while Punjab will plant 500 million trees during this period. The total target for phase one is six billion. After two years, we will do the re-evaluation as to find out which of the province

has met the target and which has not. We will set the target again after this re-evaluation. God willing we will achieve the target of planting 10 billion trees across the country in next five years. Every province has a different plan, which it will execute upon through a different method to do the tree plantation drive like the methods of urban forestry and agroforestry will be used in different parts of the country. The combination of all these techniques will lead us to the best results regarding the tree plantation drive in the country.

EU: What is your own assessment about capacity of Sindh to do such a tree plantation drive?

Aslam: This question also came to our mind as that was why we asked the provinces to fully own the target

as the provinces should have assumed complete ownership of the project after reviewing their own capacity. We will also launch an umbrella scheme as the federal government under this scheme will provide both financial and technical assistance to the provinces. While monitoring of the project being carried out in different parts of the country simultaneously will also be carried out. The targets given this time by the provinces have been proposed after due evaluation of the situation on the ground, and after assessing financial, and technical capacity of each of the province. So God willing, this campaign will be successful.

EU: Is there also a provision for taking on board the non-governmental organizations



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and civil society with you

Aslam: Yes certainly we will do take the concerned NGOs and civil society on board with us in this drive. This is such a huge target that the government alone could not achieve it. Every province will implement its part of the target through a specific model as one such model envisages involvement of the communities. The private sector will certainly be involved in this campaign to meet this huge target.

EU: What is the update about the Clean Pakistan campaign?

Aslam: This campaign is also going through the stage of planning. We have given our vision for this campaign as well that carries five salient points. The process of consultation with the provinces is on as what they could do for this campaign and what targets could be suitable for them. The provinces have been asked to duly assess and inform us their own status of garbage disposal including its different aspects like solid waste disposal, food waste management, and sewage disposal as every province will propose the target for itself after duly going through this process of evaluation. Once the provinces propose the target, we will also ask them to send a PC-1 of the project as how best to achieve this target. The federal government will assist them in achieving this target. The provinces will take some time to complete the planning stage of this project. Once the project is properly planned, it will be ready for execution for next three to four years. This is the most difficult phase of the project we are going through now as there is a very famous saying that if you fail to plan then you are planning to fail. Our experience of Khyber Pakhtunkhwa was similar as we spent one-and-half-year for doing planning only. Once we started the execution after the planning stage, we faced no difficulty as the execution was done almost like automatically.

Our plan of first 100 days was that how best to spend the next 1500 days as in these 100 days we have set our direction. We have set the direction as how best to make Pakistan clean and green. The next phase is how best to implement this project on the ground. The provinces have been involved in the Clean Green Pakistan campaign as all of them are now being made on board with us.

EU: What exclusive effort you are going to make for Karachi's



We have recently got approved a very special project for Karachi from the Green Climate Fund. Under the proposed project, the entire cow waste of Karachi will be consumed to produce bio-gas. This bio-gas will then be utilized for running 200 buses on the under-construction Green Line section of Bus Rapid Transit Service in Karachi. The \$500 million project has been recently approved by the GFC.

betterment?

Aslam: There should be some exclusive project for Karachi. A team belonging to Karachi should be selected to execute this project. The Sindh government should also be taken on board with us to do this project. We will take on board the lawmakers of Pakistan

Tehreek-e-Insaf belonging to Karachi. The civil society will also be taken on board with us so that this project could be carried out with a collective effort and responsibility.

No single person could achieve this task. The government alone also could not do this project as it has to make the masses partners in this drive. The people have to own this campaign in order to realize the need that they have to clean Karachi. There is also the possibility of doing several small projects for Karachi of solid waste management as these projects could be integrated into one large project that later could be utilized for doing a project of waste-to-energy or that of fertilizer production.

EU: What else you are doing exclusively for Karachi?

Aslam: We have recently got approved a very special project for Karachi from the Green Climate Fund. Under the proposed project, the entire cow waste of Karachi will be consumed to produce bio-gas. This bio-gas will then be utilized for running 200 buses on the under-construction Green Line section of Bus Rapid Transit Service in Karachi. The \$500 million project has been recently approved by the GFC. This is the first such urban transport project to be built in the world after due approval by the GFC. This project has been exclusively approved by the GFC for Karachi. This project comprises of a very wonderful concept as our ministry has also approved it.

This is basically a government-owned project. This project will transform the under-construction Green Line bus service into a zero-emission mass transit service for the city.

This is also a zero subsidy project as government will provide no subsidy to run this metro bus service as the revenue generated through ticket sales would be enough to run this service. The costing of the project has been done in such a beneficial manner.

EU: What other projects you are doing in the country to counter the phenomenon of the climate change?

Aslam: We are doing a project for Gwadar city as well, as discussion in this regard is being carried out with China. We will also make Gwadar a clean and green city. The city possesses so many assets as Gwadar is being transformed. We will make this city move in the best direction after its transformation. ■

Team Energy Update visits snow-capped Swat Valley

KPK govt. to set up 105 clean power generation projects



The team Energy Update undertook a virtual dream visit in January 2019. That came possible primarily because the team EU met Advisor to Khyber Pakhtunkhwa Chief Minister on Energy, Hamayatullah Khan in Islamabad. It was during this meeting, the issue of initiatives launched by the KPK's Government to tap massive potential of the province to generate clean electricity, came under threadbare discussion. During this discussion, the issue of installing mini-micro hydropower stations in KPK for generating run-of-the-river renewable electricity in the province was also discussed. It was that moment where exactly the team EU expressed the desire to physically witness one such mini-micro hydropower station, which is functional and also doing power generation. The advisor of on energy happily invited the team EU to his home town.

After the overnight stay at an army mess in Khwazakhela area of District Swat, the real journey began on the morning of Saturday, 26 January, 2019. That involved two 4WD Toyota Hilux vehicles and trekking a portion of the snow-capped mountains of Swat to reach the actual site of a mini-micro hydropower station in the scenic district. The real life trekking experience involved in the journey made it really adventurous and challenging given the phenomenal snowfall situation in the entire Swat valley. Keeping in mind that the entire team EU is based in Karachi where it never comes across any opportunity to check their hiking or trekking skills. Over Two hours

journey using 4WD vehicles and involving trekking took the team EU to the site of the renewable energy project in District Swat.

Team EU finally reached the site of 150 Kilowatts mini-micro hydro power plant installed in Village Lalkoo, Union Council Sakhra, Tehsil Matta of District Swat.

The Rs40 million project was developed by Pkhtunkhwa Energy Development Organization (Pedo) with Sarhad Rural Support Programme (SRSP) as its implementation agency. Inaugurated in August, 2016, the low-cost renewable energy project has been providing like uninterrupted power supply to over 300 nearby houses since day one of its inception. It is one of 105 such small hydro power plants being developed in Districts Shangla, Swat, and Kohistan by the Pedo.

