

A visit to site of Thar coal & energy project

Gwadar's Importance

The 'demise' of
regulatory bodies

Inauguration of Chashma-III
nuclear power plant

Exclusive Interviews



Amjad Ali
Awan
CEO, AEDB



Abu Ahmad Akif
Fed. Secretary
Climate Change



Lt. Gen. Jamil
Haider
CEO, FPCDL



Akbar Ayub
Khan
CEO, PEDO

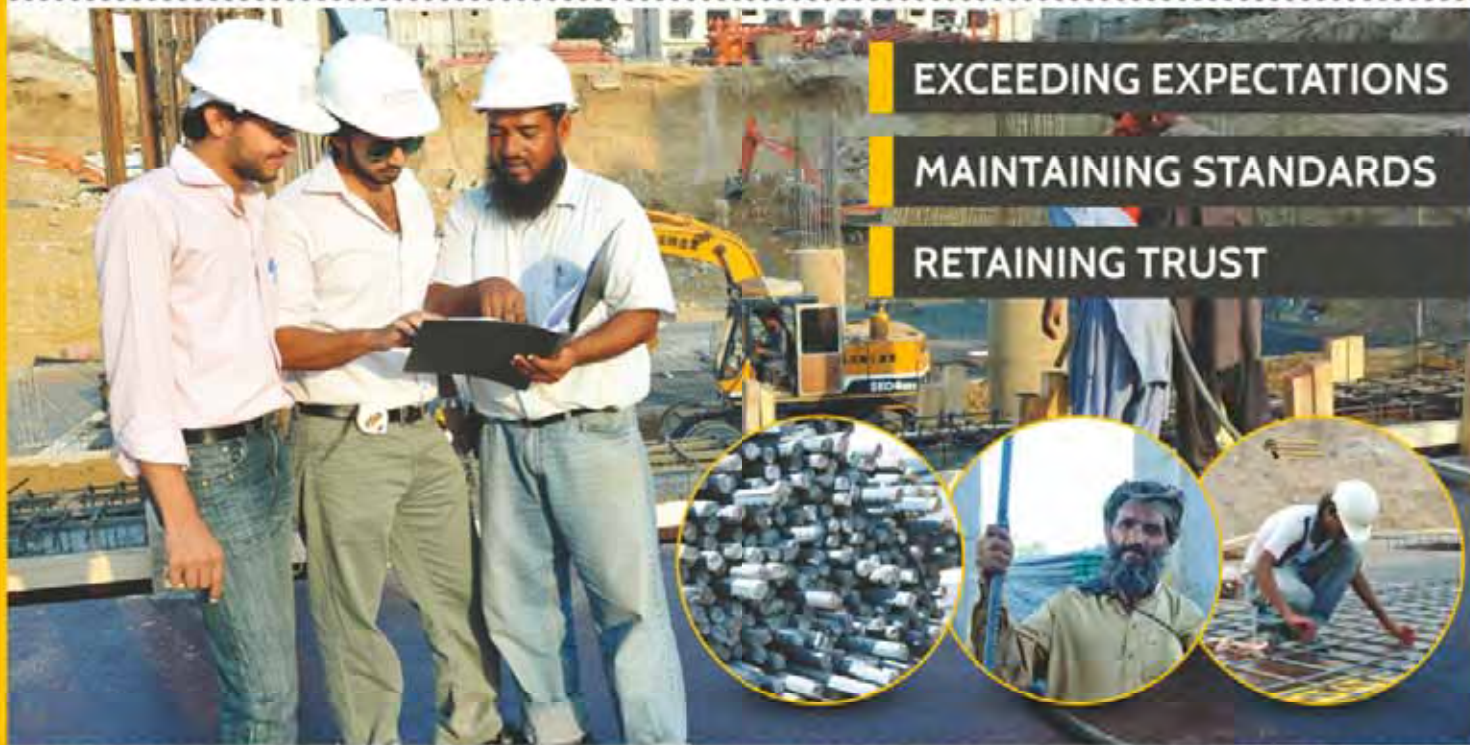


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New year new hopes

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- Asset evaluation (noise, leakage, corrosion, other damages)
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- Low and high voltage inspections

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- Sapphire 49.5 MW Wind Farm Project
- Yunus Energy Limited 50 MW Wind Farm Project
- Zortu Enerji Wind Project
- Power Generation through Wind Energy at Metro Power Company Limited
- Power Generation through Wind Energy at Gul Ahmed Wind Power Limited
- Foundation Wind Energy-I & II Limited 50 MW Wind Farm Project

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CONTENTS



Exclusive Interviews



Amjad Ali Awan
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Akbar Ayub Khan
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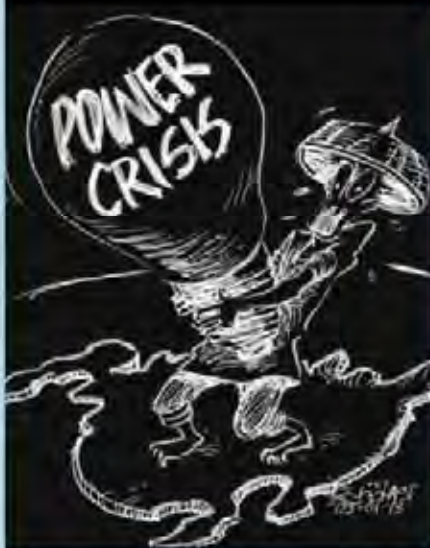
Khalid Aslam
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2017
ECO-FRIENDLY

New year new hopes

**Pakistan's power sector:
going up, down or
nowhere?**

5



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From the editor's desk...

Hope for further relief in power woes during 2017

The year 2017 has dawned with a renewed hopes for easing out energy crisis in the country, especially with optimism that there would be less duration for load-shedding both in rural and urban areas during the coming summer. Many under-construction power generation projects are expected to start their production during the year and construction on more would start during the year.

Pakistan has been facing acute shortage of energy including electricity and natural gas, resulting in power load-shedding and gas load management in many areas of the country for several years now. This has not only affected the routine life of the people, but badly impacted the industrial growth and exports. Various energy related projects have been initiated especially during the last two years in private sector with foreign investment.

Many power projects in hydro, natural gas, coal, nuclear and alternative energy are currently under construction and out of them some have already started production and it is expected that by 2018 Pakistan will be completely free from power load shedding, even electricity production would be in surplus. Besides power producing units, the government is also focusing on improving transmission and grid system, which would result in less power losses and uninterrupted power supply.

Under the strategic China-Pakistan Economic Corridor (CPEC) besides a number of infrastructure development projects, many private Chinese companies have started investing in power projects. In addition to the traditional thermal power generation projects, Chinese investment is also coming in coal, nuclear and renewable energy projects. Chashma power plants-II and -III have already started adding power in the national grid, and Chashma-IV will be ready by April 2017 thus increasing the contribution of nuclear power in the energy mix. China is also making huge investment in two other nuclear power plants in Karachi (K-2 and K-3), which are expected to generate 2200 mega watt electricity when be ready in the future. A large Chinese investment is coming in renewable energy projects including wind and solar power projects.

Pakistan is impressively progressing in coal development and generating power through indigenous coal, vastly deposited in Thar desert. Sindh Engro Coal Mining Company (SECMC) and Engro Powergen Thar Ltd (EPTL) with Chinese investment are undertaking a mining and 330X2 (660 MW) power generation project in Tharparkar district.

Pakistan has a huge power generation potential in renewable energy as God has blessed us almost full-year sunshine in many parts and a vast area of wind corridors in Sindh and Balochistan coast. According to a survey conducted by Pakistan Meteorological Department only Sindh has a potential to generate over 11,000 MW from wind turbines. Pakistan is included in the list of the highest solar insolation in the world. Only Quaid-e-Azam Solar Power Park in Punjab is expected to produce 1000 MW power during 2017. Unfortunately, still solar and wind have very low contribution in overall energy production in Pakistan, which needs to be increased by encouraging local as well as foreign investments in clean energy projects. It is a matter of the fact that alternative energy producing units are very costly, only foreign investment can solve it. Luckily, Chinese investment is available for Pakistan under CPEC.

With an optimistic energy outlook for the year 2017, we hope that the country's march towards progress would be accelerated in order to achieve a 5.7 percent growth in Gross Domestic Product (GDP) by 2018. Reduction in load-shedding would help increase industrial and trading activities thus would put a positive impact on country's exports. Hydro and nuclear energies are considered cost-effective. For consumers, the main concern is higher electricity bill, which would also be eased when overall cost of production of the energy mix would come down.

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Pakistan's 4th nuclear power plant connected to national grid

Prime Minister Nawaz Sharif inaugurated power production from 340 megawatt Chashma-III nuclear power plant 'C-III' near Mianwali, Radio Pakistan reported.

Speaking at the inauguration ceremony, the prime minister slammed the opposition, calling on them to refrain from 'sabotaging' Pakistan's national interests.

"We shouldn't waste our time launching unnecessary protests," he said. "Ending loadshedding is one of our top priorities," he said, reiterating his government's commitment to end loadshedding by 2018.

The power project is a joint collaboration between the Pakistan Atomic Energy Commission (PAEC) and China National Nuclear Corporation. It was executed by the PAEC under the guidelines of the International Atomic Energy Agency.

PM Nawaz said the Chashma-III nuclear power plant will add 600MW to the national grid, adding that it will also help PAEC in achieving the overall target of 8,000MW. He also directed the PAEC to accelerate the production of nuclear power plants.

The premier congratulated the participants and the Atomic Energy Commission (PAEC) on timely completion of the project and thanked the China Atomic Energy Authority and the Export-Import Bank of China for extending technical and financial support to the endeavour.

The Chashma-III nuclear power plant was preceded by the Chashma-I and Chashma-II power projects.

Another unit of the same capacity, Chashma-IV, is expected to be completed in the coming year. The premier expressed hope that the Chashma-IV would be completed before its deadline.

Additionally, the Karachi nuclear power projects K-II and K-III are expected to add a total of 8,800MW electricity to the national grid by 2030 as a mid-term target for the PAEC.

The prime minister said that timely completion of the K-II and



K-III nuclear power plants will strengthen bilateral relations with China. He invited Chinese investors to invest in various sectors in projects that are mutually beneficial.

Prior to the inauguration, Plant Manager Riaz Khalig Ansari told the prime minister that Chashma-I and Chashma-II projects were operational and produced 325MW and 340MW, respectively. The Chashma-IV nuclear power project would be complete by April 2017 and two more reactors would follow at an unspecified date in central Pakistan. Along with the 2,200MW Karachi nuclear power units, K-2 and K-3, the country's total nuclear power output is expected to be 8,800MW by 2030.

According to the Pakistan Electric Power Company's statistics for 2015-16, hydel power accounts for 33.9 per cent of the total power produced in the country and is followed by residual furnace oil at 29.9pc. Gas accounts for 28.8pc, nuclear sources 3.8pc, high speed diesel 1.4pc, wind 0.8pc, Bagas and RLNG contribute 0.5pc each, solar and small power producers add 0.2pc each, and coal 0.1pc. ■



New year new hopes



Prime Minister Muhammad Nawaz Sharif while inaugurating 340 MW Chashma-3 nuclear power plant in Mianwali district on December 28, 2015 reiterated his government's commitment to end electricity load-shedding in the country by the end of his government's tenure in 2018. Total production of the Chashma-2 and 3 nuclear power plants is 600 MW.

In addition to these two projects, the government expects that 2200 MW more electricity would be added to national grid when two major nuclear power plants, being constructed at Hawks Bay area in Karachi (K-II and K-III), would be functional by 2022-23. All nuclear power plants are being constructed with financial and tech-

nological assistance from China. Pakistan plans to generate total 8800 MW from nuclear sources by 2030.

Besides nuclear power, Pakistan is pursuing to generate power through all other sources including hydro, coal, thermal, solar and wind sources. Coal is considered a major potential indigenous source for power generation after hydel as Pakistan has a huge coal reserve in Tharparkar area. But to tap this resource and for installation of power generation houses at the coal mining site, a huge investment is required. There are many environmental challenges while using coal for power generations.

According to estimates Pakistan has acquired reserves of 175 billion tons of coal only in Thar desert area, which are quite enough to generate 100,000 MW for over 100 years.

Besides the traditional thermal and hydro power options, alternative energy sources are also being given importance to generate power and there is a lot of progress to produce power through wind, solar and biomass resources. There is a silver lining that Chinese companies have also shown interest in investment in alternative energy and many projects of wind and solar power generation currently progress in different parts of Pakistan.

The government expects to add over 1,000 MW power only through wind power projects before the 2018 elections. Wind energy is considered as the cheap-

est and clean energy with longer life and least running costs on the turbines. Work is in progress to install wind powered turbines in coastal areas of Sindh especially in Thatta district. At least ten wind power projects with a cumulative capacity of 537.2 MW have already started generating power and according to industry sources, these units have been connected to the national grid. More power through wind would be added to national grid during 2017.

Similarly, at the solar energy front, Pakistan is undertaking an ambitious plan to build the world's largest solar farm in Punjab called Quaid-e-Azam Solar Power Plant. Once completed in 2017, the project is expected to produce 1,000MW of electricity. On the same site a pilot project of producing 100 MW has already started functioning. This project is part of the CPEC and Chinese companies are completing it.

The much-delayed but controversial hydro power generation unit Nandipur Power Project with a capacity of 425 MW near Gujranwala in Punjab will be ready to be fully operation in 2017. This project with a potential to generate 1,000 MW is also being constructed by a Chinese company.

The PML-N had won the 2013 elections on the slogan to end power load shedding from the country. At that time, country was facing the worst-ever power outages and PML leaders particularly Chief Minister of Punjab Mian Shahbaz Sharif had launched a special campaign against the federal government to protest against longer duration load shedding. This campaign is con-





sidered as the stepping stone for the winning 2013 elections.

The top priority of the PML-N government led by Prime Minister Nawaz Sharif, after coming into powers was to solve load shedding problem by increasing power generation and enhancing the transmission capacity in the country. A number of power plants are planned to be constructed mostly in private sector and for them financial assistance has been arranged through donors like China under the much trumpeted China-Pakistan Economic Corridor (CPEC). The CPEC is not just a road project linking China with Pakistan's Gwadar port, but it includes various development projects including power plants. Through the power projects initiated by the present government, it is expected that additional 10,400 MW would be included to the national grid by the year 2018. The projects include coal, hydro and wind power generation units in Punjab and Sindh province.

Some power major plants under CPEC are Hubco Coal Power Plant, Port Qasim Power Plant, Engro Thar Power Plant & Surface Mine in Block II of Thar Coal Field, Dawood Wind Farm, Jhimpir Wind Farm, Sachal Wind Farm, China-Sunec Wind Farm, Thar Coal Block I & Mine Mouth Power Plant, Sahiwal Coal-Fired Power Plant, Rahimyar Khan Coal Power Plant, Karot Hydro-Power Plant and Quaid-e-Azam Solar Park in Bahawalpur.

Important transmission line projects are also part of CPEC, which included Matiari-Lahore Transmission Line and Matiari-Faisalabad Transmission Line.

Government expects that the new power projects will also significantly change the energy mix, replacing expensive im-

ported oil and resulting in reduction of the average cost of generation.

The new year 2017 will be an important for the present government to gear up its efforts for power generation as it has to complete all the major energy units much before 2018 to be prepared for the elections.

It is a matter of the fact that Pakistan has been facing acute energy crisis due to its growing demand and depleting generation capacity. The government expects to bring the generation of electricity to 33,000 megawatt (MW) by the year 2018 against the estimated demand of 26,000 MW at that time.

According to government sources, the overall power generation capacity will increase to 21,599 MW by April 2017, which would further grow to 25,080 MW in June 2017. By the end of 2017, the capacity will exceed to 27,600 MW and in June 2018 it will be 30,938 MW whereas demand will be 25,961 MW and availability at 26,590 MW.

Till last year total installed capacity of power generation in Pakistan is estimated at 22,800 MW, but all the power plants are producing just 12,000 MW with a peak time demand of 19,000 MW, thus there is a short fall of around 7,000 MW, which is filled by resorting to load-shedding across the country, 6 hours in urban areas and 8 hours in rural areas. The Prime Minister Nawaz Sharif on November 8, 2016 announced to bring the load shedding period to half, that means three hours in urban areas and four hours in rural areas. In winters, usually the power demand from domestic consumers declines.

It is hoped that the next year would be a promising year for power sector. ■



Have u made new year's Resolutions? if not, then read this how to make NEW YEAR RESOLUTION. Make New Year's goals. Dig within, and discover what you would like to have happen in your life this year. This helps you do your part. It is an affirmation that you're interested in fully living life in the year to come.

Goals give us direction. They put a powerful force into play on a universal, conscious, and subconscious level. Goals give our life direction.

What would you like to have happen in your life this year? What would you like to do, to accomplish? What good would you like to attract into your life? What particular areas of growth would you like to have happen to you? What blocks, or character defects, would you like to have removed?

What would you like to attain? Little things and big things? Where would you like to go? What would you like to have happen in friendship and love? What would you like to have happen in your family life?

What problems would you like to see solved? What decisions would you like to make? What would you like to happen in your career?

Write it down. Take a piece of paper, a few hours of your time, and write it all down - as an affirmation of you, your life, and your ability to choose. Then let it go.

The new year stands before us, like a chapter in a book, waiting to be written. We can help write that story by setting goals. ■

Pakistan has become member of exclusive club nations

producing over 1,000 MWs of clean energy:

Amjad Ali Awan, CEO AEDB



Pakistan has become member of the exclusive club having countries, which have been producing over 1,000 Megawatts of electricity on basis of renewable energy sources as our country has been exploiting well potential of its wind, power, and bio-mass resources of clean power, said Chief Executive Officer of Alternative Energy Development Board (AEDB) Amjad Ali Awan. The CEO of AEDB stated this as Energy Updated interviewed him in detail regarding achievements and future plans of the alternative energy board. Mr. Awan had especially come to Karachi to take part in first International Wind Energy Summit organized by Energy Update in collaboration with AEDB and similar many other concerned entities in public and private sector. Here are important excerpts of his interview:

Energy Update: Tell us about recent milestones achieved by Pakistan in the arena of alternative energy?

Mr. Amjad Ali Awan: Pakistan has achieved 1135 MWs installed capacity of electricity generation on basis of renewable sources of energy. This capacity would be increased to 1185 MWs by next month when first project of renewable energy under China Pakistan Economic Corridor using wind power would be installed at Ghoro. Out of these 1135 MWs the country has been producing on basis of renewable sources, the country has been producing 590 MWs on basis of wind power, 400 MWs on basis of solar energy, 145 MWs power produced through bagasse available with sugar mills in Northern Sindh and Southern Punjab.

EU: Tell us about future planning of AEDB?

