

# MONTHLY **Energy** UPDATE

ISSN 2309-6578

**More companies coming  
in for power generation  
from Thar Coal**

**Pakistan still has massive  
gas reserves, unexplored**

**India massively polluting  
Pakistani environment**



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# MONTHLY **Energy** UPDATE

الحمد لله

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through  
energy  
crisis**

By the grace of Almighty we have emerged as the largest circulated magazine in the field of energy & environment for the last ten years.

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**Energy**  
UPDATE

Monthly Energy Update Magazine

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**10<sup>th</sup>**  
**ANNIVERSARY**

By the grace of Almighty we have emerged as the largest circulated magazine in the field of energy & environment for the last ten years.

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**Disclaimer:** No reliance should be placed on the [information provided in the magazine] by any one for making any financial, investment and business decision. The information is general in nature and has not been prepared for any specific decision making process. Energy Update has not independently verified all of the [information provided in the magazine] and has relied on sources that have been deemed reliable in the past. Accordingly, Energy Update or any its staff or sources of information do not bear any liability or responsibility of any consequences for decisions or actions based on the provided information.

From the editor's desk...

www.energyupdate.com.pk

## Govt fails to complete major power projects in time

Very few things would take priority for the government over its commitment to end power outages in the country by the end of its term in 2018. But when there are reports making the rounds that there could be a possible delay in completing power projects that would help achieve that goal, it is bound to annoy the prime minister. With more than half the PML-N government's term over, the completion of two crucial projects is likely to be delayed. The authorities are fighting a race against time to complete the Neelum-Jhelum hydropower project and the Tarbela-IV Extension before the general elections. If that does not happen, the prime minister's hopes of staying true to his word regarding adding thousands of megawatts of electricity to the national grid will be dashed.

The Wapda chairman has repeatedly assured that work on the Tarbela-IV Extension would be completed by June 2017, but a delay is in the offing. Meanwhile, despite cost revisions that have seen the estimate shoot up by over 100 per cent, the Neelum-Jhelum project is also unlikely to be completed on time. The issue with the delays is not just about the projects not being ready to supply much-needed electricity. There are also serious concerns about cost revisions, which will take a great toll on the government's finances. For long, bureaucratic red tape and an inefficient organisational structure have hindered the country's development on various fronts. While the government at times is all too ready to boast about the few power projects that have allowed some relief to the energy sector, there still remain important projects, which if not implemented, are likely to derail the progress Pakistan is hoping to make. With energy needs bound to go up, the country can ill-afford to be found wanting in terms of making progress in the power sector. At the same time, despite some reforms being initiated, deep-rooted issues in the sector remain intact. It is of utmost importance that the government ensures the completion of the two said projects in time as Pakistan's long-term economic progress depends increasingly on resolving our energy needs.

The situation is very crucial for the present regime, already sinking in many scandals especially Panama Leaks, as it completely failed in meeting any commitment with the poor nation as it just followed the footsteps of most failure regime of PPP from which the PML-N took over the reins of the government.

*Naeem Qureshi*

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Published by M. Naeem Qureshi for Energy Update  
& Printed at Print Vision, Karachi Cell: 0333-2244586

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**Greetings & Felicitations**  
on the occasion of 10th Anniversary



**Khalid Siraj Subhani, President, Engro Corporation Limited**

I congratulate the team behind Energy Update on completing 10 successful years of publication and bringing key insights about the energy sector in Pakistan to the mainstream. This is a significant milestone as Energy Update remains the only energy-focused publication in Pakistan. As the country faces an acute energy crisis, such publications are integral in keeping the players in the energy sector up-to-date with the recent developments and solutions in the field.

As the Pakistani government and the private sector continue to partner for long-term energy solutions, publications such as Energy Update have the unique opportunity of becoming the voice of the industry at a local and global level. I hope that the publication continues to grow and wish them the best for future projects.



**Khalid Mansoor, MD, The Hub Power Company Limited**

On behalf of my entire organization The Hub Power Company Limited, we extend our heartiest congratulations to your publication for completing 10 glorious years of success.

Publications such as yours play an important role in highlighting the issues of the power sector of the country. With a highly targeted readership within the energy sector, Energy update has provided a much needed medium to discuss all aspects of the industry.

The news stories and features of Energy Update have always been a reliable source of timely information about the power sector. Its articles continue to be thought-provoking and provide an unbiased analysis of the industry. Over the years, your publication has proven itself to be indispensable to the stakeholders.

We wish you the management of Energy Update the success for many more years to come. And we hope that Energy Update will continue to be the voice of the industry.



**Dr. Mirza Ikhtiar Baig, Former Advisor to the PM**

I congratulate Energy Update on their 10th Edition. Energy Update has gained a name in Pakistan by highlighting energy issues our industry and country faced with. I am pleased to learn that lot of local and intl companies are investing in energy projects in Pakistan and as per Government there will be new power generation of 10,600MW by 2018 from various renewable energy projects undertaken by the investors. The Prime Minister of Pakistan has called 2018 year of no load shedding in the country. I am confident that this will lead to a new era of industrial growth and prosperity in Pakistan.

I wish Energy Update all the success and give due credit to their Managing Editor Mr. Naeem Qureshi infringing stake holders at one platform.



**Ishtiaq Baig, Honorary Consul General**

I am glad to learn that Energy Update magazine is celebrating its 10th Anniversary. The magazine is playing a vital role in bringing stake holders in energy sector at one platform for which I give due credit to their Managing Editor Mr. M. Naeem Qureshi his team for the publication dedicated to the Energy sector in Pakistan.

I congratulate the management of Energy Update and wish you all the success in your future endeavors.



**Dr. Mohammad Bilal Khan, President Medal for Technology Dean and Principal Head, USPCASE NUST**

I would like to congratulate Energy Update on completing 10 glorious years of service to the energy sector of Pakistan. US-Pakistan Center for Advanced Studies in Energy is committed to address Pakistan's energy challenges by influencing policy makers, developing human resource and technology, prompting applied research through intensive engagement with industry, protecting the environment and mobilizing communities to contribute to sustainable economic growth of Pakistan. USPCASE is well poised to facilitate industry partners in applied research and value addition.

## Greetings & Felicitations on the occasion of 10th Anniversary

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**Mian Zahid Hussain**, Sitara-e-Imtiaz, Honorary PhD  
Former Minister for Information Technology - Government of Sindh  
Chairman - All Pakistan' Lubricant Manufacturers Association (APLMA) President - Pakistan  
Businessmen and Intellectuals Forum (PBIF), Senior Vice Chairman - Businessmen Panel (BMP)  
President - All Karachi Industrial Alliance (AKIA)

It gives me immense pleasure to know that "Energy Update" is celebrating 10th Anniversary of its publication as a business magazine on energy in Pakistan. This undoubtedly reflects effective information and subject materials being provided to the Readers with profound circulation among 40,000 industrial and business organizations in Pakistan and abroad.

I am confident to say that the information contained in the "Energy Update" magazine is valuable for the Planners, Researchers, Developers, Administrators and Professionals who are engaged particularly in the Energy Sector to keep them updated with the latest developments. I would like to appreciate the efforts and initiatives of Mr. M. Naeem Qureshi, Managing Editor and his team for putting untiring efforts towards a national cause of industrial and economic development. I extend my heartiest felicitations to the entire team of Energy Update for their commendable services and hope they will maintain the spirit and zeal in their endeavors in future. I wish them every success.



**Muhammad Qasim**, Managing Director PEECA, Energy Department

It is heartening that Monthly Energy Update has completed 10 years successfully. Ten years down the road, it has crossed many milestones along with the development of Energy Sector in Pakistan. It has fully grown in tandem with this burgeoning sector.

Now this premier sector has taken a new turn. That is, suddenly there is a mega level of realization that the mother earth cannot be left at the mercy of some of its errand children and we have to mitigate the adverse impacts of fossil fuels and combustion and other such activities. So thrust of new era is on Energy Efficiency and Conservation (EE&C). EE&C measures will reduce energy demands and restrict the scale of electricity production facilities which would otherwise be required; it will also reduce fuel use and restrict the national dependency on fuel imports, as well as reduce emissions and decrease environmental pollution. The potential is enormous and limit of efforts is sky. The more is the flight of imagination, the more are options and ways to conserve energy and environment.

Punjab Energy Efficiency and Conservation Agency under the able leadership and vision of Mr. Shahbaz Sharif, the Chief Minister of Punjab is addressing macro as well sectoral issues with a view to achieve sustainable energy performance across the province in all the key energy consuming sectors. And we are encouraged to find Monthly Energy Update along with us in our efforts of Energy Efficiency and Conservation mitigating the impact of this great crisis that has erased more than 2% of the GDP growth of the nation and has made 4.1 million people unemployed.



**Pervez Madraswala**, Pakistan Australia Business Forum

While congratulating Energy Update editorial team, staff members and readers, I would like to take this opportunity to comment on the successful ten years of this magazine. It is satisfying to see our Energy Sector's progress in this competition driven world. Energy Update appnes us about the latest happenings in the Energy Sector. The industry should also come forward and contribute articles in Energy Update to make it a true 'Voice of the Industry' and a journal of international standard. Please convey my personal appreciation as well as felicitations from executive committee of Pakistan Australia Business forum to all your team members.



**WASEEM VOHRA**, Former VP FPCCI

Energy crisis is the single largest threat being faced by Pakistan nowadays and we should sincerely and seriously made efforts to meet our requirements and to overcome the energy crisis through all means possible, including nuclear power. The time demands for a radical restructuring of the power generation sector, consolidation, reorganization and recapitalization of the distribution networks and mega investments in hydel, coal and nuclear energy. It can provide a lasting solution to the energy crisis haunting us today.

It is necessary to look for alternate energy resources to resolve the crisis and one alternative is to tap into the potential of solar power to produce energy as the biggest source (SUN) is free. The other alternative available source is wind that may run wind mills or wind turbines. The power generation in the thermal power plants can be switched to coal. Pakistan has immense natural resources of Hyde powered development, Wind power at Jhimpeer corridor having potential of 40000 mw. Thar Coal has the potential to provide very cheap electric power for 300 years.

If Pakistan's energy crisis not dealt with care and farsightedness at both operating and strategic level, it might turn out to become a national security threat.

I am glad that Monthly Energy Update is celebrating its 10th Anniversary, and congratulate the whole team for publishing such a nice magazine covering oil & gas, power generation, alternate energy and environmental sector since 2006.



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# Pakistan still has 28.32tcf gas reserves

## Many basins are awaiting gas exploration

Oil and gas sector in Pakistan has seen remarkable growth since the independence, 1947, produced were scarce. At that time there was no gas production. During the half century the petroleum industry has played a significant role in national development due to gas discoveries. The sources are supplying gas through a collective transmission and distribution network of about 90,900 kilometers. Pakistan meets about 100pc of gas and 17pc of oil demand from indigenous sources.

Since inception, total 850 exploratory wells have been drilled till September 2013, (834 onshore and 16 offshore, in Pakistan covering 827,268 sq. km. up to September 2012, 271 oil and gas fields (62 oil and 209 gas and gas/ condensate) have been made in various basins of Pakistan which gives drilling density of 2.44 wells per 1,000 sq. km and success rate was 1:3.2 (Fig 2).

Despite lower drilling density as compared to global drilling density of 10 wells per 1,000 sq. km, the success rate of Pakistan compares favorably with international success rate of 1:10. The total recoverable reserves of natural gas and oil are estimated at 53.354 trillion cubic feet (TCF) and 1004.54 million barrels. Allowing for cumulative production, the remaining reserves are 285.677 million barrels oil and 23.180 TCF gas. Large areas are still remained to be explored.

Oil and gas production has increased over the last few years due to successful exploratory efforts of the companies. The production of oil during 2012-13 was 76,277 barrels per day while gas production reached 4.259 billion cubic feet per day in 2011-12.

Total 97 wells (35 exploration and 62 development) were drilled. Total 850 exploratory wells have been drilled till September 2013, (834 onshore and 16 offshore) in the sedimentary basins of Pakistan covering 827,268 sq. km. up to September 2012, 271 oil and gas fields (62 oil and 209 gas and gas/condensate) have been made in various basins of Pakistan which gives drilling density of 2.44 wells per 1,000 sq. km and success rate of 1:3.2.

The total recoverable reserves of natural gas and oil are estimated at 53.354 trillion cubic feet (TCF) and 1004.54 million barrels. Allowing for cumulative production, the remaining reserves are 285.677 million barrels oil and 23.180 TCF gas.

Large areas of Pakistan's basins are still waiting for exploration, that are many times more than these proven reserves.

Oil and gas production has increased over the last few years due to successful exploratory efforts of the companies. The production of oil during 2012-13 was 76,277 barrels per day while gas production reached a record level of 4.259 billion cubic feet per day in 2011-12.

Total 850 exploratory wells (since inception) have been drilled till September 2013, (834 onshore and 16 offshore) in the sedimentary basins of Pakistan covering 827,268 sq. km. up to September 2012, 271 oil and gas fields (62 oil and 209 gas and gas/ condensate) have been made in various basins of Pakistan which gives drilling density of 2.44 wells per 1,000 sq. km with a success rate of 1:3.2. Despite lower drilling density as compared to global drilling density of 10 wells per 1,000 sq. km, the success rate of Pakistan compares favourably with international success

By Ismat Sabir

**The Government is providing an investment friendly environment for the oil and gas sector to attract local and foreign investors. As a result of these financial and structural reforms, this sector has already emerged as one of the most attractive sectors for investment in the country.**

rate of 1:10.

In early 1990s, main consumers of petroleum were transport, 50 percent, and power sector 25 percent, collectively responsible for 75 percent consumption.

The consumption of petroleum declined between 2000-01 and 2005-06. The reason was rise in the price of crude oil since 2001 from average \$22.99 per barrel increased to \$50.04 a barrel which was 118 percent higher than 2001. The government has initiated pro-market reform program in the sector that limited the government role to only policy related issues and pricing and regulatory responsibilities to pass on to an independent regulatory authority. The government also changed the guaranteed return formula of the refineries to an Import Parity Price (IPP) formula. Previously, the refineries were working under a fixed return formula where the return was capped in the range of 10 to 40 percent of their equity. Thus government was liable to meet any loss in the profitability of the refineries.

Under the new formula, an import tariff is applied to the FOB price of the petroleum product to determine the ex-refinery prices. Further, to attract on the exploitation of indigenous resources, the government announced policy for Power Generation Projects 2002 in which one window facility was provided by Private Power and Infrastructure Board (PPIB) for all projects above 50 MW Capacity. Thus oil became expensive source for the power sector was substituted by gas as electricity was generated by consuming almost 50 percent fuel, Furnace Oil and Diesel Oil. During the period 2003-04 and 2005-06, the rise of share of transport in oil consumption was mainly due to fast growing transport sector while shift toward CNG was not fully matured.

However, due to gas load shedding

share of oil has again started rising. But still oil remained expensive prior to July 2014; the government immediately responded to falling international oil prices and brought the domestic oil prices to Rs67.79 per liter less than the levels last seen in 2009.

The falling of international oil prices saved foreign exchange due to lower import bill, an amount of \$3 billion were to be saved. Due to substantial decrease in retail prices on December 1, 2014 and afterwards on January 1, 2015, sales of petrol have shown an unprecedented increase. However, Pak-Arab Refinery Ltd (PARCO) the largest producer of petrol was shut down due to tripping of 11KV lines in Muzaffargarh area while National Refinery Limited (NRL) also shut down due to leakage of Distillation Tower. The short supplies created the problems for Oil Marketing Companies (OMCs). On the other hand as required by the OGRA Ordinance, 2002 OMCs had to maintain 20 days storage, stocks which OMCs could not fulfilled. Moreover, in the first half of January 2015, two vessels of OMCs were also delayed. By the time daily sales reached the level of 15,000 metric ton per day against projected demand of 12,000 metric ton thus 45,000 metric ton more than the normal demand during first fortnight of January 2015, created the petrol crisis. However, the government tackled the crisis immediately, official documents said.

### **There are some of the companies working in oil exploration and refining sector:**

Attock Petroleum, oil & gas marketing, Byco Petroleum, Indus Oil Refinery Ltd, Khalifa Coastal Refinery, Mari Petroleum Company Limited, National Refinery, Oil

and Gas Development Company, Pak-Arab Refinery Limited, Pakistan Oilfields, Pakistan Petroleum, Pakistan Refinery Limited, Sui Northern Gas Pipelines, Sui Southern Gas Company.

The Oil and Gas Sectors is the engine of growth therefore the Government and its unprecedented growth is expected to further promote investment activities in the country.

The Government is providing an investment friendly environment for the oil and gas sector to attract local and foreign investors. As a result of these financial and structural reforms, this sector has already emerged as one of the most attractive sectors for investment in the country.

### **Potential Investment Areas**

Pakistan is rich in natural resources and has the capacity to become self sufficient in energy having huge sedimentary basins stretching over 825,000 sq. km, offering vast opportunities for exploration and development of the local natural resources with an exploration success ratio of 1:3.5.

The oil and gas 10 year road map for private investment is aimed to drill up to 100 wells a year. The Government has made a comprehensive and more investor friendly Petroleum Exploration and Production Policy offering bright prospects with greater incentives for accelerating exploratory and production efforts. The policy will also help in reducing import of refined products to 90pc of total consumption. Moreover, Pakistan is eyeing at acquiring an additional refining capacity of above 6 million ton per annum. Pakistan has estimated oil reserves of 303.63 million barrels while its production is 65,531 barrels per day. The gas reserves of Pakistan are estimated to be 28.32 TCF while production is 4 billion





cubic feet per day.

Pakistan with its ideal location is recognized as the regional gateway for energy. Energy demand of Pakistan was expected to rise at a compound Annual Growth Rate (CAGR) of six percent during the financial year 2011 to 2015. The Government has declared the power sector as one of the top priorities for investment and is taking all necessary measures to build a more conducive environment by simplifying procedures to facilitate potential investors. The policies have resulted in \$605 million of foreign direct investment in the Oil and Gas sector for the year 2009-10.

Oil and Gas Sector of Pakistan has a demand of oil and gas that needed for large scale exploration and expansion projects and investments to help boosting oil and gas production. Pakistan mainly depends on oil and gas for its energy generation. These two components of energy contribute 77.49% to the energy requirement of Pakistan. The country has estimated oil reserves of 303.63 million barrels while its production is 65,531 barrels per day. The gas reserves of Pakistan are estimated to be 28.32 TCF while its production is 4 billion cubic feet per day.

Currently, seven refineries are operating in the country, having the capacity to refine 248,506 bpd. Three more oil refining companies would be established with their total capacity of refining crude of 465,000

barrels per day (bpd) to enhance the existing quantity produced by seven companies. After the establishment of these companies the country's refining capacity would reach up to 713,506 bpd.

Gas is the major source of energy in Pakistan. Pakistan has a well developed gas transmission infrastructure. The gas distribution companies plan to invest \$285 million over the next five years in gas sector.

Pakistan has also signed a \$7.6 billion gas pipeline project which would be providing 750 million cubic feet of gas to Pakistan daily from Iran by mid 2015.

The shift to CNG has proved popular by the fact that the number of CNG vehicles has reached two million, giving Pakistan the distinction of having the highest number of natural gas vehicles in the world. In the previous year, a total investment of \$833 million has been made in the CNG sector.

In order to promote LPG as a potential energy fuel, the Government deregulated the sector in 2000 to attract investment and give the LPG market a much needed boost. As a result, an investment of \$200 million has been made to develop LPG infrastructure.

On the other hand, the country's largest energy company, PSO, said it would be cutting back on the amount of oil and companies can now buy on credit, an action that would worsen already daily power cuts. Around two thirds of Pakistan's energy is generated by oil and gas.

## Italian company keen to explore oil, gas reserves in Pakistan

Many foreign companies are interested to invest in Pakistan and recently former vice prime minister of Italy and current Vice President of ENI, a reputed Italian oil and gas company, Lapo Pistelli, met Pakistani Finance Minister Ishaq Dar accompanied by Italian Ambassador for exploring investment opportunities in energy sector in Pakistan.

A group was formed to discuss various matters related to investment projects. He communicated to the minister ENI's keen interest in taking up projects in the LNG, solar power and oil and gas sectors. Dar assured Pistelli all possible support and cooperation in this regard.

It was said that policies will bring improvement through policies of 1993, 1994, 1997 made Pakistan an attractive location for upstream investment. Pakistan over hauled the policy in 2001, 2007, 2009 and then in 2012. On account of combination of factors such as improved returns on investment based on new fiscal incentives, transparent and open regulatory environment, induction of market reforms and technological advances, the Government expects positive impact on local upstream market and hopes that forward momentum will be maintained. ■

## Planes can plant 9mln trees a day with seed bombs

Can Nature win the war on climate change? Maybe with a little help from humanity. Old military planes are now being reconditioned and refitted with new mechanics. Using these planes, we can drop tree bombs instead of landmines.

Most major ecosystems are in danger of over-logging and with each acre we loose the world loses more of our precious oxygen makers and plant medicine. We all realize the value of wood, but the over use of our culture is unable to keep up with the practice of hand-planting one tree for each one cut down.

Using old military planes, we can plant a billion trees a year. These planes will "Tree Bombs" to reforest areas that have been devastated by commercial clear cutting.

The aerial reforestation planes can reach remote areas, even deserts! This removes the need to have individuals plant seedlings by hand.

The program uses some of that fastest growing trees in the world, which grow over 10 feet per year. These trees can fully

counter the negative effects of deforestation within a few years.

According to an article by the Guardian and followed-up by Treehugger, Inhabitat, and Themindunleashed:

"A fleet of unused and decommissioned C-130 Hercules cargo planes, originally created to drop land mines, could be recommissioned as foresters. Lockheed Martin - the quintessential military innovation company - and Aerial Forestation Inc, of Newton took an old rusty idea from former UK RAF pilot Jack Walters and turned it into a reality. The planes will be outfitted to each drop up to 900,000 trees in one day and with 2,500 C-130's sitting unused in 70 different countries, this idea could make for a lot of little saplings." Inhabitat.com

The Mind Unleashed described the process like this, "The current proposal retrofits unused C-130 Hercules cargo planes to drop cones of seeds. The cones

"bury themselves in the soil of a

deforested area at the same distance that one would

want them to be if planting the trees by hand. The tree bombs don't explode on impact but rather their casing dissolves over time and they contain a measure of fertilizer and enough moisture to ensure that the tree takes root."

"The possibilities are amazing. We can fly at 1,000 ft at 130 knots planting more than 3,000 cones a minute in a pattern across the landscape - just as we did with landmines, but in this case each cone contains a sapling. That's 125,000 trees for each sortie and 900,000 trees in a day." ■



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Over 60% areas in Karachi exempted from load-shedding

# KE has invested over \$1.2 billion across all core functions

An exclusive interview with CEO K Electric, Muhammad Tayyab Tareen

By Engr. Nadeem Ashraf

**EU:** Please brief about yourself your educational background, professional experience and any special assignments in the past?

**MTT:** My association with KE dates back to 2009. Starting with CFO and Chief Strategy Officer before becoming CEO in November 2009.

Remained associated with as Managing Director, Abraaj Group. My experience spans 21 years, primarily covering areas of business turnarounds, financial management, planning and business acquisitions

with multinational companies. Prior to joining The Abraaj Group, I was the Chief Financial Officer (CFO) of the Coca-Cola Company managed bottler in the UAE and Oman in 1996, from 1997 to 2001, served as the CFO and Company Secretary of Coca-Cola Beverages Pakistan. My career began in 1995 as Manager Project Financing with Packages Limited in Pakistan.

I am basically a qualified Chartered Accountant and member of the Institute of Chartered Accountants of England and Wales.

**EU:** K-Electric is a leading power

company, please share with us about development, performance and achievement of K-Electric?

**MTT:** KE's achievements are a direct result of its efforts to improve services across all areas. In the past 6 years, KE has invested over \$1.2 billion across all our core functions. This translates into the addition of 1037 MW into our generation capacity, establishment of 12 new grid stations, and rehabilitation of 20 existing grid facilities. When the new management took charge in 2009, adhoc load shed was prevalent across the city, we introduced segmented and planned load shed that





was widely appreciated and today after six years of determination, 60% of the city including all industrial zones are exempted from load-shedding. Our concerted efforts have also reduced transmission and distribution losses from 38% to 23%.

KE also shifted its focus to becoming a customer-centric company, creating 28 Integrated Business Centers (IBCs) offering a one-window solution to citizens in their respective areas. Today, KE hosts one of the largest call centers in Pakistan with the short code 8119, and are the only power utility in the country tackling customer service through social and digital media around the clock in real time. KE also introduced a listed Shariah-compliant Sukuk (worth PKR 22 billion) which was fully subscribed within 12 hours of its launch, this itself is a testament of the confidence and trust our valued consumers have in KE.

Each of these initiatives has brought the company closer towards our ultimate goal to empower the citizens of Karachi and be a catalyst for sustainable change and progress towards a brighter future.

#### **EU: Lot of consumers have complained against excess billing and customer services.**

**MT:** All KE bills are issued in accordance with the provisions of the NEPRA Act, 1997 read together with CSM and that there is no policy of overbilling through padding of extra units or otherwise. KE's stated billing policy is that it bills as per meter readings. In isolated cases, where average/assessed/detection billing mode is used, KE follows the procedure set down in the CSM read together with the Electricity Act, 1910."



#### **EU: Heat wave is a big threat for Karachiites, are you prepared to face it in hot summer?**

**MT:** Global warming is a real phenomenon - climate change is a serious threat, KE has invested approx \$400 million to rehabilitate its transmission, infrastructure & since last year KE has installed and 58 feeders, 2293 PMTs & 119 Sub-stations. KE is collaborating with MET, PDMA, NDMA & Aman Foundation for heat-wave safety awareness campaign along with on-ground CSR activities.

#### **EU: Karachi facing heavy load-shedding in different areas of Karachi?**

**MT:** As stated earlier 60% of Karachi including all its industrial customers are exempted from load-shedding. KE only sheds load in areas where theft is rampant and here too rigorously working to provide technical solution to reduce the possibility of theft and so reduce load-shedding.