Out of these 105 plants, construction of 93 such units has been completed. It provides perfect off-grid power supply solution for villages in KPK that is a perfectly community-owned, community-led, and environment friendly energy initiative. Moreover, turbines and related equipment for such mini power plants all are locally assembled.

The power plant of Village Lalkoo

will soon attain the stage of financial self-sufficiency as a proper billing system will be launched for the connected houses as each household paying monthly electricity charges as low as Rs300 would enable the power plant to ably meet its recurring/maintenance expenses. The commercial units in the area being supplied electricity through this project are being charged relatively higher than the residential units.

The Run-of-the-river power generation is the best way to tap the vast hydro resource of the country for renewable power generation without involving much cost.

The initiative of KPK government to install 356 mini-micro power plants across the province had become a much politicized issue before the General Elections-2018 with the detractors of the provincial government of Pakistan Tehreek-e-Insaf terming it yet another failure of the provincial authorities concerned. The visit proved the notion wrong to a large extent with the firm belief that such good energy/technical/infrastructure initiatives shouldn't unnecessarily be dragged into the domain of politics just to do political point scoring against the opponents or for vested political interests. ■

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18 foreigners among 127 get civil awards

The federal government on Saturday issued the list of 127 persons, including 18 foreigners, who will be conferred civil awards by President Dr Arif Alvi for excellence in various fields of activities at an investiture ceremony to be held on the Pakistan Day on March 23. The list, which is usually issued on the country's Independence Day on August 14 every year, has been issued by the cabinet secretariat just two weeks before the Pakistan Day celebrations, as there was no government in the office on the country's last Independence Day.

Following are the few of prominent personalities have now been decorated with Tamgha-e-Imtiaz by the govt.

Aqeel Karim Dhedhi Chairman, AKD Group

Aqeel Karim Dhedhi, a prominent businessman and Chairman AKD Group, was also awarded the "Sitara-e-Esaar" by then president Gen. Pervez Musharraf for his services during the devastating earthquake that hit the northern areas of Pakistan in October 2005. He has also been awarded honorary PhD (Honoris Causa) degrees by private institutes like Biztek Institute of Higher Education and the Indus Institute of Higher Education.

Dhedhi is involved with groups including community based assistance, health services, leadership development of deserving younger generation, and women empowerment.[9] He is a trustee and member of the Board of Directors of The Shaukat Khanum Cancer Hospital; The Indus Hospital; World Memon Organization and the Resource Development Committee of Agha Khan University Hospital.[10] He also takes interest in health services, women empowerment, leadership development of young generation and community based assistance.

Aqeel Karim Dhedhi is a part of a local initiative called "Hum Aur Aab[11]" aimed at creating awareness about water consumption and to solve the water crisis of Pakistan at both, national and international levels.

Aqeel Karim Dhedhi being a great fan of sports himself has contributed a lot in promoting sports culture in the country.■



Dr. Abdul Bari Khan Chief Executive Officer, Indus Hospital

The Federal Government has announced a list of 127 individuals who will be receiving Civil awards on the 23rd of March, 2019 for their outstanding service to the country.

It is a great honour that #DrAbdulBariKhan is going to be receiving 'Hilal-i-Imtiaz' which is the second highest civilian award which is conferred on individuals who have made a meritorious contribution to the national interest of Pakistan, world peace, cultural or any other significant public endeavors.■



Syed Abu Ahmad Akif Secretary, Ministry of Climate Change

Syed Abu Ahmad Akif has been a member of the Pakistan Administrative Service (PAS), the premier group amongst the federal civil service of Pakistan since 1983. The PAS continues to comprise of "enlightened generalists" inspired by Confucian Mandarins. Possessing multi-disciplinary skills, officers usually work in many areas of management due to extensive horizontal mobility. Syed Akif has worked in the "field" as a general administrator heading the law and order and governance coordination functions, as well as in the federal and provincial secretariats, a rural development programme, state-owned corporate sector, an Asian Development Bank funded institutional reform project, and the national pension system. Most recently (2010-2015) he served as head of Pakistan's Hajj Mission in Saudi Arabia. Syed Akif has also worked in the civil society and private sectors by way of leave from the government (2000 - 2003). In 1998 Syed Akif received a fully funded degree fellowship at the East West Center Hawai'i that led to a master's degree in public administration.■



Maulana Bashir Farooqi Chief of Saylani Trust

Maulana Bashir Farooqi is the Chief of Saylani Welfare Trust, which has steadily grown into one of the most active and renowned welfare organizations in Pakistan. Besides welfare work, Maulana Bashir Farooqi also conducts Istikhara for people who are looking for guidance to solve their problems. Thousands of people take advantage of this facility every month. Maulana Bashir Farooqi was born in 1963 in the month of Ramadan. He belongs to a noble and religious family from the Bantawa Community. His family migrated from India in the early days of partition and settled in Sikarpur from where they came to Karachi in 1977.■



Muhammad Yunus Tabba (Late)

Muhammad Yunus Tabba started his over fifty years long career with YBG as one of its founding members and has seen it progress through manufacturing, sales, management, marketing management and general management. With his expertise and diversified experience, he has taken YBG to a level which is appreciated by both local and international business communities. Muhammad Yunus Tabba has also been awarded "Businessman of the year" by the Chambers Of Commerce several times during his awe-inspiring entrepreneurial career.■



M. Ahmed Shah President, Arts Council

M u h a m m a d Ahmed Shah is the first elected President of Arts Council of Pakistan, Karachi. He continues to serve this position in this historic institution for the past 10 years. He has the acumen for managing Arts, Culture, literature and fine arts, and enhances the credibility of the Arts Council.■



Gas crisis in Sindh

Provincial assembly shows dismay over federal govt's apathy



By Kanwal Jatoti

The gas crisis, which once again hit the general public, industrialists and traders of Sindh continuing during entire winter also reverberated during the session of Sindh Assembly.

The concerned lawmakers of the august elected house of the province

castigated the relevant federal authorities that people of Sindh should not be subjected to miseries on account of the natural gas shortfall when the province accounted for the majority of the gas volume produced in the country.

The Sindh Chief Minister Syed Murad Ali Shah spoke on the prevailing gas crisis

in the province during the sitting of Sindh Assembly held on 08 February, 2019.

Speaking on the occasion, the CM censured the federal government for causing severe crisis of natural gas in the province, especially Karachi. Sindh has been denied its due constitutional right to consume the gas indigenously produced in the province, Shah said, adding that the province had right to its gas as defined in the Article 158 of the constitution.

The CM informed the PA that Sindh had been producing 2,700 to 3,000 MMCFD natural gas. He maintained that as per the provisions of the Article 158 of the constitution, the province alone could consume this volume of gas to generate inexpensive electricity and fulfil other needs of its people.

