MONTHLY

Energy UPDATE

8th Anniversary

ISSN 2309-6578

Dams are crucial for Pakistan

LPG autogas is fuel of future

Shale oil best substitute of conventional

Event Report: IFEC 2014

Exclusive Interviews of Energy Experts

Ansar Parvez | Saeed A. Khan | S. Inamul Haq | Aamir Hussain

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11th Annual Environment Excellence Awards 2014

Call for Nominations

All environment friendly organizations are invited to submit their nominations

NFEH

About NFEH

National Forum for Environment & Health (NFEH) is a purely non- governmental, non-profit organization, established on June 5, 1999. NFEH is affiliated with United Nations Environment Progam (UNEP) & supported by the Ministry of Environment, Govt. of Pakistan.

For Award Criteria, visit www.nfeh.org

Introduction of Award: Annual Environment Excellence Awards were instituted by NFEH 10 years ago and have elicited a very enthusiastic response from the industry. These awards have become the benchmark for the standards that need to be followed.

Deadline for Nominations: April 30, 2014

Award Ceremony: On June 5, 2014 at the occasion of World Environment Day.

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CONTENT

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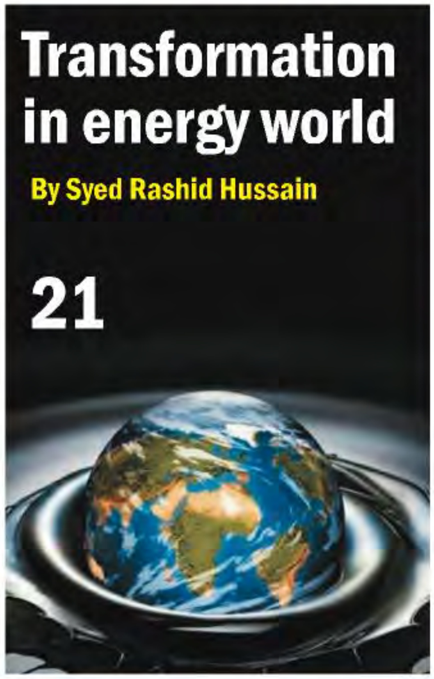

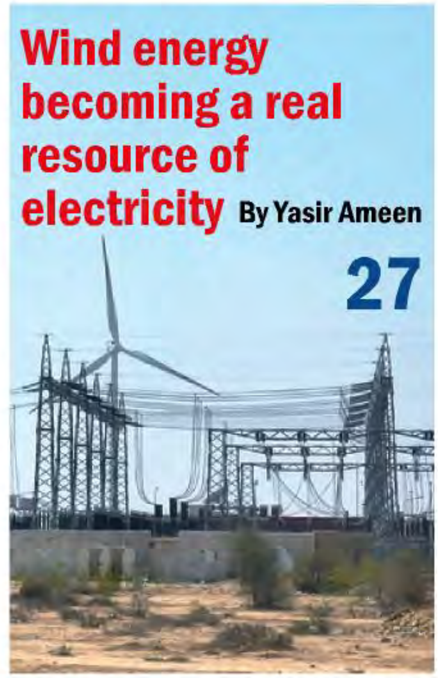

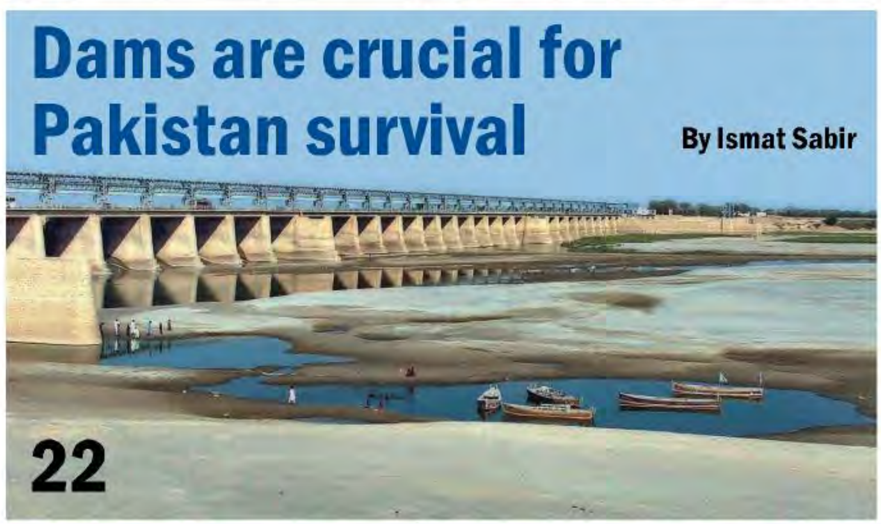

From the editor's desk...

Govt testing time begins to control energy crisis

The government honeymoon period is over with the arrival of May and its real test has commenced to steer out energy crisis with sustainable solution from short-term to long-term basis.

The worst season of load-shedding has started off crippling economy and lives of the citizens mercilessly but there is no respite visibly and the circumstance will continue this year for next five to six months.

It is true in fact that the rising mercury boosts up the temperature of the nation in the form of agitating protests and harsh criticism in the public and mass media which shape its performance index and credibility among the people who voted it with high expectations.

Prime Minister Nawaz Sharif efforts to hold emergency meeting is welcoming which chalked out measures for generating additional 1,000 MW into the national grid. However it will reveal in months to come that how the government could get success in its strategy and maintain peace and discipline in the economy and society.

The series of cutting-ribbon ceremony is unabated as the government kicked off LNG import project and regained little success over restoration of Iran Pipeline projects. Besides, inauguration of many projects like 660 MW coal-based power plants at Bin Qasim, Karachi and Quaid-e-Azam Solar Park in Bahawalpur set to generate 100 MW this year and 1,000 MW by 2016-end.

There is a need of expedite development works on the planned projects because it costs billions of dollars to the economy for one day long-hour load-shedding with far reaching affects on the future of the country.

Government should come up with emergency and solid plans including daylight saving and electricity conservation plan for providing quick relief to the masses and industries as well.

It should control issues like land losses and recovery of bills from commercial and industrial sectors to permanently finish the menace of circular-debt which piled up again to cross Rs 300 billion in accordance with the predication of Energy Update.

The practice of justice and technical advancement in the system could prevent the energy sector to do away from the losses, otherwise, the circular-debt will come again and again in the future.

Energy update has completed eight years of its publications in Pakistan in which it gained reputation and recognition from different quarters of energy sector at national and international level.

We have covered issues related to energy sector in details like no one else did in Pakistan. We inform, we educate and we predicate the present and future of Pakistan's energy sector in sophisticated and scholastic style.

Naeem Qureshi

Voice of Energy Sector
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LETTER TO EDITOR

M. Haseeb Khan, Lahore

CNG supply

THE government recently announced that there would now be a continuous supply to CNG stations in Punjab, with a limited supply for six days from 10am to 4pm (Monday to Saturday) as a token of goodwill for the public.

Unfortunately, this planned activity, instead of providing consolation and ease, has become a source of disgrace for the people, sweltering on the roads, standing in queues waiting for their turn.

Moreover, alternate hours of electricity loadshedding have exacerbated that pathetic situation.

This thoughtless gesture is only propitious for commuters as policymakers did not consider the working or professional class which cannot endure to sacrifice their office work, roasting whole day under the boiling sun.

The policymakers should reconsider their planning in order to provide attainable comfort to the public. It would be commendable if timings are rescheduled, appropriately, in the evening.

Ending power crisis

Energy resources are the backbone of economic development of any country. Pakistan has been facing the problem of energy crisis and loadshedding for more than five years due to the increasing demand for power in the form of electricity, diesel, petrol and coal.

The continuing electricity crisis and increase in electricity prices are destroying national growth, income and per capita income as well. Loadshedding does not only affect the people but also the industrial sector. Many industries have cut down their production units due to non-availability of the required energy. Loadshedding is worsening day by day in urban areas where there is no power for as long as 10 hours a day. And in rural areas it ranges from 12 to 18 hours a day.

Most of our electricity is produced by thermal power plants which burn oil or gas and then produce electricity. The country is facing a shortage of oil and even gas. It imports oil and gas for this purpose and pays heavy import bills.

As Pakistan has one of the largest coal deposits in the Tharparkar desert, the government should utilise coal to generate power. Another natural resource to produce electricity is wind. Pakistan has several points for energy production through wind. These include the coastal belt, the northern areas and Azad Kashmir.

LPG hazards

Bushra Ijaz, Lahore

GIVEN the increasing urbanisation and population explosion in Pakistan, the prospect of maintaining safety standards for people is immensely important. Recently a local news channel broke the news of an LPG station set up adjacent to the asphalt processing unit in the Mohlanwal area in the outskirts of Lahore.

Asphalt is a highly combustible material, falling in the category of petroleum, and is chiefly used in paving roads. In case of an accident, any of these units can be enormously hazardous, risking the lives of a great many people.

Although there were many fire incidents in the past, the authorities concerned did not take any notice. The government should look into the matter and ensure shifting of such units out of residential areas.

LNG: confusion and chaos

CONFLICTING news reports have emerged in the past several months, depicting ignorance and incompetence on the LNG subject.

The authorities stated that LNG would be available in October, it changed to November and then the minister said recently that LNG would be available in March 2015.

The very next day, the head of the LNG company, Elengy, said it would be available in April 2015. The minister and the secretary of petroleum ministry were pressing the ECC hard to approve the project, whose approval would have been a disaster at this stage.

Another entity, the PSO, is dragged in for unknown reasons and, as reported, it has also so far failed to present a plausible case to its board.

The same goes for the SSGCL whose top officials are on the ECL and being probed for high-end corruption apart from being responsible for the present state of the company's affairs.

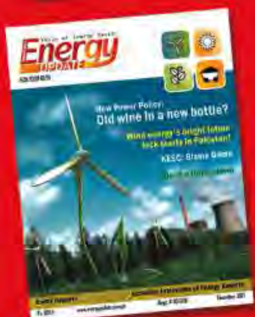
The LNG price is not yet fully settled and sealed. Accordingly, freight charges cannot be finalised in the absence of the exact route, timings, shipment size, receiving station details. Agreements having cross-linkages have not been defined with full scope and its individual conditions' precedents.

The whole scheme of things was started in a haphazard way. Point scoring was the main characteristic rather than doing something valuable for the country.

It seems the outcome will be undesirable, i.e., even if all goes well, the first gas alien molecules cannot flow into our system before October 2015. The government is to blame itself for resting such a big responsibility on the laidback ministry, its officials and incompetent government-controlled entities.

MONTHLY Energy UPDATE

Greetings & Felicitations
on the occasion of 8th Anniversay



Dr. Ishrat Ul Ebad Khan, Governor Sindh

I am pleased to learn that the monthly "Energy Update", launched in May 2006, is the only trade magazine on Energy and is the voice of the energy industry. It has been covering oil and gas, power generation, alternate energy and environment sector.

It is heartening to observer that this magazine set before itself the high aim of becoming the voice of the energy industry and is focusing on developments in the global energy sector, with particular interest to Pakistan, and is also covering the developments in the alternate energy, especially CNG, NGV of which, it is understood, Pakistan is the largest consumer in the world.

I am sure that the unbiased analysis, truthful reporting and open receptive attitude to suggestions will assist the magazine in making Energy Update a publication most useful for the industry and will enhance its circulation.

I congratulate the Management and editorial staff for issuance of 8th Anniversary of Energy Update.

H.E. Mr. Jesper M. Sorensen, Danish Ambassador

Ensuring sustainable economic growth, clean energy, and sufficient clean and safe water resources are among the greatest global challenges today. Denmark has decided to become the first fully green economy. By 2050, Denmark aims to be entirely independent of fossil fuels, inspiring many other countries to follow. The ambitious goal will be reached by increasing energy efficiency and resource optimization; by expanding the share of renewable energy from sources such as wind and biomass; and by driving the development of an intelligent energy system capable of managing the fluctuations of renewable energy.

Thus, energy is one of several other areas, where Danish companies have much to offer to Pakistan. Strong positions may be found in technology areas such as wind energy, biomass including burning of biomass in power stations, and development of methods to produce 2nd generation bioethanol. Other fields to be mentioned are fuel cells and components to be used in relation to heating and cooling.

Denmark believes strongly that sound economic and sustainable environmental policies go hand in hand. While Denmark's GDP has more than doubled over the last 35 years, its energy consumption has remained steady - and the water usage has even decreased.

Zakaria Usman, President, Federation of Pakistan Chambers of Commerce & Industry

Pakistan is in the grip of serious energy shortage crises that is effecting all sectors of economy and various segment of society. The situation has pushed the people to bear burden of 8 to 16 hours load shedding. The economy of Pakistan has been very badly affected halting major trade, economic and agriculture activities. The factories having shutdown during the outages, international and domestic order can not be fulfilled due to reduced production.

I appreciate that Energy update magazine highlighted the issues to the concerned quarters and also suggested different measures to curb the shortage of energy. I express my heartiest gratitude to the management of Energy Update and congratulate them on their 8th Anniversary and hope that this magazine will dedicatedly raise the voice of industrialists who are the real stakeholders of the country and facing sever problem in running their business activities. I hope that the Prime Minister Nawaz Sharif is keen to resolve this issue and doing his best efforts in bringing alternate energy, utilizing the coal reservoirs of Thar, importing LNG, installation of new thermal power stations and import of electricity from neighboring countries. He is endeavor to meant the short fall of energy in Pakistan. I hope that with next 2 years the energy crises in Pakistan would be eliminated.

Dr Mirza Ikhtiar Baig, T.I., Member Board Of Management - PSO

The Prime Minister has promised to overcome gas load shedding within one and half year and power load shedding within 3 years.

International companies are taking keen interest to develop energy projects which is witnessed by the active participations by the world renowned energy companies in 8th Power & Alternative Energy Asia Int'l Exhibition inaugurated by me at Karachi Expo Centre. Alternative energy and LNG are the hallmark of the future and numbers of projects are in pipeline to produce additional power and gas.

Energy Update 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. Naeem Qureshi. I wish Energy Update all the success on their 8th Annual Edition.

Ishtiaq Baig, Founding President of Make-A-Wish Foundation Pakistan

It's a real pleasure to convey my heartiest congratulation on the completion of 7th successful year of your esteemed "Energy Update Magazine". The factors which are comprehensively discussed to create useful awareness about the energy sector are really commendable. The magazine has also widely covered the developments achieved by the global energy sector, focusing the interest of Pakistan and achievements to find alternate source of energy i.e. CNG/NGV etc. of which Pakistan is the largest consumer in the world. It has beneficially paved the way to plan out our strategies in a better shape. Your entire team truly deserves appreciation for their hard work and professional approach. I wish "Energy Update Magazine" everlasting success and hope it will keep the trend to provide the readers such impressive articles on the issues of national interest.

Greetings & Felicitations
on the occasion of 8th Anniversay

Mian Zahid Hussain, Former Minister / Adviser to Chief Minister Sindh

It is a matter of immense pleasure to say few words on the publication of the 8th Annual Edition of the Energy Update Magazine dedicated to the energy & environment sector and to convey my best wishes and compliments to their editorial staff and team members on achieving this feat.

To my knowledge, Energy Update Magazine has played a great role in highlighting Pakistan's Energy Options and ways / means to address the various problems presently faced by the Country. I am confident that this edition, focusing on the developments in the Global Energy Sector with particular interest towards the use of alternate energy in Pakistan, will surely provide information / various possible solutions to address the issue of energy crisis and thus playing their part in the future development / prosperity of our Country. I once again offer my best wishes for your continued success and would also assure you of my continuous support and cooperation.

Mr. I.A. Osmani, Senior Vice Chairman Pakistan Engineering Council

The Energy Update, a Pakistan based internationally recognized magazine, is making highly significant efforts to improve quality of life on earth through dissemination of knowledge about environmental issues and solutions through renewable energy. In my opinion the Energy Update magazine is a service to humanity and not merely a scientific and journalistic endeavor. Its impact has stretched to limitless social dimension of the community like health, poverty, education etc.

I congratulate Mr. Naeem Qureshi and his team on completion of near-decade era and the magazine has grown up well and is matching the demands of time. The magazine has now achieved a place at international forums of energy and environment issues around the globe.

Kalim A. Siddiqui

I am very pleased to know that this month "Energy Update" magazine is celebrating its 8th Anniversary and would be publishing a special anniversary edition, dedicated to the auspicious occasion of Energy Update's 8th Anniversary. I would like to congratulate their management for this landmark achievement. In addition to full team efforts, I would like to specially acknowledge the hard work of its Managing Director, Mr M. Naeem Qureshi. Being the first Pakistani International Magazine on Energy & Environment it has made its place in the energy industry through its unbiased coverage on the developments in the local & global energy sector with particular reference to Pakistan. This magazine has also been covering the developments in the alternate energy sector with reference to CNG/LNG/LPG, Solar and Wind.

Engr. M. Adil Usman, Chancellor, Sir Syed University of Engineering & Technology

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. 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 8th Anniversary, and congratulate the whole team for publishing such a nice magazine covering oil & gas, power generation, alternate energy and environmental sector since 2006.

Muhammad Musaddiq, CEO of Siddiq Renewable Energy Pvt Ltd

"It is great to know that Energy Update magazine has successfully completed its 8th year. This magazine is a great source of useful information for renewable energy companies such as ours. The magazine keeps a close eye on the developments taking place in the energy sector with special interest in the Pakistani energy sector. Energy crisis is one of the major issues being faced by Pakistan. We need to innovate and plan for future with creative solutions. Energy update has done a lot of work in this regard and has been acting as responsible media tool for promoting the work done in the energy sector of Pakistan. Your team is very hardworking and dedicated and their contributions in the energy sector need appreciation."

Mr. Azhar Ali Khan, CEO, National Environment Consultants

I am pleased to learn that the monthly Energy Update is celebrating the 8th Anniversary of its publication in May 2014. I would like to acknowledge the role of Energy Update in highlighting the importance of energy in country's economy development through its candid analysis and objective reporting. At the same time it is also trying to persuade the government by publishing foreign and local technical and research reports on the use and benefits of environment protection, alternate sources of energy like wind, biomass, bio-fuel, and solar. I hope that Energy Update will keep up its job of disseminating information and latest updates on energy & environment sector in the country as well as abroad. I congratulate the team of "Energy Update" on the 8th Anniversary of the magazine and wish them more successes in the future.

