

CAC NEWS

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CORPORATE ADVISORY COUNCIL

NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY



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FROM THE EDITOR'S DESK

Dear Readers!

I am delighted at the response received on the First Printed Edition of the CAC Newsletter. Thank you all for your support and feedback. It is this encouragement and recognition that drives us to strive harder to achieve our objective; strengthening the triple-helix-Industry, Academia and the Government. The CAC team is a group of hardworking, young individuals, with the vision to do something positive for the nation. Within our capacity, we are making all possible efforts to serve as a platform for the integration of the Industry and Academia, to join hands and find workable solutions through R&D. From this issue onwards, we have decided to include a section: "Sector In Focus" which will highlight one of the CAC sectors each quarter and the achievements of that Sector. In this quarter, we have highlighted the CAC Energy Sector. I sincerely hope that this subsequent printed edition would be as appealing to our readers as the previous one. Your feedback is of utmost importance to us.



Sobia Bilal

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Visit of Mr. Ilyas Suri to SMME, NUST-27th November 2013

Mr. Ilyas Suri, Technical Advisor to Chairman, Indus Motor Company Limited, has been part of the CAC Automotive Sector Committee since its start in 2010. Earlier this year, the previous Industry Co-Chair of the Committee, Mr. Farhad Zulficar, Vice Chairman, House of Habib and Director & Member Board, Indus Motor Company Limited, nominated Mr. Ilyas Suri to take over from him. Mr. Zulficar had to step down for personal reasons, but will continue to be a senior member of the Committee, and has also joined the CAC Board of Advisors (BoA).

Owing to Mr. Ilyas Suri's extensive experience in the Automotive Industry, his technical acumen, and his long and fruitful association with CAC, the CAC Co-Chairs were happy to accept the nomination, and welcomed Mr. Suri as the new Industry Co-Chair.

Mr. Ilyas Suri took over as the new Industry Co-Chair in November 2013, and immediately after formally accepting the invitation, he visited NUST, on 27th Nov 2013. The purpose of his visit was to get an update on the projects and activities that SMME has done so far, and to have a brainstorming session with the NUST Co-Chair of the CAC Automotive Sector Committee, Dr. Abdul Ghafoor, Principal NUST School of Mechanical & Manufacturing Engineering (SMME), as well as the CAC management, on how to take the Committee forward.

During the earlier part of the day, Mr. Suri visited SMME, where he was given a detailed presentation on SMME, its academic strengths, its Industry link-

ages and the projects it is doing with the Industry. After the presentation, there was an open discussion on the various ways in which the Industry can undertake a more active role in SMME in particular and NUST in general. Mr. Suri was also given a tour of SMME labs including the Automotive Research Lab (ARL), as well as the Design & Manufacturing Resource Complex (DMRC). Meaningful discussions took place between the Committee Co-Chairs, the main area of focus being how to enhance the Industry's involvement in R&D and other initiatives at NUST.

It was decided that the recommendations and proposals resulting from this meeting will be presented in the next formal session of the CAC Automotive Sector Committee (the last meeting of the Committee took place in Lahore on 05th October 2012).

The second session was held with Dr. M. Akram Sheikh, Professor Emeritus NUST and Co-Chairman CAC, and Mr. Amer Hashmi, Secretary General CAC, in the Main Office at NUST. Dr. Abdul Ghafoor, Principal SMME, and Dr. Riaz Mufti, Professor Automotive Engineering SMME, were also present during the meeting. Discussion on the direction in which the Automotive Sector Committee and SMME should go in terms of Industry linkages was discussed in detail. Certain strategic proposals and recommendations were jointly agreed upon; further steps on these proposals would be taken in the days to come.

The visit concluded with the presentation of the NUST souvenir to Mr. Ilyas Suri.



Dr. Abdul Ghafoor presenting NUST Souvenir to Mr. Ilyas Suri



Mr. Ilyas Suri, Dr. Abdul Ghafoor and Dr. Riaz Mufti in a session with Dr. M. Akram Sheikh



Akhter Hameed Khan Memorial Lecture at NUST Business School (NBS)

Mr. Akhter Hameed Khan was a Pakistani development activist and a social scientist. He promoted participatory rural development in Pakistan and other developing countries, and widely advocated community participation in development. In the 1980's he started a bottom up community development initiative of Orangi Pilot Project, based in the outskirts of Karachi, which became a model of participatory development initiatives. He also directed many programmes, from microcredit to self-finance and from housing provision to family planning, for rural communities and urban slums. It earned him international recognition and high honors in Pakistan. He emphasized that no country could prosper unless the poor were made an integral part of the development process.

The CAC Social Sector Committee (SSC) has recently taken Mr. Fayaz Baqir, Director, Akhter Hameed Khan Resource Centre (AHKRC), on board as an external/Industry member. The principle objective of the AHKRC is to promote a macro and micro level understanding of the causes and processes of change in the rural areas of the Southern part of the world in general and of Pakistan in particular with the purpose of promoting the use of this understanding for developing and/or supporting rural development initiatives and programmes; influencing Government, donor, media and NGO policies; and for facilitating the necessary human resource development to make this possible.

An AHK Memorial Lecture is arranged annually to pay remembrance to this noble man and his cause. The lecture comprises of short motivational speeches and experiences that his colleagues, family and fellow workers shared

with him. This year, the AHK Memorial Lecture was arranged at NUST Business School (NBS) on the 10th of October, 2013. Students from all the Schools of NUST were encouraged to attend as it is the youth that we need to educate about such initiatives and encourage them to actively participate in such activities.

After a welcome speech by Mr. Fayyaz Baqir, Director AHKRC, a lecture on "Community and Issues of Conflict and Governance" was delivered by Mr. Ejaz Rahim, former Cabinet Secretary. Rector NUST Engr. Muhammad Asghar, Principal & Dean-NUST School of Social Sciences & Humanities Dr. Ashfaq H. Khan & and Principal & Dean NBS Dr. Naukhez Sarwar also attended the session.

The Lecture concluded with a decision on creation of an Endowment Fund through joint collaboration between AHK Foundation and NUST. The objective of the Endowment Fund will be to provide need based scholarships to NUST students. This is a sub fund of the NUST Trust Fund. AHK and NUST each contributed PKR 1 million into this fund and NUST has pledged to raise and contribute another PKR 9 million in the near future. This shall be undertaken by involving prestigious organizations, the likes of The World Bank, for this cause.

On behalf of the CAC management and the NUST Co-Chair for CAC Social Sector Committee (SSC) Mr. Irfan Akhtar (Chief Financial Officer NUST), we would like to thank Mr. Ejaz Rahim for delivering an inspiring lecture to the NUST students and faculty. We are also grateful to Dr. Ashfaq Hassan Khan, then Principal & Dean NBS and his team for hosting the lecture at NBS.





Begum Akhter Hameed Khan receiving Memento from the AHK Foundation Team



Mr. Fayyaz Baqir, Director AHKRC, and Dr. Ashfaque Khan, Principal S³H at the lecture



Strategic Alliance Between Canada Pakistan Business Council (CPBC) and Corporate Advisory Council (CAC), NUST

The Canada-Pakistan Business Council (CPBC) is a not-for-profit Canadian organization promoting trade between Canada and Pakistan for the last 30 years. The Council has organized several trade missions to and from Pakistan, resulting in joint ventures and business promotions. A few highlights include a Transfer of Technology (TOT) Agreement between Aga Khan Hospital and Queen's University, and between CM INC and OPSTec (now known as Preston University). Some business contracts were signed between Softlight Inc, and 22 Colleges and Universities for the promotion of educational products. Business was also concluded with a CNG company of Toronto and Shell dealers of Pakistan to a tune of over 5 million dollars. In 1998 a Pak-Canada trade committee was formed by the Federation of Chamber of Commerce of Pakistan to develop bi-lateral trade. In June 2003 an MoU was signed between Canadian Manufacturers and Exporters and CPBC to promote bilateral trade between Canada and Pakistan by encouraging large Canadian and Pakistani companies to establish business links.

CPBC has been a Global CAC Partner for the past 3 years. When it became a CAC member, its President was Mr. Andy Merchant, who held this post for 16 years and made outstanding contribution to building business relations between Canada and Pakistan. An MoU was signed between NUST and CPBC in October 2010 to promote cooperation between the two institutions, including development of HR, encouraging R&D and investment in Pakistan by expatriate Pakistanis and other organizations, etc. As a result of this MoU, a Talent Scholarship Scheme was started for a period of 5 years, under which NUST receives 3 scholarships for undergraduate students every year from CPBC – 2 merit-based and 1 need-based scholarship. The contribution from CPBC goes a long way in enabling brilliant and needy students

fulfill their educational and professional aims.

In November 2013, Mr. Samir Dossal was elected as the new President of CPBC. Mr. Dossal is the President of Linkks Canada Inc., an entrepreneur, engineer and a businessman. He has been part of the CPBC Board for over 10 years.