#### **EU: Do you have any plan to increase power generation, investment to increase power for Karachi?**

**MT:** While Karachi continues to experience exponential, unplanned growth, KE is committed to cater to the needs of this expansion. KE has already rolled out a \$2.2 Billion investment roadmap. Some key projects include:

#### **GENERATION:**

- 700 MW coal fired power project at

bin Qasim

- 500 MW alternate fuel based power generation (LNG & Renewables)
- Conversion of two units of 420 MW (2x210 MW) of Bin Qasim 1 to coal

#### **TRANSMISSION:**

- Transmission enhancement project - TP 1000 - Expansion of transmission infrastructure capacity by 100 MVA

#### **DISTRIBUTION:**

- Smart Grid
- Aerial Bundled Cables across many
- High loss areas
- Technical loss reduction projects

#### **EU: Please share your CSR activities, environment and safety?**

**MT:** Community engagement and development is at the heart of its value creation model. KE reaches over 8 million lives through free or subsidized and uninterrupted power to 14 leading NGOs in the health and education sectors.

Safety is non-negotiable at KE and our relentless efforts have borne some good results i.e. 67% reduction in employee accidents, 73% reduction in asset damage incidents since 2009 and 80% reduction in public accidents since 2009.

Safety Audits & Inspections system instituted in distribution, grids, generation plants and other support departments.

KE generation plants are compliant with Global HSEQ Standards (OHSAS: 18001 for Health & Safety, ISO 9001:2008 for Quality & ISO 14001:2004 for environmental management. Some of the awards KE has won include: Employer's Federation Health & Safety Award and ACCA-WWF Environmental Award. ■

This public service message is brought to you by KE.



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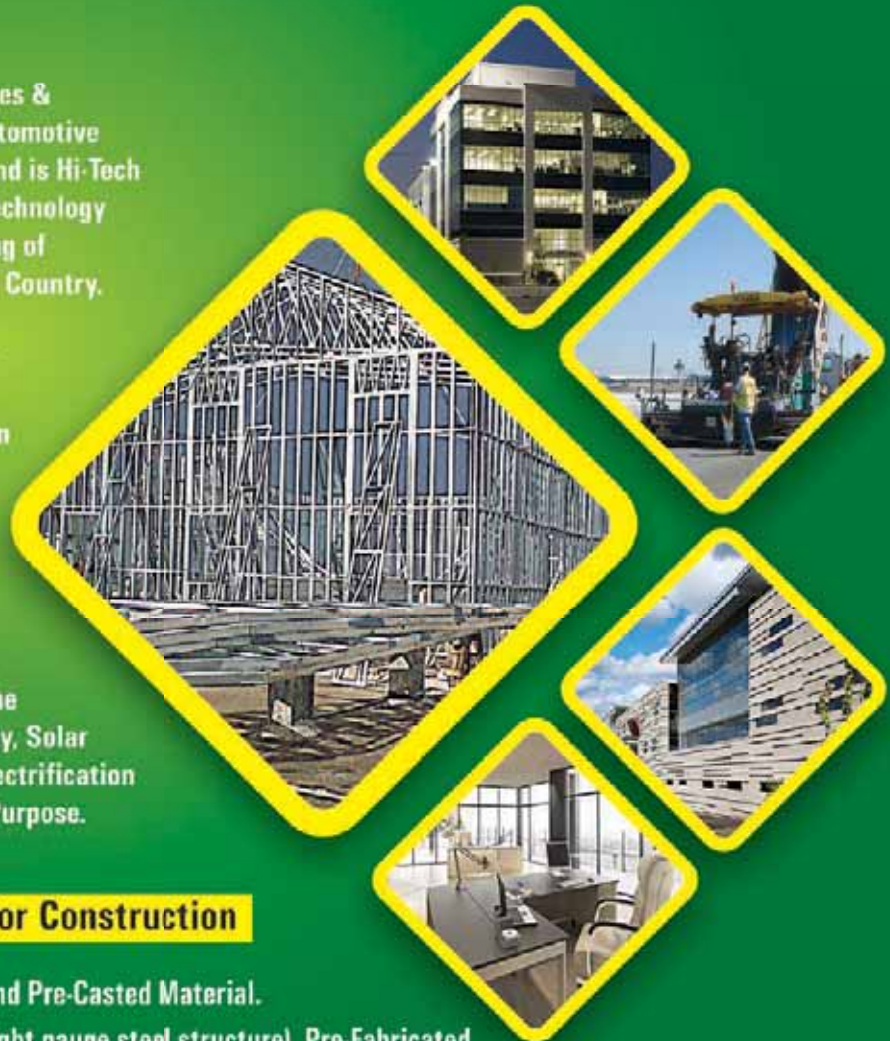
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# Celebrating Earth Day is not enough

## Pakistan needs to pull its act together before the next climate change conference in December

By Rina Saeed Khan

Each year, on April 22, Earth Day is dedicated to honouring the planet and across the world, people have been celebrating this day since the 1970s. This year, Kuch Khaas, a non-profit social enterprise, organised an Earth Day event in Islamabad for the capital's young schoolchildren, who participated in parades, debates, poetry recitations, poster competitions, and environmental science projects highlighting recycling, protecting trees and animals, preventing pollution and promoting renewable energy. It is this generation that is going to witness the impact of climate change as they grow up so it is integral that they become aware about the need to protect the planet.

This year, Earth Day was also chosen as the date for more than 170 governments of the world to sign the Paris Agreement in New York. Ban Ki-moon, the UN Secretary-General, had invited all the world leaders to sign the historic Paris Agreement at the UN headquarters. Interior Minister Chaudhry Nisar Ali Khan signed the agreement on behalf of Pakistan and told the international community that Pakistan is strengthening its institutional structures to step up action to address climate change.

Pakistan of course ranks high among countries most affected by climate change. Our agricultural economy now faces larger risks from erratic monsoon rains, floods and extended droughts. Climate change is finally being recognised as one of the biggest challenges for the country. It is now being highlighted in the media and is frequently discussed in parliament.

Some provinces are taking the lead in addressing the challenge the Khyber Pakhtunkwa province has launched the Billion Tree Tsunami to plant new trees and protect existing forests, which are considered carbon sinks. To match the popularity of PTI's Billion Tree Afforestation Project in KP, the federal government recently launched the 'Green Pakistan Programme', whereby over 100 million trees are to be planted across the country.

The Punjab government has also built the 100 MW Quaid-i-Azam solar park, the first mega solar project in the country, which is now being expanded to provide 1000 MW of renewable solar energy to the national grid.

Pakistan also has mega hydropower in the form of Mangla and Tarbela Dams, which provide clean energy.

Hydropower currently provides almost 11pc of Pakistan's energy mix and more hydropower projects are being developed in the country's mountainous north including small hydro plants.

At the same time, Pakistan is also investing in polluting coal power projects that are to be built as part of the China Pakistan Economic Corridor. They are now facing growing opposition, as they should, because coal is the dirtiest of all fossil fuels. Although Pakistan's current carbon emissions are negligible, as a responsible member of the international community that has now signed the Paris Agreement, the country has to do its share as the world transitions to low carbon pathways. At any rate, coal is going to become more expensive as the Paris Agreement comes into effect. The burning of coal accounts for nearly 50pc of global energy related carbon emissions and is one of the main drivers of climate change.

The Paris Agreement aims to limit global warming to 1.5°C. We have already reached one degree of warming and are experiencing climate change in extreme wildfires, record heatwaves, crippling typhoons, devastating droughts, and thick air pollution in our cities.

Imagine what will happen if we ever reach two degrees of warming. Scientists say that South Asia will be the region most impacted by global warming, due to more extreme weather events such as floods and droughts. They also say that we have to act now before it is too late.

The US and China, the world's biggest polluters have already indicated that they will be ratifying the Paris Agreement by the end of the year, after signing it in New York. About 15 nations, mainly small island states, have already ratified the agreement. UN climate chief Christiana Figueres explained what needed to happen after the signing in New York.

Most countries, though not



all, need to take the signed document and go back home and go through ratification procedures that in most countries requires parliamentary discussion and decision.

Pakistan still has to ratify the Paris Agreement. It also has to revise its Intended Nationally Determined Contributions (INDC) document, which all countries had to submit before the Paris Summit in December 2015, detailing how much carbon they were willing to cut. Pakistan submitted a weak, one page document. 'Pakistan has to first conduct a study on what are the current levels of emissions, then see how much they will grow under CPEC and highlight how to reduce these emissions in various sectors', explains Bilal Anwar, a climate expert currently working for the Centre for Climate Research and

Development at Comsats University in Islamabad. 'We didn't submit a meaningful INDC before the Paris conference and so were left out other countries came well prepared'.

Pakistan now has to prepare a more detailed INDC document before the next climate conference to be held in Marrakesh this December in order for it to play a significant role in the negotiations and to claim climate funds in the near future. 'It is also important for Pakistan to have local entities like the National Rural Support Programme and Akhuwat Foundation accredited by the Green Climate Fund, the international fund which is giving out climate finance,' says Anwar. The Green Climate Fund currently has \$14bn (which is going to increase) to give out to

developing countries to address climate change. 'The Green Climate Fund has already started funding projects across the world and we need to start developing our capacity and designing projects in line with the fund,' he says.

If countries do not make deep emissions cuts by 2020, they will miss their chance to meet the Paris goal of limiting warming to 1.5°C, say activists like Greenpeace. The Paris Agreement is the most important climate agreement ever made and we can only hope that it succeeds so that the younger generation can live safely on the planet without worrying about devastating floods, storms and rising sea levels. ■

courtesy: Daily Dawn

## NFEH and Virtual University sign three-year accord

The Virtual University of Pakistan and National Forum for Environment and Health (NFEH) have entered into an agreement for a period of three years under which students of the university would be given special orientation and awareness helping them to be fully conversant about environmental issues and the cause to protect natural resources.

The Virtual University (VU) and NFEH initiated partnership in the field of environmental

conservation and protection as both the entities signed a memorandum of understanding to this effect. The MoU was signed by VU Registrar Prof Dr Masroor Ellahi Baber and by NFEH President Muhammad Naeem Qureshi.

Some 35,000 students VU related to its 200 campus sites all over the country is likely to get benefited by this agreement.

According to NFEH chief Naeem Qureshi, the purpose of initiating this partnership is to commence a collaboration between the two entities to make the VU's students responsible towards environment in their surroundings keeping in mind fast depletion of natural resources.

He said that NFEH had vast experience of holding activities to train and sensitize people towards the cause of environmental protection as the forum had run several campaigns as being the practical work to upkeep environment. In this regard, the NFEH in collaboration with concerned government, non-governmental, and private organizations is conducting the greenery and plantation drives in entire Karachi before onset of every summer for last some years, he said.

Mr. Qureshi said that his forum had in mind that students of VU spread all over the country and even Pakistani-origin students of the university in overseas countries were like a valuable asset to involve them in any campaign for the cause of environmental protection and conservation.

He said the country needed future leaders in all walks of life and professional fields, who were fully aware and knowledgeable about the cause of protection and conservation of environment, natural resources, and sources of energy facing threatening



situation in the region.

He said the experts and professionals associated with his forum would do their best to promote best practices recommended for protection of environment, conservation of depleting natural resources, searching for alternative and renewable sources of energy. Qureshi said that such practices would be highly helpful for the university's students whenever they decided to enter in practical

life as world over such professionals and managers were highly appreciated who had extra caution and care for environment, climate, and energy resources.

He said that among other things, special sessions would be held in which UV's students would be invited to train them regarding tree plantation and other pro-greenery and pro-environment initiatives. ■



**When one loses the deep intimate relationship with nature, then temples, mosques and churches become important. J. Krishnamurti**



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## **Energy** **UPDATE**

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*From:*



**Abdul Hadi Khan**

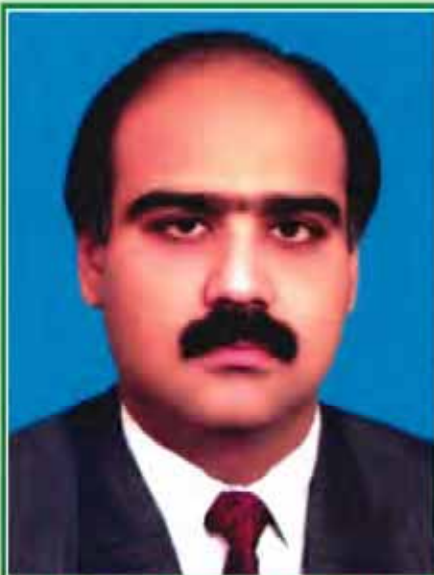
**Chairman, All Pakistan LPG Distributors  
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Zero Loadshedding: Dream or Reality?

# Around 10,000 MWs more electricity in three years

Country needs cheap and reliable sources of energy  
Shahjahan Mirza, M.D, Private Power & Infrastructure Board



The Private Power & Infrastructure Board (PPIB) in last 20 years developed 9,000 Megawatts electricity through private investment for the national grid while in next three to four years another 10,000 MWs electricity would be made online by PPIB with the planning and support of present government and untiring efforts of PPIB team which has boosted the confidence of the private investors to deliver unprecedented results in the arena of power generation in years to come. This was stated by Managing-Director of PPIB Shah Jahan Mirza as Energy Update interviewed him in detail regarding scope of functioning of the board he has been heading, present and upcoming power projects being developed in private sector under patronage and facilitation by PPIB. Here are important excerpts of Mr. Mirza's interview.

By Naeem Qureshi

**Energy Update: What is the progress of PPIB in development of power sector of the country?**

**Shah Jahan Mirza:** We are doing several projects as we have complete portfolio of over 15000 MWs power generation. Out of this, 7500 MWs electricity would be generated through coal while over 7500 MWs electricity would be produced through hydro power projects. The government has been trying to make power affordable and sustainable for people irrespective of type of new electricity produced in the country. The best source of sustainable and affordable power generation is coal and then hydro electricity is another indigenous source although hydro-based electricity is not available to its full capacity throughout the year as it is available only for four to five months. But still hydro-electricity is a renewable, clean and indigenous source of power generation which is being given priority in the plan for additional capacity.

Now coal-based power plants are coming up in the country. First of all our coal-based power plant in Bin Qasim of 1320 MWs as its first unit would be commissioned by December, 2017 and second unit in June 218 while efforts are being made to make first unit operational by September 2017 and the entire power plant by March 2018. Second is our coal-based power plant of 1320 MWs in Sahiwal, its commercial operation date would be achieved in December, 2017. So these two coal-based plants would be giving total 2640 MWs electricity.

Third coal-based plant is considered as a breakthrough for power sector of our country as Engro's power plant has already achieved important milestone of financial close and started construction. With this power project getting operational, we would start exploiting our local coal

reserves of 175 billion tons at Thar in Sind Province. Financial close of both mining and power plant phase of the project has been achieved. We have worked with the sponsors a lot on the power plant and



invested much time as a lot of work has to be done as this is the first power project coming up on basis of indigenous coal reserves of the country. Lengthy negotiations and discussions were held with prospective lenders of the project. This project was delayed a little bit is it involved mining for extraction of local coal reserves as such work is being done for the first time in the country. The first power generation unit of this project would be commissioned by last quarter of year 2018 while second unit would be available by mid of 2019.

We are working on two other projects as one is 660 MWs and the other one of 330 MWs both at Port Qasim. There are also two other power projects in Thar area one is by Oracle of UK and other by Shanghai Electric of 1320 MWs each but work on them has been a bit slow. Work on these power plants has to be integrated with coal mine as both should be made operational at the same time. These two power plants might be available in 2019.

Around 10,000 MW of new electricity generation will be available by the end of 2018 as this new energy production would be done through both public and private sector projects.

**EU: What is your viewpoint on Thar coal and power project?**

**Mr. Mirza:** The development of Thar coal is a historical event in the energy history of Pakistan and it has become emphasis of the govt that no new power plant should be constructed on basis of



imported coal as coal reserves in Thar would be promoted and extracted for sake of cheap energy an energy security for the country. But for exploitation of local coal reserves, it has been imperative to set up power plants in Thar area as transportation of indigenously available coal for long distances would not be feasible due to presence of high moisture and high ash content in it.

**EU: Tell us about measures to allay environmental concerns regarding construction of coal-based projects?**

**Mr. Mirza:** The environmental guidelines being followed in Pakistan for building power plants are based on standards set by World Bank as these plants are built in accordance with criteria of World Bank. On basis of these standards, first the EIA (environmental impact assessment) study and social impact study of the project are carried out. These social and environmental impact studies are submitted to provincial environmental protection agencies. These studies are also made available online on the websites of these environmental watchdogs. Then there is process of public hearing for listening to reservations of concerned quarters regarding these projects. Then approvals are granted to these projects. All this process has to be followed in order to ensure that emissions from these power plants should not exceed the criteria of emission standard set by World Bank that means we are following international environmental standards as there is no compromise on this aspect. All such matters are monitored by provincial environmental watchdogs.

In India, over 60 per cent of power generation is based on coal while China has even greater reliance on coal-based power production but these countries have been continuing with coal-based power generation despite having high carbon footprint. Till present day Pakistan's carbon footprint is near to being negligible. So we still have massive scope to work on such projects. Then the companies, which work on coal-based energy projects also do CSR related projects as they do a number of welfare projects including schools, dispensaries, and hospitals for local people of the area in which these power plants are being built.

**EU: Tell us about involvement of PPIB in hydro-based electricity projects.**

**Mr. Mirza:** This is one of major successes of the PPIB and that of the country also as hydro-based power plants are being established in private sector given that on the global scenario, the private sector has limited exposure and experience in hydro-electricity sector. You will find a few hydro power plants in private sector. Our first such power plant got commissioned three years back of 84 MWs in Azad Kashmir while second such power plant of 150 MWs is also in Azad Kashmir as the project has been completed by 70 per cent to 75 per cent. This second project will be commissioned by April next year. The third such hydro

power project is too in Azad Kashmir as financial close of this 100 MWs project had been completed in October last year as this project has entered into the construction phase.

In all these projects, leading international banks including Asian Development Bank, IFC, Islamic Development Bank are providing debt financing as being lenders. So involvement of leading international lending agencies meant that these agencies have no concern regarding environmental issues of such power projects as such agencies get involved in energy projects only after being satisfied on environment-related concerns of the power plants. We have another proposed hydro power project of 870 MW in Naran-Kaghan area of Khyber Pakhtunkhwa as we have set the target of achieving financial close of this project within the current year. Then another such project of 720 MW will be built very close to Islamabad on Punjab-Kashmir border. These two projects are included in China Pakistan Economic Corridor as we have set the important target of achieving financial close of these projects within the current year. This would be our major achievement. Next is 1100 MW Kohala hydro power project as we are planning to achieve financial close of this power plant in next year.



This is a very good beginning and construction period of such project ranges from five to six years as the EPC (engineering, procurement, construction) contractor for such projects are selected through process of competitive bidding.

Moreover, the PPIB would also facilitate in development of small and medium hydro sized power projects, which were initially conceived by provinces but they could not be developed as guarantees and implementation agreements by the provincial governments concerned were not acceptable to the prospective sponsors and banks to get involved in these plants. This breakthrough for development of such small and medium projects of provinces, was achieved in power policy of 2015 announced by this Government after achievement of consensus with the provinces and approval of Council of Common Interest.

We are working on medium and large hydro-based projects of around 7500 MWs generation capacity as four to five such projects are in the advance stage.

**EU: What is new on the front such private sector power projects?**

**Mr. Mirza:** We had invited EoIs (expression of interests) for two hydropower projects; one is 350 MWs power project in Neelum Valley in Azad Kashmir while the other project is 58 MWs capacity in Chitral, KPK. We got very good response for these projects from local and international investors. For the Azad Kashmir's project, six parties have submitted the EoIs while for the KPK's project three parties submitted the EoIs. We would make progress on these projects in a gradual manner as in two month's time we would decide as to whom contracts of these projects would be awarded. ■



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# Commercial dynamics of renewable energy

**O**VER the years, renewable energy has gained substantial traction and now contributes more than 20pc to the electricity generation worldwide.

In 2013, 120GW of renewable electricity generation capacity was added internationally with solar capacity exceeding wind for the first time.

Major reductions in technological costs, climate change issues, government support and incentives, oil and gas price volatility and potential for liability for green house gas emissions have been at the forefront of the move towards renewable energy along with massive public support for solar, wind and hydro. The movement has even compelled some oil majors such as BP and Statoil to invest in renewable energy both onshore and offshore, however, not all are convinced of joining the green energy movement.

This is happening in a market environment where the whole paradigm of 'Peak Oil and Gas', has been made questionable with the development of unconventional hydrocarbon resources. Smaller countries such as Iceland and Norway now generate all their electricity through renewable sources while others including Germany want 80pc green electricity by 2050.

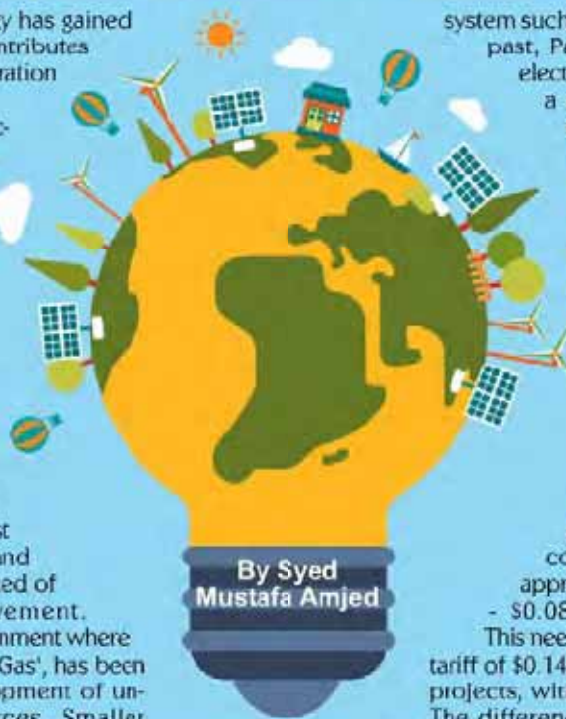
However, whether renewables make economic and technical sense for Pakistan, the world's 6th most populous country in the world, is another story and needs serious consideration in view of our perennial power shortages and transmission losses. At peak summer electricity demand, we are regularly short of about 5,000 MW generation capacity, which is a substantial amount per se. Hydro, solar and wind are resources that are in abundant supply in Pakistan and should play a significant role in the electricity mix, albeit in view of certain very strategic considerations.

Renewables, especially solar and wind power, have issues of reliability, intermittent supply variation, cost and equipment specifications which need to be carefully considered based on geographical location and environment of the proposed solar and wind farm locations in Pakistan. Furthermore, the ability of the national grid to adapt to major supply of solar and wind power also needs to be considered along with the effect of higher solar and wind tariffs on overall electricity costs to the population.

Since we are a perennially electricity deficient country needing base loads rather than peaking loads, we also need to carefully determine the share and timelines of adding renewables to the national grid with the exception of perhaps utility scale hydro projects.

It is pertinent to mention here that solutions to electricity generation variability and related issues as mentioned above are being constantly improved, however, their adaptability to Pakistan is questionable given our infrastructure and demand supply profile. A lot of ground has to be covered before we are able to develop a diversified matrix of renewable energies with intelligent technologies and smart grids to manage both base and peak loads.

Hydroelectricity is arguably the cheapest source of electricity worldwide, however, all countries are not blessed with a river



system such as Pakistan's. In 1985, a not too-distant past, Pakistan generated almost 67pc of its electricity through hydro and was, by default, a great follower and proponent of renewable energy. This share has now dropped to 30pc as the country's focus moved away from cheap hydro to relatively expensive fossil fuel based electricity generation.

On a positive note, we are now again focusing on hydropower development with a number of utility scale and smaller projects in the pipeline including Suki Kinari 870MW, Azad Pattan 640MW, Karot 720MW, which is being developed by China Three Gorges International.

These would be very welcome additions to the national grid while providing affordable energy to the country. The levelised tariff that has been approved for these plants ranges from \$0.053

- \$0.088/kwh which is quite reasonable.

This needs to be seen in contrast to the levelised tariff of \$0.14-0.15/kwh approved by Nepra for solar projects, with higher tariffs for the initial 10 years. The difference in tariff, for lack of details, could primarily be due to higher Pakistan-specific costs.

But international comparison is rather stark with competitive solar power now being generated at \$0.08/kwh without subsidies. The overall 5GW solar project by DEWA Dubai was recently bid at \$ 0.0585/kwh for second round. However, interestingly the third phase of this project was bid at \$0.0299/kwh. Solar power has had many false dawns and one needs to see this through.

Pakistan has wind potential of 50,000 MW with quite a few sweet spots for wind power. However, offshore areas present a much higher wind potential as compared to onshore. Wind power is contributing a miniscule 0.25pc of total electricity generated and the ratio needs to be enhanced significantly.

Internationally, low cost onshore wind power is now being developed at \$0.05/kwh whereas, the levelised tariff now allowed in Pakistan is \$0.13/kwh. As renewable power projects normally have a range of cost profiles which are dependent on resource quality, equipment cost and performance, capacity factors, operational and maintenance costs, economic life, regulation, capital costs and discounting factors, a comparison with international norms would require a detailed study of project dynamics.

Having said this, the reality is that costs, especially for solar power, have gone down by 50pc over the last four years and this reduction should be reflected in local allocated tariffs.

Given the above scenario, technology cost reductions and economic dynamics, the following steps should be undertaken to adequately develop the renewable energy sector:

The Renewable Energy Policy 2006 needs to be reviewed in view of changed market dynamics and costs. The policy provides for zero risk to investor on account of variation in wind speeds and hydrological flows and a rather generous 17pc return on equity ( ROE) on wind projects. The investor is compensated for resource quality risk leading to a higher tariff for local consumption. This needs to be revised in view of international best practices as the industry has graduated from subsidies and government incentive schemes. ■



The MGH Group has been active in the energy sector for more than ten years. The company works mainly in two distinct areas, i.e. the engineering and construction of civilian and industrial electric facilities ("power" part) and the creation of products/solutions linked to renewable energy sources.

