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ENERGY UPDATE

12th ANNIVERSARY EDITION

$5 billion Neelum Jhelum Power Project gets off in a haste

Too many power projects by PML-N yet the shortage goes on

Haveli Bahadur Shah Power Plant starts operation

Cruel KE again playing loadshedding drama

Global Warming to play havoc in years to come

Exclusive Interviews

Shah S. Masood
MD, Bahria Foundation

Adnan Mudassar
MD, PEECA

Dr. Imran Y. Muhammad
Jofa Group

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June 2018

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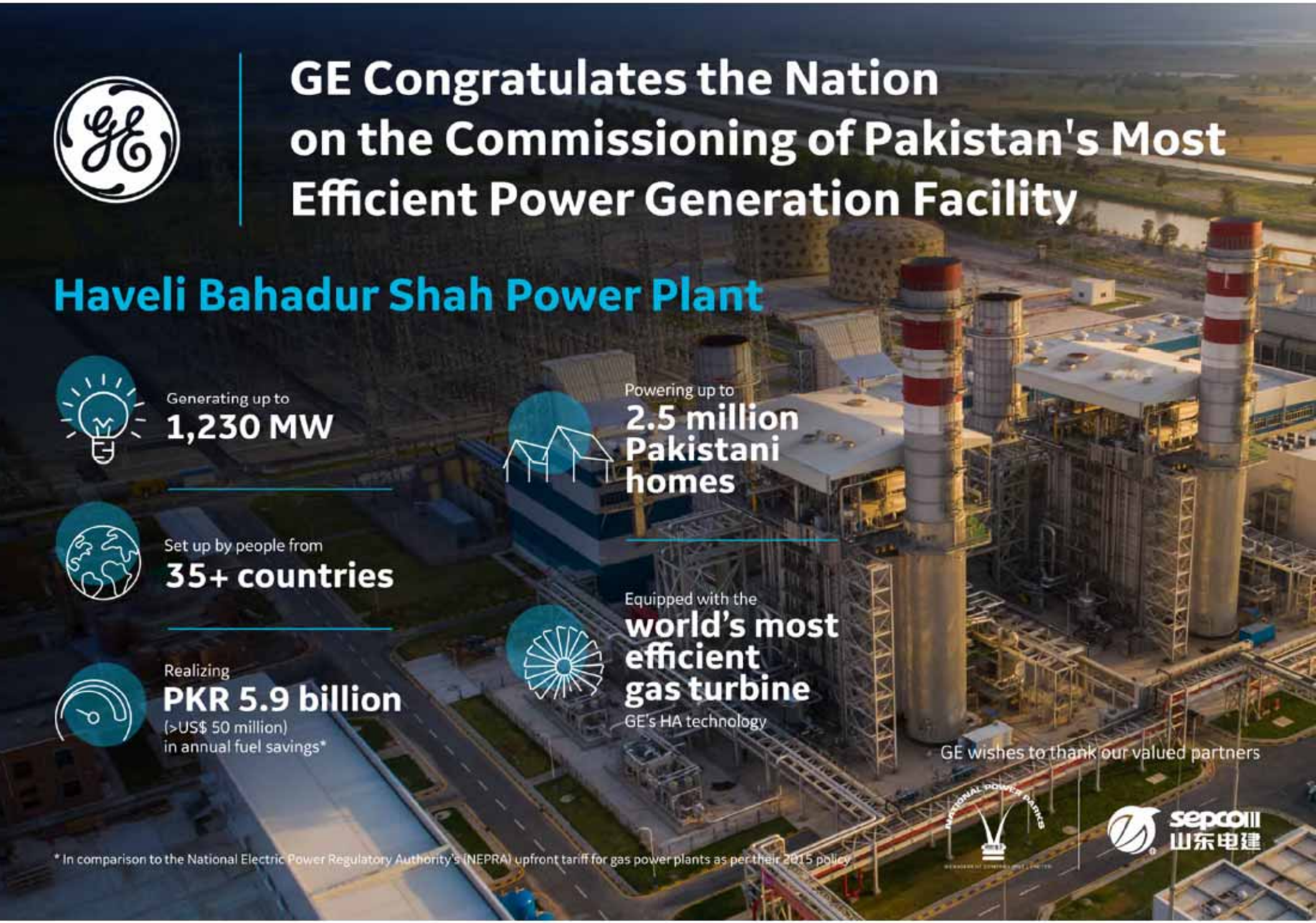
GE Congratulates the Nation
on the Commissioning of Pakistan's Most
Efficient Power Generation Facility
Haveli Bahadur Shah Power Plant
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2.5 million
Pakistani
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world's most
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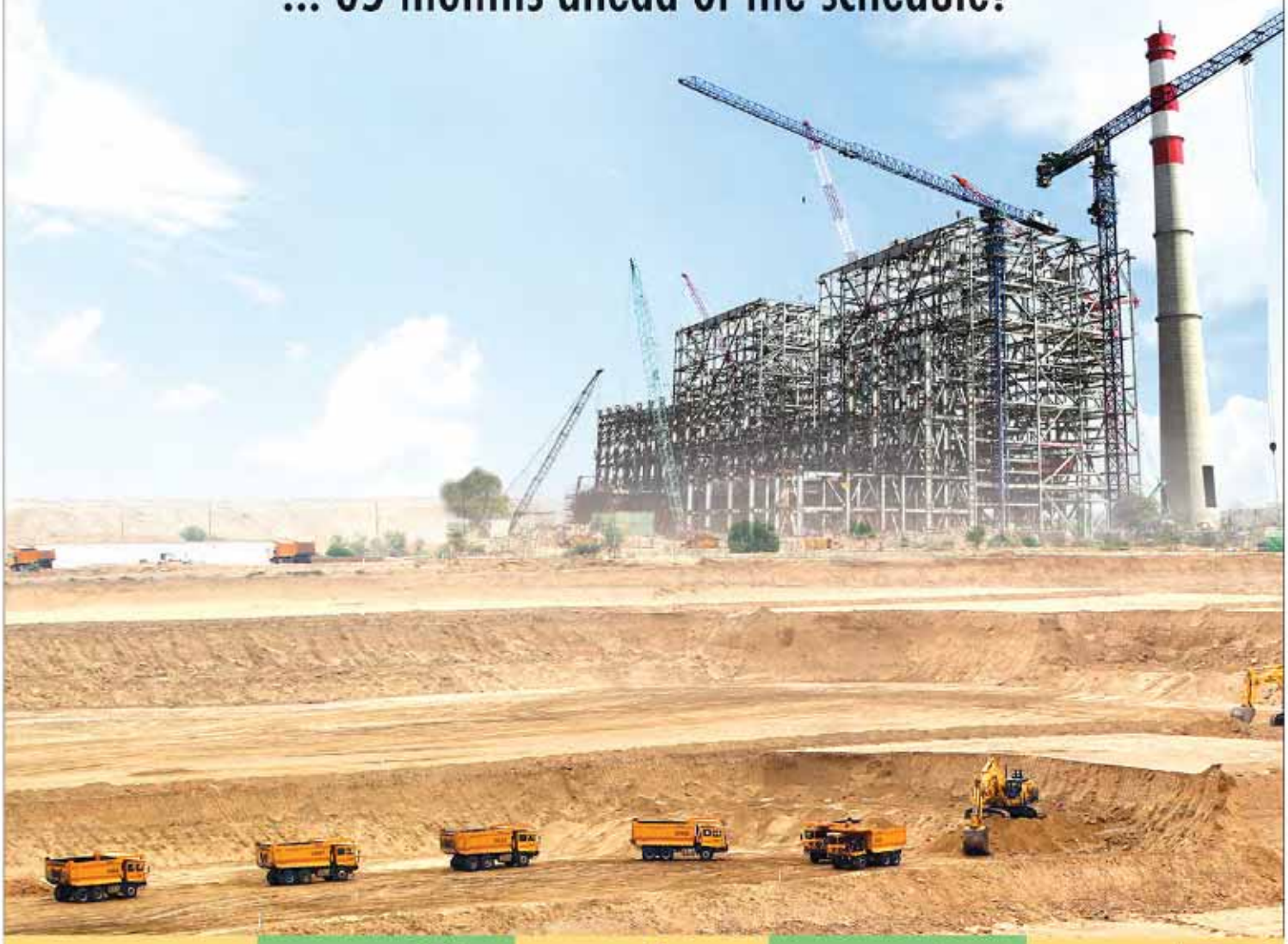
* In comparison to the National Electric Power Regulatory Authority's (NEPRA) upfront tariff for gas power plants as per their 2015 policy

2018: The Year of Thar

75% Project Completion at Thar Coal Block II...

... 05 months ahead of the schedule!



Out of +4000 jobs, 75% jobs given to local Tharis

1000 plus youth provided technical skills for sustainable livelihood

First of its kind, Women Dump Truck Drivers Program launched

Creating local vendors to create hundreds of livelihoods opportunities

Marvi Clinic's specialist physicians serving 2000 patients a month free of cost

CLINIC

Construction of model resettlement village underway to settle 172 families with all basic facilities

With an objective to providing quality modern education to Thari children, about 2000 children enrolled in 09 schools with all modren facilities

SCHOOL

A state-of-the-art 250-bed Thar Foundation Hospital, Islamkot is under construction to provide medical facilities free of cost

A project for prosperity

tharfoundation

3 state-of-the-art RO Plants providing for safe drinking water to 6000 population a day

Disaster hit villages of Odani and Vakro rehabilitated in no time providing relief to 5000 population

Going beyond duty, Ansari Green Park established which hosts 28000 trees and counting

As an environmentally responsible project, going beyond duty, we have planted 141,000 trees – and counting – in Thar Block II

Utilizing mine groundwater, Pilot Projects for Biosaline Agriculture and Fish Farming witness success

A project with purpose

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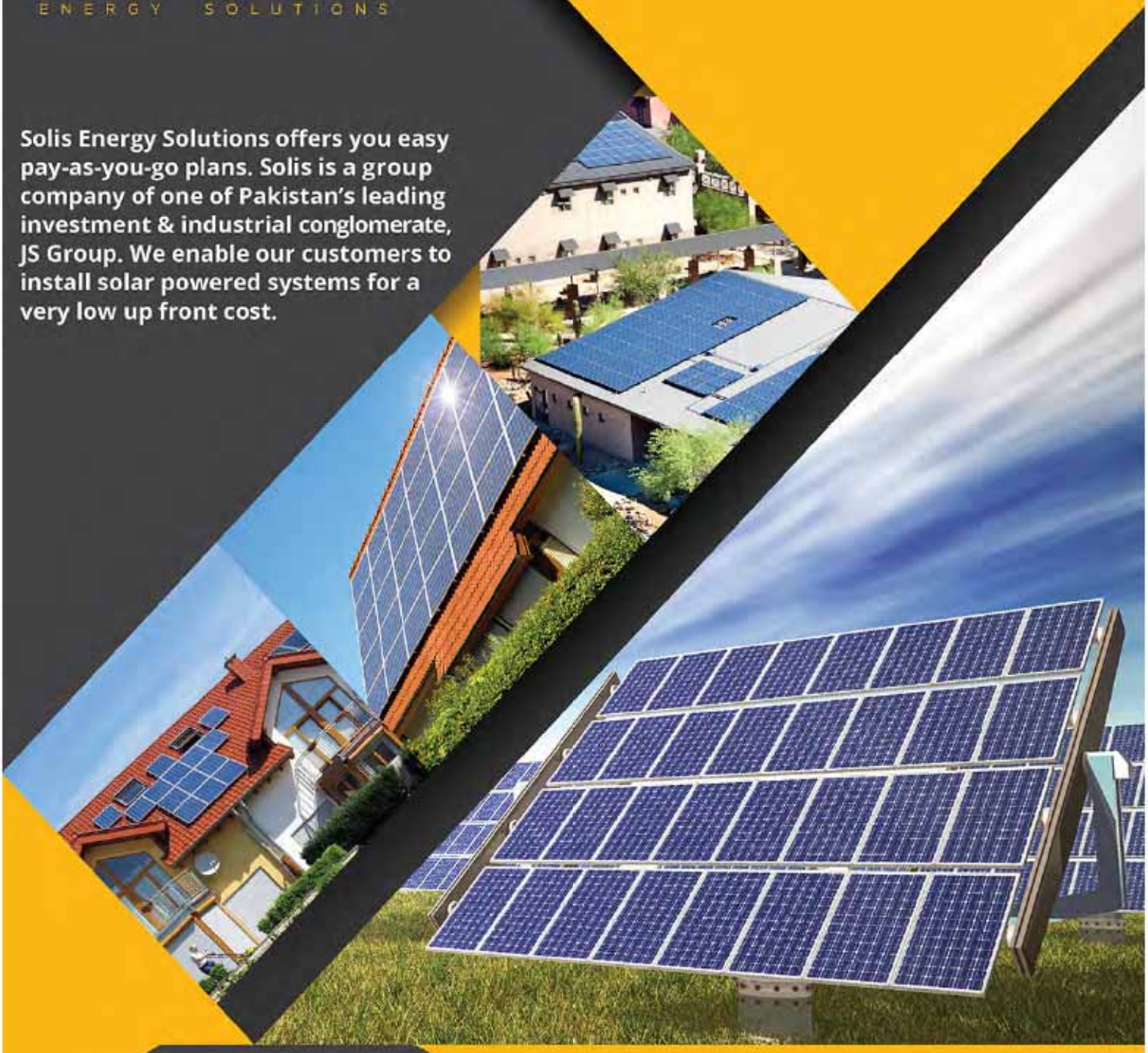

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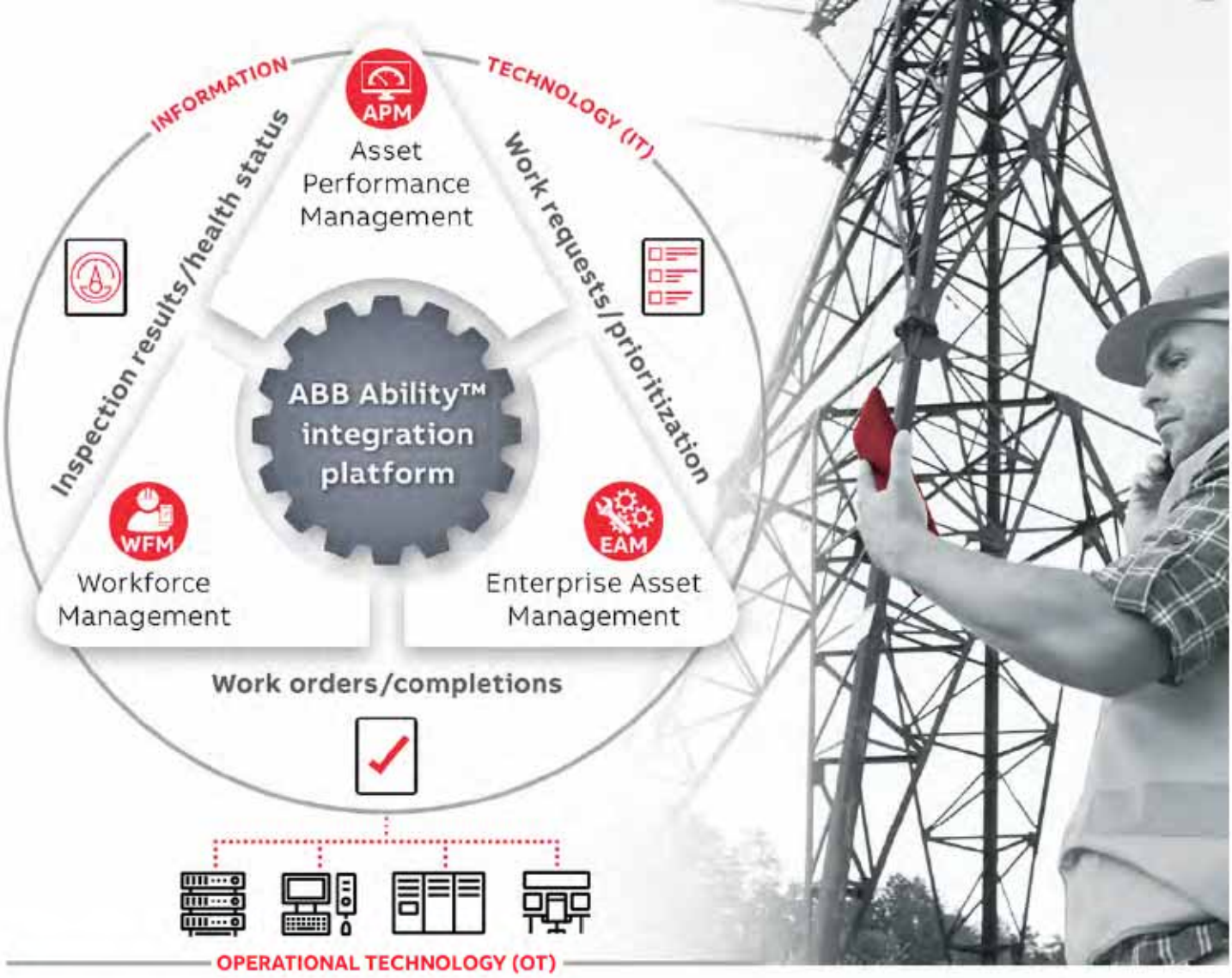

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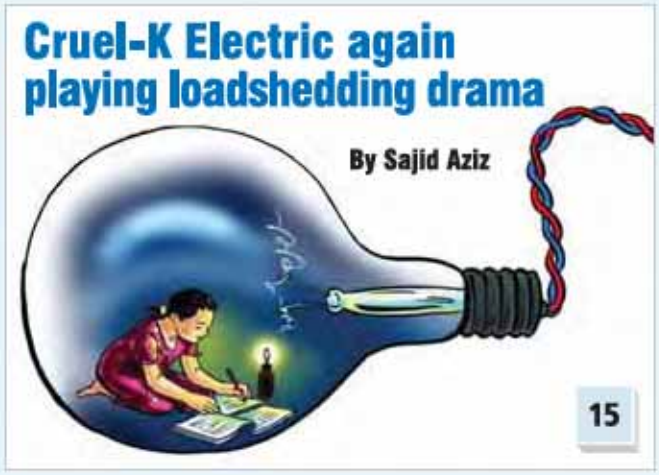

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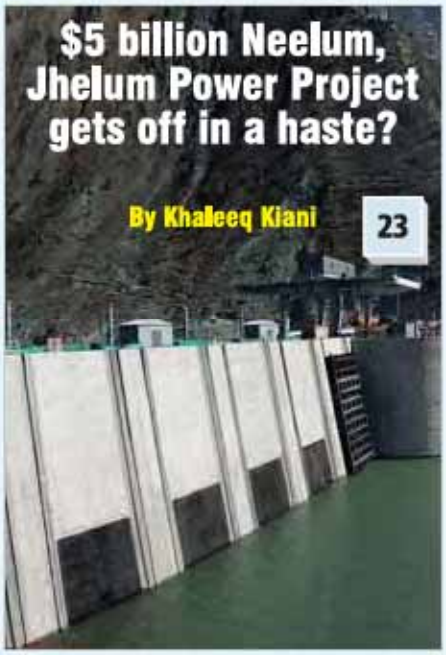

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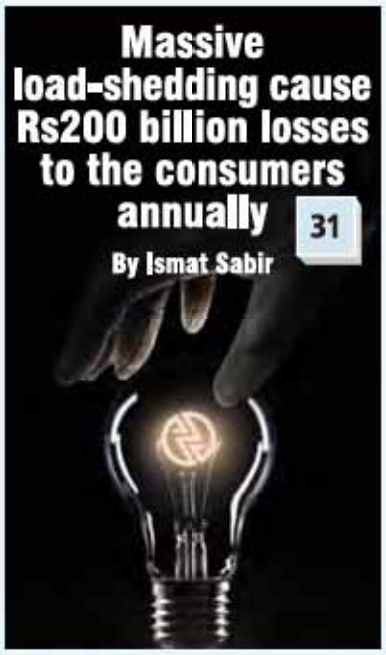

Massive load-shedding cause Rs200 billion losses to the consumers annually

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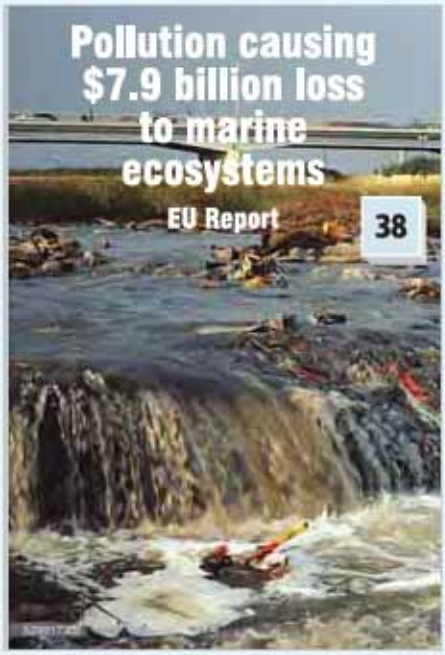

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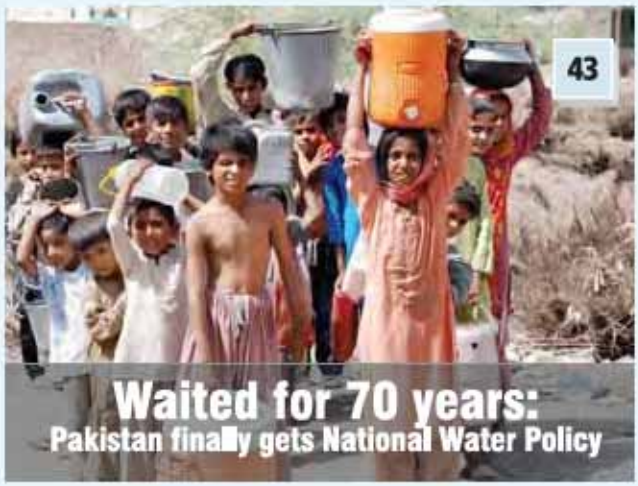

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Waited for 70 years:

Pakistan finally gets National Water Policy

From the editor's desk...

Energy sector gets meager allocation in budget

Just two days after the budget announced by the Finance Minister Dr Miftah Ismail, a mini-budget has fallen within no time onto the masses as POL prices have been increased by the present regime without any hesitation. As the month of Holy Ramazan is approaching fast, the ruthless so-called democratic government has nothing to do with the public woes, is continuing to the anti-people decisions, even when it is just a few steps away from the exit door.

How a shameless regime would dare to face the public once again in the forthcoming elections? labelled as Election-Budget or a sugar-quoted budget, whatever it is, has a total outlay for Rs5.247 trillion. The inflationary budget, as it has proposed taxation measures outweigh the relief offered to industrialists, agriculturists and salaried persons ahead of elections. The Rs5.247 trillion budget is Rs493 billion or 10.3% higher than the outgoing fiscal year's original budget.

The key reason behind 10% increase was that Dr Ismail tried to present relatively realistic picture of expenditures, unlike his predecessor Ishaq Dar who always understated expenditures at time of budget.

There is a Rs1.9 trillion hole in the budget, which is equal to 4.9% of Gross Domestic Product (GDP) and will be filled by taking foreign and domestic loans.

The government has taken measures, which would generate revenues that will be higher than the losses due to tax breaks. The government also backtracked from its earlier announcement of increasing income tax exemption threshold from Rs400,000 to Rs1.2 million. It levied very nominal tax of Rs1,000 to Rs2,000 per annum on people earning from Rs400,000 to Rs1.2 million.

The budget for fiscal year 2018-19 is quite unusual in all aspects. It is for the first time that a government that was elected for five years gave six budgets, which the Leader of the Opposition in the National Assembly Khursheed Shah called an attempt to 'usurp the right of the next parliament'. The budget has been announced without any wisdom Opposition political parties have called the move 'illegal and unconstitutional', but Ismail remained adamant that fiscal operations need to be announced for the entire year.

It was expected that the PML-N government would announce a people-friendly budget due to upcoming general elections. However, where the government gave tax relief to industrialists, agriculturalists, stock brokers and salaried persons, it also levied new taxes or increased the rates to recover the losses.

The government has proposed to increase the petroleum levy rates by three fold to Rs30 per litre on all petroleum products including kerosene oil and liquefied petroleum gas. The estimated revenue from this single measure is Rs300 billion for fiscal year 2018-19.

The Federal Board of Revenue (FBR) chairman said the government would sustain Rs184.5 billion gross losses due to income tax, sales tax and customs duties reliefs. In order to compensate these losses, the government also levied minimum Rs93.3 billion new taxes. The cumulative impact of Petroleum Levy and new additional taxes is far higher than Rs184.5 billion relief measures.

Ismail proposed Rs800 billion for the Public Sector Development Programme (PSDP), which is Rs230 billion less than the Planning Ministry printed in its document of the PSDP for 2018-19. The government has proposed the FBR's tax collection target at Rs4.435 trillion, non-tax collection target at Rs772 billion. The four provinces will get Rs2.59 trillion as their share in the federal tax collection under the 7th National Finance Commission Award. The budget may also prove a nail in the coffin of the present regime as it has increased the unpopularity of the PML-N government.

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Mohammad Zubair
Governor Sindh

It gives me immense pleasure to know that Monthly "Energy Update" has completed 12 consecutive years of publication, and is fully dedicated to cover issues of power and energy sector of the country.

As I have been informed Energy Update in last 12 years became an active sponsor of a number of events and moots, which discussed energy issues of the country in a detailed and constructive manner.

The third world countries like Pakistan do need specialized publications like Energy Update where experts could write in an extensive manner for analyzing issues of power and energy sectors.

The Government has the utmost resolve to fulfill energy requirements in the country by the end of this year. Establishment of coal fired power plants in Bin Qasim and Thar are prime examples of Government's commitments in this regards.

The periodicals like Energy Update provide a vibrant and relevant platform to all the stakeholders of the arenas of energy and power to interact and exchange useful ideas.

I hope that Energy Update will continue with its publication without any interruption in future as well. I wish best of luck to the entire team of Energy Update.

Shah Jahan Mirza
Managing Director PPIB

Energy Update" is leading energy magazine of the country, which has been providing broad based and reliable update on energy outlook, development in energy sector, various on-going initiatives, policy and regulatory concerns in the energy sector for last consecutive 12 Years.

Upon this occasion of completion of 12 years of publication, I felicitate the team of energy update for providing un-interrupted, impartial and highly professional views and stories on energy, power and related infrastructure to the audience. During the period, Energy update has organized number of successful events to discuss issues and challenges faced by power sector and provided platform to the experts for opinion exchange and to recommend pragmatic solution on the grave issues being faced by this crucial sector.