The total demand of natural gas in the province stood at 1,500 MMCFD at present which was mainly due to its industrial consumption, Shah said, adding that the province was being provided less than 1,200 MMCFD gas, which had resulted in shortfall.

The assembly was informed by Shah that he had written a letter to the prime minister last month after the house passed a resolution stressing the constitutional right of the province to consume its natural gas as explained in the Article 158. "I wrote to the PM to apprise him that the province merely needs fulfilment of its rights in accordance with the Article 158."

He said within 14 to 15 days after he wrote the letter to the PM, Sindh had to face again a crisis-like situation in terms of gas supply. "I'm constrained to send again a letter to the prime minister today after the present state of crisis," the CM said. He added that there had been no response to his earlier correspondence sent to the PM.

Leader of the opposition in the Sindh

CM WRITES TO PM: The same day, Sindh Chief Minister Syed Murad Ali Shah, through a demi official (DO) letter, has conveyed his deep concern to Prime Minister Imran Khan over the incessant and prolonged gas outages across Sindh, which, according to the CM, is the largest gas producing province in the country.

Shah informed the PM that due to the shortage of gas, both the domestic and commercial consumers were facing severe difficulties in the province. "This is gravely impacting the province's economy, industries and homes," the CM wrote. He added that stopping the supply of gas to Sindh was a violation of the Article 158 of the constitution. The CM said in the letter that the current production of gas in Sindh was between 2,700 and 3,000 mmcf, against which the Sui Southern Gas Company was supplying only less than 1,200 mmcf to the province. Quoting the constitution's Article 158, the CM said the people of Sindh should be given 3,000 mmcf of gas on a priority basis.

Shah requested the PM to look into the matter and direct the relevant ministry to supply gas to Sindh as per the province's requirement in line with the Article 158 of the constitution.

Last month, the Sindh Assembly passed a resolution expressing its displeasure at the reduced gas supply to the province, and warning the federal government to end the unconstitutional gas load-shedding, or face a protest to be launched by everybody residing in the province.

A joint resolution was moved by Muttahida Qaumi Movement-Pakistan's Mohammad Hussain, Sindh Local Government Minister Saeed Ghani and Grand Democratic Alliance's Nand Kumar, voicing concern over the prolonged gas shortages across the province that had gravely impacted the province's economy, industries and homes.

The Governor Sindh, Imran Ismail said on the issue that he had talked to the chief of Sui Southern Gas Company on the issue who had informed him the reasons of the persisting gas shortfall in the region. He said that unprecedented cold wave in the franchise area of SSGC in Balochistan and Sindh had caused sudden surge in gas consumption, which created the present shortfall of gas in the region.

He said that gas supply to the industries was being curtailed for two days to ensure availability of natural gas to both industrial and commercial consumers.

He said that gas supply would be normalized to the industries of Karachi after the cold wave was over by the start of coming week.

He said that efforts were being made to ensure uninterrupted gas supply to domestic and commercial consumers as per the priorities set by the federal government for sector-wise gas distribution on a countrywide basis.



Assembly Firdous Shamim Naqvi, who belongs to the Pakistan Tehreek-e-Insaf, the ruling party in the centre, said the people of Sindh should be supplied natural gas as per their domestic, commercial, and industrial needs and his party would strive for the fulfilment of this fundamental right of the province.

Naqvi said the federal petroleum minister was under obligation to explain the reasons due to which Sindh had been denied its constitutional right to consume natural gas indigenously produced in the

province. "We will fully support this cause of the people of Sindh," the PTI leader asserted.

Other lawmakers in the house also got the chance to speak on the persisting gas crisis in the province. The chance came in the form of an adjournment motion of MPA of ruling Pakistan Peoples Party Syed Zulfiqar Ali Shah on hardships being faced by the gas consumers in Mirpurkhas.

Speaking on the occasion, Sindh Energy Minister Imtiaz Ahmed Sheikh said

that present gas crisis had nothing to do with the possible depletion of the gas reserves in the country as it was caused due to massive mismanagement of the natural resources by the federal government.

He said that people of Sindh by no means should be subjected to the gas crisis again and again when the province had abundance of natural energy resources. He said that the federal government should fully realize the importance of Sindh being the top gas-producing province in the country.

He said that federal government instead of providing any relief to people of Sindh had been constantly subjecting them to miseries by curtailing their due financial, water, and energy resources.

The Sindh Energy minister said that federal government had also mismanaged the import of LNG into the country to overcome this gas crisis.

Other concerned legislators on the treasury benches also spoke on the occasion and castigated the federal government for its consistent failure to overcome gas crisis in the country as people had been facing tough times as their household cooking and heating needs remained unmet due to the gas shortage. ■

Thar Coal Power Plant creates history

continued from page # 14

has voluntarily adopted various international compliance standards.

Celebrating this transformational event, the President of Engro Corporation, Ghias Khan said: "The first sync of the power plant on Thar coal is truly a momentous occasion for entire Pakistan. Engro's commitment to the Thar coal project goes back almost a decade when we entered into a public private partnership in 2009. The synchronization of the first unit of the 660MW power plant is both testament to Engro's capacity to engineer excellence and deliver on this project of national importance which will ensure the energy security of the country.

Commenting on the landmark achievement, Ahsan Zafar Syed - the Chief Executive Officer of Engro Energy and EPTL said: "This is a historic moment for us where Engro has not only delivered on its promise of realizing the Thar dream but technically demonstrated proof of the concept that Thar coal is suited to produce indigenous energy which can prove to be economical in the long run and reduce our dependence on imported fuel mix. I would like to acknowledge the efforts of our partners and sponsors in the project who have played an instrumental role in this landmark achievement. ■



Quetta Gladiators overpower Peshawar Zalmi to win PSL 2019

Quetta Gladiators won the Pakistan Super League (PSL) 2019 after clinching an eight-wicket win over Peshawar Zalmi in the final at the National Stadium of Karachi.

The tournament was the the largest cricket activity in Pakistan for 10 years after a terrorist attack on the Sri Lanka team bus prevented foreign teams from visiting.

"I thank the crowd for coming in big numbers," Quetta and Pakistan captain Sarfaraz Ahmed said.

"People have sent a clear message that Pakistan love cricket and it is safe for cricket." ■

Nestlé Pakistan partners with Clean Green Pakistan Movement

Nestlé Pakistan signed a Memorandum of Understanding (MoU) with Ministry of Climate Change, Pakistan to partner with the Clean Green Pakistan movement launched by the Prime Minister of Pakistan in October 2018. Clean and Green Pakistan Campaign is a much-needed initiative for Pakistan considering the low forest cover in most of the areas and poor cleanliness in rural/urban areas alike.

The Clean Green Pakistan is a comprehensive movement kicked-off by the Ministry of Climate Change which focuses on Liquid Waste Management; total Sanitation and Hygiene, including Hygiene Awareness; Access to Safe Drinking Water; Tree Plantation to include a country-wide afforestation campaign; Solid Waste Management including commitment to clean public spaces, streets and schools.