Mr. Samir Dossal visited NUST on Thursday 21st November 2013, to meet senior team members from (CAC), Global Think Tank Network (GTTN) and Advisor's Office, and also hold a meeting with the Co-Chairs of CAC – Rector NUST Engr. M. Asghar and Professor Emeritus NUST Engr. Dr. M. Akram Sheikh – and Advisor NUST / Secretary General CAC Mr. Amer Hashmi. The purpose of this visit was to enhance collaboration between NUST and CPBC and explore new avenues.

Since the last visit of President CPBC to NUST, NUST has established the GTTN to undertake policy-based research and policy advocacy. Also, NUST's flagship program of the National Science & Technology Park (NSTP) has made progress, and is currently at the Feasibility stage, after being approved by the NUST Board of Governors (BoG). The CAC has also matured as NUST's Industry-Academia linkages platform, and is working closely with the Pakistani business and Industrial concerns. Mr. Samir Dossal was given detailed presentations on the NUST Knowledge Ecosystem by Director CAC Ms. Rabia Shoaib, Mr. Ali Shah-Senior Research & Policy Analyst GTTN and Ms. Faiza Malik-Project Manager Advisor's Office. After the presentation, discussion on collaboration opportunities was held. Thereafter Mr. Dossal met with Rector NUST, Dr. Akram Sheikh and Mr. Amer Hashmi.

During Mr. Dossal's visit to NUST, it was agreed that NUST and CPBC will broaden the scope of their cooperation, and will work together in several areas, few of which are mentioned below:



1. A prestigious scholarship scheme for NUST students; a merit-based scholarship of the stature of the Rhodes scholarship for the brightest students, as well as need-based scholarships for deserving students.
2. Enhancing collaboration with Canada-based companies from the platform of the CAC, and encouraging them to invest in R&D in Pakistan. Businesses in Canada to be encouraged to make use of the broad S&T base available at NUST, including infrastructure (research laboratories, equipment) and researchers (faculty, students).
3. Mobilizing the broad base of expatriates in Canada to benefit Pakistan, in terms of human resource development (inviting successful and talented Pakistanis living in Canada to NUST for teaching/research assignments, conducting professional courses and guest lectures at NUST, etc.) as well as leveraging their influence to encourage investment in R&D and other initiatives in Pakistan.
4. Establishing collaborations between NUST Global Think Tank Network (GTTN) and similar institutions (think tanks, academic / intellectual bodies) working in Canada.
5. Establishing greater collaboration for NUST's NSTP program. Cooperation for this program would include attracting anchor tenants (successful established businesses) as well as entrepreneurs from Canada to become part of the NSTP, attracting investment from Canada for establishment of the NSTP and for encouraging start-ups and entrepreneurial ventures.



Mr. Amer Hashmi, Advisor NUST presenting the NUST shield to Mr. Samir Dossal, President CPBC



Rashid Memorial Welfare Organization

A Project Committed to Serve the Underprivileged and Poor of Pakistan

A NUST team from the CAC Social Sector Committee (SSC) visited the model city of Rashidabad on 23rd-December 2013. Earlier on, Air Commodore (Retd.) Shabbir Ahmad, the founder of the model city, had visited the CAC in September and met the NUST Co-Chair of the CAC SSC, Mr. Irfan Ahmed Akhtar (Chief Financial Officer NUST) and the CAC team, and had given a detailed account of the model village named Rashidabad. He had invited CFO and the CAC team to visit Rashidabad.

Given below is a detailed account of this one-of-a-kind project, an example for those working in the Social and Community Development Sectors.

The Rashid Memorial Welfare Organization (RMWO) was set up by a group of retired PAF officers in 1998 in memory of Flt. Lt. Rashid Ahmed Khan, who embraced 'Shahadat' on 13th December 1997 when his aircraft caught fire above a densely populated area. In a struggle to save thousands on ground, he maneuvered his Mirage fighter aircraft away from the population and sacrificed his own life. In the same spirit, the team set up the RMWO. The RMWO is managed by a Board of Trustees who are all friends with a mission to change and uplift the rural underprivileged. Their motto is "to dedicate and give to others what is not ours".

Rashidabad pilot project of RMWO is in interior Sindh, 35 KM from Hyderabad towards Mirpur Khas, stretched over 100 acres. The foundation stone was laid on 13th December 1998 by the then Governor Sindh, Gen. Moinuddin Haider. It encompasses all four elements of a sustainable society; education, health, environment and socio-economics.

With an initial donation of only Rs. 25 million by the Trustees themselves, land was acquired gradu-

ally and then construction started as more funds started coming in. The project has made remarkable progress since its inception in 1999, in the fields mentioned below.

EDUCATION

SST Public School:

This is a venture in conjunction with the Old Boys of PAF Public School Sargodha, who have endeavored through many a storm to reach the goal of a state-of-the-art educational institution at par with, or even exceeding, their alma mater. Housing 400 boys (designed gratis by Mr. Qaiser Hussain), it has all the facilities and faculty to allow development par excellence in all fields and not just the IGCSE/A level. 25% students (orphans & destitute) are on full scholarships. The first batch reported on 15th September 2005. Students have achieved country-level and even one international record in IGCSE.

YK Academy:

A day School catering to a diverse group of socio-economic strata for 900 boys & girls from kindergarten to matric level (designed gratis by Mr. Majeed - Peshawar), the YK Academy is expected to be raised to the level of a college in the near future. It is named after the late Khawaja Yaqub, a philanthropist from Karachi. The School has graduated 8 matric classes with impressive results. Students belonging to families with good financial background pay full tuition fee and those who cannot afford are given free tuition; even their uniforms, books and transportation are free-of-charge.

The Citizens Foundation School (Rubab Kassam Campus):

The Citizens Foundation helped establish this School; it is a co-ed School for 900 students (designed gratis by M/S



The NUST-CAC SSC team at the DMKM Vocational Training Centre

Arshad Shahid Adullah), to impart quality education and training. It is one of the outstanding Schools of the Foundation and the best in the region. In the specially designed ecosystem of Rashidabad, the School benefits from many ancillary facilities like sports fields, recreational areas and influences from the regular group events/functions held at Rashidabad.

Non Formal Schools:

Suffah Literacy in 30 villages in proximity to Rashidabad has been in vogue since the past 8 years. This has specifically addressed the needs of the village females. All books at these Schools are provided free of cost. Besides the 'Jugnu Style' education, which is tailored to their needs, they are groomed to develop a healthy and progressive mindset.

DMKM Vocational Training Center:

This has been designed for specific skill development like sewing & stitching, knitting, local handicraft work, etc. has been launched by the DMKM Welfare Fund in November 2009 in the basement of the KHAWAJA YAQUB HOUSE. 6 courses (6 months each) of nearly 180 ladies have graduated.

HEALTHCARE

Bilquis Mushaf Medical Complex:

Presently a 200-bed hospital, the Bilquis-Mushaf Medical Complex (BMMC) is at the finishing stages (designed gratis by Mr. D.R. Surti). The OPD and specialist consultancy as well as the Gynaecology Department is functioning optimally. The facilities of the Pathological lab, X-Ray, Operation Theater and general OPD are currently extended to the rural underprivileged at subsidized cost. The BMMC was launched in June 2012 with two floors only (25 beds). In January 2014 all 5 floors are going to be commissioned at an incremental increase of 25 beds every 6months. BMMC is going to be the best major medical facility for the poor in rural Sindh. I-Care Foundation and Rajby Trust are the main donors for operations of general health care facilities.

LRBT Free Eye Hospital:

A hospital with 50 beds was constructed by RMWO (Dedicated to SALIM A. SHEIKH) at a cost of Rs 40 Million and handed over to Layton Rehmatullah Benevolent Trust (LRBT) for operations. The LRBT Hospital was commissioned in June 2008; it caters to a large number of affected patients. On an average over 300 outdoor patients are treated daily. Besides, over 40 eye operations are performed daily.

Blood Bank & Transfusion Centre:

The Fatimid Foundation started services at Bilquis Mushaf Medical Complex Rashidabad in December 2010. Over 200 patients have been registered for regular blood transfusions (Thalassaemia & Hemophilia). An independent building NABATH SULTAN ALI CENTER, sponsored by Mr. Shahnawaz from USA, in the name of his beloved mother, has been commissioned. It was inaugurated jointly by Mr. Nabath Sultan Ali & Gen. Moinuddin Haider on 23rd March 2013.

In addition to the above-mentioned, the model city also works in the Socio Economic Sector by providing care for orphans and senior citizens, running an Islamic Information Centre as well as a water filtration plant. An artificial lake is created to maintain the balance of nature; the lake also has facilities of paddle and rowing boats. Sports fields have been specially made to boost physical fitness of students at Rashidabad. To attract good doctors and teachers from the urban areas, it was felt by all the members of RMWO that suitable living quarters comparable to that of the city, should be provided. 68 family residential units have been built. This facilitates the teachers/doctors staying in Rashidabad to be available when needed.

The purpose of the CAC SSC team's visit was to have a glimpse of the various establishments in the city and explore the possibilities of working with the RMWO from the SSC platform. Such projects have great potential for replication in other parts of the country, and will tremendous value to the lives of underprivileged communities.



