



Under the patronage of
H.E. Dr. Abdul Hussain bin Ali Mirza
Minister of Energy
Kingdom of Bahrain



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Sustainable Energy for Developing Countries



2nd ENERGY MANAGEMENT

CONFERENCE & EXHIBITION 2015



6 - 8 December, 2015

Gulf Hotel, Kingdom of Bahrain

www.energymanagement.bh

Organized by



الهيئة الوطنية للنفط والغاز
NATIONAL OIL & GAS AUTHORITY



جمعية المهندسين البحرينيين
BAHRAIN SOCIETY OF ENGINEERS

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« Introduction »

Energy security is a core element in any national development plan and energy management is the vehicle for attaining and ensuring the long-term sustainable supply of energy to fuel the national prosperity. This is particularly true in our region as energy security affects all aspects of development, including access to water, which represent the biggest challenge to almost all nations.

Conventional energy sources are normally associated with undesirable effluents that if not managed well, can have detrimental impact on our planet earth including global climate change. Therefore, environmental compliance plans should always be an integral part of any national development plan. The ultimate objective of energy management systems is to ensure the availability of the needed energy sources for fueling the present without compromising the ability of the future generation to meet their energy needs. This noble objective must be fulfilled with minimum impact on the environment.

Energy management is a top down instrument that enables government institutions to foster collaboration and benefit from the synergy between all stakeholders, including producers, consumers and investors. Energy security over the medium to long terms can only be effectively managed by an integrated plan that addresses the following four pillars:

1. Technologies that enhance energy sustainability such as renewable sources and bio-energy.
2. Generation efficiency to produce more useable energy from unit input sources.
3. Energy efficiency measures to minimize waste and improve energy utilization.

The conference will address these important topics specially from the policy and management perspectives and will provide attendees with professional insights of the industry leaders and experts. We are confident that you will find the conference and exhibition rewarding and enjoyable.

We look forward to seeing you in Bahrain.



« Chairperson's Message »



Nabilah M. Al-Tunisi
Chief Engineer,
Saudi Aramco

Building on the success of First Energy Management Conference and Exhibition, I am delighted to welcome you to the Second Energy Management Conference and Exhibition in Bahrain. We are indeed honored to hold this significant event to address the importance of energy management and efficiency, the potential of renewable energy, and their application toward achieving sustainable development goals.

The International Energy Agency reported that the global economy grew by around 3% in 2014. The world's economic system is driven by energy production and use which account for two thirds of the world's greenhouse gas emissions. Hence, significant cut down on green-house gas emissions is a necessity, while sustaining the global economic growth. The judicious use of energy — and consequently its conservation — is responsible and smart business. Adopting energy management strategies is essential for businesses to control their energy expenditures, turn costs into thriving prospects, and reduce risks by making informed and smarter energy decisions.

We are now at the cusp of a technological revolution where transformation of the energy industry is imperative. The evolution of new energy technologies and systems cannot follow the compartmentalized model that has worked so well in the past, because of the time constraints imposed by economic growth and climate change. All parts of this new and improved energy economy are strongly interlinked, and researchers in this arena must be conscious of this fact to maximize their contributions.

This premier international gathering is an opportune moment for scientists, professionals, policymakers and other parties, to review recent developments in this rapidly changing environment, and absorb the benefits and efficiency of comprehensive energy solutions. I would like to invite regional and International organizations to participate in the exhibition being held in parallel to the conference. The exhibition showcases the latest technologies, trends and best practices. With your participation, I am confident we will be one step closer toward achieving the event's theme, **“Sustainable Energy for Developing Countries.”**

Let's invest in a sustainable future!

Thank you.