I am thankful to Energy Update for portraying untiring efforts of PPIB towards achieving government commitment to overcome the energy crises by adding affordable and sustainable new generation capacity to the national grid.

I hope that Energy Update will continue with its publication with same zeal and zest. I wish all the best to the Energy Update team for future publications and upcoming events/conferences on energy and power generation.

Murad Ali Shah
Chief Minister, Sindh

It is indeed heartening to know that the Monthly "Energy Update" is going to organize 10th Power Generation Conference in Islamabad on 11 May 2018. It is pleasing to note that the "Energy Update" has been organizing this event every year on a regular basis to take into account every aspect of the national and regional power and energy sector, Such moots, which gather experts of the energy sector at a one platform has always been helpful in doing through discussion on overall the energy sector.

The present Sindh Government has been doing its best to actively contribute towards the national cause to achieve complete self-reliance in the energy sector. In this regards, Sindh Government has been fully backing a number of initiatives launched in the province to generate electricity on basis of both conventional and renewable energy means. The Sindh Government has been one of the active significant partners in the project being executed to exploit for the very first time vast coal reserves in Thar for massive power generation. It has also been fully supporting a number of wind-based power projects installed at the country's first wind corridor between Gharo and Keti Bandar.

The Singh Government also under public-private partnership mode has been successfully running its very first 100MG power plant at Nooriabad. In the end, I would likely to convey that my government has always been fully supportive and backing the ideas to organize moots like this 'Power Generation Conference' at the national level to hold threadbare discussion on energy sector. I fully support ideas of such conference because it provides the much-needed forum to the national, federal and provincial stakeholders of the energy sector to gather at one place, hold thorough debate and exchange ideas on the debatable issues I am also delighted to know that this conference would provide an ample opportunity to companies working on to power sector to showcase their new and modern technologies and innovations related to the power sector.

In the end, I once again reiterate my support to the idea of organizing this conference on the power sector every year and wish its organizers success in all their efforts for the cause of self-reliance in energy sector.

Shamsuddin A. Shaikh
CEO, SECMC

Energy Update is one-stop-shop for news and information on energy developments in Pakistan and internationally, for people within and outside the industry. For Pakistani media, I believe it is a matter of pride to have produced a platform like this that is a unique resource especially since the energy is now so dynamic and has become such an important discussion across the board. We are thankful to Energy Update for covering Thar coal and its developments, and helping us share the story of Thar and Pakistan's transformation.

Muhammad Naeem, HI, SI

Chairman Pakistan Atomic Energy Commission (PAEC)

It is my profound privilege to share my views for the Energy Update magazine on the auspicious occasion of its 12th anniversary. The monthly Energy Update is one of the leading magazines on energy and environment issues. I appreciate the efforts of Energy Update on its positive contribution for the awareness on development of different energy sources including Oil & Gas, Hydro, Nuclear and Renewable alongwith energy related environment issues since 2006.

Pakistan Atomic Energy Commission is contributing in the mitigation of energy crises in the country by providing electricity through its five operating nuclear power plants. Currently, share of nuclear power in the electricity mix is about 7-8%. Optimal fuel mix is a prerequisite for sustainable energy development in a country. We are planning to increase the share of nuclear power as much as possible, to a level of 20%, in the coming years.

Nuclear electricity is a reliable, low carbon emission and low cost energy source. At present 450 nuclear power plants are in operation around the globe generating 2500 billion kilowatt-hours electricity. There is a global concern that electricity should be produced through low carbon energy source to mitigate climate change. Nuclear power, almost carbon free electricity generation source, is a viable option for limiting the increase in global green house gases emissions while producing electricity without seasonal effects. Nuclear power produces 11% of the World's electricity that is one-third of total electricity generation from low carbon sources. To achieve the global target of greenhouse gas emission reduction, overall share of nuclear energy has to be increased to more than 25% in world electricity mix.

PAEC has enviable record of running its nuclear power plants for more than 45 years. KANUPP near Karachi is being safely operated since 1972. The nuclear power plants C-1, C-2, C-3 and C-4, at Chashma near Mianwali, are among the best performing electricity generating units in the country operating at more than 90% capacity factors. Government of Pakistan has targeted 8800 MW nuclear power generation capacity by 2030 in its energy security plan of 2005. To achieve this target, construction of two larger capacity units of 1100MW each, K-2 and K-3, is in full swing near Karachi and it is expected that these nuclear power plants will start generating electricity by 2021.

It is highly commendable that Energy Update always gives importance to the benefits of the nuclear energy. The Power-Gen Conference organized by Energy Updateis also found very useful for the awareness and dissemination of information about the latest trends in power generation across the world and within the country.

I pray that Energy update may continue to flourish with even more rapid pace.

Adnaan Tapal,

CEO AVS / ACT Wind power

Congratulation to Energy Update magazine on its 12th anniversary of publishing quality monthly periodicals covering key aspects of the energy sector. The magazine serves as a wealth of information on key topics in the energy sector and helps to formulate effective policy through articles, seminars, exhibitions and conferences. Energy Update plays a very important role in bringing key stake holders on the same table thereby enabling exchange of ideas and effective policy formation. As we know, today Wind Energy is the cheapest form of energy production and 2018 will see the commercial operations of over 1000MWs of Wind Energy. Cost of wind energy continues to fall and as a result a further 800 MW of wind energy projects have applied for cost plus tariffs to NEPRA at a per unit cost of energy that is cheaper than any other form of power generation. A fantastic accomplishment by all stake holders! We thank Energy Update for highlighting the cause of CLEAN and AFFORDABLE energy which will enable our children to live in a pollution free environment.

Farman Lodhi, CEO, HAWA Energy

A great initiative started by Energy Updates decade ago has been a real success. It gives me immense joy congratulating Energy Updates on their 12th Anniversary. They had contributed tremendously and played a dynamic role towards the energy sector of Pakistan. It's absolutely wonderful to see this platform growing every year with the support and dedication of Mr Naeem Qureishi and his team. I wish you success for future endeavors.

Khalid Subhani, CEO Thal Nova

It is heartening to note that this May the Monthly "Energy Update" is going to celebrate 12th anniversary of its inception. It is really a matter of pride and distinction that a monthly publication dedicated to cover Energy sector is completing 12 consecutive years of its publication. Such specialized publications have always been a reliable source of information and inspiration for the successive governments to serve the masses and resolve their issues in the best of manner.

No doubt energy shortfall has become one of the biggest challenges not just in Pakistan but in the entire region. There has been a constant and continuing research, search, struggle by concerned state and government authorities in a number of developing countries to overcome energy shortfall in an effective and sustainable manner.

There has been emphasis at global level to conserve the environment by exploring and utilizing such methods of energy generation, which could cause environmental degradation to the least possible extent. The process of exploring new resources of power generation should ensure protection of environment, flora and fauna, and natural habitat in best of the manner. Apart from energy generation through conventional methods i.e. reliance on fossil fuel there should be constant search to utilize renewable forms of power generation for the cause of environmental protection in the best way.

The publications like Energy Update do provide a common platform for relevant experts from government, public, and private sectors to do exchange of ideas with each other so to find the best way forward to overcome power shortfall. In my opinion, it is binding upon the concerned authorities in government and public sectors to facilitate and support continued publication of such specialized publications in uninterrupted manner. I wish best of luck to the entire team of Energy Update and hope that in future this specialized publication will continue to grow and prosper by publishing most relevant, up-to-date, and matured content relevant to the arenas of energy and power production. My best wishes are with them.

Pervez H. Madraswala, Chief Executive Officer, Clipsal Pakistan (Pvt.) Ltd. And Chairman, Pakistan Australia Business Forum

On the 12th Anniversary of Monthly Energy Update (EU) magazine, I would like to congratulate, the entire team and readers of EU on achieving this milestone. EU's anniversary is a testament to the significance of energy sector magazine as well as the talent of those who have contributed toward its growth and development. For over a decade now, the EU has been an invaluable information source that brings news on noteworthy developments in local, national and international affairs to its reading audience and beyond its borders.

It is amazing to see a Pakistani magazine, who caters to Energy and Environment is developed to world standards. It goes without saying that Energy Update magazine has a unique style of news coverage and presentation making it more informative and educative. The EU news stories and materials have contributed immensely to the growth and development of energy sector. It is surely a great service to the energy sector in Pakistan, which is very commendable.

As EU mark this eventful celebration, I wish to convey my special appreciation to devoted and talented publishers, contributors and writers of this monthly periodical for their ongoing efforts in bringing essential information and authoritative opinions on many subjects of significance to its loyal readership base.

The coverage of noteworthy events provides unique experiences for readers and gives access to essential information they require every day. I am confident that EU's enduring legacy of bringing news to community will continue to thrive, and many more readers will have Monthly Energy Update as their news outlet of choice. Once again, congratulations on 12 years of accomplishments. Best wishes for many more years of success!

Abul Kalam Siddiqui, CEO, BV Pakistan Pvt Ltd

The importance of the renewable energy technology has been growing significantly since the beginning of the 21st century and will continue throughout this century. Expectations have been growing worldwide for renewable energy technologies as a solution for energy and global environment issues; issues projected to become more evident and serious during the 21st century. According to some long-term projections, renewable energy may satisfy half of the world's energy needs by 2050. This would put renewable energy on the same level of importance as conventional energy.

The specialists involved in the field of renewable energy technologies today, should accept this challenge and respond to these ambitious targets this century. Doing so will influence our direction and quality of life in the future. Knowing that renewable energy is a peaceful energy resource present everywhere on earth should inspire us to further its development and dissemination. We at Bureau Veritas, carry out shop inspection of equipment procured and site inspections of power utilities using our international network. Our fully equipped laboratories and non destructive testing experts provide a comprehensive range of services to meet clients specification or local regulations. They perform construction material testing, non-destructive testing, destructive testing, environmental analyses and many others.

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Cruel-K Electric again playing loadshedding drama

Prime Minister's so-called efforts prove to be futile

K Electric should be handed over to consortium of stakeholders

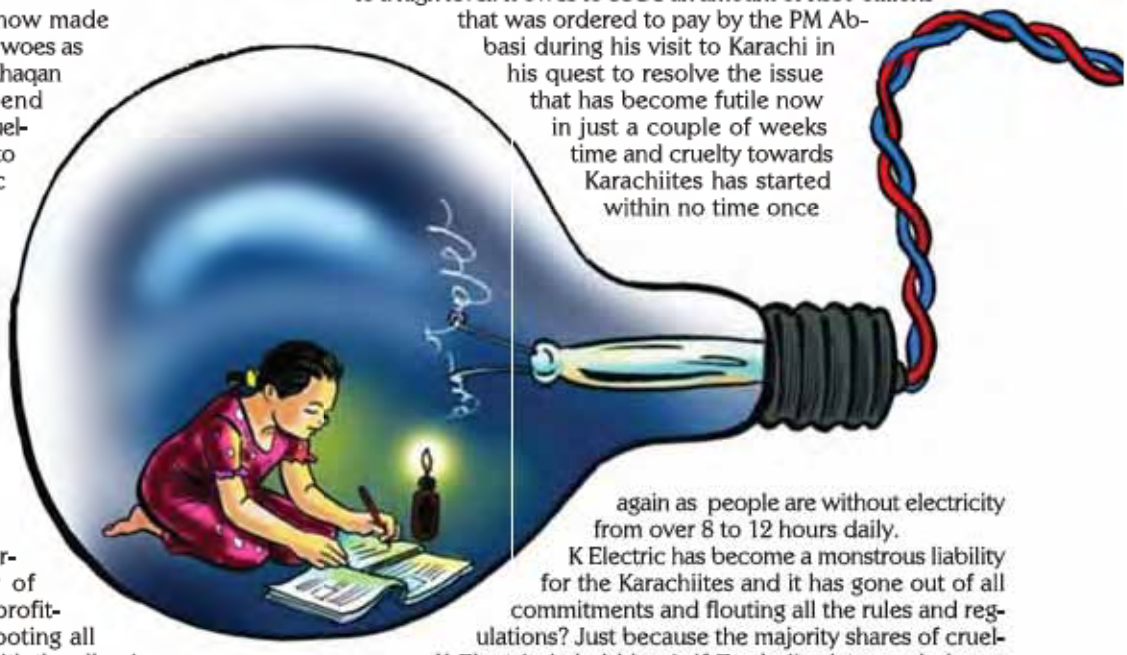
By Sajid Aziz

The power corridors have now made the mockery of Karachiites' woes as the Prime Minister, Shahid Khaqan Abbasi himself claimed to end massive load-shedding by the cruel-K Electric after his Karachi visit to intervene the SSGC-K Electric row that has become a chronic dispute.

The cruel-K Electric has started unabated load-shedding since the day summer season has commenced in Karachi, without considering the remotest and slightest feeling of human sentiments..... Just forgetting that it was a utility agency and not a commercial or profit making exploiter.

K Electric since its transformation had done a number of criminal acts for its unending profit-hunger, by snatching and uprooting all the copper wires replacing it with the allumi-num ones and usurped billions of rupees copper, it was a day-time robbery on the pockets of KESC (K Electric) consumers. It replaced electric meters that run above 40 per cent faster than the old ones and it did not refund the amount to the tune of Rs60 billions that were extortion by this company on account of furnace oil price charged at the highest rates when the international market was down and the rates were at the lowest. It's sheer high handedness by the K Electric that it failed to reimburse the said amount to the consumers despite Supreme Court's order.

The K Electric is charging highest tariff from its consumers while it never consume furnace oil and all its units being run on furnace oil have remained shut, and only those units are being used for electricity production that are consuming gas from SSGC and being provided on cheap rates or power being purchased from WAPDA and IPPs, that too on credit while outstanding amounts to WAPDA, IPPs and SSGC are mounting to a high level. It owes to SSGC an amount of Rs80 billions that was ordered to pay by the PM Abbasi during his visit to Karachi in his quest to resolve the issue that has become futile now in just a couple of weeks time and cruelty towards Karachiites has started within no time once again as people are without electricity from over 8 to 12 hours daily.



K Electric has become a monstrous liability for the Karachiites and it has gone out of all commitments and flouting all the rules and regulations? Just because the majority shares of cruel-K Electric is held by Asif Zardari's sister and almost majority of the politicians including ruling PPP in Karachi are the major supporters of these exploiters sitting on the helms of affairs of K Electric besides having full patronage from so-called regulator of power sector - the NEPRA. That's why it was either Sindh Government, MQM Pakistan or bureaucracy, they always support K Electric and claim that SSGC is not supplying appropriate gas to the K Electric and that's why the K Electric has resorted to load-shedding. Why they do not demand from K Electric to run its units on furnace oil instead of begging for more and more gas despite the fact that it is charging too high from its consumers i.e. at the rate of furnace oil? This is a million dollar question remains unanswered and even PM Abbasi refrained replying this or ordering the K Electric to produce power

continued on page # 37

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HBS Power Plant starts operation

Exclusive Visit to Haveli Bahadur Shah Power Plant

Group Photo of Participants at the competition ceremony of Haveli Bahadur Shah Power Plant. Picture Shows Sarim Shaikh Head of GE Pakistan and Afghanistan, Managing Editor Energy Update M. Naeem Qureshi & Others

National Power Parks Management Company Limited (NPP-MCL), GE and SEPCOIII Electric Power Construction Co., Ltd. has announced the completion of Haveli Bahadur Shah (HBS) power plant's commissioning activities and has now started combined cycle commercial operations to add up to 1,230 megawatts (MW) of reliable power to the national grid. The project is among the largest gas-fired combined cycle plants in the country, capable of supplying the equivalent power needed to meet the electricity needs of up to 2.5 million Pakistani homes and one of the most efficient combined cycle power plants in the world.

"The start of combined cycle commercial operations at Haveli Bahadur Shah (HBS) Power Plant marks a major milestone in the power sector of Pakistan, supporting the government's goal to enhance access to reliable, affordable power," said Rashid Mahmood, CEO of NPPMCL. "The project has been developed to the highest standards of quality and excellence, and will serve as a benchmark for future electricity projects in terms of the technology being deployed."

The HBS project was initiated by NPPMCL, which is solely owned by the Government of Pakistan through the Ministry of Water & Power, and was entirely funded through the Public-Sector Development Programme (PSDP). SEPCOIII Electric Power Construction Co., Ltd (SEPCOIII) is the engineering, procurement and construction (EPC) contractor for the project, responsible for setting up the power plant and all commissioning activities. GE has supplied two of its advanced HA heavy-duty gas turbines, one steam turbine and two heat recovery steam generators (HRSGs) for the plant, as well as technical advisory services.

Wang Zengxu, SEPCOIII's Project Director at HBS added, "The Haveli Bahadur Shah Power Plant demonstrates the power of global collaboration with the application of best-in-class technology. We have drawn on a leading combination of exceptional Chinese engineering skills and knowhow, together with GE's record-setting technology for the facility, to build the most efficient combined cycle power plant in the country."

The Haveli Bahadur Shah Power Plant is about the size of 65 football fields and staff from over 35 countries worked together to complete the project. The project's execution has been among the fastest globally and 3 to 4 months shorter than typical for projects of comparable scale and complexity. Performance tests to date indicate that HBS has set world record levels of efficiency.

Mohamad Ali, President and CEO of GE's Gas Power Systems - Projects business in the Middle East, Pakistan and India, added, "The Haveli Bahadur Shah Power Plant uses industry-leading power generation equipment, including GE's HA technology - the world's most efficient heavy-duty gas turbine. This innovative technology is helping to unlock unprecedented levels of efficiency in Pakistan's power sector, ultimately lowering the cost of electricity production. GE has long supported the development of Pakistan's energy sector and through our collaboration on this transformational project, we are underscoring our commitment to provide solutions that are truly game-changing."

GE's HA technology has undergone full-speed, full-load validation tests at GE's Greenville, South Carolina facility in the United States at extreme conditions well beyond those encountered while in service. It is the fastest growing fleet of heavy-duty gas turbines today, with more than 75 units ordered to date by over 25 customers across more than 15 countries, including the United States, Mexico, Brazil, Pakistan, Japan, Bahrain, China, France and others. The technology has now delivered two world records - one for powering the world's most efficient combined-cycle power plant, based on achieving 63.08 percent gross efficiency at Chubu Electric Nishi-Nagoya Power Plant Block-1 in Japan and another for helping EDF's Bouchain Power Plant achieve 62.22 percent net combined cycle efficiency in France.■

Demand and Supply Gap

Too many power projects by PML-N yet the shortage goes on

By Ismat Sabir

In spite of long claims, Pakistan has forced to go into darkness due to severe electricity shortage over the last many years. Electricity shortfall has reached 4,250 MW with demand standing at 29,600 MW and generation at 31,000 MW. Load shedding and power blackouts hampering to the economic growth through their impact on employment, trade and poverty. The statistics showed that Pakistan has witnessed low GDP growth rate during the periods of low or negative electricity growth and while periods where electricity growth picked up there is increase in GDP growth rate (GoP, 2013). Power crisis terribly destroyed industrial sector of Pakistan. Around 40 percent factories and industry units are now has been closed and around 7.5 percent of labor force is out of job only because of this dilemma.

However, Tarbela Hydel Power Station will become largest powering generation facility in the country having accumulative capacity of 6298 MW with addition of 5th Extension project. The existing installed capacity of Tarbela Hydel Power Station is 3478 while 1410 MW was being added with 4th Extension project. The first unit of 4th Extension project having 470 MW capacities has already been started generation and remaining two units would shortly be added. The executive Committee of National Economic Council (ECNEC) has already approved the PC 1 of the project while the World Bank and Asian Infrastructure Investment Bank (AIIB) have partnered to provide US$690 million for the completion of the project. The World Bank and AIIB are providing $390 million and $300 million, respectively. The project is estimated to cost $823.5 million and remaining would be contributed by WAPDA the National Transmission and Dispatch Company. As per details of the project, the existing Tunnel No. 5 of the Tarbela Dam be converted into power tunnel without affecting the irrigation release capabilities. As many as three units with generation capacity of 470 MW each will be installed to generate 1410 MW electricity during summer season. It is a low risk and high reward project aimed at providing more than 1.8 billion units of the lost cost hydel electricity to the national grid per annum. The project's Financial Internal Rate of Return (FIRR) has been estimated at 13.5pc. The power sector in Pakistan is depends on a mix of hydel and thermal units dominated by two public sector utilities that are Water and Power Development Authority (WAPDA) for the whole of all of Pakistan except Karachi, K-electric (KE) for the City of Karachi and its surrounding areas. There are a number of independent power producers that contributes significantly in electricity generation in Pakistan. For years, the matter of balancing Pakistan's supply against the demand for electricity has remained a largely unresolved problem.

Due to an unrealistic power tariff, high inefficiencies, low payment recovery and the inability of the government to manage its subsidies mechanism that lead to a serious "circular debt" issue which is becoming a barrier for future energy sector investment. The economy is badly affected by electricity crisis with loss of huge capital. The solution to the current crisis lies in energy conservation at all level in the country. The use of alternate energy such as wind and solar power could be utilized to immediately reduce the shortages, while electricity projects from coal and large dam could provide a long term solution to the electricity shortage.

However, China, Iran, India and Tajikistan, Germany, Qatar, Kuwait and some other countries have been offering to export electricity to Pakistan to overcome the growing electricity crisis.

Pakistan's energy infrastructure is not well developed. Currently the country is facing severe energy crisis. Despite of strong economic growth and rising energy demand during past decade, no serious efforts have been made to install new capacity of generation. Moreover, rapid demand growth, transmission losses due to outdated infrastructure, power theft, and seasonal reductions in the availability

of hydropower have worsened the situation. Consequently, the demand exceeds supply and hence load shedding is a common phenomenon through power shutdown.

At the time of independence, Pakistan inherited 60MW of power generation capability for a population of 31.5 million, producing 4.5 units per capita consumption. Twelve years later, when WAPDA was created in 1959, the generation capacity had increased to 119 MW.

In 1964-65, the electricity generation capability rose to 636 MW from 119 in 1959, and power generation to about 2,500 MKWH from 781 MKWH. The rapid progress witnessed a new life to the social, technical and economic structures of the country, mechanized agriculture started, industrialization picked up and general living standards improved.

The task of accelerating the pace of power development picked up speed and by 1970, in another five years the generating capability rose from 636 MW to 1331 MW with installation of a number of thermal and hydel power units. In the year 1980 the system capacity touched 3000 MW which rapidly rose to over 7000 MW in 1990-91.

A rapid growth of the Karachi was witnessed in 1990s as big industrial and commercial houses were set up leading to sudden increase in demand for electricity. Therefore, KESC has been granted the license to generate, transmit and distribute power in its licensed area. In 2000s, annual consumption of electricity in the residential sector has increased per customer, while annual consumption by each industrial customer has also reached at peak and widened the demand-supply gap. In 2006, the Asian Development Bank has estimated that 45 percent of Pakistan's population lacked access to electricity.

Electricity crisis worsens in Pakistan in 2008 as shortage of Electricity has increased over 4000MV. Pakistan's industrial consumers were facing an electric power deficit due to low water levels at hydroelectric dams.

A study estimated that the electricity demand and consumption with respect to GDP per capita is greater than unity. The findings suggest that under optimistic growth scenario of around 6 percent per annum, the required growth for electricity generation is around 9 percent per annum. Continuous investment on electricity generation is required to meet the future requirement of electricity. The average prices of electricity are below the threshold or optimal level. The prices beyond the optimal level have insignificant contribution to the electricity consumption implying that electricity demand is insensitive to the changes in the electricity prices beyond the threshold level. The weak relation between electricity demand and electricity prices is primarily due to lack of alternatives for electricity. The availability of cheap alternatives such as coal, gas or other renewable sources will change the dynamics of the relationship between electricity consumption and electricity prices.

The studies on the power crisis amongst other issues such as governance, transmission and distribution losses, circular debt etc. have also highlighted tremendous increase in the demand for electricity as the leading factors contributing to the persistent demand supply gaps. Over the last three decades, there is immense upsurge in the demand for electricity owing to urbanization, industrialization, rural electrification, growth in agriculture and service sectors, rapid growth in domestic demand and rising per capita income. Actual demand was not fully anticipated because of the failure to forecast and plan for future, upgrade existing plants and set up new generating stations in the face of rapidly rising demand.

The power projects were awarded to HEI (Bhikki and Balloki) and SEPCO III (Haveli Bahadur Shah), as primary contractors (EPCs) responsible for the Engineering, Procurement and Construction of these plants. The EPCs then sub-contracted GE to supply in total six high efficiency HA gas turbines, three steam turbines and some other equipment for these plants, as well as technical advisory services. GE understands the need for reliable and cost efficient power to the people of Pakistan and the importance of these projects. Throughout the execution of these projects, GE has gone beyond its role as equipment supplier and contractually defined obligations to assist the EPCs in delivering these projects successfully and will continue to do so. Once completed, these projects are expected to deliver up to 3,600 megawatts of power the equivalent power needed to supply up to 7.3 million Pakistani homes and industries. Better design and economies of scale these plants have already saved Pakistan the equivalent of about PKR 30 billion in EPC cost per project and are expected to lead to over PKR 100 billion in fuel savings over their lifetime. This will make a meaningful difference in the everyday lives of the people of Pakistan by not only providing much needed power but also reducing their electricity bills.GE successfully installed HA Gas Turbines evolved from extensive experience of GE's F-technology and steam cooled H-technology. HA gas turbine, making it the fastest growing gas turbine fleet in the world. The company achieved 70+ unit orders across 15+ countries, including orders in the US, Mexico, Brazil, Japan, Bahrain, China, France and others.

According to BR, Pakistan registered a negative 2 percent growth in gas production the figure shows the fact that the political party is repeatedly making false claims that it has successfully met the energy crisis. Since 2013, foreign exploration companies that have left Pakistan include Niko, Baker Hughes, Tullow Oil and Premier Oil and the reason for their departure is twofold: (i) failure of the federal government to offer fresh exploration blocks for bidding, prompting provinces to demand that the federal government grants them the right to offer blocks for exploration, a legitimate demand if this failure is sourced to political

considerations, as claimed by provinces where the PML-N is not in power; and if the rationale for preference for LNG imports over offer of fresh exploration blocks for bidding was for individual as opposed to the nation's economic interests then there is a need to re-evaluate the various agreements signed for LNG imports; and (ii) offer of low wellhead cost.

Completed at cost of around $5 billion, the power project comprises four units with generation capacity of 242.25MW each. The Prime Minister said the government had successfully overcome the power shortfall by executing power project to add around 10,400MW of electricity. He said currently, only those areas were facing forced load shedding where power theft had been reported. Diversification of energy production, the prime minister said in future no renewable energy project would be executed if it cost more than thermal project. The project has started providing electricity to the national grid on trial basis. The first unit is contributing 60MW electricity to the system and will generate electricity to its full capacity to the tune of 242MW in days to come.