Mr. Awan: The AEDB has been planning that electricity produced through solar power would be increased to 1756 MWs by the end of year 2018 while wind power projects in the country would be producing well over 1,000 MWs after two years. Letters of Intent (LoIs) have been issued to four more projects to increase bagasse-based electricity to 375 MWs while by year 2019, different sugar mills in the country would be contributing up to 500 MWs electricity to the national grid.

I am optimistic that by the beginning of year 2019, the country would be producing 3,000 MWs electricity through renewable energy as its onward supply to the end consumers would be made on basis of subsidized tariff causing not much financial burden on users of clean electricity in their households and businesses.

EU: Do inform us about commitment and resolve of present government to promote the cause of clean electricity in the country?

Mr. Awan: Up to 91 per cent of 1135 MWs electricity the country has been producing through renewable sources of energy, was achieved since year 2013 while 57 per cent of this installed capacity has been secured in just one last year showing sincerity of the present government to utilize potential of the country to produce clean energy.

EU: Please do inform us about efforts of AEDB to promote wind energy in the country.

Mr. Awan: Ghoro-Jhimpir wind corridor in Sindh alone has the potential to generate 32,000 MWs to 35,000 MWs electricity. The AEDB under its future strategy would encourage operators of wind power projects in Sindh to install at their site solar panels to generate additional megawatts of clean power on more stable and reliable pattern. This would develop the pattern of hybrid electricity generation through renewable means.

The AEDB has also been facilitating the process of arranging finances from international donor agencies for capacity building in national grid for evacuation and onward transmission till power distribution companies of the area, electricity produced through new projects of wind power.

The AEDB for last around one-and-half years has not been issuing LoIs for new wind power projects in Sindh as already a number of such projects using the renewable source of energy had been in the pipeline.

continued on page # 14

The 'demise' of regulatory bodies

The government has decided to forfeit the independence of the regulatory authorities of Pakistan by transferring them from the Cabinet Division to the respective line ministries, thereby diluting their autonomous status to much of a line function. The government submitted the summary titled "Transfer of regulatory authorities from the cabinet division to respective line ministries" on the agenda of the meeting of the Council of Common Interests (CCI) held this week.

The provinces of KP and Sindh are reported to have opposed the centre's move to bring the regulatory bodies under the respective ministries fearing infringements of their independence in decision making. Of special concern to them are regulators OGRA and NEPRA who have a delicate function to perform: dispense justice and ensure fairness in revenue distribution. KP has a much greater reliance on the revenue from Tarbela dam and other hydropower projects in KP and also the oil and gas production in its territory.

The KP Chief Minister demanded withdrawal of the said summary from the agenda of CCI. He is reported to have stated that 'critical decisions of national importance and far reaching consequences should not be taken in haste and without proper framework. The transfer involves long-term implementation for rights of the provinces. There is a need for a detailed and careful deliberation at our end before we firm up our viewpoint for consideration of the CCI which for sure cannot be done in a short span of one day'. The concerns of the provinces that the change is an infringement on the independence of the regulators has merit. Also, it appears true that much is being done in haste and without any home work.

The dilution of the independence of the regulators is not only a matter of concern to the rights of the provinces but the concerns and consequences for other stakeholders are far more complicated and severe. For that one must attempt to truly comprehend the reasons behind the formation of regulators in Pakistan and the necessity of their presence to conduct international businesses as per internationally acceptable fair business practices and norms.

The whole foreign and local investments in the power, oil and gas industry is based on the strength of the independence of OGRA and NEPRA. Much of the multinationals presence in Pakistan is on the strength of fair implementation of intellectual property rights by IPO (Intellectual Property Organisation) of Pakistan and many more such regulators having an influence on the economy of Pakistan.

There are 18 main regulatory bodies in Pakistan: NEPRA, OGRA, PEMRA, FBR, NAB, State Bank of Pakistan, Election Commission of Pakistan, Security Exchange Commission of Pakistan, IPO, Public Procurement Regulatory Authority and others. The regulators of Pakistan are provided protection under the constitution of Pakistan to perform their duties in the interest of the nation and the people of Pakistan. They are to conduct their responsibilities free from political influence and interference.

The conduct and tenure of heads of the Regulatory Bodies are provided protection under the constitution of Pakistan to enable them to work independently. The regulators are fully autonomous. They, however administratively report to the Cabinet Division.

Unfortunately, however, regulators have surrendered their constitutional independence by being subservient to the dictates of the government of the day and vested interests. But the gov-



ernment move would deprive them of whatever little independence they have in them. Their autonomous status would be compromised and they are inevitably likely to function as one of the departments of the ministry in a line function, following much of the ministry's interests and dictates, then as an independent body balancing the interests of the government, the investors, the provinces and the public.

Lately, the government appears to be in haste in re-structuring the state machinery to make it more compliant and subservient to the political influence and dictates. Little does the government, however, realise that this is a profoundly unwise move.

Last week, the Chairman of SECP announced the Companies Ordinance 2016, which categorically gives power to the federal government to appoint and remove the Chief Executive Office of public sector companies making them venerable to the pleasure and dictates of the government. No professional and dynamic talent would opt to take up a such a job. The result will be inferior quality of governance of the public sector enterprises which are already hit hard by incompetence, corruption and losses.

It is ironic that the legislators placed by the public in the assemblies and Senate do not bother to challenge such defaults of the government effecting the public in any effective and meaningful manner. Any item which they appear to take seriously and with one voice is the one related to the increase in their emoluments. ■

Why do couples hold hands during their wedding?
It's a formality just like two boxers shaking hands
before the fight begins!



Wife: Darling today is our anniversary, what should we
do? Husband: Let us stand in silence for 2 minutes.

It's funny when people discuss Love Marriage vs Arranged. It's
like asking someone, if suicide is better or being murdered.

Pakistan has to change its water consumption practices to avoid disaster:

Abu Ahmad Akif, Federal Secretary of Climate Change

"Pakistan is one of the worst consumers of water in the world. While saying so I am making a very responsible statement. The concept I am talking about is called sustainable production and consumption of water. The developed countries use just 20 litres as embedded water content for doing per Dollar industrial production but here in Pakistan this embedded water content reaches up to 2,000 litres for industrial production of similar value".

This was stated by Federal Secretary of Ministry of Climate Change Syed Abu Ahmad Akif as Energy Update interviewed him in detail regarding vision, working, present and future programmes of his ministry. During the interview he was asked questions regarding his own thinking on the topics of environment, natural resources and biodiversity conservation and climate change.

Here are some important excerpts of his interview for our readers:



Energy Update: Please tell our readers what was the background and circumstances, which led to establishment of Ministry of Climate Change?

Abu Ahmad Akif: We have to take into account the legal and constitutional context behind establishment of Ministry of Climate Change. Before passage of the 18th Constitutional Amendment there was a concurrent list as this comprised of the subjects on which both federal and provincial governments could do legislation. While there was also a federal legislative list on which federal govt could do legislation. After adoption of 18th Amendment the concurrent list was done away with while all the subjects mentioned on it were completely transferred to the provinces. The subject of "Environment" was also present on the Concurrent list as this subject was also transferred to the provinces. Even now the subject "Climate Change" is not on the federal legislative list.

We in the Ministry of Climate Change are basically the guardians and custodians of international accords and agreements of which Pakistan was a signatory as they were signed in the multilateral environment regarding protection of environment and climate. We have in the country the custodianship of these agreements. Therefore, we are looking after affairs related to 15 to 20 international accords as all these agreements were signed with State of Pakistan not with its provinces. As far as my personal views are concerned, I do think that work being done by provinces in this regard should be more strengthened as the provinces are supposed to deal with the main issues related to environment. The federal government while sitting in Islamabad could not improve climate and environment of Karachi facing rapid deterioration. It is primarily the obligation of people of Karachi

to improve environment of the city as they are the people who breathe out in the air of Karachi.

EU: Kindly inform our readers about any important projects being done by your ministry?

Mr. Akif: Our ministry has been doing a project for change of social behaviour covering the aspects of water, sanitation, and hygiene as it is social behaviour of residents of a city, which makes the difference in environment and sanitation conditions of that city. We have been doing a project related to menstrual hygiene in 80 selected girls' schools of Sawat. This project was conceived and being implemented in collaboration with local Education Department. In all the selected schools, sanitation committees are also formed to observe due cleanliness in classrooms where separate dustbins were provided to collect and properly dispose of solid, semi-solid, and recyclable municipal waste.

EU: What else the Ministry of Climate Change has been doing in the country?

Mr. Akif: Climate change is really a very diverse and multi-dimensional subject. It is also a very overarching subject at the same time as everything from use of fossil fuel to energy conservation comes under the domain of climate change. Every citizen of Pakistan is like the subject of climate change as being a creature who exhales Carbon dioxide. For instance the project of Solar Power as being a development project in the country is of our particular interest. We also manage the "CITES" on behalf of the country i.e. Convention on International Trade in Endangered Species. We deal with efforts in the country to protect endangered

animal species of turtles, dolphins, markhor, and others. We are also part of the global efforts to limit global rise in temperature well below 02 degree Celsius as what had been agreed upon in the Global Climate Change Summit of Paris in 2015. Since the time human civilization has begun industrial activities, there has already been observed 01 degree Celsius rise in global temperature. Our country will soon ratify the Paris Climate Change Accord.

Then we are also working to establish a "Climate Change authority" through adoption of a bill by the parliament. We are expecting that certain concerned quarters would likely oppose such legislation as according to them the provinces are supposed to deal affairs related to climate change. I also concur with their thinking that provinces should do work towards the cause of climate change but one should also keep in mind that international accords are not signed with the provinces but with the State of Pakistan. Such concerned quarters having reservations in this regard should consider us as a national entity having due partnership of the provinces available to us. The proposed climate change authority would be chaired by the prime minister while chief ministers of all the provinces would be its members.

EU: What is the main cause of concern for you regarding the issues of climate change and protection of environment in the country?

Mr. Akif: The main cause of concern for us is rapid increase in population. Here I would like to express my point of view on the issue that could be otherwise deemed immoral, unsocial and against the religion and i.e. if we breed like cats and dogs then we will live like cats and dogs. In year 1951, the human population of region where Pakistan is situated was 33 billion that has now increased to 180 billion. There has not been increase in water available in Indus River but the population dependent upon the river has increased six times. Look at the water woes the country has been suffering through. A mafia operating water tanker service has emerged in the metropolitan city of Karachi, which has even grabbed the attention of international media like BBC and Al-Jazeera TV that did programmes on it. We are used to waste massive quantity of water while the anti-social elements do exploit the situation and do thriving business to meet demand supply gap persisting in our household water needs.

The government's job is to adopt and enforce a water policy and introduce the regime of water pricing as in the present situation we take the water supply for granted. We should ask about cost of consuming water from such households who are dependent upon water tanker service.

Up to 90 to 95 per cent water available in Indus River lasts only for three months from June to September as afterwards it flows undeterred to sea. We are used to do flood irrigation. We will continue to face water shortage or even the situation would be further worse if we continue with our ill-conceived water consumption practices. ■

Project Manager is a Person who thinks nine women can deliver a baby in One month.
Procurement manager is a Person who thinks it will take 18 months to deliver a Baby.
Operations Manager is one who thinks single woman can deliver nine babies in one month if works harder.
Marketing Manager is a person who convinces anyone that he can deliver a baby even if no man and woman are available.
Financial Budget Team thinks they don't need a man or woman: they'll produce a child with zero resources.
Planning and Technical Team thinks they don't care whether the child is delivered, they'll just document 9 months.
HR Manager is a person who thinks that... a Monkey can deliver a Human Baby - if given 9 Months.
Customer is the one who doesn't know why he wants a baby.!!!!



Interview of Amjad Ali Awan, CEO AEDB continued from page # 11

EU: Inform us about any new initiative on part of the AEDB?

Mr. Awan: The AEDB has also started doing mapping of renewable energy sources available in the country through assistance of World Bank. For the purpose 12 wind masts have already been installed for wind energy and 10 solar data stations had been established in different parts of the country (in the four provinces) to scientifically know about potential of the country to produce electricity on basis of these two main alternative sources of energy. The AEDB has also conducted the study to know about entire potential of the country to produce renewable electricity in the country through bio-mass energy whether using rice husk or sugarcane trash. Data obtained through such study would be presented before potential investors who are willing to install electricity projects using bio-mass energy. We have the planning that by year 2019, electricity generation on bagasse alone could surpass 1,000 MWs.

Although it is not included in mandate of AEDB, it has drafted and got approved from federal govt standards for safety and quality of solar cells being used on domestic basis for various appliances for preventing further import of substandard products being recharged through solar power.

Till the time the country would develop its own testing labs to check quality of solar cells, it would be binding upon the pre-shipment inspection companies to ensure due observance of safety and quality standards recently enforced for solar cells being imported into the country.

The AEDB had been doing all the work to develop guidelines and regulations for system of "Net-metering" to be adopted by power distribution companies so to encourage individual consumers to install solar panels or wind mill to generate renewable electricity on domestic basis that would be lucrative for such household customers of electricity. The AEDB would also provide a training forum for personnel of distribution companies, which would adopt "Net metering" system for their consumers so to sort out technical issues in provision of such public utility services.

Moreover, AEDB would launch an awareness campaign to motivate people especially industrialists to adopt Net-metering system as every part of Pakistan has the potential to use solar energy for electricity production as this system would prove to be a game-changer for power needs of the entire country.

EU: What about CSR related activities to be carried out by companies wind energy projects?

Mr. Awan: The AEDB has been ensuring that operators of wind power projects at Ghoro-Jhimpir wind corridor in Sindh would develop a number of welfare projects under the concept of corporate social responsibility so to fulfill health, educational, employment, and livelihood needs of the area people whose socio-economic standards of living should be improved along with progression on these projects. ■

**PRESENT ANNUAL WORLD ENERGY CONSUMPTION
IS ABOUT EQUAL TO THE ANNIHILATION ENERGY
OF 4 TONS OF MATTER.
BARNEY OLIVER**

FPCDL has installed a combined cycle power plant with a generation capacity of 180 MW

Lt. Gen. Jamil Haider, CEO, FPCDL



Lt Gen Jamil Haider, HI (M), S Bt (Retd) joined the Pakistan Army in 1971 and was commissioned in the Regiment of Artillery in July 1972. I had a distinguished career in the Pakistan Army spanning over 40 years. I was decorated with Hilal-e-Imtiaz (Military) and awarded gallantry award of Sitara-e-Basalat. His diverse experience in the Army includes Brigade Major of an Infantry Brigade, Instructor at the Pakistan Military Academy, Commands of a Divisional Artillery in Northern Areas, Infantry Brigade, Infantry Division, Corps and Army Strategic Force Command. He also served on the appointments of Vice Chief of Logistics Staff, Director General Logistics, Deputy Chief of General Staff and Inspector General Arms at General Headquarters. I managed the operations at Chaklala Airport in 2005 earthquake whereby ensuring timely despatch of relief goods to affected areas by road and air. He also had the honour of serving as Defense and Military Attaché in Nepal from April 1994 to November 1997. He is a graduate of Command and Staff College Quetta, Jordanian Staff College, Jordan and National Defence University, Islamabad and held a Masters Degree in War/Strategic Studies. Since 6 August 2015, he is the Chief Executive Officer / Managing Director of Foundation Power Company Daharki Limited (FPCDL), a subsidiary of Fauji Foundation, one of the largest corporate / welfare organizations of Pakistan. He is a keen player of squash.

EU: Please provide details of your project i.e. size of the project in MW, investment, financial close, infrastructure.

Jamil Haider: FPCDL has installed a combined cycle power plant with a net generation capacity of 180 MW. The approved project at a cost of USD 212 million. Project financial closing was achieved in September 2007 and the plant was commissioned in May 2011.

Infrastructure comprises a Gas Turbine (Frame 9E) manufactured by General Electric, France, a Steam Turbine manufactured by Fuji, Japan and a Heat Recovery Steam Generator (HRSG) manufactured by Doosan, South Korea. 220KV Switch Yard used for electricity transmission is manufactured by Siemens, Germany.

EU: What are the future plans of expansion & investment. What is the scope of alternate energy in the country?

Jamil Haider: This company has been set-up by Fauji Foundation (FF), Pakistan. Besides this project, FF also has direct and indirect investments in other thermal and alternate energy





generation projects. Diversification and a sustainable expansion has always been an aspiration of the group. Certain growth proposals are under consideration and any worthy feasible project will be initiated and necessary efforts channelized for implementation.

EU: Are you satisfied with the government policies for power generation sector?

Jamil Haider: The Government policies for power sector are still evolving and fundamental variations take place with every change in government. It is a fair concern for all stakeholders. My certain observations in this regard are:-

a. In the light of the recent Power Policy, revisions made in tariff determination, payment terms of power purchaser in case of non-availability and guarantees extended by the government are not much persuasive for the investors to further invest in the country's power sector.

b. Owing to the never ending serious issue of circular debt, the biggest challenge being faced by power sector companies is the cash-flow management. Although, the government has endeavored and improved the payment mechanism, certain concerns still remain to be addressed.

c. The installed distribution and transmission system is another impediment in bringing an efficient electricity transmission system in place since no consideration has been made to enhance or properly maintain the installed equipment. The transmission and line losses are beyond NEPRA's target and have emerged due to inefficiency, theft, law and order situation of different regions and unfortunately all concerned are still taking decisions that are not likely to address the flaws.

d. Non-accountability and malpractices at various levels, bureaucratic channels and non-professional approach

I also feel that hydel being the cheapest form of energy with adequate sources in the country should be tapped to the optimum to achieve the desired results in power and agriculture sectors for the benefit of the masses.

have all contributed to further backslide the system.

e. However, I am positive that cognizant of these issues, the government will take all necessary measures to address them. I also feel that hydel being the cheapest form of energy with adequate sources in the country should be tapped to the optimum to achieve the desired results in power and agriculture sectors for the benefit of the masses.



EU: Please tell us about CSR activities of your company including environment policies in accordance with international environment friendly standards.

Jamil Haider: FPCDL is committed to act responsibly towards the community. Fundamental to this commitment is making enduring efforts to serve the underprivileged. At a glance in the last five years, FPCDL has:

a. Supported the District Government in Polio Vaccination campaigns through extending logistic facilities;

b. Rehabilitated local schools from a scratch till complete furnishing, development of hygiene facilities, installation of sustainable (solar) electricity system and provision of play equipment for the children;

c. Promoted education through extending financial encouragement and support to the teachers and school staff;

d. Contributed to the local community through fumigation in response to Dengue / Malaria Programme and distribution of food items and medicines after the last floods in Sindh.

e. Supported the community through employment of local unskilled labour, and

f. Planned a 'Clean Water Project' where the intention is to supply drinkable water to the nearby communities/villages in near future.