### **ELECTRIC FACILITIES**

With regard to electric facilities, over time the Group has specialized in:

- industrial facilities with the design and construction of MV/LV panel boards;
- power center;
- distribution panels;
- MV/LV re-phasing;
- LV distribution facilities;
- automated processes and electro-mechanical controls applied to sterile environments in particular.

All the above comes with specific skills for construction in critical infrastructure and environments such as Data Centers, oil and gas sites, cleanrooms, sensitive areas in general (e.g. railways, airports, ports).



# FTA with China costs us heavily, must be revised - Hussain Agha

## Steel industry in Pakistan needs level-playing field

CEO, Agha Steel, Hussain Agha  
narates the success of Agha Steel  
in an interview with Energy Update

**Energy Update: What is the role of your company in development in steel industry in Pakistan?**

**Hussain Agha:** The steel industry plays a vital role in the development of a nation. It is the foremost indicator to accelerate the pace of economic growth and to bring financial stability. Focusing on the steel industry in Pakistan, the total production capacity of the industry stands at approximately 5-6 Million tons per annum against the estimated market demand, with respect to CPEC, is 10 million tons per annum. Contributing in development of steel industry, we are in the process of expanding our production capacity by utilizing the most advanced state of art technology. This will ensure maximum benefits for Agha Steel and all its respective stakeholders.

Furthermore, development of steel industry is associated with clear and consistent policy; without it, steel industry in Pakistan can never be developed. Government has to come upfront in making consistent strategies. However, Agha Steel Industries (ASI) is participating to develop and devise firm policies and viable strategies respectively.

We are also focusing on developing and training talent for the future. They are our backbone and we strive to develop leaders for tomorrow. Our engineers get exposure to the latest steel making technologies at Agha Steel as we are the only steel manufacturer in Pakistan utilizing an EBT Electric Arc Furnace to make its exclusive Rebars.

**EU: Please share the challenges faced for the development in steel industry?**

**HA:** The utmost challenges are being faced by steel industry are: Unavailability and price of electricity, low cost and dumped Chinese import.

**Unavailability and Price of Electricity:**

Presently, demand of electricity is 20,000 MW against generation of 15,500 MW. Pakistan has been facing severe electricity short fall since last two decades. Demand and supply gap causes power outage and load-shedding which curtail and hinder the development of our domestic



steel industry. Moreover, Pakistan is land of natural resources; but in fact, they are not adequately being used to generate electricity. Oddly, electricity generation in Pakistan is based on thermal energy; therefore, it costs too much. Pakistan has the highest energy cost in the region, perhaps one could say our energy tariffs are amongst the highest in the world! This is a very severe concern for us but we are hopeful of a better future as many new efficient energy projects have been announced.

Low cost and dumped Chinese import: Chinese steel sector is highly subsidized; such as export rebate, subsidies on scrap, and inexpensive; such as cheap electricity. These factors are enough for Chinese steel products to get competitive edge over Pakistani steel products. In addition, Chinese traders/exporters get involved in under invoicing, misdeclaration and dumping of steel products. These unprincipled demeanors adversely affect our national steel industry, as our industry can be coined as an infant industry. An average size steel mill in Pakistan produces 50,000 tons per year, whereas in China the average steel mill manufactures over 4 million tons per year! Pakistan only produces 0.3% of the steel in the world, whereas China produces more than 51% of total steel production. Evidently, a level playing field is the need of the hour and a positive road map needs to be planned out so we can move our local industry towards world standards. We hope that our issues are addressed amicably by the government of Pakistan.

### **EU: Your views about the energy crises in the country? And its solution?**

**HA:** Energy plays vital role for socio-economic development of a nation and it is considered as a lifeline for industrial growth. Owing to increase in population, demographic changes and industrialization, an enormous increase in energy demand has been witnessed. Undoubtedly, electricity is an important source of energy and consistently; every time, there is shortfall of approximately 4,500 MW. Therefore, it is essential for government to narrow down the electricity shortfall up to breakeven or in surplus. Simply put, we have an easy solution for resolving energy crisis; "when there's a will there's a way". Let us hope for a better future and a brighter Pakistan. This nation is the gem of Asia and we are on the path of becoming the roaring Asian Tiger if our energy projects are executed efficiently. Pakistan has the best



resources in the world available. We have abundant natural resources and our workforce has brilliant engineers, minds, and talent. We just need to learn to mobilize and

effectively utilize all our resources in an efficient manner to realize the strength that lies within. We can easily become a world class economy, and the energy sector must become the catalyst to spark the growth potential downstream. Based on researches, household and industrial sectors consume electricity 45.6% and 28.4% of total electricity respectively. If we shift household sector on solar energy we cannot only reduce the electricity shortfall but we will have electricity in excess. For reference one should go through Chinese project Green peace's 5-kilowatt pilot rooftop project. We must utilize Pakistan's promising natural resources such as wind, hydro, waves and solar energy. In modern world they call it "renewable energy," I like to call it the future!

### **EU: What's your edge in steel industry?**

**HA:** "Quality" gives us a competitive edge in steel industry. In addition, we own state-of-art-technology such as Electric Arc Furnace and 25 Strand Automated Rolling mill. Complemented by our innovativeness in manufacturing steel, coupled with competent engineering team, Agha Steel Industries takes pride to win the Consumer Choice Awards 2014-2015 for being the "Manufacturer of First Earthquake Resistance Rebar" in steel industry of Pakistan. This is testament to the potential of our engineering sector and Agha Steel's vision to redefine the local steel industry of Pakistan. We even had steel companies from the United Kingdom congratulating us on such a wondrous feat. Our Rebar's offer unparalleled quality that can ensure upto 15% savings in consumption when compared to commercial grade rebars. Its truly a technological breakthrough for our steel industry.

### **EU: What is your suggestion to develop steel industry in Pakistan?**

**HA:** The steel industry has been facing severe threats due to inexpensive dumped Chinese imports. A level playing field is required to ensure a conducive environment for growth. Officially, Pakistan signed an FTA with China in 2007, however this turned out to be a tragedy for our economy. According to statistics, trade deficit with China during the nine months (July-March) was \$3.398 bn which was 200% more than Pakistan's exports to China. Exports to China during nine months were



*Mr. Hussain Agha is playing a prominent role in transforming Pakistan's Steel Industry by spearheading Agha Steel Industries to become leading steel manufacturer of the country. Hussain Agha attended Bentley University, which is ranked amongst the top 15 Business Schools in North America. He excelled to complete his undergraduate degree with a Bachelors of Management, ranking in the top 10 percentile in his graduating class. Further pursuing to complete his MBA, he graduated with Honors from McCallum Graduate School of Business at Bentley University. After attaining an exceptional education, the focus grew towards attaining the knowledge of steel making with an aim to redefine the steel industry of Pakistan.*

*The innovative idea's of Mr. Hussain Agha, such as focusing on quality products by manufacturing through an Electric Arc Furnace, coupled with the passion for steel making allowed the group to effectively launch the largest steel project of the decade in the private sector of Pakistan in a record-breaking time of only 14.5 months from inception. Mr. Hussain Agha's management skills and technical knowledge of steel making has enabled the Group to effectively expand and penetrate Pakistan's infrastructural development by providing quality steel rebar's and wire rods to many key development projects.*

\$1.694 billion compared to imports of \$5.092 billion. This is very alarming and our government must address these trade related issues positively. Government is the key player to develop steel industry in Pakistan. Steel industry in Pakistan needs firm policies for survival and stability of itself. Government should review FTA with China and provide level playing field for our Domestic steel industry. Furthermore, the government should effectively implement policies to curb under invoicing, misdeclaration and dumping of Chinese steel products. Efficient and substantial investments can easily be made if the government sets a transparent roadmap and investment friendly policy for the next 10 years.

**EU: Would you like to say something about Corporate Ethics and CSR?**

**HA:** Corporate ethics are very essential and as company evolves, the emphasis on corporate ethics grows alongside with

corporate social responsibility. At ASI, it is at the very heart of our core business and we must play a positive role for our communities. Aligned with our focus on CSR, we have envisioned Agha Dialysis Center (ADC), which is a free of cost Dialysis Center. At ADC, we firmly believe that nobody should die just because they cannot afford to live. In Pakistan too, many people have died just because they could not afford a dialysis treatment. This is unacceptable and we hope to serve the needy. Over 20 million people have Chronic Kidney Disease (CKD) in Pakistan. Diabetes and hypertension are the two main reasons for CKD. Shockingly, the figure of people with diabetes is expected to grow by over 200% in the next three decades. This is highly alarming and leaders of our society must work to reverse this trend. Corporate ethics are very important and I firmly believe that for a company to grow, corporate ethics must be part of the fundamental pillars.

Moreover, we are going to consider numerous new projects to provide free

food and education under the banner of "Agha Food Recovery" and "Agha Technical Institute". We believe society will be healthier, if we provide them opportunities to fulfill basic necessities. In fact food, education and health are basic needs for which we live on.

**EU: Agha Steel Industries is heading to the new era of steel-making, what are the secrets behind this great success?**

**HA:** While many factors are involved for success, the greatest is the guidance and support we have bestowed upon is from the Almighty Allah. Additionally, our constant focus on ensuring quality above profits enables us to provide superior products and customer savings to our end users. Customer service is the principal focus of our organization and we view them as our business partners, aiming to always create a win-win situation. It's all about team work and creating a positive environment for all stakeholders. ■

## Bank Alfalah sponsors Pakistan's First Formula Electric Car

Extending its support in developing indigenous talent and taking innovation in Pakistan to the next level, Bank Alfalah unveiled Pakistan's First Formula Electric Car developed by the young innovators from FERN (Formula Electric Racing NUST, a PNEC-NUST initiative).



Abdul Aleem, Shariq Waqar, Ahsan Lakhani, Imran Riaz, and Syed Muhammad Taha Rizvi are proud Pakistanis from FERN and Bank Alfalah Rising Talent that have not only made the country's first Formula Electric Car, but are also ready to lead their team of 14 to the Formula SAE® Lincoln 2016 – a leading American competition for undergraduates – with Bank Alfalah's support. While 30 teams from 6 countries were able to qualify for the competition, FERN emerged as the only team representing not only Pakistan but the entire Asia.

Running on Lithium Ion Polymer Batteries, the Project FERN car weighs 275 Kgs and is capable of achieving the top speed of 110 km/h with an acceleration of 0-75 km in 4.8 seconds. Some of car's salient features include Rack & Pinion Type steering system, Single Piston custom made

aluminum Calliper braking system, and an Unequal A-Arm suspension system with push rods with SP-4 way dampers.

Sharing his delight on this major development, Atif Bajwa, President and CEO at Bank Alfalah, said, "Bank Alfalah Rising Talent programme is a platform where the youth get opportunities to transform ambitions into success, and contributes to the country's socio-economic development. Today we reiterate that commitment by supporting some of the brightest minds in Pakistan's technological landscape. Developing the country's first Formula Electric Car and representing Pakistan as the finalists for the acclaimed Formula SAE® Lincoln competition for Asia are landmark achievements not only for NUST but for the country." ■

## Swiss CG says "good-bye Karachi"

In the presence of 1,291 guests, who came from all over Pakistan and abroad to say good bye, the Consul General of Switzerland - Mr. Emil Wyss along with his wife thanked



everyone for the exceptional hospitality, kind collaboration, and valuable support during two years tenure in Karachi.

Present among other dignitaries were Chief Executive Officer of Trade Development of Pakistan - Mr. S. M. Muneer, Speaker Sindh Assembly - Mr. Agha Siraj Durrani, Adviser to Sindh Chief Minister - Mr. Nasir Hussain Shah, Commissioner Karachi - Mr. Syed Asif Hyder Shah, Senior Representative of MQM - Mr. Farooq Sattar, British Deputy High Commissioner in Karachi, Consul Generals of France, Germany, Iran, Russia, Turkey, U.S., Consul of Italy, and Honorary Consul Generals of many countries. Leading businessmen, senior journalists, media celebrities, and representatives of academic institutions and NGOs were as well present.

At the event, which was the largest diplomatic function held in Karachi's recent history, Mr. Wyss presented his successor. ■

# The New Clean Development Mechanism (CDM) Punjab is extensively affected due to pollution coming from India

By Irfan Ahmad

The Clean Development Mechanism (CDM) is an arrangement made under the Kyoto protocol which creates emissions reduction credits through emissions reduction projects in developing countries.

The Kyoto Protocol (finalized in 1997 and went into force in 2005) was an international treaty which extended the 1992 United Nations Framework Convention on Climate Change (UNFCCC) that commits state parties to reduce greenhouse gases emissions, based on the premise that (a) global warming exists and (b) man-made CO<sub>2</sub> emissions have caused it.

Nearly all nations ratified the treaty, with the notable exception of the United States. Developing countries, including China and India, weren't mandated to reduce emissions, given that they'd contributed a relatively small share of the current century-plus build-up of CO<sub>2</sub>.

The Kyoto Protocol failed because of the lack of active participation from USA, China and India. While the USA did not bother, India and China got maximum carbon credits despite overall increase in greenhouse gases from their own industry during the years.

The new Paris Agreement in 2015 is a bridge between today's policies and climate neutrality before the end of the century. The governments including USA, China and India have agreed:

- On a long-term goal of keeping the increase in global average temperature to well below 2°C above pre industrial levels;
- To aim to limit the increase to 1.5°C, since this would significantly reduce risks and the impacts of climate change;

Before and during the Paris conference, countries submitted comprehensive national climate action plans. These are not yet enough to keep global warming below 2°C, but the agreement traces the way to achieving this target.

Although Pakistan has minimum contribution towards greenhouse emissions (en-

ergy from coal is less than 0.1% of the total mix), it has become the main sufferer of the Global Warming. Our carbon footprint is 0.47kg/kWh, whereas India's carbon footprint is 1.33kg/kWh i.e. three times bigger than us mainly due to the usage of up to 60% coal in their energy generation.

The severe fog in winter months, experienced in large parts of Punjab is due to this pollution coming from India.

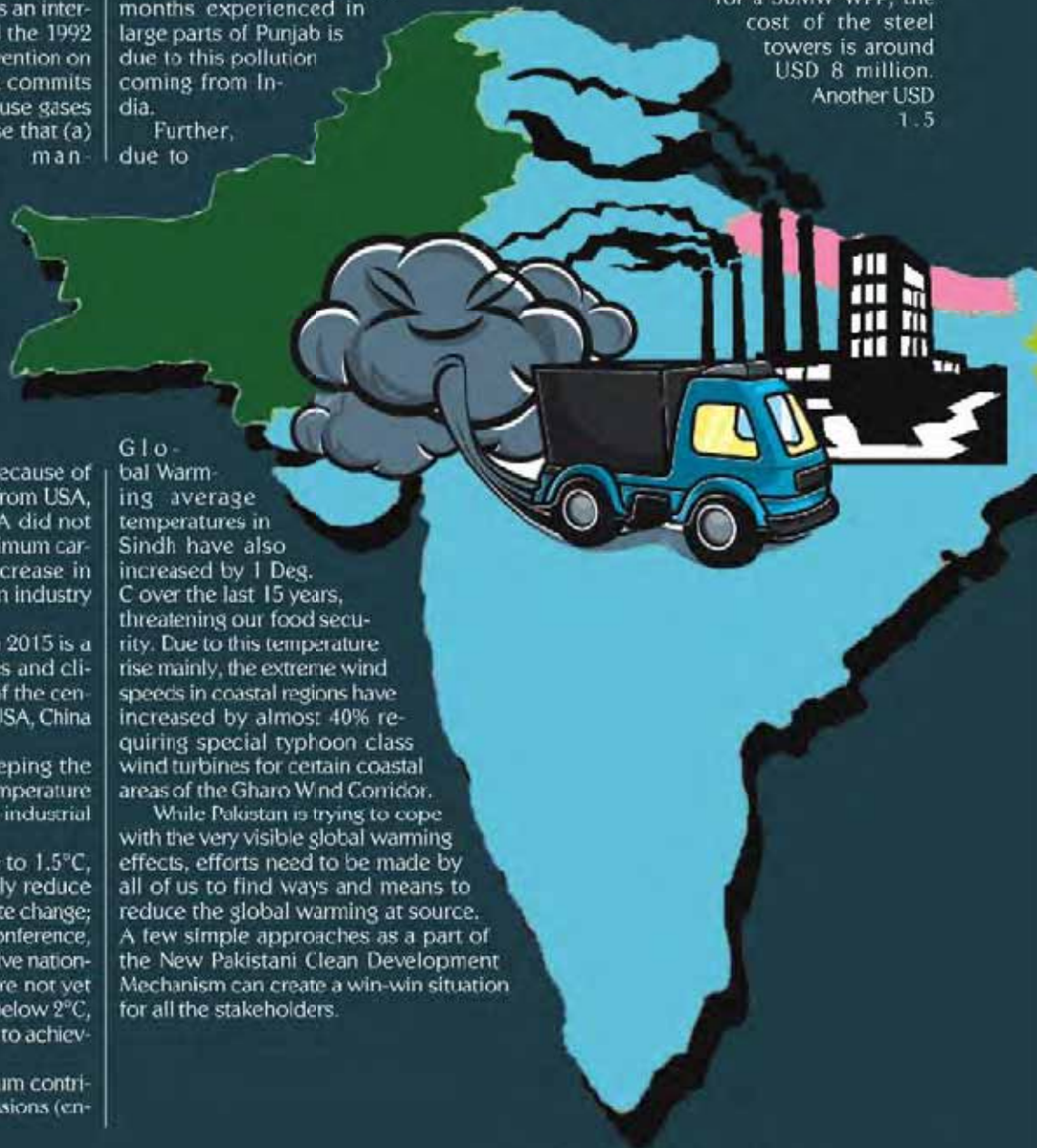
Further, due to

## Manufacturing Wind Turbine Generator (WTG) Towers locally in Concrete:

WTG towers are generally manufactured in steel. For Pakistani Wind power Projects (WPPs), this heavy and large equipment needs to be imported. As a thumb rule

for a 50MW WPP, the cost of the steel towers is around USD 8 million.

Another USD 1.5



Global Warming average temperatures in Sindh have also increased by 1 Deg. C over the last 15 years, threatening our food security. Due to this temperature rise mainly, the extreme wind speeds in coastal regions have increased by almost 40% requiring special typhoon class wind turbines for certain coastal areas of the Gharo Wind Corridor.

While Pakistan is trying to cope with the very visible global warming effects, efforts need to be made by all of us to find ways and means to reduce the global warming at source. A few simple approaches as a part of the New Pakistani Clean Development Mechanism can create a win-win situation for all the stakeholders.

million is required for transportation and insurance. If the towers are manufactured in concrete (local steel, crush and cement) which is quite normal for hub heights above 100 meters, there will be:

- huge cost savings in foreign exchange
- no fuel burnt for transportation
- creation of jobs

### Hybridizing Fossil Fuels with Renewable

Up to 15% fuel saving is possible in Pakistani industry, if a MW range PV Solar Plant produces 50% of the required maximum power during sun hours for a 24X7 industry. Reduction in emissions, grid stability and maintenance cost reductions are added advantages. Conventional generation for base load requirement suitably hybridized with a renewable energy resource in the proximity should be the first priority of the current generation plans. Eg.: 1000MW PV Solar Plants in QA Solar Park Bahawalpur can be hybridized with 1320MW imported coal project being set up in Sahiwal to save coal during the day time and also to keep the much required power balance in the 220kV network.

### Increasing Power Plant Efficiencies

Improvement in energy efficiency of the base load plants (by converting to combined cycle power plants instead of open cycle) and utilizing cheaper resources of primary energy like indigenous coal should be the main stay of strategic planning.

### Going for locally manufactured Electric Cars

Electric cars would be on the roads of Pakistan sooner than later. The e-car consists of mainly a battery and electric motor drive. Cheaper and quick rechargeable batteries are around the corner. Basic research should be carried out by our technical universities, like done all over the World, to produce modern batteries locally. Learning institutions are leaders in basic research. Industry can only help in marketing the innovative products.

The New Pakistani CDM cannot be fully implemented if we do not see the locally manufactured solar cars chargeable from locally manufactured solar stations within the next five years. The IC engines are highly inefficient as basic drives for transportation.

A nation of 200 million cannot survive on imported goods and borrowed money. What we have started mortgaging now is the future of our children and this is quite a shameful act. This nation has the potential to rise and shine any time it wants to. The time has come. ■



Ambassador Mr. Salk Khan and CEO Mr S.M Muneer and Rabiya Javeri Agha, Secretary TDAP at Pakistan's Trade Caravan recently held at Almaty Kazakhstan



Pakistan Society for Training and Development celebrated its 50 years with a conference entitled Rethinking & Reimagining The Capabilities of Pakistan. The conference explored the possibilities of rethinking and reimagining the capabilities of Pakistan, with the objective of highlighting the importance of learning and development on a personal level as part of organizational strategy.

The conference explored their theme through various panel discussions and keynote speakers. The welcome address was given by Saeed Siddiqui Vice President PSTD, which was followed by a video montage, which took a look at the rich 50-year history of Pakistan Society for Training and Development. The panel discussion with senior consultant, Carnelian Kamran Rizvi, Senator Nisar Memon and Adjunct professor Zaffar A Khan took a look at the legacy of training in Pakistan and how it has changed over the years and where we can go from the point that we stand on today.

Following this interesting panel discussion, Lars Kure Juul Neilson from Denmark gave an enlightening talk on leadership and the correlation with talent management. Senior executive vice president Habib Bank Limited, Faiq Sadi presented a case study with regard to Change and Transformation. Other speakers who addressed the packed house included Rumman Ahmed who spoke about Learning Innovation and Ramiz Allawalla who gave a video presentation on People Transformation. Among the more memorable sessions of the conference was one by Dr Atta ur Rehman, the former Federal Minister for Science and Technology entitled Knowledge and Innovation: Imperatives for Socio Economic Development.

The PR of the event was done by STARLINKS PR and Events ■

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More companies to join Engro for coal and energy projects in Thar

## First power generation from Thar to be linked with national grid in 2018

**Shamsuddin Shaikh,**  
CEO, SECMC

By Sajid Aziz

Once Thar coal and energy project in block-II achieves financial close, several companies are ready to invest in Thar as no major issue is leftover there while risk factor for new entrants to venture into the project is also getting minimized, said Shamsuddin A. Shaikh, the Chief Executive Officer of Sindh Engro Coal Mining Company (SECMC). In a recent interview to the Energy Update, he said that before Thar Block-II project, companies were reluctant from investing in the project as previously there was no precedence of investment made for extracting indigenously available coal and using it for power generation at the site of Thar. Shamsuddin Shaikh while replying the queries regarding progress on Thar Coal Project, extent and level of government's support and involvement in the project, expansion and operational plans, and CSR-related activities of his company. It should be recalled here that SECMC is the joint venture company between Sindh government and Engro Corporation for doing exploratory, mining, and power generation in Block-II of Thar. Here are some important excerpts of the interview:

**EU: Once financial close is achieved, what would be follow-up operational course of action for Thar coal and energy project in Block-II?**

**Shaikh:** In year 2018 our first power generation system would be synchronized with the national grid. This system comprises two units of 330 megawatts each as both the units would be made operational simultaneously.

**EU: Whether it would a part of Thar coal project in China Pakistan Economic Corridor (CPEC)?**

**Shaikh:** Along with our first 660 MWs power project is the coal mine of 3.8 million tons per annum (MTPA) production capacity. We requested to the authorities concerned related to CPEC to expand this coalfield to 7.6 MTPA as along with this expansion another power plant of 660 MWs would be installed. They readily agreed to our proposal.

The mine at present we are engaged with costs us around \$850 million with first power plant of \$1.1 billion. The Sindh government is investing to build infrastructure in the area including roads, effluent treatment project, and airport costing it around \$750 million. Total cost of our project in Thar is \$3 billion while expansion of power generation project would cost us around \$1 billion. Expansion of mine from 3.8 MTPA to 7.6 MTPA would be carried out at cost of \$300 million.

We would build two initial power generation units in Block-II of Thar while four units would be installed later by other companies as in this regard negotiations are being held with several firms who are readily available to invest in Thar coal energy project after our project reaching the stage of financial close.

**EU: Earlier, there was talk of delay in completion of necessary infrastructure in Thar, what is the current status in this regard?**

**Shaikh:** Roads in the area are almost complete while Thatta-Sujawal Bridge connecting the area would be completed in next six to eight months. Similarly airport in the area would be completed in next six to eight months also. Work on water supply project is being carried out to complete it by end of 2017 while effluent treatment project would be completed in the current year as per the commitment of Sindh govt. By and large Sindh government has been delivering what it promised for Thar coal project while federal govt is also fulfilling its

commitment for providing transmission lines for the project.

**EU: Is there complete understanding between federal and Sindh governments to complete Thar coal project?**

**Shaikh:** There could be differences on a number of issues between federal and Sindh governments but there is no difference or issue at all between the two governments to complete Thar coal project. In this regard, we had invited Prime Minister Nawaz Sharif in 2014 to Thar who along with former president Asif Ali Zardari jointly performed groundbreaking of our project. The relevant organizations under the federal govt. including Ministry of Water & Power, National Transmission and Dispatch Company, and Private Power & Infrastructure Board have been providing us full support for our project. These federal agencies have been lending full support to us to the extent that sometimes it becomes difficult for us to match their speed.

**EU: Tell us about importance of using indigenous resources for power generation?**

**Shaikh:** Everybody now has fully realized that Pakistan could no more afford power generation on basis of imported fuel. All these projects now being built would be operational by 2018-19. Now projects coming under CPEC are not being completed free of cost as equity and loan is being given, which has to be returned after completion of the project. So once all these power projects were completed, there would be massive outflow of cash from the country to repay loans availed under CPEC facility. So at that time it would be highly suitable to use indigenous fuel for power generation by these projects for their feasibility and sustainability so that there should be no more additional payment of cash outside the country.

We are planning our project in such a manner that there should be addition of 660 MWs every year in the system after year 2018, till reaching total ultimate capacity of 4000 MWs.