The project, located in Azad Jammu and Kashmir, is scheduled to be inaugurated on April 13. The project has four units with cumulative generation capacity of 969-MW. The first unit has started electricity generation followed by the second, third and fourth units at one month interval, respectively. The project is an engineering marvel with 9pc of the project being underground in the high mountain areas. Neelum Jhelum Hydropower Project consists of three main components i.e. a dam, water-way system comprising 52-km long tunnels and an underground power house. The project will provide about five billion low cost hydel electricity to the national grid every year. Annual benefits of the project have been estimated at Rs55 billion. For optimal utilisation of water and hydropower resources in the country, WAPDA has been implementing a two-pronged strategy for the purpose. Under the strategy, not only the under construction projects are being completed in the shortest possible time but new projects are also being initiated in both water and hydropower sectors. WAPDA is trying its best to award contracts for Mohmand Dam and Diamer Basha Dam within a year to supplement significantly towards existing water storage and hydropower generation capacities in the country.■

Murad signs MoU with St Petersburg for cooperation in energy, oil, gas

Sindh Chief Minister Syed Murad Ali Shah has said that in the emergence of a multipolar world and changing power configurations world-wide and also in the South Asian region, Pakistan's close association with Russia is very important and cooperation between both countries would bring prosperity to the entire South Asian region.

This he said while talking to a high-power delegation of Saint Petersburg, Russia led by its Vice Governor Mr Sergej N. Movchan at CM House. The delegation consists of leading companies from St. Petersburg, Russia in the fields of Energy, Oil & Gas, Textile and Fashion Industry, Light Industry, Pharmaceuticals and others. The objective is to create business linkages to enhance bilateral trade leading to meaningful cooperation.

He said that the current phase between the two countries is very promising and very encouraging. There have been frequent high-level visits over the past few years, and interaction between the two-sides compared to the past has been intense. It may be noted that that on the occasion of 70th anniversary of diplomatic relationship between Pakistan and Russian Federation the reciprocal visit by Vice Governor of Saint Petersburg, Mr. Sergej N. Movchan along with a high-level business delegation is visiting Karachi, from 24-26 April is being carried out to Sindh as part of strengthening the relationship between Province of Sindh, Pakistan and St. Petersburg Russia

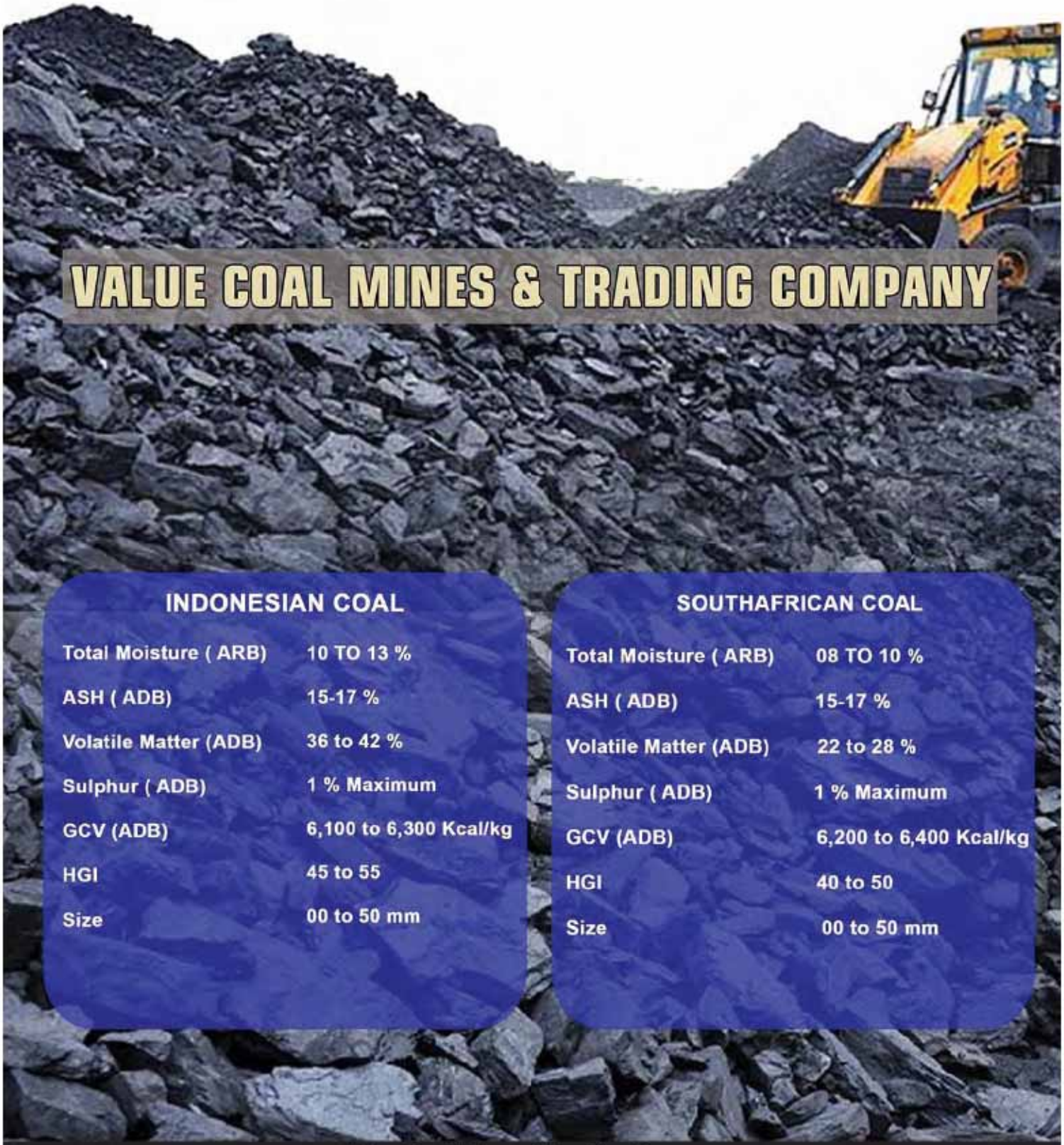
Sindh Chief Minister Syed Murad Ali Shah and Vice Governor of St Petersburg Mr Sergej N. Movchan signed memorandum of understanding (MOU) for further cooperation in education, energy, oil, & gas, textile, water filtration and pharmaceutical.

It may also be noted that during the reciprocal Visit of Vice Governor of Saint Petersburg, Mr. Sergej N. Movchan, Sindh Board of Investment has hosted a meeting and Sindh St. Petersburg Business Forum to instigate partnerships among the local and Russian counterparts.

Russia is currently involved in many energy projects inside Pakistan and is fully committed to help Pakistan alleviate its energy crisis. Russia is the world's largest producer of oil and gas and Pakistan has welcomes Russian investment in the energy sector. The expertise of Russia's oil company like Rosneft and Gazprom Gas Company have contributed significantly in developing Pakistan's oil and gas potential.

The chief minister said that the trade links have existed historically between the two countries, but the volume of trade needs to be increased exponentially so that both countries can reap more benefits from it. Pakistan exported goods worth $ 131.68 million in 2017 as against exports of $ 151.41 million in 2016. This shows a decline of 13 percent.■

VCME



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HGI	45 to 55
Size	00 to 50 mm

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ASH (ADB)	15-17 %
Volatile Matter (ADB)	22 to 28 %
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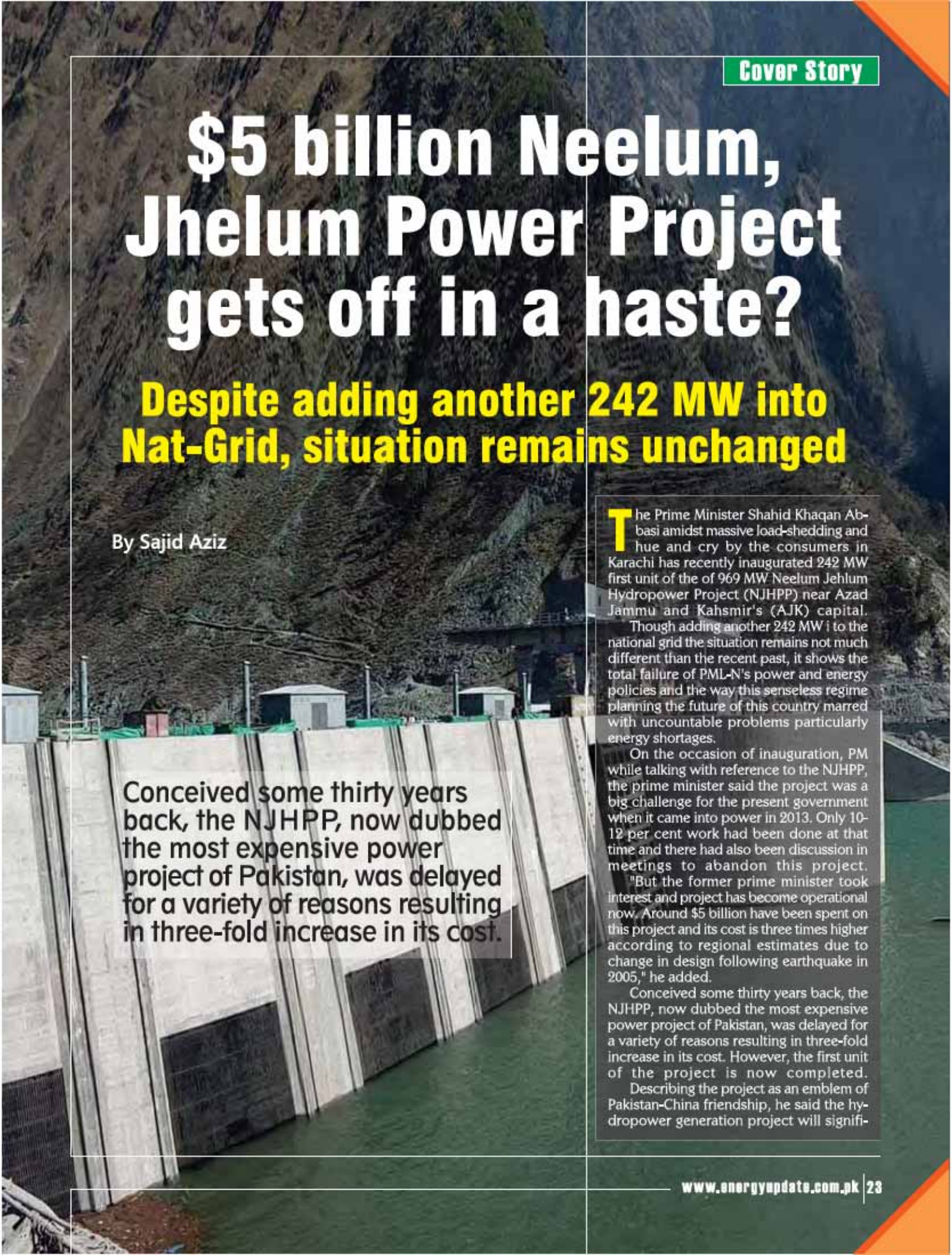
$5 billion Neelum, Jhelum Power Project gets off in a haste?

Despite adding another 242 MW into Nat-Grid, situation remains unchanged

By Sajid Aziz



Conceived some thirty years back, the NJHPP, now dubbed the most expensive power project of Pakistan, was delayed for a variety of reasons resulting in three-fold increase in its cost.

The Prime Minister Shahid Khaqan Abbasi amidst massive load-shedding and hue and cry by the consumers in Karachi has recently inaugurated 242 MW first unit of the of 969 MW Neelum Jehlum Hydropower Project (NJHPP) near Azad Jammu and Kahsmir's (AJK) capital.

Though adding another 242 MW i to the national grid the situation remains not much different than the recent past, it shows the total failure of PML-N's power and energy policies and the way this senseless regime planning the future of this country marred with uncountable problems particularly energy shortages.

On the occasion of inauguration, PM while talking with reference to the NJHPP, the prime minister said the project was a big challenge for the present government when it came into power in 2013. Only 10-12 per cent work had been done at that time and there had also been discussion in meetings to abandon this project.

"But the former prime minister took interest and project has become operational now. Around $5 billion have been spent on this project and its cost is three times higher according to regional estimates due to change in design following earthquake in 2005," he added.

Conceived some thirty years back, the NJHPP, now dubbed the most expensive power project of Pakistan, was delayed for a variety of reasons resulting in three-fold increase in its cost. However, the first unit of the project is now completed.

Describing the project as an emblem of Pakistan-China friendship, he said the hydropower generation project will signifi-

cantly contribute to the existing energy crisis in the country. The PM also paid glowing tributes to the 21 workers who lost their lives during the completion of the project.

He mentioned that around 10,400 MW power had been added to the national grid during past five years which, he claimed, was a record in the history of Pakistan. "The credit for this achievement goes to Nawaz Sharif. The development done in past five years is more than the collective development of past seventy years," he claimed but did not mention the reason why the country's situation has not been changed despite fact his govenment so far increased the power projects and their generation capacity to almost double the demand in the country.

He said the present government had also ended gap of demand and supply of electricity. However, he said the consumers in areas of power theft would continue facing load shedding as the government could not put their burden on the consumers paying regular bills.

Abbasi said the government had installed three gas based power plants and one of them had been made operational. "The second plant will become operational by end of this month whereas the third one will start adding electricity to the national grid by the next month. These plants have 62 per cent efficiency."

Despite criticism, he said, the government made Nandipur Power Plant operational which is generating 525 MW of electricity. "The government has set up plants from diversified sources as it works on hydel, coal, gas and wind based power projects. Two coal based power plants are operational and the third one will be made operational soon," he added.

The PM said the government will have to build two dams in a decade to overcome water crisis. The Water and Power Development Authority (Wapda) Chief Muzammil Hussain said the project was conceived 30 years back and the first unit of 242 MW had become operational.

He said Pakistan decided to work on this project after coming to know Indian's plan to build Kishan Ganga project. He said the project would generate 5 billion units annually to earn Rs50 billion. Abbasi gave the credit of the project to former PM Nawaz Sharif, the AJK Prime Minister Raja Farooq Haider demanded that 250 MW electricity be allocated to the AJK to end load shedding. Those people are remembered and respected in history who work for nation but Nawaz Sharif is thrown out for life for doing work. Those who work here are dragged in court and are thrown out forever. The country cannot move forward where there is such political disability," Abbasi said.

The PM has rightly said this while describing the political instability and sacking off his master by the court on corruption ruling, the power sector's pathetic situation narrates the political and economic instability of Pakistan. The extremely bad governance and an expenditure of billions of dollars, the hotchpotch energy policy, shady deals with the foreign suppliers and contractors, dependence on IPPs despite executing many power projects in public sector, it fears that our country may not be able to sustain in power sector in years to come despite spending 70-year's record spending on power generation.■

Pakistani Minister for Energy (Power Division) Tours American Embassy Energy Sustainability Initiatives

American Ambassador David Hale hosted Federal Minister for Energy (Power Division) Awais Ahmad Khan Leghari for a briefing and tour of the American Embassy's energy sustainability initiatives. The Embassy Chancery, which was completed in 2015, achieved LEED Silver certification by incorporating locally and regionally available materials, maximizing the use of open space, and using recycled water in the facility's landscape and irrigation system.

Minister Leghari viewed energy-efficient design features, including solar panels, sun shades, and water saving technologies. The Embassy uses an advanced building automation system as the facility's control center, enabling real-time monitoring of operations to ensure efficient use of electricity and water throughout the compound. Minister Leghari lauded the sustainability features designed to conserve water and reduce the use of electricity, and encouraged Ambassador Hale to share these best practices with Pakistani students and urban planners.■

In Japan, in a soap manufacturing company the soap bars were made, then wrapped in a wrapper automatically on an assembly conveyer belt and finally packed in cartons...Many a times it happened that the wrapping machine wrapped without soap. i.e. you had an empty packet without soap.
To rectify this problem the Japanese company bought an X-ray scanner from the US for $60,000 to check on the assembly line whether the wrapper had soap or not..
A similar problem happened at Lifeboy soaps, in Pakistan.. Guess what they did???? They bought a pedestal fan costing around 15 $ and placed it on the edge of the assembly line. The empty wrappers, without soaps just blew away!!!
And You Say Japanese are Advanced in Technology.????

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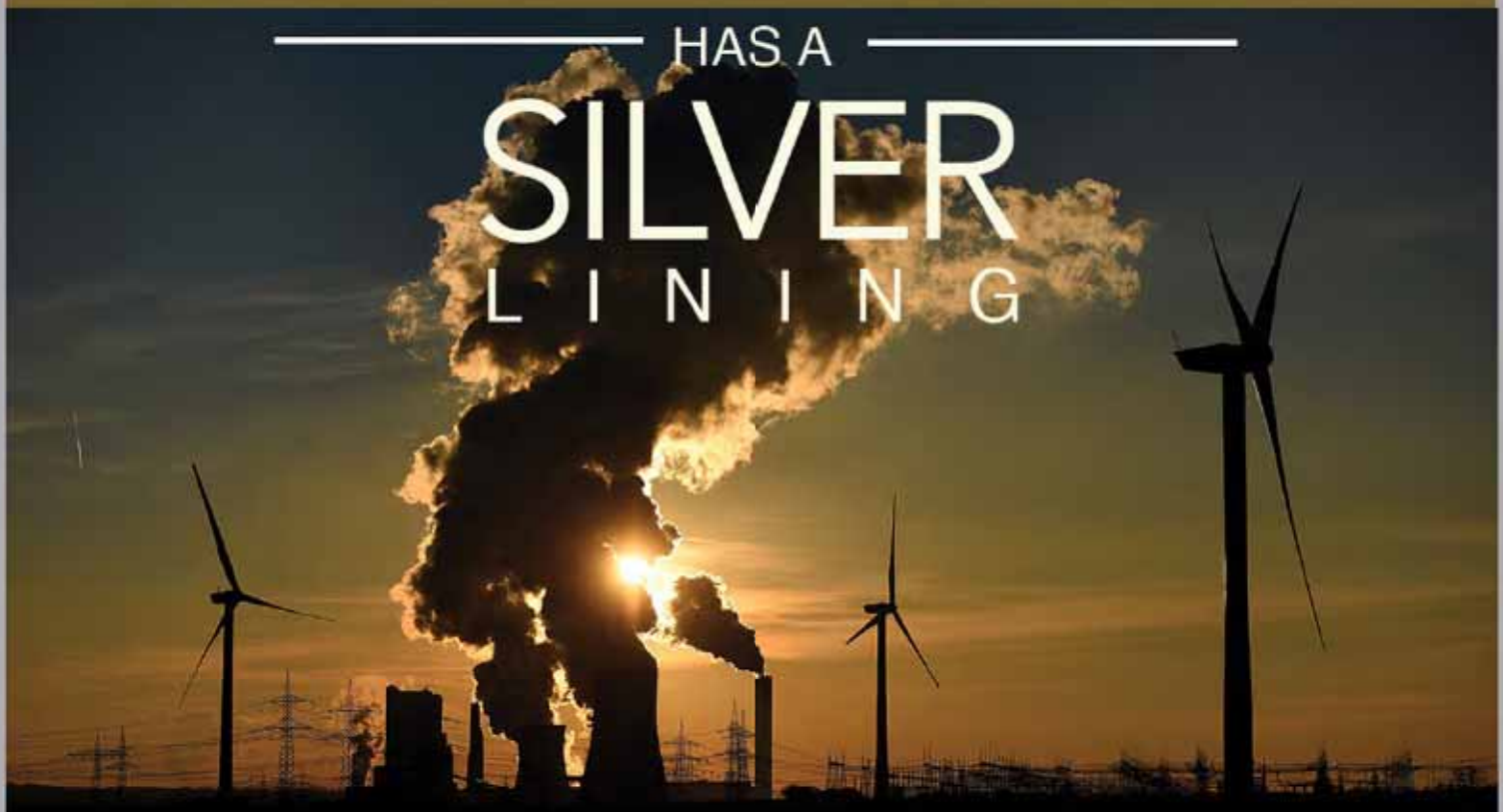

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Pakistan is fast losing gas reserves

Bahria Foundation is setting up a first of its kind LNG Terminal in Sonmiani

Exclusive interview of Shah Sohail Masood, Managing Director Bahria Foundation

By Naeem Qureshi

Pakistan is facing a deficit of about 2 bcfd of gas presently, which is likely to increase further with the economic development of the country and implementation of various industrial project under CPEC. The current supply of local gas which is around 4 bcfd is depleting rapidly with no new large discoveries expected. With an average size of LNG Terminal project of 500 mmcfd, we still have the requirement of four LNG terminal projects", says Shah Sohail Masood, Managing Director of Bahria Foundation (BF). In an exclusive interview he says that.....

Energy Update (EU): What are your educational background, professional, experience and achievements?

Shah Sohail Masood (SSM): I got commission in Pakistan Navy 1981. During my distinguished career. I have served on various Commands and Staff Appointments includes Commanding Officer of Submarine HANGOR, Commander Submarine Squadron (COMSUBS) and Commander North (COMNOR). My prominent staff appointments include Directing Staff at PN War College, Director Plans, Assistant Chief of the Naval Staff (Training), Assistant Chief of the Naval Staff (Ops & Plans), Deputy Naval Secretary and Director General Naval Intelligence at Naval Headquarters. I have also served as Additional Secretary-III at Ministry of Defence. My last appointment before retirement was Commander Naval Strategic Force Command. I am specialized Navigator and an experienced submariner by profession. I am a graduate of PN War College and have done Armed Force War Course from National Defence University.

EU: What is the capacity and investment volume of your LNG Project?

SSM: Bahria Foundation is setting up a first of its kind LNG Terminal in Sonmiani Bay area located about 8 kilometers offshore with a capacity of 750 mmcfd peaking to 1 bcfd. The terminal will be connected to the onshore custody transfer station with a 32-inch diameter sub-sea pipeline. The project will supply RLNG to the IPPs proposed to be set up in the vicinity of the land fall point and will also be connected to the national grid through ISGS/SNGPL pipelines. The project is estimated to cost around $200 million.

EU: What is the equity ratio of the project, local and foreign?

SSM: The project will be funded up to 30 percent of the project cost through equity injection by the sponsors, which currently include Bahria Foundation and PARCO. ENI of Italy and a very large multi-national company in the oil and gas sector is also expected to join the project soon. About 70 percent of the cost of the project will be funded through loans obtained

from local banks and international financial institutions. We do not plan to approach any international aid agency for provision of funds/aid for the project.

EU: As you see, what is the current market of LNG in Pakistan?

SSM: Currently Pakistan is facing a deficit of about 2 bcfd of gas which is likely to increase further with the economic development of the country and implementation of various industrial project under CPEC. The current supply of local gas which is around 4 bcfd is depleting rapidly with no new large discoveries expected. With an average size of LNG Terminal project of 500 mmcfd, we still have the requirement of four LNG terminal projects.

With the exception of Bahria Foundation LNG Terminal Project (BFLTP) all the other proposed projects are being planned at Port Qasim which could result in port congestion and other security related complications. Location of BFLTP on the western side of Karachi will be critical in terms of energy security and provision of RLNG at very competitive prices.

EU: Please share the challenges, development and solution of energy crises. Is LNG the solution?

SSM: Pakistan is currently facing acute energy crises as the existing power projects are unable to meet the demand. A number new power plants are being set up under CPEC which are primarily based on coal. The total installed capacity in the country is about 24,643 MW which is likely to increase to 32,812 MW by end 2018. However, NTDC estimates planned generation capability of only 20,616 MW and 24,640 MW in 2017 and 2018 respectively. The current deficit is about 3710 MW which is expected to be reduced to about 500 MW by end 2018. The current challenges faced by the power sector are as follows; transmission losses of about 18%, additional transmission lines are required to meet new power generation from CPEC and other Projects and Circular Debt of about 1.0 trillion.

As a first step we need to take immediate and effective measures to reduce transmission losses and circular debt which is hampering the industry in utilizing its full potential. In order to mitigate the situation we need to have an effective power generation utilization strategy. Old plants based on furnace oil need to be phased out. New plants based on LNG are to be prioritised due to their better efficiency and being more environment friendly. India and China have become one of the biggest players in the LNG industry and we need to follow in their footsteps. LNG prices are expected to remain attractive as they are linked as a percentage of oil and are normally much cheaper than furnace oil in terms of price and efficiency. In my view LNG is the solution for the current energy crises.

EU: Are you satisfied with the current economic and trade policies of Pakistan?

SSM: Needs a detailed study and analysis on this issue.

EU: As a corporate entity, please let's know about initiatives for excellence environmental measures under CSR?

SSM: Bahria Foundation is extremely cognizant of its responsibility towards the ecology of the area as well as improving the overall wellbeing of the local populace: BF will utilize its CSR Funds for providing clean drinking water, health and education to the locals in the area. BF through one of its subsidiaries (Sahil Welfare Association) is already running periodic medical camps all along the coastal areas of Pakistan. In the first phase, plant a million mangrove saplings along the Baluchistan Coast, planting of coral at site, launch a campaign to clean the beaches of Sindh and Baluchistan.

EU: Please add any other relevant points/reviews that would be beneficial for our readers?