SHALE OIL

best substitute for conventional oils

By Ismat Sabir

It is advised that to cope with the gas crisis Pakistan should use its shale gas reserves that are estimated at 51 trillion cubic feet near Karachi in southern Sindh province.

A natural gas wellhead on a drilling site in northwest Pennsylvania, a region known for its many quarries

Gas is considered a cheaper substitute than oil in generation of power therefore the country has to import huge quantity of oil to meet local demand and also has to spend precious foreign exchange on its import.

Natural Gas

Pakistan is a large consumer of gas. Its total resource is about 282 trillion cubic feet with reserves of 24 trillion cubic feet and production of almost 4 billion cubic feet per day. During 2012, total production was at 1,559 billion cubic feet that is equivalent to 32 million TOES, shows a growth of 6 percent as compared to last year. There are 146 non-associated gas fields while 44 associated gas fields operating under 15 companies.

It is advised that to cope with the gas crisis Pakistan should use its shale gas reserves that are estimated at 51 trillion cubic feet near Karachi in southern Sindh province. US experience has shown that investment in shale gas can increase production at a faster rate and prices can be brought down from about $12 per MMBTU in 2008 to below $2 per MMBTU. Implementing this option requires US technical expertise and significant foreign investment. To increase production of gas from nearly 30 trillion cubic feet of remaining conventional gas reserves also require huge investment.

Shale gas and oil

Shale gas is natural gas that is found trapped within shale formations. It has become an increasingly important source of natural gas in the United States since the start of this century, and interest has spread to tap the potential gas shale in the rest of the world.

Oil shale also known as kerogen shale, is an organic rich fine-grained' grained sedimentary rock containing a solid mixture of organic chemical compounds from which liquid hydrocarbons called shale oil, crude oil occurring naturally in shale can be produced.

Shale oil is a substitute for conventional crude oil; however, extracting shale oil from oil shale is more costly than the production of conventional crude oil both financially and in terms of its environmental impact.

Deposits of oil shale are found across the world, including major deposits in the United States. Estimates of global deposits range from 2.8 to 3.3 trillion barrels.

Oil shale can also be burned directly in furnaces as a low grade fuel for power generation and district heating or used as a raw material in chemical and construction materials processing.

Oil shale gains attention as a potential abundant source of oil, whenever the price of crude oil rises. Estonia and China have

well established oil shale industries, and Brazil, Germany, and Russia are also utilizing oil shale.

The US experience has shown that investment in shale gas can increase production at a faster rate and prices can be brought down from about $12 per MMBTU in 2008 to below $2 per MMBTU. Implementing this option requires US technical expertise and significant foreign investment.

Reserves

Oil shale deposits are found in all world oil producing regions but most of them are too deep to be exploited economically. Although resources of oil shale found in many countries but only 33 countries can produce them economically. In 2010, the estimates showed that shale resources may be equivalent of more than 5 trillion barrels of oil but about 1 trillion barrels may be technically recoverable.

The US deposits constitute 62pc of world resources; together the US, Russia and Brazil account for 86pc of the world's resources in terms of shale oil content.

History

Oil shale, as a fuel, is being used by human beings since prehistoric times, since it generally burns without any processing. The first UK patent for extracting oil from oil shale was British Crown Patent 303 granted to Becker and Serle in 1684. Modern industrial mining of oil shale began in 1837 in Autun, France, followed by exploitation in Scotland, Germany, and several other countries.

Operations during the 19th century focused on the production of kerosene, lamp oil, and paraffin; these products helped supply the growing demand for lighting that arose during the Industrial Revolution. Fuel oil, lubricating oil and grease, and ammonium sulfate were also produced.

The European oil shale industry expanded rapidly before World War I due to petroleum shortage and the mass production of automobiles and trucks.

The Estonian and Chinese oil shale industries grew after World War II but most other countries abandoned their projects due to high processing costs and the availability of cheaper petroleum. Following the 1973 oil crisis, world production of oil shale reached a peak of 46 million ton in 1980 that fell to about 16 million ton in 2000. .

In 1986, President Ronald Reagan signed a law that abolished the United States' Synthetic Liquid Fuels Program. At the beginning of the 21st century, the global oil shale industry began to revive. In 2003, an oil shale development program restarted in the US. Authorities introduced a commercial leasing program permitting the extraction of oil shale and oil sands on federal lands in 2005.

As of 2008, industry was using oil shale in Brazil, China, and Estonia and to some extent in Germany, and Russia. Several other countries started exploring their reserves or had built experimental production plants. Oil shale serves for oil production in Estonia, Brazil, and China; for power generation in Estonia, China, and Germany; for cement production in Estonia, Germany, and China; and for use in chemical industries in China, Estonia, and Russia.

As of 2009, 80 percent of oil shale used globally was extracted in Estonia, mainly due to the power plants. Estonia has an installed capacity of 2,967MW, China 12 MW and Germany 9.9MW. Israel, Romania and Russia run their power plants on oil shale, but have shut them down or switched to other fuels likes natural gas. Jordan and Egypt planned to construct power plants fired by oil shale, while Canada and Turkey planned to burn oil shale along with coal for power generation. Oil shale serves as the main fuel for power generation only in Estonia, where the oil shale fired was producing 95pc of country's electrical generation in 2005.

According to the World Energy Council, in 2008, the total production of shale oil was 930,000 ton, equal to 17,700 barrels per day of which China produced 375,000 ton, Estonia 355,000 ton and Brazil 200,000 ton. In that year, production of the conventional oil and natural gas was amounted 3.95 billion ton or 82.12 million barrels per day.

Extraction and Processing

Most exploitation of oil shale involves mining followed by shipping after which one can burn the shale directly to generate electricity, or undertake further processing. The most common methods of surface mining involve open pit mining and strip mining. These procedures remove most of the overlying material to expose the deposits of oil shale, and becomes practical when the deposits occur near the surface. Underground mining of oil shale, which removes less of the overlying material, employs the room and pillar method.

The process of decomposition begins at relatively low temperatures (300 °C or 572 °F), but proceeds more rapidly and more completely at higher temperatures.

Hundreds of patents for oil shale retorting technologies exist; however, only a few dozens have undergone testing. As of 2006, only four technologies remained in commercial use.

Applications and products

Industry can use oil shale as a fuel for

thermal power plants, burning it, like coal, to drive steam turbines; some of these plants employ the resulting heat for district heating of homes and businesses. In addition to its use as a fuel, oil shale may also serve in the production of specialty carbon fibers, adsorbent carbons, carbon black, phenols, resins, glues, tanning agents, mastic, road bitumen, cement, bricks, construction and decorative blocks, soil additives, fertilizers, rock wool insulation, glass, and pharmaceutical products. However, oil shale use for production of these items remains small or only in its experimental stages.

Some oil shale yield sulfur, ammonia, alumina, soda ash, uranium, and nahcolite as shale oil extraction by products. Oil shale gas has served as a substitute for natural gas, but as of 2009, producing oil shale gas as a natural gas substitute remained economically infeasible.

The shale oil derived from oil shale does not directly substitute for crude oil in all applications. It may contain higher concentrations of olefins, oxygen, and nitrogen than conventional crude oil. Some shale oils may have higher sulfur or arsenic content. The sulfur content in shale oil from Jordan's oil shale may rise even up to 9.5pc. The higher arsenic content of these materials means that the oil must undergo considerable upgrading before serving as oil refinery feedstock.

Above ground retorting processes tended to yield a lower API gravity shale oil than the in situ processes. Shale oil serves best for producing middle distillates such as kerosene, jet fuel, and diesel fuel. Worldwide demand for these middle distillates, particularly for diesel fuels, increased rapidly in the 1990s and 2000s. However, appropriate refining processes equivalent to hydro cracking can transform shale oil into a lighter range hydrocarbon or gasoline.

Economics

According to a survey, the cost of producing a barrel of oil at a surface in the US would range between $7 to 95 adjusted to 2005 values.In order to run a profitable operation, the price of crude oil would need to remain above these levels. The analysis also discusses the expectation that processing costs would drop after the establishment of the complex. Some experts compare the proposed American oil shale industry to the oil sands industry of oil per day in late 2007.

A 1972 journal compared shale based oil production unfavorable with coal liquefaction as less expensive, generating more oil, and creating fewer environmental impacts than extraction from oil shale.

Environmental Impacts

Mining oil shale involves a number of environmental impacts that include acid drainage induced by the sudden exposure and subsequent oxidation of formerly buried materials, the introduction of metals including mercury into surface water and groundwater, increased erosion, sulfur gas emissions, and air pollution caused by the production of particulates during processing, transport, and support activities. In 2002, about 97pc of air pollution, 86pc of total waste and 23pc of water pollution in Estonia came from the power industry, which uses oil shale as the main resource for its power production.

Therefore, environmentalists oppose production and usage of oil shale, as it creates even more greenhouse gases than conventional fossil fuels. Some have expressed concerns over the oil shale industry's use of water. In 2002, the oil shale fired power industry used 91pc of the water consumed in Estonia.■

POGEE 2014, more than a decade of its preeminence in the Energy Industry

The 12th International Exhibition for the Energy Industry-POGEE-2014 is scheduled from 28th May to 30th May, 2014, at Expo Centre, Lahore. The exhibition is geared up for an extensive display of technological advancement and innovative services and is attracting a good number of visitors from cities like Faisalabad, Sialkot, Gujranwala, Rawalpindi, Muzzafargarh, Shakohpura, Multan, Lahore and Karachi. More than 200 companies from around 25 countries are participating in the show including with a majority from China, Germany, Iran, India, Italy, Japan, Pakistan, U.A.E., U.K, U.S.A, Ukraine, Malaysia, Egypt, Australia, Korea, Taiwan, Singapore, Netherlands, Saudia, Switzerland, Thailand and Turkey.

The exhibition provides an opportunity to bring together the international business professionals and the leading local industry players to exchange their technical and business expertise to acquaint the local industry with the latest developments in the energy sector.

POGEE- 2014 will also be featuring a highly focused Conference program that is aimed at bringing South Asia's Energy Industry into the limelight. The POGEE Conference offers an excellent platform for exchange of views & information to the highly targeted audience from Oil, Gas and Energy Industry.

10th International Conference will commence on 29th May 2014, and will be based on the theme "Empowering Pakistan's Energy Future: Innovation and Investment". Mrs. Saniya Awais, Managing Director, Punjab Power Development Board (PPDB) will grace the POGEE Conference as the special guest.

Chairperson & Speakers:

- Dr. Miftah Ismail, SAPM/Chairman, Board of Investment
- N. A. Zuberi, Managing Director, Private Power & Infrastructure Board (PPIB)
- Muhammad Iltaf, Deputy Executive Director (LPG/LNG), Oil & Gas Regulatory Authority (OGRA)
- Mr. Sarim Sheikh, President & CEO, GE (Gulf & Pakistan)
- NSR Group, China

The first session of the Conference will have participation of eminent speakers from Board of Investment (BOI), Private Power & Infrastructure Board (PPIB), Oil & Gas Regulatory Authority (OGRA), GE and NSR Group China.

Adding further value to the conference, an Exclusive Panel Discussion on "Exploring Prospects for Coal Based Power Generation" will be conducted by Dr. Muhammad Bilal Khan, National University of Science and Technology (NUST). The panelists include Mr. Shamasudin Shaikh, CEO, Sindh Engro Coal Mining Company, Mr. Zubair Shafi Ghauri, Chief Marketing Manager, Pakistan Railways, Dr. M. Ashraf Moten, Chief Chemist, Coal & Energy Development Department, Underground Coal Gasification Project, and Prof. Dr. Shahid Munir, Director, Centre for Coal Technology, University of Punjab. This globally recognized platform anticipates that participation of each individual brings benefit and success in their businesses and enables the country to move a step forward towards its economic growth. Energy Update is the Media Partner of the event.■

Pakistan pla electricity fr

The government has set a target of 8,800 MW generation through nuclear power project by 2030 and more than 40,000 MW by 2050 from current generation capacity of 755 MW to meet the ever increasing energy demand.

Dr. Ansar Parvez, Chairman Pakistan Atomic Energy Commission (PAEC) in an exclusive interview with Energy Update highlighted the importance of nuclear sources in the country while dispelling concerns of environment and public sector with establishment of power plants.

He said the power shortfalls tend to affect economic and industrial growth in the country. . To meet the electricity demand, expansion of coal and nuclear capacity is required as oil is extremely expensive, gas is in short supply and hydel generation is seasonal though it has other benefits such as water management.

He assured that nuclear energy is safe and reliable. Safety culture has been strictly adopted by PAEC in all nuclear power plants. There is a need for increasing power generation through all existing sources including hydel, coal, gas and nuclear, as well as new sources like wind and solar.

EU: Can you tell us when did Pakistan start its nuclear power programme?

Ansar Parvez:: Pakistan began its nuclear power programme in 1965 with construction of Karachi Nuclear Power Plant, KANUPP. The plant is of Canadian design and came online in 1972. Pakistan thus became the 15th country in the world to set up a nuclear power plant. Just two years after commissioning of KANUPP, in the aftermath of the nuclear test across the border, the world community imposed embargoes on nuclear cooperation with Pakistan, which included termination of fuel supply and technical support for KANUPP.

Despite the embargoes, KANUPP was kept operational by the PAEC's scientists and engineers and the power plant is still operating safely for the last 41 years without any vendor support.

EU: What is the existing capacity of nuclear power plants in Pakistan?

AP: Besides KANUPP which provides electricity to K Electric, there are two more operational nuclear power plants namely Chashma Nuclear Power Plants unit-1 and unit-2 (C-1 and C-2). Both were constructed with the help of China and are being operated by PAEC. Their combined capacity is 655 MW. These plants are amongst the best operating power plants in the country in terms of capacity factors and cost of production. These plants produce electricity at an average cost of Rs 7 per unit. In comparison, the power generation through furnace oil may cost more than Rs16. So, one can say that the nuclear power plants, C-1, C-2 and KANUPP, are running well and providing low cost electricity.

Safety is the top priority in nuclear power plants. A plant safety committee keeps an oversight to ensure that is operated within the safe envelope and, of course, there is an independent national regulatory authority, PNRA, which ensures that all safety regulations are being strictly followed.

EU: What is the status of the new nuclear power plants in Karachi?

AP: After successfully operating C-1 and C-2 and start of construction of two 2x340 MW nuclear power plants (C-3/C-4) in 2010, PAEC decided to construct large size plants having power generation capacity 2200 MW. Before deciding to locate the plants near Karachi, PAEC carried out site specific seismic and tsunami studies.

The new plants in Karachi will be of Generation III. Utmost care is taken in Generation III plants so that even

ns to explore 8800MW om nuclear by 2030

By Ijaz Iqbal

in case of a severe accident, no undue harm is done to the surroundings.

The Fukushima nuclear power plants were Generation II and of old design, built in 1970s. The plant survived the earthquakes but the resulting tsunami made the diesel generators non-functioning. Heat removal from the plant was impaired resulting in increase in core temperature and pressure. However, not a single person died from radiation.

EU: What is special in Generation III nuclear power plants?

AP: : In Generation III systems, the plant is designed in such a way that even in case of any accident, if all cooling systems fail to work and complete system blackout occurs then cooling can be done through natural processes such as gravity.

They also have double containments around the reactor system. This special feature, not only prevents any release of radiation but also provides additional protection from external physical attack. Keeping in view all these safety measures, the PAEC came to conclusion that Generation III plants with these additional features are much safer to build and operate.

EU: What safety measures have been taken by the PAEC?

AP: There is a strong safety culture in PAEC and international bodies concerned with safety related issues like the World Association of Nuclear Operators (WANO) periodically visit Pakistan and inspect the safety measures. PAEC already has got site license for new nuclear power plants in Karachi from the regulator, PNRA, as well as approval from Sindh EPA, while plant design license is under study which will take about one year.

EU: We are getting Karachi nuclear power plants from China. Is Chinese technology reliable?

AP: The PACE is going to install a China plant in Karachi, and we are well aware about the technology. In China 28 nuclear power plants are under construction while there are about 77 plants in the world are under construction process, 6 are establishing in India, 10 in Russia and two are under construction in Pakistan, 600 MW two power plants (C1 and C2) already established while two others (C3 and C4) are under construction process. But in Karachi, another big nuclear power plant having power generation capacity 2200 MW will be established with latest technology of Generation III.

There is a strong safety concept in PAEC and the World Association of Nuclear Operators (WANO) came to Pakistan and checks the safety measures of Pakistan's nuclear power plants regularly. The PAEC already got sight license for new Karachi nuclear power plant from the regulator while design of plant license is under study and it will take about one year.

EU: The local people of Karachi are concerned about these plants, what do you say?

AP: Population density is the most important parameter in selecting a site for a nuclear power plant. The other factors which have to be taken into consideration include earthquake, tsunami and physical nature of soil. The seismic studies show that this is the most appropriate site. According to our calculations and assessment, in case of accidental radiation release, there would be no negative impact beyond 5 kilometers distance from the plants. At present, the area around the 5 km radius of the plant is sparsely populated. There is an emergency preparedness plan already in place because of KANUPP. Moreover, the thick double containment walls, will not allow any harmful substance to go out from plant.

EU: How do you compare nuclear with other sources of electricity production? How much time it takes to build a nuclear power plant?

AP: Like hydel power plants, the nuclear power plant takes 6 to 7 years for completion. Once a nuclear power plant become operational, it provides continuous power supply without interruption due to seasonal changes as in case of hydel. In order to meet electricity demand, there should be continued addition in the

system through different sources. The government already has plans to establish coal based power plants in different parts of the country; this will definitely help in improving the energy situation. Currently 41 percent power generation in the world is carried out by coal based sources. In Pakistan, there are big coal reserves in Thar. They require huge investments to mine and utilize. That is why the government has decided to establish coal based power generation plants that run through imported coal and later substitute imported by Thar coal. According to a study, the absence of a single unit of electricity costs 38 cents to the economy of the country.