Through this initiative, Nestlé Pakistan will be partnering with the key components of this movement by launching an awareness campaign on hygiene as part of its Nestlé Healthy Kids Program and Healthy Women initiative. As part of Nestlé Pakistan's Employee Volunteer Program (EVP), a cleanliness drive will be launched which will include cleaning of public spaces across major cities of



Pakistan. This campaign also includes plantation of 50,000 trees across various sites. Under Nestlé Pakistan's "Caring for Water" initiative; access to clean drinking water is provided to 60,000 people.

Speaking at the occasion, Waqar Ahmad, Head of Corporate Affairs, Nestlé Pakistan said, "The Clean Green Pakistan initiative reflects the Prime Minister's pledge towards addressing the climate change challenge.

Our partnership with this movement is aligned with our commitments of safeguarding the environment which includes: global commitment of using 100% recyclable or reusable packaging for all

our products by 2025; preserve natural capital, including forest cover; and reduce food loss and waste. We are also aligned towards attaining the Sustainable Development Goals (SDGs) including Clean Water and Sanitation, and Life on Land."

Whilst, addressing the MOU ceremony, Malik Amin Aslam, Adviser to Prime Minister on Climate Change, added, "Clean Green Pakistan drive will InshaAllah shape the country's sustainable future. We welcome the support from Nestlé for this drive and it reflects on their role as an environmentally responsible business entity in Pakistan." ■

FPCCI to hold investment conference in Balochistan



FPCCI to hold Investment Conference in Balochistan with the support of Balochistan government. This was decided in a meeting Engr. Daroo Khan Achakzai, President FPCCI had with Mr. Mir Jam Kamal Khan, Chief Minister Balochistan at Quetta. The objective of Investment Conference is to explore the opportunities of Investment in various sectors in Balochistan wherein investors

across Pakistan as well as from foreign countries will be invited.

Engr. Daroo Khan Achakzai said that this investment conference would be held in the 1st quarter of 2019 to explore and exploit the resources existing in Balochistan and project its soft image on international level particularly in the backdrop of CPEC. He further informed that Chief Minister has offered incentives

for attracting foreign investment in all sectors of the provincial economy to create jobs for youth and apart from incentives to both local and foreign investment the provincial government will also ensure security and protection of the investment.

Engr. Daroo Khan Achakzai hails from Balochistan assured the Chief Minister that FPCCI would project the positive image of Balochistan in the entire region and the issues and challenges being faced by the business community of Balochistan will be resolved on priority to restore the confidence of the investors. Though in terms of area Balochistan is unparalleled yet the investment and economic activities need to be projected so that the province could keep pace with progress and development. Mir Jam Kamal Khan, Chief Minister during the meeting extended congratulation to Engr. Daroo Khan Achakzai on his election as President FPCCI and all newly elected office bearers of FPCCI and assured his full cooperation support in carrying out economic activities in Pakistan in general and Balochistan in particular. ■

PPL donates solar power modules for 500 houses in Awaran



Pakistan Petroleum Limited (PPL) has donated Rs15.5 million for providing solar power modules (SPMs) to meet the much-needed electricity requirements of 500 households in District Awaran, Balochistan. To this end, a two-day hands-on training programme was organized for village-based focal persons from District Awaran, Balochistan between January 22 and 23 at a focal hotel in Karachi to operate, maintain and repair the SPMs.

General Manager Corporate Services PPL Furqan Uddin Sheikh distributed certificates among participants in the presence of the implementing partner Sindh Radiant Organization (SRO)'s Chief Executive Officer Ghulam Hussain Khwaja and officials from both organizations. PPL's donation covers purchase and distribution of 500 SPMs, including 3 LED lamps, a DC fan and a solar panel each, in 24 villages of tehsil Awaran and Mushkai, District Awaran besides training of focal persons.

The two-day training focused on both classroom-based sessions and a visit of the manufacturing site to provide participants with the required skills. PPL continues to reach underserved communities in far-flung areas of the country through its diverse CSR programme for over six decades. Provision of sustainable energy solution for locals in Awaran, where PPL has an active exploration license, will improve their quality of life. ■

PTCL Celebrates IWD in Multan

PTCL celebrated International Women's Day under the theme 'Better the balance, Better the world' by organizing a special event to recognize and appreciate the achievements and success of their female workforce at the PTCL Regional office in Multan.

at the event was Shagufta Hussain, Pro Vice Chancellor, Women University Multan. Other distinguished guests and speakers included Bushra Akram, Senior Clinical Psychologist, Multan, Zunera Azfar, Superintendent, Punjab Police, Multan Cantt, Namreen Munir, DSP, Punjab Highway Patrolling Police, Multan and Rizwana Tabassum Durani, Senior Producer, PCB, Multan. The speakers shared their professional experiences and learnings, which proved to be motivating and heartening for the female participants.

On the occasion, Muhammad Ajmal Khan, RGM, PTCL, Multan, said, "At PTCL, we strongly believe that our female workers are playing a pivotal role in success of our organization. We value their contribution and continuously strive to provide them with ample opportunities to further excel and stand out."

The speakers shared their professional experiences and also talked about proactively supporting female staff to ensure that they feel empowered, valued and respected at workplace.

PTCL celebrated the International Women's Day across Pakistan in various regional and zonal offices. ■



JS Bank becomes Pakistan's first to be accredited with Green Climate Fund

JS Bank has become Pakistan's first financial institution to have been accredited by the Green Climate Fund (GCF), the world's largest climate fund. The Fund aims to provide facilities to private sector corporations in emerging economies for limiting or reducing greenhouse gas (GHG) emissions through investments in low-emission and climate-resilient programs.

As an accredited entity, JS Bank will be able to apply for funding of up to USD 250 million per project. Currently, the Fund has 102 active projects worldwide and has a pledged total of USD 10.3 Billion. JS Bank can also mobilize additional funds from private sector investors to support action on climate change. In addition to opening new paths of local and international funding, the Bank can partner in contributions to climate adaptation and mitigation financing in Pakistan. This approval was based on JS Bank meeting GCF's stringent criteria including fiduciary standards, environmental and social safeguards and specialized capacities in driving climate action.

As per the Global Climate Risk Index 2018, Pakistan is the seventh most vulnerable country facing long-term climate risk. Hence, there is an urgent need to embark upon multiple initiatives to mitigate the impact of climate change. With presence in 172 cities in Pakistan, JS Bank has a strong commitment to sustainable development and will continue working with customers, clients, businesses and the government to respond to the challenges posed by climate change. The Bank has a demonstrated record of undertaking environmental and social initiatives in the areas of clean energy, energy efficiency, transport and infrastructure. ■

Govt allows revival of renewable energy projects

■ By Khalique Kayani

The government has decided to allow partial revival of renewable energy projects blocked in March last year by the PML-N government subject to a revised tariff mechanism and greater decisive role to National Transmission and Despatch Company (NTDC) to provide interconnection facility.