SSM: Bahria Foundation has a team consisting of very committed and professional individuals who have, so far, put in their religious efforts to make this project a success. It is my honour and a great responsibility to deliver on this Project within the timeframe. I shall be happy to share my experience throughout this journey so that others aspiring to do something great for the country may learn from it.■

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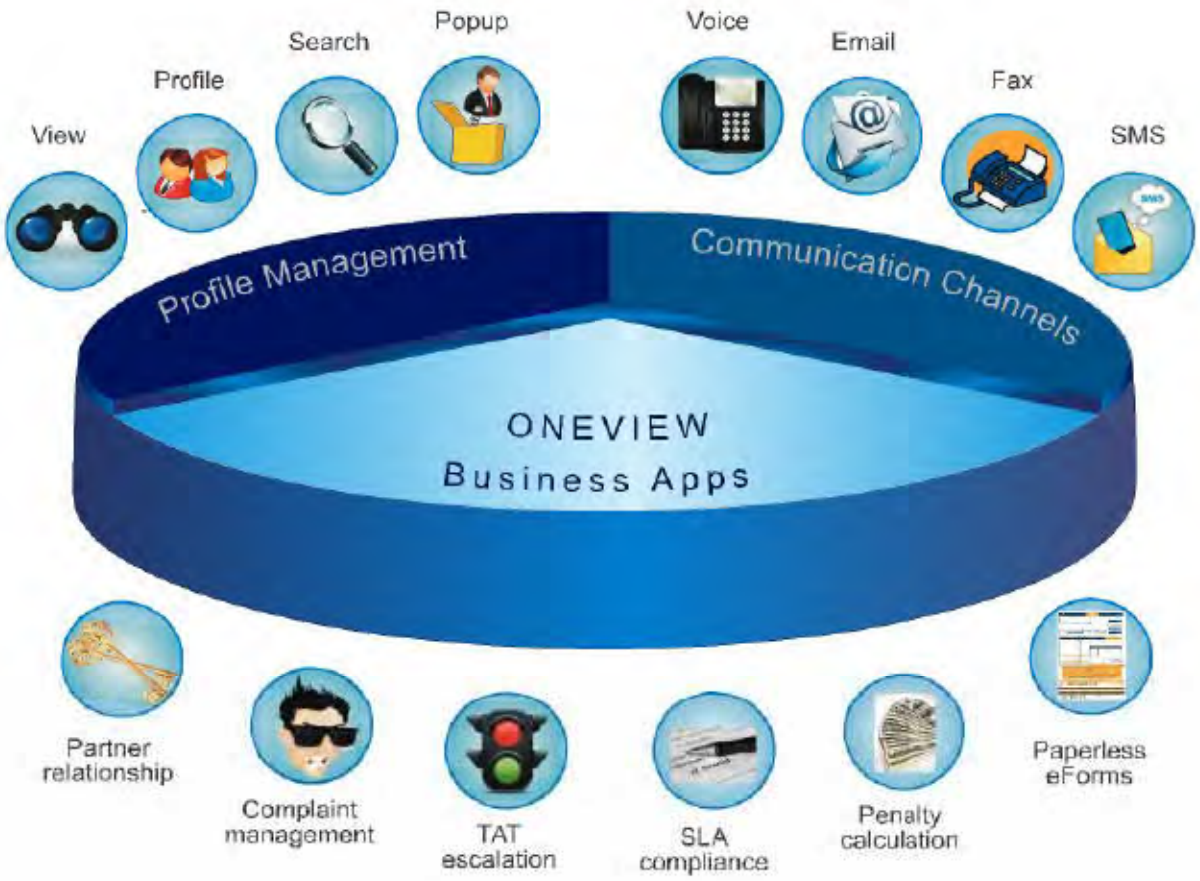

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Massive load-shedding cause Rs200 billion losses to the consumers annually

By Sajid Aziz

Electricity consumers lose an average amount of Rs200 billion annually on account of load-shedding by the power distribution companies' negligence and ineptness, this was showed by an independent survey carried out with the help of USAID.

The impact and cost of the high level of power load shedding to domestic consumers since 2012 by a survey based approach develops a methodology for quantification of the cost of outages by deriving the utility loss, cost of self-generation and other costs incurred. Overall, the total outage cost to residential consumers in the urban areas of Pakistan is estimated at close to Rs 200 billion. The willingness to pay more for uninterrupted electric supply is also determined. Policy recommendations are made to mitigate the impact of load shedding on domestic consumers. The widespread and growing phenomenon of power load shedding has emerged as one of the principal supply-side constraints to growth of the economy of Pakistan. Not only has this led to significant losses of output, employment and exports but also during periods of high outages there have been large-scale protests, particularly in Punjab and K-PK. Households have faced severe disruptions due to the high and growing incidence of load shedding.

These have led to mass protests on streets resulting in disruption of other economic activities. As such, the economic return of reducing outages and of facilitating the process of adjustment to these outages is likely to be high. This paper provides an approach and methodology for quantifying cost of load shedding to households in Pakistan.

The growth in installed capacity and generation of electricity in Pakistan has been more than doubling every decade up to 2000-01, with annual growth rate over 7%. It is only during the last decade that the rate of expansion in capacity has substantially slowed down to less than 3% per annum. In the initial years of the decade there was significant excess capacity, due to the hump in investment by the IPPs in the mid-to late-90s. But adequate provisions were not made to cater for the future growth in demand. The growth in electricity generation was rapid in the 70s and 80s. in particular, the commissioning of the Tarbela Dam in the early 80s enabled a quantum jump in supplies at low cost. During the 90s as the growth rate of the economy slowed down, demand for electricity was not so buoyant and the rate of increase annually in power generation declined to 5%. During the last decade, this has fallen further to only 3%. The growth in electricity consumption was during the years prior to commencement of significant load shedding in 2007-08 and the years thereafter. It is important to note that in 2011-12 National Electric Power Regulatory Authority (NEPRA) reports the generation capability as less than 70% of the installed capacity

The highest burden of power outages is on the 'middle class' living in the cities of Pakistan. It is 7 per cent for such households as compared to 6.2 per cent for low income households and 5.8 per cent for the richest households. The total outage cost per kwh for residential consumers on average is close to Rs 26 (24 cents) per Kwh. The highest outage cost per Kwh is observed in Sindh at Rs 40 (38 cents) per Kwh, while the lowest cost is in Punjab at Rs 18 (16 cents) per Kwh. The outage cost per Kwh is the highest for the `middle class` at Rs Rs. 27 (25 cents)- Rs 29 (27 cents), the report concluded.■

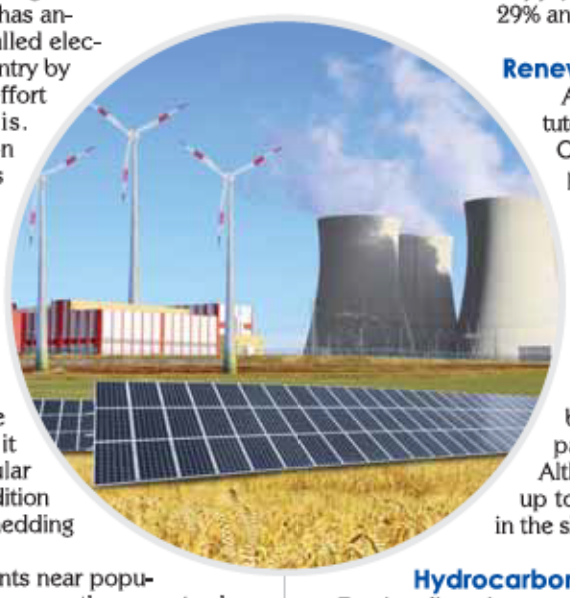
Power production rises 30% over five years

By Zafar Bhutta

The Pakistan Muslim League-Nawaz (PML-N) government, due to completing its tenure in the next one month, has announced that it has ramped up installed electricity generation capacity in the country by 30% over the past five years in an effort to overcome the energy crisis.

The installed power generation capacity reached 29,573 megawatts by February 2018 compared to 22,812MW in 2012-13, the government said in the Pakistan Economic Survey 2017-18.

During the period, 39 projects with cumulative capacity of 12,230MW were connected to the national grid. With power shortages being the prime economic challenge five years ago, the government said it cleared Rs480 billion worth of circular debt in mid-2013 which led to the addition of 1,700MW and helped ease load-shedding considerably.



SC concerned over N-power plants near populated areas However, the survey kept mum on the current volume of circular debt that has once again plagued the energy chain and is estimated to have crossed Rs1 trillion. The government failed to increase the share of hydroelectric power - the cheapest source of energy - in the total energy mix during its tenure. Instead, its contribution went down from 31% in Jul-Feb 2012-13 to 27% in the same period of FY18, which the government blamed on lower water availability.

However, there was no change in the share of thermal power generation, which had been a major contributor to the circular debt. Its share stood at 64% in Jul-Feb 2012-13 and was at the same level in Jul-Feb FY18.

Among other fuels, the share of nuclear power edged up from 5% to 7% and that of coal from 0% to 2%. Pakistan also started importing liquefied natural gas (LNG) during the current government's tenure, which was called an economical fuel compared to other petroleum products, to bridge the widening energy deficit. In Jul-Feb FY18, 63% of LNG (401 million cubic feet per day - mmcfd) was supplied to different power plants which included Bhikki, Haveli Bahadur Shah, Balloki, Halmore, Orient, Rousch, Kapco, Saif and Sapphire. The remaining LNG was provided to fertiliser plants, industrial units and transport sector.

Bill recoveries

According to the survey, significant improvements were made in the recovery of dues that brought a meaningful decline in transmission and distribution losses.

Over the past five years, average recovery remained above 90%. In Jul-Mar FY18, bill recovery stood at 89.5% constrained mainly due to only 24% recovery by the Quetta Electric Supply Company.

In Jul-Mar FY18, overall transmission and distribution losses came down to 16.8% regardless of some anomalies.

Among high loss-bearing companies, Peshawar Electric Supply Company recorded 37% transmission and distribution losses, followed by Sukkur Electric Power Company, Hyderabad Electric Supply Company and Quetta Electric Supply Company where losses were 35%, 29% and 22% respectively.

Renewable energy

At present, renewable energy constitutes only 2% of the electricity generation. Over the past five years, 18 wind power projects of 937.27MW capacity started commercial operation while six solar power plants of 418MW began production.

For power generation from bagasse, six sugar mills having cumulative capacity of 201.1MW started operation.

Over the past one year, there had been no significant change in the pattern of electricity consumption. Although the share of households edged up to 51%, it was offset by a 1% decline in the share of industry.

Hydrocarbon exploration

Foreign direct investment shrank considerably in oil and gas exploration during the current government's tenure. It had been recorded at $600 million in FY14 and came down to $200 million in Jul-Mar FY18.

Annual consumption of petroleum products in Pakistan was calculated at around 26 million tons in FY17. Domestic crude oil production meets only 15% of the country's requirement whereas 85% of the demand is met through imports.

Owing to low supply of gas to compressed natural gas (CNG) filling stations and consumption of motor gasoline in generators, the demand for the latter increased up to 25% over the past five years, which necessitated the reopening of abandoned oil depots.

Six abandoned depots were reopened due to which storage capacity of diesel, petrol, kerosene oil and light diesel oil increased.

The share of oil consumption in power production dropped significantly while the share of transport vehicles rose. "This is taking place as new power plants are moving towards cheaper fuels whereas increase in the share of transport is mainly due to the decline in domestic prices of petrol and higher imports of used cars," said the survey.

In Jul-Feb FY18, the share of oil consumption in transport vehicles increased to 64.4% compared to 57.2% in the same period of previous year. The share of oil consumption in power production dipped to 26.4% from 33.2% during the period.

This led to a small hike in the domestic crude oil extraction as in Jul-Feb FY18, 21.8 million barrels were produced compared to 21.5 million barrels in the corresponding period of previous year. Domestic gas supplies contributed about 38% to the total primary energy mix. The government said it was pursuing policies to enhance gas production as well as imports to meet the growing demand.

In Jul-Mar FY18, average natural gas consumption stood at about 3,837 million cubic feet per day (mmcfd) including 632 mmcfd of LNG compared to 3,205 mmcfd last year. Power producers continued to remain the largest consumers of gas followed by domestic consumers. ■

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ThinkTank

Global Warming to play havoc in years to come

By Muhmmmad Awais Umar

The rise in temperature (global warming) due to anthropogenic activities is a reality. By the end of the century, the situation is likely to worsen drastically if greenhouse gas emissions are not reduced significantly. Humans have often convinced themselves that technological advancement can reduce greenhouse gas emissions and help cope with scarcity of natural resources - The Cornucopian Theory. This is not the case as it is evident that societies have suddenly collapsed as technologies fail or their material resources run scarce; for example the collapse of Mayan civilization. Too much faith only in technological solutions to climate change may lead to a similar situation in future, if politically and socially rational changes are not made. Fossil fuels - a major source of energy - are known for their key contribution to human development. According to the International Energy Agency, fossil fuels meet around 80% of the world's energy demand and are responsible for about 40 gigatons of carbon dioxide emissions per annum.

This higher concentration of carbon dioxide in atmosphere is the main cause of global warming. Furthermore, increasing human population is also contributing to the depletion of natural resources and environmental degradation. More population requires more resources to get processed and disposed of in the environment in the form of pollution. Currently, the world is striving to address climate change by reducing carbon footprint through less consumption and better technology. But an unsustainable growth of human population will undermine these efforts. So, in order to cope with climate change, we not only need smaller footprints, but also lower number of feet on earth - Neo-Malthusians Theory. This controlled growth of human population will lead to a healthier and more stable post-fossil fuel society as it helps to reduce the demand for natural resources, especially fossil fuels, coupled with technological advancement. Researchers across the world have examined the effect of various population growth scenarios on economic development and energy use. They have found that slower population growth has the potential to significantly reduce greenhouse gas emissions in future.

Pakistan, similar to many other developing countries, has a high population growth rate. It has been observed that in the last two decades, its population has increased by around 57% and is expected to double in the next 30 years. On the other hand, material resources of the country are either stagnant or growing very slowly whereas poor economic performance and internal security condition have made the situation worse. Although Pakistan is currently emitting low levels of greenhouse gases, it is one of the most vulnerable countries in relation to climate extremes (floods, droughts and heat waves). According to Oxfam, for the long run, farmers' ability to produce food has been affected by continuous flooding in the past few years. Water availability for the rapidly growing population is another major challenge as per capita water availability has decreased from 5,260 cubic metres in 1951 to 908 cubic metres in 2017. Climate change may reduce water resources even further and this will affect lives and livelihoods of the growing population.

Energy and agriculture sectors account for 90% of Pakistan's total greenhouse gas emissions. According to the INDC (Intended Nationally Determined Contribution) in 2015, both sectors account for around 334 metric tons of carbon dioxide equivalent (mt Co2 equivalent) emissions. In the coming decade, greenhouse gas emissions will increase more rapidly to around 1,355 (by energy and agriculture sectors) mt Co2 equivalent in 2030, just to fulfil demand of the growing population. Increased concentration of greenhouse gases in the atmosphere will have a severe impact on future generations because the presence of carbon dioxide in atmosphere is long-lasting - even for thousands of years - and takes about a decade to have its maximum warming effect. It means that the amount of carbon dioxide we are emitting will increase the dangers of climate change in the next decade and later.

Currently, Pakistan requires $7 to $14 billion per annum to tackle existing climate vulnerabilities. Furthermore, it requires around $40 billion to reduce its projected greenhouse gas emissions by 20%. By keeping in view the population growth, demand for food and energy, economic performance and climate change impact, it would be difficult for Pakistan to achieve its development targets until or unless it controls its population growth. For this purpose, it is important to integrate economic policy with population and resource distribution policies. This would be helpful in enhancing people's prosperity as there will be less mouth to feed with more economic development through efficient use of scarce resources.■

courtesy: Daily Dawn

Exclusive Interview

Punjab to save Rs10 billion annually by replacing old appliances - Adnan Mudassar

So far other provinces have no initiative in energy conservation

Adnan Mudassar, Managing Director, Punjab Energy Efficiency and Conservation Authority (PEECA)

Just replacement of outdated lights, fans, ACs of Punjab Govt buildings will annually save Rs10 billion: Adnan Mudassar, MD PEECA. If you just replace existing lights, fans, and air-conditioners of the institutions owned by Punjab Government, with energy-efficient appliances, you will end up saving 30 to 40 percent electricity that means 480 MWs of electric supply and by the end of the year you will be saving around Rs10 billion". This was stated by Managing Director of Punjab Energy Efficiency and Conservation Agency (PEECA), Adnan Mudassar as the 'Energy Update' interviewed him in detail about present initiatives and future plans of his agency in Punjab. Following are the important excerpts of interview of Mr. Muadassar for our readers:

By Naeem Qureshi

Energy Update: What the aims, reasons, and objectives behind establishing the PEECA?

Adnan Mudassar: The basic aim to establish this organization is to manage the demand side of electricity and energy. So firstly NEECA (National Energy Efficiency and Conservation Agency) came into existence in 2016. The provincial governments were supposed to support it through one of their provincial arms. If you look at the overall situation of the country, PEECA is basically leading the sector because so far there has been no initiative at all on this front in Khyber Pakhtunkhwa, Sindh, or Balochistan. We are closely working with the NEECA for this cause.

Since it is an energy efficiency and conservation drive so it has two components basically: one is the efficiency component, which relates to the technological advancement; the second component is energy conservation which is basically change in behavior of the consumer. As far as I look at the situation, the most difficult part of this drive is to bring change in behavior as we are not used to adopt the desired energy conservation practices. For this we are going to start a learning initiative in schools so to provide guidance to students on the topic of energy efficiency and conservation. We will provide guidance to the students from Class-03 to Class 12. Then we have the plan to incorporate something on the topic of energy conservation in the curriculum prescribed for degree-level engineering education in the universities.

EU: Tell us about any of the important initiatives launched by the PEECA in Punjab?

Muadassar: One of the projects we have been doing in collaboration with the NEECA, is the energy labelling of fans. It is one of our first projects where we have been able to label the fans. It is a long way to go as it is just the beginning. In Punjab alone there are 70 million fans as each one of the existing fans in use consumes around 120 to 140 watts of energy. If you replace these 70 million fans with energy labelled fans of 60 to 65 watts power, you will reduce up to 50 percent of the load that is taken up by these fans. That comes to around saving of 2,000 MWs electricity. This all estimation is on the basis of a preliminary study report of the Word Bank on the subject of energy conservation. So this is the potential of energy conservation we are talking about.

EU: Tell our readers about newly launched plan of the PEECA.

Muadassar: We have conducted a survey to know about quantum of energy consumption and electricity bill being paid by different institutions of Punjab Government. The Punjab Government

pays the total power bill of Rs 25 billion in a year against 1200 MWs consumption of electricity. We carried out energy audit of 900 institutions owned by the provincial government. This audit tells us that these institutions have been using old fans, tube lights, and ACs. If you just replace the existing fans, lights, and ACs of these institutions, you will save up to 30 to 40 percent electricity consumed by them. That means 480 MWs of electricity as you will be saving around Rs 10 billion a year.

We did planning on this project and took it to the World Bank as we need funding for the project. The World Bank committed to support us and gave us the go-ahead to do the project. So this project is supposed to cover total 85,000 government buildings in the province. So initially we shortlisted only those government-owned buildings whose energy consumption is more than one MW. So we prioritized those identified 77 govt buildings whose power consumption is more than one MW. So retrofitting of these buildings has to be done. We have completed retrofitting of one out of these 77 buildings and that is the case of building of Government College University, Lahore. We ended up saving 40 percent of power consumption of this university.

EU: Tell us about other works of your organization?

Mudassar: We have developed the document containing the proposed provincial 'Energy Conservation building code'. This document is now being thoroughly reviewed by the relevant experts. This code is already prepared and available at the federal level. Every province has to develop this code on its own on basis of its peculiar climatic conditions. We have done it in the context of Punjab. We have done quite a few consultative sessions on the same document with the concerned stakeholders and we now believe that in next few months, we will be in a position to implement it.

Then we are planning to solarize the power usage of government-owned universities in the province under the 'ESCO' model. We are inviting the private sector to install solar systems at the universities as we will pay rental for these systems. So there will be no upfront cost of the project for the government. It will work under the net-metering system as the extra units of solar power could be supplied to the grid. We have done tendering process of the project involving ten interested companies.

EU: What are the upcoming plans of PEECA?

Mudassar: We are planning to collect first-hand data of energy consumption of agriculture sector as right now we don't have any numbers or data regarding this sector.

Then it is our long-time desire that we are able to work on the industrial sector. We have been doing planning for this as we will be required to do benchmarking for the industry for the cause of energy conservation. We are also working on specific energy conservation norms for the industry. We are also working on the 'PAT' scheme, which means Perform, Achieve, and Trade as adoption of this regime will highly incentivize for the industry to adopt energy conservation methods and techniques that would be highly beneficial for their business. This will introduce a certification system showing how much a specific industry is conserving energy as obtaining of this certificate will become necessary for each one of the industry participating in this regime. This system has been very successful around the world. We will adopt this regime only after fully going through the consultative process involving the concerned associations of industries. These associations on their own will propose us energy conservation targets for their specific industries as the same standards will be later enforced. This project is going on very successfully in India as there it is in its fourth year.

Then we also intend to do energy labelling of ACs and refrigerators being sold in the market likewise we have done in the case of fans in Punjab. We will do energy standardization and labelling of other electrical appliances as well likewise energy labelling project is going on in China.

EU: How your organization is spreading the message of energy conservation in the province?

Mudassar: For this we have been doing workshops in the industrial hubs of the country like in Faisalabad, Gujranwala, and Rawalpindi where we are used to invite representatives of concerned associations of industry and chambers of commerce.

Then we are also involving local government agencies in our drive urging them to adopt energy conservation methods like they are motivated to replace the existing street light bulbs in use with energy-efficient LED bulbs. Then we also do printing of brochures, leaflets, and other printed material, which is used among other places at schools of 36 districts of the province where we do conduct the energy conservation awareness campaign.■

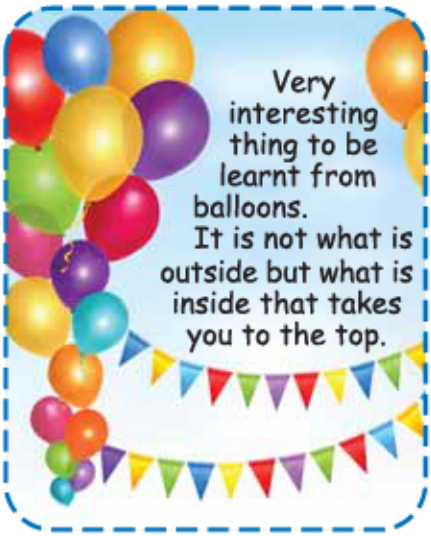
Cruel-K Electric again playing load-shedding drama

continued from page #

From its units consuming furnace oil. What the heck K Electric would do when all he gas reserves would go dry and SSGC will not be in a position to supply gas to it even one single MMCFD?

Would there Karachi's electricity woes be resolved or the government has any kind of remedy to this problem? The answer is no because the present Prime Minister seems dummy of PML-N and has not been given any power to make decision he is just passing time till the PML-N's tenure is over.

The only answer as suggested by some experts, is to declare KESC's privatization as cancelled and a consortium of city's stakeholders comprising Aqeel Karim Dhedi, Arif Habib, Bashir Ali Muhammad, S M Muneer, Bashir Jan Muhammad, Irshad Kassim, Siraj Kassim Teli, etc. should be given the stakes and their nominated engineers may run the affairs of KESC peacefully.■



Indus - among top 10 most polluted rivers

Pollution causing $7.9 billion loss to marine ecosystems

EU Report

A group of scientists have found that up to 95 per cent of plastic polluting the world's oceans comes from just 10 rivers, eight of which are in Asia including Pakistan's Indus River, reported.

Two of the rivers are in Africa - the Nile and the Niger – while the others are in Asia. The plastic that reaches the world's oceans gets flushed through these rivers: The Yangtze, the Indus, Yellow River, Hai River, the Nile, the Ganges, Pearl River, Amur River, the Niger, and the Mekong, in that order.

According to a new research, the mismanagement of waste accounted for 88 per cent to 95 per cent of the total global waste floating in the sea, about five trillion pounds of plastic.

By targeting rivers such as the Yangtze in China the worst offender, and the Ganges in India, plastic pollution could almost halve.

The river Indus, one of the longest rivers in Asia is polluted as a result of litter, untreated agricultural, industrial and municipal waste.

These rivers have a few key things in common. All of them run through areas where a lot of people live, hundreds of millions of people in some cases.

Scientists calculated that halving plastic pollution in these waterways could potentially reduce the total contribution from rivers by 45 per cent.

Massive amounts of plastic bits that imperil aquatic life are washing into the oceans and even the most pristine waters. But how it all gets there from inland cities has not been fully understood.

Dr Christian Schmidt, a hydrogeologist at Helmholtz-Centre for Environmental Research (UFZ) in Leipzig, Germany, told the Daily Mail, "A substantial fraction of marine plastic debris originates from land-based sources and rivers potentially act as a major transport pathway for all sizes of plastic debris."

His team analysed data on debris from 79 sampling sites along 57 rivers - both microplastic particles measuring less than 5mm and macroplastic above this size. They said microplastics, in particular, can damage the health of marine life but cleaning it all up would be impossible.

> "The top 10 rivers - eight of which are in Asia - accounted for so much plastic because of the mismanagement of waste."

However, stemming the tide could help reduce the potential harm. Dr Schmidt said to do this, researchers need a better understanding of how plastic makes its way into the oceans in the first place.

Rivers which flow from inland areas to the seas are major transporters of plastic debris but the concentration patterns aren't well known. The findings could help fill in this knowledge gap.

Dr Schmidt pooled data from dozens of research articles and calculated that the amount in rivers was linked to the 'mismanagement of plastic waste in their watersheds.'

He said in the interview with the Daily Mail, "The 10 top-ranked rivers transport 88 to 95 per cent of the global load into the sea."

The study follows a recent report that pointed the finger at China, Indonesia, the Philippines, Thailand and Vietnam for spewing out most of the plastic waste that enters the seas.

The Yangtze has been estimated in previous research to dump some 727 million pounds of plastic into the sea each year. The Ganges River in India is responsible for even more - about 1.2 billion pounds.

A combination of the Xi, Dong and Zhujiang Rivers (233 million pound per year) in China as well as four Indonesian rivers: the Brantas (85 million pound annually), Solo (71 million pound per year), Serayu (37 million pound per year) and Progo (28 million pound per year), are all large contributors.

Previous research has also suggested two-thirds of plastic comes from the 20 most contaminated rivers. But Dr Schmidt reckons this can be narrowed down even further.

He told the Daily Mail, "The rivers with the highest estimated plastic loads are characterised by high population - for instance the Yangtze River with over half a billion people. These rivers are also in countries with a high rate of mismanaged plastic waste (MMPW) production per capita as a result of a not fully implemented municipal waste management including waste collection, dumping and recycling."

"The data shows large rivers are particularly efficient in transporting plastic debris. Large rivers like the Yangtze transport a higher fraction of the MMPW that is generated in their catchments than smaller rivers," he added.

These three factors lead to the estimat-

ed concentration of most of the plastic load to large rivers with a large population living in their catchment. Countries with high MMPW generation such as China or India could greatly reduce the plastic pollution of rivers by implementing proper waste management.

"In industrial countries, although they have a well-developed waste management infrastructure, one way for plastic waste entering the environment is littering," said Schmidt.

Pollution costs more than £6 billion ($7.9 billion) in damage to marine ecosystems and kills an estimated one million seabirds, 100,000 sea mammals and untold numbers of fish.

Dr Schmidt said in the interview, "Pollution of the marine environment with plastic debris is widely recognised and is of increasing ecological concern because of the chemical persistence of plastics and their mechanical fragmentation to so-called microplastics which can be ingested by even small organisms such as zooplankton."