There is a need for improving energy mix including generation of power through all sources. The hydel power generation has many benefits in long run, provides cheaper electricity, water storage facility, which is basic requirement of agriculture. In summer when hydel power generation reaches to its peak, stop fuel base power generation and save the fuel and use it during winter when hydel generation reaches to its minimum level due to non-availability of water.

EU: What are your views on energy mix in Pakistan?

AP: There is a need for improving energy mix including generation of power through all sources. The hydel power has many benefits in the long run, provides cheap electricity, water storage facility, a basic requirement for agricultural development. In summer when hydel power generation reaches its peak, fuel based power generation may stop to save the fuel for winter when hydel generation decreases to its minimum level.

EU: Is KANUPP running safely? What extra safety arrangements have been planned for new power plants at Karachi? Does PAEC follow international standards?

AP: KANUPP has been operating for the last 41 years and nothing serious has happened since its inception. The new nuclear power plant in Karachi will be built according to latest technology and will have no harmful affects on the surrounding areas. There is a double layered containment over the reactor system, having no chance for any radiation to leak. The containment is so strong that even under direct aircraft crash, the second containment will remain intact. Thus, there are no worries about safety of the plant.

We follow international rules and standards of safety and security of nuclear power plants. The directives of local regulatory body, PNRA, are strictly followed as they are responsible for licensing of the plants. The PNRA has strong linkages with International Atomic Energy Agency (IAEA).

EU: How do you see the future of nuclear power in Pakistan?

AP: The current goal is to generate 8800 MW from nuclear power plants by 2030, while at present, 755 MW power is being generated. These nuclear power plants are reliable and available in all seasons and shut down for a period of one month once a year for refueling and other maintenance.

There is a bright future for nuclear power generation in Pakistan. Once the existing under construction plants become operational; there are other plans to install more power plants without any investment from Pakistan. China will establish the plants, and the government will purchase electricity from these plants. This plan is at an initial stage but such proposals are under consideration and may materialize in the near future.■

Transformation in energy world

By Syed Rashid Husain

RIYADH: History is under spotlight. Way back in the mid-80s when Afghan jihad was at its peak, Riyadh on the urging of Washington opened its taps, flooring the oil markets.

The mighty superpower USSR, dependent on oil income, could not sustain the sharp fall - and simply melted away. The free world had won the round!

Writing of the episode, Paul Kegnor in his book writes: "In an amazingly innovative, gutsy and largely unknown plan, Reagan and Casey convinced (King) Fahd to help the administration hurt the Soviets economically via control on oil flows. In late 1985, the Saudis agreed to increase oil production dramatically - ultimately raising the output from less than two million barrels a day in mid-1985 up to nine million barrels a day by Fall 1985." And then he says: "the price plunged from $30 a barrel in the fall of 1985 to $10 in April 1986." And the USSR disintegrated.

Is a similar move in making now? With the referendum in Crimea, the world is almost back to the cold war days.

Oil is very much a part of the ongoing strategic calculations being made all around. Could the US (in coordination with Saudi Arabia and allies) unleash a flood of oil that would drive down prices and punish Russia for flexing its political muscle - remains a big moot of discussion all around?

The administration could release oil from the Strategic Petroleum Reserve, in a bid to reduce global oil prices and damage the Russian economy, underlined billionaire investor George Soros in a recent interview.

"The strongest deterrent is in the hands of the United States because it can release oil from the strategic oil reserve," Soros says, "which would then reduce the price of oil and that would ruin the Russian economy, which lives on oil." Soros must be taking history lessons these days!

Steve LeVine says the strategy under discussion (in Washington) is to drive down the price of global oil. If it could be done, a price in the $90-a-barrel range (Brent has been trading around $106.60 at the time) would be a big hit to the Russian state budget. The idea is for the US to sell sustained volumes of 500,000 to 750,000 barrels a day from the SPR into the market. And if there is a fall in price by only $12 dollars per barrel, Russia would lose $40 billion revenue in the budget.

America could push down global oil prices by as much as $12 a barrel by selling 500,000 barrels a day from its strategic reserve, argued Philip Verleger, who worked in the administrations of both President Ford and Carter.

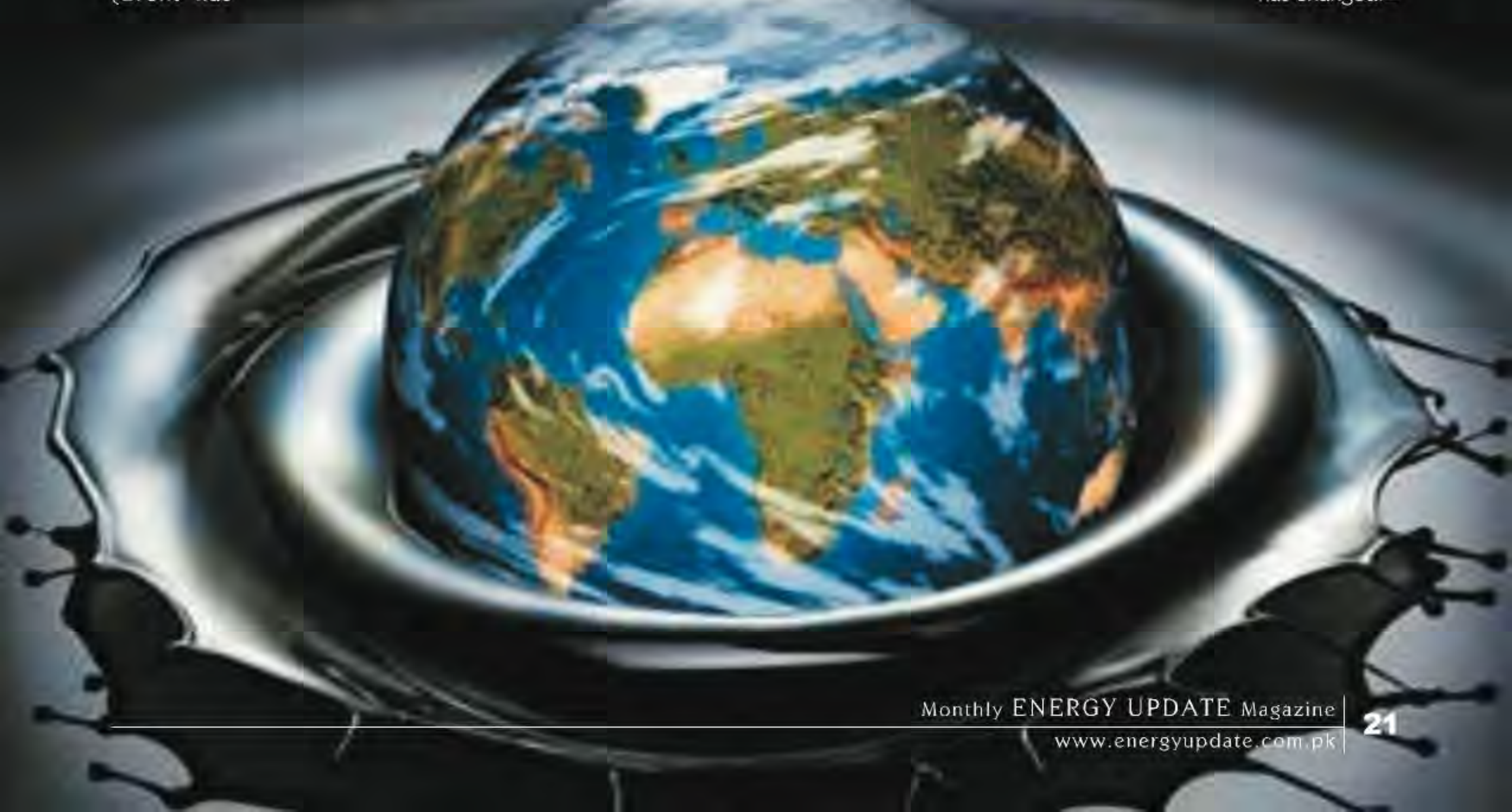
The lower prices would cost Russia about $40 billion in lost income from oil and gas sales, equivalent to 2 per cent of its economy, he said.

A well established and well informed industry expert, preferring to stay anonymous, is of the view that if the Americans in coordination with Saudi Arabia engineer a US $20 per bbl drop in the price of Brent crude oil, this could potentially reduce the Russian budget by some 15pc and hence make life extremely difficult for the Russian government and indeed Putin.

Russian think tanks though are taking the threat lightly. Sergei Demidenko, an expert at the Institute of Strategic Studies and analysis told Pravda. Ru that "first of all, the situation in the 1980s and the current situation in the oil market and general political situation in the world are very different."

And indeed times have changed. Saudi cash requirements have gone up and any significant drop in oil prices could result in considerable budgetary deficit. Bank of America Merrill Lynch says its preliminary spending projections for 2014 place Saudi Arabia's fiscal break even oil price at $85 a barrel.

Former Saudi intelligence chief Prince Turki al-Faisal has also been hinting in recent weeks that any such coordination may not be feasible today. "I am skeptical whether there can be something called an energy weapon to be used (today)," he said. Despite all the musings, all around, such a move may not be plausible and feasible today. The world has changed!■



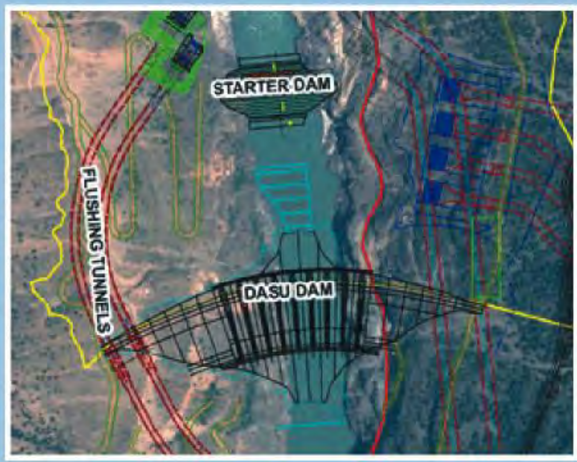
Dams are crucial for Pakistan survival

Pakistan is highly dependent on agriculture, having dependence over water resources, mainly Dams. These dams are not only resourceful for country's agriculture industry but these massive power producing units which generate electricity massively at amazingly reasonable expenses.

Dasu hydropower project

Dams are important for the economic growth of a country, therefore the government is to construct Dasu hydropower project on the Indus River on Kabul-Indus River in Kohistan district of Khyber Pakhtunkhwa. The project will cost $7.5 billion and expected to start this year and may be completed in two stages and four phases by the year 2037. The total capacity will be 4,320MW.

The project report was prepared by WAPDA and published by the World Bank. The report indicated that the first phase will be comprised of installation of the full dam and three of the planned 12 turbines, while phase two, three and four will involve the installation of three more turbines in each phase. The phases have been grouped into two stages. Under stage-1, the first phase is planned to start operation in 2019 and the second phase in 2022. However, the start of operation of the 2nd and 4th phases are uncertain, the 3rd phase is likely to be completed in 2031 while the 4th phase by 2037.



Dasu hydropower project is a socially difficult project A total of 4,643 hectares will be required for various project components such as dam axis, reservoir area, relocation of inundated Karakorum Highway, campsites and housing areas for operation and maintenance staff of the project and access to roads.

About 767 households from 34 villages will be relocated. Almost 90pc of the households have opted for relocation to sites of their own choices in higher elevations. An amount of $398.74 million will be required for relocation of project affected persons. This process consists of 10 separate components, including direct costs for land acquisition and other assets such as structures, crops and trees.

Dasu has a population of 5,000. At the peak of construction about 3,000 labourers will be required daily, that would bring significant changes in the lives of the mountain people of Dasu. The construction of dam will attract thousands more new in migrants turning this remote small place into an affluent town with influx of construction workers and migrants.

Although Dasu Dam is constructed on Indus River and not on Kabul River but Afghanistan have reservations on the project.

Tanaza Dam

By Ismat Sabir

Boats park on the bank of Indus River due to shortage of water

Kalabagh Dam

The Kalabagh dam is a mega water reservoir that Government is planning to develop across the Indu Dasu hydropower project s River, one of the world's largest rivers. The proposed site for the dam is situated at Kalabagh in Mianwali District of the north-west Punjab province, bordering KPK.

The dam project is a highly controversial since its inception. In December 2005, General Pervez Musharraf, announced that he would definitely build the dam in the larger interest of Pakistan. According to the PC-II of the Project, Kalabagh dam was initiated by GOP in 1953, and until 1973 project was basically for storage of wter for irrigation needs, and to meet the challenges of rapid increase in the cost of energy that enhanced the priority of the dam as a power project.

The paperwork was finalized in March, 1984, with the assistance of the United Nations Development Programme; supervised by the World Bank, for WAPDA.

The proposed construction of the Kalabagh Dam is being opposed by the three provinces and the only province is in favor of this dam is Punjab. The delay has also caused the cost of dam many folds.

Darawat Dam

The under-construction Darawat Dam is located in Thatta and Jamshoro districts of Sindh province is expected to be completed by December this year. The irrigation system of the project was scheduled to be completed in June 2013.

Darawat Dam, is being constructed across Nai Baran River some 70 kilometers west of Hyderabad, is a component of WAPDA's plan to construct small and medium-sized dams in addition to its mega projects in water and hydropower sectors.

The total cost of Darawat Dam is Rs9.4 billion. The project will help to store water for irrigated, mitigate floods; provide employment opportunities and emancipation of women. The concrete faced rock filled dam is 820 feet long and 141 feet high. The dam will store about 120,000 acre feet of water to help to irrigate 25,000 acres of land, besides creating 4,500 employment opportunities during the construction, operation and its maintenance. Annual benefits of the project have been estimated more than Rs one billion. Life of the project of water reservoir will be more than 100 years.

Diamer Bhasha Dam

The Asian Development Bank supported Pakistan to construct the Diamer Bhasha dam and shift from expensive furnace oil to cheap coal fired power generation. The ADB was in agreement with the government's policy of moving away from expensive to cheap fuel mix.

An agreement has been signed for the provision of a $900 million loan aimed at converting 1,325MW on coal. Diversifying to coal will help the country cut down its electricity generation cost.

The cost of the project was estimated at $12 to 13 billion and will require contribution from the government and other international financial institutions. Presently, Pakistan is producing three fourth of its total electricity demand by using expensive furnace oil and in next four years the government has to reverse this ratio. As suggested by the international donors, all future power projects will be based on cheap fuel mainly on coal, nuclear and alternative fuel.

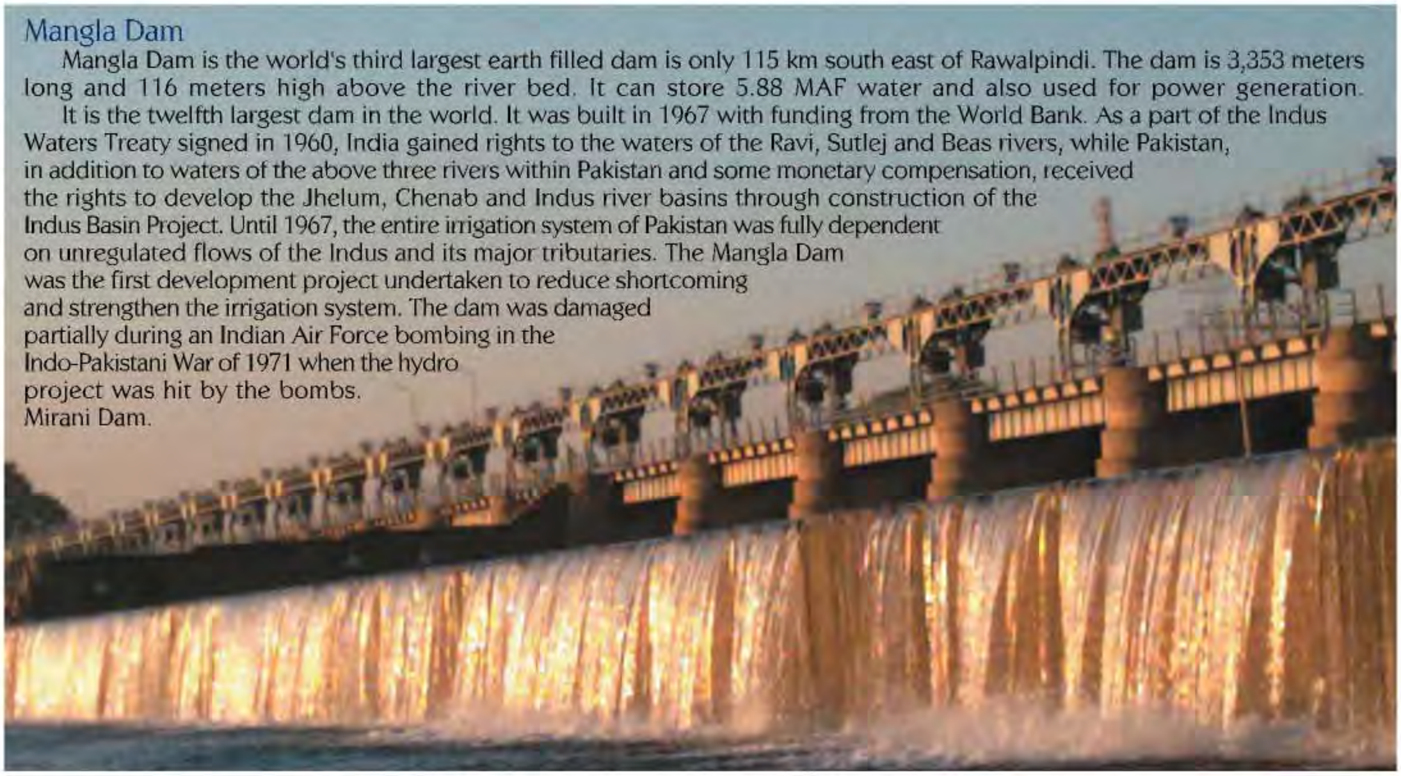
After Jamshoro project the next project will be Gaddani where ten projects having a generation of 6,600MW will be installed and fuelled by coal.