The NUST-CAC SSC team in front of the School for the deaf and dumb currently under completion





ANNOUNCEMENTS

Mr Naukhez Sarwar New NUST Co-Chair for CAC Banking & Financial Services Sector (BFSS) Committee



We are pleased to announce the appointment of Dr. Naukhez Sarwar, Principal & Dean NUST Business School (NBS) as the new NUST Co-Chair for the CAC Banking & Financial Services Sector (BFSS) Committee.

He has replaced Dr. Ashfaque Hasan Khan, who has recently joined NUST School of Social Sciences and Humanities (S3H) as Principal & Dean. Dr. Ashfaque Hasan Khan was Principal NBS from March 2009 to October 2013, and was the first NUST Co-Chair of the CAC BFSS Committee since its formation in April 2010.

Dr. Naukhez Sarwar has been associated with NBS for the last 15 years. Previously, he has headed the department of Management & Human Resource at NBS from 2002 till 2007.

Dr. Naukhez Sarwar holds a PhD in Business Studies from Manchester Business School, University of Manchester, UK. He has a broad-based and rich experience of teaching and research at both international and domestic Universities. He was awarded a full scholarship by the Norwegian Organization, NORAD, to pursue MBA at AIT and was also awarded the European Commission Scholarship for Student Exchange Programme between European & Asian students to study at EAP Oxford. He was nominated for the HEC Best Teacher Award for four consecutive years and received the HEC Best Teacher Award in 2007. He was also a member of the HEC Committee which introduced a uniform curriculum for business education in Pakistan in 2005-2006. He has actively been involved in training and consultation sessions in his areas of expertise which include Strategic Human Resource Management, International and Comparative Human Resource Management and Organizational Development.

We at CAC welcome him in both his new roles and look forward to working with him.

Team Development

We at the CAC believe in continuous improvement in all areas of work life, and encourage our team members to enhance technical and professional skills that will enable them to perform their current duties better and also help them in their future professional endeavors.

Ms. Sobia Bilal has been at NUST since September 2010 and with the CAC since December 2011. She looks after 3 Sector Committees of the CAC – Chemical, Defence Technologies, and Social Sector. Sobia recently cleared the Project Management Professional (PMP) Certification Exam. The CAC will gain from her improved knowledge and understanding of Project Management methodologies. This accomplishment is an important stepping stone for her professional life here at NUST, and beyond. We congratulate her on this achievement and wish her all the best.

Rabia Shoaib Ahmad
Director CAC



Mr. Sohail Wajahat Siddiqui New Industry Co-Chair for CAC Energy Sector Committee



It is our pleasure to introduce as the new Industry Co-Chair of the CAC Energy Sector Committee, Mr. Sohail Wajahat Siddiqui, CEO Karam Green Energy and Former Minister for Petroleum & Natural

Resources, Govt. of Pakistan.

Mr. Sohail Wajahat Siddiqui is a prominent name in Pakistan's Corporate Sector; he was also Federal Minister for Petroleum and Natural Resources from April 2013 to June 2013. During his entire career, spanning over 31 years, as CEO of Cluster and MD & CEO for Siemens Pakistan, he headed the complete Energy Sector operations including the Oil & Gas exploration businesses. He served as Chairman Board of Management (BoM) at Pakistan State Oil (PSO), Pakistan's leading Public Sector Company engaged in marketing and distribution of POL products. Mr. Siddiqui and his management team brought significant changes with visionary policies by revamping the organizational structure of this national asset that led to saving of billions of rupees per annum to the national exchequer. He has also presented, on different forums, the roadmap to overcome power shortages through an integrated energy plan which will save billions of US Dollars for the country. Mr. Siddiqui has thorough knowledge of upstream and downstream Oil & Gas and Energy sectors; added to this is his knowledge of the Healthcare and Communication sectors.

Based on revolutionary and innovative ideas & concepts introduced in Pakistan in Telecommunication and Engineering sectors, Government of Pakistan bestowed upon him the prestigious Sitara-e-Imtiaz. Mr. Sohail Wajahat holds a Masters (MS) Degree in Electronics Engineering from King's College London, UK.

Mr. Siddiqui started his professional career with Siemens Pakistan as trainee engineer and then as MD & CEO (first Pakistani to head in the history of the company). He also served as the CEO for West Asia cluster besides holding other key responsibilities within Siemens Germany (SAG). He served as a Senior Consultant to the Central Board of SAG and as member acquisition team SAG for Westinghouse Power Corp. During his tenure as MD, Siemens, Pakistan transformed manifolds both exogenous and organic, e.g. order intake was 25 times higher, share price increased by 15 times, and dividend by 24 times. In addition to above, offices at Dubai and Afghanistan were established. Total overall market share increased from nil to 35% in Dubai. SAP was introduced for the first time in Pakistan, in 1998, by Mr. Siddiqui; he also introduced the desalination plant concept and EPC businesses. He developed and implemented a manual "Recipe of Success" and introduced concepts of HAAMSEY and Prism of Success.

Based on his intellect and diversified experience, Mr. Siddiqui was appointed on Boards of numerous private and public leading organizations including Member Board of Directors at Siemens Pakistan, Atlas Engineering, NE-SPAK Engineering Co, Export Processing Zone Authority (EPZA), Karachi Shipyard & Engineering Works (KS&EW) and Pakistan Steel (PS), CEO of Karam Green Energy, Chairman for Think Tank on Integrated Energy Sustainability, Co-Chairman - Energy for Pakistan Economic Forum at Pakistan Business Council (PBC), Member - Think Tank of Experts, Integrated Energy Plan 2010-2025 and Pakistan's Energy Future for PBC, Central Power Purchasing Agency (CPPA), Sectoral Committee on Energy at HEC and Board Member at ROUSCH (Pakistan) Power Ltd.

Moreover Mr. Siddiqui had served on different Boards and contributed significantly to turn around organizations including Board of NBP, Board & Governing Board Member at Pakistan Business Council (PBC), Pakistan Engineering Council (PEC), Engineering Development Board (EDB), Trade Development Authority of Pakistan (TDAP), Technology Up-Gradation & Skill Dev Co (TUSDEC), Pakistan German Business Forum (PGBF), Trustee Board



Member at Karachi Port Trust (KPT), Member Managing Committee at Federation of Pakistan Chamber of Commerce & Industry (FPCC&I), President, VP and Member Advisory Council at Overseas Investors Chamber of Commerce & Industry (OICC&I), President & VP of Management Association of Pakistan (MAP), Member Governing Council of Prime Minister Quality Award (PMQA), Member at International Chamber of Commerce (ICC), Sindh Sports Board (SSB), Custom Valuation Committee (CVC), Electronic & Telecom Sector Study Group, Federal Export Promotion Board at Ministry of Industries & production (FEPB), Expert Advisory Cell at Min of Industries (EAC), Policy Board - Pakistan Intellectual Property Rights Organization (PIPPO), Export & Public Sector Utilities at Karachi Chamber of Commerce & Industry (KCCI), Member Steering Committee at Planning Commission (PC), Karachi Water & Sewerage Board – Desalination Plant (KW&SB), Member Divisional Council at PSQCR, Chairman Steering Committee at Provincial Committee on Investment Sindh (PCOI), Task Force on Investment – Sindh, Enquiries & Implementation Team, Sindh, Director Alpha Packaging (Pvt.) Ltd, Executive Member Business & Economic Advisory Council of 21stCentury Club, Member Managing Committee at Employers Federation of Pakistan (EFP), Member Executive Committee at Engineering Vision 2010, Vice President at Pakistan India CEO Business Forum (PICBF), Chapter Chair & Board Member at Young President Organization (YPO), Member Board at World President Organization (WPO) and Member at Chief Executive Organization (ceo), USA., Board of Governors at Institute of Business Administration (IBA), Lahore University of Management Sciences (LUMS), AIESEC Pakistan, Member Board - Sindh Board of Technical Education & Vocational Training Authority (STEVTA), Member Corporate Advisory Council (CAC) at National University of Sciences & Technology (NUST), Member Academic Council at Hamdard University (HU) and many more.

Mr. Siddiqui is a certified Director from Pakistan Institute of Corporate Governance (PICG). He attended numerous courses including National Security Workshop (NSW -13) at National Defence University

(NDU) at Islamabad, Top Management Course (TMC) at Germany, International Management Course at USA, Siemens Leadership Excellence, Protection against Social Engineering, Corporate Governance, Siemens Leadership Framework, Internal Certification & SOA 302, Finance, Limits of Authority (LOA), Business Conduct Guidelines (BCG), Global Bribery & Corruption, Financial Ethics & Business Conduct, Global Compliance and many more.