Schmidt continued, "Beyond the long recognised occurrence of plastic debris in the marine environment plastic debris has been more recently detected in freshwater environments and can be found even in pristine, remote locations."

He added, "The high fraction of a few river catchments contributing the vast majority of the total load implies that potential mitigation measures would be highly efficient when applied in the high-load rivers. Reducing plastic loads by 50 per cent in the 10 top-ranked rivers would reduce the total river-based load to the sea by 45 per cent."

Schmidt concluded, "Our analysis reveals that plastic loads of large rivers disproportionately increase in relationship to the increase of plastic debris available for transport.■

There are 7 puzzles which the Buddha answered in his mystical way:

1: "What is the SHARPEST thing in this world?"
His people replied simultaneously: "The Sword."
Buddha Answered:
he sharpest is the "human tongue" Because with the tongue, humans easily hurt the heart, hurt people's feelings, through slander etc ...

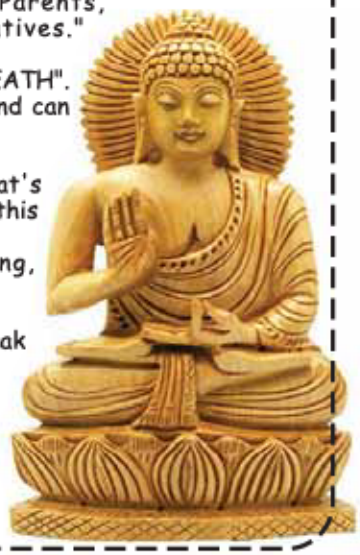
2: What is the MOST distant from us in this world?
Some replied: "Space, the moon, the sun."
Buddha Answered:
The most distant is the "Past". Whoever we are, however rich we may be, we can NOT go back in time. Therefore we must make good use of today & days that will come.

3: What is BIGGEST thing in this world?
Someone replied: "Mountain, Earth, Sun.
"Buddha Answered:
The biggest thing in the world is "Lust". Many humans become wretched because they indulge their lusts. All means are justified in order to realize the lusts of this world. Therefore be careful with lust ..!

4: "What is the HARDEST (and has the MOST WEIGHT) in this world?
"Someone replied: "Steel, iron, elephant."
Buddha Answered:
The hardest thing is to "promise". It's easy to say but extremely hard to do.

5: "What is LIGHTEST thing in this world?
"Someone replied: "Cotton, wind, dust, leaves."
Buddha Answered:
The lightest in the world is humility, hence it is easy "to forget humility & to leave humility". Look at the many people who are chasing wealth and position, they simply dropped/left humility.

6: What is CLOSEST to us in this world?
Someone replied: "Parents, Friends, Friends, Relatives."
Buddha Answered:
The closest to us is "DEATH". Because death is SURE and can happen any second.



7: Last question: "What's the easiest thing to do in this world?"
They replied: "Eating, sleeping, hanging out"
Buddha Answered:
The easiest is to "Break someone's heart"

Even non-Buddhists can use this knowledge and wisdom

10th Int'l Power Generation Conference 2018

Experts call for indigenous resources for resolving power crisis

By Nadeem Ashraf

The message was very much clear and that was also quite easily understandable for all the relevant quarters: the ultimate solution to the persisting power problem of Pakistan lies in exploiting its indigenous energy resources especially those, which could produce electricity through renewable and environment friendly means.

The message was in fact a unanimous call by energy experts and other speakers who spoke at 10th Annual Power Generation Conference organized at Serena Hotel of Islamabad recently. The Energy Update in collaboration with Alternative Energy Development Board (AEDB), Private Power & Infrastructure Board (PPIB), and other collaborating partners organized the annual moot this time in Islamabad.

The theme of this year's conference was "The next emerging challenge: sustainability & growth in power generation".

Like previous years, this time also the power generation conference served as best and most productive platform to assemble at one place the best minds available in the country related to the power sector. Energy experts, managers, and investors of power projects both in public and private sectors attended the moot in a large number.

This year's conference also served as the most suitable moot to thoroughly review performance of the outgoing federal and provincial governments in the energy sector during the last ten years and that is because the event was held less than a month before constitutional tenure of the present government ended.

The speakers on the occasion said that Pakistan without wasting any more time should immediately take steps to tap indigenous energy resources of the country including coal, hydro, wind, solar, and bio-mass to generate electricity through most affordable and reliable means.

They said that Pakistan like on a war-footing basis required a firm policy framework and mechanism to facilitate maximum exploitation of indigenous resources of energy available in the country for maximum benefit of the masses.

According to them, the more country relies on conventional means of electricity generation that uses much expensive hydrocarbon resources, the more elusive the objective of achieving self-reliance in energy sector will become.

One of the startling disclosure of the conference was that the Pakistan's renewable energy production for the first time have been increased to record level of 1568 Megawatts excluding hydroelectricity as identification of five more wind corridors in Balochistan could add several more thousand megawatts of clean energy to the national grid.

The disclosure came from none other than the Chief Executive Officer of AEDB Amjad Ali Awan who spoke while chairing the concluding session of the conference.

The AEDB chief said that renewable energy production in Pakistan would increase to 1870 MWs by the end of current year.

He said that wind power production through only one wind corridor in Sindh was 938 MWs as this wind-based energy generation would increase to 1240 MWs later this year.

He said that at present hydro-based power projects accounted for 38 percent produced in the country as the same should be increased to 45 percent in coming years.

"If Denmark has set the target to stop consumption of fossil fuels by 2050 then

Group Photo of Participants at 10th Annual Power Gen Conference 2018. Picture shows Chairman AEDB Amjad Ali Awan, Managing Editor Energy Update M. Naeem Qureshi, Engr Nadeem Ashraf & others

Pakistan has all the potential of renewable energy to set a similar target," said the AEDB chief.

Earlier speaking at the conference, Acting German Ambassador in Pakistan Dr Jens Kokish said that Germany and Pakistan had massive potential to collaborate with each other in the renewable energy sector as this collaboration would go a long way in resolving energy crisis of the latter on a sustainable basis.

He said the German energy model posed an excellent example for Pakistan for adoption as Germany swiftly overcome its power crisis by maximizing power generation through renewable means while gradually lessening reliance on conventional means of power generation that was also quite harmful for the environment.

He said that Germany once faced similar challenge as currently being encountered by Pakistan in the energy sector. "We transformed our energy sector to increase sustainability of the power being supplied to our people. We changed our energy mix as we turned towards renewable energy and other innovative technologies," he said.

He said that during favourable weather conditions, renewable energy accounted for up to 90 per cent power produced in Germany. He said that Germany was going to shut down all its nuclear power plants by the year 2022 under its drive to promote use of clean and renewable energy for power production.

He said that Pakistan should actively pursue the option of doing renewable energy projects of hybrid nature so to utilize maximum potential of wind and solar power available across the country.

Managing-Director of PPIB Shahjahan Mirza said that per capita consumption of electricity in Pakistan was 1/5th of average per capita consumption of electricity in rest of the world. "This means we have to supply more electricity to raise standard of living of our people," he said.

He said that Pakistan should go for a wiser fuel mix using all its indigenous energy resources including coal, hydro-electricity, and renewable means to produce electricity on a sustainable basis.

He said that PPIB had facilitated completion of new energy projects in private sectors capable of 8,200 MWs electricity. He said that by the year 2021, PPIB would ensure completion of private sector power projects having potential of producing 15,000 MWs power.

Federal Secretary Planning and Development Commission Shoaib Ahmed Siddiqui said the energy demand always increased with increasing population of the country. The incumbent government had done a lot in power generation sector and now transmission capacity was being enhanced. He said many investors were coming to invest in the energy sector of Pakistan. He urged the business community to come forward and join hands to provide affordable and clean energy to the consumers. Terming the conference encouraging, the Secretary expressed the hope that the organizers would continue this practice for finding amicable solution to ever increasing energy demand.

Appreciating the organizers, he emphasized for holding more such conference to create awareness among the masses about energy issues.

Mr. Siddiqui also stressed the need for water-integrated plan to construct small hydro projects which could easily be exploited.

Chief Marketing Officer Sindh Engro Coal Mining Company (SECMC) Brig (retired) Tariq Lakhair said Pakistan is blessed with tremendous potentials of indigenous energy resources and it has seventh largest coal reserves in the world.

He said Thar Block II could alone generate 5,000 megawatt (MW) electricity for next 50 years.

He said 80 per cent work on Thar Coal power plant has already been completed and its first unit would start generation by December 2018. He said unfortunately in past, mafia create hurdles in exploiting indigenous resources.

Managing Director Siemens (Pakistan) Mr. Helmut Von Struve said affordable energy would be foundation of social and stable Pakistan.

He was of the view that energy landscape has gradually been changing to renewable energy (RE).

He said Siemens Pakistan is technology partner in ditigization with Pakistan energy sector.

Dr Faiz Chaudhary narrated the power sector challenges and the way forward to resolve them. He said we must follow the right path to get out of the power crisis.

He was of the views that after disbundling of WAPDA, codes and policy guidelines were not followed in order to provide affordable and reliable electricity.

CEO Star Hydro Waqar Ahmed said all future energy policies must have backing of all stakeholders. He pointed out that hydel was suitable solution to cheap electricity.

He said the country's economy would directly benefit from hydel generation and it would also help contribute to the development of the area.

Speaking on the occasion, Chairman Pakistan LNG Ltd Dr Manzoor Ahmed said Pakistan had lost around $100 billion on account of energy crisis. He said an amount of $2-3 billion could be saved annually by converting furnace power plants on RLNG.

Earlier In his welcome address, Chairman Organizing Committee Energy Update Magazine, Muhammad Naeem Qureshi thanked all the distinguished guests and said the conference has been regularly organizing for the last 9 years.■

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By Ismat Sabir

Waited for 70 years:

Pakistan finally gets National Water Policy

First time in the history of Pakistan the most sought-after National Water Policy has been prepared and announced by the Federal Minister for Water Resources, Syed Jawed Ali Shah, that was approved in the 37th meeting of the CCI, presided over by Prime Minister Shahid Khaqan Abbasi who was given a detailed briefing by Deputy Chairman Planning Commission, Sartaj Aziz, on draft National Water Policy (NWP). Later, the Prime Minister along with four chief ministers signed the "Pakistan Water Charter" pledging commitment to the National Water Policy.

The meeting also approved Qazi Formula for distributing of net hydel profit, said Chief Minister Khyber Pakhtunkhwa Pervez Khattak, adding that his province will get an additional Rs60 to Rs70 billion of NHP after the implementation of the AGN Qazi Formula. Provinces' led to approval of the formula from the CCI forum. The AGN Qazi formula was developed in 1991 and was approved by the CCI meetings in 1991 and 1993, Khattak pointed out.

> "Water scarcity and water contamination are the most deadly weapons of mass destruction. Pakistan is being systematically destroyed by these weapons due to the lack of vision and failure of government policies."

The salient features of the Policy include water uses and allocation of priorities, integrated planning for development and use of water resources, environmental integrity of the Basin, impact of climate change, trans boundary water sharing, irrigated and rain fed agriculture, drinking water and sanitation, hydropower, industry, ground water, water rights and obligations, sustainable water infrastructure, water related hazards, quality management, awareness and research, conservation measures, legal framework and capacity building of water sector institutions.

The implementation of NWP will be undertaken through a national level body namely "National Water Council" (NWC).

The NWC will oversee the implementation of NWP and a steering committee, headed by federal minister for water resources, will monitor the implementation with representatives from federal and provincial governments and concerned departments.

Pakistan has surpassed Ethiopia in water scarcity. In the next 7 years Pakistan will experience water shedding worse than electricity load shedding with water load shedding for up to several hours. Water scarcity and water contamination are the most deadly weapons of mass destruction. Pakistan is being systematically destroyed by these weapons due to the lack of vision and failure of government policies. Pakistan, unlike Australia which is naturally and geographically water starved, has been a water abundant country having with per capita availability of renewable water at more than 5,000 cubic meters, is now with per capita availability down to almost 1,000 cubic meters.

Water Resources (PCRWR) gave a warning that if the government does not take immediate action, the country will run out of water by 2025. This gives us just seven more years of doing something as soon as possibe to stop this mass leakage of a resource that is not only needed to live but to earn livelihood in the country. Pakistan is an agro-based economy and 90pc of water is used in crop rearing and farming. Pakistan has had the

and farming. Pakistan has had the lowest agricultural growth of less than 2.5pc in the last 5 years where exports have nosedived to $20 billion instead of the 29 billion targeted for 2017-18.

Pakistan dumps water worth $22 billion into the sea every year mainly because of lack of storage capacity and poor conservation practices. The Indus Water Treaty indicates contentious yet equitable in deciding the ratio of the Himalayan water sharing between Pakistan and India. Internally 80pc of rural agro-related crimes take place on water distribution issues as the irrigation system is outdated and the feudal power in rural areas asserts its will on diverting water flows to their advantage. Pakistan's draft National Water Policy looks to a future dominated by the impacts of climate change, advocates water pricing and highlights regional cooperation challenges

The key features of the policy include:

Emphasis on flood and drought management; assessing the impact of climate change on receding glaciers and increased siltation of dams and reservoirs;

protecting the environmental integrity of water basins through afforestation, soil conservation and improvement in land use;conservation of the flow of water to maintain the ecology and morphology of rivers as w ell as deltas, coastal ecosystems and fisheries; efforts at mitigating the impact of rising temperatures, particularly heat and water stress in arid and semi arid regions and its effect on agriculture productivity; and acknowledgement of changing precipitation patterns. The draft of water policy notes that a substantial part of Pakistan's fresh water comes from outside the country. The Indus Waters Treaty (IWT) between Pakistan and India provides a sharing mechanism. The draft water policy says that the provisions in the IWT for unlimited hydropower development in the upper catchments, within India, have the potential of threatening water availability in Pakistan during low flow periods.

Although the government claims the draft water policy is a national one and all provinces are stakeholders, but some experts feel that the federal government may be overreaching its mandate.There must be a clear cut mechanism for monitoring, regulating and utilizing water resources, besides water testing of water tables. Moreover, water can be used in conformity with the 'crop per drop' idea. Because water resources are rapidly depleting and we are moving towards water crisis in the coming 10 to 15 years, just in the way the country is facing electricity and natural gas shortages today.

In cities, the main problem is water contamination. Metro cities like Lahore, Islamabad and Karachi are water disasters as 70pc drinking water is arsenic and unsafe for consumption.

Sewerage pipes and water pipes are all the same with the result that Pakistan has the highest incidence of Hepatitis C in the world. Gastro infections and skin diseases abound. After electricity and gas, water shortage will spike unrest and protests in future. Government cautioned that an expected water shortage might wilt the country's cash summer sown crops during the current season, but it is confident over the desirable supplies of other agriculture inputs.

Gram production was estimated at 335,000 tons, 45.7 percent less than the target, while lentil harvest was estimated at 6.6 million ton, 34.7 percent lower than the target, due to water shortage.

The World Bank continues to work with both Pakistan and India to resolve the most recent disagreement over dispute resolution mechanism under the Indus Waters Treaty in an amicable manner and with an aim to safeguard the Treaty, a spokesman said on Tuesday.

The Treaty is a profoundly important international agreement that provides an essential cooperative framework for India and Pakistan to address current and future challenges of effective water management to meet human needs and achieve development goals" the official said in a response to an emailed query about the.

The World Bank engagement process that has been initiated in late 2016 to resolve differences between Pakistan and India over water infrastructure projects in line with provisions of Indus Waters Treaty has yet to be completed.

As far as Pakistan's point of view is concerned this issue is very important. Owing to an impasse on resolving differences on dispute resolution mechanism, Kishanganga. Hydropower Projects has already been completed by India the source said and added on account of a lack of time bound approach in the mediation process, this trans boundary issue is lingering on without any progress.

It was also observed that the current process involving implementation of Indus Waters Treaty between Pakistan and India has been stalled since late 2016 and there was no light at the end of the tunnel due to lingering difference on dispute resolution mechanism.

The World Bank should take the blame for failure in making headway on mediation front or at least identify and explain real reasons behind the roadblock.

A World Bank document, released in August last year, 2017, said the present disagreement between India and Pakistan has been about the construction of the 33 megawatt Kishenganga and 850 megawatt Ratle hydroelectric power plants being built by India in Occupied Kashmir.

The two countries disagree over whether the technical design features of the two projects contravene the Treaty.

The plants are on respectively a tributary of the Jhelum and the Chenab Rivers. The Treaty designates these two rivers as well as the Indus as the "Western Rivers" to which Pakistan has unrestricted use.

Talks related to the Kishenganga and Ratle hydroelectric power plants are ongoing.

However, a deadlock emerged in the talks as both countries sought different dispute resolution mechanisms for resolving the issue. Observing the impasse, World Bank Group President Jim Yong Kim on December 12, 2016 announced that the Bank would pause before taking further steps in each of the two processes requested by the parties.

Both India and Pakistan stated that processing the requests regarding the Neutral Expert and Court of Arbitration simultaneously presented a substantial threat to the Treaty, since it risked contradictory outcomes and worked against the spirit of goodwill and friendship that underpins the Treaty. The announcement by the Bank to pause the processes was taken to protect the Treaty in the interests of both countries. This pause is still in effect.■

LPG Policy is not being implemented in full spirit'

The Senior Vice Chairman, FPCCI Standing Committee on LPG, Ali Hyedr has condemned that LPG Policy 2015-16 is not being implemented in its true spirit, causing the idustry and consumers big losses.

Ali Haider in an interview on the present scenario of LPG industry in Pakistan has talked about unjust policy decisions and regime being maintained by the federal government for LPG industry. Replyimg a question regarding major issues the inustry has been facing he asid that the LPG industry has been passing through a state of crisis because, in the present finance bill, Petroleum Development Levy (PDL) has been imposed on the locally produced Liquefied Petroleum Gas (LPG). This has emerged as a major setback for the LPG business in the country. We consider LPG as an alternative fuel as it is important that the prices of alternative fuel should remain lower than the competing fuels in the market in order to duly promote it.

We are of the viewpoint that local producers of LPG have been selling their product on Saudi Aramco prices, which simply means exploitation of the Pakistani consumer as this is rightly considered as the poor man's fuel

]If we are supposed to conserve whatever tree, forest, and vegetation cover left in this country then access to this alternative fuel should be expanded to the remotest parts of the country. Moreover, its cost should be made cheaper so that the people could easily buy it within their purchasing power.

I would like to recall here the policy given by the federal government for LPG industry in 2015 that envisages imposition of PDL on the local product so that the finances so generated by the government could be utilized for giving subsidy to public limited companies for importing of LPG in the country. That means companies like Pakistan State Oil and Sui Southern Company will import LPG and would supply it to the consumers on an average weighted price. So far this policy has yet to be implemented. But one-half portion of this policy has been implemented and has been done to our utter disfavour. They (the government) have pushed us into the regulated regime from the deregulated one, they have fixed our profit margins, and they have imposed PDL on LPG. But so far there has been no phenomenal progress towards the cause of increasing availability of locally produced LPG in the country. So far the policy step related to import of LPG in the country through public listed companies has yet to be implemented.

At present, it is happening that every other importer is bringing sub-standard LPG into the country. For instance, Pakistan needs 10,000 tonnes LPG but against this demand, 30,000 tonnes is being imported into the country and afterwards, it is illegally sold out in the market. This illegal trade is being carried out without taking into account specifications meant for the LPG business. As the price of Butane is less than that of the Propane then willfully more percentage of Butane is imported into the country. The terminal operators at the Port Qasim in Karachi have failed in effectively enforcing standards, post-shipping inspections or laboratory tests. I have urged Oil and Gas Regulatory Authority (OGRA) several times that it should impose OGRA-standards on land routes, sea routes, and on import gates as until and unless these standards are not enforced in letter and spirit, the influx of substandard LPG will continue to affect Pakistan. Pakistan has already been facing a massive problem of maintaining its foreign exchange reserves as every time this issue becomes more severe whenever the country has to clear its import bills related to the petroleum product.

It is our earnest request to the Government of Pakistan that it should allow import of LPG as much as the country required the fuel commodity in actual. The government should only allow import of LPG that fully meets specifications of OGRA meant for the LPG business. The import of LPG that doesn't meet the specifications of OGRA should be stopped forthwith. The government is required to strictly enforce its policy regarding the LPG industry.■

Ever since Robert was a child, he had a fear of someone under his bed at night. So he went to a Psychiatrist and told him. "I've got problems. Every time I go to bed. I think there's somebody under it. I'm scared. I think I'm going crazy." "Just put yourself in my hands for one year", said the psychiatrist. "Come, talk to me three times a week and we should be able to get rid of those fears." "How much do you charge?" '$200 per visit,' replied the doctor. 'I'll think of it and if needed I will come back to you,' Robert said. Six months later he met the Psychiatrist on the street.
'Why didn't you come to see me about those fears you were having?' he asked. 'Well, $200 a visit three times a week for a year is an awful lot of money! A Pakistani friend of mine cured me for the price of one plate biryani and a bottle of coke. I was so happy to have saved all that money that I went and bought myself a new SUV". 'Is that so!' with a bit of an attitude he said, 'and how, may I ask, did the friend cure you?'
He told me to "Sell the bed and sleep on a Mattress on the floor."
Moral: TO HELL WITH THOSE PSYCHIATRISTS.. GO TALK TO YOUR friend. There is always a Pakistani way to solve a difficult problem... :)

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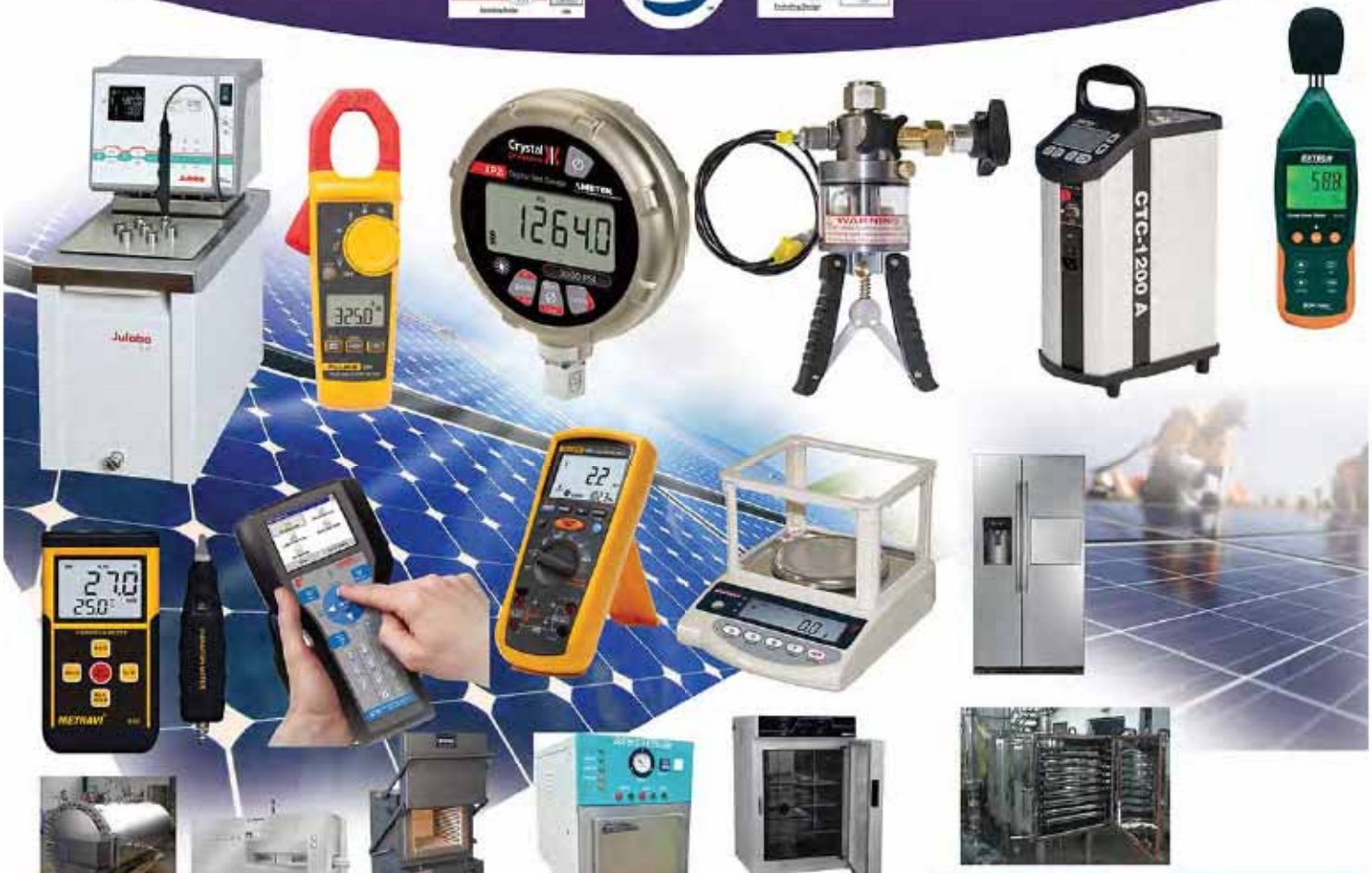

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Rapid devaluation of rupee causing massive losses to Pak economy, Dr. Imran Y. Muhammad

Managing Director of Jofa Group calls for level playing field

Dr. Imran Y. Muhammad is a self-driven person and Almighty Creator has bestowed him with marvelous character, gorgeous personality and exceptional qualities regarding practical initiative, courage and perseverance. Above all he has the determination to bring the positive change in the lives of the people of our society and is devotedly working for this noble cause. Dr. Imran is a Canadian citizen. He is highly qualified and a well-reputed personality both, nationally and internationally. He is Managing Director of Multinational Group of Companies involved in various businesses (Super premium FMCG, Construction, Renewable Energy, Premium Jewelry, Premium Textile, etc.

Dr. Imran is Silva Ultramind ESP Trainer; Board Certified International Master Instructor of Hypnotherapy for National Guild of Hypnotists (USA) (1st in Pakistan & 3rd in Asia) and only NLP Master Trainer in Pakistan trained by all the Co-Creators and Developers of NLP John Grinder, Richard Bandler, Frank Pucelik, and Robert Dilts. He is a certified Intuitive Counselor, Motivational Public Speaker, Facilitator, Trainer and Coach based in USA, Canada, Europe, UK, Australia and Pakistan.