Mangla Dam

Mangla Dam is the world's third largest earth filled dam is only 115 km south east of Rawalpindi. The dam is 3,353 meters long and 116 meters high above the river bed. It can store 5.88 MAF water and also used for power generation.

It is the twelfth largest dam in the world. It was built in 1967 with funding from the World Bank. As a part of the Indus Waters Treaty signed in 1960, India gained rights to the waters of the Ravi, Sutlej and Beas rivers, while Pakistan, in addition to waters of the above three rivers within Pakistan and some monetary compensation, received the rights to develop the Jhelum, Chenab and Indus river basins through construction of the Indus Basin Project. Until 1967, the entire irrigation system of Pakistan was fully dependent on unregulated flows of the Indus and its major tributaries. The Mangla Dam was the first development project undertaken to reduce shortcoming and strengthen the irrigation system. The dam was damaged partially during an Indian Air Force bombing in the Indo-Pakistani War of 1971 when the hydro project was hit by the bombs.

Mirani Dam.



Tarbela Dam

Tarbela Dam is on the Indus River which is located about 50 kilometers northwest of Islamabad, in Haripur District, Hazara Division, Khyber Pakhtunkhwa. It has a height of 485 ft above the river bed and is the largest earth filled dam in the world. The dam is second largest by structural volume. The dam was completed in 1974 and was designed to store water from the Indus River for irrigation and flood control, and for the generation of hydro-electric power. Besides, supplying water for Irrigation, Tarbela Power Station has generated 341.139 billion KWh of cheap hydel energy since commissioning. A record annual generation of 16.463 billion KWh was recorded during 1998-99. Annual generation during 2007-08 was 14.959 billion KWh while the Station shared peak load of 3702 MW during the year which was 23.057pc of total WAPDA System Peak.

The Tarbela Dam is a major source of Pakistan's total hydroelectric capacity. It is part of the Indus Basin Project Water Treaty signed in 1960 between India and Pakistan. The project was funded by the World Bank. The construction began in 1968, and completed in 1976. The dam has a volume of 138,600,000 cubic yards. The dam has a reservoir capacity of 11,098,000 acre feet. It is about 143 m high and 8,997 feet wide at its crest. A new, smaller hydro-electric power project has been developed downstream known as the Ghazi Barotha Hydel Power Project. It is solely for generating electricity and has a water channel with the highest flow in the world.

It is a small dam located at about 35 Km south-west of Rawalpindi on Dhamial Road.

Warsak Dam

The gignatic multi purpose Warsak Dam is situated 30 kms north-west of Peshawar in the heart of tribal territory. It has a total generating capacity of 240,000 kw and would serve to irrigate 110,000 acres of land.

Shakidor Dam

The Shakidor (Shadi Kor) dam is located near Pasni, Balochistan, south west Pakistan, 1,900 km from Islamabad and has a length of about 148 meters. It was built in 2003, at a cost of 45 million rupees ($758,853), to provide irrigation water to the nearby farms. On February 10, 2005, the dam burst under the pressure of a weeks' worth of rain, killing at least 70 villagers and dragging their bodies to the Arabian Sea.

Misriot Dam

Misriot dam is located 12 km south-west of Rawalpindi. This small dam has an artificial lake with boating and fishing facilities. Fishing permit may be obtained from fishing guard at Misriot. It has a pleasant landscape and walkways beyond the lake among eruptions of black rocks.

Mirani Dam is located in Gwadar, Balochistan, Pakistan. Mirani Dam is multipurpose project. It is located on Dasht River, about 30 miles west of Turbat in Makran Division of Balochistan, it envisages provision of dependable irrigation supplies on the two banks of the river. The project has been completed in November 2006 and inaugurated by the President Pervez Musharraf of Pakistan. ■

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- ✓ Project management, evaluation and monitoring
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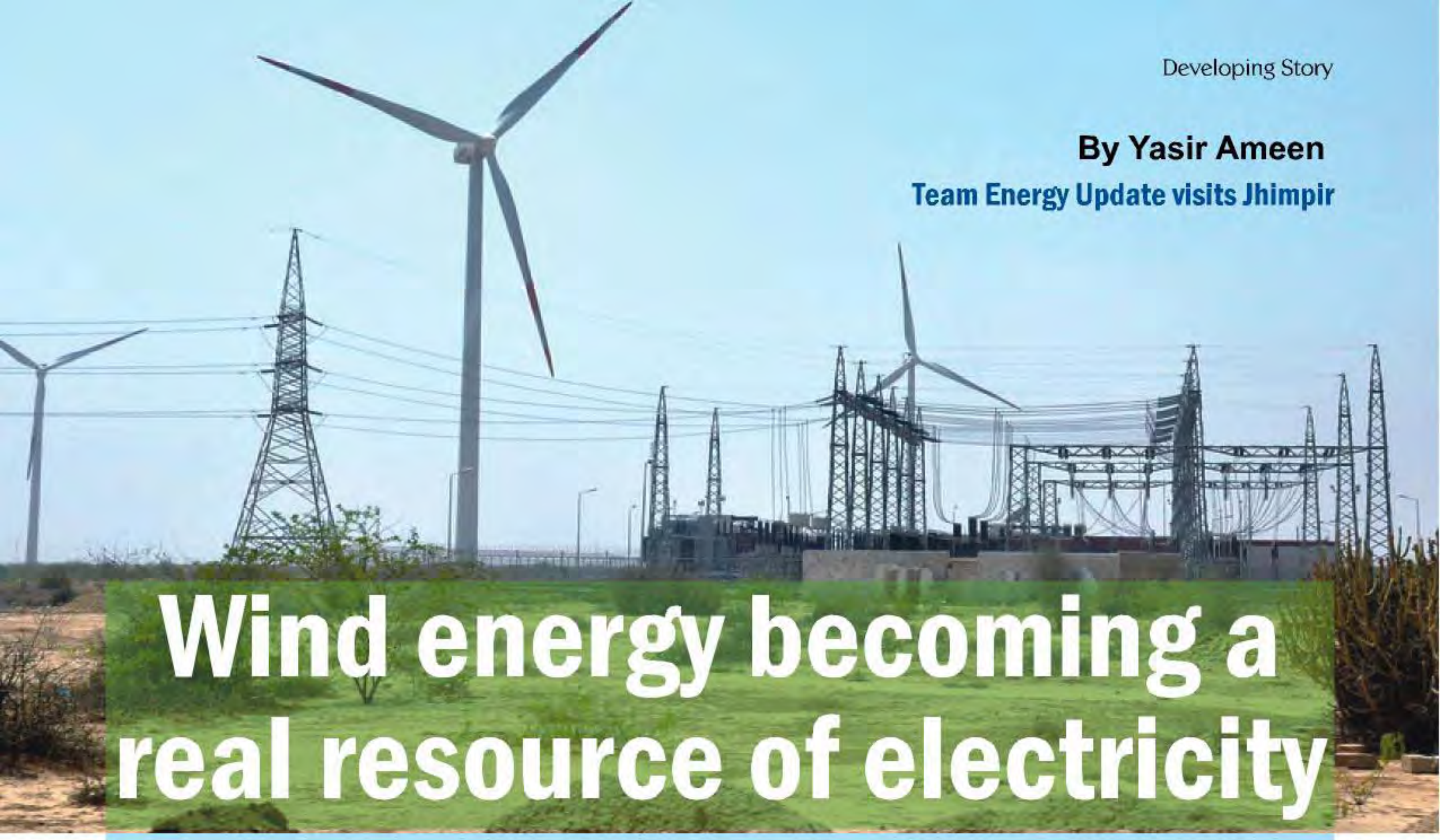

By Yasir Ameen

Team Energy Update visits Jhimpir

Wind energy becoming a real resource of electricity

Tall turbines operating to generate electricity with seemingly an unending numbers in the land of Jhimpir welcome you in an emerging energy corridor of the country.

The network of these turbines has been set up by different companies along with supported equipments and plants a 114 kilometer away from Karachi.

It aims to discover the real potential of natural wind making it a major source of producing electricity to the national grid of Pakistan in the near future.

A significant number of turbines are operational and being part of electricity production whereas some of them are being prepared to start their commercial operations of power generation in the months to come.

It will be hard to believe for those considering renewable as myth for Pakistan saying these sorts of projects are not applicable in our country but in developed countries with high-tech expertise.

But now it is a big reality for everyone, those who used to oppose and those who used to ignore wind energy, to observe a true potential of Pakistan which is now standing in the list of those countries who are opting to shift their energy dependency on renewable sources.

At present there are two companies operating commercially to produce more than 100 MW electricity to national grid but there are many more to come in the near future developing and expanding a sector of wind energy within power sector at rapid pace.

The generation of electricity through renewable resources especially from Wind energy has become reality in Pakistan after completion of two projects successfully with many others units stand in the queue to be operational in the next two years, attracting investment of $2 billion by the end of 2015 from various developed countries, Asjad Imtiaz Ali, CEO Alternate Energy Development Board said on the occasion of exclusive

visit with Energyupdate team and foreign investors.

The generation of electricity stands at 100 MW presently will exceed enormously to 800MW with gradually kick start of under construction projects in the coming months on the belt of Jimphir--- a wind corridor of Pakistan having capacity of producing 50,000 Mega Watt with average wind speed over 7 meter per second.

These power projects are mainly being set up having capacity of 50 MW to 15 MW separately by highly experienced and renowned companies from the developed countries where solar energy is heavily reliable. These countries include Germany, Denmark, Holland, Spain and Turkey.

The present government is keen to increase the utility of natural resources with the ways of renewable energy including Wind and Solar, which shows the seriousness of the government towards facilitation of the foreign and local investors and multinational companies.

The setting up of Wind energy generation units in Pakistan has boosted confidence of the federal and provincial government to deliberate on renewable methods of power generation because it is encouraging to note that different provincial governments besides federal have approached AEDB for chalking out strategy to establish units of Wind energy in different cities.

Wind energy is proven highly reliable and cost-effective source of power generation particularly for the countries like Pakistan which is heavily dependent on imports of costly oil for power generation. But the import bill of petroleum products/oil will be substantially reduced with the gradual migration of electricity dependence to renewable sources.

The substitution of power resource from oil and renewable is a big objective for the government because it will impact significantly over the trade balance of the economy hence will give opportunity to the policy makers to get benefits from its positive outcomes.

On the other hand, there will be tremendous benefit to the customers who will get affordable and comparatively low cost electricity in the future.

The expansion of Wind energy at the site of Jimphir will generate employment for thousands of skills workers whereas it will develop the area with infrastructure to commence different agro-based and commercial activities in the adjacent or nearby areas.

Most importantly, Wind energy is a sort of renewable energy which is environment friendly thus the carbon emissions and radiations of various chemical-coated toxic gases will never be possible despite the expansion of the sector.

The recurring cost is very minimum as against different source of energy productions as a matter of fact the natural wind/air is the basic raw material for electricity production which is naturally available and fortunately abundant in the specialized area in Pakistan.

AEDB is working aggressively to facilitate all foreign companies working to set up their plants and it has planned to provide turbines and equipments and components at local level in order to reduce the import cost of the companies.

In this regard, the board is working to invite specialist manufacturing companies to establish their high-tech manufacturing units in Pakistan for providing all equipments and components to investors of the growing local market. The company will cater the swelling demand of the sector in the future facilitating companies of wind energy, transferring cutting edge technology at local level and generating employment for locals, AEDB chief concluded.

Now it is high time for the government not only to facilitate the government to expedite development and completion work of wind energy projects but to also attracts local and foreign companies to setting up their plants in near future.

Alternate Energy Development Board (AEDB) top brass along with media visited three operational plants and received briefing from each company during its visit. The team was informed the operating structure of the companies, expansion plants and different issues being faced by companies.

With wind power generation is in full swing at three power plants—Zorlu Enerji, Fauji Energy and Three Gorges, the issues of the companies are more or less same. One is infrastructure and the other is local community resistance.

Related to infrastructure, the highways and roads leading to Wind Energy Farm are in dilapidated conditions making its immensely stressful for companies to commute with machineries and different crucial equipments for the plants.

The government has not developed roads and its related network across the farm which caused trouble to investors and companies but someone whether at private and at the government level has to accomplish this task ultimately.

However attracting foreign investors and facilitating foreign companies are responsibilities of the provincial government which should address this issued on priority basis.

While meeting with top officials of the three companies one after another, Imtiaz Asjad Ali, the CEO of Alternate Energy Development Board (AEDB) was apprised these issues in detail and he was demanded to urgently take measures in development of infrastructure and provision of basic utilities such as water supplies to companies.

He assured that he would approach to the Sindh Government and take up these

issues with them for the quick redressing of the issues that could hurt investment and development flow of the sector.

The other issues is related to local community that affect particularly to Fauji Energy Limited as many resident offered resistance in the development work demanding the management to provide them job opportunities at the project which is being explored on their land.

The company is reluctant to give jobs to any local resident because it believed that it would raise the cost of production of the company unnecessarily.

On the other hand, Zorlu Enerji and Three Gorges have provided job opportunities to local people and these companies have not faced any issues related to clash with local people.

The two companies have hired and groomed local people and now are utilizing them as productive part of their business which maintained their good image in the local societies.

Wang Shenliang, CEO of Three Gorges, said that its company is very ambitious to establish power plants of wind energy in Pakistan because the plans of the company include expansion of power plants and developments of smart grids.

He is very optimistic about future of wind energy in Pakistan saying that his company also set up a subsidiary manufacturing unit of wind power plants aimed at providing equipment to different companies going forward. The company is one of the state-of-art mechanism with more than 100 people have been employed, groomed and utilized.

Mumtaz Hassan, Country Manager, Zorlu Enerji, was very satisfied and determined as his company set precedent in producing electricity through wind power energy and he succeeded to materialize his company's plan in Pakistan.

There were many people who used to say that wind power projects would not get success in Pakistan. Even majority of them could not believe that companies could set up their infrastructure and plant. He said proudly, "Yes, we have prove it that we can produce electricity from wind energy and we are successful despite people say anything."

We have set up one of the modern plants in the world in Pakistan and we aim to develop more projects of power generation in the country.

Zorlu Enerji will expand its power plants of wind energy upto 100 MW whereas it is very keen to invest in the solar energy having plan to invest in the Punjab's Quaid-e-Azam solar park in Bhawalpur.■

Solar park rolled out in Bahawalpur

Prime Minister Nawaz Sharif inaugurated solar power park, which will start generating 100 megawatts of electricity in December this year and by 2016 add 1,000 megawatts to the national grid. The Quaid-e-Azam Solar Park project is a joint venture of the government of Punjab, Bank of Punjab and M/s TBEA Ltd of China.

Addressing the ceremony at Islamia University, Bahawalpur, the premier said Pakistan's biggest problem is power shortage that has pushed the country backwards and adversely affected its agriculture, exports, imports and industries.

The government is committed to ending load-shedding which is why it is 'working day and night' to complete new power projects, he said. "Since Pakistan's creation, 23,000MW of electricity have been produced, while we are planning to add 21,000MW to the system in the next eight years."

Premier Nawaz said his government would meet the country's energy needs much before the end of its five-year tenure. Pakistan would not only be able to meets its own requirement but also produce surplus electricity, he claimed.

The Pakistan-China Economic Corridor, with a total investment of $33 billion, is a glaring example of the close friendship between the two countries, he said. The 2,100-kilometre corridor would include special economic zones, a railways system and a model city, airport as well as a free port at Gwadar.■

Converted coal-based power plants inaugurated

Pakistan is entering the field of major coal- based power generation as the building of two of the ten such power plants with a capacity of 660 megawatt generation by Prime Minister Nawaz Sharif at Port Qasim near Karachi.

In August last Doha based QINVEST LLC, Power Construction Corporation of China (Power China) and SEPCOIII Electric Power Construction Corp, Government of Punjab and Private Power & Infrastructure Board (PPIB) signed a MoU for the development of ten 660 megawatt (MW) coal based power projects at coastal areas of Gaddani in Balochistan.

Two of the projects were made part of first phase while the eight would be constructed in second phase. For the existing project, joint venture of Sino hydro Resources Limited, China (a wholly owned subsidiary of Power Construction Corporation of China) and Al Mirqab Capital, Qatar will undertake development of two 660MW each coal based power project at Port Qasim, Karachi.

Port Qasim Power Plant will have the state-of-the-art technology that would produce coal based electricity with minimum environmental impacts and maximum efficiency. Moreover, being a coal based power plant, electricity production costs would be lower as compared to furnace oil based plants. In addition, the project will provide employment opportunities to local people, thereby, adding to the overall economic development of the country.

Some of the major global investments of the group include Barclays, Credit Suisse, 1 Hyde Park (the most prestigious real estate development in London). Additionally it has one of the largest portfolios of high end five star hotels in Europe. Going forward the group wants to increase its investments in the energy, resources/mining and infrastructure sectors particularly in the emerging markets, the sources added.■

LPG autogas is a fuel of the future

By Yasir Ameen

LPG autogas is the fuel of future in Pakistan with a potential to substitute Compressed Natural Gas (CNG) in vehicles comprising public transport and passenger cars alike, said Saeed Ahmad Khan, Chairman Oil and Gas Regulatory Authority (Ogra). If the government promotes the fuel with incentives, its development is possible on fast track throughout the country. In an exclusive interview, the Ogra chief said the LPG autogas is rightly a replacement of CNG having relatively increase mileage & lesser prices than petrol & diesel.

CNG is not available uninterrupted at fuelling stations throughout the country because the reserves are depleting fast even not sufficient for smooth supplies to all sectors now, he said. In the crisis situation, one could avail the opportunity to introduce a fuel which could cater the demands of vehicles at large.

Khan urged that the government should come up with incentives like soft loans for investors and businessmen in the energy sector to set up LPG autogas stations as same as the then government had done extensively and exclusively to promote CNG a decade ago. This will be better opportunity for banks and financial institutions as well to provide financing to a productive and lucrative sector.

Pakistan State Oil (PSO) has chalked out a plan to establish LPG autogas stations in the country as the authority received 30 applications from state-owners fuel marketing companies whereas 15 more applications have been submitted to authority for licenses. Ogra is considering to provide them license ensuring all regulatory and safety compliance whereas it will encourage more investors whether new or existing to enter into the new business segment, Khan added.