The Management Association of Pakistan (MAP) has honored Mr. Siddiqui an Honorary Membership for rendering outstanding services to MAP. In Jun' 13 Mr. Siddiqui was included in the "100 Business Leaders of Pakistan" by the CEO Club. Under the dynamic leadership as MD & CEO, Siemens Pakistan won hundreds of Awards & Trophies like: Retained 1st position for several years in the Top 25 companies award by Karachi Stock Exchange (KSE), Best managed company in Business & industries by MAP, Best Annual Report by ACAP & ICMA, Best presented accounts award by South Asia Federation Association (SAFA), Engineering goods export award by FPCCI, SITE Exports Award, Best Corporate Newsletter, CSR National Award, Consumer Choice Award and Environment Excellence Award. In his individual capacity he was awarded by Institution of Engineers (IEP), Award of Excellence by PEC, Leading Industrialist by Government of Sindh, Outstanding achievements by Governor SBP, Exemplary Management Contribution by Nutshell Forum and many more.

We are indeed very happy to have Mr. Sohail Wajahat Siddiqui on board as Industry Co-Chair CAC Energy Sector Committee and hope to gain from his expertise and experience.



Dr. Tariq Mahmood New NUST Co-Chair for CAC Infrastructure Sector Committee



Traditionally, the NUST Co-Chair of any CAC Sector Committee is the Principal / Dean of the School that provides services to that particular Sector. For the CAC Infrastructure Sector Committee (ISC), the

Principal of the NUST School of Civil and Environmental Engineering (SCEE) is the NUST Co-Chair. The first NUST Co-Chair for the ISC was Dr. M. Nasrullah Khan, who had been serving as Principal SCEE since June 2008 retired from his position at NUST in July 2013. He headed the CAC ISC for almost 2 years, and we at CAC are very grateful for his able leadership.

Dr. Tariq Mahmood joined SCEE as Principal on 30th August 2013. It is our pleasure to introduce Dr. Mahmood as the new Industry Co-Chair for the CAC ISC.

Dr. Tariq Mahmood was commissioned in the Corps of Engineer of Pakistan Army in October 1976. He obtained a degree in Bachelor of Civil Engineering from Military College of Engineering (MCE), NUST,

Risalpur, in 1982. He graduated from Command and Staff College Quetta in 1987. In 1993 he obtained his PhD Degree in Civil Engineering (specialization in Transportation Engineering) from Michigan State University USA. He obtained his Masters in War Studies from the prestigious National Defence University, Islamabad in 2005. During his service in Pakistan Army he held various significant Command, Staff and Instructional assignments. Dr. Tariq served as Commandant MCE Risalpur, Director General Procurements Pakistan Army, and Director General Welfare and Rehabilitation GHQ Rawalpindi. He taught Post Graduate Civil Engineering classes at National Institute of Transportation (NIT), NUST along with supervision of various research projects, including those for National Highway Authority (NHA).

Dr. Tariq Mahmood has also served in Design and Consultancy Directorate, E-in-C Branch, where extensive design of road and airport runways was undertaken by him. He retired as Major General from Pakistan Army in 2013.

We at CAC welcome him in both his new roles, and look forward to working with him to promote Industry-Academia linkages through the CAC ISC.

“Our progress as a nation can be no swifter than our progress in education, the human mind is our fundamental resource.”

John F. Kennedy



Mr. Ilyas Suri - New Industry Co-Chair for CAC Automotive Sector Committee



We are pleased to welcome Mr. M. Ilyas Suri, Technical Advisor to Chairman Indus Motor Company Limited and House of Habib, as the new Co-Chair for the CAC Automotive Sector Committee. Prior to the appointment of Mr. Ilyas Suri, the title was held by Mr. Farhad Zulficar, Vice Chairman House of Habib and Director & Member Board, Indus Motor Company Limited.

Mr. Ilyas Suri has been part of the CAC Automotive Sector Committee since its inception in 2010. He has been extremely valuable to the Committee and to NUST throughout the past 3 years; most members of the CAC Automotive Sector Committee have been nominated on the Committee by Mr. Suri. His technical expertise and his rich experience is acknowledged and respected by everyone in the Automotive and Engineering Industries of Pakistan.

Mr. Suri has travelled extensively to UK, Europe, ASEAN countries and Japan for technology transfer agreements, selection / procurement of plant & equipment. He has been involved in various negotiations on technical and business matters and selection/procurement of plant & equipment. He has worked in various national and in-

ternational Industries including Tenatronics Limited, Canada, Bela Engineers, Agriauto Industries Limited and Indus Motor Company Limited.

His achievements include heading the project team for establishment of the Toyota plant in Pakistan, thereafter the operation, capacity improvement, expansion and development of parts locally. He has inordinate experience in manufacturing facilities for the development of Precision Automotive Product.

He specialized in Engineering and Production Management from Hendon College UK (Middlesex University). Mr. Suri also remained the board member of the Indus Motor Company Limited prior to his appointment as Technical Advisor to the Chairman Indus Motor Company Limited.

We at CAC welcome Mr. Suri in his new role, and hope to work together for achieving higher aims and greater success from the platform of the CAC Automotive Sector Committee.



The CAC Board of Advisors (BoA)

The CAC Sector Committees comprise of domain and technical experts, senior Industry members and Government representatives, thereby forming a unique triple helix combination of Academia, Industry and Government, engaging in advisory, consultation and R&D collaboration. We believe that in order to better realize the true potential of the 150+ members that the CAC has on its panel, it is now important to encourage more inter-Committee interaction and cooperation.

With this objective in mind, the Co-Chairmen of the Council, Rector NUST Engr. M. Asghar and Professor Emeritus NUST Engr. Dr. M. Akram Sheikh, recently approved the formation of a high-level board – the CAC Board of Advisors (BoA). It has been established with the following objectives:

1. To realize the cross-cutting nature of the CAC Sectors, and conceptualize and plan projects that cut across more than one Sector Committees in terms of expertise, human resource and outcomes. A few such projects have been executed through the CAC, e.g. vocational training of unskilled and under-privileged youth by the Design & Manufacturing Resource Complex (DMRC), SMME NUST (cross-cutting project CAC Social Sector & CAC Automotive / Engineering Sectors). Other projects of cross-cutting nature are in the planning phase.
2. To enable the CAC and NUST to gain from the expertise, intellect and experience of senior members from the academic and business worlds and the Government, who are not currently part of any CAC Sector Committee, e.g. Presidents of the Chambers of Commerce, senior functionaries from Planning Commission, Ministries, donor organizations, investment houses, other HEIs, etc.
3. To devise high-level strategies for nation-building through the combined thought input of the BoA members.
4. To develop policy recommendations and to advocate and present them at the right forums.
5. To give the CAC senior management and all CAC Committee Co-Chairs an insight into the work being done by each Sector Committee.
6. To give the BoA members opportunities to share their views and gain from each other's experience and expertise.

We welcome the following distinguished representatives from the Pakistani Industry, Government and Academia (triple helix) on board the CAC BoA, and are grateful to them for accepting our invitation:

Industry (Private Sector)

1. Mr. Ali Habib – Chairman House of Habib
2. Mr. Altaf M. Saleem – Chief Executive Officer Sharganj Mills Ltd. (A Crescent Group Company), Former Chairman ERRA
3. Mr. Farhad Zulficar – Member CAC Automotive Sector Committee, Vice Chairman House of Habib, Director & Member Board Indus Motor Company Limited
4. Mr. Ilyas Suri – Industry Co-Chair CAC Automotive Sector Committee, Technical Advisor to Chairman Indus Motor Company Limited
5. Mr. Irfan H. A Vazeer – Member CAC Infrastructure Sector Committees, Chief Executive James Finlay Ltd. & President Italian Development Committee
6. Mr. Naeem Mukhtar – Industry Co-Chair CAC Banking & Financial Services Sector (BFSS) Committee, Chairman Allied Bank Limited



7. Mr. Saquib H. Sherazi – CEO Atlas Honda Limited
8. Mr. Shaban Khalid – President Islamabad Chamber of Commerce & Industry
9. Mr. Sohail Wajahat H. Siddiqui – Industry Co-Chair CAC Energy Sector Committee, CEO Karam Green Energy, Former Federal Minister for Petroleum and Natural Resources
10. Mr. Syed Zibber Mohiuddin – Member CAC Automotive, Information Communications and Technology, and Infrastructure Sector Committees, Member Board of Directors Panasian Group of Companies
11. Mr. Zubair Ahmed Malik – President, The Federation of Pakistan Chambers of Commerce & Industry (FPCCI)

Public Private Sector Partnership

Mr. Mohsin M. Syed – Regional Director North National Industrial Parks - Development and Management Company

Academia

1. Dr. Ashfaque Hasan Khan – Principal/Dean NUST School of Social Sciences and Humanities (S3H)
2. Dr. M. Bilal Khan – NUST Co-Chair CAC Energy Sector Committee, Principal/Dean NUST Centre for Energy Systems (CES), NUST
3. Dr. Naukhaiz Sarwar – NUST Co-Chair CAC BFSS Committee, Principal/Dean NUST Business School (NBS)
4. Dr. Tariq Mahmood – NUST Co-Chair CAC Infrastructure Sector Committee (ISC), Principal NUST School of Civil & Environmental Engineering (SCEE)

Obituary Commodore Qaisar Mahmud SI (M) Retd.