It also provided an opportunity to the Sindh government to provide interconnection grid facility for renewable projects (RE) projects that it had issued letters of interest (LoI) but were affected by the government's decision of March 2018.

The decision was taken at a meeting of the Cabinet Committee on Energy (CCoE) presided over by Finance Minister Asad Umar. The meeting also reviewed about 20 per cent increase in revenue collection by power distribution companies through increase tariff, fuel price benefit, loss reduction and better recovery.

The CCoE noted that between November 2018 to January 2019 collection of power bills amounted to Rs244 billion compared to Rs204bn, showing an increase of almost Rs39.7bn. The major increase of Rs16bn came from increase in tariff while Rs13.3bn higher revenues were earned due to improved recovery from consumers. About Rs6.1bn saving was achieved in three months through loss reduction and Rs4.5bn through higher fuel price adjustment.

The CCoE approved proposals from the Power Division, providing for all future RE investments to be treated in line with the Renewable Energy Policy 2019 that envisages a framework consistent with the current international market norms and greater consumer benefits. The policy is currently being reviewed by stakeholders and would be formally taken up by the CCoE later but guiding principles were approved on Wednesday.

It was decided that all projects which have been granted letters of support (LoS) by the Alternate Energy Development Board (AEDB) shall be permitted to proceed towards the achievement of their requisite milestones as per the Renewable Energy Policy 2006. However in those cases where more than a year has elapsed since tariff determination by the National Electric Power Regulatory Authority (Nepra), the rates would have to be reviewed by the regulator as per policy.

The committee was informed that the 2006 policy offered liberal risk covers and attractive power purchase tariffs to the private sector with gradual transition to open market competition with utilities free to choose between supply options competing against each other.

It was reported that a number of projects had issued LoI by the provinces. Several of these projects were granted tariffs and generation licences by Nepra and LoS by the AEDB but the then government stopped all these projects beyond a cutoff date without a revised policy for the transition.

It was decided that any resource risk linked with RE projects being considered as pipeline projects under the 2006 policy would be consistent with the Nepra's decisions taken in various tariff determinations dealing with such projects and resource risk for wind, solar and hydro would be henceforth borne by the seller.



Also, all processing of the subject projects would be linked with the date of grid interconnectivity as provided and confirmed by NTDC.

All projects that have been issued LoI, granted determination of tariff by Nepra and issued a generation license would be allowed to proceed ahead towards the achievement of their requisite milestones as per the 2006 policy. However, if the tariff determination has been done since more than one year or if the tariff validity period, has elapsed, Nepra would be requested for review of the same to make it consistent with the current market environment, lower cost and consumer interest.

In case of wind projects that fall in the above categories and are situated in the wind corridor of Jhimpir, Sindh, the NTDC and Sindh government would work on the latter's proposal for the construction of evacuation facilities from the said corridor by the provincial government and would be reflected in a firm agreement between the two.

Based on the NTDCs confirmation of evacuation and as per the timeline decided for completion of the projects, the Central Power Purchasing Agency-Guarantee would consider granting of consent. Also projects that have been issued LoI prior to the expiry of the of RE Policy 2006 on March 08, 2018 but have not received a tariff determination from Nepra would be allowed to proceed ahead subject to becoming successful in the competitive bidding process to be undertaken by the AEDB.

For projects which are regarded successful in the bidding process, LoS shall be issued subsequently allowing the projects to achieve Financial Closing as per the time period allowed in the document. The sponsors willing to proceed with the development of their respective projects under this mechanism shall be required to provide an undertaking to withdraw all lawsuits against federal and provincial government and their entities without prejudice. ■

courtesy: Daily Dawn

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- We can takeover any existing security system and offer maintenance checks to guarantee the best performance for you & your premises
- We understand that being security conscious is ever increasing protecting your property and family is a number one priority
- Our fully insured and accredited team offer quality, safety and cost efficiency throughout and whole process



300 local, int'l exhibitors displayed their products at HVACR Exhibition



Over 300 local and international exhibitors have participated the 26th Pakistan HVACR and Building Services Expo & Conference held in Karachi, after featuring numerous insightful sessions, technologies and strategic discussions representing the potential of HVAC products and the skill set of Pakistan. This highly informative event received tremendous response from industry professionals, engineering students, domestic customers, media and the general public.

The exhibition was held at the Expo Centre in Karachi from the 13th to 15th of February 2019, was orchestrated by the Pakistan Heating, Ventilation, Air-Conditioning & Refrigeration (PHVACR) society. It featured more than 300 local and international exhibitors, and was thronged by more than 12,000 visitors in three days. Senior officials from American Society of Heating, Refrigeration, Air-Conditioning Engineers (ASHRAE), Pakistan Heating, Ventilation, Air-Conditioning & Refrigeration (PHVACR) society, international business ambassadors from Turkey, China, USA, UK, UAE, Thailand, Bahrain, Germany, Canada, Italy, Spain, Japan, Malaysia, Lebanon and various other countries, Government officials and engineering students attended the event.

Speaking at the occasion, Noor Afzal, Chairperson HVACR society said that: "We feel proud to successfully execute the annual grand expo. We are thankful to all our partners, society officials, exhibitors and especially our student volunteers for the successful completion of the event and we are enthusiastic to organize upcoming expos at a larger scale."

Tim Wentz, Presidential Member of ASHRAE said that, "It's a wonderful experience to see the potential and zeal of the HVAC industry of Pakistan. I believe HVACR Expo is an ideal platform for international HVACR stakeholders to network, share knowledge and initiate business with the domestic industry of Pakistan. ASHRAE announces to support the local players of Pakistan and students as much as we can at every scale."

Junaid Esmail Makda, President Karachi Chamber of Commerce & Industry said that, "Events like PHVACR expo add value to the overall economy of this country. We really appreciate the ideation of the PHVACR expo and are hopeful to see more of such events. We further request the society to organize this expo in all the provinces of Pakistan" Students from different engineering universities presented their ideas/projects to the jury of judges. Judges distributed prizes among students based on the grading by jury. Next edition of the HVACR expo is set to be organized in Lahore in the coming year. ■

Total-Eren secure 50 MW wind power project in Ukraine

NBT AS ("NBT"), a utility-scale wind power developer based in Oslo, and Total Eren SA ("Total Eren"), a leading renewable energy Independent Power Producer ("IPP") based in Paris, have signed definitive financing agreements for the first phase of a 250 MW wind project located in the Kherson region of Ukraine. The \$155M financing agreement was signed at a special meeting of Ukraine's National Investment Council in Davos. The project's start of construction is imminent.