LPG autogas will be allowed to set up as new fuelling station or in existing retail outlets side by side with CNG and petrol dispensers however the issues of safety and space will be strictly addressed for avoiding any danger in future.

The development of LPG autogas will be done on the best planned model unlike CNG sector which were setup haphazardly in small areas whereas the rest of the areas was not tapped adequately. LPG autogas is available ingeniously for domestic sector whereas its imports could be possible through nearest neighbouring countries through the given facilities at sea ports.

The development of LPG autogas sector will streamline the business of LPG gas in the country as the supplies of the fuel will be done to fueling stations without abrupt variation of prices. On the other hand, the sale of LPG will be diminished at retailers' shop which is dangerous from a safety point of view of people and environment.

As far as LNG import is concerned, Khan said the role of Ogra is limited but it has been working seriously to accomplish its task fall in its domain. LNG project is likely to be made reality by the next year after year long procedures including licence for land and pricing to be set in the phases.

The government seems serious and willing to roll out the project on fast track because the shortfall of gas has increased to 1.5 MMBTU which will worsen the energy crisis in the country.

The LNG im-

port project is vital for the country meeting its growing need of gas in different sector because the discovery of gas field is extremely difficult in Pakistan mainly in the areas where it is available but security is a grave concern, Ogra chief said.

We don't have many options for exploring avenues of natural resources. Our demand is rising but supplies are shrinking continuously which widen the gulf between demand and supply hence our economy is burdened severely. We have limited gas resources and they could be found where the situation of security is vulnerable. On the other hand, there is a big scope of shale gas in Pakistan but it is costly and unaffordable to people. It is high-tech and high cost gas.

Ogra is working to monitor overall business of oil and gas in the country but there are certain things which are beyond of its domain. It can not handle smuggling of Iranian petroleum products in the different cities of Pakistan.

The smuggling of petroleum products from Iran is an issue but we will try to control it, in fact, the responsibility lies with custom authority not to allow its inflows on borders. But we whenever receive information, direct official concerned to stop its supplies in the country.

Secondly, the sale of petroleum products at open spaces mainly at chowks and markets of different cities is not acceptable to regulator which is mulling to take various measures for its control.

The best solution is to set up petroleum pumps where the demand emanates at different places upon and marketing companies should tap this opportunities as soon as possible.■

Ogra delegation visits terminal

A high-powered delegation of the Oil and Gas Regulatory Authority recently visited the proposed site of the LNG terminal construction by Elengy Terminal Private Limited (ETPL) at the Port Qaism and also traveled through the vessel channel by boat to observe the physical aspects of the project.

The delegation headed by Vice Chairman Sabir Hussain also included Member Gas Amir Naseem, Executive Director (LPG/LNG) Shahid Nauman Afzal and all other relevant senior officials. The visit was in line with the hearing on the application of the ETPL for construction of the terminal that the Ogra did that was presided over by Chairman Saeed Ahmed Khan.

During the course of hearing the interveners had raised apprehensions about possible channel congestion, siltation, safety, and other issues relating to site and channel. Therefore, the Authority considered it imperative to take an all encompassing delegation to the site through the channel in order to observe physical and technical aspects of the project before taking any decision on the application of ETPL seeking licenses for the construction of LNG terminal, a pipeline from the terminal to the Sui Southern Gas Company (SSGC) the buyer of gas, and other regulated activities.

The Authority would now examine the application viz a viz the legal requirements, approvals, and NOCs in addition to the objections raised by the interveners during the course of hearing in Karachi on the ETPL's application for the grant of license to construct the LNG terminal at Port Qasim. Initially it was noted that the final approval of the PQA, NOC from the Ministry of Defense and certain studies were still pending.■

ABB brings air circuit-breakers to market

ABB has launched its next generation of air circuit-breakers, SACE Emax 2 after more than 70 years of cutting-edge research and experience in the electromechanical industry to create this new benchmark.

Not only does Emax 2 meet or exceed the standard performances and functions that the market demands from an air circuit-breaker, but it has evolved into a true power manager. Emax 2 and its Ekip brand of tripunits and accessories contain the perfect blend of control, connectivity, performance, ease of use and safety to efficiently satisfy any application or need.

The Ekip Link system and Ekip Control Panel enable local monitoring of circuit-breakers and switchgear functions in an individual switchboard. They require no programming and are available for even the most basic Emax 2 trip unit, providing an economic way for a small plant to increase monitoring capabilities or a large plant to simplify local supervision and maintenance.

Unlike competing models, it also boasts a large color touch screen interface which allows for clear navigation, creating a simple and quick way to find information or make adjustments.

"We have seen the market recovering over recent months and the past 2 years of investment made by the government is really beginning to show. Many new projects have been announced and we are excited to be a part of the Middle East's economic development. Energy efficiency is currently a hot topic and there are new requirements in building regulations to control energy and reduce our carbon footprint.

For this reason we have invested heavily in the research and development of air circuit-breakers that has enabled us to introduce new energy control features that don't currently exist in the market." declared Roberto Invernici, Local Business Unit manager for Breakers and Switches, Low Voltage Division, Southern Gulf & Pakistan.■

Pakistan to be richer with latest technology on LNG supply

Sheikh Imranul Haque, CEO ETPL talks with Energy Update

By Salahuddin Haider

The signing of LNG Service Agreement (LSA) between Engro Elengy Terminal Private Limited (EETPL) and Sui Southern Gas Company (SSGC) has led to renewed hope that Pakistan will able to combat the crippling gas shortage in the country. Pakistan's existing gap between gas supply/demand is approximately 1.6bcfd. At the current rate of consumption, it is expected that Pakistan will run out of gas in less than 20 years, hence it is imperative to look for the alternative source of gas in and around Pakistan. Importing LNG will enable the government to save significant foreign exchange through import substitution of oil and alleviate the energy crisis plaguing the country. The commissioning of the ETPL project, which has an investment of over USD$150 million, means that Pakistan will be richer in the latest technology on the port supply of LNG.

The project has been cleared by the Cabinet and procedurally will get the approval of the Defence Ministry also. Within 11 months of the formal signing of the agreement, ETPL will be ready to secure LNG from ships, and will be handling up to 42 million tons of LNG for onward supply to the oil terminals.

Haque stated that LNG is the need of the hour and the only possible short-term solution to provide relief to our gas deprived nation. On one end, the country struggles to operate its industry and power plants on natural gas, on the other, it struggles to even setup basic infrastructure for import of LNG.

Government of Pakistan wants to secure LNG supplies from Qatar, but in return, the counterparty wanted the infrastructure to be developed in Pakistan for LNG handling before a deal could be made. It has been reported that a Qatari delegation will negotiate the liquefied natural gas (LNG) price and

press ahead with a government-to-government gas supply deal.

As the LNG Services Agreement (LSA) has been approved by the ECC and the SSGC Board and awaits Cabinet approval, controversy now surrounds the project. With daily news being issued in papers targeting either the LNG price or the Terminal safety, we sat down with Sheikh Imranul Haque, CEO ETPL and discussed the onslaught the project now faces.

EU. Initially, Engro Vopak Terminal Limited (EVTL) was pursuing the project. However, ETPL had bid for the project instead of EVTL. Why is that?

SIH: It is no secret that we had coined the term "Fast Track" - the country faces 1.5 bcfd of gas shortage today and worse is to come, time is of essence. We proposed to the GOP to use the EVTL chemical and LPG jetty for handling of LNG on intermittent basis. The project would be able to handle 1.5 MTPA of LNG on intermittent basis and gas would be supplied 6kms away from the terminal from where SSGC would off-take the gas molecules. This was a 6 month project short term setup and would give the GOP breathing space to issue tenders for Greenfield projects, which are capital intensive and would require 24 to 30 months for completion.

However to ensure transparency and competition, and after GOP's consultation with other stakeholders, i.e. Pakistan Gasport Private Limited (PGPL), Global Energy Holdings (GEIH) and Fauji Oil Terminal (FOTCO), GOP issued an RFP to handle upto 3 MTPA of LNG and on continuous basis, with a 24 km pipeline, majority of it being 42" long. This was substantially different from the EVTL Fast Track Project, and therefore we had to go out of the way and construct a new jetty for handling of the same. That is why ETPL pursued the project as EVTL could not handle 3 MTPA of LNG at its existing jetty without hurting its chemical businesses. This is also the reason that our original application to OGRA was from EVTL but subsequent to the GOP RFP, OGRA was duly informed of the change in applicant, being ETPL and all other paperwork followed the change.

EU. During the OGRA hearing, interveners filed petitions saying that the required authorizations are still pending and thus OGRA license should not be awarded. What is the updated status?

SIH: We have been in terminal business for more than 16 years now and this is not the first time we have been working with OGRA. At EVTL, we have been handling LPG since 2002 and similar OGRA licenses for LPG are also required.

For handling of LNG, ETPL has obtained NOCs from Sindh Environment Protection Agency (SEPA), Civil Aviation Authority (CAA) and Ministry of Industries (Department of Explosives). OGRA provisional license was also obtained prior to the submission of bid.

NOC from Ministry of Defence (MOD) is in progress. We cannot approach MOD directly and they must be approached by Ministry of Ports & Shipping (MP&S) for the same. First time we had requested PQA was in August 2013 to expedite the matter on our behalf and they have finally written to MP&S to pursue the matter with MOD in February 2014. Upon MP&S writing to the MOD, NOC will be processed.

As per LNG Rules 2007, OGRA only needs to be appraised of the status of the NOCs required and not the actual NOCs themselves and this has been the case in the past as well when OGRA had issued licenses for Greenfield projects a few years earlier.

ETPL application meets all requirements of PIANC, SIGTTO, NFPA 59A, the LNG Policy 2011 and LNG Rules 2007 and the same had been concluded by OGRA's Third Party Auditors, SGS, in their evaluation report of ETPL's application.

EU. Papers and Port Users have cited concerns over the ETPL site in terms of safety. Why does ETPL still want to establish the terminal at the site adjacent to the EVTL chemical and LPG jetty?

SIH: When LNG imports were envisaged by the GOP and an LNG Policy 2006 was issued and site acceptance was based only on an Environmental and Social Impact Assessment Study (ESIA) and compliance to International Guidelines. Subsequently, PGPL were issued NOCs and IA was signed by PQA.

We advised conducting of QRAs and Simulation studies to the GOP to facilitate site selection and a revised LNG Policy 2011 was issued incorporating the recommendation. We were the first ones to conduct a site specific QRA, not for one site but for three sites, one of which was the site adjacent to the EVTL chemical and LPG jetty. Our QRA was done by Lloyd's Register UK who is an authority on LNG and a reputable name in safety, recognized by over 50 accreditation societies. The QRA not only approves the ETPL site as a safe option but also terms the site as having "operational advantages". But we did not stop here. We updated the study and conducted Consequence Analysis for the project in February 2014 by Lloyd's Register. The study assesses various failure scenarios and its consequences on the surroundings. And the impact is limited to ETPL's berthing basin which is away from the channel traffic, merely 150m from the RLNG manifold. This clarifies that there will be no impact on any Port Traffic, which is in the main channel and not in the ETPL berthing basin. Similarly all other port users are also not effected as they do not lie within the ETPL berthing Basin. The ETPL berthing basin is the area which houses the ETPL jetty, the ETPL FSRU and the LNG Carrier.

We also conducted HAZOP studies in the UK in January 2014 for the project. The study was led by Lloyd's Register of UK and was participated by SSGC, PQA, Royal Vopak (Holland), China Harbor (CHEC), Excelerate Energy (USA), Technica LTD (UK) and Qatargas (Qatar). These are the people who are familiar with the LNG industry as much as we are with tea. It's a part of their daily business. The HAZOP studies have termed the ETPL project and site as being viable in terms of technicality and safety.

People who are citing safety zones and distances from internet researches are unaware of the industrial trend. Some think the terminal needs to be 2000m away from public and some even say 3000 m? Where are these numbers coming from? We have visited international LNG terminals. Do you know that

Bahia Blanca terminal in Argentina is approximately 500m away from a grain terminal and at a similar distance from a fertilizer plant while the LNG jetty is within approximately 200m distance from the grain jetty? The LNG import terminal, the Zebrugge terminal in Belgium has a major part of the Knokke-Heist municipality within its 3 kilometer radius, which includes, to name a few, hotels, parks (Willemspark) and restaurants (Bartholomeus, Ter Duinen, Channel 16). The Everett LNG terminal in Boston, USA is located across the Mystic River and LNG tankers must pass through Boston harbor to reach it. The terminal is located at the heart of population and The General Edward Lawrence Logan International Air Port is a mere 3 km away from this facility. Our peers in India also operate LNG terminals. The Petronet LNG terminal in Dahej, Gujrat has three more jetties, including the Birla Copper Jetty within a 2 km radius. The Birla Copper industry is 2 km away and there is also a Gas cracker plant located 3 km away from the LNG storages. Our partners in EVTL, Royal Vopak, operate the largest LNG import terminal in Europe, the GATE terminal, right next to an oil terminal. Compare this to our site, and we are more than 950 m away from FAP, our closest neighbor. I am sure the numbers quoted for safety distances are based on guess work. We must verify the news and cross check the facts before spreading them, doing otherwise is either a result of malafide intentions, or of misinformation.

As the world is reaping advantages of LNG, Pakistan is arguing whether the safety distance is 2000m as quoted by the newspapers, or 150m as Lloyd's Register have determined after site specific assessment.

We at Engro have a strong safety culture. We have DuPont standards in place and we take pride in our HSE and CSR initiatives. We either do businesses safely, or do not do business at all. We have brought in partners of international repute to work with us. Excelerate Energy, our FSRU provider, operates the largest fleet of LNG FSRUs in the world and have experience in development of at least 6 LNG terminals internationally. Why do you think they will want to risk their reputation and their FSRU (a USD 250Mn + asset) if anything being done by ETPL was unsafe? Before commissioning, the site and the terminal will be audited by FSRU operators, LNG suppliers and LNG Carrier operators who will refuse to bring in their multi-million worth assets to the project if we have done anything outside the norms of the LNG industry. This check in itself is an impetus for us to ensure that we meet all international safety requirements for terminal siting and infrastructure, else our investment of over USD 150 Mn goes to waste.

I will also like to add that PGPL/FOTCO have now made interventions in the name of safety while they themselves were a party to the bid and had proposed sites in similar locations. It was safe then? Why does ETPL want to setup a terminal at their proposed site? Firstly, the tender was a fast track project. ETPL's site can be developed within 335 days as compared to 2+ years for Engro's site at Khiprianwala Island. Also the capital expense and thus the cost to the people of the country is significantly lesser than Greenfield sites. If the site is safe and economically viable, then it becomes the only option to any sane mind and that is what we have done.

EU. There have been tenders issued earlier for LNG imports and have been scrapped due to various reasons. The government think that the people of Pakistan require LNG. Do you think there are people in Pakistan who think Pakistan does not require LNG?

SIH: After the scrapped Mashall project, this is the fourth tender for the import of LNG. People of Pakistan needs Gas as it comprises of 40to 45% of the country's fuel mix. We need gas to run our power plants, fertilizer, cement and textile industry, even CNG based vehicles. Pakistan has more than 9 million CNG based road vehicles which is the largest CNG based transportation of the world.

that Port Qasim traffic will stop due to LNG shipping and the world will come an end if something goes wrong, I do believe that there are people in the country who do not want LNG imports to become a reality and that is why misconceptions about the tender and the project are being spread. Do you know that LNG does not catch fire in liquid form unlike oil, needs a specific mixture with air/oxygen to become ignitable, and there are no LNG related accidents in the world to date? Port Qasim handles more dangerous cargoes today. They handle a 60,000 MT of Oil ship, they handle a 10,000 MT LPG ship. Mashallah PQA have handled such cargoes safely for the last 17 years.

We must see who it benefits if LNG does not come, and we must see who is spreading misconceptions about LNG. We should ask these people why they are doing this and don't they realize that Pakistan is facing a severe gas shortage, which is expected to worsen? We must promote national interests instead individual benefits.

EU. What is Port Qasim's stance in all of this?

SIH: PQA were aware of our proposed project site before we had submitted our bid to the GOP in October 2014. PQA were a part of the Pre-Bid meetings in Islamabad and have committed to support the Project. As LNG is a new technology for the PQA to handle, they need some time to work with a reputable consultant to draft LNG related Operating Procedures. PQA also needs to procure tugs and train their pilots for safe handling and this is a normal practice when such projects are kicked off for the first time in a country. We have initialed the Implementation Agreement with PQA and we look forward to work with them. We have worked in PQA since 1997 and we know they are capable of delivering as the nation looks towards them for playing their role as a competent and prudent Port Operator.

EU. What do you think will be the outcome of the current LNG Saga?

SIH: A hype has been created regarding the risks of LNG. Even flying in an airplane is risky, but risks are successfully managed by implementing appropriate measures. If the airline industry had shunned the idea of flying for it being risky, rather than implementing appropriate safety measures, then we wouldn't have the perks of commercial flying today.

I cannot predict the future. But we have tried our best and offered a very competitive tariff for handling of LNG. We have proved project safety and compliance of legislative and international requirements.

I hope whatever happens, happens for the best for our nation and when we leave this world, we leave a much better and stable country for our children. It is a pity that first we could not construct dams in the country, and now we cannot construct a simple 20m x 30m jetty to handle LNG.■

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Bid Evaluation
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Conceptual Drawings
Basic Design
Detail Design
Construction Drawing
"As Built" Drawings

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Scheduling and Budgeting
Preparation and Implementation of QA/QC Plans
Preparing HSE Manuals applicable to the construction site
Preparing Project Documentation
Punching List
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By Yasir Ameen

Thar Coal project moving from planning to progress

The production of electricity through coal-based power plants is not only crucial for the country's energy needs for the future but it is a lucrative investment opportunity for power producing companies with their long-term project but the interest of private and foreign companies have been seen encouraging in this sector after the provincial government along with its partner is working on a projects at rapid pace.