We at CAC NUST sadly announce the death of Mr. Shahid Mahmud's father. Mr. Shahid Mahmud, CEO Interactive Group and NUST Co-Chair CAC ICT Sector Committee, lost his father, Commodore Qaisar Mahmud SI (M) Retd., on 4th October 2013.

Commodore Qaisar Mahmud SI (M) Retd. had a brilliant career in the Pakistan Navy, including his prestigious appointment, at the rank of Captain, as the founding Commandant of Pakistan Navy Engineering College (PNEC). After retirement, he served at senior positions in various organizations. He joined Chartered Institute of Logistics & Transport (CILT) in 1993 and took charge of the CILT Rawalpindi-Islamabad Section in 1996 till June 2010 in the capacity of Honorary Secretary & Vice Chairman. The CILT Section Office was also initiated by him in the premises of Interactive Communications (Pvt.) Ltd, Islamabad.

We extend our heartfelt condolences to Mr. Shahid Mahmud and his family members; and pray that Allah (SWT) blesses his soul and gives his family and friends the strength to bear this tremendous loss.



NUST Industry Liaison Office Making Futures...



NUST is fortunate to have the brightest students of this country. NUST is the place that 'makes it happen'. But have you ever really wondered, 'Who keeps it going?' The answer to this question is also quite simple, The Industry Liaison Office-NUST. It was created to address all Industry needs, including but not limited to quality human resource, the office of industrial relations has been working tirelessly around the clock to facilitate all of the NUST graduates for job placements ever since its inception.

It is universally understood that University-Industry linkages play a major role in the economic growth of any country. With today's constantly evolving environment, the process of talent acquisition has become even more critical, moreover such collaborations help in bridging the gap between the Industry and academia.

It is the ILOs mission to provide all prospective employers with a talented pool of human resource from NUST in the least amount of time. We are determined to facilitate all employers through all possible means and resources. With the aim of making NUST graduates the preferred choice for all recruiters, the ILO takes feedback from Industry members on a regular basis and uses the feedback to bring about the necessary change.

Another question remains: What exactly happens at

the Industry Liaison Office?

The activities here include student internships & job placements, faculty interaction with industries and solutions to industrial problems through R&D projects. NUST has been able to establish industrial linkages with leading institutions and organizations of the country.

To handle the current students and the alumni separately, ILO has established 2 offices, the Office of Industrial Relations and the Office of Alumni Association, to help it accomplish its goals.

Only in the recent year; following milestones have been achieved by ILO:

- » Successfully placed over 1100 students/alumni in Industry.
- » 94% students are either employed, pursuing higher education or involved in entrepreneurial ventures of the recently graduated batch of 2012.
- » 1650 Jobs opportunities and 650 Internships shared with graduates this year.
- » Organized 140 employment related activities till date; including branding opportunities (Unilever, P & G, Zong, Mobilink, etc); as well as research facilitation (Telenor, Mobilink, IBM, Ebryx, etc.).
- » Initiated 110 Industry Linkages this year; currently maintaining 350 active Industry Partners in the field





of Manufacturing, Technology, Production, FMCGs, Energy and Pharmaceutical.

- » NESCOM Student Fellowship program for undergraduate and post-grad students.
- » Industrial Collaboration with Indus Motors finalized to sponsor annual Industrial Gold Medal for SMME graduates at the Convocation.
- » Coke Quest was launched by Coca Cola (Beverages Pakistan Ltd), ILO was successful in convincing them to make NUST as their primary partner to train and recruit students. Thus now 35 among 50 students this year would be from our university.

- » In addition to this; first ever NUST Alumni Home Coming is being organized on 28th December, 2013 to mark the completion of NUST's twenty years of defining futures.

The ILO understands students have pinned their hopes of bright future with this office; thus we continue to strive in exploring new horizons and look for ways to expand our collaborations and partners to get a perspective on the upcoming trends in the Industry.

In line with this mission, ILO & CAC would be working in close coordination to facilitate and nurture maximum Industry relationships.

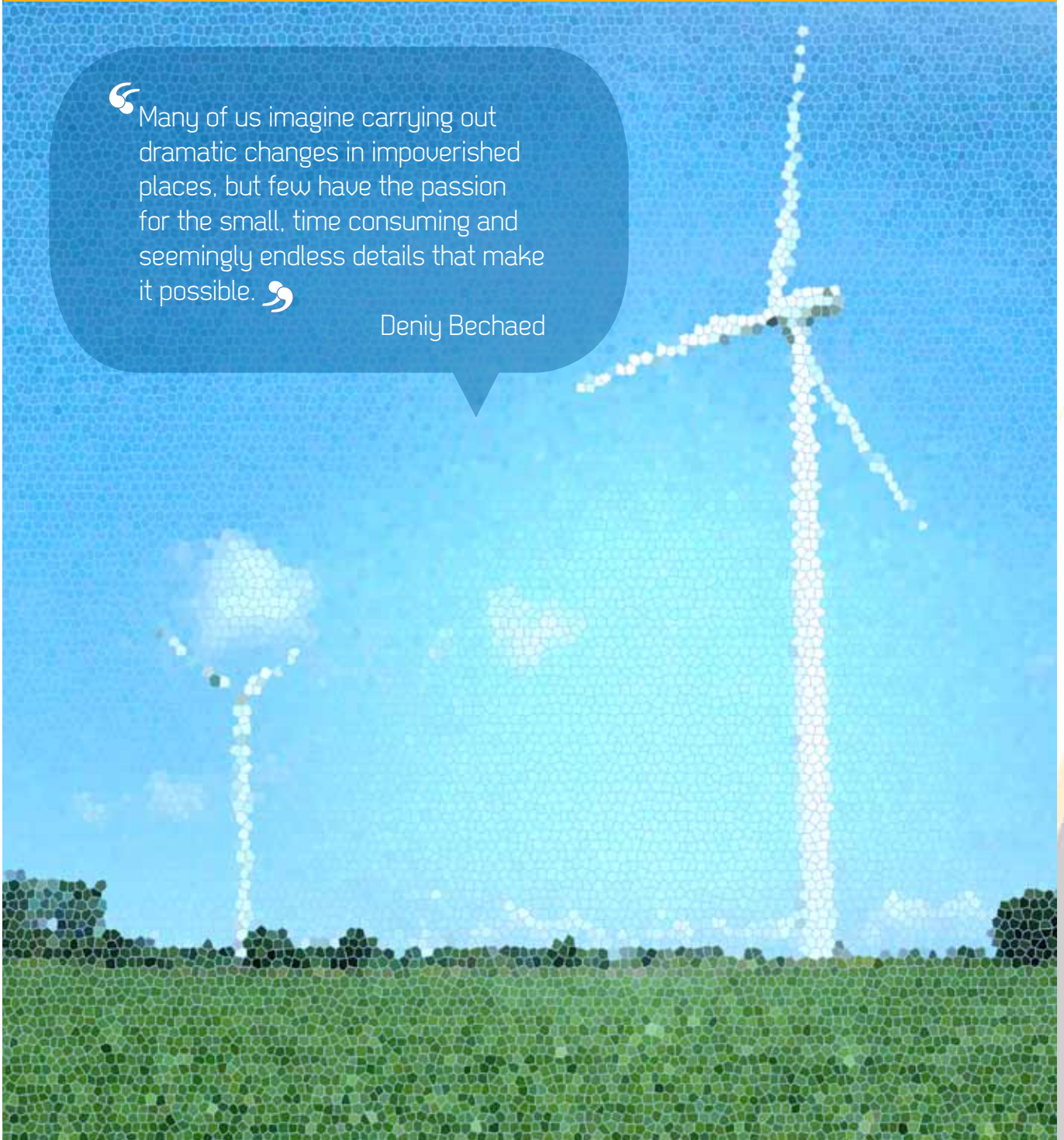




SECTOR FOCUS - CAC Energy Sector

“Many of us imagine carrying out dramatic changes in impoverished places, but few have the passion for the small, time consuming and seemingly endless details that make it possible.”

Deniy Bechaed



Message from NUST Co-Chair for CAC Energy Sector Committee



NUST Center for Energy Systems (CES) supports the CAC Energy Sector Committee under the leadership of Dr. M. Bilal Khan, Principal and Dean CES. CES and CAC coordinate closely in establishing collaboration with the Industry, as well as in fulfilling other mutual objectives.

CES successfully completed the course work for its 1st batch of MS Energy Systems Engineering followed by allocation of 37 MS thesis project titles across various platforms. It is a unique program in which the students were exposed to both renewable and conventional energy subjects including Solar PV devices, Thin Films, Fuel Cells, Biofuel Engineering, Simulation and Modeling of energy projects, Clean Coal technology, and Energy Economics and Planning.

In line with the CAC objectives, CES is dedicated to resolving Pakistan's Energy crisis and contributing to development of sustainable energy in the country through enterprise activities and Academia-Industry collaboration. The Centre attracted USD 800,000

from overseas Industry (NRG Biofuels/UNIDO) and USD 50,000 from the local Industry (FFCL/ICI). Furthermore, approved grant of USD 500,000 in kind/ cash is currently in the pipeline (ASEAN/Greesham's UK). 20 applied research projects are being actively pursued by the CES faculty who managed 20 high-quality publications in Impact Factor Journals of International repute together with 2 approved US/WIPO patents in 2013.