The onshore wind project, called Syvash wind farm ("Syvash") has been developed by Norway-based NBT together with France-based Total Eren. At its full capacity, Syvash represents a \$380 million total investment. Syvash will consist of 64 wind turbines and will be located on 1,300 hectares of land in the southern Kherson region of Ukraine. Once completed, it is expected to become the country's largest renewable energy project.



Syvash is the first internationally financed large-scale wind farm in Ukraine. An A/B loan of up to \$155 million has been raised for the construction of the initial 133 MW phase. It will consist of a \$75 million EBRD loan, while B-Loans of up to \$75 million will be provided jointly by the Green for Growth Fund (GGF) and the Netherlands Development Finance Company (FMO). A parallel loan of \$5 million will be provided by the Nordic Environment Finance Corporation (NEFCO).

The Syvash wind farm will be built to very high international standards, conforming to EBRD Performance Standards and Equator Principles. The electricity generated from Syvash will be sold to state-owned company "Energoynok" - Ukraine's wholesale electricity market operator. Once the full project is constructed, it will have a planned production of 850 GWh per year, and will generate enough electricity to meet the needs of approximately 100,000 households in the municipality of Rivne, in Ukraine. It is expected to reduce CO2 emissions by 470,000 tonnes per year, hence creating a positive impact on the environment. ■



Mitsubishi's subsidiary plans to set up LNG terminal

Tabeer Energy Limited, a wholly-owned subsidiary of Mitsubishi Corporation, has planned to set up a Liquefied Natural Gas (LNG) terminal at Port Qasim with an estimated cost of \$400 million.

This was stated by Kosuke Makino, Chief Executive of Tabeer Energy Limited, who along with Atsushi Fujii - Chief Executive Mitsubishi Corporation for Pakistan - and Kimihide Ando, SPK - Senior Vice President Mitsubishi Corporation.

"It would be the first of its kind, a market based commercial project without any sovereign guarantee or subsidy from the government of Pakistan. We will import LNG cargoes in Pakistan to sell these directly in open market to our customers," Makino said. Tabeer Energy is a 100 percent affiliate of Mitsubishi Corporation and has been a global LNG integrated player since the early 1960s. Mitsubishi has over 60-year busi-



ness experience in Pakistan. Makino said the company would start its operations by the end of the year 2020. "Subject to regulatory, commercial and technical evaluations, the natural gas will be supplied to Pakistan somewhere by the end of year 2020 or mid-2021," Makino continued. He said the company would take

its financial investment decision in second half of 2019 to start the work on the project.

Port Qasim Authority (PQA) for a Letter of Interest (LoI)," he said and added that he hoped to have approval from the Authority at the earliest.

Tabeer LNG Project would be established at Port Qasim, Karachi, according to Makino, the site is discretionally selected as a result of a detailed study on social and environmental impacts of the project.

He said the project would be able to ensure the security of supply of LNG to each customer in Pakistan on competitive prices. We will supply RLNG to the power, CNG and industrial sectors," he added.

Tabeer Energy will be endowed with a capacity to supply 750mmcfcd of gas that would be imported with LNGC arrival frequency of 70-90 cargoes per annum. ■

Engro earning grows by 45 percent

Pakistan's premier conglomerate, Engro Corporation (PSX: ENGRO) announced its financial results for full year ended December 31st, 2018. The Company posted a consolidated profit-after-tax (PAT) of Rs23,632 million - up by 45%, while PAT attributable to the shareholders increased to Rs12,708 million from Rs9,407 million during comparative period last year.

Engro Corporation completed 2018 with revenue of Rs171,568 million - 33% higher than Rs128,593 million last year. Increase was primarily driven by improved fertilizers and petrochemicals performance. On a standalone basis, the Company posted a PAT of Rs12,720 million against Rs11,390 million for the last year, translating into an EPS of Rs24.28 per share. The Company announced a final cash dividend of Rs2.00 per share for Q4 2018, bringing the cumulative dividend to Rs21.00 per share for FY 2018. In addition to this, the Company also announced the issuance of 10% bonus shares.

Fertilizer business revenues grew by 42% whilst PAT for the current period increased by 56% versus comparative period and stood at PKR 17,414 million. The business witnessed an increase in revenue and profitability over the last year primarily due to both higher fertilizer offtake and prices, coupled with one-off deferred tax reversal (non-cash) due to reduction in the corporate tax rate from

30% to 25% in the coming years. The domestic fertilizer industry continues to face challenges in recovery of subsidy receivables.

For the Polymer business, 2018 proved to be a year of economic consolidation. The business completed debottlenecking of PVC and VCM with strong operational performance, realized higher local sales and completed ground work for expansion projects while developing a strong balance sheet. The business achieved record PVC production, witnessed a 27% increase in revenue and posted a PAT of Rs4,930 million. However, the business faces gas supply risk which will need to be proactively managed.

Within Engro's Energy portfolio, Qadirpur Power Plant continued to demonstrate a billable availability factor close to 100%. Due to depletion of permeate gas from the gas field, net electrical output to the National Grid was lower as compared to last year. Circular debt has been a persistent problem whereby receivables from power purchaser remained high. This poses a continuous challenge for the business and the power sector in general and needs urgent attention from the relevant authorities.

The development of Thar Coal project continues at full pace and remained on schedule. During June 2018, coal from the first seam of the open-pit mine was extracted from a depth of 140 meters

below the surface. On Thar Power Plant front, the project development continues at a steady pace. During the year, the power plant was successfully connected with the National Grid for the purpose of receiving back-feed required for plant start-up. In partnership with the Government, both projects are expected to remain on track for completion by mid-2019 to help resolve the energy demand in the country.

The LNG Terminal handled 74 cargoes as compared to 70 cargoes during last year. However, Chemicals Terminal witnessed a volumetric decrease over last year primarily due to lower imported LPG volumes. The growth of 45% in the consolidated profit after tax of Engro Corporation has been achieved despite the recognition of a one-time taxation related provision in the Chemicals Terminal business.

As part of its portfolio management strategy, the Company subscribed to the right shares issued by Engro Polymer & Chemicals Ltd. during July 2018, amounting to PKR 3 billion. Further, the Company divested 30% of its shareholding in Elengy Terminal Pakistan to Royal Vopak during December 2018 - shareholding of the Company in Elengy Terminal now stands at 56%. Keeping Human Capital as a top priority, Engro Corporation has current and future leaders, improving organization and talent management. This multi-year transformation program will offer a blended learning experience and the Academy is poised to become an integral part of the people transformation journey at Engro. The company continues to concentrate on creating long-term sustainable shareholder value by optimizing capital allocation to desired sectors in line with its capital allocation strategy. ■

KAPCO earning registers growth of 166% in 2019

Kot Addu Power Company (KAPCO) announced its 2QFY19 financial result where the company posted a profit after tax (PAT) of Rs5,881mn (EPS: PKR 6.68), up by 166% YoY compared to Rs2,214 mn (EPS: Rs2.52) during same period last year. The jump in earnings is mainly due to other income on account of tariff true-up during the period. This takes 1HFY19 earnings to PKR 8,996mn (EPS: PKR 10.22) compared to Rs4,395 mn (EPS: Rs4.99).