**EU: Why other power plants are being built in the country to use imported coal when Thar coal is also being extracted?**

**Shaikh:** There could be all benefits readily available related to Thar coal but there is one particular problem related to the project i.e. even with unlimited spending of money, all power projects in the country could not be converted to use Thar coal on an instant basis like tomorrow. For achieving such a cause, more blocks of

Thar coal area should be opened up for doing mining and energy projects. There should be maximum power generation on basis of Thar coal at its site when there is no major issue including that related to environment as there is no city situated nearby.

One thing could be done in this regard that power generation on basis of Thar coal should be shifted to the nearest where water is available as availability of water is one major issue concerning building Thar coal power project. For this cause, Keti Bandar is the most nearest abundantly suitable site, which has to be developed for the purpose. For transporting Thar coal to Keti Bandar, railway track has to be built so that power plant could be installed on basis of water abundantly available there. I think that this is the future of Keti Bandar, on which we are working with Sindh government. No doubt Sindh government is



completing the project to bring water at the site of Thar coal, but that water so brought would be so much expensive that all power projects could not be built on its basis.

**EU: What arrangements are being made to protect environment with Thar coal power project getting operational?**

**Shaikh:** The environmental issue concerning coal-based power plants is related to power plants of older version. For Thar coal project, all power units being installed are third generation power plants. Here Engro is already very much conscious about environment. The project being built by our company fully complied with National Environmental Quality Standards and World Bank's criteria. Now study related to Environmental impact assessment we have done is not just confined to our projects only as it would cover other power projects likely to be built in Thar is there is no envi-

ronmental issue for using Thar coal for power generation up to capacity of 4000 MWs.

**EU: What are CSR-related activities your company is doing for people of Thar?**

**Shaikh:** When there would be expansion of our coal mine, we have to shift and relocate two villages of Thar as they would be affected by our mining work. For this purpose we prepared a resettlement action plan in accordance with guidelines of World Bank, approval of the govt. and after concerned village people giving their consent to the relocation plan. Later, new site for relocating these villages was searched and found and designs of new houses to be constructed were approved.

We have now planned to relocate the two villages in the first phase of the project before our power plant getting operational even though it would take around eight years when mine expansion work would reach the site of these two villages.

Moreover, we are working on education sector in Islamkot area of Thar as we have signed a memorandum of understanding with The Citizens' Foundation to build two major schools there as these schools would be made functional before our power plant achieving commercial operation date. Another MoU is signed with Indus Hospital Karachi to build a 70-bedded hospital in Thar, which would fulfill all health care needs of area people. Moreover, we are running medical camps, veterinary camps, and also giving scholarships to youth there to get skilful education.

Now one has to see present day's Islamkot with the one two years back and Islamkot, which would be present after two years once Thar coal power project would be operational as there would be marked improvement in its living standards and state of facilities. In this regard, we are getting all the required help and assistance from MPAs and other people representatives of the area.

**EU: Number of employees engaged by Thar coal and energy project?**

**Shaikh:** At present, our own 40 to 50 employees are working for the project. When construction of the project would enter into full operational phase, there would be 4,000 people working at the site. In the post-construction period, 1,100 to 1,200 people would be working in phase one of the project. Every new power plant at the site would add 300 to 400 more employees for Thar coal project. Moreover, there are around 200 Chinese nationals working for the project. ■

# Bakri Group

EU Report

## ABOUT THE GROUP

Bakri Group of Saudi Arabia is known for its international outlook and diversity and is pursuing a journey of expanding its international horizons. The group was founded in 1973 and has presence in Middle East, South East Asia and Far East Regions. Bakri Group's principle business segments are in the energy sector, the marine sector and the investment and services sector.

### Bakri group:

- One of the largest private Fuel Oil traders in GCC
  - Developer, builder and operator of desalinated water facilities
  - Owner and Operator of Cross country pipelines
  - Owner and Operator of Aviation Fuel Terminals
  - Owner and Operator of Fuel Oil Terminals
  - Largest provider of Bunker Fuel in GCC
  - Downstream Oil Marketing Companies in Pakistan, Middle East and Africa
- Bakri's presence in Pakistan

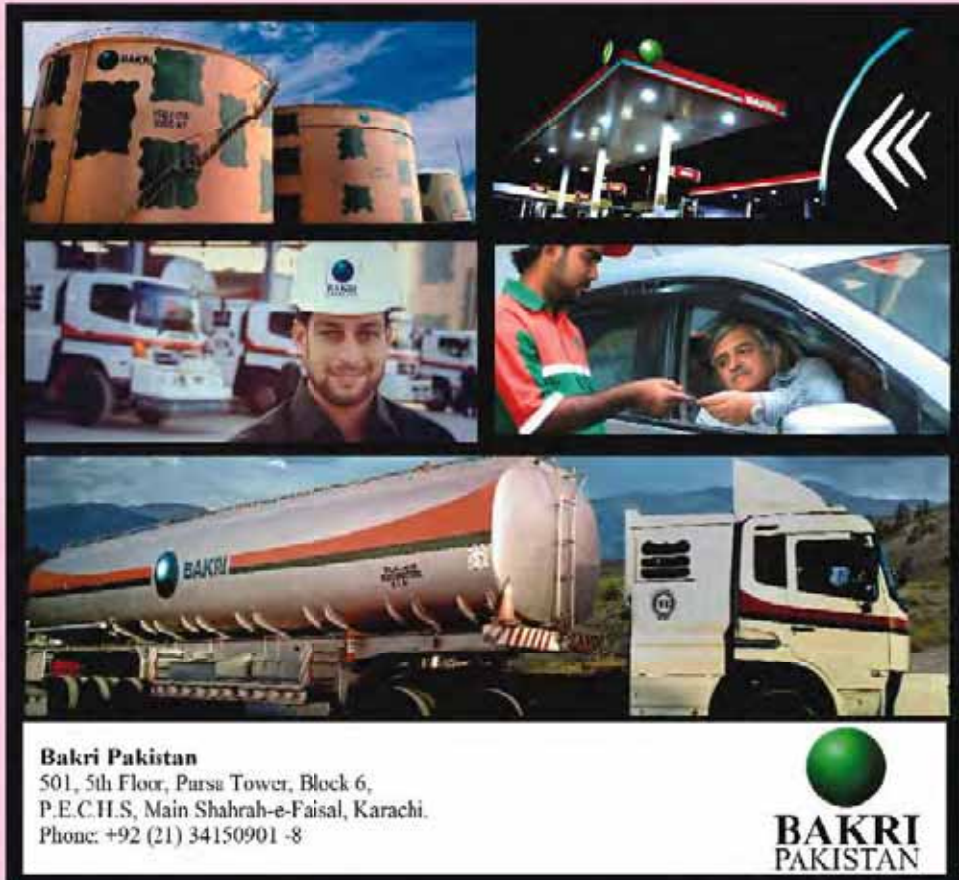
dates back to 1994, supplying petroleum products directly to Government of Pakistan. Throughout the time Bakri has demonstrated a patriotic streak by not only providing quality products at economical prices, but also consistently meeting energy needs of the country for the last 21 years.

### Bakri Pakistan is 100 PERCENT FOREIGN INVESTMENTS OF BAKRI International Energy Company

Bakri Group of Saudi Arabia is represented in Pakistan since August 2005 by its two operating entities "Bakri Trading Company PVT Limited" and "Overseas Oil Trading Company PVT Limited". Both the companies are in the final stage of merger, which is to be followed by an 'Initial Public Offering' (IPO) in order to be listed on the Pakistan Stock Exchange.

Bakri Pakistan is involved with marketing of black and white oil products across Pakistan. It possesses state-of-art facilities and operations that facilitate its business activities. Its key business activities include procurement from local and international suppliers, storage and supply of petroleum products to its retail outlets and power generation companies.

1. Bakri Pakistan takes pride in owning and operating the 2nd largest storage of fuel oil in Pakistan.
2. The company is the 2nd largest importer of Fuel Oil in the country.
3. Bakri Pakistan is proud to be working in the national interest by providing hospitality to the local refineries, thereby helping to reduce the import of refined product in the country.
4. Bakri Pakistan started the construction work of oil terminal at Shikarpur, which is planned to be operational during the fiscal year 2016. This will increase the total storage capacity of petroleum products in the country, besides generating employment opportunities and making Bakri second largest storage operating OMC of Pakistan.
5. The Company has entered the aviation fuel business and plans to explore the possibility of establishing bunkering services in the country.
6. Bakri Pakistan has also introduced world renowned lubricant brands - Q8 in Pakistan with variants ranging from Automotive to Industrial use. ■



#### Bakri Pakistan

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# Bakri Group to go for IPO very soon in Pakistan

## Bakri Trading has 100% Pakistani employees

Mirza Shakil Baig, Managing Director of Bakri Trading Company

*"We have been reposed with great trust as we are a 100 per cent foreign owned company but here our management is 100 per cent Pakistani with not a single person of foreign shareholding present here in the country," said Managing-Director of Bakri Trading Company, Mirza Shakil Baig as Energy Update interviewed him in detail as company is ranked second in the country in terms of fuel storage facilities after Pakistan State Oil. While discussing origin, current, and future status and programmes of Bakri Group in Pakistan commented on the declining trend of fuel prices and energy issues of the country, he continued to say.....*



By Naeem Qureshi

### Energy Update: Tell us about genesis of Bakri Group?

**Shakil Baig:** Bakri group is a Saudi group as they are originally from Medina. It was established as a trading company in Saudi Arabia. There in Saudi Arabia, they have a shipping company and have some other businesses like water desalination plant, worldwide trading, shipyard, and ship repair. They were the largest fuel and furnace oil supplier to the government of Pakistan. They had been doing this for last 25 years. Later on PSO picked up this thing as govt here deregulated the oil supply business. About 10 years ago they (Bakri Group) realized to do some business within Pakistan as they had a lot of interest in the country. Thus they formed two companies, one was 100 per cent owned by Bakri Group and other one with 50 per cent shareholding with a Pakistani entrepreneur. It was a challenge as both the companies started operating together as issues related to availability of products and opening retail outlets had to be tackled. We as a company have grown having 300-plus outlets in the country. It has been a big journey that took ten years. A lot of challenges had to be overcome as being an oil marketing and distribution company, you have to develop storages all over the country as the company did it. The company developed state-of-the-art oil storages and terminals having largest oil terminal at Port Qasim. This is the second largest fuel oil terminal in the country after the PSO's. For such achievements all credit goes to Bakri group. We have a terminal at Sheikhpura near Lahore while another terminal is coming up in Shikarpur. There are oil depots coming up in Daultpur, Mehmood Kot, and Sahiwal. It is the network of oil distribution, we are building in the country. Since deregulation of the oil sector business, we have been competing with new oil companies in the country.

### EU: Please tell us about affects on oil business in the country due to decline in fuel prices?

**Mr. Baig:** Our work related to oil marketing business has become challenging in view of declining oil prices as the government is used to announce new oil prices on first of every month. Suppose you are a petrol pump dealer, you will not pick up the petroleum product if prices are increasing next month. You will avoid the product because you are not interested and you want to sell it at a higher price. Inventory management becomes an issue when oil prices are declining at the end of month as you have minimum inventory but you cannot start new month with zero inventory. These are the challenges in the oil marketing business as you keep inventory on deliberate basis as this is the requirement of the business. But you know you have to bear the loss on first of the month as the govt sometimes announces reduction in gasoline prices. So if the petrol price is



reduced by Rs 08/litre and in case you are keeping storage of a million litres of petrol, your eight million rupees are simply gone. So these are issues for oil marketing and distribution companies in Pakistan at this stage when prices are slashed every month because of international oil price. As reduction in fuel prices takes place on a frequent basis so it creates challenging situation for an oil marketing company every month in terms of keeping a reasonable quantity of fuel. It means with start of every month, you try your best to manage these challenges.

But indeed consumers are happy as earlier fuel tank of a car was used to fill up in Rs 4,000 while now the same could be done in just Rs 2500. Hopefully this reduction in prices will be given down the line for other sectors also for general good of the masses like reduction in fares of taxis and passenger buses.

#### **EU: What is future strategy of your group in Pakistan?**

**Mr. Baig:** Both our Pakistan-based companies are now owned by one group as there is no reason to keep two separate companies at a time. We have started having the merger. We are now in the midst of merger process. These two companies will be merged together in a couple of months as later on the two companies will emerge as a single entity. Then we have planned that after emerging as a growing single entity, we will go for Initial Public Offering as we would float our shares in the market. As per our planning this could take place till early next year.

#### **EU: Tell us about volume of your investment in Pakistan.**

**Mr. Baig:** This company started with 10 million US Dollars investment as 100 per cent of this investment came from abroad. Again it is a big honour for this company that there is no local or Pakistani



shareholding in the company as normally there is Pakistani shareholding in rest of multinationals present here. But here is a challenging situation as 100 per cent management of the company is Pakistani. What a great trust reposed from our group that management of the company is 100 per cent Pakistani despite 100 per cent foreign investment used for establishing the company. It is the matter of trust that their assets and their money is in our hands. It is a good challenge and we are overcoming it. Our foreign-owned group is so much satisfied and happy with us that there is present not a single person in the country being representative of foreign shareholding of the group.

#### **EU: Tell us about your viewpoint regarding persisting energy crisis in the country?**

**Mr. Baig:** Previously price of furnace oil was Rs 80,000 per ton but today it is slashed to Rs 25,000. We don't see that much relief to the consumers. The present Nawaz Sharif's govt had passed on such reliefs to the masses, which had never been passed on by any previous govt. Price of petrol has been slashed to Rs 62 per litre from Rs 107 per litre as never before in fuel history of Pakistan, such reduction up to 40 per cent to 45 per cent, in petrol price

did happen. At present power load shedding in the country should not take place as earlier the govt was used to say that it didn't have enough money to buy furnace oil owing to circular debt issue. In the present scenario there should be no shortage of fuel as we are buying fuel at 1/3 of the fuel prices persisting two years back. The power generation plants should be run at their maximum available capacity.

country is concerned, the import of Liquefied Natural Gas by the country provides the best solution. The ship-based import of LNG into the country should be increased with increase of LNG terminals at sea ports keeping in view increasing population pressure in the country. We could not wait till availability of gas in the country through trans-border pipelines either through Iran or Turkmenistan as completion of such projects would take time.

#### **EU: What is environmental policy of your company?**

**Mr. Baig:** Our company very strictly follows its in-house health, safety, and environment policy as there has been present a very stringent mechanism for inspection of our tank orries as part of oil distribution network. I wish you go and visit any of our terminals in this regard. When you compare our oil storage facilities with that of other companies, there is found remarkable improvement in state of cleanliness as not a single drop of oil is found anywhere at the site of such a facility. This shows our excellent performance as we would maintain it in future as well.

As part of our CSR activities, we gave donation on voluntary basis to Edhi Foundation and Jinnah Postgraduate Medical Centre during the last heat wave in Karachi. We are also financially supporting a number of charitable and welfare organizations including the Citizens' Foundation for supporting the schools. ■



# Pakistan is one of the gainers of falling oil prices

**Pakistani nation is the most unfortunate that has not been passed on the benefit**

By Ismat Sabir

The consumers in entire world have enjoyed the benefits of falling oil prices for the last two and half years but the people of Pakistan were the most unfortunate nation that has never been passed on this benefit by the PML-N Government.

The government has once again increased the prices of petroleum. The hike in the Petrol price was Rs2.19 per liter and diesel 98 paisa, effective from the first day of April 2016.

In the international market buying oil prices was nearly \$40 a barrel, in April 2016. The prices were \$47.70 a barrel on 31 March 2015.

Indian Oil Corporation, IOC, made Petrol available in New Delhi at Rs61.87 per liter compared to earlier Rs59.68. A liter of diesel is now costs Rs49.31 compared to Rs48.33 a liter.

In Pakistan the benefit of reduction in oil prices globally do not passed on to the general public and to the consumers. The government practice is that it focuses on increasing the GST on POL products to maintain its revenue collection therefore the general public and consumer deprived of this benefit. Oil is mostly

an imported item of energy for Pakistan, the price of which is increasing continuously especially in the last few years. The price of oil was \$10 per barrel in 1995 which increased to \$110 per barrel in May 2014 showing an increase of about hundred times as compared to its price in 1995.

The import of crude oil remained 44.99 million barrel during July-March FY 14 compared to 40.9 million barrels in corresponding period last year showing a growth rate of 11 percent while local crude extraction grew 12 percent as it stood at 23.0 million barrels in July-March FY14 compared to 20.5 million barrels in corresponding period last year posting a growth 6.2 percent.

On imports US\$4.33 billion was spent on petroleum crude compared to US\$4.00 billion in corresponding period last year.

In India the hike was Rs3.07 a liter increase on March 17 and Rs1.90 a liter hike in diesel rates. While this was the second increase in petrol price, this is the fourth fortnightly increase in diesel rates. IOC attributed the hike to current level of international product prices of petrol and diesel and the Indian rupee US dollar parity.

At one time, 13 Jan 2016, oil was traded below \$30 a barrel



**The consumers in entire world have enjoyed the benefits of falling oil prices for the last two and half years but the people of Pakistan were the most unfortunate nation that has never been passed on this benefit by the PML-N Government.**

but oil prices were not reduced proportionately in the country. The decrease was about 20 percent due to off prices this year; it was happened because of weak Chinese demand and the absence of output restraint.

Minister for Water and Power Khawaja Muhammad Asif said federal government said we saved Rs252 billion so far in terms of low oil price at international market. Regarding not providing the benefits of recent reduction in the prices of electricity to the consumer of less than 300 units' electricity, the minister said consumers of 300 units electricity and less have already been heavily subsidized. He said benefits of fuel adjustments are being provided to consumers of over 300 units also. He said that the government is considering reducing the tariff to the consumer of 50-300 units.

He said that the government is charging Rs2 per unit from the consumer to the slab of 50 units, Rs4.11 from 50-100 units, Rs5.79 from 100-200 units and Rs8 from 200-300 units. He said that recovery of electricity bills has been increased from 88 percent to 93 percent, a 5 percent increase, while line losses have been decreased by 1 percent only.

Petroleum price should be reduced by at least Rs15 per liter, demanded business community. On the other hand, reduction in taxes on fuels would give boost to country's economy, because high input cost is rendering Pakistani products uncompetitive in world market.

The cheaper fuels would also promote agriculture sector as diesel is used in tractors, tube wells, harvesters, thrashers and other agricultural machinery.

For 9MFY16, the consumption of major petroleum products, in the country, like petrol, diesel and furnace oil touched to about 16 million ton (15.96 million MT), depicting an increase of 4.4 percent over this period. While furnace oil consumption decline in volumes during the nine month period, it was volumes of petrol that were

the key growth driver; furnace oil sales were down by six percent, while petrol sales by the oil marketing companies accelerated at 25.8 percent during the period. HSD sales remained at a growth rate of four percent.

A similar trend was seen in petroleum product imports; where furnace oil imports were lower by around six percent for 8MFY16, petrol imports rose by 42 percent. This rise in petrol imports and overall petrol consumption in the country has been due to increased usage in the domestic transport in the absence or shortage of CNG.

The trend has been similar for March 2016 where furnace oil has shown a 12 percent decline, and petrol volumes have shown increase of 38 percent. A downturn in furnace oil volumes has been observed over the months. This has been primarily due to lower furnace oil consumption in power generation and heightened use of imported LNG.

In recent months the price of crude oil has fallen 50pc. This fall has a significant impact in reducing transport and other business costs. Falling oil prices is good news for oil importers, such as Western Europe, China, India and Japan and also for Pakistan who saved Rs252 billion. However, it is bad news for oil exporters, such as Venezuela, Kuwait, Iraq and Nigeria.

### Impact on Oil Importing Countries

Oil importers benefitted from this fall because the value of their imports reduced the current account deficit that is important for a country like Pakistan who imports its major portion of oil consumption and currently has a large current account deficit.

However, for oil exporters, a falling oil price will do the opposite impact reducing the value of their exports and causing lower

trade surplus. The UK is currently a small net importer of oil, so will have limited impact on UK current account.

### Oil Exporting Countries

As regard of oil exporters, a falling oil price has negative impact. Many oil exporting countries rely on tax revenue from oil production to fund government spending. For example, Russia collects 70pc of all tax revenues from oil and gas. Falling oil prices leads to a government budget deficit, or either higher taxes or government spending cuts. Other oil exporters like Venezuela are relying on oil revenues to fund generous social spending. Saudi Arabia and UAE have built up substantial foreign currency reserves; they can afford temporary falls in oil prices. Therefore, Saudi Arabia has so far not responded by cutting output.

### Impact on oil consumers

Lower oil prices reduce the cost of living, as it directly impacts lower inflation rate. For instance, inflation was one of the reasons behind the recent fall in UK inflation to zero percent.

The falling prices especially benefits fixed income groups as they have more money to spend. It is like a tax cut. Prices could lead to higher spending on other goods and services and add to real GDP.

On the other hand, many experts feared about prospects for the European and global economies. The fall in oil prices indicated weak global demand. Continued low growth around the world would result weak global growth.

### Deflation

The biggest fear in Europe, at the moment, is the sliding prices towards deflation and the fear of a 'Japan style' lost decade. EU inflation has fallen to a five year low



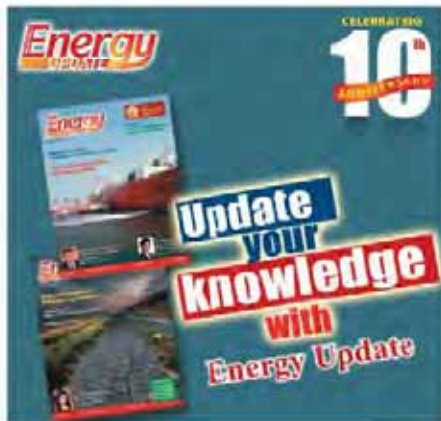
(0.4% in August 2014) 31pc of Euro zone goods prices are now falling rapidly. This worried economists because deflation tends to cause serious macroeconomic problems: Lower consumer spending and lower investment.

Falling oil prices increases income, but lowers consumer confidence, they do not like to spend it but prefer to save. The situation does not help increasing spending is pushing down the inflation rate and making actual deflation a real possibility. The fear is that once the Euro zone enters deflation, it could prove very difficult to escape and it could lead to a long period of stagnant growth.

### Other economic impacts of lower oil prices

Reduce profitability for alternative energy sources. Part of the fall in oil prices is due to OPEC countries like Saudi Arabia wanting to protect their oil markets and not lose market share to other energy sources. It may delay investment into alternative 'greener' forms of energy, such as electric cars. Falling oil prices could reverse the recent decline in car use, leading to a steady increase in traffic congestion and environmental costs of petrol use. A few years ago, oil prices were rising to a high rocketing speed and many expected high oil prices to be the new norm. It is unlikely that OPEC will want to tolerate low oil prices for too long. There is still strong demand in Asia (India and China). Though there were fears of a slowdown in Asian growth. One can see that from the past 6 years, oil prices have been quite volatile, there is a strong likelihood that sometime oil prices will increase again. Effect of falling oil prices on Russia and Pakistan. The Russian economy is highly dependent on the oil and gas industry. The fall in oil prices caused a rapid devaluation in the Rouble and contributed to a recession.

On the other hand government of Pakistan will reap benefits of decreasing oil prices but consumers will remain always looser! ■



## Break Free so far...

Over the last week a global wave of actions to keep fossil fuels in the ground has been gathering momentum all over the world. Words alone are not enough to describe how powerful this moment of action is. If you've missed any of it, here's what's happened so far in just the first 6 days of Break Free:



It started in Wales, where over 300 people shut down the UK's largest open-cast coal mine for a day. Hours later, 10,000 people from all over the Philippines gathered in Batangas City to demand an end to coal. In New Zealand hundreds of people held one of the country's largest banks, ANZ, accountable for their role in funding and profiting from climate change. In Australia hundreds of people shut down the world's largest coal port using kayaks, canoes and homemade rafts. All this, and it's not over yet. There are many more powerful actions planned between now and May 15.

As each action unfolded this week, people from all over the world expressed their solidarity through the Break Free Digital Witness project, which provides live support and amplification for activists as they take to the streets (or coal mine, or water, or anywhere else). You can still be a Digital Witness for the actions to come, I know folks on the ground would really appreciate it.

You can see all of the amazing photos from last week and follow the remaining actions as they happen at [breakfree2016.org](http://breakfree2016.org).

The next few days will also be incredible, not least of all because together these actions set the stage for the just transition to 100% renewable energy that this overheating planet needs. ■

## U Within Association holds First Patients' Summit

U Within Association held the First Patients' Summit at a local hotel, in recognition of the champions fighting severe skin diseases. The event was attended by consultant dermatologists, patients, members of the Association and important people from the corporate sector. Key speakers and honourable guests of the Patients' Summit were Dr Najia Ashraf, Dr Manzoor Memon, Farid Ali, Ranesh Vankwani, Dr Riaz Memon, Ms Boba Venture, Saqib Baqai, Dr Wajahat Khan, Dr Jawed Siddiqui, Jamil Mughal and the famous film director Syed Noor. Ashraf highlighted in her speech that there are newer treatment options available for patients today, like biologics that result in 90 per cent to 100 per cent clear skin in some cases. Ali, suffering from psoriasis himself, shared his experience and motivated the patients to fight back to regain their lives. The objective of the Summit was to provide voice and courage to patients suffering from severe skin diseases and to create awareness of this widespread malady.