Think Tanks are a key element in global competition and collaboration for knowledge production and acquisition. An Energy Think Tank will be formed under the USAID Center for Advanced Studies (CAS) program, building on current experience and strengths of the GTTN and implementing best practices from around the world.

We are also very happy to have Mr. Sohail Wajahat H. Siddiqui, CEO Karam Green Energy / Former Minister for Petroleum and Natural Resources, on board as the new Industry Co-Chair of the CAC Energy Sector Committee. With his practical experience of the Engineering Industry, his numerous current and past appointments on various Energy-related forums, and his experience of various Ministries and Government organizations, not to forget his appointment as Federal Minister, will be a great asset for the CAC Energy Sector Committee. His expertise and experience will add tremendous value to the CAC Energy Sector Committee and to CAC and NUST in general.

Dr. Mohammad Bilal Khan
Principal and Dean CES



Message from Industry Co-Chair for CAC Energy Sector Committee



The pioneering efforts of CAC have provided NUST the opportunity to bring together Industry and Academia for discussing and discovering solutions for the benefit of future Industrial growth and creating a database for coming generations. This makes NUST a unique institution that stands tall amongst its peers. Students at NUST are indeed fortunate that they go through experiences that prepare them to confidently face practical life well versed with both the academic and practical side of their respective Industries. With the CAC platform NUST students have access to knowledge that is invaluable for their careers.

Mr Sohail Wajahat H. Siddiqui

CEO, Karam Green Energy

Former Federal Minister for Petroleum and Natural Resources

Foreign Experts' Visit to Center for Energy Systems (CES) NUST

Mr. HE, a Chinese Engineer, and Dr. Xinying Liu, senior faculty and distinguished researcher at the University of South Africa, paid an extended 3-weeks visit to CES NUST to supervise the installation and commissioning of the GTL Lab funded by Fauji Fertilizer Company Limited (FFCL) at a cost of USD 65,000. The research facility consisting of advanced instruments, controllers, transformers, syngas supply system, vertical reactors, downstream separators and GC analysis equipment was installed and tested by the overseas experts with the help of local team. The facility is the first of its kind in Pakistan and second in the world to be housed by any University.

Following installation of the facility, Dr. Liu delivered a stimulating talk on XTL processes (conversion of carbon resources into liquid fuel). XTL is an impor-

tant theme which covers the fundamental technology involved in the conversion of coal, natural gas, or biomass to high-quality clean burning diesel fuel. The technology was originally developed by petroleum-lean and coal-rich Germany at the fading stage of World War II, and has henceforth become commercialized. However it is owned and practiced by only a few companies in the world, namely Sasol, Shell, Exxon-Mobile and Cyn-troleum.

Sasol Co. of South Africa is producing 160,000 barrels of XTL diesel per day at an average price of USD 30 per barrel. In Pakistan's context, with 60 coal gasifiers at a cost of USD 650 Million a 20,000 barrel per day facility can be established at Thar utilizing coal gas. This will entail foreign exchange savings to the tune of USD 960 Million at the prevailing rates.



The Water-Energy-Economic Nexus: An Integrated Modeling Framework for Scenario Analysis

Prof. Dr. Sherman Robinson is a Senior Research Fellow at IFPRI and Professor of Economics (Emeritus) at the University of Sussex. He joined the Economics Department at Sussex in 2004 and then accepted a joint appointment at the Institute of Development Studies (IDS), UK, in 2005. He worked at IFPRI from 1993 to 2004 as Director of the Trade and Macroeconomics Division and rejoined IFPRI as a Senior Research Fellow in 2011. Before joining IFPRI, he was Professor of Agricultural and Resource Economics at the University of California, Berkeley (1983-1994); Economist, Senior Economist and Division Chief in the Research Department of the World Bank; Assistant Professor of Economics at Princeton University; and Lecturer in Economics at the London School of Economics. He has held visiting senior staff appointments at the Economic Research Service, U.S. Department of Agriculture; the U.S. Congressional Budget Office; and the President's Council of Economic Advisers (in the Clinton administration). Mr. Arthur Guenau is from IFPRI; he is a graduate of Écolepoly technique from France, and holds an MS in Technology and Policy from MIT USA (2012).

Both foreign guests described Computable General Equilibrium (CGE) Model and its structure and typical features. They also explained Regional Water-basin Management Model (RWSM). They stated that combined CGE-W model is applied to Pakistan to analyze the economy wide impacts of changes in wa-

ter resources in the Indus river basin, focusing on water "shocks" such as droughts. The CGE-W model is regionally disaggregated with a number of crops and includes the impacts of water stress on agricultural productivity. The RWSM model applied to Pakistan (RWSM-Pak) is a new water basin simulation model. RWSM-Pak is designed to manage the water system (reservoirs and canal system) under different scenarios of river flows and competing demands (provided by the CGE model). Both models simulate long-run economic growth and changes in water resources, supporting analysis of long run climate change scenarios. The CGEW model framework combines the strengths of the component economic and water models, without having to make compromises typical of water models that incorporate simple economics or economic models that include water in a simplified manner. To illustrate the use of the model system, they presented empirical results for four climate change scenarios and analyze the economic benefits of adding Diamer-Bhasha Dam to the system.

Dr. Ashfaque Hasan Khan, Principal and Dean NUST School of Social Sciences & Humanities (S3H) and Dr. Muhammad Umar Khan Khattak from Institute of Geographical Information Systems (IGIS) NUST also attended the seminar. At the end, Dr. Mohammad Bilal Khan introduced the faculty members to both guests and discussed possibilities of future collaboration of CES NUST with their institute for research and development in respective field.



An Integrated Modeling Framework for Scenario Analysis: Attended by NUST Team



Gas Chromatograph Mass Spectrometer (GCMS) Equipment donated by NRG Biofuels Canada

NRG Biofuels Canada recently donated a Gas Chromatograph Mass Spectrometer (GCMS) worth USD 50,000 to CES NUST as part of their ongoing support in the Renewable Energy domain. CEO NRG Biofuels, Mr. Chris Willmann stated;

“I am pleased to announce and follow up in deeds on our commitment made in March 2011 as part of the joint MoU between CES NUST and NRG Biofuels Inc. to arrange in furnishing certain lab equipment to CES NUST. At this time we would like to take the opportunity to donate a Gas Chromatograph-Mass Spectrograph to hasten the research efforts conducted on our behalf and as a sign of goodwill”. Principal CES, Dr. Mohammad Bilal Khan, extended his compliments in response;

“We would like to thank you for your continued support as evidenced by your current donation of this precious piece of equipment. Because of your generosity we are able to further our mission in advancing the cause of applied research at NUST. A GCMS is crucial to our current line of experiments. It means a world to us and all of the researchers who are able to participate in the ongoing research”.

NRG Biofuels has previously donated valuable equipment to establish the Renewable Energy Lab and also established a Biofuel Park at CES NUST, apart from supporting human resource in terms of Research Associates and Technicians. With the current donation the company's investment at NUST now exceeds PKR 35 Million.



NRG Biofuel Park at Center for Energy Systems (CES) NUST



Energy Managers' Training Program for Industry Professionals in collaboration with GIZ and All Pakistan Textiles Mills Association (APTMA)

CES NUST conducted a three-day Energy Managers' Training workshop in collaboration with GIZ, the German Society for International Cooperation, and All Pakistan Textile Mills Association (APTMA) in the KPK province of Pakistan from 2nd May till 4th May 2013. The trainers included Dr. Adeel Waqas, Associate Professor CES; Mr. Shahid Hussain Ansari, Assistant Professor CES; Engr. Abdul Rehman, Lecturer CES; Mr. Ali Mehmud, Chief Executive Officer (CEO) Unified Energy Systems Pvt. Ltd. & Member CAC Energy Sector Committee; and Professor Ahmad Sohail, College of Electrical and Mechanical Engineering (EME); all these trainers participated on behalf of NUST. The objective of the training was to increase awareness and a sense of responsibility, amongst Textile Sector companies, regarding Energy Conservation and Energy Efficiency.

The course emphasized on Energy Conservation and Energy Efficiency in mechanical, electrical and chemical equipment that are commonly used by the textile Industries. The trainers elaborated upon the best practices from theoretical and practical points of view to enhance the Energy production capabilities. The importance of ISO 50001 certification, which is related to Energy Conservation and Efficiency, was also highlighted during the training session.

The primary take-away from the training was to help the Textile Industries to reduce their Energy consumption by implementing waste heat recovery and Energy Conservation measures in the following regimes: Steam generation/distribution, Cogeneration, Illumination, Economizers, HVAC systems, Transformers, PFI panels, Electric motors, Variable speed drives, Compressors, Pumps, Furnaces, and Cooling towers.