Net sales witnessed an increase of 11% YoY to Rs44,221mn, which is majorly owing to 39% YoY rise in furnace oil prices, however dispatches declined by 25% YoY to 2,616 GWh in 1HFY19. In 2QFY19, sales witnessed a decline of 32% YoY | 60% QoQ due to 65% YoY | 73% QoQ decline in dispatches (551 GWh). Gross margins remained stable at 16% in 1HFY19, however up by 1,063bps YoY to 28% in 2QFY19. The rise in gross margins was witnessed due to rupee depreciation, we view.

Other income jumped by 248% YoY in 1HFY19 (361% YoY | 133% QoQ in 2QFY19) due to tariff true-up during the period mainly due to currency depreciation of more than 5% during the period under consideration. Finance cost has increased by 43% YoY (55% YoY in 2QFY19) to Rs4,400 million due to 16% YoY rise in PSO's payables in 1HFY19 coupled with higher short term borrowings. Surprisingly, the company skipped its dividend as overdue receivables of the company went up by 37% YoY to Rs109 billion (as of Sep'18) ■

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Giant wind turbines start to pay off and investors want more

By Anna Hirtenstein

The expanding network of giant windmills in the North Sea - the largest such collection in the world - is turning into a windfall for some bankers helping institutional investors acquire a piece of Europe's renewable-energy market.

A record \$9.36 billion of stakes in offshore wind farms were sold last year, up 77 per cent from 2016, and refinancing of project debt doubled to \$6.27bn, data compiled by Bloomberg New Energy Finance show.

The 23 acquisition deals, almost all in Europe, were the most ever for the industry, and the average transaction price rose 69pc to \$407 million, an all-time high.

Investors are stepping up investment in offshore wind farms that are producing eight times more power than in 2008.

After years of public subsidies, turbines as tall as the Eiffel Tower with blades longer than soccer fields are grabbing a bigger share of Europe's electricity supply, replacing some coal-fired plants on land.

With demand rising for renewable energy, developers are selling stakes in older projects to raise cash for new ones.

"Offshore wind makes up a significant and growing percent of the work we're doing in infrastructure," said Lisa McDermott, an executive director of project finance at ABN AMRO Bank in Amsterdam. "It's getting very competitive for banks to get involved."

Among the financial institutions active in offshore wind deals are Green Giraffe, KPMG, Societe Generale, Mitsubishi UFJ Financial Group and Natixis.

"There's lots of people announcing sales," said Carol Gould, head of power and renewables on the structured finance desk for MUFG in London. "It's very hectic."

Gould said, adding that there are "quite a few" deals slated for the first half of this year.

Governments in Europe have been investing in clean energy to make good on commitments made in the 2015 Paris climate accord to reduce carbon emissions. BNEF estimates countries in the EU provided 61bn euros (\$75bn) of subsidies in 2016 for renewable energy, mostly for solar and wind farms.

The startup costs for renewables used to be higher than conventional fuels, but improvements in technology make some new wind and solar developments cheaper than building a coal plant.

The UK and Germany are by far the biggest investors in projects that try to harness the ocean breezes in the North Sea, accounting for more than three quarters of the region's offshore generating capacity.

While offshore wind farms account for just 2pc of Europe's electricity, more are being built. According to BNEF estimates, each new project announced last year in Europe will cost more than \$500m. One will top \$4.8bn.

Many of the investors buying into offshore wind are attracted to stable cash flows from long-term contracts to sell power at above-market rates, a legacy of early government aid for the industry.

The UK paid out almost 138m pounds last year to projects with contracts for difference, just one of several subsidy programmes.

"You can see the enthusiasm worldwide and the imperative for decarbonisation and renewables," said Richard Crawford,



The GE-Alstom Block Island Wind Farm stands in this aerial photograph taken above the water off Block Island, Rhode Island.-Bloomberg

a director at Renewable Energy Investment Group, which acquired a 15pc stake in the Sheringham Shoal offshore wind farm for \$91m (80m pounds) in December.

"There is the opportunity, of course, for more significant amounts of money to be invested in offshore, and that's exciting some investors."

In January, Partners Group agreed to buy 45 percent of the Borssele III and IV projects in the Netherlands from Royal Dutch Shell, Eneco and a unit of Mitsubishi Corp. The deal may have been valued at about \$2bn.

Orsted recently sold 50pc of its Walney Extension wind farm in the UK to two Danish pension funds for 2bn pounds.

Sumitomo Corp is said to be close to buying a stake in wind projects under development in waters off western France from a consortium led by Engie.

A few miles down the coast, Renewable Energy Systems is looking for a buyer for its piece of a wind farm the company is working on with Spain's Iberdrola in the Saint Brieuc Bay.

In the UK, the biggest source in Europe for offshore wind power, Germany's Innogy SE is planning to sell a minority stake in its Triton Knoll project, which is under development. Enbridge Inc is selling half of its interest in the Hohe See wind farm off the coast of northern Germany, with Canadian funds and Macquarie Group said to be preparing bids.

"We still have interest in adding more offshore investments to our portfolio," said Henrik Nohr Poulsen, executive director at Copenhagen-based PFA Pension A/S, one of the Orsted buyers.

Last month, Japanese trading house Marubeni Corp sold its share of the Westernmost Rough project in the UK to Macquarie's Green Investment Group.

Marubeni also is said to be in the early stages of divesting its interest in the Gunfleet Sands wind farm. ■

courtesy: Daily Dawn

Nature-Based Solution in dams construction, phasing out grey structure

Grey infrastructure may no longer provide their envisioned benefits because hydrological parameters and patterns are changing.

Vladimir Smakhtin: almost every day we hear news about catastrophic flooding or drought somewhere in the world. And many nations and regions are on track for even more extreme water problems within a generation, the latest IPCC report warns.

Extreme floods and droughts have a profound impact on development, particularly in less developed parts of the world. About 140 million people are affected - displaced by the loss of incomes or homes - and close to 10,000 people worldwide die annually from these twin calamities. Global annual economic losses from floods and droughts exceeds \$40 billion; add in damages from storms like America's recent Hurricanes Florence and Michael, and cost numbers balloon.

Flood and drought economic losses - comparable in dollar terms to all global development aid - strongly affect the water, food and energy security of nations. To help cope with these problems, massive investments continue to be made in large reservoirs.

However, in certain regions it has started to make little engineering sense to build additional "grey (concrete and steel) infrastructure" due to a lack of suitable sites and / or rapid evaporation. In others, aging grey infrastructure may no longer provide their originally envisioned benefits because hydrological parameters and patterns are changing.