As regards environment conservation perspective, FPCDL is a 'Green Field Energy Centre' with lowest possible hazardous emissions. Pursuant to the provisions of the core agreements, FPCDL abides by Pakistan's 'National Environmental Quality Standards' and 'World Bank's Environmental Standards' in relation to stack emissions, effluent monitoring and environment preservation. Further, the Company has invested in tree plantation, both inside and outside its site premises. ■

PEDO has developed a new Hydro Power Policy 2016

Akbar Ayub Khan, CEO, Pakhtunkhwa Energy Development Organization PEDO

EU: Please provide us your profile in detail including your education background, professional, experience, achievement and hobbies.

Akber: I completed my MBA from the Lahore University of Management Sciences in 1998. In 2009 I completed the Chartered Financial Analyst programme and became a member of the CFA institute USA and CFA institute of Pakistan.

I started my career in Engro Chemical Pakistan Ltd. (formerly Exxon Chemicals) in 1998 and stayed with them for 7 years. I worked in their Finance, Mergers & Acquisitions and as CFO of one of their subsidiaries. In 2006, I joined Pakistan Tobacco Company (subsidiary of British American Tobacco) in their Finance; worked in supply chain finance, marketing finance and also got the opportunity of working in Japan and Papua New Guinea. While working as Finance Director in Papua New Guinea, I got an offer from Abbott Laboratories in their regional office in Singapore. I took the opportunity and joined Abbott Laboratories in 2012. During my stay in Singapore, we as a family started thinking of moving back to Pakistan and in September 2014, I left Abbott and came back to Pakistan. When we took the decision to return to Pakistan, I was of the opinion that I should contribute to the development of the country leveraging my experience and knowledge and more so my province KP. Hence, I decided to take a job as CFO of KP Oil & Gas Company Limited (KPOGCL). After working for a brief period in the company, I joined Pakhtunkhwa Energy Development Organization (PEDO) as the CEO, taking up the challenge to transform and turnaround the power sector of KP.

During my entire career, I have had the opportunity of working on various projects and in diverse cultures / environments. I was

given a Corporate Excellence Award in Engro; in BAT got the opportunity of working abroad and turning around operations/business.

I am a keen sports enthusiast and love playing cricket and squash. I am also fond of pets particularly dogs (German Shepard breed).



EU: Please tell us about PEDO's current hydro power projects in operation and their cost.

Akber: PEDO is spearheading the power sector initiative of the GOKP. To date it has completed 4 hydro power projects totaling 105 MW, namely Malakand III 81 MW, Pehur, Swabi 18 MW, Reshun, Chitral 4.2 MW and Shishi, Chitral 1.8 MW. Reshun HPP was damaged in the devastating floods of 2015 and is currently out of operation. Besides this, work is already underway and in various stages of implantation on 8 hydro power projects totaling 270 MW amounting to approximately Rs 75 billion investment.

In order to provide access to energy / electricity to rural population where there is either no electricity or people are experiencing long hours of load-shedding, PEDO launched the provincial government's flagship micro hydel power projects (MHPs) in 2015. This initiative aims to develop community based 356 Mini/Micro Hydel Stations at a cost of Rs. 5.4 billion, which will be implemented through NGOs and handed over to rural community based organizations after completion, providing cheap and continuous electricity. Currently 100 MHPs have been



completed totaling approximately 4.0 MW.

EU: Please share future plans of investments and hydro projects in KPK including any foreign, public, private partnership?

Akber: In order to fast track implementation of power projects in KP, PEDO has embarked on a multi-pronged strategy of developing power projects both in public & private sectors and using different sources like hydro and solar. PEDO is already working on 8 hydro power projects totaling 270 MW; a total of 3 totaling 56 MW are expected to reach commercial operations by the end of this year, another 3 totaling 62 MW under construction and 2 hydro power projects with a capacity of 153 MW are in final stages of award. Besides this, PEDO is collaborating with Asian Development Bank (ADB) to fund Balakot 300 MW hydro power project, the biggest power project ever undertaken in KP.

In parallel, PEDO launched its private sector initiative in 2016. It has developed a new Hydro Power Policy 2016 and is the first province to have also developed associated guidelines for the policy. We have advertised 7 projects totaling 668 MW with a total investment of approximately US\$ 2.0 billion (Rs 200 bn) to private sector. PEDO has received a tremendous response from investors with a total of 61 proposals against these 7 projects. Currently these proposals are under evaluation stage and are expected to be awarded in the coming months. This is the first time such huge investment which is being brought into the province at a time when law and order is a challenge. This clearly shows confidence of investors in the policies of the government and PEDO.

Besides these projects, there are 10 hydro power projects approximately 1700 MW with feasibilities completed and another 3 with capacity of 965 MW with feasibilities to be carried out. PEDO is evaluating implementing these projects in public and private sectors.

PEDO is also exploiting the solar power potential of the province and has already given LOIs for 4 projects totaling 153.5 MW.

Regarding the MHP initiative, PEDO has enhanced the projects to 1000 projects with a capacity of approximately 100 MW and benefitting almost 1.0 million people. ADB has been very impressed with this initiative and has already started its collaboration with PEDO in this regard and will be providing funding of approximately US\$ 300 million (Rs 30 billion). PEDO has also started a pilot solar

homes solution programme benefitting 5,650 households. It plans to provide solar solutions to un-electrified schools and Basic Health Units (BHUs) with ADB funding.

EU: What is the progress of hydro energy in Pakistan? Please share the overall challenges you are facing for your projects.

Akber: It is unfortunate that hydro power has not received the importance that it deserved in the past 15-20 years. As a result, the energy mix in the country has tilted towards thermal with hydro power a meager 30% in a country that is blessed with huge hydro power potential of 50,000 MW. Moreover, KP province constitutes approximately 50-60% of its potential. PEDO has started the reform process in KP and is fast tracking development of hydro power projects in the province. Key challenges that need to be addressed are:

- " Financing
- " Power evacuation by NTDC & PESCO
- " Professionals to work in the sector and run organizations on corporate lines
- " Security / Law & order

EU: What support the company has got from government organizations/ departments for development of hydro energy in the region? Are you satisfied with their performances?

Akber: A lot of support and help is required from the federal government to ensure fast track development of hydro power in the province and country at large. Specifically, NTDC needs to play a more constructive and proactive role in providing power evacuation/transmission system to planned projects especially in KP. Currently, a significant number of hydro power projects of PEDO specifically in Chitral do not have a power evacuation and is not existent in NTDC long term plan.

EU: Please tell us about the initiatives of PEDO or projects for excellence environment.

Akber: PEDO is focused on developing renewable energy resources in KP for power generation and is playing a key role in safeguarding the environment. By providing electricity to rural areas through its MHP programme, it is helping in replacing wood fuel with hydro power, thereby saving on forests and averting landslides. ■

This Pakistani Woman Went from Karachi's Slums to Harvard University

They say that one's ambitions are a strange thing. There are some people who, no matter what background they come from, cannot be deterred from reaching out to the stars and grasping the very ends of the cosmos.

This is one such story of a girl who lived in a slum in Ismail Goth. And who, despite the challenges she faced, enrolled in a Harvard Program and much more.

Meet Anum Fatima, a humble girl who used to reside in a local slum. Her tale proves that nothing is impossible for women, baring their own unwillingness that keeps them from achieving their dreams. Through sheer determination and hard work, she has crawled out from a life of desolation, and into a place of endless possibilities.

Hailing from the slums of Ismail Goth, Anum took destiny by its horns and pursued an educational journey that would lead her to the gateways of one of the most prestigious institutions in the world. Her keen interest in educating herself



led her into the care of The Citizens Foundation (TCF), a nonprofit organization, working for the education of the underprivileged in the lesser known areas of the state.

Her talents and hard work awarded her a fully funded scholarship from the TCF from grade 9 to her post graduate, where presently she is pursuing her MBA degree. Moreover, the icing on her achievements was the three months summer school she got to attend on 'English for Professional Purposes' at the Harvard University.

Enriched with such an awe-inspiring experience, Anum has high hopes for her future and sees herself chairing a multinational company soon. However, she first wants to devote some of her time to the organization and people that allowed her to pursue her goals.

Working with the TCF, Anum hopes that her story can inspire others to break the shackles of self-inflicted disappointments and face life and its challenges. ■

Gwadar's Importance

The first ship carrying Chinese goods steamed off from Gwadar port in Pakistan November 13, 2016, on to ports in West Asia. Gwadar port, on of Pakistan's southwest coast, will handle about one million ton of cargo by 2017.

It was a historical occasion but a group of Pakistani Members of Provincial Assembly by opposing growing influence in Pakistan said that Beijing may use the \$46 billion CPEC to boost its trade with India.

While a section of the people in Balochistan, where the port

outside the Straits of Hormuz. It was upgraded at a cost of \$1.62bn. The port was officially leased out to China for 43 years, until 2059. After expiry of the lease period, the strategic port will be converted into Pakistan's second naval base.

It will also be the site of a floating liquefied natural gas (LNG) facility as part of the larger \$2.5 billion Iran-Pakistan gas pipeline project.

The CPEC comprising a 3,218 km road route, consisting of highways, railways and pipelines that will connect Gwadar port

India is also not happy with the CPEC, as it passes through the Pakistan-occupied Kashmir and Gilgit Baltistan. The CPEC, which Beijing sees as a crucial link that will help it become a world's economic power.

is located, are also against the China-Pakistan Economic Corridor (CPEC). They apprehend that the CPEC's benefits will not flow to them.

However, many experts believe Pakistan will be benefitted from Chinese investment in the shape of creation of job opportunities. To protect about 7,036 Chinese nationals, working on CPEC and other workers on the projects, the government of Pakistan has announced it would deploy 14,503 security personnel.

India not happy

India is also not happy with the CPEC, as it passes through the Pakistan-occupied Kashmir and Gilgit Baltistan. The CPEC, which Beijing sees as a crucial link that will help it become a world's economic power.

The Gwadar port in the warm waters is a deep sea port on the Arabian Sea. It has strategic location between South Asia, Central Asia and West Asia at the mouth of the Persian Gulf, just

to Xinjiang in China. The CPEC is crucial for China's 'One Belt, One Road' initiative that aims to connect China to Europe and Asia.

Pakistan will also gain from CPEC by attracting Chinese investments in the form of Foreign Direct Investment (FDI) in Pakistan. It is expected that CPEC would generate over 700,000 direct and indirect jobs. Pakistan Army will establish a headquarter in Diamer district to ensure CPEC security.

Gwadar port is expected to be fully operational by the end of 2017.

The industrial units in Gwadar Export Processing Zone (EPZ) are allowed to sell their half of produce in the local markets. The Federal Board of Revenue (FBR) has notified a tax exemption on profits and gains of any industrial unit in the Gwadar EPZ for a period of 10 years. Earlier, the industrial units located in the Gwadar EPZ needed to export 80 percent of their production for availing tax exemptions and incentives.





The exemption will commence from the time the industrial unit is set up or begins commercial operations.

List of Projects Located In EP Zone are :

Makkah City, Habitan Shelter, Prince City and Dream City Gwadar.

Investment in any project in EP Zone Gwadar is an investment with a 20 years' Tax Holiday facilities. The following countries, directly benefiting by Gwadar, besides Pakistan and China, are:

Tajikistan: A land-locked country that will get access to international waters for its oil and gas exports and other imports.

Uzbekistan: Again a land-locked country, will be greatly benefited by Gwadar.

Turkmenistan: It is a country blessed with natural gas and oil. But being land locked, it cannot benefit from them. Trans Afghan Gas Pipeline (TAP) from Turkmenistan to Gwadar, the long dormant project that hopes to pump Turkmen natural gas to markets in south Asia is finally ready to step off the drawing board. This project is being developed by CENTGAS.

Kazakhstan: It is also a country with a lot of oil but no means to access the international market. A pipeline is also planned to transport this oil to Gwadar and then rest of the world.

China is heavily dependent upon the oil imports from the Gulf, at present this oil passes via a very long route, through the state of Malacca under the US influence. Oil reaches the Shanghai or the Chinese East Coast from where it is transported thousands of miles through land transportation to the West of China. By using Gwadar port and then Karakoram Highway (KKH), it is a much safer, cheaper and shorter route for West of China.

Middle East is a very important region

The Gwadar port in the warm waters is a deep sea port on the Arabian Sea. It has strategic location between South Asia, Central Asia and West Asia at the mouth of the Persian Gulf, just outside the Straits of Hormuz. It was upgraded at a cost of \$1.62bn. The port was officially leased out to China for 43 years, until 2059.

in the world because of its huge oil reserves and large markets. China has a natural dependence on this but does not have means to influence it. Government of Pakistan has already committed to provide a Naval Base to China in Gwadar. This will not only help secure the Gwadar but also take the Pakistan China friendship to new heights.

Chinese goods will find an easier, shorter and secure route to Middle East which will increase its profitability and trade volume. China will also be greatly benefit from the industrial zone by setting up industries close to the markets.

Chinese Commitments

China has very strongly committed to Gwadar project because of her own interests. Following are the major inputs from the China:

China has been instrumental in design of the Gwadar project.

China is providing approximately 80

percent of the cost of Port in shape of grants and soft loans.

Over 500 Chinese workers have worked on the project on 24-hour basis to complete the port's set up. There are still a large number of Chinese engineers and technicians working on the project.

It is hoped that the dream to make Gwadar a regional trading centre would soon come true.

At first the focus will be on the local fishing industry by installation of a modern processing plant, though it has not given a timeline for the plant. The Chinese officials said they will try to process it here so that the locals can be benefited.

China will also set up a Dry Port at the Pak-China border to take advantage of shorter route to sea through Gwadar.

China has paid \$360 million to Pakistan for expansion and up-gradation to all weather traffic ability of Karakoram Highway linking Pakistan with China.

A track is also being worked on from Gwadar through Turbat, Panjgore and Rato Dero to link up CARs (Central Asian Republics). The 715 kilometer Makran Coastal Highway linking Gwadar with Karachi, has already been completed.

The new International Airport has received a grant of \$75 million from Oman and Rs 563.35 million from Pakistan government.

Prime minister has allocated Rs 21 billion to speed up their interests in the projects. A refinery is to be constructed on 2500 acres.

President of Pakistan has announced establishment of an oil refinery, British Petroleum and Shell along with others companies. They have expressed hope that it would help Gwadar become the hub of oil for Pakistan.

The work on 14 major roads inside Gwadar is in full swing, i.e. Baluchistan Boulevard, Jinnah Avenue and Coastal Highway for onward linking with Afghanistan, Iran and CARs. President has announced many measures about Gwadar.

Gwadar port with RCD highway and Indus highway would also connect ports in Iran and Turkey besides further improving the communications to and from Gwadar.

The World Bank has offered loans for construction of railway links with Gwadar, Pakistan government is considering the offer. According to Gwadar Master Plan, the area of the port is about 90,000 acres.

Pakistan also plans to establish 29 special economic zones under CPEC.

In conclusion one can say Gwadar port will change the shape of not only the region but also the whole world and would bring prosperity for millions of people in all four provinces. ■

Renewable energy is the solution to ensure energy security in Pakistan

KHALID ASLAM

Chief Operating Officer, Renewables Division, Sapphire Textile Mills Limited.

By Amer Malik

The Sapphire Wind Power Company Limited (SWPCL) has conceived a unique concept of hybrid energy by combining solar and wind power to exploit the natural energy resources in virgin areas of Sindh.

"The concept of hybrid renewable energy is first of its kind as it has not been executed anywhere in the world, whereas we have successfully modelled the project during the last three years," said Khalid Aslam, Chief Operating Officer (COO) of Sapphire Renewable Ltd in an interview with Energy Update.

Khalid Aslam is a metallurgy engineer, got education from Russia and has an experience of over 15 years in renewable energy with 10 years of service in Sapphire Renewable Ltd. He has also served in Pakistan Steel Mills and in Europe.

Jhimpir wind corridor, situated around 80 km from Karachi in Sindh, offers solar energy in daylight with favourable wind in the night to produce renewable energy sufficient to run power grids to optimum capacity and generate environment-friendly electricity, which would not only improve the lives of people but also help overcome the ongoing energy crisis in Pakistan.

It is a vast land spread over 30 to 40 thousand acres of barren plains, which is identified through satellite mapping conducted by National Renewable Energy Laboratory (NREL), USA.

He informed that Sindh province had a defined wind corridor at Jhimpir in Thatta district with theoretical potential of 40,000 to 50,000 mega watt power. At present, he said, as many as 10 wind power projects are working on ground in Jhimpir including SWPCL's project of 52.8 MW power, commissioned in November 2015, which is first wind power project in Pakistan to secure funding from Overseas Private Investment Corporation (OPIC), USA. "It is the first wind project in Pakistan commissioned in record time of 14 months," he added.

He said that a banking syndicate led by International Finance

Corporation (IFC) and comprising DEG - The German Investment & Development Company, Asian Development Bank and Islamic Development Bank was funding SWPCL's upcoming project of 200 MW, which would be commissioned till June 2018.

Khalid Aslam said that renewable energy is the solution to ensure energy security in Pakistan as imported raw material such as coal, oil and Liquefied Natural Gas (LNG) to general thermal power were not only expensive but has also environmental hazards. He said the local resources included Thar coal, hydel energy and renewable energy, adding that Thar coal carried environmental hazards due to fuel-based thermal energy, whereas hydel power generation capacity was diminishing due to lack of reservoirs as well as global warming - a phenomenon being witnessed in lack of rains and snowfall in current winter. Therefore, he said, the renewable energy is the only viable option available through one-time investment with minimal maintenance cost to ensure energy security in the country. "The renewable energy will





be a revolutionary shift in the energy paradigm by offering clean, green and affordable energy solutions - ending the energy economy's dependence on carbon-based fuels and making it sustainable and ecologically friendly," he added.

However, he said that Pakistan suffered from ineffective and inefficient transmission system, which required political will, funds and resources as well as time to upgrade the existing transmission line system with a maximum capacity of up to 20,000 MW power.

Thermal energy was optimized at 50 to 55 per cent of grid absorption capacity; whereas wind efficiency was 37 to 40 per cent at grid level. "The storage is crux of renewable energy," he said, adding that the research was going on to store renewable energy. "It will revolutionize energy sector if breakthrough occurs in research on storage of renewable energy," he added.

He said that the electricity power based on imported raw material cost very high due to its dependence on international market fluctuations and rupee devaluation, whereas the renewable energy to consumers would cost at Rs 10 per unit with minimal health and environmental risks. He informed that the wind energy has seen highest investment in the world. "Europe has been setting up off-shore wind farms into the seas," he added.

According to Khalid Aslam more than 30 per cent of population in Pakistan was

off-grid, suggesting that a comprehensive planning needed to be devised and implemented to light up the households through solar or wind energy in underprivileged areas without electricity of Pakistan. "The renewable energy is the only solution to ensure supply of electricity in off-grid areas because laying a transmission system was

not cost-effective," he added.