« Advisory Committee »



Sh. Mohamed bin Khalifa Al-Khalifa
Chief Executive Officer, Nogaholding
Chairman



Dr. Faisal Al-Faqeer
Saudi Aramco
Saudi Arabia



Mr. Sam Grossman, PE
Chairman
WFEO Energy Committee, Chevron, USA



Mr. A. Majeed Al Gassab
Bahrain Society of Engineers
Bahrain



Mr. A. Hussain Monfaridy
Advisor – Minister's Office
National Oil & Gas Authority, Bahrain

Opening Ceremony Program

19:00 – 19:30	Exhibition inauguration
19:30 – 19:35	Recital of the holy Qur'an
19:35 – 19:50	Speech by the Patron H.E. Dr. Abdul-Hussain Bin Ali Mirza Minister of Energy
19:50 – 20:05	Speech by the Chairperson Ms. Nabilah M. Al-Tunisi Chief Engineer, Saudi Aramco
20:05 – 20:20	Speech by Mr. Marwan Abdel Hamid President, World Federation of Engineering Organizations (WFEO)
20:20 – 20:30	Speech by Mr. Masoud Al-Hermi President, Bahrain Society of Engineers
20:30 – 20:50	Honoring the Sponsors



CONFERENCE COMMITTEES

Organising Committee

Mr. Masoud Al Hermi Chairman	Bahrain Society of Engineers
Mr. Jameel Khalaf Al Alawi Vice Chairman	Bahrain Society of Engineers
Mr. Mishal Al-Zughaibi Mr. Faisal Al-Musa	Saudi Aramco Saudi Aramco

Sponsorship & Exhibition Committee

Ms. Sameera Al Qattan Ms. Walaa Al Malki Ms. Balqees Janahi Mr. Abdullah Al-Mesfer Mr. Yazeed Al-Homaid	Ministry of Finance, Bahrain National Oil & Gas Authority, Bahrain National Oil & Gas Authority, Bahrain Saudi Aramco Saudi Aramco
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Publicity Committee

Dr. Hassan Al Fardan Mr. Mahdi Al Jalawi Mr. Ayman Youssef	National Oil & Gas Authority, Bahrain Bahrain Society of Engineers Saudi Aramco
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Logistics Committee

Mr. Hassan Al Taraifi Ms. Reem Khalfan Mr. Shaker Abdulaziz	Bahrain Society of Engineers Bahrain Society of Engineers Bahrain Society of Engineers
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Technical Committee

Eng. Anwar Khalaf Chairman	National Oil & Gas Authority, Bahrain
Members	
Dr. Ebrahim A. Jalil	Energy Expert, Egypt
Dr. Moh'd Alsayyad	National Oil & Gas Authority, Bahrain
Mr. Abdul Nabi Al Sabah	Bahrain Society of Engineers
Mr. Hussain Makki	National Oil & Gas Authority, Bahrain
Mr. Ayman Eltaloni	UNEP, Bahrain
Mr. Khalid Almohanadi	Bahrain Society of Engineers
Dr. Saeed Alalawi	University of Bahrain
Dr. Ahmed Yousif	University of Bahrain
Dr. Waleed Zebari	Arabian Gulf University
Ms. Lamees Alhassar	Ministry of Finance, Bahrain
Ms. Rana Saloom	Electricity & Water Authority, Bahrain
Dr. Saad Al-Jindal	Kuwait Institute for Scientific Research
Dr. Walid Chakroun	Kuwait University – ASHRAE
Dr. Nesreen Ghaddar	American University of Beirut
Dr. Mohammed Salah-Eldin Imbabi	University of Aberdeen
Mr. Ahmed Al-Awadhi	MASDAR/Ministry of Energy, UAE
Mr. Michael Michaud	American Society of Mechanical Engineers, USA
Prof. Daniel Favrat	EPFL, Switzerland
Dr. Ruomei Li	Chinese Society for Electrical Engineering, China
Mr. Mario Weigers	EDESA, Argentinea
Prof. Abubakar S. Sambo	Energy Commission, Nigeria
Mr. Pradeep Chaturvedi	Institution of Engineers, India
Prof. Dr. Carsten Ahrens	Jadehochschule, Germany
Mr. Martin Manuhwa	South African Federation of Engineering Organisation, Zimbabwe
Dr. Majid Al-Gwaiz	Saudi Aramco
Mr. Mana Al-Owaidh	Saudi Aramco
Mr. Ali Al-Qahtani	Saudi Aramco

« Keynote Speakers »