APTMA concedes that the subject training has had a direct impact on the Industry; Energy Conservation and Energy Efficiency measures have been implemented in 40 out of 374 member Mills with significant Energy savings to the tune of 1.0 MW per Mill. The utility of the subject training is obvious, and such trainings need to be conducted for other Sectors and Industries, so that advantages can be extended across other Industries. GIZ expressed their keen interest to sponsor future Energy management workshops and also extend training to other Industrial sectors with Master Trainers from NUST. CES plans to conduct similar trainings at NUST bringing modern instrumentation and alternate Energy resources in its fold for which one-hour additional segment has already been prepared for joint offering with National Instruments (NI) USA.



Energy Managers' Training Program in collaboration with GIZ and APTMA

Visit of Mr. Robert D Christie, Managing Partner & COO Fuelade Solutions USA, to the Center for Energy Systems (CES) NUST

Mr. Robert D Christie, Managing Partner & COO Fuelade Solutions, USA visited CES NUST on 23rd September 2013. He attended the inaugural session of the World Engineering Congress at Center for International Peace & Stability (CIPS) NUST. Principal CES NUST gave brief presentation about the Centre and also discussed the ongoing applied research projects undertaken by the faculty members. Mr. Robert D Christie appreciated that the vision of the Center justifiably includes both electrification and liquid fuel as part of the Energy mix.

During his presentation, Mr. Robert D Christie gave a brief overview of his company, and discussed how they successfully launched their product across the globe. He said that Fuelade boosts power, reduces emissions and increases fuel economy of both Diesel and Gasoline Engine Platforms to the tune of 20-30 %. He further said that extensive testing reveals that Fuelade completely burns fuel in the combustion chamber and also cleans injectors, valves, pistons, cylinders walls and improves fuel economy. Mr. Robert D Christie also said the Fuelade can be tested on already running diesel generators on NUST campus; such experiments will also prove the feasibility of the product.



Visit of Mr. Robert D Christie Managing Partner & COO Fuelade Solutions, USA, to CES NUST



Participation of Principal and Dean CES NUST and NUST Co-Chair CAC Energy Sector Committee at the International Conference in Lebanon

The National Instruments (NI), USA, sponsored the Arab Day International Conference, which was held on 16th May 2013 at Beirut Lebanon. The conference themes were:

- i. Academia-Industry partnerships
- ii. Entrepreneurship and innovation
- iii. Application of instrumentation across various technology platforms

Distinguished speakers from Italy, Turkey, UAE, Saudi Arabia, India, USA and Pakistan participated. A separate session on Renewable Energy was conducted in the form of Panel Discussion in which Dr. Mohammad Bilal Khan, Principal CES NUST, participated as a panelist with other distinguished experts from US, Lebanon, India, UAE and Saudi Arabia. The NUST flag was kept high in this forum.

Prior to the conference, NI gave Dr. Bilal and Indus-

try Professor at CES NUST Dr. Qamar Malik an exclusive briefing on the line of instruments they carry for applications in the Energy Sector. In the light of feedback received from the participants of the Energy Managers' Training Program recently conducted by CES NUST in KPK Province, NI was apprised about the important role instruments can play in the conservation and management of Energy in Industry. NI agreed to prepare and deliver a tutorial segment in the next such program at NUST, free of cost. On this occasion NI shared a branded complimentary copy of their software LABVIEW, which is now available to CES faculty for their projects.

On a final note, the Industry delegate from Saudi Arabia informed that his company was in the process of installing Solar Energy to the tune of GW and there is a demand of 85,000 (Eighty Five Thousand) Energy Graduates in the Kingdom over the next five years in the various Energy Sectors.



Visit of Mr. Robert D Christie Managing Partner & COO Fuelade Solutions, USA, to CES NUST



Participation of Principal and Dean CES NUST and NUST Co-Chair CAC Energy Sector Committee at 5th Pakistan Oil & Gas Forum 2013

Dr. Muhammad Bilal Khan, Principal and Dean CES NUST, was invited as panelist on 5th Pakistan Oil & Gas forum 2013 which was organized by SHAMROCK on 30th May 2013 at the Marriott Islamabad. The emphasis was on demanding and foreseeing political will to create an integrated Energy Ministry in order to build, improve and implement on a comprehensive Energy policy. Large number of delegates and Industry stalwarts from government, regulatory bodies, oil & gas companies, power generation Sector and allied organizations, including multiple panels of experts attended the forum. The Federal Secretary of Petroleum, Mr. Abid Saeed, highlighted some of the critical issues being faced by the oil & gas sector. Mr. Shahid Sattar, Member Energy, Planning Commission of Pakistan, stressed the need for implementation of the Petroleum Policy. The first session was on Oil and Gas Policy, balancing the investment, demand and supply equation. The second

session was on diversifying the Energy mix, a road map towards sustainable Energy solutions which focused on the opportunities that can make a difference in our current and future Energy needs of the country. During the panel discussion, Dr. Bilal stressed on the need for considering an Energy Mix in the country that is favorable to the prevailing circumstances. Coal/Biomass for co-generation, renewables as add-ons, good maintenance protocol for the thermal power plants, in particular operated by WAPDA, and adopt Energy conservation measures both in domestic Sector and in the Industry. He apprised the audience that the CES NUST had recently conducted an Energy Mangers' Training Program in collaboration with APTMA and GIZ, which APTMA concedes is saving up to 1 MW per Mill in the Textile Sector.



5th Pakistan Oil & Gas forum 2013 organized by SHAMROCK on 30th May 2013 at the Marriott Islamabad



Center for Energy Systems (CES) NUST and Engineering Development Board (EDB) Consultative Workshop on Coal Gasification

A one-day consultative Workshop was jointly organized on 11th June 2013 at NUST by the Engineering Development Board (EDB) and CES NUST. A large number of university researchers, engineers, academicians, scientists and Industry representatives attended the Workshop. In his introductory remarks, Dr. Asif Raza, Pro-Rector Academics NUST, emphasized the need for practical measures toward controlling the prevailing Energy crisis. He said that NUST had the requisite expertise and resources which it will be happy to provide in this regard to the cause of resolving the Energy crisis. He assured the forum that through collaborative efforts, the Academia and Industry, substantiated by Government support, can devise means to overcome this menace.

Engr. Qazi Ebadullah Khan, Chief Executive Officer EDB, informed that EDB had initiated an Industrial Research Program (IRP) to establish Industry-Academia linkages. He elaborated the main features of IRP and informed that under the IRP, around 1,000 scientists and researchers in 308 disciplines from 22 universities have been brought on a common platform. He added that the consultative workshop on coal is one of the most important initiatives taken in the follow-up of the IRP. It was high time to switch to suitable Energy resources that are affordable, competitive, and above all, sustainable. Coal is a suitable source of Energy, available in abundance to meet the country's Energy demand for more than a century.

Prior to this, Dr. Mohammad Bilal Khan, Principal CES NUST said in his welcome note that at present Pakistan is facing serious Energy crisis. Severe shortage of electricity and natural gas has adversely affected the Industrial and domestic sectors, crippling the economy in the process. Pakistan is ranked 2nd in coal reserves, but 35th in coal production. Coal occupies 45% of the world Energy mix, with USA using 50%, India 70%, China 79%, and South Africa 93% coal in their respective Energy mix. While sitting on one of the world's largest reserves, our share of coal in the Energy mix is less than 1%. A way forward is the gasification of coal which is a versatile technology that can provide heat for the furnaces, electricity for captive power and liquid fuel for the commuting, logistics, aviation and marine sectors. It promises indigenous, reliable and less expensive power generation as compared to oil fired power generation based on imported oil.

Representatives from Pakistan Institute of Engineering & Applied Sciences (PIEAS), Coal Water Slurry Company, Tuwairqi Steel Mills, Thar Coal Project, Greshem Eastern (Pvt.) Ltd., Clean Coal Gasification Company, International Fabrication Lahore, Trade Serve International, Pakistan Council for Renewable Energy Technologies (PCRET) and State Bank of Pakistan (SBP), delivered enlightening talks in the Technical and Industry sessions of the Workshop. After the discussion session, the participants put forward recommendations to materialize the gasification of local coal. A research team comprising of EDB and CES NUST will develop and forward a concrete technical proposal to HEC for funding the indigenous design and fabrication of an Industry prototype to be tested and offered to Industry at large.



CES and EDB Consultative Workshop on Coal Gasification



Visit of Mr. Nicolas Fornage, Country Director of the French Development Agency (AFD), to CES NUST

Mr. Nicolas Fornage, Country Director of the French Development Agency (AFD), and Mr. Nauman Bhutta, Head of Projects AFD Pakistan visited CES NUST on 9th July 2013. The agenda of the meeting was to explore possible projects of public interest for infrastructure development in the Energy sector. Dr. Ehsan Ali and Dr. Z. S. Khan from CES NUST were also present in the session.