Dr. Imran is a distinguished social campaigner. He is the developer of Abraq

By Naeem Qureshi

® Healing System and Founder of Transformation® International Society (TIS). The TIS has a vision "to aspire to inspire optimism in everyone who come in contact with by infusing their hearts, minds and souls with enthusiasm, hope and positive thinking". The TIS is helping both young and old people, - irrespective of their age, sex, ethnic background, religion, etc. - to make the most of their life by teaching them to optimize their performance, boost their motivation, achieve excellence and live their life to its fullest using latest human development technologies and wisdom of the ages via regular Free Consultation and Therapeutic Services, monthly Free Seminars and via TV programs of which almost 800 programs are already recorded on all leading channels.

Dr. Imran has the honor of introducing Advance Mental health Psychology & amp; Mind Sciences Transformation Technologies in Universities of Pakistan and in this regard he is providing free teaching services at Universities. In recognition of Dr. Imran's outstanding performance in the field of public service and education, the President of Pakistan has conferred on him, one of the highest civil award of Sitara-i-Imtiaz. Furthermore, upon noticing his enthusiasm and never-ending efforts in field of education and social service, the Recognition awards are given to Dr. Imran by Government of Netherlands, Canada & USA. Dr. Imran is also Honorary Consul General of Philippines in Karachi.

In an exclusive interview with Eergy Update (EU) Dr Imran cnotinues to say that.....

Energy Update (EU): What are the details of nature, volume and scope of business and investment of Jofa Group in Pakistan?

Imran Y. Muhammad (IYM): Jofa Group has been involved in various business ventures which includes textile products by the brand name of AsimJofa, Movenpick Ice Cream and Movenpick Coffee from Switzerland with distribution in all over Pakistan, Asim Jofa Diamond Gallery, Jofa Jewelry and construction. The volume and sizes of these businesses ranges as medium size with smart ROI and profitability ratios.

EU: How much business climate of Pakistan in general and that of Karachi in particular is favorable for investment and doing business by international companies like the Jofa Group?

IYM: Jofa Group has found favorable business environment in Karachi but these are coupled with challenges of power shortages which, results in losses to the group in the business of ice cream, for other business ventures, law and order and economic conditions deprive the business to achieve economies of scale. Karachi in general is the financial hub of Pakistan is the usiness friendly city of Pakistan with largest banks, transportation, industries, real estate. People of Karachi have developed a fashion sense to consume foreign products and brands on their day to day routine.

EU: What are the main issues which, have been hampering growth of businesses being done in Pakistan by the multinational companies?

IYM: Rapid devaluation of the rupee against the major currencies, due to which, the profit margins are shrinking, increasing cost of manpower and energy, high R & D expenditure which, can lead to the suffering of the masses for not conducting sufficient research on the newly emerging trends in the Pakistani environment, cultural effects: Sometimes the multinational companies affect the values, norms and traditions of the host country very badly as in Pakistan. They bring with them their own culture and try that the local people of Pakistan adopt these values. Through different marketing strategies they try to sell luxurious products to the people. For those who lack funds to buy it have a sense of deprivation in them and try to opt for illegal means to buy those. Energy crises in the country has led to growth of MNCs, Inconsistent import policies and random SRO's.

EU: What are the immediate future plans of Jofa Group in Pakistan and in the region?

IYM: Jofa Group tend to continue with market research and study the requirements of the market and bring in new products categories to gather maximum market share.

EU: In what areas of trade and business Pakistan and the Philippines have been collaborating with each other on an active basis?

IYM: Philippines' exports to Pakistan, are: food and beverages, auto parts, machinery & parts, electronics, oil, chemicals, fertilizers, tobacco related products, skin care products, second hand clothing while Philippines imports from Pakistan are include: pharmaceutical, garments and textiles, rice, sports goods, cement, medical and surgical goods, food products (salt mostly) and fruits & vegetables.

EU: Which are the sectors of business and economy where Pakistan and the Philippines could collaborate with each other and increase mutual trade and ties?

IYM: Food sector, export of rice, potato, onion, citrus, import of canned food, coconut oil and products, pharmaceutical, export of pharmaceutical products, import of medical and surgical goods, texiles, garments & fashion. Export of cotton, towel and terry, bed sheets vs import of used clothing and eauty care products.

EU: While discharging your duties as the Consul General of Philippines, what are your preferences and priorities with regard to enhancing mutual relations between the two countries?

IYM: Bilateral relations were established between Philippines and Pakistan soon after the latter's birth. The first diplomatic mission of Pakistan was opened in Pakistan in 1949. Bilateral relations between the two countries are based on trust and goodwill and we have successfully built and enjoyed our cordial relationships. It should be noted that this year is a milestone to commemorate the 69th anniversary of the establishment of diplomatic ties between Philippines and Pakistan. As the Honorary Consul General of Pakistan, my priority is to further develop and deepen our long standing and warmly cherished mutual cooperation.

EU: What are your CSR activities and for uplift of the downtrodden and underprivileged communities?

IYM: "Life's most persistent and urgent question is – What are you doing for others?" I am the founder and originator of Transformation International Society (TIS). Initiated about two decades ago, in Canada, the Transformation International Society (TIS) is the product of a vision where accessible and affordable healthcare, vocational training and education are not a mere concept, but rather a reality benefiting individuals beyond the boundaries of age, gender, race or ethnicity.

TIS is continually striving towards equipping people with the tools to optimize their disposition, motivation, and skills towards achieving excellence, making them productive, self- sufficient and independent in various walks of life. The outcome of our endeavors has been nothing short of gratifying. Indeed, making a positive impact on someone's life is a reward in itself.■

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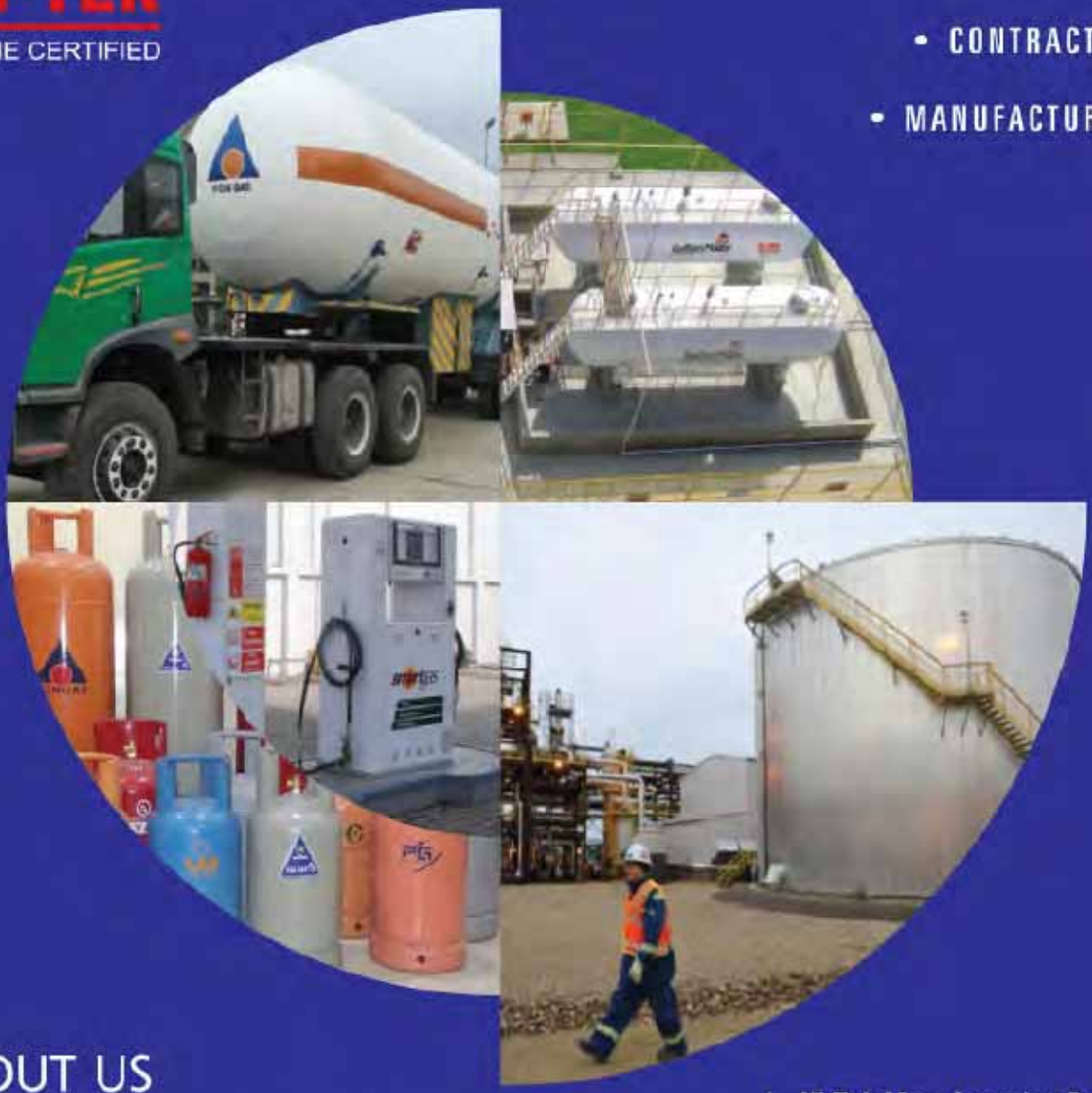

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NEW ERA OF POWER GENERATION

Share of traditional sources to fall below two-thirds by 2030

By Ghassan Barghout

Complementary, not competitive - this ethos must be etched into the global energy playbook, as well as in Pakistan. Sleeves must be pulled up to ensure that the Energy Information Administration's (EIA) forecast of a 28% increase in global energy consumption by 2040 is met - without incurring avoidable bills, major price fluctuations and public discontent.

Fossil fuels and renewables are two sides of the same coin. Energy security relies on both renewables and more conventional fossil fuels flourishing. Traditional energy sources - including fossil fuels and nuclear power - still account for 77% of total electricity generation globally, according to the International Energy Agency (IEA). Even aggressive scenarios do not envision the global generation share of traditional sources falling below two-thirds by 2030.

However, the future is undoubtedly a diversified one. The transition to this new era is well underway. Among the many factors that have contributed to this are the political momentum behind the Paris Agreement, falling prices of technology, and the need for energy independence. More than half of new power plant orders in 2016 were for renewable energy technologies and 750,000 electric vehicles were sold in the world in 2016, for example.

However, the low-carbon transformation will not happen overnight and renewable power alone cannot offer the continuous, stable electricity supplies required to power growing modern societies. With energy storage solutions still at a relatively nascent stage, renewable power remains intermittent, varying with fluctuations in weather patterns. This makes efficient, flexible power from traditional sources critical in order to maintain grid stability.

In a country such as Pakistan, power producers' vital efforts to meet energy demand must extend across gas, coal, as well as renewable sources for good reason. The government has already set out on this path, setting ambitious targets under Vision 2025 to double power generation to over 45,000 MW to provide uninterrupted and affordable electricity, and to increase the percentage of indigenous sources of power generation to over 50%. Pakistan's investments in the Bhikki, Haveli Bahadur Shah and Balloki RLNG power plants, and the upcoming Thar coal plants that will be fuelled by domestic supplies of lignite, as well as wind farms and solar parks, are prime examples of the diversified investments necessary to meet the energy deficit in the country.

power plants - they are expected to deliver up to 3,600 megawatts of power, the equivalent power needed to supply up to 7.3 million Pakistani homes, over a 30+ year life cycle, making a meaningful difference in the everyday lives of the people of Pakistan. GE's HA gas turbine technology that powers the facilities has now set two world records, one for powering the world's most efficient combined-cycle power plant, based on achieving 63.08% gross efficiency at Chubu Electric Nishi-Nagoya Power Plant Block-1 in Japan and another for helping EDF's Bouchain Power Plant achieve 62.22% net combined cycle efficiency in France. Furthermore, the HA technology offers an excellent flexible complement to intermittent renewable sources as it can ramp power supplies up or down quickly, as renewable energy supplies fluctuate. Pakistan's coal projects also offer a means to bring affordable, reliable and flexible power online using the country's own fuel resources, thus enhancing its energy security.

As we enter this new era of power generation, energy producers must collaborate to cultivate new technologies and revitalize traditional ones and carve out a diversified and innovative 21st century global energy system. The world is ever-changing and so must our thinking. It is not a question of 'either- or' - meeting Pakistan and the world's energy needs will require drawing on a mix of fuel sources. (Writer is President & CEO Gas Power Systems - Sales, GE Power, Middle East & North Africa).■

The writer is a President & CEO Gas Power Systems - Sales, GE Power, Middle East & North Africa

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JS Energy Collaborates to Inaugurate 50 MW Wind Power Project

JS Energy, a subsidiary of JS Group, in collaboration with its local and international partners successfully inaugurated a 50 MW wind farm under the name of Hawa Energy (Private) Limited. The launch of this wind farm has

brought Pakistan's total wind generation capacity to over 800 MW

Located at the Gharo-Jhimpir wind corridor, the project was undertaken by a joint partnership of JS Energy, which provided project management and financial backing in association with Hawa Investments, Daelim Energy, Asma Capital and JCM Power. The project is also funded by Overseas Private Investment Corporation (OPIC), a US government agency. The project's execution was undertaken by Power China, a Chinese EPC contractor using 29 x 1.715 MW General Electric (GE) advanced wind turbines.

Speaking at the occasion, Farman Lodhi, Chief Executive Officer-Hawa Energy said: "This is an exciting moment for us and we are proud of the collaborative efforts undertaken by all stakeholders to make this dream come true. All 29 turbines are now online and are feeding power into the national grid to meet the needs of more than 20,000 households."

Sharing his thoughts, Bruno Bucari, Chairman-Hawa Energy said: "This is a moment of joy for all of us and has significant emotional value to me as my idea of transition from fossil fuels to Clean Energy has become a reality

with the completion of this project. Congratulations to each individual who worked on this project for their dedication and commitment. I would also like to extend my gratitude to all the stakeholders who came on board and supported this project all the way. I look forward to seeing this project bridging a part of the power supply-demand gap in the country."

With power demands increasing rapidly across the country, Hawa Energy's project highlights the importance of the private sector in increasing electricity generation capacity and boosting renewable energy generation.■

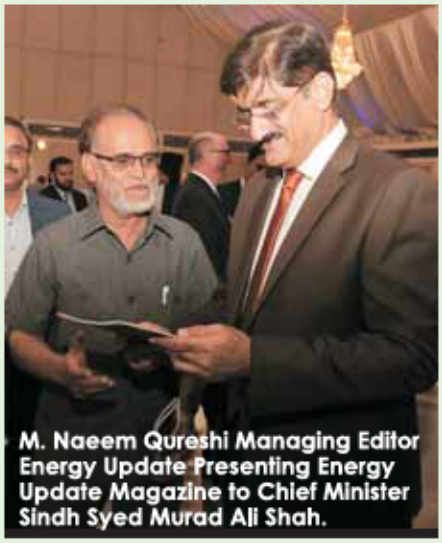
Sindh increases wind power to 930 MW: CM

Sindh Chief Minister Syed Murad Ali Shah has said that the commitment he had made 21 months ago to generate 1000 MWs renewable energy in the province by the end of his tenure has come true as the wind-based power generation in Sindh has been increased to 930 MWs and by December this year it would be around 1200 MWs.

This the chief minister stated while addressing the inauguration ceremony of 50 MWs Jhimpir Wind Power Plant organised at a hotel in Karachi.

He said on the occasion that the root cause of power crisis of the country was undefined, defective and unworkable Power Policy, particularly for indigenous energy resources.

Sindh CM said that he had been working very closely to develop alternative energy in the country. When three projects of wind energy were being installed at Jhimpir, the issue of height of the wind turbines had surfaced which he had got resolved, he said. Presently, two more wind projects have been made operational. "It is a wonderful achievement and it would add to the power availability in the country," he said and added "Definitely we need more such power plants."



M. Naeem Qureshi Managing Editor Energy Update Presenting Energy Update Magazine to Chief Minister Sindh Syed Murad Ali Shah.

He recalled that when Shaheed Mohtarma Benazir Bhutto had given power policy, there was a lot of criticism on it, especially after her government was sacked. "In those days I was working in Bahrain and we, a few engineer friends, were used to discuss the power policy Mohtarma had announced as critics mostly had termed it an expensive power policy," he said and added that the tariff was 06 or 07 cents per unit of electricity.

CM said "People do not understand the cost of not having power – we didn't have power at that time," he said and added a study was done in 1994–95, wherein the cost of not having power was worked out which was quite dangerous. "Just imagine, had the power policy of Shaheed Benazir Bhutto not been there, around 500 MWs power would not have been added to the national grid – in such a situation where we would have been standing now," he asked. He advised the policy makers to find out the cost of not having power – "Our country has suffered a lot, we have gone back several decades because we do not have power," he reiterated.

He said like food security there should be energy security in the country. Giving an example of food security, the CM said that when PPP government came into power in 2008, there was shortage of wheat in the country. The PPP government announced a number of incentives, as a result "We harvested bumper crops and now we are exporting wheat," he said. Similarly, in order to achieve energy security, we will have to give incentives to private sector to invest in power generation.

The CM said that in order to achieve energy independence we will have to find indigenous solutions. "What I had learnt 20 year back is still valid - still we need to find out the cost of not having energy," he said and added "obviously, we need to have the system better, I accept that the recovery of electricity bills is not being done, the circular debt keeps piling up, all these are the issues which we have to improve eternally but we could not stop energy supply in the country, for its people and the industry," he said.

Shah said that that exactly 21 months and two days ago he had taken over as Sindh CM and in the very first week in August 16, 2016 he called on the then prime minister of Pakistan. "In our meeting I did talk to him on energy. What I told him that by the end of our government's tenure we would have 1000 MWs energy to be produced in Sindh – and with the grace of God right now we are producing 937 MW power."

He said that now the first plant in Thar is on the track, we have done 75 percent work of coal mining and by the end of this year, we would start generating power and start grid synchronization and by March 2018, 660 MWs power would be added to the national grid and commercial operation of the coal-based power plant would be achieved, he vowed. "Subsequently every year we would be adding over 1000 MW from Tharparkar- this is what we are working now and this is how energy security is achieved".

CM said that the tariff of upcoming coal-based plant was as low as 9.5 cents so the cost of Thar power- is more than fifty percent lower than the other sources of energy.

He said "We have put in only 05 percent of renewable in the grid. The grid has fluctuation, it is not reliable," he said and added "I have studied engineering- I remember one thing "If we have a problem and it has a solution, there is not any problem without solution." ■

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Govt assures to build TAPI project in Pakistan

Audience of the National Scoping Workshop on the Environmental and Social Impact Assessment (ESIA) process of TAPI Gas Pipeline Project were given the firm assurance that the government would fully support building of the 825 kilometres-long Pakistan section of TAPI gas pipeline project in full compliance of the international, national and provincial environmental laws of the country.

The firm assurance came from Romina Khurshid Alam, parliamentary secretary for Federal Ministry of Climate Change, while speaking as being the chief guest at the National scoping workshop held as part of the Environmental & Social Impact Assessment (ESIA) Study of TAPI Pipeline project in Pakistan. M/s. Environmental Management Consultants (EMC) Pakistan organized the workshop as being the local associate of international consortium of consultants M/s. MAB, M/s. Naftec and M/s. Jacobs working on ESIA of total 1,814 kms-long Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline project.

"It is my pledge that Government of Pakistan will fully support TAPI Gas Pipeline project vis-à-vis ensuring compliance to Environmental Acts, Rules, and Regulations both at Federal and Provincial levels," said Miss Khurshid Alam on the occasion.

She said that participants of the workshop would be helpful in identifying the scope of negative and positive aspects of the TAPI project in Pakistan so to make it more sustainable, environment, and climate friendly.

"Do share with us whatever are the recommendations and deliberations of this workshop so to incorporate them in our plan to build this project to mitigate to the maximum possible extent any adverse social and environmental impacts of this pipeline project," said the parliamentary secretary for climate change.

She said the federal government would provide full assistance and coordination so that the TAPI pipeline project was built in accordance with different provincial environmental laws, guidelines, and regulations as after the 18th Constitutional Amendment the subject of the environment had been fully devolved to the provinces.

Muhammad Shakeel Malik, additional secretary of Ministry of Climate Change, said that construction of TAPI project would emerge as the national level bench mark of compliance with environmental standards and regulations.

He said the transnational gas pipeline project would also emerge as a supreme example of regional cooperation to overcome persisting energy shortfall in Pakistan and in neighbouring countries.

He said the government would fully make sure that construction and operation of the TAPI project in Pakistan should fully comply with National Environmental Quality Standards and rules and regulations of environmental watchdogs of Balochistan and Punjab-the two provinces in Pakistan from which the gas pipeline would pass through.

"This scoping workshop would be helpful in meeting the national, provincial, and local level environmental requirements as stipulated in the law," said the additional secretary Climate Change.

Syed Nadeem Arif, managing director of EMC Pakistan, informed the audience that four separate ESIA studies were being undertaken for the TAPI project one each for Turkmenistan, Afghanistan, Pakistan, and India.

He said that proper air quality, noise, physical environmental, ecological surveys, socio-economic, human resettlement surveys would be carried out in sample areas of the country to

Khaled Nassar, Team leader of NAFTEC/MAB (the international ESIA partner

firm of the project), said that TAPI project would be built in the four regional countries in a manner that it should fully conserve the environment, wildlife, natural habitat of their areas from which pass through.

He said that TAPI project would be implemented to protect livelihood prospects of the local communities whereas it would also generate massive employment opportunities for the skilled people in the areas nearby to the gas pipeline.

Saquib Ejaz Hussain, project manager ESIA study from EMC Pakistan, said that 23 locations had been properly identified all along the proposed route of TAPI pipeline in Pakistan for conducting surveys of physical environment as part of the ESIA for the project. Similarly, around 15 major locations have been identified in the country for air quality and noise surveys to determine baseline situation along the gas pipeline route. Ecological, archaeological, socioeconomic and resettlement surveys will also be conducted by multidisciplinary teams engaged by EMC.

He said that a proper grievances redressal mechanism would be defined as part of the ESIA document to meet the international requirements to resolve possible environmental and social grievances caused due to construction of the project.

He said that land acquisition and human resettlement aspects of the TAPI project would be carried out in the country well in accordance with the international lawful requirements so that nobody living in the areas of the project should be deprived of his or her rightful compensation package after acquiring his living place or agricultural land. "The project would be carried out in Pakistan in a manner that local communities would fully own it as per the international aspirations," he said.

He assured the audience that ESIA would be duly presented before environmental watchdogs of Punjab and Balochistan for approval as afterwards the document would attain a binding legal status. Meanwhile, audience of the workshop especially those from Balochistan asked about measures taken to safeguard environment, wildlife, national parks, and water resources of the province especially in those areas where the gas pipeline would pass through.

The concerned participants also asked about the possible socio-economic benefits the projects would generate for the backward areas of Balochistan and also about possible share of the province in the gas supply Pakistan would receive after commissioning of the project.■

QATPL, HEI and GE announce the start of combined cycle commercial operations at Bhikki Power Plant

Quaid-e-Azam Thermal Power (Private) Limited (QATPL), Harbin Electric International Company Limited (HEI) and GE Power (NYSE: GE) announced the completion of combined cycle commissioning activities and the start of full-fledged commercial operations on May 20, 2018, 00:00 hours at the Bhikki Power Plant. The facility is now adding up to 1,180 megawatts (MW) of power to the national grid - the equivalent power needed to supply up to 2.4 million Pakistani homes. The plant is owned by QATPL, HEI is the engineering, procurement and construction (EPC) contractor for the project, responsible for setting up the power plant and all commissioning activities and GE has supplied two advanced HA heavy-duty gas turbines, associated equipment and technical advisory services for the facility.

"We realize that the country's energy needs are immediate and growing and have left no stone unturned in meeting these needs," said Mr. Akhtar Hussain, Chief Operating Officer of QATPL. "Bhikki Power Plant is expected to run for up to 30 years and will help to power homes, villages, towns and cities across Pakistan. The selection of GE's HA gas turbines, which have helped to deliver world record levels of combined cycle efficiency, will help ensure that the power generated at Bhikki is reliable, affordable and leaves a smaller environmental footprint than average, to the benefit of millions of Pakistanis."

GE's HA technology has now helped to deliver two world records - one for powering the world's most efficient combined-cycle power plant, based on achieving 63.08 percent gross efficiency at Chubu Electric Nishi-Nagoya Power Plant Block-1 in Japan and another for helping EDF's Bouchain Power Plant achieve 62.22 percent net combined cycle efficiency in France. Furthermore, the HA can ramp up or down quickly, while still meeting emissions requirements to help maintain grid stability. It thus offers an excellent flexible complement to renewable sources as Pakistan increases the proportion of solar and wind power in the energy mix, which is intermittent in nature and can fluctuate by time of day and season.

Mr. Li Chao, Chief Operation Officer of HEI and General Director of 1st Power Division of HEI added, "The Bhikki Power Plant is a testament to our commitment to power Pakistan and fuel progress. Each stakeholder involved in this project went the extra mile to cooperate, promote and benefit from one another's expertise to bring power online at an accelerated timeframe." Mr. Mohamad Ali, President & CEO of GE's Gas Power Systems - Projects in the Middle East, Pakistan and India, added:"Uninterrupted, affordable power is a cornerstone of modern societies. The successful completion of the Bhikki Power Plant will benefit communities, businesses and industries across Pakistan and lead the way in helping to secure the country's energy future. We are honoured to support the government, our customer and the people of Pakistan in establishing this state-of-the-art facility." GE's HA technology has completed off-grid, full-speed, full-load validation testing at extreme conditions well beyond those encountered while in service at the world's largest, most thorough gas turbine test stand located at GE's manufacturing facility in Greenville, South Carolina.■

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PM inaugurates first CCV plant in Lahore

Leading Through Innovation

Pakistan's First Catenary Continuous Vulcanization (CCV) Line and Aluminium Alloy Plant was inaugurated by the Honorable Prime Minister of Pakistan, Shahid Khaqan Abbasi, on 24th March 2018. This project has been setup by Fast Cables Limited in Lahore near the Sunder Industrial Area. Several other dignitaries were present at the Inauguration Ceremony including the Federal Minister for Commerce Muhammad Pervaiz Malik, Federal Minister for Power Awais Ahmad Khan Leghari, Minister of State for Industries and Production Arshad Khan Leghari and Punjab Minister of Industries Sheikh Allaudin representing the Chief Minister of Punjab.

Foreseeing addition of energy generation capacity in Pakistan, Fast Cables has established the first CCV Line and Aluminum Alloy manufacturing facility in Pakistan. This project is a reflection of the company's commitment to strengthen local production in the country in order to reduce the nation's dependence on imports. The new plant manufactures much needed high voltage transmission line AAAC conductors and up to 33KV cables required for the expansion of our National Grid.