He said that the renewable energy would eliminate burning of kerosene oil, wood and cow dung, caused respiratory problems due to constant inhalation of particles flying out of fire. "The women and children are most affected due to these fuel materials in every household," he added. He said that the government must take initiative in this direction by allocating seed money or engaging international agencies and private sector to ensure supply of electricity in dark areas of the country. "Bangladesh has given solar lanterns to fishermen as they are able to do fishing in the night," he said adding that this public-welfare initiative would assure heavy return as a large population would be able to enhance their utility, which would not only help alleviate poverty but also contribute to national economy. "The women can be engaged to promote cottage industry after provision of electricity in their households," he added.

While commenting on Sapphire's role in Corporate Social Responsibility, Khalid Aslam informed that SWPCL has remained closely embedded with the local community and has initiated a number of support programs from the out-set - a more comprehensive CSR programme is under development. "We are working on a health initiative and a vocational training program by establishing a centralized system in the area to provide equal opportunity to local population in order to optimize their abilities and to make them useful citizens in the country," he added. ■

Mr. Khalid Aslam is a multilingual, multidisciplinary professional with rich entrepreneurial insight; highly motivated facilitator with experience of effectively leading multicultural teams and achieving set targets. With MSc. in Metallurgical Engineering from Institute of Steel and Alloys, Moscow during 1971-77, he has attended a number of courses on Financial Management and Project Development.

With over 37 years of international experience in business start-up, project development and heavy industry, he has successfully led project teams through all phases of project development - from concept clearance, feasibility development, tender, documentation and evaluation, contract negotiations to actual roll out and construction.

He has a deep understanding of current renewable energy policies and committed to the development of green technologies and alternative energy. Mr. Khalid Aslam has conceived and established an ESCO that offered RE & EE solutions - the operation was uniquely placed, having capability to design & package bespoke solutions for clients.

In his current role he been responsible for conceptualizing Sapphire group's diversification strategies beyond the textile domain - including in the heavy engineering, real estate and renewable energy sectors.

Following an out-sourced model, he has managed to develop a 50-MW wind power project in a highly structured and cost effective manner. The project has become a trend setter in the sector having developed many "first of kind" concepts.

He led the project team to successfully negotiate foreign debt (from OPIC, USA) of \$ 95 million and achieved financial closure for the wind power project. He also has spearheaded the site team and the project is scheduled to achieve COD in a record time of 14 months. Concurrently he is leading project teams to develop 3 x 50 MW wind power projects; 40 MWp solar hybrid project and 45 MW hydro project.

Hydropower projects: aiding investment

By Khaleeq Kiani

A picture of the Gomal Zam Dam. Taking a leaf out of a draft policy for the development of mega hydropower projects, the prime minister recently agreed, in principle, to divide the Diamer-Bhasha Multipurpose Project in two.

Hydropower generation and water sector projects are being put on a strategic path to rope in shy private investors.

The new draft policy paradigm, now in its initial phase, also supports net hydropower profit payments to all regional and provincial stakeholders, where these natural resources are located.

The private sector that has so far been reluctant to invest in long-gestation projects - having burnt its fingers in the past - would now be offered comfort through collaboration with the government, or its entities (such as Wapda).

A long standing grievance of the Khyber Pakhtunkhwa province over Net Hydropower Profit (NHP) has been effectively addressed through a backlog settlement of more than Rs75bn (being charged to consumers through the power tariff).

Similarly, an agreement has been reached with Punjab for the payment of Rs82bn by Wapda, on account of NHP for the Ghazi Barotha Hydropower Project, due since 2005. This will raise consumer tariff by 33paise per unit countrywide.

Of this, Rs38bn would be settled upfront and the remaining Rs44bn would be paid in the next three fiscal years at a rate of about Rs14.5bn per year. Wapda will continue to pay Rs9.5bn to Punjab every year for the productive life of the project. Punjab would get Rs1.10 on each unit of electricity produced by the GBHP - the same rate paid to KP for Tarbela.

Two other stakeholders - Gilgit-Baltistan and Azad Jammu and Kashmir - however may not benefit equally despite being major sources of hydropower, because of constitutional reasons, but may be compensated on the basis of equity.

Taking a leaf out of a draft policy for the development of mega hydropower projects, which is expected to be formally approved by the Council of Common Interest (CCI) in its coming meeting, the prime minister recently agreed, in principle, to divide the Diamer-Bhasha Multipurpose Project in two.

This would allow that the dam portion of the project to be funded through the Public Sector Development Programme (PSDP) allocations and Wapda generated resources, while financing for power generation will be arranged on a commercial basis through Wapda or by leasing its existing projects.

The policy is drawn from on past experience when private investors would lose their breath with time consuming preparatory work, which in addition to feasibility studies and engineering design, involved other legal and regulatory formalities like tariff approvals and competitive bidding.

This led to capacity addition of over 7423MW of thermal power plants by the private sector between 1995 and 2015 against only 84MW of hydropower, despite the later being cleaner and cheaper.

On top of that, multilateral lenders had their own policies and priorities for financing development projects 'in different regions' along with sensitivity towards dislocating and disturbing people, loss of heritage and environmental issues.

A total of seven mega projects of 24,200MW have now been identified for development on the Indus Cascade through the new initiative and more projects will follow.

The draft policy offers two options for private sector participation. Wapda will complete the preliminary work and get a feasibility stage, upfront tariff, from the regulator at attractive



commercial terms before handing over the project to private investors through competitive bidding.

Competitive bidding, however, would not be based on the lowest cost and tariff because experience suggests that Chinese companies engaged in cut throat competition to secure projects at 20-25pc lower costs than engineering estimates and subsequently delayed projects or created problems of cost escalation.

Therefore, under one option Wapda will complete a detailed engineering design by consulting firms of international repute, carry out environment impact assessment (EIA), acquire land and ensure resettlement of any to be affected persons, construct roads and infrastructure, put in place a power evacuation system, get Nepa approval on upfront tariff and engage an international panel of experts (IPE) before offering the project for competitive bidding.

The IPE would shortlist bidders on the basis of technical and financial strength who would be asked to compete on the basis of early completion of the project against a bank guarantee. Wapda would finance the IPE for supervising the construction. The actual cost would form the basis of shareholding between Wapda and the investor.

Under this option, major projects like Dasu 5,400MW, Diamer-Bhasha 4,500MW and Bunji 7,100MW have been selected and would be offered to the private sector in the first stage. For this, the construction of the main dam of the Diamer-Bhasha, and its land acquisition, would be completed by Wapda while its power generation would be offered for private-public partnership.

The second option would be applied to projects like the 4,000MW Thakot and 2,400MW Pattan where the detailed engineering designs was not ready as yet. The preference for the bidder would be on the basis of early project completion and maximum energy output.

In this case as well, the government or Wapda would complete the EIA, land acquisition and resettlement, development of roads and the power evacuation system before offering the project for bidding.

The successful bidder would be selected by IPE on the basis of technical experience and financial strength against a bank guarantee to ensure committed performance targets.

In both cases, the investor would have the incentive to complete the project before the deadline and secure additional revenue due to early power sale.

They would be guaranteed additional years of operations with a higher return on equity while providing saving of interest during construction and cost savings. ■

CSR importance in a society

Corporate Social Responsibility (CSR) is a business approach that contributes to sustainable development by delivering economic, social and environmental benefits for all stakeholders.

CSR is a concept with many definitions and practices. CSR is a very broad concept that addresses many and various topics such as human rights, corporate governance, health and safety, environmental effects, working conditions and contributions to economic development.

E&P Companies for social welfare fund

Oil and gas companies operating in different parts of the country have deposited about \$2.544 million under the social welfare fund during the last three years. According to details, Exploration and Production (E&P) companies are required to deposit social welfare fund in the joint account with deputy commissioners, maintained in concerned districts, which were utilized for wellbeing of the locals, residing in oil and gas producing districts. Currently the Ministry of Petroleum and Natural Resources was revising social welfare guidelines for carrying the development schemes in oil and gas producing tehsils and districts across the country. Under the new strategy, parliamentarians were being given important role in identification and execution of the social welfare schemes.

Under the revised guidelines, social welfare schemes will be based on requirements of areas and identified by the lawmakers of districts in consultation with representatives of local bodies or local administration. Moreover, many companies are providing philanthropic services like Pakistan State Oil (PSO), Ptcl, E & P, Telenor etc.

PSO is the country's biggest oil marketing company (OMC) involved in storage, distribution and marketing of various petroleum products. The OMC deals in motor gasoline, furnace, high speed diesel, kerosene, LPG, jet fuel, CNG, petrochemicals and lubricants.

The company has the largest storage capacity of one million tons in the country, which is around 74 percent of the national total storage capacity. PSO also has the biggest retail network that serves the automotive sector and supplies fuel to the railways, aviation industry, armed forces, power projects and the agriculture sector.



The Engro innovative ways to promote CSR



First quarter of fiscal year 2016-17

PSO posted a 4.4 percent increase in net sales, whereas its earnings increased by around 35 percent. In the first three months of FY17, the OMC maintained its market leadership position with an overall market share of 56.5 percent.

PSO utilizes its scale of operations as strength to positively impact the underprivileged people nationwide especially in the vicinities where PSO operates. By integrating CSR into the business strategy, PSO is helping to drive shared value amongst its stakeholders and enhanced its corporate brand image amongst the general public.

PTCL and CSR

Pakistan Telecommunication Company Limited (PTCL) is socially aware of its responsibilities and determined to do its utmost cause that contribute to the lives of individuals and help better the standards of society as a whole. Corporate Social Responsibility is a way of life at PTCL which focuses on the areas of health, education, environment and community development.

PTCL promotes education and boost knowledge revolution by providing youth access to online learning through the company's Illuminating Learning Movement (ILM) programme. PTCL firmly believes that an educated Pakistan will be a brighter Pakistan.

PTCL ILM programme comprises a free 1-year subscription of a progressive online learning solution to the youth of the country. The subscription will help 5000 deserving Matriculation and Intermediate students to prepare for their Board Exams and Entry Tests.

Click2Learn is a comprehensive and interactive online learning solution provider with state-of-the-art methodologies covering learning, testing, practicing and training. It improves the performance of students in exams and increases their chances of achieving good results.

The company believes in empowering people through its ICT platforms. This initiative will open alternative learning opportunities for talented youth and empower them to enhance their development and take control of their own future.

Internship programme to empower youth

PTCL has opened its doors to the talented youth of Pakistan through its One-Year Paid Internship Programme. The programme enables fresh graduates to develop essential skill set and experience required to compete in today's fast paced and challenging job market.

Collaboration with Universal Service Fund (USF)

The USF and PTCL have entered in a contract to provide basic telephony and data services to the population in the yet un-served areas of Baluchistan districts of Pishin, Killa Abdullah and Quetta. PTCL is making consistent efforts to enhance Pakistan's capacity to develop and produce a globally competitive telecom sector and industry.



Making a determined effort develop Pishin, a far flung area of Baluchistan is a clear manifestation of PTCL's resolve to bridge the digital divide. With the support of USF, PTCL is set to extend the benefits of its network coverage to the underserved communities in the un-served areas. PTCL is contributing Rs149 million to this endeavor in an effort to bring information and communication technology to the remotest areas. The total cost of the project is Rs2000 million out of which PTCL contribution is Rs1275 million while USF contribution is Rs725 million.

Donation to Benazir Income Support Program

PTCL donated Rs10 million to the Benazir Income Support Programme.

PTCL aims to continue to work for betterment of media in Pakistan, and also lauded media services rendered during the last few years.

This initiative of PTCL also coincides with the Government decision to celebrate 2009 as the Environment Year. PTCL's decision to reduce the number of billing pages is an environment friendly initiative and is a way forward towards becoming a paperless enterprise.

The company is determined to improve and build good relationship with its customers by providing novel and superior telecom products and services to its valued customers and is striving hard to meet their expectations.

PTCL, CISCO and NUST to establish Center of Excellence for Internet Technologies

PTCL, CISCO and NUST, Center of Excellence for Internet Technologies established at NUST SEECs, Islamabad. The Center

a brainchild of Mr Walid Irshaid, President and CEO PTCL was set up in the state of the art. An MOU was signed by the three parties, with the Chief Guest of Dr Ata ur Rahman.

Setting up such a Center, PTCL will be able to benefit from world class research that will be of immense value to them. The human resources was to be developed at this Center to be able to export their skills and expertise to the region and beyond. IT sector will contribute towards enhancing the quality and quantity of exportable IT related skills to the global marketplace.

CSR and Telenor

Telenor believes that the telecom industry has the power to transform society and therefore strives to maximize the positive impact of telecommunications, create shared value for the society and help a sustainable future.

Telenor Pakistan believes in conducting its business in a way that creates shared value for all relevant stakeholders. Working under the values strive to make best use of the business are in to facilitate and support societies around it.

In Pakistan general perception about the corporate sector is that they do not care about anything except their own interests.

CSR and NGOs

The companies in Pakistan have evolved their CSR identity in line with the sociological stance of the country. More and more companies are now focusing on contextually relevant issues and not just a one-size-fits-all solution that comes in a pre-made template from the West.

Pfizer and PARCO addressing a wide array of social issues and Mobilink coming up with its SMS based Literacy Initiative. These examples and many more suggest a much wider and locally workable model of CSR.

The government in Pakistan has only shown sporadic support of CSR and sustainability and believes that it is a good thing.

The general perception in the Western world is that the local companies in Pakistan have no awareness about CSR and therefore no impetus to adopt the same. Most activities are still mainly philanthropy and a holistic approach to CSR is seldom seen, but areas like employee volunteerism and environmental conservation have become more prominent over the past years. As more and more young people join the workforce, they bring the knowledge, awareness and the motivation to be more ethical and responsible. In locally owned businesses, the leadership is becoming younger too and is challenging the conventional profit oriented mind-set. As CSR matures in the country and companies begin to realize the business case of good CSR practice, it will lead to better, more impactful initiatives ■

Indus hospital's main motive is to look after the humanity



The power albatross

In April 2008 as the world oil prices crossed the \$140 per bbl mark the oil-based high priced Independent Power Producer (IPP) model came home to roost. The model protected the independent power producers from any form of competition or market risk and instead concentrated all the risk on the Government of Pakistan and power consumers. The result was that a steep increase in Pakistan's oil import bill triggered a massive balance of payment crisis and a steep rise in energy costs for the producer economy generated economic stagnation and declining competitiveness at home and abroad.

Nepra, the power regulator of Pakistan, in its hearings in August 2008 fixed the end consumer tariffs (for LESCO) at around Rs 8.62 per kwh for peak time and Rs 5.11 for off peak consumption. Since those fateful days Pakistan's economy has not recovered its zest and for the last eight years it has been limping along. The power sector has seen crippling impact of circular debt, continuing massive transmission and distribution losses, huge public sector receivables, escalating power tariffs and continued menace of power shortages.

In spite of the massive decline in oil prices that started in mid 2014 and reached under \$30 per bbl at the end of 2015, a decline of around 80 percent from its peak, the power tariff has not seen any major decline. The Peak tariff topped Rs 15 per kwh and off peak tariff was around Rs 9.5 in June 2015. Since then the peak tariff has hovered around the Rs 14 mark. On the supply side, power generation, which in 2007 was clocked at 98,384 GWH, reached an anemic level of 102442 GWH in 2015. An average growth of half a percent per year over the last eight years. This is a direct result of the failure of the previous government's ill-fated policy to induct rental power in a corrupt and opaque manner and the current government's ill-conceived Gadani Power Project that took a long time to implement and in the end didn't see the light of day.

The failure of policies of two governments in this respect reveals the bankruptcy of public sector management of the power industry of Pakistan. The ministry of water and power and its paraphernalia of attached departments and regulators are responsible for this debacle. Eight years is a long time during which the sector could have been totally transformed, reformed and shortages eliminated yet it seems we have hardly moved. If people of Pakistan have to get affordable power in future, the power system has to be moved from a governmental controlled monopoly to a fiercely competitive power market. There is however no signs



yet of an emerging competitive power market, renewable energy has hardly made a dent and the power sector continues to hobble the prospects of stronger economic growth or higher private sector investment.

Going forward the ministry through its principal accounting officer has informed us that in order to cater for an expected generation shortfall of between 7000-8000 MWs estimated for 2017-18, the additional capacity planned to be achieved by March 2018 is around 10,996. We are further informed the plans beyond 2018, would take the capacity addition to 30,837 MWs by the year 2022. What the ministry failed to inform the public is at what cost?

People of Pakistan would have to bear both massive environmental damage and excessive tariffs. Coal power comprises the major share of the added capacity being planned. We know that other countries are phasing out coal power at a time when Pakistan is embracing coal power. We have to prepare ourselves for unprecedented levels of smog in our cities like what is currently happening in China and India. It will be monumentally costly to get rid of the side-effects of unbridled coal power expansion.

Adding 30837MWs of mostly dirty power through IPPs at an upfront tariff of around 9 cents per kwh when the rest of the world would be generating equivalent power at less than 4-5 cents per kwh will bankrupt our economy and will be a direct raid on the pockets of consumers in Pakistan. A single cent per unit excess tariff would translate into a daily extra payment of six million dollars that will be borne by the Pakistani consumer. A four cent difference would cost us a cool ten billion dollars per year. These excess payments would represent a continuous albatross around our necks for the life of these long-term IPP contracts foreclosing any possibilities for developing a competitive power market.

When the inefficiencies of the transmission and distribution system are factored in the cost of power to the consumer becomes unsustainable. The entire chain, from the supply of fuel to the power stations, to the billing and collection from the consumer is riddled with corruption, incompetence, waste and mismanagement dominated by federal government decision making and control. The consumer is on the verge of revolt against this daylight robbery.

The question is, when the entire chain is in the process of being unbundled due to technological advancement in renewable power production, wherein a single integrated national grid is no



longer needed for efficient supply of power to the consumer and where the large and small consumers can easily produce the power at half the cost compared to what the national grid can or is willing to supply, then why the consumer should pay the extra cost of state ineptness and the single buyer IPP model. It is clear that Pakistan's international competitiveness has been eroded by a rotten power system that needs a total transformation for national survival.

There is a national malaise when it comes to power sector reforms. The unholy alliance of vested interests has stunted and delayed most efforts for honest reform towards a competitive power sector. The ECC belatedly on April 30, 2015 approved the establishment of the Central Power Purchasing Agency (CPPA) as an independent entity from the National Transmission and Despatch Company Limited (NTDC). This was done as a necessary step towards the transition of the power sector into a competitive market by July 1, 2020, the deadline approved by the ECC.