It is pertinent to mention that the AFD has shown their keen interest in providing financial assistance in Energy-related infrastructure public development projects and support for PhD and Postdoctoral studies for the students and faculty members in differ-

ent Universities of France. To improve the power supply at consumer level, AFD is supporting the development of Renewable Energy by providing funds to address the current Energy crisis in Pakistan. To reduce the power demand, AFD is also co-financing with the Asian Development Bank (ADB) a multi-tranche program on Energy Efficiency in domestic and Industrial sectors. They further said that funds will be available through Economic Affairs Division (EAD) Pakistan as loan but not as a grant. On this occasion Principal CES made a presentation to apprise the guests of the genesis of CES NUST and also elaborated on some of the applied projects being undertaken in the areas of Renewable Energy and Gas-to-Liquid processes.



Visit of Mr. Nicolas Fornage, Country Director of the French Development Agency, to CES NUST



Collaboration between NUST Center for Energy Systems (CES) and UNIDO-GEZ for “Promoting Sustainable Energy Production and Use from Biomass in Pakistan”

UNIDO-GEZ, in collaboration with CES NUST, launched a Project titled “Promoting Sustainable Energy Production and Use from Biomass in Pakistan” on 27th September 2013 in a ceremony at Serena Hotel Islamabad. Federal Minister for Information, Broadcasting and National Heritage; Mr. Pervaiz Rashid; was the chief guest. The total worth of the Project is USD 1.8 Million. CES NUST has been assigned to conduct one component of the Project, that is, “Capacity Building and Strengthening of Technology Support System” with a budget of USD 405,000. It encompasses different sub-components including R&D development for Biomass Gasification Technologies (BGTs) at CES, training of Industrial manpower on BGTs and evaluating the potential of biomass gasifier fabrication at local level.

The plenary talk on the occasion was delivered by Mr. Alois P. Mhlanga, Industrial Development Officer from UNIDO, Vienna, Austria. Mr. Alois mentioned that the Project is focused on the efficient utilization of biomass to benefit the SMEs and rural communities in Pakistan. Mr. Muhammad Ahmad, National Project Manager for Biomass in Pakistan, UNIDO, highlighted the successful implementation of this technology in our neighboring countries and said that they aimed to replicate the same in Pakistan. Dr. M. Bilal Khan, Principal NUST CES, made a comprehensive speech to highlight the imbalance of our Energy mix and prospects of BGTs contributing towards global campaign for the massive reduction of CO2 emissions which will restore the natural milieu of our planet and meet

the Energy crisis in Pakistan. He further added that the launching of UNIDO’s Project will be helpful to set the trends of Biomass-to-Energy, and Pakistan can produce 5,000 MW of electricity every year using only available biomass. He further said that the Biomass Project will implement Energy-efficient utilization in this non-commercial Energy Sector which accounts for almost 50% of Energy consumed in the rural areas. As a distinguished speaker and Principal Investigator of Project from CES NUST, Dr. Ehsan Ali, also made a detailed presentation highlighting the biomass issues and their remedy using R&D facilities at CES leading to an established infrastructure with trained manpower to work for optimized outcomes from targeted BGTs.

The Project is focused on introducing Biomass Gasifiers to Small and Medium Enterprises using biomass, and training of the Industrial manpower to handle and replicate this technology successfully at the local level.

Mr. Pervaiz Rashid appreciated the initiative by UNIDO-GEF to contribute in the Renewable Energy Sector in Pakistan.



CES NUST awarded USD 405,000 for the UNIDO Project

Participation of Center for Energy Systems (CES) NUST in India-Pakistan Dialogue on Energy and Climate Change

The Sustainable Development Policy Institute (SDPI) and Heinrich Boll Stiftung Pakistan jointly convened the India-Pakistan Dialog on Energy and Climate Change on 12th & 13th December 2013 at Islamabad. Mr. Khawaja Muhammad Asif, the Minister Water and Power, inaugurated the workshop. Dr. Mohammad Bilal Khan, Principal and Dean CES NUST, delivered an invited speech in the Session on Renewable Energy for Climate-Resilient Development. He said that the newly launched Fifth Assessment Report on climate science by Inter-governmental Panel on Climate Change (IPCC) gives a fifth wakeup call to policy-makers, practitioners and civil society that climate change is an imminent and ominous reality. What is more disturbing is that sea-level rise, glacial melt, temperature rise and extreme weather events are only some of the direct consequences of climate change. The indirect effects will be felt on important sectors which will be perpetually stressed by climate variations. In other words, climate change is expected to impact everything from markets, infrastructure and economy to Energy, water, health, food and agriculture.

Underscoring the importance of private-public partnership in the Renewable Energy Sector, he stressed that the critical role played by Private Power and Infrastructure Board (PPIB) needs to be further potentiated by creating awareness about the incentives offered by Hydropower for Foreign Direct Investment (FDI). Although PPIB is largely responsible for 27 IPPs Operational with installed capacity of 6,870 MW, however these are mostly thermal and hence expensive. He informed that the Power Sector attracted FDI of USD 159 Million in 2012 and PPIB is currently processing 40 multiple fuel power projects with capacity of 10,399 MW; 1,800 MW commissioned. At the end he emphasized the huge potential that resides in putting up captive Power Plants in the country. Dr. Shaukat Hameed Khan, Former Vice Chancellor (VC) Ghulam Ishaq Khan Institute of Engineering Sciences & Technology (GIK) Topi, Pakistan, and Ms. Zeenat Niazi, Member Planning Commission, and Mr. K. Srinivas from India also delivered speeches on Energy Security and Sustainability in Pakistan and Engaging Communities in Renewable Energy respectively.



Dr. Mohammad Bilal Khan, Principal and Dean CES NUST, at India-Pakistan Dialog on Energy and Climate Change



Talk on Energy Security and Challenges for Pakistan at National Defence University (NDU), Islamabad

Dr. Mohammad Bilal Khan, Principal and Dean CES NUST & NUST Co-Chair CAC Energy Sector Committee, represented Dr. Samar Mubarakmand at the National Defence University (NDU) to deliver a talk titled "Energy Security and Challenges for Pakistan" on 21st October 2013. Mr. Abid Ali, Secretary Ministry of Petroleum and Natural Resources, was the other speaker on the panel. Lack of qualified human resource and integrated Energy planning, imbalanced Energy mix with heavy reliance on imported oil, non-utilization on vast indigenous resources, lack of implementation of viable projects and waste of natural gas in the last 25 years both in terms of efficiency in power generation and its diversion to the transport Sector together with insufficient oil and gas exploration were identified as the main pitfalls.

He elaborated the potential of the coal Sector which can provide guaranteed long term Energy security to Pakistan. It can prove to be a major tool for Import substitution of expensive Residual Fuel Oil (RFO) in future. He emphasized that power and liquid fuel production from Underground Coal Gasification (UCG) can be a game changer for Pakistan. The world average cost of power from UCG is 2-3 cents per unit. For a 100 MW project it is expected to be 4-5 cents per unit. The capital expenditure on a UCG power station inclusive of gasifiers is USD 1.2 per watt, the lowest for any power production plant. Moreover, with 60 gasifiers at a cost of USD 650 Million, a 20,000 barrel/day facility can be established at Thar utilizing coal gas in conjunction with the Fischer-Tropsch (FT) Synthesis process. He informed the audience that CES is commissioning a lab-scale FT Synthesis facility funded by Fauji Fertilizer Company Limited (FFCL).

In addition, the fertilizer Sector uses 650 mmcft of Sui gas daily. This gas is first converted to

UCG and then used to produce fertilizer. Only 25 gasifiers can produce this amount of gas with an outlay of USD 280 Million. Fertilizer factories have already expressed interest in UCG from Thar and are willing to lay a pipeline for it. He further pointed out that Pakistan's Wind Energy potential also remains virtually untapped. The National Renewable Energy Lab (NREL), on the basis of a study of wind regimes, estimates this potential to be around 41,000 MW from 21 identified sites in the Ghara - Keti Bandar corridor. The wind enters from the Arabian Sea, passes 'harmlessly' through the corridor and enters into India on the other side of the border. The Indians are producing 8,000 MW using this wind.

He appreciated the resolve of the Government to set up the, 3,800 MW Dasu run-of-the-river project, 1,300 MW solar field in southern Punjab and 6,500 MW Gadani coal power project. The talk concluded with recommendations and action plans for the short, medium and long terms.

The lecture was attended by 169 officers including 27 officers from 17 allied countries of the National Security and War Course (NWSC) 2013-14. This was followed by a healthy Question/Answer session involving both speakers.



Dr. Mohammad Bilal Khan at National Defence University (NDU), Islamabad

Talk Lecture on Research Methodology at Command and Staff College, Quetta

Dr. Mohammad Bilal Khan, Principal and Dean CES NUST & NUST Co-Chair CAC Energy Sector Committee, delivered a lecture titled "Research Methodology" at the Command and Staff College Quetta on 10th September 2013. A new paradigm in research was introduced comprising Insight, Imagination, Correlation and Reinvent Thinking to supplement the established project sequence namely, Design, Synthesis, Measurement, and Analysis.

Relevant examples were sighted from advanced research conducted at NUST to highlight the efficiency of the new paradigm. 464 officers and College Directing Staff including 39 allied officers from 27 different countries attended the talk. Command and Staff College invites eminent personalities as guest speakers to deliver talk on subjects of professional and general import.

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