Chaired by famous television host/anchor and social activist Dr Muzna Ebrahim, The U Within Association is a patient welfare organization that was created two years ago with the aim of

training both patients and doctors to deal with various skin diseases prevailing in the country and to create awareness about them, with a special focus on urticaria and psoriasis. The Association started off as a small group of doctors, psychiatrists and life coaches providing counselling to patients who had become depressed, isolated and even suicidal because of the long duration and unpredictability of their disease. The Association hosts regular patient, doctor and counselor group meets, arranges for free consults with the best dermatologists in the country and even provides free treatment. ■



## Public sector organizations owe SSGC Rs105 billions: Khalid Rehman

All efforts are being made to arrest UFG SSGC has taken up biggest ever project of its history, MD, SSGC talks to Energy Update

By Sajid Aziz



"The major program that has been undertaken by Sui Southern Gas Company (SSGC) is to install a 350 kilometer transmission pipeline at a cost of Rs60 billion in a years' time that is unprecedented in the history of company. There is a lot is going on and the SSGC Board has full confidence and we assure everyone for better service. In Sindh-Balochistan zone there is no consumer has been deprived off as we are providing gas as per priority set by the government and that there is no load-shedding of gas is going on in Sindh", says Managing Director, SSGC. We have a big problem in receiving our dues particularly from K Electric and Pakistan Steel. Pakistan Steel is a major concern as it owes us Rs41 billion and as a consequence we have discontinued major supply of gas to steel mills. We are facing liquidity problem as gas prices too were not revised upward for the last two and half years. In an exclusive interview with the Energy Update he continues to say that.....

**EU: Why UFG ratio has been increased in SSGC despite all efforts taken by your office?**

**KR:** One needs to understand that the reasons for increased UFG levels are due to controllable factors such as gas theft, measurement errors and leakages in overhead and underground pipelines. The Company is clamping down on gas theft and meter tampering offenders with an iron hand and is also undertaking raids against them on regular basis. In doing so, it has helped saved millions in volumes and has raised claims with OGRA. Secondly the Company is engaged in continuous rehabilitation of worn out pipeline network to prevent leakages. There are, however, some external factors that have contributed to significant increase in UFG. These factors include bulk to retail ratio, volatile law and order situation, government's moratorium on new connections and new towns' expansion.

**EU: What is the volume of stuck up amounts of SSGC's arrears against various govt. functionaries including K electric?**

**KR:** There is a big amount remains stuck up with various public sector organizations due to which the SSGC is facing financial crunch. Some of the organizations are amount they owe us. K-Electric – Rs61,405 million, Pakistan Steel Mills – Rs41,837 million and Wapda – Rs3,058 million.

**EU: What was the impact of LNG's import on SSGC's network, negative or positive?**

**KR:** LNG import will prove to be a game changer for Pakistan's energy sector because it is and will play a major role in bridging the demand-supply gap of natural gas. Having said that by developing a massive infrastructure from Karachi to transmit re-gasified LNG all the way to Punjab, the company is currently laying down a 42" dia, 342-km pipeline, which is the biggest project ever undertaken by SSGC.

**EU: What further measures you are taking to arrest UFG?**

**KR:** The Company is taking concerted efforts to control UFG by replacing defective meters, rectifying leakages, doing pressure profiling, and installing

cyber locks at industrial premises. In addition, SSGC is undertaking anti-gas theft raids to help save millions of rupees in volumes.

**EU: Is it true that SSGC's UFG rate has grown over 16% while SNGC's dropped to 10 %?**

**KR:** We can't say anything about SNGC's UFG rate but in our case UFG is around 13 percent. We however, trying our best to minimize this level through various measures.

**EU: Does your company support CSR? Please share your CSR activities.**

**KR:** SSGC is investing primarily in education, health, environment and community development activities, either on its own or through collaborations with government and non-governmental organizations

**EU: Is there any shift in your CNG supply policy as after a short break there is another spell of load-shedding of CNG has started in Sindh?**

**KR:** Actually there was an additional supply of gas from the sources that's why we had given uninterrupted supply of CNG for the consumers and that was a significant



relief. Another factor was falling oil prices due to which petrol consumption had been increased and demand of CNG had become decreased. Now the situation is a less supply of gas from the source due to which we have to resort load-shedding of CNG once again. It depends on supply and demand situation.

**EU: Some CNG stations are in practice to suspend sale of CNG at midnight in the city in the pre-**

**text of loss of gas pressure due to which consumers are suffering?**

**KR:** We are not aware of this type of situation as we have no such complaint. As far as gas pressure is concerned NG stations' complaint is false and baseless as we provide them gas through separate pipelines and there is no loss of pressure in gas supply. We are not the regulatory authority to punish such CNG stations but OGRA can punish errant CNG stations for their unprecedented act. ■

## All industries to be provided gas soon: MD SSGC

Managing Director Sui Southern Gas Company (SSGC) Khalid Rehman has assured business community that the government is seriously considering to provide natural gas to all industries across the country and the SSGC will promptly act for gas provision to industries.

MD SSGC said in a meeting at FPCCI that the system to deal with consumers is being revamped by the SSGC as we are public utility and we are working in this direction swiftly because we want to change the old mindset. He said that the SSGC is giving more importance to industries and all problems of industries regarding gas will be solved amicably.

Replying to a question raised by Khalid Tawab, he said that It is true that LNG price is lower than that of CNG prices but LNG price tariff is being decided by the federal government and the SSGC has no any role in this matter. However, being a public utility he will try his best to remove this anomaly in pricing formula but it will take some time.

He said that the FPCCI is playing leading role in economic activities in the coun-

try. The SSGC is trying to provide best possible facilities to consumers, he said adding that the decision over fixing Gas Infrastructure Development Cess (GIDC) and gas prices are in the domain of the federal government. He said that the CNG sector has been told to use either LNG or CNG by the government. However, the SSGC wants to re-fix gas prices with the consent of all the stake-holders.

Replying to a question regarding GIDC on cement sector raised by Vice President FPCCI Hanif Gohar, the MD SSGC said that there is no GIDC on the cement sector. He said that due to hard work of Association of Builders and Developers (ABAD) the government has lifted moratorium on gas connections to high-rise residential buildings. He also clarified that the cement industry is on the least priority of the SSGC.

He said that at present the SSGC has enough gas so we need not to go for gas load-shedding but with the rising of mercury we will be forced to adopt load-shedding the IPPs will began to use more gas for electricity generation.

Earlier welcoming the MD SSGC and other officials of the utility SVP FPCCI Khalid Tawab said that 'the private sector is trying its best to rise exports but due to unavailability of energy, industrialists are unable meet the export targets. He said that business community has welcomed the step of LNG import by the government as this step will go a long-way for the betterment of industry and the economy of the country but every industry and all stake-holders should be provided level-playing field and CNG rates should be brought at par with that of LNG.

Chairman of Sub-committee Abdul Sami Khan welcomed the guest and drawn his attention towards anomaly in prices of CNG and LNG as due to this anomaly CNG sector is facing huge loss.

VP FPCCI Hanif Gohar appreciated the efforts of Khalid Rehman for lifting moratorium on gas connections to high-rise buildings and reminded him that the notification regarding lifting of gas moratorium is missing residential societies as was promised. He also raised a question regarding GIDC on cement sector. ■

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# Man Turns the Earth into a Microwave-Oven

The change of climate on this planet is a fact. Though its causes are not those which the people are led to believe. However, its effects will be fatal.

We have been observing for years with increasing concern that the climate on this planet is changing. However, its causes still seem to be a mystery. Scientists agree hopefully with each other in one point—that it is getting warmer. As reasons for the warming, scientists have theories like for example the chemically caused decrease of the ozone-layer through propellant gases combined with an increase of irradiation from the sun, or the steady increase of carbon dioxide combined with a decrease in the emission radiation from the earth. Again other scientists claim that through the carbon dioxide the earth would tend to cool down because of decrease in irradiation from the sun. At the climate conferences they then oracle about which possibility could best be sold politically and could be made best acceptable to the public and at the same time demand least concessions from those responsible for causing it. Thus, they came to agree to talk about possible limitations regarding the carbon dioxide emissions.

However, even for controlling the supposed carbon dioxide problem they don't seem to be very serious. It becomes even

grotesque when having to acknowledge that developed nations may have the right to buy unused contingents from non-developed countries in order to artificially meet their quotas. Thus the climate conferences degrade themselves to the point that reach kindergarten level except, of course, that they cost a great deal more money. It might even be that these expensive conferences serve in reality very much different aims than normalizing the climate.

Some years ago a measurable warming of the earth was officially stated to be already about 0.7 degrees centigrade. WHO though, a year ago, calculated a warming of 3.5 degrees, however, in January 2001 they speak of about 6 degrees being expected. At the same time there are pictures coming to publication (Die Presse, January 13, 2001) with the intention of making people aware of the melting and thinning of the ice cape on the north pole and the growing open ice sea, along with an expected rise of sea levels by up to 88 cm. It is interesting to note that after years of fruitless scientific warnings of a climate change the politicians now seem all of a sudden very worried about it, as was never to be expected in the past. One gets the creeping feeling that there must be some politically manipulated panic-mongering behind it. We will come back to this in an other place.

But what value should be attached to today's politically-

## EU Report

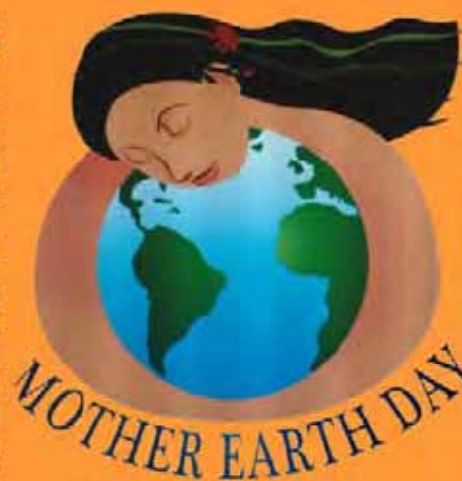


claimed causes of the climate change when this question is still argued by scientists who continue to contradict one another? Could the purpose of such arguments about carbon dioxide and propellant gases not just serve to put the real causes of the climate change in disguise? Why then has it become taboo to speak about the radioactive pollution of the ionosphere in which radioactive isotopes still are accumulated from man-made radioactive radiations which does not conform to nature and which hinders the reforming of ozone? Why is the legitimate, controversial discussion about mobile phones, against any common sense, so stubbornly one-sided and politically steered in favour of the money powers, despite longtime scientific proof of the cancerous and heating effects of microwaves? Why do the media not inform the public about the incredible threat of the HAARP-Project, the so-called "protecting device" of the American military in Alaska which is also based on microwave technology?

Ever since 1962 science has known about the detrimental effects of an ionized atmosphere in which no ozone can be formed. Because of this knowledge there followed in 1966 a moratorium on atom-testing which was broken by the French (Mururoa 1966-74 and again since 1986). But also the Americans and the Russians continued their subterranean testing during the moratorium. In addition all atom plants continuously emit isotopes into the atmosphere which contribute to the thinning of the ozone layer despite the moratorium. Nevertheless, in spite of this knowledge the main causes for the holes in the ozone layers are still the propellant gases, e.g. the fluorochlor carbon hydrogens, though such chemicals could never ever have the capability to thin out the ozone layer to such a degree. However, following such a thinning out of the ozone layer, an increased irradiation from the sun would logically have to be expected.

Also with the introduction of the wireless systems an increased warming has been recognized. By about 1920 the low frequency long waves had been introduced, followed in 1940 by the higher frequencies of the short waves and in about 1950 by the very much higher frequencies of the microwaves. Is there a causal connection between the wireless systems and the warming of the earth? The heating effect of the technical radiation can today be expected to be common knowledge. It is also known that the higher the frequencies the richer the energy and the higher the warming effect of the technical radiation (as in a microwave-oven). With the introduction of the high frequency mobile telephones, the satellites and the HAARP, it must therefore be expected that the entire atmosphere between the earth and the ionosphere, which begins approximately at 80-100 km above sea level, will be warmed in a similar way to that in microwave-ovens. The HAARP is even using focused and pulsed radiation with which the ionosphere literally is being melted into the form of a mirror from which the radiation can again be reflected back to earth for whatever purpose—could it be shadowing and mind-control of the people?

With the application of microwave technology not only the atmosphere is heated up, but also the waters of the seas. Thus new sea and air currents come into existence which become ever more noticeable and thus interfere with the climatic conditions on the earth. We must remember the ever growing typhoons and tornadoes going on new paths, the increasing floods and tidal waves, the changes of direction of the sea currents, the El Ninos, the increasing earth quakes, etc.



With this kind of heating up of the biosphere, we get exactly the same situation as in a microwave-oven except that the heating is not so intensive. The warming occurs by an unnatural process, by friction from within to without, and not by the gentle transformation of red light and conduction from without to within as happens in nature. The technical way by the unnatural radiation, e.g. the microwave, therefore, damages and destroys all substances and matters which are warmed in this way. They become poisonous, detrimental and cancerous. The body cannot restore them back into healthy states again. They lawfully have to be decomposed and discarded by the body. Likewise, warmth caused in such an unnatural way is also unhealthy, as for example the warmth

generated from infrared beamers.

Thus technically created warmth has not only an effect on the climate, but also, and in a far more disastrous and unpredictable way, on the health of nature, animals and mankind.

Already today, sicknesses occur which have no names yet, in the face of which doctors are perplexed and helpless, and for which no medicines are available and never will be. Such sicknesses are in a fearfully increasing trend. Only an intact nature can handle and heal such sicknesses which belong to the cancer-syndrome, if man gives nature a chance to do so. This, however, would mean that man realizes what, in fact, he is doing and stops his inconsiderate and fatal war against life, which he can never win. With this war man has been bringing cancer to this earth. And cancer is only curable when there are again natural conditions existent on the planet.

Apart of the cancerous and warmth-creating effects, the radiation also leads to chemical reactions e.g. in the seas. It causes an increased emission of chlorine from the sea salts which gets into the atmosphere and builds up acids, e.g. hydrochloric acid which does not exist normally in nature. Thus nature is getting over acidified.

This man-made technical radiation has, therefore, cancerous, acid forming and climate changing effects.

Despite this terrifying realization, industry continues, with political help, to spread such an infernal technical radiation globally. It is quite inconceivable what mankind will be bringing on itself and nature yet through such a life-disclaiming and spiritless attitude of our governments and industry leaders, unless common sense finally prevails. Is there not a saying that people have the governments they deserve? ■

### A valid reason...

A senior citizen drove his brand new Mercedes to 100 mph. looking in his rear view mirror, he saw a police car behind him. He floored it to 140, then 150, ... then 170, ... Suddenly he thought, "I'm too old for this nonsense!" So he pulled over to the side of the road and waited for the police car to catch up with him. The officer walked up to him, looked at his watch and said, "Sir, my shift ends in ten minutes. Today is Friday and I'm taking off for the weekend. If you can give me a good reason that I've never heard before for why you were speeding. I'll let U go." The Man looked very seriously at the police man, and replied:- "Years ago, my wife ran off with a policeman, I thought you were bringing her back." ■ The Cop left saying. Have a good day, Sir.

# KPK is producing 50,000 barrels per day oil - Raziuddin

KPK Oil and Gas Company has been formed to jack-up oil exploration in the province, says Muhammad Raziuddin, CEO, Khyber Pakhtunkhwa Oil and Gas Company



By Naeem Qureshi

**EU: What were the circumstances and need for establishing Khyber Pakhtunkhwa's own oil and gas company?**

**Raziuddin:** When situation in Khyber Pakhtunkhwa and adjoining FATA (federally administered tribal areas) got worsened in the wake of 9/11 as the province was considered on the frontline in the war against terrorism, the government in 2009 thought setting up such an organization. Such an organization was needed to act for coordination among government agencies concerned, civil administration, law-enforcement and security agencies, and private sector in the field of oil and gas exploration and production.

Such an organization conceived initially envisaged that the proposed company would work as a security conduit between the concerned private sector and total government. After the 18th Constitutional Amendment the aspects of economic activity along with initial mandate of security conduit was also conceived for the proposed organization. So the method was adopted for constituting a provincial level oil and gas company.

Then in 2013 when this company was eventually formed, its mandate included investment in oil and gas sector, rendering services, drilling, extraction, and sale of oil. Moreover, the company would also act as a conduit between all the oil and gas companies, which would work in KPK and all the official institutions concerned. Then the notifications were also issued both by provincial government and its Home Department that the company would also render services for any private sector entity venturing into oil and gas sector of



*As the government came forth, we have moved forward from red-tape to red carpet while giving an enabling environment to national and multinational companies for exploration and production of oil and gas in Khyber Pakhtunkhwa having abundance of such natural resources. This was stated by Chief Executive Officer of Khyber Pakhtunkhwa Oil and Gas Company Ltd (KPOGCL) Muhammad Raziuddin as Energy Update held a lengthy discussion with him regarding genesis of the provincial holding company he has been heading, its mandate, current and future projects for tapping on vast oil and gas reserves of the province. He says in an exclusive interview with Energy Update (EU) that..... important excerpts of the interview for our readers:*

KPK and resultantly faces law and order situation.

18th Constitutional Amendment the Petroleum policy adopted afterwards gave rights to provincial holding companies to do investments. So we have made investments in six petroleum concession blocks along with OGDCL (Oil and Gas Development Company Ltd) and Mari Gas. Then we do bid as any other normal company for rendering services in the oil and gas sector.

It is not the case that this company is working against other companies of the government in the oil and gas sector rather it is working along with them while creating a synergy in this regard.

Oil and gas reserves have been present here for last several millions of years but earlier only one company was tapping on them while now five companies are doing extraction of natural resources while each province is owning its own company. This would increase oil and gas production manifold.

The situation would also be helpful in generating employment opportunities while energy crisis would be eased out with pace of work getting five time accelerated.

We have created an enabling environment in KPK for doing work there at a time when situation was considered much worsened. In Pakistan there are present 31 rigs out of which 10 rigs have been working in KPK. The KPK is accounted for more than 50 per cent oil produced in the country. The oil production in KPK has been increased from 30,000 barrels to 50,000 barrels per day. The volume of gas production stands at 400 MMCFD (million cubic feet per day) increasing from 300 MMCFD as we have aimed to increase gas production to 600 MMCFD by year 2020

as this increase in gas production would benefit the entire country. Some 100 MMCFD increase in production of gas volume simply means 800 Megawatts generation of electricity. The production of LPG (liquefied petroleum gas) was 10 tons, which has been increased to 500 tons.

As we have moved forward from red-tape to red-carpet, we have been able to bring people from Poland to visit FATA while Russians have been doing geological mapping in FATA.

As geological mapping is being done both in KPK and FATA, there is a present crew of approximate 1000 people at each such site of mapping. So it is like a miracle, providing security to 1,000 people while also keeping them in a single camp. While in such a situation both local and foreigners have been living here for the purpose.

We have established for the purpose an energy security steering committee under the mandate given to us as this committee has the representation of all the agencies concerned including corps headquarters of army, inspector-general of provincial police force, Frontier Corps and other security and govt's agencies concerned.

#### **EU: Tell us about investment and work being done by your company.**

**Raziuddin:** We have already been doing investments and now we have applied as an operator to do work in the oil and gas sector, which is a major step for any energy sector company. As we entered in the market, several companies have become interested to do investment. We have applied to federal govt for NoCs. As soon as these NoCs were issued, these companies would be ready to do the investment.

At present 10 rigs are functional in our area while Rs four billion are initially spent on each of the concession. We have total 21 blocks as just two years back, work was being done in just two blocks while now work is in progress in all 21 blocks. The investment in this regard would reach up to Rs100 billion. The oil production will also increase by three fold while till year 2025 this production would increase by five to six times. Production of LPG would also increase by five times and as such the issue of energy security of the country would be resolved to a large extent through resources of KPK alone.

#### **EU: Don't you think this would lessen the role of federation in exploration and production of oil and gas?**

**Raziuddin:** I don't think it would cause to limit the role of federation rather a syn-

ergy would be created between the province and the centre. The OGDCL had not been able to do work in KPK for last ten years but as soon as we entered into partnership with them, they started working on an immediate basis. Work on 21 blocks could not take place for previous ten years but later these blocks were opened for work in just two years. For instance, one of the blocks Kohat had been acquired by OGDCL in 2005 but they were not able to do work in it. Now Chinese have been working in the Kohat block as seismic work has been completed while afterwards drilling would start there. This is our one major contribution in oil and gas sector.

#### **EU: Tell us about issues and challenges faced by your company in this regard?**

**Raziuddin:** The relevant laws have become too much old and as such Acts of 1923 and 1948 could not work in the present times. Changes should be incorpo-



rated in these laws. There has been present serious lack of capacity to do work in federal govt as for instance in any relevant section of Ministry of Petroleum, there should be present 40 people but instead only four persons are working. As soon as these people are inducted in the govt's service, the work would automatically get accelerated.

For instance we applied for a block Lakki in our area in May 2014 but we have not been given approval as drilling would have been started by now if approval was given to us on timely basis. So there are serious issues related to lack of manpower, lack of capacity, and lack of middle management in the federal agencies related to oil and gas sector.

#### **EU: Any programme your company has been working upon to create technical manpower and skilled labour?**

**Raziuddin:** At present 150 professionals have been working with us but very soon we would increase this number to over 300.

It should be mentioned here that there have been present 27 seepage sites in KPK from where oil and gas has been oozing out on natural basis without doing any effort. For this we have applied to federal government for grant of permission to us so that such oil and gas being oozing out and getting wasted, we harness would it and bring into the national system of gas. We have been doing negotiations in this regard for last five to six months and soon as we would get the NoC, we would bring these seepages online. These seepages are very shallow as a very special rig is required for them. Such a rig is neither present in the entire Pakistan nor in the Middle East. We have been constructing a rig of 500 horse power for the special task in collaboration with an engineering college. The designing and construction work on the

rig would start in next two months. These seepages could increase oil production by 400 barrels while 10-12 MMCFD gas volume would also be available. These seepages have been wasted for last 50 to 60 years and now we would bring these 27 seepages online.

#### **EU: Tell us about interference by bureaucracy in the working of your company.**

**Raziuddin:** We have been facing no interference of any kind either from any of the provincial ministers, chief secretary, or from the chief minister. We have our own board for supervision of work as majority members of the board are professionals from the private sector. Although secretaries of Finance and Energy departments are members of the board but rest of it comprises of professionals. We have been working in an improved and professional system where we act on independent basis with no interference or pressure from any min-

# Pakistan has no water security due to bad governance - Dr. Salman Shah

## Ministry of Water and Power has no concentration on water issues

"Pakistan has no water security as Pakistan has no basic water policy as this major resource is as much important for Pakistan as much oil is important for Saudi Arabia," said Dr. Salman Shah as Energy Update briefly interviewed former advisor to prime minister on Finance and Economic Affairs regarding water issues of the country.



destructive power of water. The term water security means that destruction caused by water should be prevented while all general benefits of water should be availed whether for health, production, agriculture, and for the industry.

We have established a ministry on water issues but this federal ministry is also

called water and power ministry. This ministry most of the times pursues issues related to power having no concentration at all on water issues. It is the matter of considering water a very important resource, which is vital for development and progress of the country. The misuse of water would continue till the time we gave such salience to the water resource. Moreover, in the present bleak scenario, inappropriate allocation of water would also continue causing further increase in poverty among general public in the country while we would con-

**By Engr. Nadeem Ashraf**

tinue to witness damages caused due to floods getting more widespread.

We all consider water as a free commodity while never considering it as an important resource even at the top level, so there is not much focus on this issue. We are not cognizant about the benefits the Pakistani economy could get due to improvement in water sector while even menace of poverty could be alleviated in the country. We are much focused on other issues as we give so much importance to production of electricity through coal, we give importance to construction of roads. But we have no focus on the water issue despite that it is like backbone of our economy. It is important to promote understanding among public that water resources are like the lifeline for Pakistan. Until and unless this message was spread among masses, no improvement could be brought in water affairs and related circumstances of the country. ■

ister, CM, or from chief secretary.  
**EU: Is partnership with international companies included in your mandate?**

**Raziuddin:** Yes this is included in our mandate. We have been working as a junior partner with different companies including multinationals. As soon as govt. would give us the NoC to do work in these five blocks, we would work as the senior partner in any of the joint ventures while other companies would work as junior partners. Then we would take the lead in such joint venture partnerships.

**EU: How much budget has been allocated for your company?**

**Raziuddin:** In the current year, the provincial govt allocated Rs3 billion budget for us while according to our outlay, this allocation would increase to Rs10 billion in next three years. This is a major step for any of the smaller provinces to reserve such a large allocation in their budget for oil and gas sector and energy cause of the entire country. With seismic work being done while work is also being carried out

in 10 rigs, some 7,000 to 8,000 job opportunities have been created in the province on direct or indirect basis. These jobs on direct basis would increase to 21,000 as soon as we would get the requisite NoC from the federal govt.

**EU: Do you have mandate to do power sector projects?**

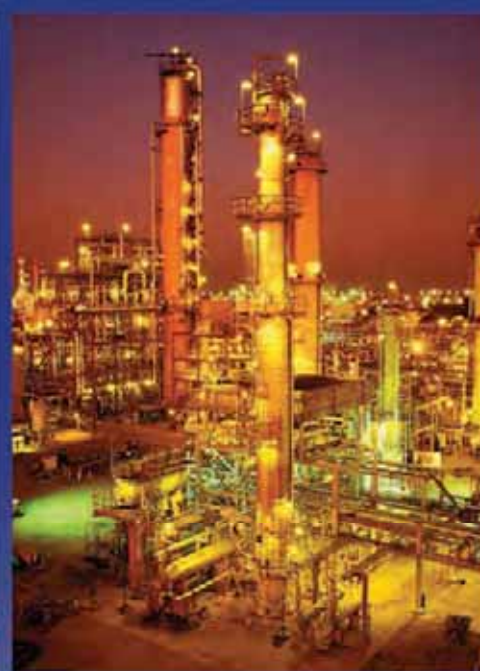
**Raziuddin:** Under Article-158 of the Constitution, Economic Coordination Committee and Council for Common Interests allocated for us 100 MMCFD gas for doing power production only. The KPKOGCI has been given the mandate for setting up such power plants. We are going to Sialkot to address businessmen community there in order to persuade them to invest in power sector of KPK and wheel with them the electricity they are going to produce to destination of their own choice. We have organized road shows for our company in Dubai. We have been expecting in total Rs40 billion investment from Qatar, Dubai, and Abu Dhabi.

For bringing home such investment, we are going to establish a KPK Energy Asset Management Company as per the require-

ments of Securities and Exchange Commission of Pakistan. This would attract foreign direct investment for oil, gas, and hydro-power projects of KPK. Such a step would be taken for the first time in Pakistan as a province is going to establish an asset management company of its own.