The most recent attempt to move the process forward was reported in this paper on December 15, captioned "CCI all set to approve amendments in Nepra law"; a ray of hope albeit about five years too late. The approval of amendments by CCI, in the words of the Ministry of Water and Power were needed as the existing legislative regime, does not facilitate moving to a competitive market structure because:

- (i) There is no specific provisioning for energy trading, power market exchange, exclusive clearing and settlement etc;
- (ii) There is a lack of clarity on regulatory role of Nepra apart from tariff setting and licensing;
- (iii) There are regulatory barriers for persons wishing to establish and operate a power generation facility;
- (iv) There is a lack of a tariff setting regime which is conducive to competitive power markets, there is a lack of an energy exchange and absence of licensing of energy traders;
- (v) There is insufficient enforcement capacity of Nepra to protect consumer interests; and
- (vi) There is a need for re-alignment of regulatory functions of Nepra to cater to proposed power sector structure, while accommodating socio-political and socio-economic objectives of the federal government.'

The summary for the CCI reportedly inter alia states that:

- (i) Power generation has to be de-licensed and captive generation has to be freely permitted and connectivity to national grid ensured instead of just establishment and operation of generation plant,
- (ii) The summary notes that Pakistan needs to move towards a power market by introducing concept of market traders; as present law does not cater to licensing of persons wishing to trade in electricity.

We have yet to know whether the CCI met and approved the amendments or not. But in the meanwhile the federal government, instead of strengthening Nepra, has acted by curtailing the independence of the regulatory body by placing it under the administrative control of the ministry of water and power. It is clear that at the current pace of reforms, the target of achieving a competitive market by 2020 will not be met. The costly 30837 MW planned IPP addition to the national grid will be a fait accompli and an albatross around our necks for foreseeable future. Creating relief for the people and economy of Pakistan through a competitive power market will remain a pipe dream. ■

(The writer is a former Finance Minister)

Water and power ministry seeks PM's intervention

The Ministry of Water and Power has sought urgent intervention from the prime minister for the sanctioning of Rs175 billion supplementary budget that would clear the power sector dues, warning that the "present financial crisis" may soon blow into a full-fledged power crisis across the country.

Power plants and PSO may default on Liquefied Natural Gas and furnace oil payments in coming days due to nonpayment of power subsidies by the Ministry of Finance, wrote Secretary Water and Power Younus Dagha to Fawad Hasan Fawad, Secretary to the premier, in a "most urgent", message.

The letter to the PM not only appears an admission of the persistent financial crisis in the power sector but also drops a hint about estranged relations between two key ministries of the federal government.

Dagha has informed the premier through his Secretary that an amount of Rs283.2 billion of the power sector was stuck due to the Ministry of Finance and Revenue. Out of that Rs174.94 billion are on account of subsidies and Rs108.2 billion General Sales Tax Refunds, blocked by the Federal Board of Revenue (FBR).

"The burden of Rs283.2 billion is becoming an unbearable cash flow constraint, which is bound to lead to a full fledged crisis, if not resolved on priority," cautioned the Secretary Water and Power to the Prime Minister. The Secretary Water and Power's letter to the PM's Office also appears an indictment of the finance ministry, as he has accused the ministry of understating the budget of electricity subsidies.

"Due to deficient budgeting of the subsidies, the power sector subsidies have accumulated to Rs174.97 billion, resulting in non-payments to Independent Power Producers (IPP) in this financial year along with increase in payables of PSO," he wrote.

He said that the Ministry of Finance has not booked the impact of Rs24 billion payments of General Sales Tax on electricity bills of Federally Administered Tribal Areas (FATA) and over Rs20 billion arrears of subsidy on agriculture tube-wells in Balochistan. He said that the finance ministry has also not budgeted the Rs66 billion tariff differential subsidies to AJK consumers and roughly Rs28 billion subsidies of K-Electric. ■



By M. Naeem Qureshi

A visit to site of Thar coal & energy project

Sindh government and Engro have come together as the prime example of much talked about public private partnership at their joint venture Sindh Engro Coal Mining Company (SECMC)

Recently a select group of around 40 persons representing corporate, media, and social sectors were moved from Karachi to hundreds of miles away where perhaps in the midst of vast arid and desert zone the fate of the country is near to take the much-needed turnaround.

If that would not be the turnaround for the entire country then definitely it would



A group photo with Businessmen, Energy Experts and other guests with CEO SECMC

be a game changer for the country's energy sector and for its ever increasing electricity demand. As it is always said "seeing is believing" so the Engro Corporation took

with it the select delegation to the actual site of Thar coal and energy project where matters regarding extraction of vast untapped coal reserves of the country and



Shamsuddin A. Shaikh, CEO, SECMC giving the presentation on Thar coal & energy project



On behalf of our Chairman, Mr. Shahid Afridi & team Shahid Afridi Foundation, I pay the highest tribute to Shams Sahib and his whole team. No doubt, Mr. Shamsuddin A. Shaikh, CEO of Sindh Engro Coal Mining Company (SECMC) & his dedicated team converted a dream into a reality. We are now eye-witnesses that how professionally SECMC is exploring the untapped potential of Pakistan's ample coal reserves.

To the best of my understanding, few years back Thar Coal was a forgotten treasure. This is Pakistan, overflowing with abundant natural resources and huge manpower but an acute lack of strategic planning has pushed it to the brink of an energy collapse. There are numerous episodes of our loss of direction. Thar coal deposits were just one example of reducing assets into rubble.

Shams sb, you changed the past reality in few years.

Regards

M. Musaddiq Aziz
General Manager
Shahid Afridi Foundation



then using them at the very same site for power production, have entered in the operational phase in the very actual sense.

Here in block-II of Thar coal mining area the Sindh government and Engro have come together as the prime example of much talked about public private partnership at their joint venture Sindh Engro Coal Mining Company (SECMC) has also almost achieved what has been dreamed about by several past governments in previous decades i.e. to do mining, extraction, con-

suming Thar coal for energy production being one of the vast untapped coal reserves of the region. Things at block-II of Thar coal have really become matured as progress seemed to have become tangible since the time project have achieved financial close earlier last year.

The delegates were not only informed about progress the joint venture of Sindh govt and Engro so far achieved in extracting coal and use them at the very same mine mouth for electricity production, but also



SECMC CSR Project



SECMC's Thar Coal Block II

By: Muhammad Usman Zafar

Being a Coal technologist it was a dream come true to visit Thar coal field, the 7th largest coal reserves of the globe. Around 90-95% of the country's coal reserves lie here. Thar coal field, which covers around 9,000 square km is sub-divided into 13 blocks from which block II is allocated to Sindh Engro Coal Mining Company (SECMC). SECMC's coal block II is located 370 km from Karachi. It only contains around 1% of Thar's reserve, but still it can produce 5,000 MW for 50 years. Many energy experts have their own views about utilization of this coal reserve, few say it will contaminate environment and it should be gasified underground, some experts say the solution is to dig it out and burn it to produce electricity. As a field professional and having knowledge of coal technologies, the power generation has never been an issue but yes coal mining at Thar was a tough job due to geological conditions and loose strata above the coal seam. Another difficult job was to tackle water bodies over, in-between and under the coal seams. Coal, which is lignite contains around 1 % of sulfur, less than 10 % of ash, with around 45-50 % of moisture. All technical aspects and environmental concerns of power generation through Thar coal are satisfying. Engro Powergen Thar Limited (EPTL) is taking care of all environmental aspects like ash disposal, particulate matter, SOx and NOx. NOx emissions issue are being considered as using air staging technique for low temperature burning, which will result in low NOx production. Lime stone will be used for capturing sulfur during combustion, which will result in low SOx emissions. EPTL will use electrostatic precipitator (EP) with 99.9% efficiency for capturing particulate matter (PM). By using these technologies Engro's power plant will meet the national emissions standards.

After visiting SECMC's block II, and knowing the short-term and long-term plans of the company all things are clear now. Sindh Engro Coal Mining Company (SECMC) is going to install two 330 MW of coal fired power plants on mine-mouth model at Thar. The most impressive thing about the project is establishment of the "Thar Foundation" to take care of social corporate responsibilities (SCR). Thar foundation is working on health, education, livelihood support, infrastructure development and social preservation. After visiting SECMC's block II at Thar, I am confident there is no better option than what Engro is doing. Thar will be the energy hub of Pakistan and as Engro is working it will be a role model project.

Briefed about potential of the project to bring major improvement in socio-economic conditions of highly impoverished people of Thar. The visitors briefed about how Sindh government and Engro had taken a number of initiatives to further the cause of Corporate Social Responsibility in highly backward area where education, health, and other social facilities are too scarce and desperately required upgrading of infrastructure. Last but not the least, the members of the delegation were also informed about how SECMC has been taking care well about environment and natural habitat for wildlife of the area while ex-

tracting coal and using them for energy production for the first time in Thar.

The Thar coal and energy project is being executed in such a careful, planned, scientific and manner that it would create least minimum negative impacts on environment of the area so that it would become an all-round success story for similar all future power projects using indigenous coal reserves of the country. That would surely be helpful in favourably altering present energy mix of the country, which in the present day is largely dependent on imported and expensive fossil fuel as ultimately the country has to tap cheaper indigenous and renewable sources available in the country.

The environmental issue concerning coal-based power plants is related to power plants of older version. For Thar coal project, all power units being installed are third generation power plants. Here Engro is already very much conscious about environment. The project being built by its company fully complied with National Environmental Quality Standards and World Bank's criteria. Now study related to Environmental impact assessment study of the block-II project is not just confined to this projects only as it would cover other power projects likely to be built in Thar is there is no environmental issue for using Thar coal for power generation up to capacity of 4000 MWs.

Members of the delegation were informed that roads in the area are almost complete while Thatta-Sujawal bridge connecting the area would soon be completed and launched for traffic. Similarly airport in the area would be completed in next six to eight months also. Work on water supply project is being carried out to complete it by end of 2017 while effluent treatment project would be completed in the current year as per the commitment of Sindh government. By and large Sindh government has been delivering what it promised for Thar coal project while federal govt is also fulfilling its commitment for providing transmission lines for the project.





The most important and up-to-date information the delegates got during the visit was that the first phase of Thar Coal Fired Power Projects with the power production capacity of 660 MW would start its commercial operation by June 03, 2019 instead of October 2019 as that was the earlier set target for completion of the project.

Chief Executive Officer of SECMC Shamsuddin Ahmed Sheikh told members of the delegation at the site of the project in district Tharparkar that the financial close of the project had been achieved on April 4 2016 and since then 10.2 per cent of the total work had been completed. We are planning our project in such a manner that there should be addition of 660 MWs every year in the system after year 2018, till reach-

ing total ultimate capacity of 4000 MWs. He said work on power plant and coal mining project had been going on simultaneously.

This is the first coal fired power project in Thar and it is one of the leading energy project of China Pakistan Economic Corridor (CPEC) the CEO of SECMC said adding that this was also the only energy project with such a majority sponsorship of private sector of country.

Mr Shamsuddin informed members of the delegation that under the second phase two more power plants (330 MW generation capacity each) would be launched in January 2016 which would be completed by December 2019 as the SECMC had committed to off take coal for phase II (7.6 mtpa) to Thal Limited and Hubco for setting up plants at the site Thar block II.

The SECMC also planned to add additional capacity of 11.4 mtpa (million tons per annum) coal beyond phase II by December 2021, he added.

Moreover he said that by December 2021 five more coal fired power plants would be set up in the block II of Thar and the total production capacity of coal based electricity of Thar would be expanded to around 3000 MW.

He informed that the coal mining project cost was US \$845 million which would be on the basis of 75.25 Debt to Equity Ratio and would consist of 31.5 per cent foreign and 68.5 per cent local debt.

The main sponsors of the project are Sindh government with 54.7 per cent share Engro and Thal Limited with 12 per cent each and Habib Bank Limited (HBL) with 10 per cent share he remarked.

The chief of SECMC said that the Sindh Government had been a key enabler for the Thar project which committed 110 million equity investment for phase I and provided a back up for sovereign guarantee to the federal government of 700 million.

The SECMC CEO informed that since the financial close of phase I in block II interest in setting up Thar Coal based plants had surged and major industrial houses of the country and prominent Chinese investors had expressed an interest in obtaining coal from SECMC to set up power projects.

Members of the delegation were informed that the mine depth of 40 meter had achieved while the miners would have to go 100 more meters deep to the coal level.

He said it would be 3.8 mtpa an open cast mine ■

Thar Coal proceeding to energize Pakistan

By Engineer M Zeeshan A Alam



Recently, we had a tremendous experience while visiting SECMC project on 5th & 6th of November 2016 with a team comprising of almost 50 members related to energy and other relevant sectors in which our confusions about Thar Coal was not only clarified but we had also given a full chance to learn about this unique project, which will definitely be contributing to minimize Pakistan's energy crisis in a great manner. We had enjoyed marvelous hospitality too from SECMC right from start of the journey till the end for

which we all are very much thankful to everyone especially Mr. Shamsuddin Shaikh (CEO) as he is the true leader who really works on the ground by himself to support his team throughout project by any means.

In short, we can firmly conclude that Thar coal would prove to be an ultimate solution to end the persisting energy shortfall. Following are the interesting synopsis for quick review:

- Total Blocks = 13
- Total Coal Potential = 175 Billion Tons
- Total Energy Potential = 100,000 MW for 300 Years
- Total Area = 9,000 km²
- Block II Percentage = 1% i.e. Block II Reserves = 1.75 Billion Tons
- Energy Potential from Block II = 5,000 MW / year for next 50 Years; 3.8 – 7.6 mtpa Coal Mining (Project Cost USD \$845 Mn), Total Depth = 135 Meters
- Engro Thar Power = 330 x 2 MW (Cost USD 1.1 Bn) - Operational by 2018
- Hubco = 330 x 1 MW
- Thalnova = 330 x 1 MW
- Total Currently Approved Projects = 1,320 MW other than pipeline projects which will also use THAR COAL

Current CSR Activities:

- 2,000 Patients to be facilitated
- 70 Bed Hospitals to be run by Indus Hospital
- 1,000 Students will go to School by TCF
- 171 Homes will be made @ 3.5 Million PKR each for re located Tharis
- 1,000 Tharis are employed after full training will be extended up to 3,000 people. ■



3rd Transforming Youth Media Summit-2016

Javed Jabbar advocates activism among audience for transformation of media, laments unchecked freedom of media



Former federal Information minister Javed Jabbar has expressed serious concerns over unbridled and unchecked freedom given to electronic media in Pakistan in the present scenario saying that audience could not afford to remain passive consumers of information any more as they have to show activism for transformation of media.

He was speaking as the chief guest at the "3rd Transforming Youth Media Summit-2016" organized by Publicity Channel in collaboration with Sui Southern Gas Company here on Friday.

Mr. Jabbar, who also wrote 15 books on media and also been involved in the initial work done in the country to allow privately owned media to start functioning in Pakistan, said that more time he spent observing the liberated and independent media of Pakistan in private sector the more he became sceptical about functioning of media.

The noted media critic said that he had not envisioned what he described absolute unchecked freedom being enjoyed by private electronic media in the present day at the behest of both the government and advertisers.

He said that such unbridled and independent functioning of media would only cause to undermine collective attitudes and conduct of people in the society.

He urged those who control and run privately controlled electronic media to reveal themselves to public, shun obscurity surrounding their lives, adopt transparency, and do present them

for accountability for their errant ways to control production of media content.

He said that people should be least affected by faulty functioning of media if they would duly maintain and observe their good social values and traditions.

Former federal minister and senator urged students of different universities who were present in large number among audience of the moot, to continue with and enhance their reading skills in order to thoroughly go through relevant books and research instead of just relying on Internet and other social media in pursuit of higher education.

He said that use of Internet and "Googling Information" did provide students an opening to a vast resource of information and research but World Wide Web browsing could never become a substitute for proper book reading habit, which otherwise opens many vistas of intellectual and scholarly thinking.

Vice-Chancellor of Sindh Madressatul Islam University Prof Dr Muhammad Ali Shaikh said that historically journalism had been practised in Indian sub-continent by such personalities who wanted to bring about positive social change in the society and for this purpose they had launched a newspaper to disseminate their message.

He said that in such missionary pursuits to do journalism in the Indian sub-continent during past centuries, such noble publishers of newspapers had to face imprisonments, sealing of their



printing presses, and had to incur massive financial losses as advocacy of new ideas by them had not been likened by colonial rulers of that time.

He said the in the current scenario the nature of ownership and entrepreneurship of media had been completely transformed as large corporate business enterprises owned media houses, which had been in the practice of running newspaper and TV organizations purely for commercial gains.

He said the in the present scene where glamorous and glossy electronic media had become all the more pervasive in the society could not overshadow importance of print media, which is practised by people inclined to do research and intellectual work on a thorough basis.

Mubashir Zaidi, writer and senior producer at a private TV news channel, lamented the present system of private TV news channels where anchorpersons and presenters had to use any mean to secure maximum audience for their programmes in order to ensure their survival in the ruthless private TV media industry.

He said it was high that media industry should alter its ways to do its operations so to differentiate it from any other regular business or industry in the country keeping in view social responsibility, which had to be observed by media organizations while producing their content.

Shahbaz Islam, a senior SSGC official, said on the occasion that students of media students in universities should always keenly observe of complete reality portrayed by media regarding any incident of public importance.

Nia Salam, who conducts training for journalists and also a freelance media practitioner herself, said that it would be utterly false to assume that media would do efforts to promote any particular ideology in society as such expectations from media were undue. She said it was primary function of the media to present to public reality whether it was acceptable or otherwise for any particular segment of society.

She lamented that subject of 'Media Studies' being taught at the majority of public sector universities in the country had nothing to do with practical issues of mainstream and social media of the present day. Sana Burney, lecturer at the Indus Valley School of Arts & Architecture, said the mainstream electronic media of the country was not at all promoting rich cultural and social heritage of the Pakistani society.