Mr. David Underwood
ASHRAE President,
USA

Mr. David Underwood was awarded a Bachelor of Science in Civil Engineering from the University of Manitoba. Immediately upon graduation, he entered the HVAC&R industry and was employed by a major products manufacturer for approximately 10 years. In 1975, Underwood founded Isotherm Engineering Ltd., an HVAC&R design-build enterprise, which continues to be operational. He was a volunteer Board member of ORAC (the Ontario Refrigeration and Air Conditioning Contractors Association) for many years and served in all executive positions. He coauthored a trade refrigeration safety manual and served on a trade advisory committee for the refrigeration trade in Ontario. As a member of a Canadian Federal committee he participated in writing the Building Science and Plumbing section of the 2015 edition of the Model National Building Code (MNBC). He is an ASHRAE Distinguished Lecturer and a member of Technical Committee 7.2, HVAC&R Construction & Design Build Technologies, and of the Building Performance Alliance Ad Hoc Committee. Underwood previously served on the Board as president-elect, treasurer, served two terms as a vice president and also served as a director-at-large. He has received an Exceptional Service Award, a Distinguished Service Award and the William J. Collins Research Promotion Award.



Dr. Scott Dunning
AEE President, USA

Dr. Scott Dunning, Ph.D., P.E., C.E.M., is a Professor and Director of the School of Engineering Technology at the University of Maine. Scott began working in the energy sector in 1991. He was the founding Director of the University of Maine Industrial Assessment Center program that was funded by the US DOE. After directing this program, he led the UMaine Advanced Manufacturing Center as Executive Director until 2007 when he became Director of the School of Engineering Technology.

Scott began serving as a CEM instructor for AEE in 2000. He currently chairs the test development committee for the CEM program. He has taught the CEM course at locations throughout the U.S. over the last ten years and has also provided specially selected energy training for AEE worldwide. Scott is also an instructor for the BEP and CEA programs.



Dr. Iyad Abumoghli,
Director and Regional
Representative
of UNEP in West Asia

Dr. Abumoghli has more than 30 years of experience in strategic planning, environmental management, sustainable development, green economy and knowledge sharing an innovation. Dr. Abumoghli worked in the private sector, scientific institutions and different UN agencies at the national, regional and global levels. Dr. Abumoghli leads the regional team of UNEP West Asia in identifying and assessing relevant needs, priorities, trends, developments, and policies in order to incorporate them into UNEP's policy and programme development.

Education: Doctorate degree in Bio-Chemical Engineering from the University of Bath/UK, an outstanding graduate of the Virtual Development Academy - John Hopkins University, and a BA in Chemical Engineering from University of Jordan



Roula Majdalani
Director
ESCWA Sustainable
Development
Policies Division

Roula Majdalani is the Director of the ESCWA Sustainable Development Policies Division at UN-ESCWA. The division promotes cooperation among ESCWA countries on the sustainable management of natural resources with a focus on water, energy and green production.

Ms. Majdalani joined ESCWA in 1989 and has served as a Human Settlements Officer, First Economic Affairs Officer on water resources, and Chief of the Technical Cooperation Section.

Ms. Majdalani holds a master's degree in Urban and Regional Planning from Syracuse University and previously worked with Dar Al-Handasah Consultants (London). She has publications on the green economy and integrated management of water resources, housing development and sustainable cities. She lectured on these topics in scientific, regional and international forums.



Dr. Naif M. Alabbadi
SEEC General Director,
KSA

Dr. Naif is the Director General of the Saudi Energy Efficiency Center (SEEC) and member of the SEEC's Administrative Committee. He is also a member of the Renewable Energy and Energy Efficiency Committee of the Arab Electricity Ministers Council and member of Saudi National Building Code Committee.

Dr. Al-Abbadi was the Director of the Energy Research Institute at KACST from 2005-2010. He also worked as project manager for the Energy National Science, Technology and Innovation, NSTI Strategy Planning Project from 2006 to 2009; Assistant Director of International Cooperation Directorate at KACST from 2001 to 2005; Supervisor of Renewable Energy Department, ERI, KACST from 1998 to 2000 and Coordinator of the Saudi-United State Renewable Energy Project.