According to the reports, seven foreign and four local companies have shown their interest to acquire four blocks of Thar for generating electricity with their power plants-a overwhelming and more than expected response to the government against its expression of interest.

Among foreign companies, there are three Chinese, each on from America and Russia and two consortiums of Russia-China and China-Middle East based companies whereas four local companies include big groups from different sector.

The government is assessing the investors' financial and technical strength and qualification whereas it is likely to finalize the bidding process of four additional blocks of Thar by the end of 2014.

Investors' confidence and interest in Thar coal have been built after with the fastest development project of Sindh Government and Engro Corporation, that is, Sindh Engro Coal Mining Company (SECMC). In the join-venture project, Sindh government has planned to invest Rs 15 billion for next three years whereas Engro has invested Rs 1.5 billion so far.

Khurshid Jamali, Chairman Board of Director- SECMC said the total investment for the integrated project is estimated to be US$ 1.7 billion where China will fuel

the project with investment, labor and machineries.

As developer of Thar Block-II, SECMC plans to expand the mine in phases and reach a sustainable capacity of coal output for the production of 4,000 MW for more than 50 years. Phase - I of the project envisages mining operation of 3.8 million tons per annum of coal to be utilized by mine-mouth 660 MW power plant for 30 yearsA wholly owned subsidiary by the name of Thar Power Company (THARCO) was incorporated in 2013 with the objective of developing the power plant designed to operate on Thar coal.

Shamsuddin A. Shaikh, CEO of SECMC the company has achieved substantial progress on the mining and power project during the year. Firm EPC bids have been received from leading Chinese firms and final announcement is expected by end of this month. 6000 acres of land has been acquired for which no resettlement is required.

A public hearing of Environment and Social Impact Assessment (ESIA) was held last month to apprise the stakeholders on environmental and socio-economic impacts of the Power Plant project, approval is expected by next month. Environment approval for Mining Project was received last year. Finally, on April 30, 2014, the works for 113 million cubic meter overburden removal in Thar Block - II took start. Furthermore, infrastructure requirements including water, transportation and power transmission line from Thar to Matiari are being pursued actively with relevant authorities/agencies. The integrated project is expected to come online by Dec 2017.

An estimated 170 billion tons, there is enough energy trapped in the reserves to satisfy the energy needs of Pakistan for the next hundred years. The reserves are buried

The Thar coalfield with a resource potential of 175 billion tons of coal covers an area of over 9,000 sq km in the Thar Desert in Tharparkar district, in southeastern part of Sindh. At the optimum capacity of 4,000 MW, power produced from Thar Coal can yield a tariff of approximately 6.0 cents/Kwh. This is the cheapest of the options currently available with our decision makers. Additionally, it is approximately 50% cheaper than RFO based power generation.

Shams said that this major breakthrough has only been made possible through the instrumental support provided at all forums by Government of Pakistan, Government of Sindh, Engro and other investors.A number of local industrial groups and investors are going to join hands with SECMC to make this project a reality and drive Pakistan on-track towards energy self-reliance.

Shams Shaikh added that Thar truly is the most viable power generation option for Pakistan with development of indigenous Thar Coal Reserves offers a fortune-turning proposition for Pakistan, which will not only address the severe power shortage crisis in medium to long term but also bring energy security to the country.

The project will also bring immense socio-economic benefits for the poor people of Thar as the project will catalyze the creation of social assets - medical facilities, educational institutions, and infrastructural development and job opportunities.■

deep under the desert sands and are separated by the reservoirs of fossilized aquifers. While there is high moisture, the Sulphur content of Thar coal is low, making it environmentally more attractive.

Pakistan is fortunate to have abundant coal reserves that are equivalent to the combined oil reserves of Iran and Saudi Arabia in energy equivalent terms, and have the capacity to produce 100,000 MW of electricity for 200 years. Shams further added that

LNG import project kicks off amid high hopes

A much-awaited project of Liquefied Natural Gas (LNG) import has witnessed a significant development with its formal execution and deadline for completion within a year as recently a LNG Service Agreement (LSA) was signed between Engro Elengy Terminal Private Limited (EETPL) and Sui Southern Gas Company (SSGC) in line with the Federal Cabinet's approval for the LNG import infrastructure project.

Shahid Khaqan Abbasi, Federal Ministry of Petroleum and Natural Resources is very optimistic over the early accomplishment of LNG project to bridge the gap between supply and demand of gaseous fuel in the country though he believes the project is not as cheaper .

In order to combat the energy deficit, we are working on developing an efficient and sustainable power generation, transmission, and distribution system that can cater to the demands of the country and boost our economy. LNG import is crucial because it will substantially reduce the production costs of thermal power by replacing furnace oil and will improve the efficiency of thermal generation plants. It is the fastest stopgap solution to Pakistan's energy needs, Minister said.

He outlined the government strategy to replace fuel oil/ petroleum products with substitute and comparative lesser price fuel such as Liquefied Natural Gas, Liquefied Petroleum Gas and Coal.

The project of Liquefied Natural will be accomplished before its set timeline of 335 days started from today with the financing of $2 to 2.5 billion to import 400 mmbtu for various sectors of energy dependent.

Speaking as chief guest at the signing ceremony between Sui Southern Gas Limited and Engro Elengy Terminal Pakistan here on in line with development of LNG import terminal at Port Qasim, he said the prices of LNG will be settled as most reasonable at par with the availability and trend of the fuel cost in the global market though is no resource of energy which is cheaper at present situation.

The government will make sure that the prices will be set less than $17 mmbtu but the project will contribute significantly to meet the sprawling energy demands in the country setting to increase 10 percent additional supplies to industries and commercial sectors to have substantial share in the GDP.

The project will generate additional 500 to 600 mmbtu due to its regasification mechanism of terminal, he said. The volume of the gas is greater than what our biggest gas fields-Sui and Qadirpur-are producing, he added.

Pakistan will save $100 million per month or $1.2 billion per year in the replacement of furnace oil in power sector with LNG, Abbasi said referring to the share of gas in over all energy mix of the country stands greater than 50 percent compare with different resources.

Pakistan State Oil (PSO) will take share in the financing of the project whereas the SSGC will be facilitator and Engro will be handing overall operations.

The project is advancing towards its completion. The next stage will be talks on government level with Qatar and holding of competitive bidding among suppliers/ exporters, he mentioned.■

AMAZing

Google: Driverless cars are mastering city streets

LOS ANGELES: Google says that cars it has programmed to drive themselves have started to master the navigation of city streets and the challenges they bring, from jaywalkers to weaving bicyclists — a critical milestone for any commercially available self-driving car technology. Despite the progress over the past year, the cars have plenty of learning to do before 2017, when the Silicon Valley tech giant hopes to get the technology to the public.

Genetic code of bloodsucking tsetse fly cracked

VIENNA: Scientists said Thursday they have cracked the genetic code of the tsetse fly, potentially helping to tackle one of sub-Saharan Africa's most devastating livestock diseases as well as human sleeping sickness. "Decoding the tsetse fly's DNA is a major scientific breakthrough," said Kostas Bourtzis from a joint body of the UN Food and Agriculture Organization and the International Atomic Energy Agency which sequenced the genome in a 10-year international effort. He said it "opens the way for more effective control of trypanosomiasis, which is good news for millions of herders and farmers in sub-Saharan Africa".

Urethane igloo in Alaska for sale

ANCHORAGE: The embodiment of an Alaska cliche is for sale. The massive urethane igloo that's a must-stop for summer tourists heading up the Parks Highway en route to Denali National Park and Preserve can be had for $300,000. The 80-foot high structure was erected more than four decades ago over a shell of plywood and two-by-sixes, and was never completed on a 38-acre site, which is part of the sales package. The igloo, which shows its age, has never been anything more than a magnet for cameras and vandals, who set off firecrackers in its cavernous interior before it was boarded up.

But for someone with lots of money to spare, property owner Brad Fisher sees great possibilities for the picturesque location in Alaska's interior. The site, 20 miles from the nearest community at Cantwell, is prime snowmobiling country in winter and hiking in summer, a land of rolling hills and willows surrounded by mountains and splendid views. Fisher, 55, envisions the igloo as an eye-catching seasonal restaurant and hotel run ongreepower.

Sony's PlayStation 4 sales top seven mln

TOKYO: Sony says it has sold seven million PlayStation 4 worldwide since its launch last year and admitted it can't make them fast enough, in a welcome change of fortune for the Japanese consumer electronics giant. "The response from the global gaming community for PS4 (PlayStation 4) has been overwhelming and we are truly humbled that gamers are selecting PS4 as their next generation console of choice," Andrew House, president and group CEO of Sony Computer Entertainment Inc., said in a statement.

"The PS4 journey has just begun, and although we are still facing difficulties keeping up with the strong demand worldwide, we remain steadfast in our commitment to meet the needs of our customers," he said.

Software sales for the console are also strong, with more than 20.5 million copies sold in retail stores worldwide and through digital downloads on PlayStation Store as of April 13, 2014, it said.

The PS4 is up against Microsoft's Xbox One, and Nintendo's Wii U for dominance of the digital home entertainment market at a time that consoles are under intense pressure to prove their worth in a world of ubiquitous smartphones and tablets for games and videos.

By comparison, the Wii U, launched in late 2012, took more than a year to sell 5.86 million units.

Archaeologists find 5,600-year-old tomb in Egypt

CAIRO: Archaeologists in southern Egypt have discovered a 5,600-year-old preserved tomb and mummy predating the First Dynasty of the pharaohs, the antiquities ministry said. The tomb was built before the rule of king Narmer, the founder of the First Dynasty who unified Upper and Lower Egypt in the 31th century BC, the ministry said in a statement. The tomb was discovered in the Kom al-Ahmar region, between Luxor and Aswan, on the site of Hierakonpolis, the city of the falcon, which was the dominant pre-dynastic urban centre and the capital of the Kingdom of Upper Egypt. The archaeologists found an ivory statue of a bearded man and the mummy of the tomb's owner, who appeared to have died in his late teenage years, the ministry said.

IFEC

Pakistan's Third Islamic Finance Expo & Conference 2014

Islamic banking ready to replace conventional

By Asad Farooq

Islamic banking to undergo promotion under strict Sharia laws

The third 'Islamic Finance Expo and Conference 2014' has commenced, with a consensus that its time for Islamic mode to takeover the banking and financial sector.

The two day event was organized by Publicity Channel to promote the concept of Islamic finance and discusses opportunities and challenges, being faced by the sector in current diversifying situations.

State Bank of Pakistan (SBP) Acting Governor Ashraf Mahmood Wathra and Mufti-e-Azam Pakistan Moulana Mufti Rafi Usmani graced the event with their presence.

In his address SBP acting governor stressed the need to further accelerate the extension of Islamic banking. He said that the future of Islamic banking in Pakistan, as well as across the global is very positive. We should focus on improving the perception of Islamic banking in our society. He hailed the role of Islamic banks and stated that recently taken measures by the Islamic banks for promotion of Sharia based banking are viable and significant.

Responding to the queries of distinguished guests, he agreed that Islamic banking can play a vital role in reduction of crises, including energy crises, which directly hit the labour class of the society. In this regard, he said that finance for solar panels would be made through Islamic banks.

He said that the government is already supporting local youth for entrepreneurship and furthermore the suggestion for loaning to youngsters through Islamic banks would be considered seriously. He also agreed to include cool chains in the finance circles of Islamic banking as warehouses were already enjoying the facility.

To a question, he said that SBP could not made it obligatory for banks to increase their CSR from five to 10 percent, however banks should improve their percentage of CSR. He further said growth of Islamic Banking is faster than conventional banking in the country. He presented the example of Summit and Faysal Bank which are going to be converted into totally Islamic banking.

Mufti Rafi Usmani, in his eye opener address, said that though the Islamic Banking sector has yet to become flagged Islamic banking, it has achieved the milestone of interest free banking, which is admirable.

He claimed that with the grace of Allah Almighty, local Islamic banking sector has groomed enough itself to replace the entire conventional banking. He urged the government to transform the banking mode on government level through legislation. He was of the view that the government should now ban conventional banking immediately.

Rafi Usmani also urged the Islamic banking sector to upgrade itself on Islamic values, instead of blind competition with conventional banks. He also proposed Islamic banks to focus on Small and Medium Enterprises (SMEs) sector. According to him,
























it would bring an economic revolution in the country. He added that Islamic finance in SMEs sector is the most effective solution of the challenges and problems being faced by the state.

Mirza Ikhtiar Baig, chairman Standing Committee on Banking, FPCCI also addressed the conference. In his speech, he stressed the need to include and focus on insurance and agriculture sectors in the Islamic finance sector.

KCCI President Abdullah Zaki said the contribution of Pakistan in global Islamic banking is standing at a mere 2 percent whereas Arab countries and Malaysia are comprising lion share in market. He said Pakistani Islamic banking should increase its share in global market with innovative products and services as it has immense potential. He praised the role of IFEC for creating awareness in masses and gather experts and stakeholders of industry under one platform. He urged Publicity Channel to organize informative conferences and exhibitions in different cities for effective awareness and expansion of Islamic finance and banking industry Abdul Zaki assured all support from KCCI for development, awareness and promotion of Islamic banking in Pakistan.

Attique-ur-Rehman, Adviser to KCCI was also present at the occasion. He raised several points before the Governor State Bank of Pakistan in respect with the promotion and better utilization of islamic banking sector in the country.

Naeem Qureshi CEO Publicity Channel , said that promotion, awareness & development of Islamic banking & financial system will be continue with support of FPCCI, KCCI, academia, research organizations as a mission & religious & social responsibility.

Islamic banking industry could develop at faster pace if it is practiced with true spirit and principles of Sharia by professionals of banking and religious scholars from the field of finance.

At panel discussions, bankers shed light on various issues of Islamic banking. Talking about the challenge of awareness among masses, they said that Islamic banking itself is based on Islamic principles, however there is a shortage of posing Islamic impressions before masses. They proposed that Islamic banking products should be seemed Islamic, so as to convince masses. They stressed the need of an islamic benchmark, which would not be linked with KIBOR.

Bankers told the moot that so far, Islamic banking sector did not focus on marketing, rather their focus is satisfaction of customers. Hailing the policy, bankers termed it most effective marketing tool. Some of the bankers were of the view that commitment of bankers and teams of Islamic banking with the Islamic mode is mandatory















for promotion of Islamic banking.

Talking about space for Islamic banking in society, moot was told that as per conservative estimates, about 30 percent of farmers and agriculture associated traders in Punjab and Khyberpakhtoonkhoa still did not tap into banking because they believe that conventional banking is against the Islamic teachings. On the other hand 80 percent of conventional banking customers have tendency to convert to Islamic banking, if they are provided with suitable circumstances.

During the event Sharia advisers and religious clerics were also taken on board so as to shed light on various aspects of Islamic banking's alignment with Sharia. At the occasion, various aspects and history of Islamic Capital Markets were discussed.

Speakers said that they lauded the efforts of scholars, Islamic bankers and regulators in the promotion and development of Islamic banking as a replacement of Riba or interest-based banking.

They praised the efforts of State Bank of Pakistan (SBP) for devising a five-year strategic plan and Sharia guideline framework for islamic banks, which they term, will expand Islamic banking industry with check and balance.

Mahmood Tareen Project head of IFEC thanked all partners, sponsors, speakers & participants.

Speakers from leading organisations including Prof. Dr. Abdur Rahman Zaki (Karachi University), Mujeeb Baig (MCB Bank Ltd.), Atiqur Rahman advisor KCCI,Abdul Jabbar Karimi (Habib Metropolitan Bank Ltd), Abdullah Najib Siddiqui (Albaraka Bank Pakistan Ltd.), Dr. Sayed Arif Hussain (Takaful Pakistan Ltd.), Muhammad Akmal Jameel (Khabeer Financial Services), Mufti Syed Sabir Hussain (Dawood Family Takaful Ltd.), Mufti M. Yahya Asim (Habib Bank Ltd.), Saqib Zeeshan (Pak Qatar Family Takaful), Ahmed Ali Siddiqui (Meezan Bank Ltd.), Faisal Shaikh (Bank Islami Pakistan Ltd.), Saeed Uddin Khan, Head of Islamic Banking Division, Sindh Bank, Amir Ali Syed (Meezan Bank Ltd.), Syed Asif Azeem (Bank Alfalah Islamic Banking Group), Shakeel Khan (KASB Modaraba), Mufti Abdus Sattar Laghari (Habib Metropolitan Bank and NBFC & Modaraba Association), Mufti Zeeshan Abdul Aziz (Sindh Bank Islamic Banking Division), Zulfiqar Ali (BankIslami Modaraba), Shabi Hasan (First Habib Bank Modaraba), Mufti Dr. Muhammad Imran Ashraf Usmani (Meezan Bank Limited), Qazi Abdul Samad (The Bank of Khyber), Mufti Ahsan Waquar Ahmed (NBP Islamic Banking Group), Mufti Ahsan Waqar Ahmed, Sharia Advisor of National Bank of Pakistan, Mufti Zubair Usmani, Sharia Advisor of MCB Bank, Islamic Banking Division also spoke on the occasion. IFEC concluded with dua & pledge for more and more efforts Islamic banking in the country.■

BANK ALFALAH LIMITED بينك الفلاح المحدود

ISLAMIC BANKING

Rizwan Ata - Group Head, Islamic Banking

On behalf of Bank Alfalah, which has the second largest Islamic Banking operation in the country with over 140 dedicated Islamic Banking branches, we are pleased to endorse the platform of the Islamic Finance Expo and Conference. Such an initiative is likely to play a key role in augmenting the strides that the Islamic Banking sector is currently making in Pakistan. Most importantly, I wish to acknowledge the enabling regulatory environment and proactive efforts being made by the State Bank of Pakistan to foster participation from a variety of stakeholders in strengthening the Islamic Banking sector in the country.

I foresee considerable growth potential in the Islamic Banking Industry today, both in terms of business volume and revenues, as well as the number of Islamic Financial Institutions that have risen. The pace at which Islamic Banking in Pakistan has grown over the last few years is the most prime opportunity that presents itself to the sector right now. As per the SBP Islamic Banking Bulletin of Dec 2013, the share of the Islamic Banking industry in the overall Banking Industry in Pakistan has increased to 10.40% (in terms of deposits) and 9.60 % (in terms of total assets). The Islamic Banking Industry has captured almost 10% of the market in Pakistan during a short span of less than ten years.