Chairman of Pakistan Pharmaceutical Manufacturers' Association Dr Kaiser Waheed, Salman Siddiqui of SSGC, Ruqiya Naeem Project Director Publicity Channel TV anchorperson Ayesha Khalid, M. Shahr-oze and others also spoke on the occasion. ■

FPCCI announces new office bearers for the year 2017

The 60th Annual General Body Meeting of the Federation of Pakistan Chambers of Chambers & Industry (FPCCI) was held today (31st December, 2016) at FPCCI Head Office Karachi, wherein, FPCCI Election Commission officially announced the following FPCCI Election results for the term 2017 which, the house, received with loud clapping:

1. Mr. Zubair F. Tufail, President
2. Mr. Aamer Ata Bajwa, Senior Vice President
3. Alhaji Dhani Bukhsh Memon, Vice President from Sindh Province
4. Mr. Wali Muhammad, Vice President (Unopposed) from Balochistan Province
5. Mr. Manzoor ul Haq Malik, Vice President from Punjab Province
6. Mian Shaukat Masud, Vice President from Federal Area (ICT)
7. Mr. Sajjad Sarwar, Vice President from Chamber of Small Traders & Small Industry
8. Mr. Irfan Ahmed Sarwana, Vice President representing Association
9. Mirza Ishtiaq Baig, Vice President representing Association
10. Mr. Saquib Fayyaz Magoon, Vice President representing Association
11. Haji Atta ur Rehman, Vice President representing Association

The results of Vice Presidents from Women CCI and KPK CCI withheld due to litigation in the honorable High Court. ■

FPCCI to organize Fourth Canada-Pakistan Trade Expo 2017 at Toronto, Canada

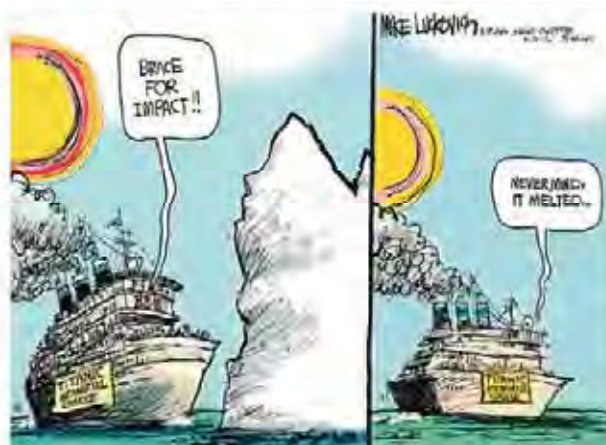


The 4th Canada-Pakistan Trade Expo 2017 at Toronto will be organized in the month of July, 2017 by FPCCI disclosed by the newly elected President FPCCI Mr. Zubair F Tufail, hoping this expo shall help in our exports to capture unconventional North American market. The leading entrepreneurs and industrial sector of Pakistan are being invited to participate in the Expo. He further added that Mr. S. M. Muneer, Chairman, Pakistan Canada Business Council FPCCI shall personally supervise the affairs of the 4th edition of expo.

The President FPCCI further stated that holding this expo shall certainly help in exploiting Pakistani products in Canadian market. The previous three Expos received very encouraging response and expects better response this time. This will afford opportunity to business community of both the countries to further come closer and strengthen economic cooperation and trade relations and shall have positive impact on the export of Pakistani products to Canada.

Chairman, Pakistan Canada Business Council, FPCCI hoped that the series of Pakistan Trade Expo will provide opportunity to explore new avenues for the promotion of Pakistan's exports to Canada and other North American countries. This Expo will also enable us to expose our trade potential in the entire North America, leading buyers, Chain Stores, Super Stores etc of Canada. Special business-to-business (B-2-B) meetings will also be arranged during the Expo. Canada is a potential market for textile, readymade garments, rice, spices, ready to eat meals, construction material, leather goods, jewellery, Biscuits and cookies, dry fruits, bed sheets, towels, surgical item, sports goods, onyx, brass and textile handicrafts etc. FPCCI has already extended invitation for participation to its member bodies and potential manufacturers. Exporters and interested companies may contact Mr. Faisal Joseph, Deputy Secretary, FPCCI at: info@fpcci.com.pk for any information needed about this expo. ■

Sustainability is at Risk!



Every project has immediate gains called acute impacts followed by long term losses called chronic impact that surface up in 15 to 20 years' time. Sustainability of projects depends on minimizing irreversible modifications in the environment. It is one of the laws of environmental sociology which states, "The more the irreversible modifications the more severe will be the adverse impact on the environment."

The current situation in Pakistan as elsewhere in the world since the mid-1960s indicates unequivocally that the earth's ecosystem is faced with extreme climate variations resulting from natural as well as man-made interventions. Pakistan is located in high heat zone area where the intense heat and high aridity has caused widespread degradation of the ecosystem. The area presents a picture of social pollution playing a dominant role in impoverishment of the meager resources of the land to fulfill the demand for urban and industrial development.

Over exploitation of the meager resources has given rise to degradation of soil, water and vegetation. These three elements of the natural ecosystem serve as the natural foundation for human existence. The fragile ecosystem in Pakistan, has lost the productivity of soil through an irrigation system that has outlived its age, impoverishment of plant, animal, soil and water resources has become irreversible and has permanently reduced its capacity to support human life.

Impoverishment of resources leading to environmental degradation is both a cause and a consequence of poverty. Therefore, impoverishment of resources leads to desertification, which in turn leads to poverty, and the vicious circle completes when poverty leads to further desertifica-

tion. Operation of the vicious circle is very much evident from the poverty induced desertification that is rampant all over the rural areas. Shortage of liquid and gaseous fuel created huge demand for firewood. The rural and coastal area is where some small trees are still around and that has prompted the relevant facilitator to go all out for cutting the trees by the root and supplying it to the charcoal kilns. Hundreds of charcoal kilns have been

built just to fulfill this urban and industrial demand and thus the already impoverished rural area has been impoverished further while the short term gain has pushed the wood cutter to absolute poverty.

Level of poverty is increasing further in this arid zone of the world due to ruthless exploitation of the meager resources compounded by frequent droughts, floods and loss of land due to erosion by the sea. The trend, of uprooting shrubs, cutting trees for fuel wood, over grazing due to over stocking, and sand /gravel removal from the river beds, is spreading from the plains to the interior and towards the hills and mountains. If the current trend continues, the already exhausted rangelands will not be in a position to support the existing level of livestock population of the arid region. The economic impact of such a situation has had direct effect on the population and is likely to increase the level of poverty amongst the herders of the area.

Such continuous and uninterrupted degradation of natural resources is pushing the ever growing population for its livelihood to migrate to urban centres, which are not prepared to absorb it. The migration of the rural population to the urban areas has amassed the urban areas with social problems by increasing slums around the cities. This situation has created law and order problems in the cities. Because of increasing poverty and lack of basic amenities the most vulnerable sections of population like the children and women are being affected and will be badly affected in the next few years.

The nexus of climate change-environmental degradation-poverty is caught in the cobweb of social pollution and that impoverishment of resources leads to environmental disasters which in turn

lead to poverty, and the vicious circle repeats when poverty leads to continuous impoverishment.

Some mechanism will have to be worked out so that implementation of the law is effective in restraining all violators without distinction from violating the provisions of the policies, rules and regulations on the climate change, protection of the environment and precious biodiversity and protection of the rights of the citizens as well as wildlife. The sustainability of the ecology, economy and social welfare has been at stake for quite some time; it is now time to: i) reverse the damages done, ii) reverse the impoverishment into improvement, iii) restrain the people from 'enjoying richness' at the cost of damages to productivity and diversity, and iv) 'sharing their richness' with poverty of the masses.

Admittedly this is a gigantic task; it takes a long time to turn the vicious circle into a virtuous circle but the critical stage of entropy has been reached and hence a cut-off date needs to be set straight away. ■

A write is a Environmental & Social Consideration Specialist at EMC Pakistan Private Limited



Pakistan's power sector: going up, down or nowhere?

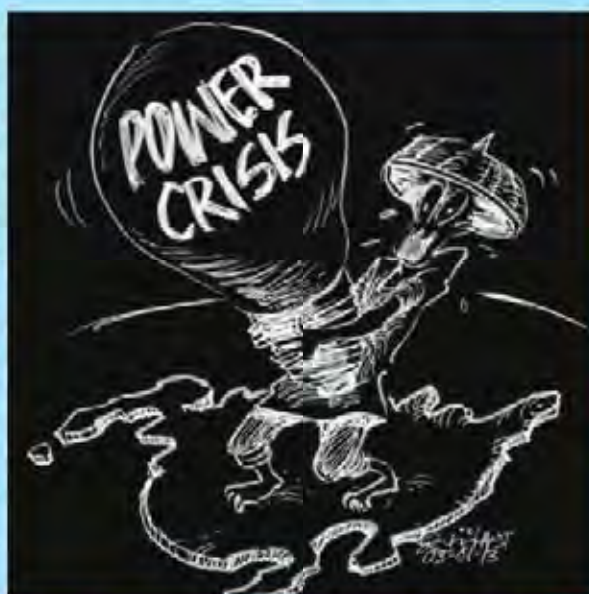
When did we last read positive reviews in the international reports about Pakistan's power sector? Never. It is now accepted internationally that Pakistan's power sector has come out of its worst financial crisis, from posting a loss to the national budget of Rs200bn to now a negligible Rs8 bn per annum. In terms of its impact on the national exchequer, the power sector's performance has brought savings of Rs400 bn in the past two years. On the operations side, the power sector has come a long way from a routine of 12-15 hours of industrial and domestic load-shedding, often unscheduled just a few years back, to now zero load-shedding for industries and a scheduled predictable load-shedding of three hours in urban and four hours in rural areas, as per the new schedule announced in November 2016.

Due to an uncontrollable circular debt, rising at a pace of Rs10-18 billion a month (in a month) during 2007-14, no investors and their bankers were ready to put in their funds in Pakistan's power sector till 2014. After strenuous efforts, the menace of circular debt has been successfully tackled with better recoveries in distribution companies and better management of generation plants plugging losses from all sides. The reduction in oil prices also helped to an equal extent. The result: an increase in circular debt has been capped since Oct 2014.

Now, there is a beeline of foreign and local investors vying to get a space on our grid. In just one year (2015), more than 12000 MWs of new private sector power projects were facilitated as against only 8756 MWs of private sector power generation in the entire (20 years) history of IPPs in the country from 1994-2013. This demonstrates that the power ministry has been able to successfully put better monitoring systems for oversight of the power sector entities which has helped reduce the sector's losses. However, in order to keep this system afloat, such vigilant monitoring and supervision will need to continue, perhaps with greater vigour if new generation is to be smoothly added to the system. In addition, there is also a need to keep the power tariffs realistic and cost-covering. Any artificial lowering of tariffs, will again jeopardise the stability achieved in the power sector, after decades of turbulence.

This tells the story of reduced load-shedding and better financial performance of the power sector, but how would that translate into zero load-shedding as being claimed. We read some worrisome views of few analysts who maintain that the aims for bringing load-shedding (outages) to zero are not supported by the available transmission and distribution capacity. Some other views even question the expected timelines for completion of the new generation projects. These views cannot be ignored especially when they get the support in the reports issued by the regulator which though based on outdated data, still get attention of the power sector analysts.

Power sector projects, like all such large scale undertakings, always have possibilities of changes in the timelines. In order to cater for any such eventuality, against an expected generation



shortfall between 7000-8000 MWs estimated for 2017-18, the additional capacity planned to be achieved by March 2018 is around 10,996 MWs. The question is whether there are any projects expected to get delayed and substantially reduce power availability in March 2018? The frank answer - while the possibility of such an eventuality occurring owing to any unforeseen technical problems in any project can never be ruled out, it will be too far-fetched presuming such problems occurring everywhere, putting the entire plan of zero-load-shedding into jeopardy, God forbid.

And there are plans for the years after 2018, as well. There is a healthy pipeline of 30,837 MWs of the new generation projects already in execution, expected to complete by the

year 2022. This includes the capacity of 10,996 MWs expected by March 2018, but doesn't include many projects such as Diamer Basha Dam and others which are also expected to be initiated soon. In these new projects, a large funding came from the CPEC Energy portfolio which solved the problem of Coal (especially Thar Coal) power financing which Pakistan was seeking to replace costlier generation and to improve the energy security.

There is no doubt that the weak and unreliable transmission and distribution system plagued with constraints and bottlenecks has been a major challenge, for successfully inducting new generation. The simulations run in the Ministry of Water and Power showed that there was no chance of transmitting any new generation on the system as it prevailed in 2013. It could not carry more than 15000-16000 MWs. For a generation of more than 25000 MWs, expected in 2018, there were 38% constraints on the NTDC's 500 KVA and 29% constraints on its 220 KVA transmission network. The work on improving system resilience is going on in all areas of the country, and closely monitored in the Ministry. It has helped reduce these constraints substantially since 2014. This was the reason that all the generated capacity, which went up to 17340 MWs in 2016 summers, was transmitted without major issues. However, the system augmentation work will be completed by the end 2017. It is expected that more than 90% of the system will be constraint free in 2018.

Zero outages for the industry since November 2014 (except during the month of Ramazan) has also helped enhancing GDP growth in 2015-16. The reduced domestic load-shedding has also alleviated the sufferings of the common man to some extent. We need to work hard every hour, all the days in the next eighteen months to ensure that the nation can see the end of the menace of power outages and its remaining adverse effects on the economy and the lives of our people, before the summer of 2018.

The increased generation and removal of system constraints will eliminate outages in most of the country. Futuristic investments will still require to be made into all spheres of power sector, from generation to distribution. The Ministry is committed to keep on working beyond 2018 end load-shedding plan to turn the entire power setup into a modern, efficient and resilient system in line with the aim to enhance energy security of the country. ■



Khyber Pakhtunkhwa
Economic Zones Development &
Management Company

Invest in Khyber Pakhtunkhwa The Heart of China Pakistan Economic Corridor (CPEC)

NEW ERA OF INDUSTRIALIZATION IN KHYBER PAKHTUNKHWA

Khyber Pakhtunkhwa Economic Zones Development & Management Company (KPEZDMC) is diligently working towards promoting rapid industrialization in Khyber Pakhtunkhwa. KPEZDMC aims to facilitate industrial growth by developing modern industrial estates leading to mass job creation, skill enhancement, increased productivity that ultimately contributes to poverty reduction and a prosperous Khyber Pakhtunkhwa. KPEZDMC plans to develop new Economic Zones across Khyber Pakhtunkhwa. Projects in the pipeline include:

ECONOMIC ZONES ACRES

1. Hattar Economic Zone	1,424
2. Ghazi Economic Zone	89
3. Jalozai Economic Zone	257
4. Rashakai Economic Zone	1,000
5. Kohat Economic Zone	1,000
6. Gomal Economic Zone (D. I Khan)	189
7. Risalpur Economic Zone	92
8. Nowshera Economic Zone	100
9. Chitral Economic Zone	50

ECONOMIC ZONES ACRES

10. Buner Economic Zone	200
11. Mansehra Economic Zone	108
12. Swat Economic Zone	40
13. Bannu Economic Zone	400
14. Gadoon Amazai Economic Zone	200
15. Batagram Economic Zone	100
16. Jehangira Economic Zone	100
17. Karak Economic Zone	1,000

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- Vocational Training Center
- Efficient Roads Network
- Captive Power Generation
- Controlled Access
- Centralized Commercial Area
- Sewage & Effluent Treatment
- Water Supply
- Telecom & IT Infrastructure

EASY

Installment Plan

Uninterrupted
Power Supply

10 Years
Income Tax Holiday

25%
Discount on
Land Price

25%
of Equity Investment
of woman entrepreneurs to be
financed by the KP Government

5%
Markup Discount
on financing for five years for new
expansion projects

25% Subsidy
on the transportation cost from
Karachi Port to anywhere in KP

One time
Duty Free
import of capital goods



Khyber Pakhtunkhwa Economic Zones Development & Management Company
120 Industrial Estate, Jamrud Road, Hayatabad, Peshawar - 25000 Khyber Pakhtunkhwa. 091-9217720

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By Roger Harrabin

India's double first in climate battle

Two world-leading clean energy projects have opened in the south Indian state of Tamil Nadu. A £3m industrial plant is capturing the CO₂ emissions from a coal boiler and using the CO₂ to make valuable chemicals. It is a world first. And just 100km away is the world's biggest solar farm, making power for 150,000 homes on a 10 sq km site. The industrial plant appears especially significant as it offers a breakthrough by capturing CO₂ without subsidy. Built at a chemical plant in the port city of Tuticorin, it is projected to save 60,000 tonnes of CO₂ emissions a year by incorporating them into the recipes for baking soda and other chemicals.

Here's how it works:

1. The plant operates a coal-fired boiler to make steam for its chemical operations.
2. CO₂ emissions from the boiler's chimney are stripped out by a fine mist of a new patented chemical.
3. A stream of CO₂ is fed into the chemicals plant as an ingredient for baking soda and other compounds with many uses, including the manufacturing of glass, detergents and sweeteners.



Zero emissions

The owner of the chemicals plant, Ramachandran Gopalan, told a BBC Radio 4 documentary: "I am a businessman. I never thought about saving the planet. I needed a reliable stream of CO₂, and this was the best way of getting it."

He says his operation has now almost zero emissions. He hopes soon to install a second coal boiler to make more CO₂ to synthesise fertiliser.

The chemical used in stripping the CO₂ from the flue gas was invented by two young Indian chemists. They failed to raise Indian finance to develop it, but their firm, Carbonclean Solutions, working with the Institute of Chemical Technology at Mumbai and Imperial College in London, got backing from the UK's entrepreneur support scheme.

Their technique uses a form of salt to bond with CO₂ molecules in the boiler chimney. The firm says it is more efficient than typical amine compounds used for the purpose.

They say it also needs less energy, produces less alkaline waste and allows the use of a cheaper form of steel - all radically reducing the cost of the whole operation.

The firm admits its technology of Carbon Capture and Utilisation won't cure climate change, but says it may provide a useful contribution by gobbling up perhaps 5-10% of the world's emissions from coal.

Lord Oxburgh, former chairman of Shell, and now director



and head of the UK government's carbon capture advisory group, told the BBC: "We have to do everything we can to reduce the harmful effects of burning fossil fuels and it is great news that more ways are being found of turning at least some of the CO₂ into useful products."

Solar farm

Meanwhile, the nearby giant Kamuthi solar plant offers a marker for India's ambition for a rapid expansion in renewables. It is truly enormous; from the tall observation tower, the ranks of black panels stretch almost to the horizon. Prime Minister Modi is offering subsidies for a plan to power 60 million homes with solar by 2022 and aims for 40% of its energy from renewables by 2030. For large-scale projects, the cost of new solar power in India is now cheaper than coal. But solar doesn't generate 24/7 on an industrial scale, so India has adopted a "more of everything" approach to energy.

The firm behind the solar plant, Adani, is also looking to create Australia's biggest coal mine, which it says will provide power for up to 100 million people in India. Renewables, it says, can't answer India's vast appetite for power to lift people out of poverty. And questions have been raised recently as to whether India will stick to its renewables promises now President-elect Donald Trump may be about to scrap climate targets for the US. At the recent Marrakech climate conference, China, the EU and many developing countries pledged to forge ahead with emissions-cutting plans regardless of US involvement. But India offered no such guarantee. Some environmentalists are not too worried: they think economics may drive India's clean energy revolution. ■

Roger Harrabin is a BBC environment analyst



High production cost: Ministry suggests placing cap on nuclear power plants

With constant emphasis on slapping a ban on the use of imported coal and furnace oil in electricity production, the government is mulling over putting a brake on the installation of nuclear power plants in future because of concern over the high cost of production.