The appropriate response is to recognize the benefits of "green (natural ecosystems) infrastructure" and to design grey and green infrastructure in tandem to maximize benefits for people, nature and the economy.

Such "Nature-Based Solutions" were the theme of this year's UN World Water Development Report. Nature-Based Solutions include, for example:

- o soil moisture retention systems, and groundwater recharge to enhance water availability
- o natural and constructed wetlands and riparian buffer strips to improve water quality, and o floodplain restora-



tion to reduce risks associated with water-related disasters and climate change

The role of green water storage infrastructure is particularly important. The enormous potential of such approaches are only now being fully understood but it's clear that green infrastructure can directly improve the performance of grey infrastructure for disaster risk reduction.

Indeed, large-scale managed aquifer recharge efforts can, in certain conditions, alleviate both flood and drought risks in the same river basin.

Recent studies suggest that, in a river basin greater than 150,000 km² in area, with only 200 km² of land converted for accelerated groundwater recharge in wetter years, agricultural income could be boosted by about US\$ 200 million per year. Not only is additional water made available to farmers in drier periods, downstream flooding costs can be eliminated. And the capital investment required could be recouped in a decade or less.

Such sustainable, cost-effective and scalable solutions may be especially relevant in developing countries, where water-related disaster vulnerability has risen to unprecedented levels and the impacts of climate change will be most acutely felt.

Nature-Based Solutions are not feasible everywhere and, where they would help, they alone are not the silver bullet solution for water risks and variability - they cannot be counted on to replace or achieve the full risk reduction effect of grey infrastructure. Nevertheless, Nature-Based Solutions need to be considered

in all water management planning and practiced where possible. Especially at river basin and regional scales, management planning should consider a range of surface and subsurface storage options, not just large concrete dams.

The challenges include: an overwhelming dominance of traditional grey infrastructure thinking and practices (and associated inertia against Nature-Based Solutions)

- o the need for more quantitative data on the effects of Nature-Based Solutions
- o a lack of understanding of how to integrate natural and built infrastructure for managing water extremes
- o overall lack of capacity to implement Nature-Based Solutions; and
- o a predominantly reactive rather than proactive approach to water-related disaster management. Nature-Based Solutions have much greater potential if included in risk reduction planning and adopted before disaster strikes. ■

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This can make a great balance sheet of your life :)

Electricity for All: Rural electrification - II

For cooking and heating needs, biogas and biomass solutions are there which can be installed for household clusters. This is being done already, commercially and as well as by NGOs such as NRSP. However, its pace should be enhanced by launching appropriate financial packages by the provincial governments.

It should be possible to achieve 100 percent of rural electrification of 30,000 villages in a decade. Assuming an average of 20KW per village, 600MW of electrical capacity would be required which may cost Rs 2.5 billion or 250 million dollars per year. This is not a big sum and all of

it not necessary to come from government coffer. A substantial part of it should come from Discos. For example, India has recently launched a similar programme to provide electricity to 30,000 households by March 2019 under a budget of 2.5 billion dollars. It is a rather ambitious programme in terms of time schedule. Perhaps, more interesting is Bangladesh's SHS programme under which 4.1 million households have been provided solar electricity, which is 12% of the population. Bangladesh is installing 70,000 SHS systems every month which it wants to increase to 300,000 per month to achieve Access for All target by 2020.

Thus, the challenge is neither technical nor technological or even financial. The challenge is purely willingness and planning and designing of a feasible project and setting the targets to achieve. A target of 500 villages per Disco (small Discos to have less and large may have more depending on the size and area needs) of rural electrical installations may not be a very tall order. A score of model projects could be initially designed and implemented which could be assisted by international organisations such as the USAID, the UN, ADB, the WB and other similar institutions. Federal PSDP and Planning Commission also can have a role in its initial launching and funding as electricity being the federal subject. Provincial governments, which already have some limited programmes, may have to increase their

appropriations in this respect. State Bank of Pakistan has a concessional finance credit line which could also be utilised and expanded with some modification. If stakeholders see results and a viable plan, resources come in.

Perhaps a programme management unit may have to be formed to look after

EU Report



the strategic issues of implementation. Discos which may have the basic responsibility may package EPC projects of 10MW each. In addition, a number of models may also be developed to cover the variety of situations that may exist. This will help in packaging as proposed in the aforementioned. Without taking similar measures, such long range and widespread programmes become victim of lethargy and decay.

For the purpose of efficiency, it is proposed that Discos to be the executing agencies responsible. For installation of facilities, Discos may be useful or efficient but for retailing and bill collection purposes, Discos may not be able to do a good job. There will be many types of electricity retailing dealing even in small change. Micro and small enterprises may have to be involved for which business models may have to be developed.

There is a darker side to the benign solar programmes. It has been observed that a large number of such programmes launched in Asia and Africa have suffered from pilferage and lack of sustainability. The first lesson is that the solutions should be low technology requiring least maintenance. However, low technology option is only feasible in the case of rooftop. Although, rooftop solar meets this requirement, batteries are often an issue. Secondly, pilferage is more where there is something free. Free or subsidies should be on common purpose community-based facil-

ities. Individual home installations should be given to financially eligible households with reasonable financial participation. Subsidies should be given to the organisations with a requirement to pass on these subsidies in the form of lower tariff and service charges to consumers. Under one or more of the aforementioned strategies, it would be possible to fast track the rural electrification rather energisation.

Subsidies would be required which may be channelled in many forms; concessional credit, cross subsidy of regulator equivalent and other loss subsidies. Subsidies may also be provided to union councils for community-based electrical systems or facilities. However, subsidy relying systems are generally not sustainable or are restricted. Subsidies should be limited to the diseconomies of remote areas and of poor regions. Fortunately, solar does not require subsidies itself. It is the cheapest and easiest resource as of today. A public oversight, regulatory and grievance redressal system would be required along with a bill collection mechanism. Union councils may have to be involved. Provincial governments and their energy departments may have to devise a policy framework.

A related issue is of induction of solar energy into the general electric grid of Pakistan. Although, some progress is made in this respect, more is required. Most of the studies and electricity plans that were made are of a time when solar was not competitive. Consequently, solar does not appear in these studies as a major and mainstream resource. Today, solar is the cheapest resource. It is high time that such programmes and plans are revised and a solar package of 10,000MW is included for the coming 10 years. Rural electrification may be included in it.

All of this requires a lot of policy and planning advance work, if a large, target-driven programme has to be implemented to provide electricity for all in a decade's time. However, this may not be discouraging. It can be done. However, inadequate and premature policy may restrict development rather than promotion. Elections are close-by and this subject should find adequate inclusion in the manifestoes of political parties.

Surely, this would attract a majority of voters. Apart from votes, it is a major social responsibility of political parties and governments. It would have major impact on literacy, health and economic development. ■



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