**EU: What about CSR and environment related activities of your company?**

**Raziuddin:** Following suo-moto proceedings by Supreme Court in a related case, royalty, production bonus and its spending related to oil and gas sector of Pakistan could be viewed on website of our company. The amount under the head of royalty is given to deputy-commissioner of the district. We have been following procedure of its spending so to stop its wasteful spending. We have been making general public of the areas concerned more aware in this regard. We have established an authority to keep checks on such spending related to royalty and production bonus. This authority would ensure public representation for doing such spending in best of the public interest. ■



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# Wind and solar have grown seemingly unstoppable

EU Report

**W**hile two years of crashing prices for oil, natural gas, and coal triggered dramatic downsizing in those industries, renewables have been thriving. Clean energy investment broke new records in 2015 and is now seeing twice as much global funding as fossil fuels.

One reason is that renewable energy is becoming ever cheaper to produce. Recent solar and wind auctions in Mexico and Morocco ended with winning bids from companies that promised to produce electricity at the cheapest rate, from any source, anywhere in the world, said Michael Liebreich, chairman of the advisory board for Bloomberg New Energy Finance (BNEF).

"We're in a low-cost-of-oil environment for the foreseeable future," Liebreich said during his keynote address at the BNEF Summit in New York on Tuesday. "Did that stop renewable energy investment? Not at all."

Here's what's shaping power markets, in six charts from BNEF: Government subsidies have helped wind and solar get a foothold in global power markets, but economies of scale are the true driver of falling prices: The cost of solar power has fallen to 1/150th of its level in the 1970s, while the total amount of installed solar has soared 115,000-fold.

The reason solar-power generation will increasingly dominate: It's a technology, not a fuel. As such, efficiency increases and prices fall as time goes on. What's more, the price of batteries to store solar power when the sun isn't shining is falling in a similarly stunning arc.

Just since 2000, the amount of global electricity produced by solar power has doubled seven times over. Even wind power, which was already established, doubled four times over the same period. For the first time, the two forms of renewable energy are beginning to compete head-to-head on price and annual investment.

Meanwhile, fossil fuels have been getting killed by falling prices and, more recently, declining investment. It started with coal—it used to be that lower prices increased demand for fossil

fuels, but coal prices apparently can't fall fast enough. Richer OECD (Organisation for Economic Co-operation and Development) countries have been reducing demand for almost a decade. In China, coal power has also flattened. Only developing countries with rapidly expanding energy demands are still adding coal, though at a slowing rate.

What does that look like on a country-level basis? The world's first coal superpower, the U.K., now produces less power from coal than it has since at least 1850.

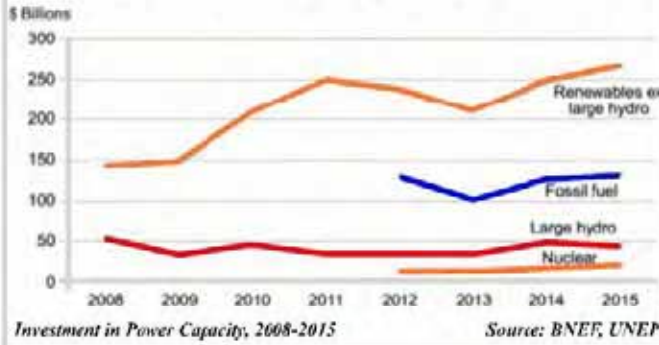
More recently it's the oil and gas industry that's been under attack. Prices have tumbled and investments have started drying up. The number of oil rigs active in the U.S. fell last month to the lowest since records began in the 1940s. Producers—from tiny frontier drillers to massive petrol-producing nation-states—are creeping ever closer to insolvency.

"What we're talking about is miscalculation of risk," said BNEF's Liebreich. "We're talking about a business model that is predicated on never-ending growth, a business model that is predicated on being able to find unlimited supplies of capital."

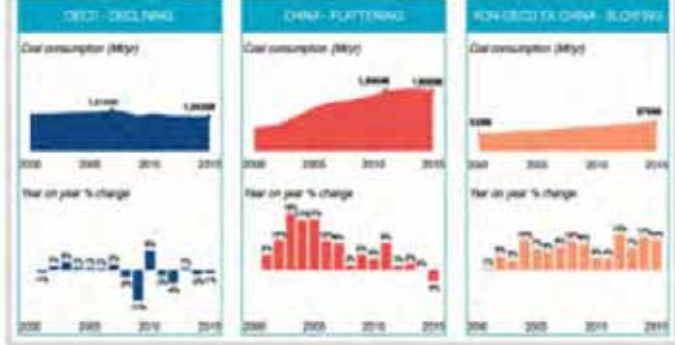
The chart below shows independent oil producers and their ability to pay their debt. The pink quadrant at the bottom right represents the greatest threat to a company's solvency. By 2015, that quadrant starts to fill up, and Liebreich warned, "It's going to get uglier."

Oil and gas woes are driven less by renewables than by a mismatch of too much supply and too little demand. But with

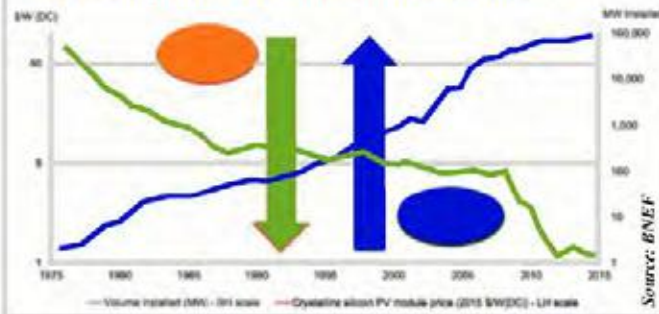
### Renewables are beating fossil fuels 2 to 1



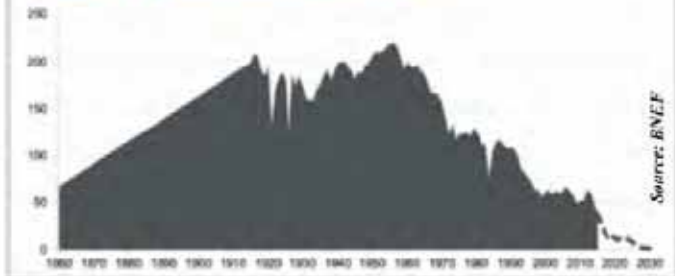
### Coal phases out in wealthier countries first



### As solar prices fall, installations boom



### Canary in the coal mine: U.K.



### An industry that keeps doubling in size



renewable energy expanding at record rates and with more efficient cars-including all-electric vehicles-siphoning off oil profits at the margins, the fossil-fuel insolvency zone is only going to get more crowded, according to BNEF. Natural gas will still be needed for when the sun isn't shining and the wind isn't blowing, but even that will change as utility scale batteries grow cheaper.

The best minds in energy keep underestimating what solar and wind can do. Since 2000, the International Energy Agency has raised its long-term solar forecast 14 times and its wind forecast five times. Every time global wind power doubles, there's a 19 percent drop in cost, according to BNEF, and every time solar power doubles, costs fall 24 percent.

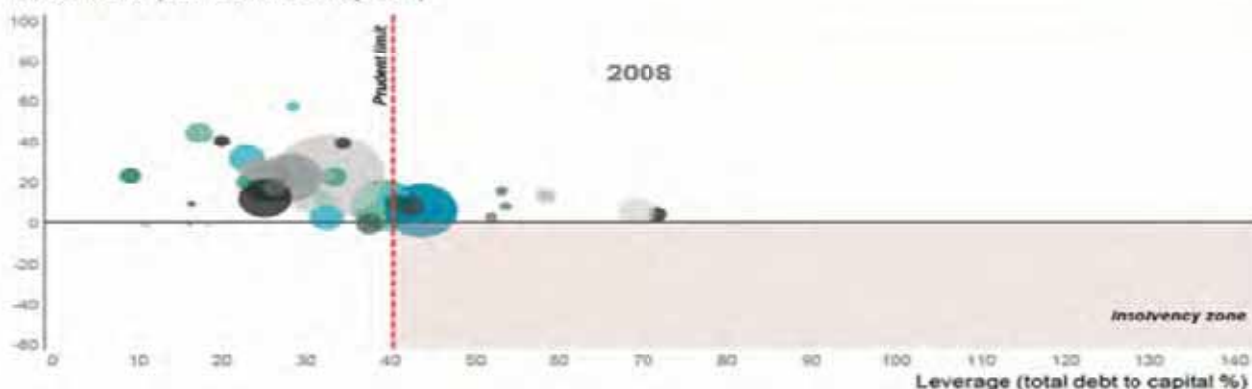
And while BNEF says the shift to renewable energy isn't happening fast enough to avoid the catastrophic legacy of fossil-fuel dependence-climate change-it's definitely happening. ■

## U.S. oil patch heads to the insolvency zone

### US INDEPENDENT OIL & GAS PRODUCER SOLVENCY RATIOS

Bloomberg  
BLOOMBERG FINANCE

Interest cover (EBITDA/Interest expense)



Notes: size of bubbles represents net debt position for each company

Source: Bloomberg Intelligence, Bloomberg New Energy Finance



# Pakistan is yet to come out with an effective water-storage strategy: Dr Pervez Amir

**We cannot regulate water as we have not built any new water storage capacity in 49 years, says Water Specialist**



*"For the last 49 years Pakistan has not developed any new capacity to store water so when we don't have any storage capacity then how we can regulate water while dealing very delicate issues on water with our neighbour India as nations build their capacity to store water through dams, barrages, and underground storage", renowned expert of water and environmental issues Dr. Pervaiz Amir stated this as Energy Update interviewed him regarding water issues and crisis-like situation being faced by Pakistan in water and energy sector. Here are some important excerpts of his interview:*

**By Naeem Qureshi**

**Energy Update: What is the current water situation of Pakistan?**

**Dr. Pervaiz Amir:** The average availability of water is getting lessened in Pakistan day by day. When Pakistan and India came into being, some 3,000 cubic metres water was available to us, as this availability of water has now decreased to the level of 1,000 cubic metres as it would keep on decreasing. In fact it is not water availability getting decreased in Pakistan but instead pressure of population keep on increasing in the country. We have to manage this situation.

Pakistan is among the countries encountered with highly stressed environment. Basically all we have is a desert-like area in the country as Indus River is criss-crossing land of the country from its middle owing to which we have been maintaining maximum number of human population here. Jordan and rest of the Middle East is facing more stressed environment as compared to that of Pakistan. But they have been still surviving. But this popular notion that we would not be able to survive without water is a far-fetched notion as fear in this regard is unnecessary.

**EU: This is being said that next ten years were important for Pakistan regarding water situation, your comments please on the issue?**

**Dr. Amir:** If India after building three dams in the area on the upper side of geography of Pakistan and then do nothing except one thing i.e. to keep filling these dams. We should also keep in mind that around one-half-a-year to two years are required to fill a single dam. Now keep in mind that India will do filling of these dams over Indus River and Chenab River and afterwards there would be no flow of water downwards towards Pakistan. Such a situation would cause serious agony here in Pakistan. Now this would be a trans-boundary issue, which could not be

**"India will do filling of dams over Indus and Chenab Rivers and afterwards there would be no flow of water downwards towards Pakistan"**

challenged anywhere on international basis. If India builds the dam there, it has to fill it also.

Underground storage is one such method of building capacity to store water that is practiced the world over. We don't have such ability and money to extract the underground stored water that shows our weakness. In countries where there is gravitational flow of water, have mountains, or situated in similar region, it is compulsory for them to store water. There was 55 million acres feet water (MAF) flowed in the heavy floods of 2010 in the country and if I do economic translation of 55 MAF water then it would come around 55 billion US Dollars. Such massive quantity of water could be stored if we would have built proper structures for the purposes of storage.

It is now up to Pakistan to take the decision as the country is at the crossroads as it has to decide, which way to go. We have an enemy, who desires too see our destruction. For such a cause this enemy don't ever need weapons or nuclear power as it would only be required to take advantage of our serious inaction on the water issue. The Pakistani nation has to take the decision whether or not they want to do progress on basis of water as it would be an important political and social decision for the country.

**EU: What is the way out from such a problematic situation faced by the country?**

**Dr Amir:** We have to make clear our mechanism of decision making. In my

viewpoint we would become a water secured nation when we would be having minimum carry over water storage capacity of 200 days. At present this carry over capacity of Pakistan is stated to be of 30 days but in fact it is not more than of 22 days. In the United States this capacity stands between 600 to 700 days while Australia despite having similar arid conditions like Pakistan, has developed carry over capacity lasting up to 500 to 600 days. In case there is no rain in Egypt, the country could survive for up to three-and-a-half years. In case there is no rain occurrence in Pakistan, we could not survive at all as our carry over water capacity could not last more than 22 days.

Earlier, there were present strong institutions in the country like for instance Wapda (Water and Power Development Authority), which had been given mandate for doing water-related development; now this institution has become a slow-moving and weak organization. We produce the

best engineers, best professionals, and best economists but their services are not being utilized here in the country.

We have to make it sure that China as part of development of China-Pakistan Economic Corridor (CPEC) should make us a water and power secured nation on reciprocal basis as we are offering too many things to China under the CPEC project. China should build for us here four proposed dams to make our country water and power secured.

When I talk about building storage capacity, I don't just talk about making us water secured as constructing such capacity should render us power secured also as electricity is the main thing for a country.

**EU: What is your analysis about water and energy situation and issues of Pakistan?**

**Dr. Amir:** The situation in power and

water sector prevailing in the country is similar to symptoms of a nation, which is not taking the required decisions at the right time. Pakistan has not been facing shortage of finances as the country is facing the crisis of decision-making. Doing water related projects has always been politically unattractive as it takes around six to ten years to build water storage structures. When the previous such structures were built in Pakistan, the army was running affairs of the country. For building such national assets, the decisions should be taken collectively by a forum, having representations of army, civil society, and government all being the relevant institutions.

Decisions for doing such important national projects should be purely done by us only as such decisions should not be taken by international financial institutions like the World Bank or Asian Development Bank. ■

## Launch of CASA 1000 Power Project

Prime Minister Muhammad Nawaz Sharif has recently visited Dushanbe, Tajikistan for 2-day official visit. The visit was taking place at the invitation of President of Tajikistan Emomali Rahmon.

Minister for Water and Power Khawaja Asif, Defense, Special Assistant to the Prime Minister on Foreign Affairs Syed Tariq Fatemi and senior officials accompanied the Prime Minister.

Prime Minister has cordially received at the airport by Deputy Prime Minister of Tajikistan Mr. Azim Ibrohim, Minister of Foreign Affairs Mr. Sirodjidin Aslov, Deputy Mayor of Dushanbe Mr. Nazarov Burhon and Ambassador of Tajikistan to Pakistan, Sherali S. Jononov.

Prime Minister received guard of honor at Palace of Nation (President House, Tajikistan). Prime Minister, Muhammad Nawaz Sharif had a one-on-one meeting with President of Tajikistan, Mr. Emomali Rahmon at Palace of Nation.

The leaders from participating countries and other stakeholders are also expected to participate in the launching ceremony of CASA 1000.

Under CASA 1000 Project Tajikistan and Kyrgyzstan will supply 1300 MW of electricity to Pakistan (1000 MW) and Afghanistan (300 MW) during the summer season.

The project is expected to be completed by 2018. The electricity purchased



under this project will help mitigate electricity deficit of Pakistan in summer season. In this period there is surplus hydro power in Tajikistan and thus the project will create a win win situation for all.

CASA 1000 Project is a flagship project and the first of its kind that will link Pakistan, Afghanistan, Tajikistan and Kyrgyzstan electricity grid.

The project will go a long way in regional integration which is very important for economic and social development of the region, the Foreign Office said.

The Prime Minister will also have a bilateral meeting with the President of Tajikistan.

The whole range of bilateral matters including trade energy, cooperation and defense cooperation will be discussed.

The leaders will also exchange views on matters relating to regional and international issues of mutual interest

Pakistan has deep historical bonds with central Asian region. I wish to transform these cordial ties into a strong economic partnership. The main thrust of our engagement is on trade, investment, energy, connectivity and culture and Tajikistan has a place of prominence in our CARs policy. Prime Minister said.

Prime Minister emphasized on the trade relations with Tajikistan and said that both countries should continue to pursue the trilateral Transit Trade Agreement with Afghanistan.

Prime Minister further said that efforts to connect both countries through the land route (Chitral-Ishkashim), via the Wakhan Corridor (in Afghanistan) must continue.

Prime Minister also extended invitation to Mr. Emomali Rahmon, President of Tajikistan for a state visit to Pakistan.

Prime Minister also witnessed the five MOUs /Agreements signed between the two countries that included Agreement on formation of a joint working Group combating terrorism, MoU between Ministries of Textile of the two countries, MoU on cooperation in the field of vocational training, MoU between National Library of Tajikistan and National Library of Pakistan and MoU between the Government of Tajikistan and National University of Modern Languages regarding training of the Tajik Diplomats. ■

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## 6th Fire Safety & Security Convention and Awards 2016

# Sindh govt to start awareness of Fire safety & security in all cities

Sindh government will enlist help and services of private sector and its relevant associations to ensure fire protection and related emergency measures at major cities, public cities and shrines situated across the province.

This was stated by Advisor to Sindh chief minister on Auqaf and Religious Affairs Dr. Abdul Qayoom Soomro while being chief guest at 6th Fire Safety & Security Awards and Convention-2016 held the other day.

The National Forum for Environment and Health (NFEH) in collaboration with Fire Protection Association of Pakistan and All Pakistan Security Association organized the programme in which 33 companies were given awards for adopting best in-house fire protection practices and measures.

Dr. Soomro said that though Religious Affairs and Auqaf department of provincial govt headed by him had no direct relevance to subject of fire safety but his department would give due value to the issue as it would ensure protection to human life and belongings, which is also the centrepiece of teachings of Islam

He advised organizers of the convention to continue with their good efforts for cause of fire protection and safety as in next year his Religious Affairs department would fully assist organizing such a moot on the important civic issue.

He appreciated the services being rendered by non-governmental and private sector organizations for fire protection and safety in society saying that their services were much of superior and greater value than that of the govt in fire fighting operations.

The CM's advisor said that government had all the resolve to eliminate terrorism from the country so that industries could be revived for economic growth of the country.

He said the government's drive to eliminate terrorism and lawlessness had achieved up to 90 per cent success in Sindh in general and in Karachi particularly so that business and industrial activities could be promoted.

Earlier in his speech, Dr. Mirza Ikhtiar Baig, former advisor to prime minister on textiles, lamented that Pakistan had no industrial safety laws on occupational safety as recently admitted by the





Federal Human Resource minister in National Assembly.

"If you recalled Supreme Court has directed provincial and federal governments to draft a bill in this regard after evolving consensus but since no time frame was given, this legislation is still pending".

He said that industrial accidents and fire incidents had become an everyday routine in most industrial cities of Pakistan. Absence of precautionary measures and lack of robust regulatory systems has put the lives of labourers in permanent danger, said Dr. Baig.

"The worst disaster in history of Pakistan took place on September 11, 2012 in Baldia Town Karachi at Ali Enterprises Factory. Some 259 workers, including women and youngsters died because they were trapped inside the locked premises," said the former PM's advisor.

He said that occurrence of Industrial disasters and the subsequent loss of human lives were attributed to insufficient safety precautions on the part of factory owners. Some industrialists avoid investment in fire extinguishing equipment in order to save costs at the expense of the lives of workers, he added.

President Super Highway Trade Association of Industry Mehtab Uddin Chawla lamented that industrial zone in the city he represented had been established some 25 to 30 years back but the area and its surrounding localities including Sohrab Goth and Gulshan-e-Maymar lacked any fire station.

He said that a number of emergency services were operating in the city but as they were only maintain a fleet of ambulances as number of ambulances with voluntary organizations could be curtailed to half to have a few fire tenders desperately needed here.

He said that industrialists could invest in firefighting equipment at their factories but even then such emergency

arrangements could provide protection up to maximum one hour in case of any major fire disaster. Wajahat Ullah Khan, director Fire Protection Association of Pakistan, said that firefight equipment and emergency exit provided at any industrial place or workplace building always remain in the functional state and be accessible to all without any physical obstruction.

Waseem Vohra, former vice-president of Federation of Pakistan Chambers of Commerce & Industry, said that emergency drill for swift evacuation of people from a building in case of a disaster should be a compulsory feature at every national institution including schools and colleges.

Hussain Sabz Ali, a vigilance and fire safety official at Habib Bank, said that in case of earthquake, people inside a high-rise building especially at its upper floors should not rush outside due to very limited reaction time. Instead they should duck beneath tables or similar furniture available in the room to keep sensitive parts of their body safe against any falling debris, he said. Later, chief guest gave away Fire Safety

Awards among the successful companies.

Naeem Qureshi President NFEH stressed on continue awareness of fire and safety for public, NGO's, builders, industry and corporate sector.

Brig. © Rashid Ali Malik President-APSAA, Fawad Bari CEO-Haseen Habib, Waseem Vohra Ex-President FPCCI, Kanwar Waseem Secretary-Red Crescent, Imran Taj CEO-Envirograf, Masood Alam Municipal Commissioner-Karachi, Rehmatullah Shaikh DMC East Administrator and others spoke on the occasion. ■



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# Wind energy projects of 500 MW to be initiated soon

**Naheed Memon,  
SBI Chairperson**

By M Nceem Qureshi

## Energy Update: Tell us about progress made by Sindh government in promoting power projects using renewable sources of energy?

**Naheed Memon:** Sindh government has done the planning that 530 Megawatts of electricity would be available to the national grid produced through wind power till June, 2016. Some 35 forthcoming projects have been allotted land of 22 acres to 23 acres area each in wind corridors of the province. This land allotment has been made with the vision that majority of these prospective wind energy projects would get commissioned till year 2018 as per the national power policy.

We would shortly issue LoIs (letters of Intent) to 10 more wind power projects that would cumulatively produce 500 MWs electricity. We have had planning in mind to materialize wind power projects in the province that would be producing in total around 2500 MWs electricity as per our vision.

In this regard, Sindh gov't is encouraging small scale businesses related to energy sector, which are planning to produce from 25 MWs to 100 MWs electricity using wind power.

Under its land allotment policy, Sindh government is giving its land up to 23 acres area in wind corridor under a 30 years lease to prospective energy sector companies to do wind power projects.

Now we are doing negotiations with federal gov't that those energy sector companies, which have been allotted land to do wind power projects should be provided grid codes from National Transmission & Despatch Company (NTDC) so that power purchase agreements of such projects would become bankable on paper at least.

## EU: What are other steps taken by Sindh gov't for the cause of power generation on its own?

**Ms. Memon:** Sindh gov't has taken the revolutionary step of establishing its own transmission & despatch company. Sindh government has decided to constitute its own transmission and despatch company for laying on initial basis 85 kilometres-long power transmission line from Nooriabad gas-powered power generation project being undertaken by provincial gov't, till grid station of K-Electric. Sindh government decided to form such a power sector company on its own when it sensed the situation that it could not rely anymore on the system of NTDC for transmitting to national grid the additional electricity it is going to produce.

In this regard, Sindh government will enter into an agreement with K-Electric so that

*Sindh government is the first gov't in the country, which has its own proper land allotment policy for doing wind power projects in the province. The policy of Sindh government to promote wind power is very open: It is offering the land, it is giving all the required guarantees and concessions while it is also taking all the risk.*

*This was stated by Chairperson of Sindh Board of Investment (SBI) Naheed Memon as editorial team of Energy Update recently interviewed the SBI chief in her office. In the interview, SBI chief was questioned to know in detail vision of present provincial gov't to promote business, industrial, and economic activities in the province with special emphasis on energy sector given power crisis persisting in the country. Here are important excerpts of interview of SBI's chairperson:*

100 MWs electricity generated through Noorabad power plant would be transmitted to be used by electricity system of K-Electric.

Moreover, the contribution of Sindh government for coal-based power generation is quite noble. Sindh govt is one of the partners in Sindh Engro Coal Mining Company, which is going to produce 660 MWs electricity in Block-II of Thar as this project is soon going to achieve financial close.

**EU: What steps in general SBI has been taking for promotion of business and economic activities in the province?**

**Ms. Memon:** For the sake of attracting new investment and facilitating existing and upcoming businesses we have been closely working with relevant bodies and organizations including TDAP (Trade Development Authority of Pakistan), KCCI (Karachi Chamber of Commerce & Industry), FPCCI (Federation of Pakistan Chambers of Commerce & Industry), Overseas Investors' Chamber of Commerce & Industry etc. Such kind of linkages have been helpful in removing barriers in the passage of prospective investors and businessmen to do business in the province. In this regard, I have requested Sindh chief minister to visit KATI (Korangi Association of Trade & Industry) so that we could better now about issues, investment and expansion plans of some 4,500 industrialist-members of the association.

Being in SBI, we are also looking after the needs of special industrial zones and industrial parks in the province including Khairpur industrial zone. We being at the SBI are also custodians of several other business and industry-related projects like Special Economic Zone Authority of whose Sindh chief minister is the chairman and I am the vice-chairperson on ex-officio basis.

**EU: Any particular case you have been handling in pursuit of mandate of SBI?**

**Ms. Memon:** While we are here to fully support and facilitate whosoever is planning to invest in proposed industrial parks in Sindh. We have come across the particular instance of Korangi Industrial Park where 55 applications of the prospective industrialists have been in the pipeline awaiting approval as proposed building plans of these upcoming industrial units were not approved yet.

We decided to fully support the case although it is not our jurisdiction as the case comes under the authority of the office of director-general of Military Land and cantonments in Islamabad as the area of industrial park falls under the jurisdiction



*Naheed Memon is the Chairperson of Sindh Board of Investment. She is also an adjunct faculty at IBA. Before assuming the responsibility of Chairperson she set up and managed a public policy think tank as its CEO. Naheed is also a Director in her family owned group of companies based in Karachi. In London she worked for Bank of America Merrill Lynch on the asset management side and serviced institutional clients. She also she set up a management consultancy firm in London which serviced clients such as PwC, Foreign High Commissions, and Oil and Gas companies. She holds a MSc. in Economics from Birkbeck College, London and an MBA from Imperial College, London.*

of Cantonment Board Korangi.