Dr. Al-Abbadi holds a Ph.D. in Mechanical Engineering (Thermal Sciences) from the University of Iowa, Iowa, U.S.A. (1996), an M.Sc. from the University of Colorado, Boulder and University of Wisconsin, Madison, U.S.A. (1990 and 1992 respectively), and a B.Sc. in Mechanical Engineering/Thermal Department from King Abdulaziz University, Jeddah, Saudi Arabia (1985).



Prof. Ibrahim Abdel Gelil
Adjunct Professor
Arabian Gulf University
Kingdom of Bahrain

Prof. Ibrahim Abdel Gelil is an adjunct professor, the Arabian Gulf University, Kingdom of Bahrain. He was the professor of the academic chair of H.H. Sheikh Zayed Bin Sultan Al Nahyan, Chair, and the Director of graduate studies program on "Environmental Management", College of Graduate Studies, at the Arabian Gulf University (AGU). Before joining AGU, he was the Chief Executive Officer of the Egyptian Environmental Affairs Agency (EEAA), the national body responsible for coordination and supervision of environmental affairs in Egypt. Prior to joining EEAA, Dr. Gelil served as the Chairman of the Board of Directors of the Organization for Energy Conservation and Planning (OECF). In addition, Dr. Gelil was chairing the Egyptian National Committee on Climate Change, and he was a Board member of the New and Renewable Energy Authority (NREA). Dr. Gelil has undertaken consultancy services to a number of national and international organizations including the World Energy Council, UNDP, UNEP, GEF, the World Bank and others. He has published intensively in the areas of environment, energy, resource management, and sustainable development.

« Technical Program »

6th December 2015

Opening Ceremony from 7pm - 9 pm

7th December 2015

Technical Session

08:30 - 08:55

Keynote Speech - Mr. David Underwood - ASHRAE Presedient, USA

08:55 - 09:20

Keynote Speech - Dr. Scott Dunning - AEE President, USA

09:20 - 09:45

Keynote Speech - Dr. Iyad Abumoghli, Director and Regional Representative of UNEP in West Asia

09:45 - 10:10

COFFEE BREAK (25 Mins)

10:10 - 11:50

Dana - 1

Dana - 2

Dana - 3

Session 1 : Energy, Climate Change and the Environment

Automobiles Fuel consumption and emission control systems and the impact of illegal systems repairs on environment
Mr. Ahmed Jameel Alsaffar - Bahrain Training Institute, Bahrain

Assessment of the Impacts of Desalination Technology on Energy Demand and GHG Emissions in Kuwait
Amany Amany - Arabian Gulf University, Kuwait

Waste to Energy
Mr. Salman Al-Khaldi - Saudi Aramco, KSA

Energy Efficiency Policy in Transport Sector
Eng. Mohammad Al-Ibrahim, SEEP, KSA

Session 2 : Energy Management

A Roadmap towards a Sustainable Energy Policy for GCC Countries
Mr. Abdulla Sabah - Al-Dur IWPP (Al-Ezzel O&M), Bahrain

Voluntary Energy and Environmental Benchmarking and its Benefits on Developing Countries – The Case of CDP
Ms. MA Martina Haindl, Dr. John P. Fillo - Trinity Environmental Consultancy International, Bahrain

Institutionalizing Energy Management System
Mr. Muneef Al-Shameeri - BAPCO, Bahrain

Implementation of ISO 50001 Standard In ENOC Retail Stations
Mr. Hamdan Abdalla Aldoukhi - ENOC, UAE

Session 3 : Co-generation & Energy Efficiency

Co-gen policy and long term vision
Mr. Nasser H. Al-qahtani - ECRA, KSA

Integrating Gasification Process with Refinery - Energy Efficiency Enhancement Case Study (Jazan Complex Project)
Mr. Ayman Gazzaz - Saudi Aramco, KSA

Efficiency, environmental and economic benefits of co-generation plants
Mr. Ayad Al Amri - ACWA Power, KSA