The Prime Minister appreciated the contribution of the private sector in meeting energy demands of the nation and introducing new technologies for local manufacturing of products to reduce reliance on imports. He congratulated Fast Cables on the establishment of a state of the art manufacturing facility and mentioned that such projects play an important role in increasing national prosperity through creation of jobs.

Next Generation Technology

Fast Cables is the leading manufacturer of electrical cables and conductors in Pakistan. With two manufacturing facilities and 10 offices nationwide, more than 800 families are earning their livelihood through Fast Cables. In recognition of its commitment to excellence, Fast Cables has been awarded Brand of the Year in May 2018 by the Federal Finance Minister Miftah Islmail. It is also the recipient of the ZTE Outstanding Power Cable Supplier Award in 2016 and the Global Good Governance Awards (3G) 2017 for Product Excellence held in Dubai, UAE.

The introduction of CCV line technology is the natural outcome of Fast Cables' unmatched focus on achieving excellence in cable manufacturing. Key features of the CCV line manufacturing facility include a triple headed cross linking extruder and online cross linking by dry curing in nitrogen environment under pressure and temperature. The CCV line also features online touch free sag control system for best accuracy and precision in online measuring which provides several advantages to customers such as more than 40 years product life. Further, through the establishment of 75KV latest laboratory testing facilities, Fast Cables has set another benchmark for the industry to follow.

Fast Cables Aluminium Alloy Plant caters to the needs of the energy sector. The plant has the capacity to produce new products for the local market such as Aerial Bundled Cable (ABC) for electricity distribution, Trapezoidal Wire Conductors and All Aluminium Alloy Conductor (AAAC) for high voltage transmission. AAAC conductors are preferred in distribution lines due to lower weight and lower electrical losses.

Focus on Quality

Fast Cables became Pakistan's first cable manufacturer to obtain Gold Certification of its Low Voltage and Medium Voltage cables from world renowned DNV GL KEMA Laboratories, Netherlands on 30th June 2017. Gold Certificate is the highest level of certification issued by KEMA Laboratories upon 100% successful electrical and mechanical testing of products as per the applicable testing standards. The company has also obtained KEMA certification for its Fast Green, Low Smoke Zero Halogen (LSZH) cables. Along with international certifications, quality of Fast Cables products has been tested and confirmed by several national laboratories and institutions such as Pakistan Council of Scientific and Industrial Research (PCSIR), High Voltage & Short Circuit (HV&SC) Lab Rawat, Research and Testing (RTL) Lab Faisalabad, University of Engineering and Technology (UET) Lahore and Pakistan Standards & Quality Control Authority (PSQCA) Lab.

Fast Tasdeeq - Your Safety in Your Hands

To address the issue of counterfeit products, in 2015 Fast Cables introduced an electrical cable verification service for its customers for the first time in the Pakistan cable industry. This added feature gives customers the confidence that they have purchased a genuine Fast Cables product. Through Fast Tasdeeq's three simple steps of Buy, Scratch and Verify, end users can be assured of the genuineness of their product and use it with peace of mind.

Fast Cables in Community

Fast Cables has set up the Fatima Latif Welfare Trust (FLWT), a nonprofit to undertake initiatives for the welfare of local communities through projects in health care, education and community development. FLWT operates the Al Falah Medical Centre in Lahore that provides free medical services to needy people. Nawabpura Vocational Training Centre for Women is another project of FLWT that offers short courses in domestic tailoring, cooking, arts & crafts, glass painting, beautician, etc. At the national level Fast Cables collaborates with leading welfare organizations like SOS Village, Akhuwat and Fountain House in addition to hospitals such as Shaukat Khanum, Gurkhi and Jinnah Hospital to provide funds for their ongoing projects. Fast Cables is the recipient of several Shaukat Khanum CSR Awards and Corporate Philanthropy Award from Pakistan Centre for Philanthropy. Further, in line with its mission to promote excellence, the company has also introduced Fast Excellence Awards in leading universities in Pakistan such as LUMS, UET Lahore, UET Peshawar, NCA Lahore, NED Karachi, etc. to recognize the achievements of aspiring engineers and architects who have excelled in their studies.■







Seminar on pollution-free transport

Commercial vehicles with outdated engine causing massive damage to Karachi'e environment - NFEH

A moot with participation of the stakeholders discussed in detail the reasons why motor vehicles lacking fitness and those with outdated systems are allowed to ply on roads of Karachi causing massive harm to its physical environment.

The seminar on pollution-free transport was second such moot under the series of brainstorming sessions being organized by National Forum for Environment and Health (NFEH) under its ongoing clean-air campaign. The first such moot was held in Islamabad on 04 December, 2017 while the latest one was held in a hotel in Karachi recently.

The speakers of the moot expressed serious concerns over the present state of affairs in Karachi where commercial motor vehicles were not required to go through any proper physical examination and fitness check every year and the resultant situation is seriously harmful for the environment.

They were of the consensus viewpoint that cities like Karachi could not make progress in a sensible, sustainable, and environment friendly manner until and unless commercial vehicles are made to pass fitness examination every year so that their operations should not harm the environment. As Karachi lacks such a regular fitness examination system, a large number of motor vehicles including passenger buses and cargo trucks continue to ply on roads of the city, which don't at all meet international and national engine and fuel specifications meant to safeguard the environment.

The speakers of the moot said that once a fitness system was in place for commercial motor carriers, similar fitness examination should be made compulsory for private vehicles as well so that their engine and fuel systems are made in line with the global environment safety standards. They recommended that traffic police should be given powers to impose fine and impound vehicles, which emit smoke or those that by other brazen means violate the environmental safety standards. The traffic police without such policing powers could not play its meaningful role to duly protect and conserve the environment.

Participants of the seminar were also informed that Karachi lacked the very basic infrastructure, which could help the concerned authorities to reverse the alarming phenomenon of air pollution as the city direly needs air quality monitoring, mass transit and transportation systems to protect its environment.

Speakers said that with very basic environmental control and monitoring systems missing in the city since long, there was no surprise that Karachi had been placed among the five most polluted cities in the world.

The speakers including concerned academics and environmentalists lamented that the city had been far from building a proper mass transit system despite several schemes announced by the successive federal and provincial governments.

They said that relevant authorities should immediately step in to build and run proper systems including air quality monitoring and vehicles' inspection systems to save the environmental situation from utter crash. The operators of commercial motor vehicles should be bound to meet environmental specifications with regard to engine systems and fuel requirements of buses and trucks as negligence on these counts should be strictly checked and penalized under the policing system.

The speakers opined that air pollution would bound to increase in Karachi unless and until a system was in place to check roadworthiness of

Sarah Javed Assistant Commissioner South; M. Naeem Qureshi, President NFEH; Fizza Shakeel, Anchorperson; Saquib Ejaz Hussain, EMC Pakistan; Engr. Nadeem Ashraf, Secretary General NFEH and Khalid Iqbal, Sr. VP NFEH speaking at a seminar

Group Photo of Participants with Chief Guest Assistant commissioner South Sarah Javed at Seminar on Pollution Free Transport in Pakistan. Also seen are President NFEH M. Naeem Qureshi, Secretary General CSR Club of Pakistan Ruqiya Naeem and others.

both commercial and private motor vehicles, which had been a regular and compulsory feature in any other metropolitan city in developed part of the world. They also called for doing real time and constant monitoring of air quality in Karachi with proper data collection systems in place all over the city.

Speaking on the occasion, Saquib Ejaz Hussain, an environmental consultant belonging to EPC Pakistan, said that owing to sheer failure of the provincial authorities concerned to check and curb the phenomenon of air pollution, the Supreme Court had to step in to initiate proceedings asking the provincial environmental watchdogs about steps initiated and systems in place to protect environment.

He said that indifference of the relevant provincial authorities in doing environmental conservation was further highlighted when out of the four provincial watchdogs only Environmental Protection Agency of Balochistan initially submitted its reply to the petition took up by the apex judiciary on the issue of air pollution.

He that as per the international standards, a metropolitan city like Karachi should have started the planning to build a mass transit system way back when its population had crossed the 10 million mark.

He said that Karachi had been witnessing annual growth rate of 4.5 per cent of registration and use of new motor vehicles in the city. "But neither roads of the city are vehicle-worthy nor our vehicles are roadworthy as in such a situation, the air and other forms of pollution is bound to increase in Karachi,"

He said that diesel being used mostly by commercial transport carriers had 54 per cent share in air pollution in the city. He said that last survey to check air quality in Karachi had been conducted more than10 years back as it had ascertained that highly alarming level of ambient air pollution had been prevailing in all 26 major commercial vehicular corridors in the city.

He said that Karachi like any other developed city should have a constant system for monitoring of air quality, which would provide real time data of prevalence of pollutants in the air to the concerned quarters as the same data should be displayed on live basis on billboard systems on major thoroughfares of the city.

He said that private schools should install systems for checking quality of air inside the classrooms as country lacked any system for checking indoor level of pollution. He said some latest data had indicated that in some of the busy vehicular and commercial corridors in the city, the prevalence of highly hazardous pollutants like Carbon Monoxide had become 240 times higher than the allowable limits set by UN's environmental standards.

Prof Dr Raza Mehdi of Department of Urban and Infrastructure Engineering of NED University of Engineering & Technology said that country should have greater reliance on railway systems present in the country for freight movement instead of doing the same operations through goods' transport carriers causing pollution.

He said that implementation of China Pakistan Economic Corridor project in the country should lead to construction of proper transportation and road networks and systems in the country including those for the purpose of mass transit within the big cities. He said that Karachi should have properly built its circular railway system several years back using the foreign consultancy and expertise available to it through concerned donor agencies. He said the department of NED University, to which he was associated with, had been trying to collect data of vehicular emissions from public transport carriers in the city as Karachi lacked a monitoring system for having real time data for prevalence of pollutants in the ambient air.

Faisal Khalil, secretary of Oil Companies' Advisory Council, said that commercial motor vehicles should be introduced in the market on urgent basis, having Euro-II compliant engines and systems as per the international vehicular standards. He said that infrastructure should be built in cities for mass and goods' transportation, which would meet the emissions and fuel specification set by the concerned international community. He said that commercial vehicles should go through fitness system to check their roadworthiness on annual basis without fail to curb the phenomena of pollution.

He said that refineries and oil companies in the country mostly had built systems to produce fuel compliant with the European and international standards but similar infrastructure should be also be evolved for commercial vehicles enabling them to meet the same compulsory global specifications. Sara Javed, assistant commissioner in Saddar area, said that concerned community representatives should help the government to check and control environment as issues like municipal waste management, proper parking of motor vehicles, and control of vehicles' emissions could not be done alone by the government.

NFEH President Naeem Qureshi said that governmental, concerned civil society organizations, stakeholders of trade and industry should sit together to find a way out from the present environmental crisis the cities like Karachi had been facing. He said that

his forum would continue to hold more such moots on the environment and pollution to evolve a consensus national agenda to adopt necessary damage control measures.■

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URBAN RAIL TRANSIT

Beijing Metro Line No.1, the first subway line ever built in China.

Chongqing Monorail, the first straddle type rail transit line ever built in China.

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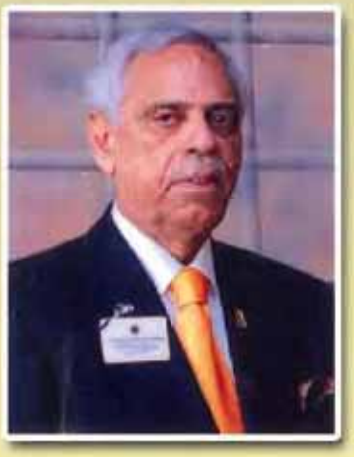

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Chairman, Malik Group of Companies
Chairman Standing Committee on Energy
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Federation of Pakistan Chamber & Industry
Chairman CNG Owners Association of Pakistan
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Serious health risks persist for Clifton residents as coal dumping continues unchecked

The health and safety of residents of Clifton Block 1, 2 and adjoining areas will continue to face serious threats till the time KPT continues to operate its coal yard in close vicinity of these residential localities.

Speaking at a press briefing, concerned environmentalists lamented sheer apathy of the relevant authorities as no one ever bothered to come forward to take strict penal action and shut down the coal yard having serious consequences for nearby Clifton residents.

The media briefing on petition on air pollution in Karachi was organized by National Forum for Environment and Health in connection of campaign Save Karachi.

Speaking on the occasion, the concerned environmentalists demanded the government to immediately shut down the coal yard of KPT near Clifton to save the situation of environment of the area from utter crash.

They said that relevant authorities allowing continued operation of the coal yard were in fact committing an act of sheer criminal negligence having serious repercussions for environment and safety of the entire area.

They demanded that the government should come up with a comprehensive, human and environment friendly policy and guidelines for import, handling, storage, and transportation of coal especially for energy projects.

Until and unless such a binding policy and guidelines are not ready, unsafe dumping and transportation of coal from various spots in the city should be immediately stopped.

Such a policy is urgently needed on mandatory basis as Pakistan is all set to exploit for the very first time its own coal reserves in Thar for power generation.

Speaking at the briefing, environmental consultant Saquib Ejaz Hussain associated with EMC Pakistan, said that there was no way out other than immediately stopping storage and transportation of coal nearby Clifton in order to ensure health and safety of its residents.

He said that continued presence and operation of KPT coal yard nearby Clifton brazenly flouted national and provincial environmental laws and regulations.

He said that unsafe and unchecked storage and transportation of coal from

KPT coal yard had been causing irreversible damage to physical environment of adjoining Clifton area as health of its residents would be compromised if this activity further continued.

He said that nearby marine environment and ecology would be seriously harmed if coal dumping, handling, and transportation continued at the site of coal yard near Block 1 and 2 Clifton.

He said recent scientific surveys and analyses had shown that air quality of the Clifton neighborhood adjacent to the coal yard had already been seriously compromised. In some of the instances, the environmental samples of the area had shown that prevalence of hazardous particulate matter had exceeded several times than the permissible limits set by the World Health Organization.

"We simply don't have any policy or system in place to check what type and standard of coal is being imported in the country as we should inspect each and every consignment of imported coal in order to determine it's hazardous for the environment," said Mr Hussain.

He said that in compliance of the court orders, the storage and handling of coal at KPT's yard near Clifton had been restricted to 200,000 tonnes per annum but rest of the coal was now being stored and handled at 25 other sites within the radius of five to 10 kiliometres of the KPT.

He said that storage and handling of coal at such greater number of sites in the midst of residential localities should be stopped forthwith in order to safeguard health of their residents.

He said that country, while doing a number of coal-based power projects didn't have any policy to consume and safely dispose of hazardous waste being produced as the result of coal burning.

Veno Advani, concerned environmentalist whose petition on air pollution is at present being heard by Supreme Court, expressed surprise that Pakistan had initiated a number of coal-based power projects when rest of the world had largely been abandoning this energy resource owing to its serious hazardous for the environment.

He said that Pakistan had been relying on Chinese technology, manpower, and expertise for doing coal-based power projects at such a time when China itself had either stopped work altogether or delayed completion of some 104 coal power plants there.

He said it was high time that government should come up with a comprehensive policy and guidelines regarding import, handling, storage, and consumption of coal for energy production. "Once all these coal-based projects will be operational, there would be no turning back as then we will not be able to take any corrective measure to safeguard environment," he said.

Mr. Advani said that there were some 100 cities around the world whose energy needs to a large extent were met through renewable resources of power as such environmentally safe options should also be utilized for cities like Karachi.

Qazi Ali Athar, an environmental law attorney, said that country should not opt for coal-based power production in order to protect environment.

He said that coal-based power production in Thar would have serious consequences for environment of the entire province. ■

ABB Pakistan celebrates 25 years of pioneering technology leadership

ABB recently celebrated 25 years of operations in Pakistan with a ground breaking ceremony for a new purpose-built facility. "It's a matter of great pride that today we are commemorating our years in Pakistan with the ground breaking for a new facility. From providing electricity to far flung villages to modernizing the country's industries by making them digitally ready, we have come a long way," said Najeeb Ahmad, Managing Director, Pakistan.

The new purpose built facility will be constructed in a prime location on the Lahore Ring Road. The office premises will have state of the art facilities covering the corporate office, customers training's center, product display area, service workshops, panel's assembly and warehouse.

Pakistan is actively addressing its energy requirements with projects focussing on renewable and thermal energy. ABB is involved in many of the on-going projects. These are part of the $62 billion energy and infrastructure projects developed under the China-Pakistan Economic Corridor (CPEC).

"ABB is a proud partner in the 400 megawatt wind farms, which are located in Gharo and Jhimpir, near the city of Karachi. We are global leaders in renewable energy generation and ABB has more than 40 years of experience in wind and solar power products and solutions that cover the entire renewable power generation industry chain from the supply of turbine and solar components to power transmission and grid connection," said Mostafa Al Guezeri, Managing Director for United Arab Emirates (UAE) and its oversight countries.

ABB's operations in Pakistan fall under the umbrella of the company's UAE and oversight cluster.

"We strive to help meet growing energy demand around the world while minimizing environmental impact and creating value for our customers," said Al Guezeri. "This project in Pakistan is one such example where ABB's flexible and innovative wind power technologies will allow the country to commit to their energy efficiency and sustainability targets. Integration of renewables is an increasingly important element of the world's energy revolution and ABB's Next Level strategy."

On the industry side, ABB is the market leader in providing control, automation, instrumentation and energy efficiency solutions for all verticals including food & beverage, pulp & paper, oil & gas, chemicals, cement, metals, textile etc.

In utility segment, ABB has a large footprint in transmission and distribution, power generation and renewables, FACTS (Flexible AC Transmission Systems) devices such as SVC (Static VAR Compensator). ABB is fully prepared to support its utility customers on all ongoing and future plans for upgrade and reinforcement of transmission network including HVDC (High Voltage Direct Current) and 800kV AC transmission in Pakistan.

ABB today further helps customers develop new processes and advance existing ones by providing insights and optimizing planning and controls for real-time operations through its ABB Ability Platform. The results can then be fed into control systems to improve key metrics such as factory uptime, speed and yield.

ABB in Pakistan is also celebrating a sustainable double digit growth in its 25th year of operation covering products, systems and service offerings for utility, industry and infrastructure.

"ABB will continue working as a pioneering technology leader in the country; and we want to thank our customers for partnering with us through the years and look forward to many more years of successful operations," concluded Najeeb Ahmad.

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in electrification products, robotics and motion, industrial automation and power grids, serving customers in utilities, industry and transport & infrastructure globally. Continuing a history of innovation spanning more than 130 years, ABB today is writing the future of industrial digitalization with two clear value propositions: bringing electricity from any power plant to any plug and automating industries from natural resources to finished products.

As title partner of Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 135,000 employees■

ABB technology enables clean wind power in Pakistan

The Zephyr Wind Farm, 60 km south of Karachi, will help address growing demand in the region and lower carbon footprint. Due to a surge in population and a steady economic growth in Pakistan, the demand for electricity currently exceeds the available power generation. It is estimated that over 140 million citizens either have no access to the power grid or endure significant and daily power interruption. Meanwhile, demand continues to grow rapidly – at an average annual rate of 8 percent, with a current supply shortfall to its population of approximately 5,500 megawatts ("MW").

The country's total installed electricity capacity is currently about 28,000 MW, with the International Energy Agency forecasting that the demand will reach around 50,000 MW by 2025. To meet this demand and to achieve its ambitious goals of boosting renewable energy from 5 to 25 percent of the country's energy mix by 2030, the government of Pakistan has promoted the adoption of energy efficient and renewable energy generation technologies like hydropower, solar and wind power generation to contribute to alleviating this projected supply-demand imbalance.

ABB has been selected as the turnkey supplier (including design, supply and installation) for the Electrical Balance of Plant substation and to integrate the Wind Turbine Generators to the national grid. ABB will also provide the technology that will convert the wind energy from 22 kilovolts (kV) to 132 kV.

Zephyr is located in the Gharo-Jhimpir wind corridor, a 180 kilometer stretch in the province of Sindh in southern Pakistan where over 1,000 MW of Wind IPP's will be operational by end 2018. When completed the project has the potential to power about 15 million households. This project has the potential to offset 1,460 tons of carbon dioxide annually. Pakistan currently relies on fossil fuels for more than 60 percent of its energy mix and aims to reduce its carbon footprint over the nearer term.■

GE, Artistic Milliners commission wind energy project

GE Renewable Energy and Artistic Milliners have officially commissioned the flagship 'Artistic Energy (Pvt.) Ltd.' wind farm in the Gharo-Keti Bandar Wind Corridor in Jhimpir, Sindh, a project which will help Pakistan expand its renewable energy production in line with its Vision 2025 goals. To this end, GE provided 29, 1.7-103 wind turbines to the engineering, procurement and construction (EPC) contractor, Power China, for implementation, in addition to 10 years of operations and maintenance services as part of the contract.

The U.S. Agency for International Development and the National Renewable Energy Laboratory estimate that Pakistan has over 132 gigawatts (GW) of wind energy capacity. The generation of wind energy also contributes to the goal of the Government of Pakistan under Vision 2025 to increase the percentage of indigenous sources of power generation to over 50 percent. Dr. Manar Al Moneef, General Manager GE Renewable Energy Middle East, North Africa and Turkey, said: "The Gharo-Keti Bandar Wind Corridor in Jhimpir is fast becoming a hub for domestic wind energy production and job creation. With an abundant supply of wind, which has more than 100 GW electricity generation potential, GE continues to broaden the renewable energy footprint in Pakistan, as this indigenous source helps to provide alternative and sustainable sources of energy. We remain firmly committed to driving growth in Pakistaen, ensuring a consistent and reliable flow of energy to millions of people."

high-performing wind turbine provides up to 30 percent increase in annual energy production (AEP) compared to its predecessor, with an increase in blade swept area and 91m hub height, that allows for greater energy capture and improved project economics for wind developers and operators, while maintaining required levels of efficiency, reliability and grid-connection capabilities. GE has been providing advanced wind turbines for the development of wind power plants in the Jhimpir corridor in Thatta district, adding more power to the national grid. The new wind farm further underlines the tremendous potential of Pakistan in using wind power.

Yaqoob Ahmed, Chairman of Artistic Milliners, said: "There is great scope in Pakistan for the cleaner, low-cost energy that wind provides. We are proud to work with GE in setting up this flagship wind power project. The project has been executed flawlessly, with COD achieved in 15 months from contract signing and three months ahead of schedule. The hub height of wind turbines at the Artistic Energy is 91m, making it the most efficient wind farm in the country with regards to output. The project is now feeding much needed power to the national grid in meeting the urgent energy needs of the country before the peak summer season." GE Renewable Energy is one of the world's leading wind turbine suppliers, with more than 30,000 wind turbines installed globally.

GE is focused on supporting Pakistan's socio-economic growth, with technologies that generate more than 1/3 of the country's electricity.

Sarim Sheikh, President & CEO of GE Pakistan, Iran & Afghanistan, said: "To deliver a sustainable and cost-effective energy system and meeting the increasing demand in the country, wind power is now essential to the energy mix now more than ever before. With the upcoming peak demand season, this indispensable addition of power 50 MW to the grid will provide respite to the populace of Pakistan with cleaner and lower-cost energy. We are proud of our collaboration with Artistic Milliners in addition to working with such a professional group which is just one step in supporting our commitment to investing in innovative energy solutions for a more sustainable future and smart way of living in Pakistan." The 50 MW project is the sixth in Pakistan to feature GE's advanced wind turbines, following the agreement to provide and install 87-units to largest 150 MW wind farm in Pakistan last year■

GE to Provide Power Cement Limited with Grid Station

GE Power's Grid Solutions business (NYSE: GE) was recently awarded a contract by Power Cement Limited (PCL), a company of Arif Habib Group, to design, manufacture and deliver a 132/6.3 kilovolt (kV) air-insulated switchgear (AIS) grid station that will support the organization in their efforts to operate a new manufacturing line. The new grid station will be delivered on a turnkey basis at the existing PCL production facility in Nooriabad Industrial Area, District Jamshoro, Sindh, which currently has an annual production capacity of 0.9 million tons of cement.

Tahir Iqbal, Chief Financial Officer and Company Secretary, Power Cement said, "As one of Pakistan's leading cement producers, we are keen to ensure continuous growth that supports the needs of our customers and exceeds the expectations of our shareholders. GE Power's Grid Solutions business is a global industry leader in the design, development and servicing of grid stations, with experience spanning across a wide range of industries and applications and we are pleased to work with them on this critical project."

Under the agreement, GE will undertake the Engineering, Procurement and Construction (EPC) of a 132/6.3 kilovolt (kV) grid station, which is expected to be complete in early 2019. The station is designed to provide efficient, reliable power to PCL from Hyderabad Electric Supply Company (HESCO), enabling them to increase annual production capacity after the above-referred expansion to 3.5 million tons of cement.

"GE Power is committed to helping our customers protect and utilize critical assets through the safe and effective supply and management of electricity," said Mohammed Mohaisen, President & CEO of GE Power's Grid Solutions business in the Middle East, North Africa, Pakistan & Turkey. "Reliable power underpins modern society and industrial systems and we are delighted to be a part of Power Cement's growth story by setting up a new grid station for them."

Pakistan's cement industry does not only cater to domestic consumers but also helps meet foreign demand. It has gradually become an important driver of economic growth, infrastructure development and employment generation in Pakistan, contributing to urbanization, modernization and foreign exchange reserves. GE has been a leading partner of the manufacturing industry in Pakistan providing a wide suite of captive power solutions that are efficient, reliable and sustainable, giving our customers peace of mind and helping them focus on what they do best, producing and delivering value to their customers in turn," said Sarim Sheikh, President & CEO of GE Pakistan, Iran & Afghanistan.■

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- Stall Fabrication Solutions

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Enjoy the company of your children. Very touching message.

A beautiful post .....from one mother to another mother.

There were days when My home used to be filled with laughter, arguments, fights, jokes and loads of mischief. Pens and books all over, and clothes messing the rooms, thrown on the beds. I used to shout at them to tidy up their mess.

In the morning:

One will wake up and say: Mama I can't find a certain book.

And the other will say : I can't find my perfume,

And one will say : Mama where's my homework.

And another : Mama I forgot to complete my homework.

Everyone used to ask about their lost possessions. And I will say, but take care of your stuff, be responsible, you have to grow up.

And today I stand at the doorway of the room. The beds are empty. All the cupboards have only a few pieces of clothes in them. And what remains is the smell of perfume that lingers in the air. Everyone had a special smell. So I take in the smell of their perfume for maybe it will fill the empty ache in my heart. All I have now is the memory of their laughs and their mischief and their warm hugs.