For this cause we have done correspondence with office of military land and cantonments so that these 55 applications seeking permission to start business in industrial park get cleared. These 55 applications of prospective industrialists have been stuck since last two-and-half years as these applications getting processed means that industrial park in Korangi would finally start functioning.

**EU: Any particular area SBI has been focusing upon in promotion of its cause?**

**Ms. Memon:** We have special focus on promotion and upgrading of agriculture-based businesses in the province as we are using some strategic facilities and funds available to us for this cause. Whether it is the case of pulping units or upgrading the rice mills in the province, we are fully focused on such issues. In this regard, I recently met managing-director of Nestle and regional president of Muller & Phipps, which is an American food distribution company.

As Sindh basically has rural economy so it is my prime objective to drive by any mean investment to agriculture and related sector of agri-based processing industries. I am also doing work to establish linkages between farmers and local businesses for a symbiotic relationship between the two sectors.

**EU: Any particular effort SBI has been doing to facilitate process of doing business in the province?**

**Ms. Memon:** We at the SBI are the custodians of the project here is Sindh, which on overall basis is being collectively done by provinces and federal governments to improve ranking of Pakistan on World Bank's list of countries ranked on basis of "Ease of doing business".

In light of 18th Constitutional Amendment, we are looking after the provincial indicators related to the list of Ease of doing business. In this regard, different relevant agencies like Sindh Revenue Board, Sindh Building Control Authority, Excise & Taxation Department and other departments are being approached to bring reform in their working so that they speed up cases and applications related to existing and new businesses in the province.

For further this cause, Board of Investment in Islamabad is closely working with the provinces while in case of Sindh, its chief secretary here has been heading a special focused group tasked with easing up the process of doing business in the province. ■

# Industrial Internet Software is Helping Solve Pakistan's Electricity Shortage

By Abeer Masood

Sahid Abdullah has been in business long enough to spot a good opportunity. Abdullah is the president of the Sapphire Group, one of Pakistan's largest textile companies with 16,000 employees, \$800 million in annual revenues, and a global base of customers. But when his country started running out of electricity a decade ago, he switched gears and built a large power plant in Muridke, just north of Pakistan's second largest city Lahore. "Moving into power generation was a step that made sense," he says. "Not just from a business perspective, but also in terms of realizing our mission and contributing to the development of the communities in which we work and live."

Abdullah's calculation was simple. Lack of power is one of Pakistan's burning needs. Electricity consumption is growing by close to 8 percent, and peak power demand exceeds supply by more than 4 gigawatts (GW), a massive amount. But his journey was far from easy.

The Muridke Power Plant generates 234 megawatts (MW), but from the start in 2010 it grappled with fluctuating fuel costs, which make up some 85 percent of its operating expenses. Fuel savings of just 1 percent could boost its net income by as much as 20 percent, but the downside was equally steep.

Abdullah started looking for a solution and learned about the Industrial Internet, a digital network connecting, collecting and analyzing data from sensors installed inside machines, including turbines that produce electricity. "His answer was in numbers," says Azeez Mohammed, president and CEO of GE Power Generation Services in the Middle East and Africa, who started talking to Abdullah in 2014.

Mohammed proposed to embed hundreds of sensors and other digital instruments in Abdullah's turbines, analyze the

data they collect, and use the information to improve the plant's performance, optimize production and reduce unplanned downtime. But Abdullah was cautious. "The last thing I wanted was to be a guinea pig in GE's 'first-of-its-kind' experiment," he laughs.

GE's Mohammed, however, was convinced that the project would work. So much so that he proposed Abdullah a deal: GE would pay for the sensors and the software and then split all benefits with Sapphire under a win-win scenario.

With Abdullah on board, GE dispatched a team of technicians and software engineers to Muridke. They spent a month developing a self-learning analytical model based on huge amounts of data from the gas turbines and other plant assets at Sapphire. The model allowed them to predict changes in efficiency, electricity output and other outcomes under different production scenarios without having to make any changes to the equipment itself.

In October 2014 the team connected the system to the plant's two GE 6FA gas turbines, which GE engineers specifically designed with the Industrial Internet in mind. By December that year, the Sapphire plant has started seeing the benefits.

The heart of the system is GE's Predix software platform and an advanced analytics application called Asset Performance Management (APM). The app allows industrial assets talk seamlessly with each other in a secure manner, and uses analytics to make the equipment more efficient.

The GE team is now working to link power plant's steam turbine to system. The software is so versatile it doesn't mind that turbine was the Czech industrial company Skoda, not GE. GE estimates the Industrial Internet could bring the Muridke Power Plant millions of dollars in benefits over the next decade.

Others in Pakistan will benefit from the system as well. Electricity shortages, known locally as 'load-shedding', are an everyday reality that families and businesses have

had to learn to cope with them. "Our entire daily routine, from the time we sit down to help our children with their homework to the time we iron our clothes, is determined by the load-shedding schedule," says Zeba Zahid, a mother of three and resident of Lahore, one of the cities that benefits from the power produced at the Muridke Power Plant. "It's especially difficult to deal with in the summer, when peak temperatures cross 45 degrees Celsius [113 Fahrenheit] and load-shedding often exceeds 12 hours a day."

GE estimates that making Pakistan's power plants smarter with data analytics and software could add 600 megawatts to the country's power output without building a single new plant. That's comparable to building an entirely new power plant.

Abdullah feels that he made a smart choice. "As far as I'm concerned, the benefits offered by Industrial Internet based solutions are real and immediate," he says. "This is an opportunity that Sapphire and Pakistan cannot afford to miss out on." ■



## Alternative energy sector is all set to contribute towards govt's cause to end energy crisis in the country: AEDB Chief Amjad Ali Awan



*We fully stand with the government as the alternative energy sector would fully contribute towards the cause of elimination of energy crisis in the country. We would contribute towards the national energy mix as much as the government allowed us being the share of alternative energy sector, says Chief Executive Officer of Alternative Energy Development Board (AEDB) Amjad Ali Awan stated this as editorial team of Energy Update recently interviewed him in detail about current and future plans of his board to promote scope and use of renewable energy in the country. Here are some important excerpts of his interview:*

**By Naeem Qureshi**

### **Energy Update: What modernization you have brought into working of AEDB?**

**Amjad Ali Awan:** The way we have done our marketing, it has generated good response from within and outside the country on basis of existing wind and solar energy tariff.

Now we through assistance of World Bank have been doing land mapping of three key alternative technologies i.e. solar, wind, and bio-gas, having been used in the country. This mapping is being done through ESMAP (Energy Sector Management Assistance Programme) through support of World Bank

At the moment all data stations related to solar energy have started working as they have started receiving data related to potential of solar energy. Now we can easily present this data whenever any prospective investor comes to us with plans to invest in solar energy sector. We have also been enforcing globally acceptable standards for technologies being used for utilizing resource of solar energy in the country as these standards would be enforced in two months' time.

Now all this is being done at a time when we are switching to the system of Net metering along with standardization in use of technology in alternative energy sector.

Moreover, now for the first time also, we have been doing coordination with NTDC (National Transmission & Despatch Company) on a monthly basis so that our deadlines in bringing about new projects should match deadlines of NTDC for the same purpose.

### **EU: Tell us about your viewpoint regarding usage of alternative energy?**

**Awan:** If you do cost comparison of alternative energy projects, they are at par with conventional technologies of power generation as there is no extended supply chain component involved in doing projects of renewable energy. So risk factor is less while doing alternative energy projects.

Then there is risk of intermittence involved in relying on renewable energy technologies as such a risk could easily be digested through adding option of solar into wind technology and through a number of engineering interventions.

### **EU: Please tell us about current and future projects of NTDC?**

**Awan:** As far as wind energy is concerned, some nine projects having generation capacity of 479 Megawatts have achieved financial close. Some 12 twelve projects of 562.2 MWs capacity are at different stages of implementation as these projects are likely to be commissioned by 2017-18.

About solar technology, 100 MWs generated through solar power have already come into the system while solar projects of 300 MWs capacity have attained the financial close. One project is going through testing phase. Rest of the projects related to use of solar power are still at proposal stage.

Now from our side there is no response shortfall in doing alternative energy projects in the country as we would be doing as much to generate renewable energy as much the govt would give us access to transmission line.

We have informed the outside world about our policy goals and seriousness in doing projects of renewable energy. We have also informed the world about the incentives we are offering on doing projects of electricity production on basis of alternative energy. As in this regard, our tariff for such projects keeps on fluctuating but we are ensuring 17 per cent to 18 per cent RoE (return on equity) to the prospective investors for alternative energy sector. Moreover, all our policies, procedures, and processes are fully bankable while we are also doing mapping for the renewable energy sector.

### **EU: So far how much investment you have been able to attract for the renewable energy sector?**

**Awan:** We have been facing no shortfall of response owing to the tariff issue as we have been getting response on equal basis from prestigious prospective investors

from the outside world as well as we are getting positive response from the local investors as well.

### EU: What is going on in other sectors of alternative energy?

**Awan:** We have with us the third largest sector in terms of production of alternative energy i.e. bio-mass as four projects related to this sector have achieved CoD (commercial operation date) including two projects of 26.35 MWs and one project of 30 MWs capacity. But one should keep in mind that bio-mass sector is not just limited to bio-gas, as we are also rich in other forms of feedstock like sugar cane trash, cotton stock, and rice husk, which could also be used for power generation on ample basis. The good thing is that the we have included above forms of feedstock in the process of mapping we have been doing through ESMAP, so that their potential for power generation could also be assessed. The other sector whose potential we could also use is small hydropower projects as we have with us mandate for tapping potential of this sector also. We would issue LoIs (letters of interest) for such projects also.

In this regard, some projects have been in the pipeline as these projects have been initiated under PPIB (Private Power & Infrastructure Board). We are also in touch with governments of Azad Kashmir and Khyber Pakhtunkhwa where there have been potential present for doing such small hydropower projects.

### EU: What steps you have taken to facilitate upcoming alternative energy projects if suppose there is use of delaying tactics by bureaucracy of Sindh government?

**Awan:** We fully appreciate and recognize the renewed mandate of provincial governments in implementing projects of alternative energy in their respective areas after adoption of 18th Constitutional Amendment. But we have enhanced our coordination and understanding with provincial governments in rolling out projects of alternative energy especially during last six to seven months. We have signed coordination agreements with governments of Punjab and Sindh in this regard. Owing to signing of such coordination agreements, we have achieved greater clarity on land related issues among contractual parties doing alternative energy projects in the provinces. We are also in touch with departments and agencies concerned of provincial governments on a number of issues concerning implementation of alternative energy businesses.

### EU: Tell us about tariff related issues concerning development and progress of alternative energy sector?

**Awan:** There is one certain good factor

in the entire power sector of Pakistan i.e. our regulator is fully independent and it is also flexible in its stance towards tariff issues. This means that in case the power sector regulator NEPRA (National Electric Power Regulatory Authority) on initial basis has given its determination regarding setting of tariff for any new power generation project or sector based on certain assumptions. Then in case someone contests this determination of tariff, the regulator would certainly review its stance regarding its own decision. This practice of regulator reviewing its own decision regarding determination of tariff, takes place at a very few places around the world. As in case of our country all the consumer related affairs being tackled by the regulator, get reviewed on a regular basis.

We simply want greater response for our alternative energy sector. Now when the policy adopted and incentives offered for the purpose have started generating positive response for the sector, then naturally you have to decrease the tariff for alternative energy sector as well. The reduction of tariff is also likely when globally speaking, EPC (engineering, procurement, and construction) costs of doing alternative energy projects have decreased while also when we are ensuring 17 per cent to 18 per cent RoE for incoming businessmen with prospects to invest in such projects.

### EU: What is your vision for future of alternative energy sector of Pakistan?

**Awan:** Given the present circumstances, our speed in doing alternative energy projects has increased. Now it is fully up to the government to decide energy mix for the country as what should be share of any specific technology in cause of power generation in the country.

We have fully opened all our options in this regard as we would contribute as much we would be asked by the govt. As it is the govt knowing the tariff situation well and also having the macro picture of energy sector of the country. We would be delivering as much as our share was determined by the govt in the national-level energy mix.

Now there are no doubts and reservations left regarding physical potential of technologies to be used for exploring renewable power sector of the country. As for the purpose, we have been doing all the necessary world class level standardization, mapping, and processes required for promotion, regulation, and development of alternative energy sector of the country. The AEDB on its part has been providing the required comprehensive and enabling environment for the alternative energy sector.

We are getting good response from prospective investors from the United States, Germany, and China analyzing and likely to explore the option of investing in alternative energy sector of Pakistan. ■



# First hydropower plant paves way for more

By DILAWAR HUSSAIN

**L**arail plant in Kashmir. The hydropower plants are more efficient, with typical efficiency ranging from 85pc to 90pc while that of thermal power plant ranges from 30pc to 45pc (typically), says company CEO Syed Hasnain Haider.

The energy crisis is a serious one, yet the renewable energy generation receives a low priority in policymaking and investment as compared to questionable current fossil fuel generation.

There is a misconception that renewable energy is not competitive and can survive only on governmental subsidies. Let us analyse this argument along with other wrong perceptions. Current thermal plants [furnace oil (FO) and high speed diesel (HSD) produce 40pc of the total electricity.

Since price of FO and HSD are linked to international oil prices and rupee exchange parity, the end user price of electricity is subsidised. The Tariff Differential Subsidies (TDS) are the difference between the actual costs of electricity and what consumers pay.

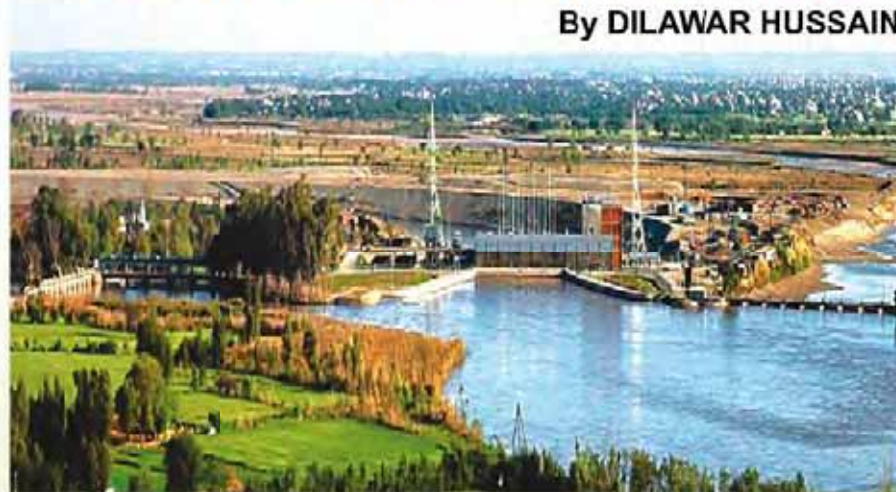
In the last five years alone, the government has paid TDS of Rs1.5tr since consumers can't afford to pay for the expensive energy our system produces.

With this subsidy, almost 5,000MW of new renewable energy capacity could have been added to the national grid. Thermal energy is not cheap. And if people think renewable energy is expensive, just remember price tag of Rs1.5tr as subsidies for thermal generation in the last five years alone.

Critics say the cost of producing electricity from renewable energy exceeds the cost of electricity from thermal generation, hence thermal generation should be preferred.

This is again a matter of perspective. Let's suppose if we would have built our energy system based on small distributive, community-driven system rather than large-scale, centralised system that we currently operate in, we would not have needed sprawling costs that we incur today on things such as large scale transmission lines, transformers, distribution grids, cables, meters, people to read meters, planners and headquarters etc.

In local parlance, this cost is typically known as distribution margin (DM) and is typically one-fifth of the total cost of electricity today. Add to this the cost of line losses that we incur today on our centralised energy systems and power theft, which almost always cripple the power system and ask for higher subsidies and



enormous debt problems.

Even at large-scale production now, renewables are competing against thermal and coal power generation. The best wind turbine in town is producing electricity at the same cost as large scale coal generation.

Hydel generation is so cheap that even if we tap 20pc of the total hydro potential, these will require no subsidies. What renewables further provide is fuel price hedging since the price of solar and wind resources have been bestowed by nature for free.

Even if we install renewables at a higher price, we no longer have to worry about fuel price volatility and exploding fiscal deficits in times when price of oil balloons up. Further, the externalities such as environmental and health costs of producing renewable energy far outshine the cost of thermal generation.

No doubt renewable energy is intermittent (only when sun is shining and wind is blowing) and thermal generation is base-load (can run 24 hours). This argument is technically true. Solar energy produces mostly during the day time but we also need most electricity during that time period only.

Wind generally blows during the night time and if combined well with solar can give a powerful solution to intermittency. Hydro generation produces maximum electricity during summer time, just when we need most electricity.

Technical intermittency remains an issue but we need to re-define intermittency in Pakistan's context. The question we need to ask is: have we received uninterrupted electricity supply on thermal generation?

The obvious answer is a resounding no. With up to 18 hours of daily load-shedding, intermittency is a problem more for ther-

mal-based generation rather than renewables.

Renewables may encounter engineering or natural intermittency problem. But thermal generation produces far greater financial intermittency problems since the power sector cannot afford high furnace oil and diesel prices.

Think of creeping circular debt bailouts time and again, nationwide petrol crisis and large scale blackouts because somehow the power sector has not generated enough financial muscle to cater to increasing production levels at higher prices. Intermittency is a major risk for thermal generation and not for renewables.

As consumers of electricity, we have not been given choice over the supply of electricity. Consumers should be given a broad based choice to pick and choose from newer and efficient technologies.

Right now, we are left with only an obsolete option for electricity generation which is expensive and at the same time less efficient. We need to enlarge our menu, open up more choices, benefit from renewable energy prices of today and use current low thermal prices to plan an effective transition from this gigantic, inefficient power sector to a new, efficient one. ■

Courtesy: Daily Dawn

Great lines by  
K.V. Ramachandra:  
"Change cannot be given to  
you everytime. You must  
bring the change"  
Who is K.V. Ramachandra?  
He is a  
bus conductor.  
Now read  
it again.  
:)

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## Wind corridors in Pakistan are of highly superior nature as alternative energy projects here can compete with world market, says Country Manager of Zorlu Energy Pakistan, Mumtaz Hassan

By Mustafa Tahir

*"Wind corridors identified in Pakistan are of highly superior nature as more such corridors would soon be discovered and properly designated including that in Jamshoro and Thatta districts as potential of the country to produce energy on renewable sources is coming to fore".*

*Mumtaz Hassan, country-manager of Zorlu Energy Pakistan, stated so as Energy Update recently conducted his interview regarding Zorlu's wind turbine farm in Jhimpir on 1148 acres area as part of Ghoro-Keti Bandar wind corridor in Sindh.*

*In the interview, the Energy Update questioned him regarding expansion plan of Zorlu in Pakistan being the subsidiary of a Turkish energy sector firm and also regarding profile and emerging scenario of renewable energy sector of Pakistan.*

*Zorlu's country manager during the interview urged the government that it should give some timeframe to resolve the issue concerning capacity of national grid as this is one of the main reasons; a ban is in place at present by Ministry of Water and Power for issuing LoIs (letters of intent) to new wind power projects in the country. Here are some important excerpts of his Mr. Mumtaz Hassan's interview:*

**Energy Update: Please inform us about new wind power projects being installed and getting readied in the country?**

**Mr. Hassan:** Some four new wind-based energy projects would achieve COD (commercial operations date) by middle of the current year as 300 Megawatts is already available while another 200 MWs would more be available on basis of wind power. Some more such renewable energy projects would be materialized by end of current year.

**EU: Please inform us about issue regarding national grid for new wind power projects?**

**Mr. Hassan:** The renewable energy being produced in the country has to be despatched but our transmission line has become old and has been left with no capacity as power produced by new projects could not be transmitted by it. Although work has

been done to resolve this issue as NTDC (National Transmission & Despatch Company) established a new grid station in Jhimpir area near Nooriabad having transmission capacity of 1755 MWs that is stated to have been already allocated to new renewable energy projects.

Recently Sindh government has allocated land to some 35 new prospective investors willing to undertake wind energy projects in the province. There are renewable power projects already online in the province while more projects would be in the position to produce electricity for the country's system as and when they would achieve the stage of COD. Moreover, there are around 40 more companies, which have applied to Sindh government's relevant authorities for launching more such projects.

As there is ban on issuance of LoIs for new energy projects owing to issues related to tariff and national grid but once this ban was lifted, it would take us around one-and-half year for the renewable energy project to get materialized. Although work has been expedited in this regard but there should be some time frame given to resolve the issue of capacity of grid for prospective investors willing to launch more such energy projects.

Moreover, along with wind there is work continuing on solar energy also both in Punjab and Sindh as you will see solar-based power being produced in the country. In this regard, some of the companies have been allotted land and capacity to despatch power through national grid. In case of solar power, capacity on grid is still available in some of the regions of the country to transmit electricity produced on basis of solar energy. So the solar energy projects would be able to despatch electricity through national grid once after achieving COD.

**EU: What are Zorlu's own expansion plans?**

**Mr. Hassan:** Zorlu had already said that it would install renewable energy projects of 100 MWs generation capacity. In this regard, Zorlu is highly satisfied with its new investment in Pakistan. Moreover, the issue of circular debt has been resolved to a large extent for last two years while renewable energy projects never faced any serious problem regarding their payments by NTDC. Then lenders related to renewable energy projects are also highly satisfied as they are getting repayments on debts by investors as per the schedule.



As far as our expansion plan is concerned we have held meeting with Sindh govt's Energy authorities while we have also applied to them to allow us to do 100 MWs power generation project on basis of renewable energy sources.

We have a new development, as Zolru is going to enter into an agreement with First Solar, a USA-based company, which is doing investment in Turkey. While after entering into agreement with First Solar, we would be importing solar panel and other related technology and equipment from Turkey. In this regard, Turkey will be extending to us facilities of lending and financing for exporting from there any product or equipment manufactured basically on Turkish land.

**EU: When Zolru would be able to achieve its expansion plan for producing 100 MWs on basis of renewable sources of energy and at what cost?**

**Mr. Hassan:** As far as cost of the expansion of project is concerned, in this regard desirable calculations could be made on basis of plain and simple formula of NEPRA (National Electric Power Regulatory Authority) on basis of NEPRA's announcement to extend feed-in tariff facility for such new wind energy projects. If NEPRA is extending feed-in tariff of 10.5 Cents or 11 US Cents/Kwh for wind power projects then our expansion project would cost us around 100 million or 110 million Dollars.

Now prices of wind turbines have come down in European markets while cost of doing such alternative energy projects would further go down with related equipment and products getting manufactured here as there will be no shipping, transportation, insurance cost for the industry. Then we would be able to compete with international market.

We have just started our expansion project and then the ban is also in place on issuing LoIs for new wind projects. Once LoI for the project was issued it would take



us around one-and-half years to complete all formalities required for launching the project including tariff determination, power generation license, and financial closure of the project.

When we did our first project, LoIs were issued to several companies but a few of these projects see light of the day. Several such projects could not attain the



stage of financial closure so banks were not interested in financing them. Several people just got hold of the land allotted to them to do the project as they could make no progress owing to lack of facilities including (wind) turbines. But we never gave up at any time as we just said we had to continue. We then became a success story in alternative energy sector as many

projects followed us.

Slowly and gradually the stage would come when our tariff of wind power would be 07 or 08 Cents/Kwh as at that stage we would be competing with World market. Things now related to wind power projects are going in a better way.

**EU: How many people are employed by your project?**

**Mr. Hassan:** Some 20 electrical and mechanical engineers are working at the project's site for operations and maintenance of the project. In all 80 people have been working for the project. Some 15 to 16 employees have been working at Karachi office of the project. Some 15 to 16 people working for the project were selected among local population of nearby villages. Although they are counted as unskilled labour but company adopted a policy that they would never be fired from service. Some of these employees from nearby villages have done hard work since

then and learnt skills related to our project.

**EU: What are CSR activities Zolru has been doing nearby the project's site?**

**Mr. Hassan:** We have been running water tanker service for a number of areas near to site of our project. We have been doing a number of activities for cause of community welfare for dwellers of nearby villages. At the project's site we have been running a medical booth, having both doctors and para-medical staff for providing health care facilities for population of local area. Ambulance facility is always available at the project's site, which would take seriously ill persons among local village population to nearest major public hospitals like the one in Hyderabad. Moreover, we would fully support and back any community based welfare and development project, which would be launched mainly for people in Jhimpir, that is our project area. ■



# Does Indus need to follow Murray?

Government should order IRSA and WAPDA to update Water Act 1992

By Engr. Saleem Akhtar

Both Indus River Basin (IRB) and Murray Darling Basin (MDB) are among the world's biggest basins. The drainage area covered by IRB and MDB is more than 1 million km<sup>2</sup> however IRB spans most of Pakistan, extending to India, China and Afghanistan. Almost 65% territory of Pakistan is covered by IRB. IRB is mainly formed by Indus, Jhelum, Chenab, Ravi, Sutlej and Beas while MDB is consisting of Murray, Darling and Murrumbidgee, Australia. The Indus Water Treaty awarded Indus, Jhelum and Chenab to Pakistan and Ravi, Sutlej and Beas were allocated to India in 1960.

The statistics show that both basins are backbone in the growth of Pakistani and Australian nations. The IRB is home of about 237 million peoples across all partner countries while there are only 2 million people across the MDB. Agriculture is using 96% water in IRB while 84% in MDB. The surface water storage capacity of MDB has risen (2 km<sup>3</sup> to 35 km<sup>3</sup>) in last 50 years however reservoirs in Pakistan have lost capacity up to 36% during the same time. Ground water is only used by 14% from MDB aquifers while 80% of all the ground water is already extracted in IRB until 2005. What is even more concerning that population in IRB is increasing quickly than MDB.