Challenges remain, including short term liquidity management hurdles and lack of trained, specialized human resource for Islamic Banking amongst others. However, with the ongoing awareness drives being led by the State Bank of Pakistan, I am confident that the sector will continue to flourish.

For Bank Alfalah specifically, Islamic Banking remains an important area of growth. We have always championed the view that our financial solutions must be based on the specific and diverse needs of each customer, which is why we introduced products such as the Car Ijarah scheme for our Islamic Banking customers. To this end, as we expand our widespread network, we also focus on upgrading our Islamic Banking technology platforms and dedicated Shariah compliant product offerings, in order to enhance 'transacting convenience' for our clients. ■

Corporate Profile

Bank Alfalah, Pakistan's 6th largest bank by assets, does business through a network of 594 branches across 196 cities in Pakistan and has an international presence in Afghanistan, Bangladesh, Bahrain and a representative office in the UAE. Bank Alfalah is Pakistan's largest issuer and acquirer of Credit Cards, has the second largest Islamic Banking arm as well as a range of doorstep banking facilities including mobile and internet banking.

During 2013, the Bank increased its Islamic Banking deposit base to Rs. 98.60 Billion, thereby registering a growth of 3.35% from 2012. Approximately 10.7% growth was witnessed in net investments, which stood at Rs 56 Billion at the end of 2013. Islamic Banking registered profit amounting to Rs. 1.32 Billion in 2013. The Bank aims to augment its credit uptake through the launch of new Islamic Banking products on the assets side. In addition, different liability products are also underway, which will add to the existing portfolio and help offer bespoke solutions and services to customers.

The Bank remains committed to its zero tolerance policy with regard to Shariah Compliance for its Islamic Banking products. Overall, its Islamic Banking is in promising stead and the Bank looks to the future with optimism. ■

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PNEC landmark development of renewable energy project

The first natural candidate to fuel the ever increasing hunger of the world for power is from Sun

Our Sun radiated over 50,000 times more power to Earth during 2010 than was its total energy demand. There is a long history of harnessing the solar energy for cooking and other applications on limited scale. Photo voltaic technology to produce electricity from the solar radiation was discovered in 1839, and the first solar cell was constructed in 1877. The first silicon mono-crystalline solar cell was made in 1941. Later, more efficient solar cells were developed mainly for space technology applications. The cost of production was nearly US $ 2000 per watt during the mid 1950's. The cost has dropped down to about US $ 0.65 per watt during 2013, making it much more affordable for commercial applications. This cost is expected to fall down further during the coming years. Use of concentrated solar power (CSP) for electricity generation was proven in 1968. In this concept solar radiation is concentrated onto a receiver through the use of mirrors. A thermal oil is circulated through the receiver, where it gets heated to several hundred degrees Celsius. The heated oil transfers its energy to water through a series of heat exchangers producing superheated steam. This steam finally turns a steam turbine to produce electricity. This technology was successfully applied at large scale during the mid 1980's, and has gained rapid grounds during the last couple of years. The cost of electricity production using this method is expected to decrease rapidly during the years to come. India has planned to install over 20,000 megawatts of solar power during the next ten years.

According to a report titled "What's Next for Alternative Energy?", by a global management consulting firm "The Boston Consulting Group" the CSP technologies are expected to achieve grid parity within the next 5-10 years. BCG's analysis suggests that CSP's localized cost of electricity (LCOE) could fall to $0.11 to $0.16 per kilowatt-hour by 2015. By 2020, CSP could provide power at $0.10 or less per kilowatt-hour. With the addition of thermal storage capacity to provide on-demand power, CSP is expected to profoundly affect the conventional power generation by 2025 if major barriers, such as limitations in transmission infrastructure are overcome. Solar thermal electricity will be able to run with a profitable business model - challenging conventional and other renewable energy sources without any subsidies. Its penetration is expected to reach 12 GW of installed capacity by 2015, 30 GW by 2020 and between 60 and 100 GW by 2025.

By Dr. Suhail Zaki Farooqui

Developments at Pakistan Navy Engineering College

In view of the above developments, a wind energy research project was initiated at PNEC at the beginning of the last decade. Under the special directives of the President, the government of Pakistan asked the Pakistan Meteorological Department (PMD) in 2001, to carry out a three year project of wind resource assessment in the coastal areas of Pakistan. The implementation of the project was jointly monitored by the author of this article and the Director General of the Pakistan Council of Renewable Energy Technologies (PCRET). Round the clock wind data was collected at one hundred feet high purpose built towers at forty five different locations along the coastal areas of Sindh and Baluchistan. The digital data was collected from data loggers for three years. The data was analyzed in 2004 and forty four thousand megawatt wind power potential was identified in the Gharo wind corridor alone, near Karachi. One quarter of this resource, that is, eleven thousand megawatt is technically extractable. Extrapolation of this assessment indicates at least three times more off shore resource in the Pakistani territory of the Indian Ocean. For comparison, the current total energy demand in Pakistan is around eighteen thousand megawatts. A second phase wind data collection project at another forty five locations in the Northern areas of Pakistan is currently underway. The data compilation is expected to conclude by this year.

The wind energy research project of PNEC was aimed at the indigenous designing and fabrication of small wind turbines according to the local wind conditions in Pakistan. A number of horizontal and vertical axis wind turbine concepts have been explored in the power range of 300 to 1000 watts during these years, despite severe financial limitations. Wind turbines are highly localized machines. One wind turbine suitable for a given location may not operate optimally at another location. Most of the imported wind turbines are designed at high wind speed ratings at 10-13 meter per second, and therefore do not operate properly in Pakistan, where we have average wind speeds in the range of 5-7 meters per second. This is to be realized that the power in the wind depends upon the cube of the wind speed, hence power in the 8 meter per second wind is only half as compared to the power in the 10 meter per second wind. Following is a pictorial overview of the wind turbines developed at PNEC at wind speed ratings of 8 meters per second. Special emphasis is laid on developing low cost technologies, so that the end product may become more affordable for the common user in Pakistan. ■

Energy for the poor

By:AKHTARALI

Pakistan's poor is in quite an unenviable and even in a shabby situation; access to land, water, employment, raw material and agri-inputs and Energy etc. We will focus in this article on the energy needs of the poor and how these could possibly be supplied in a cost-effective and affordable manner. Pakistan is passing through an energy crisis is being discussed all around. Hopefully, it may come to an early end, as the PML-N government is taking steps and launching much-needed projects in coal, hydro, nuclear and other areas. However, for the poor, things may not improve in equal proportion even with the implementation of these gigantic projects.

Energy is expensive and becomes even more expensive at the doorsteps of the poor who lives in far-off rural settlements. On distance count and availability and even cost, urban poor and the rural poor of the adjoining areas get a relatively better deal as roads, pipelines and electricity distribution networks pass nearby for them. That electricity in Pakistan is supplied at uniform rates irrespective of location is a helpful factor for the rural and distant poor. However, energy (electricity, fuel and gas) is not transported at all due to the heavy infrastructural investments required for taking the energy at the poor's doorsteps.

There was a time, Quetta, the provincial capital of Balochistan which provided natural (Sui) gas to all Pakistan, did not have gas. Political and elite pressure and the eventual increased gas demand in Quetta made the natural gas available there. Hopefully, although it would be naïve to expect that, all rural areas would reach a stage, where economies of scale make the energy supply possible to these areas. Due to low population density and lower per capita consumption, this would not happen. It has happened in Europe and in most developed parts of the world due to higher per capita consumption generating sufficient demands in small population clusters there. Distributed Energy is making a debut in the developed world for these reasons. It can also make sense to the rural poor living in distant areas.The renewable energy projects like wind and solar are being implemented either in high demand areas (solar parks) close to the grid or where resource is concentrated (wind power in Jhimpir and around). All these projects would unfortunately bypass the poor, except the close-by living poor clusters or the urban poor.

Solar, wind and biogas could make a great difference to the lives of the poor. There are energy requirements for personal needs like cooking and lighting; lighting needs for institutional facilities like schools and health centers; northern areas require fuel for heating the homes; water is to be pumped for drinking and as well as agriculture and other community needs.

Solar PV cells can produce localised energy for communal and as well as personal need. Electricity for lighting can be provided either to individual house-holds or communal facilities (through small local grids). Bangladesh has done successful experiments in supplying solar lanterns under Grameen Bank kind of social banking institutions. Similarly community loans and grants can finance installation of small solar facilities. Water pumping needs can also be much cost effectively met through solar PV pumps. The rich landlords are already benefiting in a very significant way by installing solar water tube wells, avoiding irregular grid electricity or replacing expensive diesel engines. The same technology and set-ups can serve community needs as well focused for the rural poor. Creating water rights for the rural poor under catchy phrases like "Water for All "could generate some water- sharing out of the ground water pumped by the rich landlords. But here, we would be touching politically sensitive and contentious cords and would keep it for discussion under some other heads at a future opportunity.

Smaller and scattered wind resources can be found in rural areas of Balochistan, KPK and other northern and tribal areas. Sun shines in the day and wind blows variably and seasonally, which can be resolved through battery storage or in overhead water tanks. Another way of solving this variability is to combine solar and wind; solar providing the energy in the day and wind in the night. Small village needs can be met through 5 KW facilities. Government of Pakistan has launched some similar projects, but much more needs to be done. Progress till to date has been limited to demonstration facilities. Provincial and Federal PSDP funds, donor agencies and social financing institutions could provide the required financing and help expand these much-needed programmes.

Cooking fuels is another vital area where interventions are required. Rural poor generally uses agricultural waste and biomass in their cooking hearths. Such makeshift hearths and stoves affect the health of surrounding populations and specially the women who have to cook the meal. Lungs are affected due to inhalation of smoke and other gases and eyes are affected by direct eye contact with gases. Biogas can provide ample fuel for cooking needs of the family and community, although even electricity can be generated also through mid-size biogas plants as well. Biogas generators can be built with local material and labour boosting local economy and employment. All that is required is some seed money and provision of skilled supervisors by institutional sources and agencies. Biogas initiatives had been launched as early as in 1980s.There have been technical issues then which reportedly are no more as there has been much technical dissemination and proliferation of the relevant know-how. Organisational and financial issues hamper wider scale adoption of these technologies. If government and its institutions do not marshal their resources and do not activate themselves, the Renewable energy revolution would bypass the poor like many other possibilities and technologies in the past. That would be a tragedy.■

By Ijaz Iqbal

Solar energy can bridge gap in power shortfall, says Tesla CEO

The company has specialization of manufacturing Solar Panels, CNG, LPG dispensers and other state of the art indigenous related technology products

Stressing for correcting energy mix, Chief Executive Officer Tesla Technologies Aamir Hussain has said that solar energy using is best option for day long activities like all offices, hospital, schools, commercial and industrial activities and many more.

In an exclusive interview with Energy Update, the CEO of Tesla Technologies said solar energy has a great potential in Pakistan as on one side it provides electricity to national grid, on the other it benefits of cost saving in various spheres of life including places like hospitals, schools, offices, commercial and industries.

Reducing load shedding is one activity of the solar energy but it has many others. It has the cheapest source of energy once it installed but at the beginning it needs more capital investment. Once the solar energy is installed and started using by people it will become free source of energy in next few years. More importantly, there is no emission of this energy and it does not require any gas, petrol or oil for generation of power, rather it uses natural sunlight, which is free of cost.

EU: What is the cost of battery using for solar energy?

AH: Battery is required only when you need a backup mainly in light hours of the day while in day activities, like hospital, schools and commercial activities there is no need for batteries. In the available systems, the solar panel is established with battery and without battery for day-long activities which are mainly using in commercial activities.

EU: Where is greater demand of solar equipment, locally or abroad?

AH: Currently, the domestic demand is too high but still its exports are in progress. To encourage the use of solar energy, the government has kept this sector duty free just to increase its usage. There are few solar projects at government level like provision of solar energy to various schools and government offices.

EU: Like power generator, why solar energy installation not on government priority?

AH: It is so because generators are cheaper than solar energy. For getting 4 kilo watt power, it may cost Rs15,000 in generator while for the same quantity of solar energy it requires Rs0.4 million but no more capital investment.

EU: What is best option for surmounting energy crises?

AH: No doubt, the best option is hydel power which could be availed through construction of dams to get cheapest electricity. It is long-term project and the government should carry out planning for construction of dams in advance to added electricity gradually in the system through hydel sources. In addition to hydel resource, solar energy could fulfill demand of electricity in day timing at massive level and at institutional level.

Converting street light on solar is technically not sound because street lights are functioned in the late hours of the day however it could be made useful with the attachment of battery in the lighting system to get the maximum results of source of renewable energy. The solar energy could be stored in the day because it is available 93 percent in the day with high intense rays which could be utilized in the night as well.

EU: What is the future of CNG in Pakistan?

AH: Without CNG, it very difficult to run country. The country doesn't have the capacity of dispensers to provide fuel (petrol and diesel) if CNG is completely shut down. Though CNG encouraging or discouraging is policy matter, but the exchange already has been spent on import of CNG equipment yet to be recovered. Why the government is discouraging CNG is one component to contain its usage.

EU: Is the Tesla technology made some equipments of LPG?

AH: Yes, we made some equipments of LPG like dispenser and kit and they are mostly exported to Afghanistan, because it is great market for it. Locally, the LPG market could not develop, though some five LPG stations were developed but not according to the requirements.

EU: What is best solution of energy crises?

AH: Pakistan main problem is energy mix, the government has to keep 40 percent of its energy requirements on oil, 30 percent CNG and 30 percent LPG. This is a logical decision, in which there is no shortage of any of these three types of energy sources are used as available. If there is shortage of one source of energy, then the other one could supplement it.

EU: Any support from government side to develop the engineering sector?

AH: Not a single minister, secretary, director general did not visit any engineering industry and asked about their problems. Though Engineering Development Board exists but it never supports any engineering industry in private sector. Not a single official of the EDB visited any private sector engineering industry, though they are supposed to come to the engineering industries. ■

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Company Overview:

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Company Facts

- Headquarters: Austin, Texas
- Established: 1976
- Employees: Nearly 7,100 employees worldwide
- Global operations: Offices in more than 50 countries
- R&D investment: Target of 16 percent of annual revenue; 14 R&D centers worldwide
- Customer base: More than 35.000 companies worldwide annually
- Diversity: No industry makes up more than 15 percent of revenue
- 2013 revenue: $1.17 billion

Corporate Responsibility

NI makes a positive impact on society through its technology and engineering expertise as well as the work of its employees. The company strives to create shared value for its stakeholders and local communities by

- Providing access to technology for engineers and scientists in developing countries that face extraordinary barriers to the adoption of innovative engineering tools
- Partnering with education organizations to engage students with technology and inspire the next generation of engineers and scientists
- Fostering a strong culture of innovation and fun for all employees
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From designing lifesaving medical devices to researching new methods for energy production, the more than 35,000 NI customers worldwide represent a variety of industries ranging from test and measurement to academic and embedded.

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NI's collaborative, entrepreneurial corporate culture spurs innovation in every area of the business and empowers employees to create technology to help customers and partners meet the world's grand engineering challenges. NI's award-winning culture ranked No. 18 on the inaugural World's Best Multinational Workplaces list created by FORTUNE magazine and the Great Places to Work Institute.■

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Is tobacco one of the healthiest things for you?

"It's tobacco, it's one of the healthiest things for your body." - Dr. Orva, Woody Allen'sSleeper.

Before you stone me with goji berries and golden flaxseed, let me posit. At some point, moderate amounts of natural tobacco or nicotine will eventually be shown to be healthy for most people. There, I said it. With the exception of a very occasional cigar (2 or 3 a year), I am not a smoker and find the smell of cigarette smoke offensive, but I am basing my theory on two things: Most of what we believe today is wrong, and people have been using natural tobacco for thousands of years.

Moderate amounts of caffeine, chocolate and alcohol were, until recently, known to be "poisonous" but are now, when done properly, quite healthy, thank you very much. Traditional Native American societies used tobacco for wisdom insight, sociality,healing and increased mental clarity and stamina.

Nicotine dilates blood vessels and may prove to be as effective as half an aspirin a day. Scientific studies are finding that nicotine may help people with Alzheimer's disease, so says

The National Health Museum, that includes Sen. Dianne Feinstein on its board. Let me be clear. I'm not advocating 3 packs of Winstons a day to feel fresh and renewed or even one Winston. The stuff in most cigarettes is as far away from tobacco as you can get and still call it tobacco. I'm talking about organically grown, naturally cured, small amounts of tobacco, the way they used to do it.

But where drinking a bottle of wine a day will overwhelm any health benefits, a glass a day or every other day is now considered one of 10 miracle foods, So too nature's tobacco? (P.S. I barely drink wine either).

Most of the ill effects of tobacco in my opinion, come from the horrendous Frankensteinian-ization it undergoes by the tobacco industry as they "improve" the product with chemicals and god-knows-what, as well as the paper most tobacco smoke is wrapped in.

Let your instinct be your guide. In my wellness experience, with most things: Nature good, human "improvements" bad (snake poison and hemlock excepted).

That is, if the natural state of something is healthy, humans' interference with it usually spells health disaster (see also Chicken McNuggets).

For great anti-oxidant power you can always go for some kimchi.■

Top 10 Reasons To Exercise In The Morning!

By Greg Landry

If I had to pick a single factor that I thought was most important in a successful exercise or weight loss program, it would be to exercise first thing in the morning - every morning! Some mornings, you may just be able to fit in a 10 minute walk, but it's important to try to do something every morning.
mornings?...

1. Over 90% of people who exercise 'consistently', exercise in the morning. If you want to exercise consistently, odds are in your favor if you exercise first thing in the morning.

2. When you exercise early in the morning, it "jump starts" your metabolism and keeps it elevated for hours, sometimes up to 24 hours! That means you're burning more calories all day long just because you exercised in the morning!

3. When you exercise in the morning you'll be *energized* for the day! Personally, I feel dramatically different on days when I have and haven't exercised in the morning.