Today my house is clean and organized and everything is in its place, and it is calm and peaceful. But it is like a desert with no life in it. Do not become angry with your kids about the mess. Every time they come to visit and they spend time with us, when they are ready to leave. They pull their bags and it is as if they tug my heart along with it. They close the door behind them and then I stand still and think of the many times I shouted them to close the doors. Here I am today, closing my own doors. Nobody opens it besides me. Each one gone to a different city or a different country. All left to find their own path in life.

They have grown up and I wished that they could stay with me forever.

Oh! God..... Take care of them & all other children wherever they may be, for You are their guide and protector ...and always keep them happy.

If your children are still in the stage that you need to talk and talk before they could get things done in the house, please, cherish and endure it with joy, don't nag, they will soon leave your home for you, remember they were not there at the beginning of your marriage. Now that they are around, make them happy.

Dedicated to all mothers and fathers.■

PSO donates AMTF to fight Thalassemia in Pakistan

PSO is working to help fight deadly disease of thalassemia in Pakistan. In a recent effort, the company has joined hands with the Afzaal Memorial Thalassemia Foundation (AMTF) by donating Rs. one million on the World Thalassemia Day. MD & CEO PSO, Sheikh Imranul Haque, graced the occasion as the guest of honour to hand over the cheque of support to the AMTF management. Under the donation from PSO, the AMTF will ensure access to the thalassemia treatment by members of the underserved communities.

Mr. Sheikh Imranul Haque, MD & CEO, PSO, said: "At PSO, we are committed to contributing our best to the sustainable community and social development of Pakistan, aiming to create shared economic and social value across the country. I am glad to see that PSO CSR Trust is supporting many organizations working to eliminate blood diseases including thalassemia from Pakistan. Our support to the Afzaal Memorial Trust will help them in their fight against diseases that generally target people of all ages, but particularly children."■

SECMC initiates Thar Vendor Program

Sindh Engro Coal Mining Company (SECMC) and Thar Foundation have initiated a "Thar Vendor Development Program" . Narendar Suthar leads the project. A young dynamic Narender Suthar from Mithi has done ACCA from Karachi and got degree of Associate in Business Management from USA through Full Bright scholarship. When he started Thar Vendor program in 2016, there was not a single local vendor working with SECMC. Within one and a half year he has trained and registered more than 100 local vendors. He conducted trainings, helped them in documentation and quality compliance. Over the last 18 months Thari vendors have received business of more than ONE BILLION rupees from SECMC. Local vendors provide services of catering, local transport, construction and general supplies. They have been networked with Karachi based large scale suppliers. These vendors have employed more than 1000 local people from Thar. A new stream of local economy is benefiting local communities. ■

A highly successful MD of MNC was going home in his car when he saw two men along the roadside eating grass. Disturbed by the sight, he ordered his driver to stop and got out to investigate.

He asked one man, "Why are you eating grass?"

"We don't have any money for food," the poor man replied. "We have to eat grass." "Well, then, you can come with me to my house and I'll feed you" the MD said. "But sir, I have a wife and two children with me. They are over there, under that tree". "Bring them along," the MD replied.

Turning to the other poor man he stated, "You come with us also." The second man, in a pitiful voice then said, "But sir, I also have a wife and three children with me!" "Bring them all, as well," the MD answered.

One of the poor fellows turned to the MD and said, "Sir, you are too kind. Thank you for taking all of us with you." The MD replied, "Glad to do it. You'll really love my place; the grass is almost 1 meter high...!"

*Lesson : *Never trust Higher Management.*

They will go to any extreme to finish their job. And there is none like a *KIND* Management.

WAPDA Chairman discusses projects with foreign donors

A 4-member delegation of KfW - a German Financial Institution - headed by its recently appointed Division Chief (Infrastructure and Finance) for Pakistan Ms. Veronica Garcia today called on Pakistan Water and Power Development Authority (WAPDA) Chairman Lieutenant General Muzammil Hussain (Retired) here at WAPDA House. The matters relating to financing of WAPDA projects in water and hydropower sectors were discussed in detail during the meeting.

Speaking on the occasion, the Chairman said that WAPDA holds a strong asset base, therefore, enjoys the trust of national and international financial institutions for arrangement of funds for its projects. During the year 2016 and 2017 alone, WAPDA successfully arranged Rs.100 billion from a consortium of the local banks for completing Neelum Jhelum Hydropower Project, while for Stage-I of Dasu Hydropower Project, financing was also secured to the tune of an unprecedented sum of Rs.144 billion from another consortium of the local banks.

In addition, WAPDA also managed the funds of $ 350 million by venturing into the international financial market on its own independent standing. The Chairman said that the innovative financial strategy adopted by WAPDA, has been yielding good results for development of hydropower potential in Pakistan.The Chairman apprised the delegation that WAPDA is committed to initiating construction work within a year on two of its mega multi-purpose projects namely Mohmand and Diamer Basha dams. Both projects will significantly add to the water storage and power generation capacities in the country. Similar to other hydro projects, Mohmand and Diamer Basha dams, too, provide excellent investment opportunities to local and international institutions. The KfW can also make benefit of the opportunities to invest in WAPDA projects, he added. In addition to Diamer Basha and Mohmand dams, the Chairman also briefed the delegation about the upcoming WAPDA projects including Bunji Hydropower Project, Lower Palas Valley Hydropower Project, Bara Dam and Kurram Tangi Dam etc.

Later, KfW Division Chief thanked the Chairman for arranging the briefing about WAPDA projects, adding that KfW and WAPDA have been closely associated with each other for development of water and hydropower sectors for more than three decades. She said that KfW would look into possibility of funding upcoming WAPDA projects. The progress on KfW-funded WAPDA projects was also reviewed during the meeting. These projects included Harpo Hydropower Project, Keyal Khwar Hydropower Project, Warsak 2nd Rehabilitation Project and Pakistan Glacier Monitoring Network. ■

Renewables Readiness Assessment of Pakistan

Green energy sector is still at early stages in Pakistan

The renewable energy sector of Pakistan is still at its early stages, although significant progress has been seen in the past 3-4 years. In order to scale-up RE deployments and development in the country, the Government of Pakistan collaborated with IRENA for carrying out the RRA of Pakistan. The RRA of Pakistan was launched by IRENA on 10th April, 2018. The Director General of IRENA, Mr Adnan Z. Amin visited Pakistan for the launch of the report. "Pakistan is undergoing rapid economic and industrial development, which in turn is fuelling strong energy demand growth across the country," said, IRENA Director-General at the ceremony of RRA launch. "To meet this demand Pakistan has a tremendous opportunity to cost-effectively tap its abundant solar, wind and hydropower resource potential. Doing so would support national prosperity and job creation, whilst enhancing security of supply, improving access and moving Pakistan towards greater energy independence."

The Minister of State (Power Division), Ch. Abid Sher Ali had a bilateral meeting with Mr. Adnan Z. Amin, DG IRENA in Islamabad. Mr. Amjad Ali Awan, CEO AEDB was also present in the meeting. Mr. Adnan was in Pakistan for the official launch of the Renewable Readiness Assessment (RRA) Report for Pakistan as prepared by IRENA. This RRA report has critically analyzed the renewable energy sector of Pakistan and has provided a comprehensive analysis of the country's energy sector, valuable policy guidance and technical assistance to determine our best available renewable-based power options and identifies key actions to accelerate renewable energy deployment. Ch. Abid Sher Ali thanked DG IRENA for undertaking this RRA report. He said that Pakistan is rich in renewable energy potential and can with this assessment develop policies, investment opportunities and energy development actions to harness it. Critical to this report has been IRENA's valuable policy guidance and technical assistance to determine our best available renewable-based power options.

DG IRENA thanked Ch. Abid Sher Ali and Mr. Amjad Ali Awan for the local hospitality extended to him during his visit. He presented RRA Report to Minister of State and briefed him about salient features of the RRA report and its important recommendations which can help Pakistan in scaling up Renewable Energies in short and medium term. He indicated that rapid economic and industrial development in Pakistan will transpire into strong energy demand in the country in days to come. To meet this demand, Pakistan needs to exploit abundantly available solar, wind, biomass, hydropower and geothermal resource potential and avail benefit of tremendous opportunity to cost-effectively tap these resources. ■

The Renewables Readiness Assessment (RRA) is a comprehensive tool for assessing the suitability of conditions in different countries for the development and deployment of renewable energy, along with the actions required to improve those conditions. Designed and refined by IRENA since 2011, the RRA is a country-initiated process that identifies short- and medium-term actions for the rapid up-scaling of renewables. Over 30 countries, spanning Africa, the Caribbean, Latin America, the Middle East and the Asia-Pacific region, have undertaken the Renewables Readiness Assessment process since 2011.

According to the report, Pakistan can spur social and economic development with renewable energy while increasing energy security and improving energy access. Renewables Readiness Assessment of Pakistan provides a comprehensive analysis of the country's energy sector and identifies key actions to accelerate renewable energy deployment.

IRENA's assessment presents options for Pakistan to strengthen its policy, regulatory and institutional framework in order to accelerate renewables deployment. It suggests ways to strengthen renewable energy targets, examines the constraints of existing grid infrastructure, highlights the best mechanisms to reduce costs and address technical challenges, and underlines the potential for private investment in renewables for off-grid and rural electrification.

To further utilise the country's indigenous renewable energy resources, Renewables Readiness Assessment Pakistan finds that key challenges can be addressed by: Setting a binding target for renewable energy development; the development and implementation of an integrated energy plan; Encouraging renewable energy zoning and competitive procurement to reduce overall system costs; Involving the private sector in the development of transmission infrastructure to enhance the grid; Devising a comprehensive distributed power generation plan and developing policy and regulatory frameworks and implementation mechanisms that facilitate private-sector engagement in rural electrification.

The International Renewable Energy Agency (IRENA) is an intergovernmental organisation, with 156 Members (155 States and the European Union), that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international co-operation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. ■

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K-IV to have its own 50 MW power plant

The 25thmeeting of Public Private Partnership Policy Board held under the chairmanship of Sindh Chief Minister has approved establishment of 50 MW power project for K-IV, Theme Park and establishment of wholesale dates market Khairpur. The projects which under discussion in the board include Livestock Tagging project, Local government's Karachi Theme Park and 50 MW Power Station for K-IV project, English medium schools project, Khairpur Wholesale Dates market and Safety & Security services at NICH.

The meeting was told that the government has decided to establish a 50 MWs power plant for Greater Karachi Bulk Supply (K-IV) project Phase-1 under public Private Partnership mode at Pumping Station No.1 and 2 near Keenjhar Lake.

The chief minister said that K-IV project phase-I envisages bringing 260 million gallon per day (MGD) of water to the Karachi

city. He added that the project requires 50 MW of power to meet its energy needs, therefore it necessities the installation of a dedicated power station to supply 50 MWs power to K-IV project phase-I. The plant is expected to be supplying power through transmission lines (132kv).

Murad Ali Shah said that the plant is expected to be a gas-fired and would have adequate back-up supply either on-site or through provision of power from local distribution company.

The PPP policy board approved the project development funding (PDF) for the project for private partner solicitation.

Local Government Minister Jam Khan Shoro told the meeting that KMC has received an unsolicited proposal from a private group for the development of Karachi Theme and Safari Park at the existing facility of Safari Park. The unsolicited proposal is based on the detailed technical, financial and legal studies for which the private group has engaged a leading firm.

The PPP policy board approved the project for investors solicitation under PPP mode.

The education secretary, Iqbal Durani said that Tharparkar is the largest district by land and area, yet it is ranked lowest in the human development Idex. He added that the recent developments in the energy sector is Tharparkar has given way for improvement in human development by further expanding on health and education services which can greatly reduce inequality and poverty. ■

Techno Engineering plans big investment for Pakistan

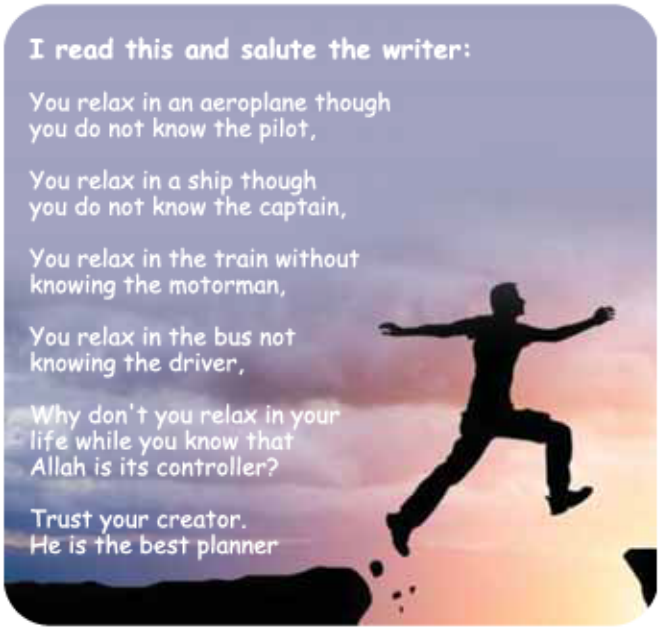
Techno Engineering has announced to bring mega investment into Pakistan by setting up international special economic zones in Makhad and Pindigheb for which it has purchased plots measuring 1250 acres each beside western CPEC route passes through the landholding.

This was announced by Abid Ali - CEO, Techno Engineering Services (Pvt.) Ltd. during an exclusive meeting with the prime minister Shahid Khaqan Ababsi here at his office. He thoroughly briefed the PM about the company's development projects in Pakistan. He informed that these zones will be affiliated with other special economic zones of the Middle East and the CEO presented a detailed document to the PM over the special economic zones to attract foreign investors, entrepreneurs, and industries including oil & gas, pharmaceutical, engineering & construction, electronics, food & beverage and IT and logistics.

The prime minister welcomed Techno and its international partners setting up the two SEZs; he assured full assistance in this regard and explained the BOI was set up for the facilitation of investors in Pakistan. The prime minister hoped to see the rapid development of the two special economic zones and hoped to attract more FDI due to the investor-friendly policies of the government. Abid Ali further told the PM that Techno intends to produce up to 350 megawatts of electricity that would contribute to mitigating energy crisis in addition to launching a host of other development projects in Pakistan. He also signaled the PM regarding his intention to enter the E&P sector in Pakistan along with their international joint venture partners.

Accompanied by the CEO, Arslan Ali, Director Techno Engineering during his briefing to the PM told that the company was already operating a state-of-the-art abattoir/slaughterhouse in Makhad and are also building the Sialkot to Lahore motorway. The company has also made the landmark pipeline to the mid-country refinery PARCO in Muzaffargarh Pakistan operated by Total Parco.

It is pertinent to mention that Techno Engineering, since 1979, has been executing infrastructure development projects including construction of bridges, motorways, tunnels, power plants in Middle East region. The company has delivered these milestone projects in Iraq, UAE and Pakistan. ■



PPL commissions well in record time of eight weeks

Pakistan Petroleum Limited (PPL), operator of Adhi Field, together with its joint venture partners Oil and Gas Development Company Limited and Pakistan Oilfields Limited, commenced first oil production from well Adhi South X-1, a recent oil and gas discovery located in Rawalpindi District, Punjab.

Adhi South X-1 was drilled to target depth of 3395 metres, resulting in discovery of oil from Khewra and condensate from Tobra sandstone reservoirs. After discovery and subsequent rig release on February 20, 2018, construction work was carried out to tie in the well to Adhi LPG/NGL Plant-III, following which it was commissioned on April 24, 2018 within 8 weeks of discovery, setting a record in well commissioning time for PPL.

Adhi South X-1 well is currently flowing from Khewra formation only at choke size 48/64" and well-head flowing pressure of 1100 psig. Currently, well production rates are around 1300 BOPD oil and 2 MMscfd gas, which is expected to gradually scale up to 1800 BOPD and 6 MMscfd, respectively.

This discovery will lead to the appraisal and development of Adhi South Field■

PSO AND FAW Motors to modernize PSO fleet

Pakistan State Oil (PSO), with support from carriage contractors, continues to induct the latest vehicles into its fleet in order to modernize road transportation and ensure the safe movement of POL products across Pakistan.

The latest fully compliant fleet, was handed over to PSO carriage contractors in an impressive ceremony organized by Al Haj FAW in Karachi where the MD & CEO PSO, Sheikh Imranul Haque, was the guest of honor.

The event was attended by important dignitaries including Senator Taj Afridi, representatives from the FAW Motors China, senior company officials from PSO, Al Haj FAW Pakistan and Hyundai Pakistan. A large number of carriage contractors were also present at the ceremony who appreciated the 36 months long interest-free deferred payment facility available to them from Al Haj FAW to purchase modern tank lorries for the PSO fleet system.

The latest range of oil tankers is built in complete compliance with the Oil & Gas Regulatory Authority (OGRA) and National Highways Authority (NHA) standards. The vehicles will add efficiency and agility to PSO's road transportation system to further the company's strategic ambition of ensuring safe and uninterrupted fuel supply nationwide. This is an important step of PSO, in collaboration with the Al Haj FAW Pakistan, in view of the massive CPEC development program where only fully compliant vehicles will be able to take part in the cross border trading.

PSO's logistics management system, comprising approximately 8,000 vehicles, is the country's largest tank lorry (TLS) fleet that transports POL products across the country. Although the company also moves petroleum products through rail and pipelines network, road remains the primary channel for fuel transportation. ■

3-6 million tons Thar Coal to be supplied to Lucky Electric

Sindh Engro Coal Mining Company (SECMC) has signed a coal supply agreement with Lucky Electric Power Company for the delivery of 3.6 million tons of coal per annum from its open-pit mine in block-II of Thar field. SECMC will supply coal to Lucky Electric, an unlisted company incorporated in 2014, as part of the third phase of mine expansion.Previously, SECMC had entered into coal supply agreements with Engro Powergen Thar Limited, Thar Energy Limited and ThalNova Power Thar Limited for cumulative supply of 7.6 million tons per annum that will generate 1,320 megawatts of electricity production with the help of Thar coal reserves is expected to begin from December this year.

SECMC's coal mine in block-II is at its optimum capacity and will be the cheapest source of energy in Pakistan with production of 30 million tons of coal per annum at $32 per ton. This will translate into approximately 6 US cents per kilowatt-hour (unit) of electricity and will be sufficient to fuel the production of 5,280 megawatts over the next 50 years. According to a statement, the Lucky Electric project involves the development, construction and operation of a super-critical (environment-friendly) coal-fired power plant of 660MW production capacity. The power plant will consist of one coal-fired generating unit and the entire equity has been injected by Lucky Cement through its wholly owned subsidiary LCL Holdings Limited.

The project is spread over 250 acres at Port Qasim, Karachi. Under the agreement, coal will be transported from Thar for the first time to a power plant based outside of the desert region through trucks. Lucky Cement CEO Muhammad Ali Tabba, while speaking at the agreement signing ceremony, expressed his resolve to contribute to the national progress and energy self-reliance. While praising the cooperation between Lucky Electric and SECMC, he stressed the need for taking more such initiatives for connecting business houses. Expressing his opinion on the occasion, SECMC CEO Shamsuddin Shaikh stated "this partnership is a testament to the promise of making Pakistan a self-sufficient energy hub. SECMC will continue to expand to provide sustainable and affordable energy through an indigenous resource, helping the nation overcome the energy crisis."■

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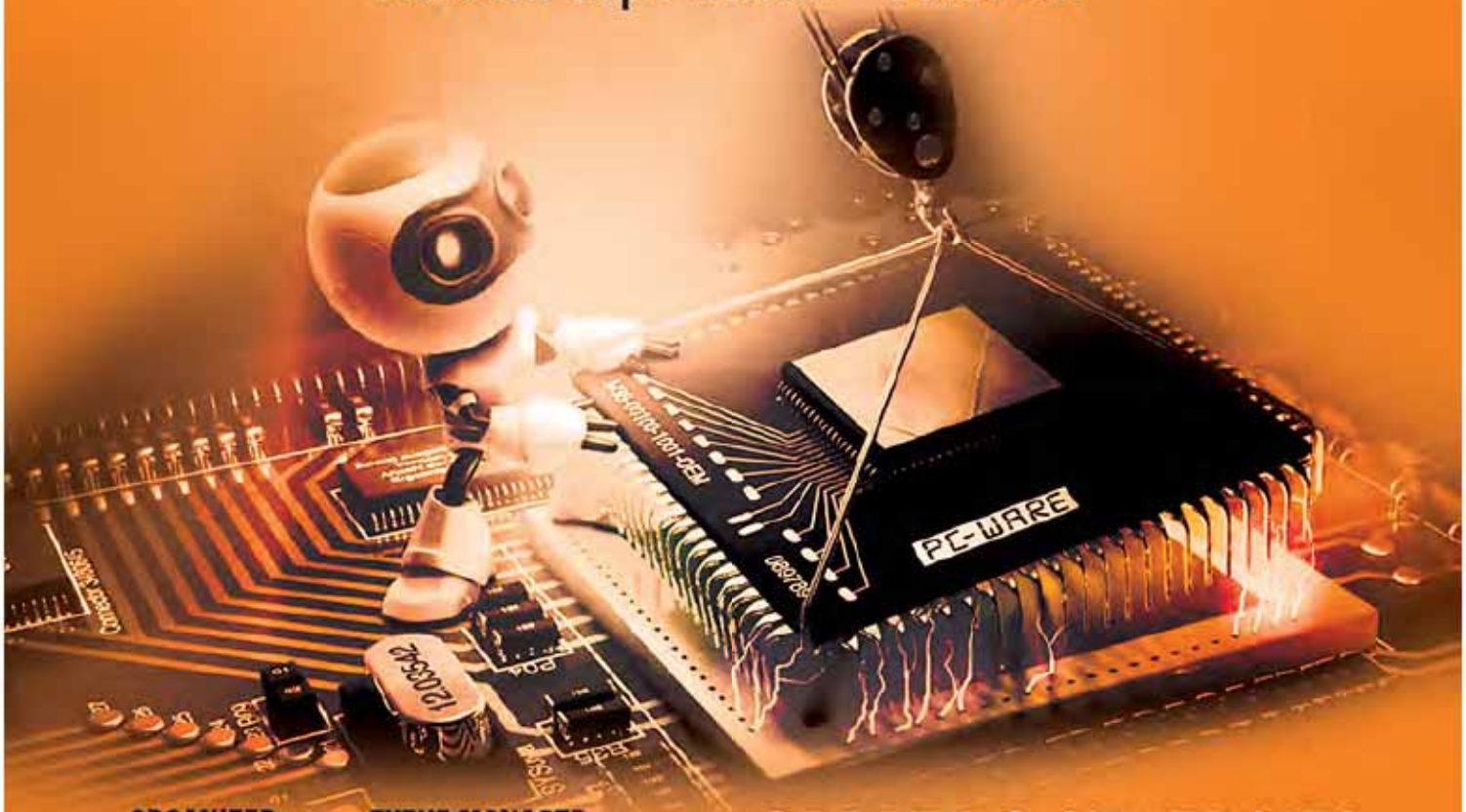

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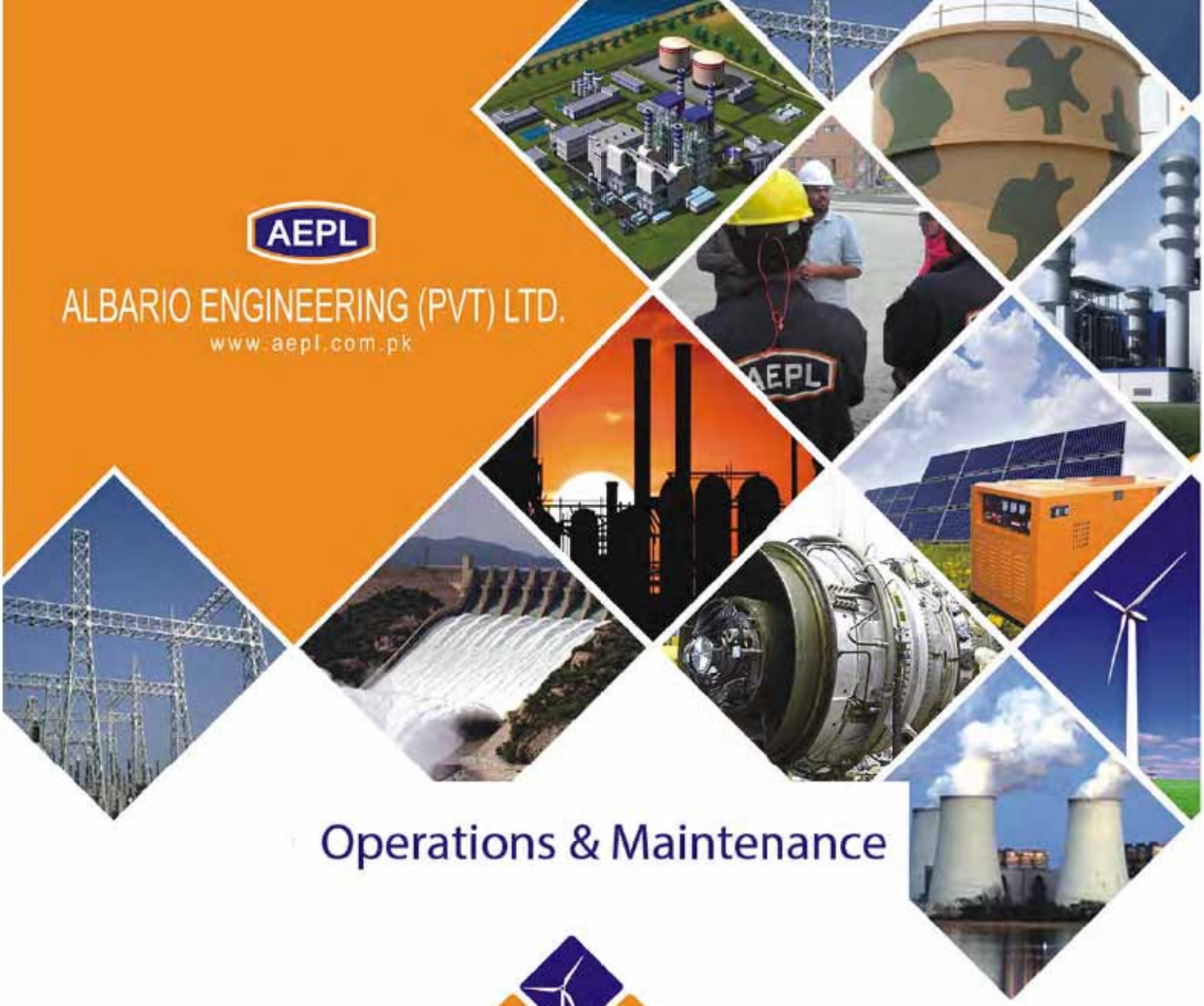

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