According to a senior official of the Ministry of Water and Power aware of the development, the ministry floated a proposal in a high-level meeting chaired by the prime minister for placing a cap on imported fuel consumption in power generation as electricity was expected to be in surplus in 2022.

"With the building of new dams and utilisation of huge Thar coal reserves, the reliance on imported fuels could be reduced," the official quoted the ministry as saying.

While saying that furnace oil consumption should be brought down in the national interest, the ministry emphasised the need for a comprehensive assessment of the sustainability of domestic resources such as natural gas and Thar coal before restricting the use of imported fuels.

The ministry also suggested to the premier that a cap should be placed on nuclear power projects as their production cost stood very high. Meeting participants noted that the Strategic Plans Division had requested for giving a briefing to the prime minister on the nuclear power generation, therefore, the cap should not be considered until the presentation was given.

Minister of Planning, Development and Reform Ahsan Iqbal said the government was determined to utilise hydel sources for power generation. In that regard, he said, construction of Munda Dam should be considered as apart from power generation, the dam would play a pivotal role in flood mitigation in Khyber-Pakhtunkhwa.



The Ministry of Water and Power also suggested restricting the share of renewable energy at 10% of the total installed capacity, saying solar and wind power projects were operating at a much lower efficiency and creating problems for the national grid.

The government of Sindh has issued 51 Letters of Intent (LoIs) for the installation of wind power plants in the province whereas Punjab is in the process of providing the LoIs. Attention was drawn to those developments in the meeting.

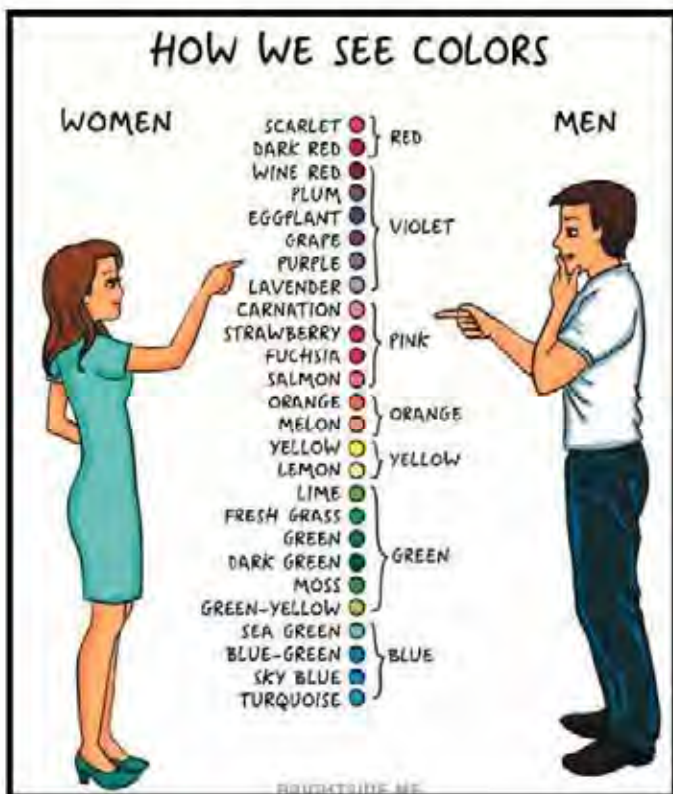
The power ministry official revealed that Pakistan's total power generation capacity in 2016 stood at 20,857 megawatts and with the addition of 19,267MW by 2018, the capacity would grow to 33,124MW. It will rise further to 51,694MW by 2022.

Among different sources of electricity, hydroelectric power has a share of 34% in the existing power generation capacity, furnace oil 29%, locally produced natural gas 19%, liquefied natural gas (LNG) 8%, renewable and nuclear energy 5% each.

In 2018 when power production is expected to go up to 33,124MW, the share of hydroelectric power will be 30%, furnace oil 18%, LNG 16%, local natural gas 12%, imported coal 10%, renewable energy 8%, nuclear power 4% and local coal 2%.

However, in 2022, hydroelectric power will likely have a share of 36%, followed by 12% for furnace oil, 10% for LNG, 9% for nuclear energy, 9% for renewable energy, 8% for local natural gas, 8% for local coal and 8% for imported coal. ■

Courtesy: Express Tribune



CONSIDERATIONS FOR 2017

1. ON EARNING: Never depend on single income. Make investment to create a second chance.
2. ON SPENDING: If you buy things you do not need, soon you will have to sell things you need.
3. ON SAVINGS: Do not save what is left after spending, but spend what is left after saving.
4. ON TAKING RISK: Never test the depth of a river with both feet.
5. ON INVESTMENT: Do not put all eggs in one basket.
6. ON EXPECTATIONS: Honesty is a very expensive gift. Do not expect it from cheap people.
7. Past is a waste paper, present is a newspaper, and future is a question paper. Come out of your past, control the present, and secure the future.

Water and power ministry seeks Rs 175 bn to clear dues

The Ministry of Water and Power has sought urgent intervention from the Prime Minister for sanctioning of Rs 175 billion supplementary budget that would clear the power sector dues, warning that the "present financial crisis" may soon blow into a full-fledged power crisis across the country.

Power plants and PSO may default on Liquefied Natural Gas (LPG) and furnace oil payments in coming days due to nonpayment of power subsidies by the Ministry of Finance, wrote Secretary Water and Power Younus Dagha to Fawad Hasan Fawad, Secretary to the premier, in a "most urgent", message.

Dagha has informed that an amount of Rs 283.2 billion of the power sector was stuck due to the Ministry of Finance and Revenue. Out of that Rs 174.94 billion are on account of subsidies and Rs 108.2 billion General Sales Tax refunds, blocked by the Federal Board of Revenue (FBR).

"The burden of Rs 283.2 billion is becoming an unbearable cash flow constraint, which is bound to lead to a full fledged crisis, if not resolved on priority," cautioned the Secretary Water and Power.

The letter to the PM's Office also appears an indictment of the finance ministry, as he has accused the ministry of understating the budget of electricity subsidies.

"Due to deficient budgeting of the subsidies, the power sector subsidies have accumulated to Rs 174.97 billion, resulting in non-payments to Independent Power Producers (IPP) in this financial year along with increase in payables of PSO," he wrote.

He said that the Ministry of Finance has not booked the impact of Rs 24 billion payments of General Sales Tax on electricity bills of Federally Administrated Tribal Areas (FATA) and over Rs 20 billion arrears of subsidy on agriculture tube-wells in Balochistan. He said that the finance ministry has also not budgeted the Rs 66 billion tariff differential subsidies to AJK consumers and roughly Rs 28 billion subsidies of K-Electric.



The Ministry of Finance did not comment on the issue. For the current financial year 2016-17, the federal government has allocated Rs 118 billion for power subsidies - down from last year's spending of Rs 171.2 billion.

Even after paying Rs 480 billion in 2013, the power sector circular debt increased to Rs 665 billion by June this year including the amount parked in a power holding company.

The power secretary warned that the following events may occur in the coming days due to present financial crisis. He cautioned that the IPPs may serve notice of sovereign default and power generation may reduce due to drying up of their credit lines. The PSO may default in furnace oil payments and LNG payments to their supplier and reduced supplies to the power plants. Resultantly, reduced generation may lead to non-observance of the load shedding plan, he added.

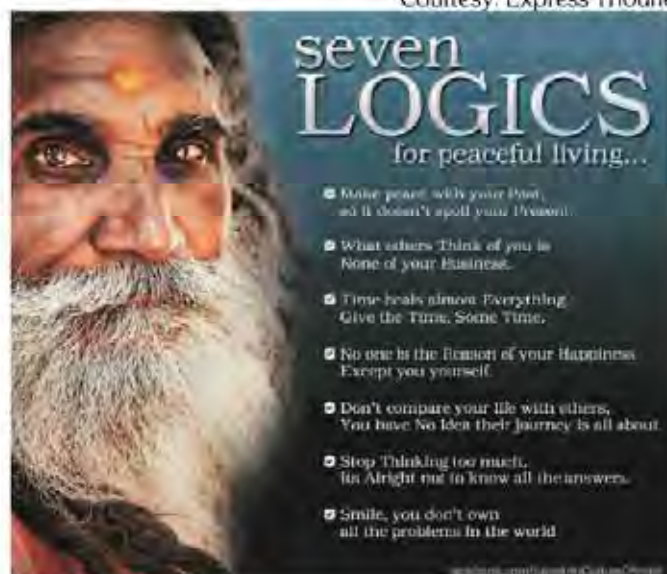
The power ministry has also demanded that the issue of Rs 108.2 billion General Sales Tax (GST) refunds may be settled immediately and the FBR should immediately stop seizing power distribution companies' accounts to meet its revenue targets.

"The unfair imposition of GST continues and so does the frequent seizure of accounts despite prime minister's instructions, causing drain of billions of rupees every months on false claims by FBR officials to just to meet their revenue collection targets," stated the Secretary Water and Power. ■

Courtesy: Express Tribune



A man named Chen Si dedicates every weekend of his life at China's Nanjing Yangtze River Bridge (the World's #1 suicide site) and saves people from jumping. He has saved 321 people in 13 years. Chen Si rents a two-bedroom flat so that those in need could have a place to stay after being saved from the bridge. The flat costs 1,000 yuan (\$145) a month. Two-thirds of the cost is covered by donations and Chen pays the rest. With a monthly salary of 4,000 yuan (\$578), he spends half of the money on his volunteer work and hands the rest to his wife.





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The cockroach theory for self development

A beautiful speech by Sundar Pichai
an IIT-MIT Alumnus and Global Head Google Chrome

At a restaurant, a cockroach suddenly flew from somewhere and sat on a lady. She started screaming out of fear. With a panic stricken face and trembling voice, she started jumping, with both her hands desperately trying to get rid of the cockroach. Her reaction was contagious, as everyone in her group also got panicky. The lady finally managed to push the cockroach away but ...it landed on another lady in the group.

Now, it was the turn of the other lady in the group to continue the drama. The waiter rushed forward to their rescue. In the relay of throwing, the cockroach next fell upon the waiter. The waiter stood firm, composed himself and observed the behavior of the cockroach on his shirt.

When he was confident enough, he grabbed it with his fingers and threw it out of the restaurant. Sipping my coffee and watching the amusement, the antenna of my mind picked up a few thoughts and started wondering, was the cockroach responsible for their histrionic behavior?

If so, then why was the waiter not disturbed?

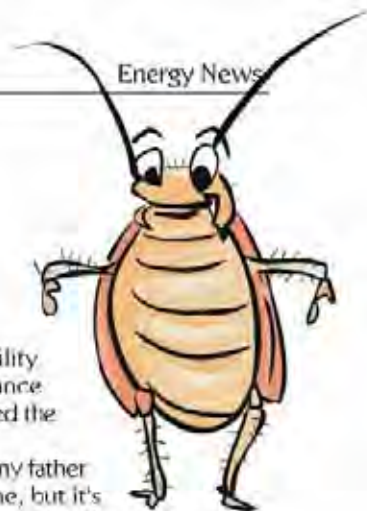
He handled it near to perfection, without any chaos.

It is not the cockroach, but the inability of those people to handle the disturbance caused by the cockroach, that disturbed the ladies.

I realized that, it is not the shouting of my father or my boss or my wife that disturbs me, but it's my inability to handle the disturbances caused by their shouting that disturbs me.

It's not the traffic jams on the road that disturbs me, but my inability to handle the disturbance caused by the traffic jam that disturbs me. More than the problem, it's my reaction to the problem that creates chaos in my life.

Lessons learnt from the story: I understood, I should not react in life. I should always respond. The women reacted, whereas the waiter responded. Reactions are always instinctive whereas responses are always well thought of. A beautiful way to understand.....LIFE. Person who is HAPPY is not because Everything is RIGHT in his Life.. He is HAPPY because his Attitude towards Everything in his Life is Right...!!■



Five die in Bulgarian train LPG blast



Five people died and at least 20 were injured, some critically, when a goods train transporting LPG gas derailed in Bulgaria. The accident happened near the village of Hitrino in the Shoumen region of on December 10. The explosion destroyed or seriously damaged a large number of houses near the railway line. The cause of the explosion has not been confirmed. The train had been travelling from the Bulgarian Black Sea port city of Bourgas to Rousse. It was carrying 26 tanks, 20 of which were propylene, three LPG and three were empty. A team from the Regional Inspectorate of Environment and Water has been measuring substances in the air.■

Brazilian builds water-powered motorbike, gets 310 miles out of 1 liter of water

Brazilian engineer, Ricardo Azevedo, has developed a hydrogen-powered engine that has an external car battery and runs on water. Dubbed the "T Power H2O," it works by splitting H2O into hydrogen and oxygen and using the hydrogen as fuel; the resulting combustion moves the vehicle. In the following video, the inventor shows how even polluted water can make the bike move. Azevedo explains, "the advantage of this motorcycle, which works with the hydrogen that comes from the water, is that the result that comes out of the exhaust is water vapor. This is different from gasoline, which [produces] carbon monoxide."■



LPG cooking cylinders to be banned in UAE



LPG cooking cylinders are reportedly set to be banned in new buildings in the United Arab Emirates (UAE). Gulfnews.com has stated the move will come in as part of a new UAE Fire and Life Safety Code of Practice. Lt Col Jamal Ahmad Ibrahim, director of Preventive Safety Department at the General Directorate of Dubai Civil Defence, said new buildings will not be issued permits if they allow occupants to use LPG cylinders, in an attempt to reduce fire accidents caused by gas leakage and cylinder explosions.

He told Gulfnews.com: "Buildings have to offer centralised gas pipe network if they allow occupants to use cooking gas. Or else they should use electric cookers." Dubai Properties banned LPG cylinders in Al Khail Gate following a blast caused by gas leakage in an apartment which resulted in a woman's death.

The developers now want to use composite LPG cylinders that are comparatively much safer than the traditional metal cylinders.■



PPL-operated Gambat South Block adds 35 MMscfd to national gas supply

Federal Minister for Petroleum and Natural Resources Shahid Khaqan Abbasi formally inaugurated the recently commissioned 50 MMscfd Gas Processing Facility II (GPF-II) at Gambat South Block during a well-attended event hosted by Pakistan Petroleum Limited (PPL). The occasion drew a diverse gathering comprising provincial and local government officials, area notables and media representatives.

Working on full capacity, GPF-II is currently producing 35 MMscfd pipeline quality sales gas, nearly 680 bpd condensate and 12 mtd LPG, which translates to more than 2.3 MMBOE annually, resulting in an annual saving of USD 105 million to the national exchequer.

Located in district Sanghar, Sindh, Gambat South is operated by PPL with 65 percent working interest. So far, eight discoveries - Wafiq, Shahdad, Sharf, Kinza, Faiz (two formations), Kabir and Hatim - have been made in the block. Of these,

Shahdad is already producing 6 MMscfd sales gas and 80 bpd condensate through GPF-I commissioned since mid-2015.

In his welcome address, MD and CEO Syed Wamiq Bokhari gave an overview of the company's exploration and production programme with a focus on production enhancement efforts from Gambat South. He also shared PPL's recent achievements, including net production crossing the 1 Bcfpde mark, and the current year's ambitious plan of drilling a record 28 wells. In addition, Bokhari spoke on PPL's CSR efforts in Sindh, including District Sanghar.

Speaking on the occasion, Abbasi commended PPL on its efforts to support the government's resolve to bridge the demand-supply gap.

Looking ahead, PPL plans to install GPF-III with a processing capacity of 60 MMscfd to tap additional reserves from the block. GPF-III is expected to be completed by the close of 2017. ■

Marine Pollution Control Board Meeting at KPT Head Office

Marine Pollution Control Board has constituted a committee to evaluate the projects like S-III, S-IV and other projects already in the pipeline for solid waste and chemical waste disposal, falling in our sea waters through various culverts and the committee is tasked to submit its report in two weeks' time. This was decided at a high level meeting of Marine Pollution Control Board at KPT Head office which was chaired by federal Minister for Ports and Shipping Senator Mir Hasil Khan Bizenjo. The meeting was also attended by Secretary of Ports and Shipping Mr. Khalid Pervaiz, Director General Ports and Shipping Mr. Asad Rafi Chandana, Chairman KPT Vice Admiral (R) Shafqat Jawed HI (M) besides other stakeholders. The meeting was followed by briefing given to media.

The Minister Hasil Bizenjo while briefing the media informed that the is comprising of KPT Chairman Vice Admiral (R) Shafqat Jawed, Commander Fleet Pakistan Vice Admiral Syed Arifullah Hussaini and a representative of Sindh Government. The Chief Secretary of Sindh has been asked to nominate a representative for this formulated committee.

The Minister said further that it is high time and that the sea waters of Karachi is heavily polluted through scores of waste and chemicals falling untreated in it as produced by the industrial sector. On submission of report, another meeting will be called and the Sindh Chief Minister also be approached to coordinate with concerned departments/institutions. The Minister optimistically hoped that the Chief Minister and the federal government will jointly implement framed policies and ensure early completion of the treatment plant projects to stop the polluted waste from falling into the sea waters of Karachi. ■

Imran Ghaznavi joins OGRA as Senior Executive Director

Imran Ghaznavi has joined Oil and Gas Regulatory Authority (OGRA) as Senior Executive Director (Corporate and Media Affairs). He will also serve as official spokesman of OGRA.



OGRA sources said that he is an accomplished professional in strategic management, communication and perception management with an experience of over 25 years.

He holds MBA and Mass. Communication degrees.

Mr. Ghaznavi has worked in both corporate as well as public sector organizations. He performed his duties at senior management positions including Security Exchange Commission of Pakistan, Competition Commission of Pakistan, Pakistan International Airlines, Planning Commission of Pakistan and Federal Board of Revenue.

He was also member, Advisory Committee of Federal Tax Ombudsman. Mr. Ghaznavi also served in oil sector as well as major media groups of Pakistan. ■

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PSO imports first vessel of 500 ppm environment friendly low-sulfur Euro II diesel

Pakistan's flagship oil marketing company Pakistan State Oil has imported the first vessel of the country's foremost low-sulfur diesel product that ensures a healthier environment and better performance of vehicles.

The move comes just two months after PSO successfully launched higher-grade RON petrol for the first time in Pakistan. Bringing the fuel revolution that it triggered and spearheaded to a full-circle, PSO has received the first 55,000 MT low-sulfur diesel vessel from Kuwait, heralding a new era of premium quality diesel in the country with more to follow in the coming weeks and months.

PSO's new low-sulfur diesel product with 500 ppm (as opposed to 10,000 ppm that the existing local diesel products from Karachi-based refineries contain), is the first and the only EURO II compliant diesel



to be shortly available in the Pakistani market.