The major difference between IRB and MDB is water resources planning and management. At national level, Water and Power Development Authority (WAPDA) and Indus River System Authority (IRSA) are responsible for IRB management. IRSA approved first ever Water Act in 1992 to deal with water distribution issues among all the four provinces of Pakistan and with

India as well. However there is no improvement in this act after the approval. Pakistan has suffered heaps of floods but no dam has been constructed due to differences among provincial governments. Future emerging challenges like climate change, increasing water demand and many more will put Pakistan in hot scale with insufficient water or no water at all. Therefore, it is need of time that lessons learnt by Murray-Darling Basin Authority (MDBA) can be utilized for local water management. MDB's action plan has gone through continuous improvement since 1990. MDBA in 2008 developed a master plan to deal with MDB and every aspect like climate change, droughts, floods, water property rights etc is included.

The people in IRB, Pakistan are suffering from plethora of problems including; water distribution inequity, poverty, health and sanitation, energy crises and environmental issues. The basin is rich in water availability and all these problems are directly related to poor water resources management. The problems are raising the questions for sustainable development of the country and demanding a quick action. The MDB has very less surface water availability than IRB however up-to-date cation plan and proper management have led MDB among the best managed basins in the world. Therefore, it is need of time that Government of Pakistan order IRSA and



WAPDA to update Water Act 1992. MBDA's action plan will be really handy in this concern to highlight the involvement of Integrated Water Resources Management (IWRM) and climate change adaptation strategies. ■

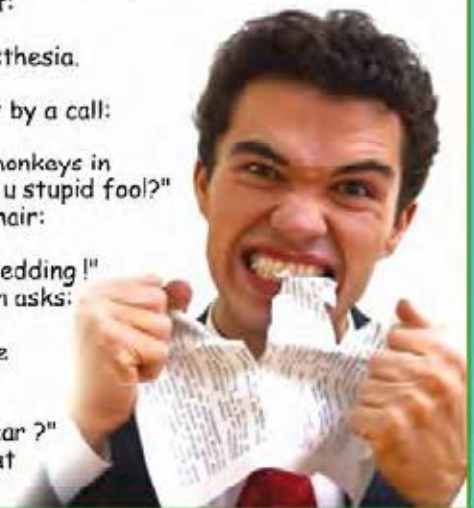
## Safety Sign

A Safety warning notice in a factory for female workers: "If your skirt is long, Stay away from the engines and if it is short, stay away from the engineers."



## STUPID questions people usually ask in obvious situations

- At movies: "Hey ! What are you doing here ?"  
Me: "I am here to apply for the popcorn seller post?"
- In bus: An uncle steps on my feet:  
"Sorry did that hurt ?"  
Me: "No not at all. I'm on local anesthesia. Why don't you try again ?"
- When I get woken up at midnight by a call:  
"Sorry ! Were u sleeping ?"  
Me: "Na ! I was doing research on monkeys in Africa. You thought I was sleeping, u stupid fool?"
- When they see me with shorter hair:  
"Hey ! Have u had a haircut ?"  
Me: "Nah ! Its autumn. my hair's shedding !"
- When someone calls on land-line n asks:  
"Where r u ?"  
Me: "I'm in market with a telephone around my neck !!"
- When I m washing my car....  
Neighbor: "Hey ! Are u washing ur car ?"  
Me: "No, I m just watering it so that it grows into a big bus.



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*From:*

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## Pakistan Oil & Gas Conference 2016

# Roadmap for a Sustainable Energy Future

The Petroleum Institute of Pakistan (PIP), a representative body of the oil and gas sectors in Pakistan organized its flagship "Pakistan Oil & Gas Conference" on Wednesday 20 April, 2016 at a local in Islamabad with the theme: "Roadmap for a Sustainable Energy Future".

The objective of the conference was to provide a valuable platform for local/international stakeholders and policy makers, including the Government of Pakistan, to discuss and analyze the key oil and gas sector issues in Pakistan and their possible solutions. The Ministry of Petroleum & Natural Resources, Government of Pakistan, has fully supported the endeavor of PIP and attached great importance to this conference.

The conference contoured areas of focus for the industry and the government



as well as provided policy guidance and recommendations to increase activity and investment in the sector, with focus on oil and gas exploration and energy efficiency.

The conference provided set of recommendations which are based on the long term energy solutions for Pakistan for securing higher GDP growth and economic development on sustainable basis. Key conference sessions were: Integrated Energy Plan for Pakistan, Oil & Gas Sector Opportunities/ Challenges (Upstream & Downstream) Pakistan Energy Sector Progress & Way Forward and Regulatory Aspects for Good Governance.

Petroleum and Natural Resources Minister Shahid Khaqan Abbasi, in his concluding remarks, cautioned there was no quick fix to the country's economic situation except for resolving the energy

crisis and the quick solution lies in LNG. About 50% of Pakistan's energy is based on gas followed by oil, hydro and nuclear sources. Hydroelectric power and nuclear energy consumed time and money, but LNG power plants were easy to develop and by December 2017 most of the energy issues would be eliminated, he mentioned.

The conference emphasized the need for an integrated energy plan, regulatory reforms, extending the security measures taken for the China-Pakistan Economic Corridor (CPEC) to the oil and gas industry, shifting from RON 87 to 92 fuel specification, complying with Euro-II fuel standards, deregulating liquefied natural gas (LNG) imports, deregulating petroleum and freight margins, splitting gas companies into small distribution setups and fast-tracking LNG projects. ■



## GPTI holds moot on renewable energy and energy efficiency



Speakers are addressing the forum on renewable energy held by GPTI

German Pakistan Trade & Investment (GPTI) organized a conference on 'Renewable Energy & Energy Efficiency' at Avani Hotel on May 05, 2016 which was attended by energy professionals, investors, businessmen and Government functionaries.

The conference showcased Germany's contribution in developing renewable energy resources in Pakistan and presented areas of joint action to improve the energy and environmental situation in Pakistan promoting sustainable energy generation and usage.

Mr. Qazi Sajid, Chairman GPTI, whilst welcoming participants emphasized the need to work together to improve the overall energy situation in Pakistan. He stated that "Germany and Pakistan businesses need to work closely to improve Pakistan's power shortage and German Pakistan Trade & Investment will do its best to facilitate this cooperation."

Speaking at the conference, Rainer Schmiedchen, Consul General of the Federal Republic of Germany in Pakistan said, "Germany is going through a major shift from a conventional energy production based on coal, oil and nuclear power to new energy sources such as wind, solar and geothermal power. It stands ready to work together with Pakistan."

Participants expressed their interest in attending more of such events in future so the exchange of contemporary business practices and trends brings forth mutual business growth and profitability in the face of present-day needs.

The conference ended with a plan to create an Industry Expert Group which would look at increasing cooperation between Germany and Pakistan. ■

## Australia Day 2016 organized by ABF

The Australian Trade Commission together with the Pakistan Australia Business Forum headed by Mr. PERVEZ H Madraswala hosted young entrepreneurs, including Skillston graduates, Chai Walla and Friendship Dairies to celebrate Australia Day in Spring 2016 - Engaging Youth and showcase successful business ventures of young Pakistanis. The Australian Trade Commission is actively involved in encouraging youth to engage with business to generate opportunities between Australia and Pakistan. Australian High Commissioner Margaret Adamson who attended the event was encouraged by the fresh approaches to business being undertaken by participants. Ms Adamson also highlighted opportunities available through Australian education providers at the tertiary level and in vocational training which can help young entrepreneurs to pursue business connections with Australia. ■



Cake cutting ceremony on the eve of Australia Day. Picture shows H.C. Australia, President ABF, Minister Sindh Nisar Khoro and Picture of Guests with Chief Guest and Host.

# PAKISTAN'S PREMIER ENERGY EXHIBITION



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# CROWN FAMILY TOUR 2016 BALI, INDONESIA

## Celebrations, Ceremonies, Adventures, Entertainments



Crown Group has organized "Crown Bali Tour -2016" winners' celebration at Pearl Continental Hotel, Karachi on Wednesday, April 20, 2016. This colorful event was arranged by Chairman Crown Group Mr. M.Farhan Hanif and Consul General Republic of Indonesia H.E. Hadi Santoso. In this ceremony, Chairman Crown Group and Consul General presented mementos to Chief Guest Mr. S.M Muneer (CEO-TDAP), Guests of Honor: Senator Abdul Haseeb Khan, Mr. Khalid Tawab (Senior Vice President-FPCCI), Mr. Mehtab Uddin Chawla (EC Member-FPCCI), Mr. Abdul Rahim Janoo (Senior Vice President-FPCCI) and Mr. Zubair Tufail (Former Vice President FPCCI).



After this event, a group of more than 200 Family members who won this scheme left for BALI-INDONESIA tour, where an award distribution ceremony was arranged in which Chairman Crown Group Mr. M.Farhan Hanif, Director Mr. S.M Kashif Qaseem, Consul General Republic of Indonesia H.E Hadi Santoso (Chief Guest) and Sindh Chamber of Agriculture (SCA) Vice President Mr. Kabool Mohammad Khatian addressed the conference and also presented awards to the winners.

The tour was full of fun, thrill & entertainment on which our CROWN Family Members visited exciting places like River Rafting, WaterBom Park, Sea Safari Cruise, Bourty Cruise, Monkey Forest and enjoyed other Water Activities. They also enjoyed food at famous restaurants and shopping around different markets. ■







### **UNDP-GEF PAKSTRAN Project: An overview**

In order to address the transport related problems UNDP, GEF and government of Pakistan have initiated Pakistan Sustainable Transport Project which is being implemented by the Ministry of Water and Power, Government of Pakistan.

The global objective of PAKSTRAN is to reduce the GHG emissions from transport sector in Pakistan. However, the developmental objectives of PAKSTRAN are: to improve urban environmental conditions (i.e. improved air quality, urban mobility, equity and city aesthetics); and to improve energy security for Pakistan. The expected outcomes of PAKSTRAN project and components are: Outcome 1: Operational urban transport system in Punjab Province being implemented by CIU-Punjab Outcome 2: Operational urban transport system in Sindh Province being executed by CIU-Sindh Outcome 3: Improved energy efficiency in truck freight Transport being implemented by CIU-Trucking Outcome 4: Increased public awareness and institutional capacity on sustainable transport concepts being executed by CIU-IUCN



### **National Conference on Sustainable Transport**

A highly informative and productive national conference under the title of "Paving the Way for Sustainable Transport in Pakistan" was organized by the PAKSTRAN project. Mr. Hassan Nasir Jamy, Additional Secretary Ministry of Water and Power / National Project Director of PAKSTRAN was the chief guest during the occasion. The main objective of the conference was to lay down the foundations for the widely acceptable policy for sustainable transportation system in Pakistan.

### **Training on Nationally Appropriate Mitigation Actions & Opportunities in Transport Sector of Pakistan**

To achieve one of the PAKSTRAN's outputs "environment and energy mainstreamed across the development sector plans and programs", PAKSTRAN project organized a training workshop on Nationally Appropriate Mitigation Actions (NAMA) Opportunities in Transport Sector of Pakistan to achieve the sub-output "strengthened institutional framework that enables holistic urban transport development" in the context of environment and energy.



### **Awareness Raising Campaign in collaboration with NED University, Karachi**

An awareness raising campaign on sustainable urban transport in collaboration with the NED University Karachi including poster, short-video clip and debate competition was organized. Awareness raising campaign was designed on the concept of 'Better Transport Let's Breathe Fresh' which motivated youth to think and gain knowledge on environmental aspects of transport in Pakistan's context. The activity aimed to raise awareness among the educated youth by involving them as an agent of behavioral change towards sustainable transport.

### **Consultative Session on Truck Freight Transport in Pakistan**

PAKSTRAN project conducted consultative session on Truck Freight Transport in Pakistan. The session was attended by more than 180 stakeholders and representatives from all over the country. The session highlighted the significance of the need for involving all the major stakeholders to improve the current situation of truck freight transport in Pakistan.



### **Sustainable Transport Related Studies**

- Following studies have been completed under the umbrella of PAKSTRAN project.
- Land use and infrastructure along the BRT Corridor-I in Lahore (from Gujjumatta to Shahdara).
  - Identification of non-fare revenue generation opportunities for Rawalpindi-Islamabad Metro Bus Service (BRT).
  - M&E Plan for energy & GHG emissions reduction benefits calculations.
  - Mapping of environmental and socioeconomic profile along the BRT corridor in Lahore.
  - PEQS to set allowable emission standards for the transport sector in Sindh.
  - Principle guidelines for Urban Transport Policy in Sindh.
  - Study and survey of mini-cabs (QINGQI'S) to use these as pick & drop carrier at feeder routes on Green & Red BRT Lines.
  - Study and survey of mini-cabs (QINGQI'S) to use these as pick & drop carrier at feeder routes on Orange & Yellow BRT Lines.
  - Environmental impacts of major truck freights in Pakistan.
  - International best practices and trends in truck energy use and its linkage to the context of Pakistan.
  - Assessment of CO<sub>2</sub> emission from truck freight transport in a low - carbon (LC) scenario.
  - Assessment of CO<sub>2</sub> emissions from truck freight transport in a business - as - usual scenario.

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# Malik Khuda Baksh



Malik Khuda Baksh was elected to serve a two year term as an International Director of The International Association of Lions Clubs at the association's 90th International Convention held in Chicago, Illinois, USA on July 6, 2007.

A renowned social worker and industrialist, Lion Malik Khuda Baksh "KB" Joined Lionism in February 1983 as a member of Karachi Lions Club (the pioneer club in Pakistan) and soon after developed his interest in almost every project

of the club. He worked so hard at every project that the club had to put aside its practice of promoting Vice President to the next post and Lion Malik Khuda Baksh within two years, became the President of the club in 1985-86. Malik Khuda Baksh "KB" after serving at various District Offices became the District Governor of District 305-South (Pakistan) in the year 1992-93.

As District Governor, his theme was "INVOLVEMENT THROUGH SERVICES AND FRATERNITY". As the District Governor in 1992-93, he was responsible for initiating a joint project of Pakistan and Sri Lanka aiming at providing Human Corneas to the Blinds which till now has resulted in getting nearly 5491 Corneas Grafting in Pakistan, free of cost to the needy from his own resources. Lion Malik Khuda Baksh "KB" was among the 17 top Governors in Campaign Sight First in the world. Another feather in his cap was that a Leo from Pakistan was declared "International Leo of the Year" while Merit Award was also won by Pakistan in the Peace Poster Contest. Lion Malik Khuda Baksh "KB" was elected Multiple Council Vice Chairman in 1993-94 and Council Chairman of Multiple District 305 in 1994-95.

In recognition of his services to the association, International Director Malik Khuda Baksh has received numerous awards, including the 100% Clubs President's Award, the 100% District Governor's Award, Top 17 Governors in Campaign Sight First in the world, the District Governor's Excellence Award, the International Membership Growth Award, the 20 Years Monarch, 20 years 100% Perfect Attendance Award, Five International President's Certificates of Appreciation.

Malik Khuda Baksh was the chairman of organizing committee of the 38th ISAAME Forum which was organized by LIONS MD-305 Pakistan at Dubai in the first week of December 2010. In appreciation of the successful conclusion of the forum, he was awarded the Presidential Medal by the International President Sid L. Scruggs.

Malik Khuda Baksh is the Grant Administrator of the flood (2010). Grant sanctioned by the Lions Clubs International



Mr. Malik Khuda Baksh is receiving Achievement Award from President of Pakistan HE Marnnoon Hussain at the ceremony held at President House Islamabad. Governor Punjab Malik Rafiq Rajwana, President FPCCI Rauf Alam and S.M. Muneer also present at the occasion.

Foundation (LCIF). Due to his efforts of PID Malik Khuda Baksh a huge grand of US \$ 799,480/- has been sanctioned for the construction of 248 houses in all districts of Pakistan.

International Director Malik Khuda Baksh also received Special Award from Honorable Raja Zulqarnain Khan, President of Azad Jammu & Kashmir in appreciation of reconstruction of 150 houses and rehabilitation of earthquake victims (July 26, 2007).

Lion Malik Khuda Baksh "KB" is a 10 times Melvin Jones Fellow and his wife Kulsoom Fatima Malik is also a Melvin Jones Fellow and is a University Professor of Entomology.

The couple is blessed with two daughters and three grandchildren.

## Business Activities

Malik Khuda Baksh is fully involved in petroleum and gas industries. He is a Chairman / Chief Executive of Malik Group of Companies.

Company is associated with Petroleum, Gas and allied products industry for the last 35 years. The company continues to grow and achieve its business objectives under the leadership of its Chief Executive Mr. Malik Khuda Baksh.

Malik Khuda Baksh is active in numerous professional and community organizations. He has served Senior Vice Chairperson of the Pakistan Petroleum Dealers Association (25 years), President / Chairman of CNG Station Owners Association of Pakistan, Chairman of the Standing Committee for foreign investment committee of the Federation of Pakistan Chamber of Commerce and Industry.

The head office of Malik Group of Companies is in Karachi and has regional offices at, Lahore, Islamabad and Peshawar. Company is also having business associates in USA, United Kingdom, Dubai and New Zealand. ■

## Generators' import jumps by 42% in Pakistan

Despite tall claims by government of bringing improvement in energy shortage, power generating machinery's demand soared as Pakistan spent Rs139 billion on import of the machinery during July-March of current fiscal, showing 42% growth over same period of last fiscal.

The nation consumed Rs 94.5 billion worth of imported power generating machinery in first nine months of previous fiscal year. Enormous rise clearly indicates the demand of power generating machinery continue to put pressure on import bill of Pakistan as precious foreign remained on exile by import of generators. Ahead of anticipated sultry weather conditions, during the month of March 2016, the importers of this trade remained active as alone in the month of March 2016, Pakistan spent Rs 15.89 billion only to import power generating machinery while the sum was enormously higher by 86 percent than the import bill of Rs 8.56 billion for power generating machinery in March 2015. However, import bill of power generating machinery registered 5 percent decrease over Rs16.67 billion in February 2016, according to the Pakistan Bureau of Statistics (PBS)'s latest data.

It is to be noted that Pakistan's monthly average bill for power generating machinery stood at \$52 million by 2012, however lingering power outages pushed this bill gigantically up to \$151 million on monthly average in 2016.

Government was continuously claiming addition of significant electricity in national grid during last year, but the statistics indicate that the countrymen still struggling to prevail over energy shortened related worries. New fiscal is still witnessing gloomy situation in



terms of persisting power shortage which has led to 12 to 15 hours power load shedding in country.

Sultry weather conditions in Pakistan compelled public to pursue alternate energy sources, thus Chinese made cheap priced generators have become primary choice especially for domestic users as well for industries.

Intensifying demand and supply gap in power sector leading to consumption of valued foreign exchange on power generation machinery imports every year. Pakistan Muslim League (PML-N) led government could not bring much relief for the energy strapped country despite having almost two years in ruling.

shortfall reached almost to 7000 megawatt (MW) this year while the country is generating 15000 MW of electricity and the current demand is 22000 MW. As of 2013 total installed electrical generation capacity in Pakistan is 21,593 MW and producing approximately 15000 MW. Frequently power failure has been raised a critical dimension in many towns and including major cities of Punjab and Sindh, where load-shedding duration stretched to almost 12 to 15 hrs. In this scenario, the demand of alternate energy products including electricity generators have emerged, and leading importers and wholesalers of generators are importing 70 to 80 percent electricity generators from China.

For industries, shortage of electricity is also a main concern, textile and other business sectors are importing above 1100KVA generators. Pakistan mainly imports handy, standby and portable generators compatible to Compressed Natural Gas (CNG), petrol and diesel. ■

## Australian Inventor develops air-conditioner that uses just 350 watts

Australian inventor, Professor James Trevelyan has engineered a revolutionary new ultra energy-efficient portable air conditioner called Close Comfort that uses less than 350 watts to operate. That's approximately 15% of the energy used by conventional air conditioners and approximately the same amount of energy used to power two ceiling fans. This remarkable invention was made possible by ground-breaking patented Australian innovation, which allows for effective cooling for up to 2 persons while using an extremely small amount of energy. It also means that Close Comfort can be used on a typical domestic UPS and even on alternate sources of electricity such as solar power or small generators.

Unlike conventional air conditioners, Close Comfort does not waste energy trying to cool large spaces. Instead, it uses Smart Air Flow Technology to direct cool air only where it is needed keeping users cool and comfortable even on the hottest of days. The entire unit



is compact, light-weight (17 kgs) and self-contained, meaning that it does not require an external unit or any sort of exhaust piping or plumbing of any kind and can be easily transported and positioned any-

where. It also does not require any additional consumables such as batteries, water or ice to operate and its ultra-efficient compressor doesn't require any gas refills. Close Comfort can be used indoor with the doors and windows open and outdoors. Its near-silent operation and capability to run for long hours makes it especially effective in giving a comfortable night's sleep. Close Comfort's applications are limitless. It can be used privately in homes for individuals or commercially in offices, hospitals, shops and many other public areas. Its portability and energy efficient operation ensures that it delivers quality cooling along with long-term cost saving compared to conventional air conditioners. ■

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EN 16001 is the European standard for Energy Management Systems. It is based on Plan-Do-Check-Act cycle, with requirements for establishing an energy policy with concrete objectives, putting in place actions to reduce and monitor energy use, verifying energy savings and planning improvements.

It offers a comprehensive set of guidelines to meet carbon emissions reduction requirements.

EN 16001 is based on regulatory compliance and has the same structure as ISO 14001. It can be easily integrated to existing Quality, Safety and/or Environment Managements Systems.

EN16001 & ISO 50001 are based on national standards for which Bureau Veritas Certification is accredited by DANAK for DS2403:2001 in Denmark and SWEDAC for SS627750:2003 in Sweden.

#### ISO 50001 CERTIFICATION

ISO 50001 is the new global standard for Energy Management with requirements for:

- Establishing an energy policy with concrete objectives to improve energy efficiency;
- Setting a baseline of energy uses, identifying critical areas and understanding influential elements on energy use;
- Maintaining a periodic forecast of energy use, allowing visibility to plan investments and improvements;
- Considering energy consumption in the decision process for design and procurement of all equipment, raw materials or services.

ISO 50001 can be easily integrated into existing Quality, Safety and/or Environment Management Systems, for all types of organizations aiming to monitor and improve their energy efficiency.

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## World's oldest person dies at 116 years

At the age of 116, the world's oldest person named Susannah Mushatt Jones died today in New York, stated an NBC New York report.

Jones died after being unwell since the past 10 days. She was living in a public housing facility for seniors in Brooklyn, a place where she has been residing for more than 30 years, said Robert Young, a senior consultant for the Los Angeles-based Gerontology Research Group. Jones, the youngest among her 11 siblings, was born in a farm town near Montgomery, Alabama in 1899. She passed high school in 1922 and worked along with her family at local farms. She later on also worked as a nanny in New Jersey and eventually made her way to New York.



## AMAZING GALLERY

### Pakistani man fathers 35 children



A man in the province capital has become the proud father of 35 children after two of his three wives gave birth to two baby girls. Jan Muhammad Khan runs a clinic in Hazarganji area on the outskirts of Quetta. He along with his three wives lives in his fort like house in Eastern Bypass area of the city. He had recently gotten fame on private TV channels and social media for having 33 children from his three wives. He then told media that he was expecting birth of two more children. "Allah has blessed me with two more children and now the number of my kids has reached 35," he told journalists.

## The amazing Toyota Transformer Car



No, we're not revealing an exclusive shot of a new convertible Toyota Avenis. This roofless model is known as the Transformer Car and arrived in Moldova over the summer, along with other emergency equipment, thanks to Operation Florian, a charity set up by British firefighters to provide equipment and training to fire services around the world.

The Transformer Car has been designed to help firefighters learn techniques such as roof and door removal, dash lift, B-pillar folds and glass removal in the case of a road traffic accident. Uniquely, the Transformer Car can be reassembled for re-use. Of course, it's not as effective for training as physically cutting up a car, but the hinged design provides a reusable resource to develop basic skills and awareness, particularly as scrap cars in some countries can be prohibitively expensive.

The idea is supported by the Toyota Fund for Europe and first developed at the engineering department at Derby University. One of the former students there, Ajay Singh Whaid, has also been involved in another vehicle safety project – this time focusing on the airbag system.

Currently, the car is being used by the Derbyshire Fire & Rescue Service for its own training as well as raising awareness with schools and the general public.

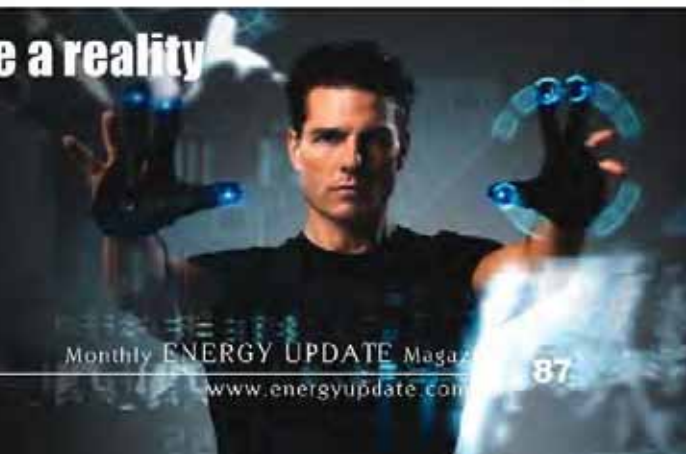
## Fun Facts about Renewable Energy

1. In 200 B.C., people in China and the Middle East used windmills to pump water and grind grain.
2. The first modern wind turbine was built in Vermont in the early 1940s.
3. Wind farms currently produce enough electricity to meet the needs of more than 600,000 families in the United States.
4. The largest wind turbine in the world, located in Hawaii, stands 20 stories tall and has blades the length of a football field.
5. An average wind speed of 14 miles per hour is needed to convert wind energy into electricity.



## Minority Report-style gloves, soon to be a reality

Minority Report-style gloves are about to become a reality. According to documents published by the United States Patent and Trademark Office, Sony is heading in that very direction. Ahead of the PlayStation VR headset launch later this year, while others are experimenting with hand and finger tracking controllers and wands, Sony is considering launching a Minority Report-style controller. The patents filed in 2014 deal with body part movements tracked and rendered for use on a head-mounted display.





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