4. Many people find that morning exercise "regulates" their appetite for the day - that they aren't as hungry and that they make better food choices. Several people have told me that it puts them in a "healthy mindset."

5. If you exercise at about the same time every morning, and ideally wake-up at about the same time on a regular basis, your body's endocrine system and circadian rhythms adjust to that. Physiologically, some wonderful things begin to happen; A couple of hours *before* you awaken, your body begins to prepare for waking and exercise because it "knows" it's about to happen. Why? Because it "knows" you do the same thing just about everyday. You benefit from that in several ways..

a) It's MUCH easier to wake-up. When you wake-up at different times everyday, it confuses your body and thus it's never really "prepared" to awaken. b) Your metabolism and all the hormones involved in activity and exercise begin to elevate while you're sleeping. Thus, you feel more alert, energized, and ready to exercise when you do wake-up. c) Hormones prepare your body for exercise by regulating blood pressure, heart rate, blood flow to muscles, etc.

6. For many people, that appointed time every morning becomes something they look forward to. It's time they've set aside to do something good for themselves - to take care of their body, mind, and soul. Many find that it's a great time to think clearly, pray, plan their day, or just relax mentally.

7. Research has demonstrated that exercise increases mental acuity. On average it lasts four to ten hours after exercise! No sense in wasting that brain power while you're sleeping. :)

8. Exercise first thing in the morning is really the only way to assure that something else won't crowd exercise out of your schedule. When your days get hectic, exercise usually takes a back seat!

9. If finding time to exercise is difficult, anyone can get up 30 to 60 minutes earlier to exercise (if it's a priority in your life). If necessary, you can go to sleep a little earlier. Also, research has demonstrated that people who exercise on a regular basis have a higher quality of sleep and thus require less sleep!

10. You'll feel GREAT! DO IT! ■

Importance of Workplace Safety Highlighted

The speakers at the 9th EFP/ILO OSH Seminar highlighted the importance of workplace safety for the workers and business sustainability. The fire incident of Baldia Town Garment Factory was revisited in a highly effective presentation by Director Mr. Wajahat Ullah Khan of Fire Protection Association of Pakistan. Recalling the incident which occurred on 11th September, 2012 at M/s. Ali Enterprises, the presenter identified the causes of the fire and solution to avoid such incidents.

Secretary (Labour), Government of Sindh reiterated the efforts of the Sindh Government to make the workplaces hazard free. He informed about the actions taken to form an effective Inspection Team yo check the compliance of Safety and Health standards by the factory owners. The inspectors will also identify the weaknesses observed during inspections.

He referred to the Joint Action Plan prepared by the ILO after the Tripartite Consultation to improve Safety and Health conditions at the Enterprise level throughout the Province of Sindh. The Joint Action Plan is being implemented by the Government of Sindh and the most important issue at present is the development of OSH Policy.

Earlier, while welcoming the guests President Employers' Federation of Pakistan, Mr. K.M. Nauman referred to the theme of the year 2014 for the International Day on Safety and Health and stated that "Safety and Health in the use of Chemicals" takes precedence as most accidents occur or aggregated because of the presence of Chemicals at the Workplace.

Mr. K. M. Nauman also referred to the Pakistan National Business Agenda identifying 17 issues which are much concern to the business and addressing them should be a priority issue for the Governments. He said Government is trying to address some of the important issues like energy crises and law and order situation but the progress is slow. He said employers are facing numerous problems due to World Pressure on Pakistan Business in the context of Workplace safety.

Other speakers highlighted the importance of Safety and Health included WHO representative Mr. Javed Akhter Shaikh, ILO representative Mr. Amin Al- Wreidat, Mr. Zahoor Awan, General Secretary, Pakistan Workers Federation and others.

9th EFP Award Winners for the Best Practices in OSH&E.

OIL, GAS & ENERGY SECTOR

1 Pakistan Refinery Limited
2 Attock Refinery Limited
3 K- Electric
1 Getz Pharma - (Pvt.) Limited
2 Rafhan Maize Products Company Limited
3 Syngenta Pakistan Limited
1 Serena Hotels -Tourism Promotion Services Pvt. Ltd
2 Hashwani Hotels Limited
1 Crescent Steel & Allied Products
2 Wah Nobel Chemicals Limited
3 Interloop Limited
4 Hinopak Motors Limited.■

Integrated information key to better supply chain

'Supply chain is the at the core of corporate success and profit maximization for concerned companies is best possible by implementing an affective supply chain management process' - stated by Mr. Qayser Alam, President Supply Chain Association of Pakistan (SCAP) at a 2-days mega supply chain conference [SCC2014], exhibition and training session at the Movenpick Hotel in Karachi recently, organized by SCAP.

The theme of the Conference was "Supply Chain - A True Business Partner A Real Game Changer" and the event provided players of the industry the opportunity to share knowledge, gather insights and set a vision for the industry's future, and included keynote addresses from industry stalwarts like Sarfaraz A. Rehman, CEO, Engro Foods;, Jehanzeb Khan, CEO, AkzoNobel Pakistan and Torsten Katzor, Global Director, Hellman Fashion Logistics.

Mr. Qayser expressed his views on the core competence of local industries in Pakistan who are achieving their goals by a continuous improvement in the supply chain process.

This conference also attempted to bridge the gap between Supply Chain professionals and academia by conducting a panel discussion on this subject and at the end presenting two best case studies selected from the numerous submissions by university

students from all across the country at the this prestigious forum. The panel discussion and the university project was both spear-headed by Noman Lutfi, Director Manufacturing, Unilever Pakistan.

Anwaar Nizami, General Secretary SCAP said that after organizing the successful conferences in past, SCAP is proud to have organized this mega conference, which is the first of its kind, largest supply chain gathering in Pakistan.

Over 300 delegates including CEO's, Heads & Executives of Supply Chain, Procurement, Production, Logistics, Strategic Planning, Finance, Distribution, Material Management professionals from various industries including FMCG, Pharmaceutical, Retail, Automotive, Telecom, Oil & Gas, etc. attended the day long conference. ■

Commissioner Karachi rolls out the Sarsabz o Pursakoon Karachi Tree Plantation Campaign

Commissioner Karachi Shoaib Siddiqui rolled out the Sarsabz o Pursakoon Karachi tree plantation campaign on the occasion of Earth Day today. During this campaign, 300000 sapling of local, indigenous and environment friendly trees, sourced from the provincial Forest Department, will be planted across Karachi over the next three months.

The campaign was rolled out with tree plantation at Ramzan Goth near Hawkesbay, in collaboration with Indus Earth Trust, an NGO that has been working in 3 UCs in that area. IET has undertaken to plant 10,000 trees in the area over a period of 1 year, with the assistance of the community. These would include fruit trees, vegetables and fodder crops.

Sarsabz O Pursakoon Karachi has been initiated by the Commissioner in collaboration with National Forum for Environment & Health. The aim is to plant 50000 with the collaboration of various individuals, institutions and organizations, and monitor their growth to make Karachi green.

The Commissioner also interacted with the community members, listened to their problems. He directed the Assistant Commissioner to resolve their issues regarding electricity supply, primary education and also directed to have their non-functional Reverse Osmosis Water filtration Plant repaired immediately.

The tree plantation ceremony was attended by the Commissioner Karachi, Shoaib Siddiqui, Chief Executive Indus Earth Trust, Shahid Sayeed Khan, Trustee of IET, former governor State Bank, Salim Raza, District Forest Officer Niaz Khaskheli, President National Forum for Environment & Health, Naeem Qureshi, and Coordinator of Sarsabz o Pursakoon Karachi, Afia Salam and Media Coordinator MEDIONIX, Sanobar Abid.■

K-Electric celeberated Earth Day 2014

To mark the occasion of Earth Day 2014, Energy Conservation Department – K-Electric Ltd. has conducted plantation activities both in-house and outreach in which employees of different departments have showed their keen interest & positively participated in house activity.

Tree Plantation activity at BQPS II:

The idea this year to celebrate Earth Day main event at BQPS II was to mark the occasion of reducing carbon emission at our Power Plant. In this connection ECD in collaboration with BQPS I & BQPS II have conducted a session for raising the awareness amongst their employees about the importance of Earth Day. Employees have been urged to adopt all the environment friendly measures which protect our mother nature from Climate Change & Global Warming. They have been emphasized by ECD on mindset issue which needs to be changed by utilization of resources in an efficient & wise manner.

Tree Plantation Activity at Power House:

ECD has successfully conducted tree plantation activity of KE installations at Power House. In which we have invited all Departmental Heads for tree plantation whose offices are located in the vicinity of Power House (Elander Road). The activity was carried out at the following places New Meter Building, Parking area of Power House, New IT Building & Supply Chain.

Outreach Activities:

In order to raise the awareness amongst the masses specially youth about the significance of the Earth Day, Energy Conservation Department has conducted series of workshops, BTLs, interactive sessions at following schools located at out skirt areas to mark the occasion.

More than 1000 students have been counseled & approximately 1000 trees have been planted on this special day.■

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EfroTech organized Successful Open House

EfroTech organized the ET Open House at its Head Office on 6 May 2014 from 10am to 7pm and witnessed the gathering of over 200 IT, HR, Supply Chain and Finance management professionals from numerous industry verticals and technology/management consultancy firms.

The products showcased at the event were TimeTrax HCMs - a HR Information Management System (http://www.TimeTrax.com.pk); BizzTrax ERP - an Enterprise Resource Planning and Supply Chain management Software (http://www.BizzTrax.com.pk); orBItrax - an Online Reporting and Business Intelligence Tool (http://www.orBItrax.com.pk).

Among the noteworthy attendees of the event were Mr. Arif Akhai of PharmaLink Karachi, one of the largest distributors of Pharmaceutical products in the country and Dr. Syed Irfan Hyder, Dean CBM & CES at IoBM Institute of Business Management.

EfroTech was the recipients of 2 Winner Awards at the P@SHA ICT Awards 2013 held in Islamabad in September last year, including Best in eLogistics & Supply Chain for BizzTrax ERP. Further details about the event and about EfroTech can be found on the ET website: http://www.EfroTech.com■

(From L to R) Hafiz Noman, GM EfroTech; Dr. Syed Irfan Hyder, Dean CBM & CES at IoBM; M. Abdullah Feroz, President EfroTech; Arif Akhai, CEO PharmaLink; Nadir Khan Feroz, CEO Efrotech & Naeem Qureshi

World Wish Day celebrated by Make-a-wish Pakistan

Make-A-Wish Foundation Pakistan celebrated World Wish Day at a local hotel in Karachi. Governor Punjab, attended the event as Chief Guest. Others who attended were: Founding President MAW Ishtiaq Baig, Capt. Shujaat Azim, Special Assistant to PM on Aviation, Muhammad Ali Gardezi, Chairman Civil Aviation Authority, Dr. Mirza Ikhtiar Baig along with Managing Directors of PIA, PSO, PPL and Movenpick Hotel.

Governor Punjab lauded the noble work of Make-A-Wish Pakistan doing for ailing children. He said the services of the Foundation are commendable and more bodies should come to existence in Pakistan so that children fighting fatal diseases are encouraged to face their problem fearlessly. He also emphasized the need to enhance CSR activities by the corporate sector in Pakistan. The wishes of 15 Make-A-Wish children were granted on this occasion. An Auction was also held for the fundraising during the event. MAWF presented Memento of Appreciation to their supporting partners PIA, PSO, PPL, NIT, Hilton Pharma, Din & Baig Groups.

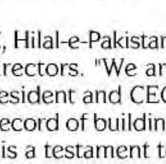
Founding President Ishtiaq Baig informed the guests that the Foundation has granted thousands of wishes of terminally ill children since its inception with the mission that that no child in Pakistan should leave this world with any unfulfilled wish in their hearts. ■

Wajahat Husain appointed as new President and CEO of UBL

The Board of Directors of United Bank Limited (UBL) is pleased to appoint Mr. Wajahat Husain as the new President and CEO of UBL. This appointment is with effect from 1 June 2014, subject to State Bank of Pakistan and other regulatory approvals.

Chairman of UBL, Sir Mohammed Anwar Pervez, OBE, Hilal-e-Pakistan, made the announcement on behalf of the Board of Directors. "We are delighted to appoint Mr. Wajahat Husain as the new President and CEO of UBL. He is a consummate banker with a proven track record of building businesses and driving performance. His appointment is a testament to the management depth within UBL and Bestway Group's commitment to succession planning."On his appointment, Mr. Husain stated "It is a privilege to have been given the opportunity to lead an outstanding organization like UBL. I am strongly committed to continuing our journey towards becoming a world class bank"■

Telenor Group names Michael Foley as new CEO of Telenor Pakistan



Telenor Group today announced that it has appointed Mr. Michael Patrick Foley as the new Chief Executive Officer of Telenor Pakistan. Mr. Foley assumes the role at a significant moment in Telenor Pakistan's history - as the country moves into a future where everyone will be able to access the internet, affordably and easily. He replaces Mr. Lars Christian Iuel who has built a strong market position for Telenor Pakistan, an agile management team and a competent organization ready to capture further market growth. The replacement takes effect from July 1, 2014.

Mr. Foley, a Canadian citizen, has more than 30 years of sales, marketing and operational experience in the telecom and retail sectors from both advanced and growth markets. He has lived and worked in more than 11 countries. Mr. Foley currently serves as the Chief Commercial Officer of the Canadian State Lottery, Atlantic Lottery Corporation.Mr. Foley takes over the helm at Telenor Pakistan at a time when the company continues to grow its market share and is set to further develop its leading consumer internet position with the recently awarded 3G license.■

Senator Rehman Malik in a group photo with DG SASSI, Dr. Maria Sultan and her team

Prominent Industrialist Ishtiaq Baig with Gordon Brown, Former Prime Minister of UK and UN Special Envoy for Global Education at a dinner reception given in his honor in Islamabad, also seen, Governor Pujab Ch. Mohd Sarwar and Minister of Education Mr. Baleeg-ur-Rehman.

Dr. Mirza Ikhtiar Baig, President Consular Corps Sindh with His Higness Crown Prince Alexander and Her Highness Princess Katherine at the Royal Palace, Belgrade Serbia

Prominent Columnist Ishtiaq Baig presenting his book "Aaj ki Dunya" to Governor Punjab Ch. Muhammad Sarwar on his recent visit to Karachi

FOUNDER of ENVIROGRAF U.K, Mr.Derek Ward received the event 4th Fire & Safety Awards 2014 trophy on behalf of NFEH in Dover Kent England

Newly elected President of PGBF Nadeem Kazmi of Siemens Pakistan with Dr. Tilo Klinner CG of the Federal Republic of Germany in Karachi and Mr. Noordin Karim Vice President PGBF.

The Country Head of Kuwait Petroleum Corporation, Ms. Talat Jabeen greeting the Counsel General of Kuwait and his wife on the Occasion of Kuwait National Day

Chairman of Businessmen Group (BMG) and Former President of the Karachi Chamber of Commerce and Industry (KCCI), Siraj Kassam Teli addressing a press conference at Majeed Bawany Auditorium in connection with 11th My Karachi - Oasis of Harmony.

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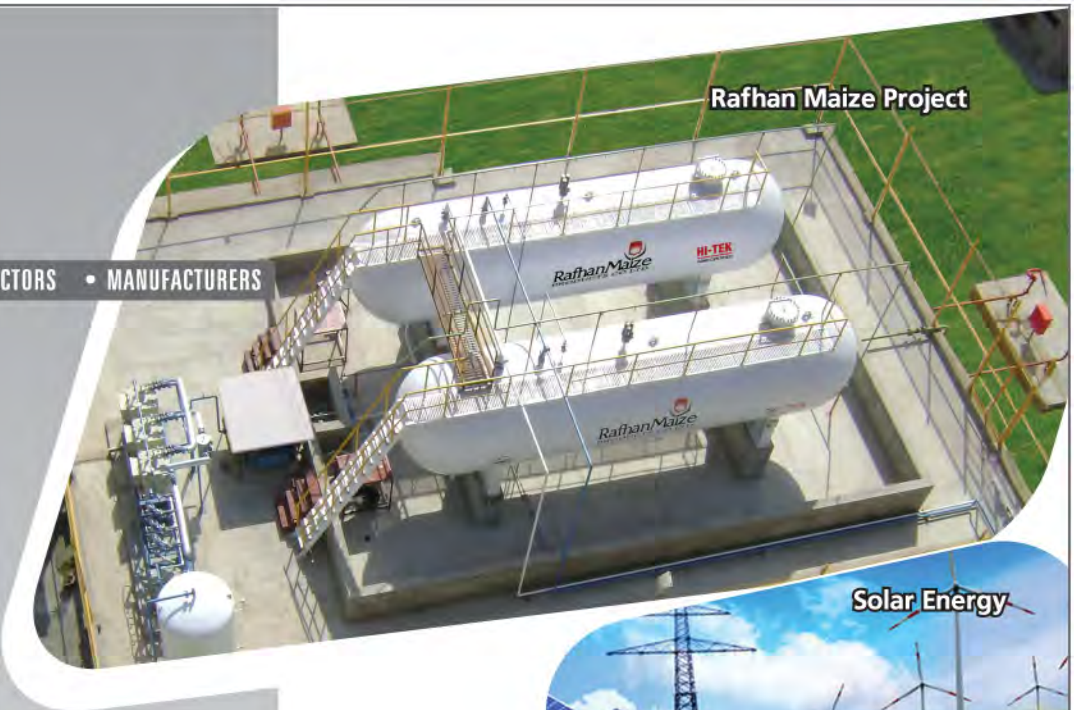

About Us

Since it was established in 1999 HI-TEK has developed from a local contracting company into a world-class Project Developer, Contractor and Facilities Management Service Provider capable to undertake a wide range of challenging projects. Today HI-TEK is an international, multi-disciplined company with diversified operations in:

EPC engineering, procurement and construction in the , power, infrastructure, environment and alternate energy sector;

Facilities Management the management and operation of SNG Systems, LPG Bottling Plants, Coal Fired Boilers, industrial plants and Power Plants.

Fabrication Services the fabrication of process equipment and heavy structures for the industrial sectors.

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