"I congratulate Pakistan State Oil on becoming the first OMC to import the country's first environment- and vehicle-friendly diesel product, and compliment the company for materialising the vision of the Government of Pakistan," said Mr. Shahid Khaqan Abbasi, Minister of Petroleum and Natural Resources.

With the new diesel product being

rolled out, it is expected to assist in improving the environment and facilitating the climate change commitments of the government in addition to reducing health concerns associated with air pollution, as low-sulfur diesel is expected to significantly improve the air quality. The resultant emission reductions of hydrocarbons and oxides of nitrogen by use of low-sulfur diesel will be a huge step forward toward improving the country's environment.

"With the import of Pakistan's first low-sulfur diesel vessel, PSO has yet again emerged as an industry," said Sheikh Imran ul Haque, CEO & MD Pakistan State Oil. "Having introduced LNG in 2015 and higher-RON 92/95 grade gasoline in November 2016, and now the low-emission diesel product, we are proud to be the torchbearer of Pakistan's fuel revolution and will continue to introduce and promote quality fuels in the country," he added.

Pakistan State Oil pledges to continue undertaking initiatives that enhance customers' fuelling and driving experience, and it is at PSO where every safe journey confidently begins. ■

Majyd Aziz elected as the New President of Employers' Federation of Pakistan



Board of Directors of Employers' Federation of Pakistan (EFP) unanimously elected Mr. Majyd Aziz as President and Mr. Zaki Ahmed Khan as Vice President for 2017-19.

Mr. Majyd Aziz is Former President of Karachi Chamber of Commerce and Industry and Former Chairman of SITE Association of Industry. Mr. Zaki Ahmed Khan is associated with EPLA Laboratories as its GM, HR, IR, Administration and Legal Affairs. He has also been Vice President in the preceding term.

Other elected members of Board of Directors/Managing Committee are Mr. Ahsan Ullah Khan, Mian Muhammad Adress, Mr. Hanif Sattar, Mr. Asif Aziz Zuberi, Mr. Akram Farid, Mr. Ismail Suttar, Ms. Saadia Naveed, Ms. Sharon Dias (DGM HR, PARCO), Mr. Khawaja Muhammad Nauman, Haji Muhammad Javed, Mr. Muhammad Feroz Alam, Mr. Sheikh Abdul Waheed Sandal, Mr. Mohsin Ashraf Tabani, Mr. Shahid Mustafa Qureshi, Mr. Khalid Junejo, Mr. Humayun Nazir (GM Human Capital, QICT) and Mr. Syed Nazar Ali (CEO Skill Development Council). ■

Govt urged to take emergency steps to reverse menace of marine pollution

The National Forum for Environment and Health has welcomed the move to convene the meeting of Marine Pollution Control Board after a long time in a situation when the problem of seaborne pollution has become an alarming issue of Pakistan.

In a statement issued here, the NFEH President Muhammad Naeem Qureshi expressed serious concerns over unchecked discharge of 550 million gallons of waste water into sea on a daily basis without any treatment.

He said that all the three sewerage treatment plants of Karachi Water & Sewerage Board were non-functional while Sindh government on its part had failed to get installed such a treatment plant at any of the industrial estates of the city.

The NFEH chief said that owing to such persisting sorry state of affairs, the marine life had virtually become extinct in up to 20 Nautical Miles area from coastline of Karachi. He said that Pakistani economy could suffer a serious setback if there was no check on rampantly increasing marine pollution as shrimp exports would decline while there could be ban imposed again by the European Union on imports of seafood from Pakistan.

He appealed to Sindh chief minister and presidents of Federation of Pakistan Chambers of Commerce & Industry and of Karachi Chamber of Commerce & Industry to take action on emergency basis so that effluent treatment plants should be installed at all industrial zones of the city in collaboration with the concerned private sector.

The NFEH president also appealed to chairmen of Karachi Port Trust and Port Qasim in the city to take the required measures so that pollutants could not get discharged into open sea from their respective areas of responsibility along the coastline. He said that all the concerned agencies and the government had to sit together to find a practical solution to this alarming issue as otherwise constant damage to environment would translate into colossal loss to the Pakistani economy depriving it of income of millions of dollars on annual basis. He also feared that thousands of people would be rendered jobless due to the menacing issue of sea pollution. Mr. Naeem Qureshi expressed hope that Marine Pollution Control Board would take effective steps to rectify the situation. ■





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By Dr Waqar Qureshi

Choice of Wind Generator Technology

Wind farm projects are mainly of two types based on connection location. Small scale wind farms and large scale (high voltage grid connected) wind farms/parks. Small scale wind turbines are behind the distribution network and do not impose direct threat to grid/network. Large scale wind farms directly integrated into grid could impose direct threat to voltage stability of the system and also get affected by the performance standards of the grid itself. Grid with tighter voltage and frequency requirements demand wind turbine generator to operate within certain limits of voltage and frequency known as voltage/frequency ride-through requirement. These requirements are generally part of grid code or electricity regulation of the grid.

For large wind farm grids like owned and operated by K-Electric or NTDC, Pakistan; it is very important to consider accurate Wind Turbine Generator Technology (WTG) type for each project based on its own merits. For a system which is subject to multiple fluctuations and interruptions on frequent basis, a suitable WTG technology is needed. Most of the wind development project integration studies would consider grid connection requirements of transmission companies such as K-Electric or NTDC. However, it is important to understand the risk of connection requirements' changes with passage of time and grid performance challenges.

A number of wind generator types are available and installed worldwide. These may be identified as four different generator types. To make things simpler they have been named Type-1 to Type-4 Wind Turbine Generators (WTGs).

Type-1 WTG is a squirrel cage induction generator with fixed rotor resistance, while the Type-2 WTG is a wound rotor induction generator with variable resistance with a high-frequency switch control. Type-3 WTG is configured by a Doubly Fed Induction Generator (DFIG). It is also a variable speed induction generator capable of speed control with $\pm 30\%$ of slip range. Additional feature is the voltage produced by the power converter between rotor and grid. Type-4 WTG is configured using a permanent magnet synchronous generator (PMSG) with full power conversion through frequency converters. All four types of WTG arrangements are shown in Figure 1.

In the presence of grid codes, all WTGs are required to stay connected to ensure system security and stability. They may disconnect if the system voltage moves beyond allowed voltage-time profile envelopes. Based on the grid code requirements, manufacturers have come up with various solutions for all types of WTGs.

In current time, Type-1 and Type-2 WTGs are almost obsolete and Type-3 are still being manufactured for specific orders. Most of the new built are involving Type-4 WTG. Due to unavailability of consolidated data of currently installed technologies in Pakistan, author is unable to make any qualitative comments on performance of those wind farms under various grid scenarios. However, it is aimed to present that level of analysis once required data/information is available. ■

Author (Dr. Waqar Qureshi, PhD, PMP) is a Senior Transmission Advisor for one the largest electricity generation company in New Zealand.

Coal may be cheap, but it comes at a heavy price

Transshipment project at Port Qasim has left govt, industrialists divided

Pakistan's romance with coal has just begun and environmentalists are not happy with the country's new-found love. Industrialists, on the other hand, seem okay with the idea, but not when it comes at the expense of environmental damage around their factories.

Pakistan is set to build a coal transshipment project at berth number 3 and 4 of Port Qasim that will be used to transport the fuel for two, 660MW coal-fired power plants in Sahiwal. The project is part of the multi-billion dollar China-Pakistan Economic Corridor (CPEC) and forms part of the PML-N promise that it would end load-shedding before the next general elections.

However, the industrialists' objection is not aimed at discouraging the government from taking steps towards an energy-sufficient Pakistan. Their argument stems from the worry that their exports may be threatened due to the dispersion of coal dust in the surrounding areas.

"There are many sensitive industries in the vicinity of the proposed project and we are concerned that the output of these factories would be damaged due to coal dispersion," spokesperson of Bin Qasim Association of Trade and Industry (BQATI) said.

The coal jetty, which envisages transporting thousands of tons of coal north of the country, is surrounded by industries including pharmaceutical, edible oil, food and a water filtration plant among others. There are currently 180 large- and medium-size industrial units operating in the industrial area at Port Qasim, Pakistan's second busiest port that handles about 40% of its seaborne trade.

Factory owners are worried about escalation as well. They fear that this may just be the start of a gradual move towards many such coal-powered projects at the port. Since the country's electricity demand is growing fast, the government may encourage more investment in other coal transshipment projects, which would hurt the businesses of surrounding industries.

Thar Coal project faces prospect of delay

Environmentalists believe that Thar Coal Project will cause more harm than good, given the country's history of weak enforcement and monitoring incapability.

"The project is going to badly affect the natural environment. The Sindh Environ-



ment Protection Agency (SEPA) should work in the interest of people and not those who destroy the environment," said Roland deSouza, executive member Shahn, a Karachi-based NGO that works for environment protection.

He said that SEPA does not have the required workforce to monitor such a huge project. "The agency is likely to approve it and, like the other projects it has approved in the last decade, this one will too, end up destroying the environment."

The other side

Proponents say that it is still possible to control the dispersion of coal dust by spraying water and other binding agents at the coal import facility. Their arguments are based on regular monitoring as the project moves forward. However, detractors maintain such mitigation measures would not be enough.

"We fear the project would hurt our

exports. Due to the sensitive nature of our products, we cannot afford a coal jetty within a kilometre's radius of our factory as it will affect the quality of our medicines," a top official of a pharmaceutical company said.

Pakistan, China ink agreement for coal project

The automobile industries in the Bin Qasim area that are concerned about the air-mix, which is crucial to their operations, said that they will have to move industry somewhere else if this project is built at the proposed location. We produce

highly sensitive auto parts that cannot be produced in the presence of air that is polluted with coal particles," a representative of an auto parts making company commented on condition of anonymity.

Another business owner echoed a similar view. "We produce food products. We believe it will not be humanly possible for us to protect our machinery and our products from the dispersion of small coal particles," said an official of a multinational food company that is located within a kilometre or so of the proposed coal jetty.

On the other end is SEPA Director General Naeem Ahmed Mughal.

He says that his office would ensure the project meets all environment protection measures during and after completion of the project.

However, Mughal, who presided over a recent public hearing organised at a local hotel, said that the project is very important for the country's economy. ■





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PPL's net production crosses 1 billion cubic feet

Pakistan Petroleum Limited (PPL) recently achieved a major milestone in November with net PPL production once again crossing the 1 Bcfe/day-mark [Billion cubic feet equivalent per day (Bcfe/d)], resulting in an overall production increase of more than 10 percent during the current year as compared to 2014-2015.

This has been made possible largely due to the company's structural reorganization to an asset-based hybrid set-up in mid-2015, enabling renewed focus to optimize reserve replacement and production from mature assets and fields.

Notable among these are drilling a record 23 operated wells (including 11 development wells with four each in Sui and Kandhkot, two in Adhi and one in Gambat South), maximizing production efficiencies mainly through revamping of Sui compressors and workover jobs on existing wells in various fields and commissioning of new production facilities at Adhi and Gambat South.

With respect to PPL's mature assets, this entailed arresting the annual historic production decline of 6 percent from PPL's flagship Sui Gas Field as well as reversing the decline with production being approximately 5 percent higher than 2014-2015, increasing

gross production from Adhi and Kandhkot fields from 84 MMscfde [Million standard cubic feet per day equivalent (MMscfde)] and 159 MMscfde in 2014-2015 to 111 MMscfde and 203 MMscfde, respectively, in 2016-2017.

Looking to the future, PPL continues to improve production efficiencies and implement an aggressive exploration programme to enhance production while maintaining a healthy reserve replacement ratio. During 2015-2016, for instance, the company made six discoveries and drilled 12 exploratory wells in operated blocks and achieved 127 percent reserve replacement ratio. ■

PPL supports Indus & Koohi Goth hospitals

Pakistan Petroleum Limited (PPL) donated Rs. 12.4 million and Rs. 9.3 million to Indus Hospital (IH) as well as Koohi Goth Hospital (KGH), respectively, as part of its ongoing CSR efforts to provide free-of-cost, quality healthcare to the underprivileged. MD & CEO PPL Syed Wamiq Bokhari presented donation cheques to CEO IH Dr. Abdul Bari Khan and President KGH Dr. Syed Tipu Sultan on December 13 in the presence of representatives from both organizations and company staff at a simple event organized at PPL's head office, Karachi.

The donations will assist in improving essential mother and child healthcare, which remain the most critical issue in Pakistan with infant mortality rate at an alarming 66 per 1,000 births and maternal mortality at 170 per 100,000 live births.

"Providing quality healthcare, especially for mother and child, has remained a key priority for our CSR initiatives. PPL has also established fully-equipped mother and childcare facilities in some of the remotest areas in the country," said Bokhari.

PPL's donation will be used to fund the operationalization of a state-of-the-art Neonatal Intensive Care Unit at IH's Sheikh Saeed Memorial Campus located near Korangi, Karachi, catering to over 0.5 million people living in the vicinity beside those coming from other areas. IH was established in 2007 to extend free-of-cost quality treatment to the underserved. Currently, Indus reaches to over 1000 in- and out-patients on a daily basis through its eight campuses across the country.

Established in 2006 in Landhi, Karachi, KGH is a 200-bed private facility, providing free-of-cost treatment to deserving women suffering from obstetric and gynaecological disorders, especially fistula, due to complications during childbirth. ■



Maple Leaf wins power generation licence

The regulator has granted a power generation licence to Maple Leaf Power Limited, clearing the way for setting up an imported coal-fired plant of 40 megawatts at an estimated cost of Rs5.5 billion. It will supply electricity to its parent company, a cement manufacturer based in Lahore, which is expected to start by July 2017.

"Electric power from the coal-based generation facility/thermal power plant of the licensee/Maple Leaf Power Limited (MLPL) will be supplied to Maple Leaf Cement Factory," said National Electric Power Regulatory Authority (Nepra), the power industry regulator, in a notification.

Group Director Finance Syed Mohsin Raza Naqvi had stated in the application sent to Nepra in August that expected cost of the power plant was Rs5.5 billion, being financed by the holding company. The expected project life is 25 years.

The project is likely to utilise approximately 150,228 tons of coal during 330 days of operations in a year. Coal will be imported from South Africa or Indonesia.

"MLPL intends to utilise either existing facilities of the Karachi Port Trust (KPT) or upcoming Pakistan Bulk Terminal facilities for coal receiving and handling. Transportation to the site will be done using trucks," the Nepra notification added. The power plant is being set up in Mianwali district, Punjab. "Maple Leaf Cement Factory owns 369.2 kanals of land...out of the said, 112 kanals have been specifically allocated for the power project," the regulator said.

Earlier, the firm had signed an agreement with Sinoma Energy Conservation Limited, China, for supply of the power plant. ■

MYSTICAL QAWALI NIGHT
PERFORMANCE BY IMRAN AZIZ QAWAL
SON OF FAMOUS LATE AZIZ MIAN QAWAL

The Pearl Continental Karachi, in collaboration with Media Sniffers organized an impressive "Mystical Qawali Night" at its elegant Grand Ball Room. The Qawal on this occasion was Imran Aziz Qawal, son of the famous (Late) Aziz Mian Qawal. The event started off with a lavish refreshment arrangement and meet and greet, followed by brief speeches by Tahir Khan, Vice President Events, Marketing, Media & Communications, Hashoo Hotels, and Aslam Khan, Hotel Manager of the Pearl Continental Karachi.

Largest hydro IPP achieves financial close

With the efforts and facilitation of Private Power and Infrastructure Board (PPIB), Pakistan has achieved another landmark by declaring Financial Close of first hydro IPP under the framework of China-Pakistan Economic Corridor (CPEC). 870 MW Suki Kinari Hydropower Project achieved Financial Close after fulfilling mandatory prerequisites. The documents have been executed by Mr. Shah Jahan Mirza, Managing Director, PPIB and Mr. Haseeb Khan, Chief Executive of Suki Kinari Hydropower Project. The Honorable Federal Minister for Water & Power Khawaja Muhammad Asif who is also the Chairman of PPIB graced the occasion at a formal ceremony held at the Ministry of Water & Power today.

This is the first hydro power project in Khyber Pakhtunkhwa Province being developed by the private sector and so far the largest hydro IPP in Pakistan. The construction activities at the site of project have already commenced and the project is expected to start injecting 3081 GWh million clean, reliable and affordable units of electricity each year to the national grid by



2022. Further, the Government of Khyber Pakhtunkhwa will also receive a significant amount of Rs. 1.3 Billion per annum as water use charges, while after thirty (30) years of operations on Build-Own-Operate-Transfer (BOOT) basis under the Power Policy 2002, the Project will be transferred to the Government of Khyber Pakhtunkhwa at a notional price of Rs. 1.

Suki Kinari Project is located on River Kunhar, a tributary of River Jhelum, District Mansehra, in the eastern part of Khyber Pakhtunkhwa between Naran and Paras towns. Khyber Pakhtunkhwa. M/s Al-Jomaih Holding Company, (LLC) (Saudi Arabia),

China Gezhouba Group Company (China) and Haseeb Khan (Pvt) Ltd. (Pakistan) are Sponsors of the Project. Suki Kinari Project is being developed with an investment outlay of US\$ 1800 Million through Debt Equity ratio of 75:25%. The lenders for the Project include Export-Import Bank of China, and Industrial and Commercial Bank of China (ICBC).

Minister for Water and Power stated that this latest development reflects GoP's pledge to make CPEC a foundation for eliminating load-shedding and achieving self-reliance through generating clean and affordable electricity in the country. Setting up of hydro power projects will improve energy mix in the country and reduce dependence on imported fuel resulting into saving of millions of dollars of precious foreign exchange annually. The establishment of this project will also be instrumental in generating economic activities as well as creating employment opportunities for the people of the areas in particular and will also entail improvement of the basic infrastructure in the vicinity which will be helpful in the poverty alleviation of the people. ■



In honour of His Highness Sheikh Nahyan bin Mubarak Al Nahyan, Head of Ministry of Culture, Youth, and Social Development, United Arab Emirates' visit to Pakistan Stock Exchange (PSX), a gong ceremony was held at PSX Karachi. The picture shows Sheikh Nahyan bin Mubarak Al Nahyan with President & CEO of Bank Alfalah Mr. Alif Bojwa, Chairman Pakistan Stock Exchange Mr. Muneer Kamal, and Managing Director Pakistan Stock Exchange Mr. Nadeem Naqvi, along with Bank Alfalah and PSX senior management.



Youth Parliament organized Youth Convention on Qaid-e-Azad Day, picture shows provincial minister Nasir Hussain Shah, Rizwan Jaffar and others at the event.



Mr. Li Wenyu, CFO Zong speaking at the MoU signing ceremony of 'Sehat Sahulat Program' of KP government

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