Moving toward Generation Excellence
Mr. Ibrahim Al-Furaih - SEC, KSA

11:50 - 13:00

PRAYER & LUNCH

13:00 - 14:15

International Experiences of the Sustainable Energy Centers and the Way Forward for the kingdom of Bahrain
Dr. Khalid Ahmed Burashid, UNDP, National Project Coordinator for the Sustainable Energy Unit in Bahrain

Mandatory and Voluntary Carbon Markets: Current Status and Future Opportunities
Mr. John P. Fillo, Naomi Lee
Yilin Xie - Trinity Environmental Consultancy International, SPC, Qatar

Towards Sustainable Energy for Developing Countries: Energy Security- Water Nexus
Mr. Ahmed Alezz - Electricity & Water Authority (EWA), Bahrain

The Continuous Journey towards Energy & Resource Management,
Ms. Alia Ali Busamra - ENOC, UAE

Developments of Oil and Natural Gas Consumption in Arab Countries
Mr. Abdulfatah A. Dandani – OAPEC, Kuwait

Complexity of Policy Strategies Within the Nexus
Dr. Tyra Oldham - LANDSDS, USA

Enhance the Performance of a Combined Cycle by Use a Fogging System
Prof. Ahmed Youssef Abdalla - University of Bahrain, Nedhal A.M. Ali - ALBA

Security of Supply and Demand
Mr. Hasan M. Qabazard - Kuwait Catalyst Company, Kuwait

Optimization of Fuel Intake in Kuwait's Power Generation Plants
Mr. Ali Hisham Abdul Rahim - Kuwait Institute for Scientific Research, Kuwait

14:15 - 14:30

COFFEE BREAK (15 Mins)

14:30 - 16:30

SPECIAL SESSION (ESCWA): Enabling Policies to Support Energy Productivity in the Arab Region - GCC

ADJOURN

« Technical Program »

8th December 2015

Technical Session			
08:30 - 08:55		Keynote Speech - Ms. Roula Majdalani	
08:55 - 09:20		Keynote Speech - Dr. Naif M. Alabbadi - SEEC General Director, KSA	
09:20 - 09:45		Keynote Speech - Prof. Ibrahim Abdel Gelil, Adjunct Professor, Arabian Gulf University	
09:45 - 10:10		COFFEE BREAK (25 Mins)	
10:10 - 11:50	Dana - 1	Dana - 2	Dana - 3
Session 1 : Renewable Energy	Session 2 : Buildings Energy Efficiency	Session 3 : Industrial Energy Efficiency	
Peak Load shaving in State of Kuwait using Photovoltaic, Dr. Mohammed M. Al-Qahtani - Kuwait Oil Company, Kuwait	Matlab/Simulink Modeling to study the effect of partially shaded condition on Photovoltaic array's Maximum Power Point, Prof. Hala J. El-Khozondar - Islamic University of Gaza, Palestine	Enterprise-Wide Energy Optimisation – Benefits, and How to Achieve Them Mr. Ian Moore - Jacobs Consultancy, UK	
Capacity value of photovoltaic and wind power plants in an isolated Mini-grid in the Kingdom of Saudi Arabia Mr. Alexandre Gusmao, Markus Groissböck - Saudi Aramco, KSA	Leadership in Energy and Environmental Design - LEED V4 Raising the Bar Mohammad Alwathaifi - Saudi Aramco, KSA	CHP Based Model for Mechanical Drivers Selection Mr. Solomon Oji - Saudi Aramco, KSA	
Renewable Energy, Energy Storage and its development in the recent years Mr. Faisal Ahmed Janahi - Retired Engineer and Energy Conservation Activist, Bahrain	Smart cities: innovation in energy will result in efficient and sustainable cities Mr. Waleed Khalaf - T-Linx, Bahrain	Successful Utilization of Surface Jet Pumps at Gas Oil Separation Plants Eng. Hani Al-Khalifa - Saudi Aramco, KSA	
Evaluation of Energy Efficiency on Modern Movement Architecture, Mr. Fareed Alghimlas, Ms. Fatma H. Al-Alawi Saudi Aramco, KSA	Arab Energy Efficiency Building Codes Nurzat Myrsalieva, Sarah Atef - Sustainable Building & Policy Development, Germany	Steam Cost and Steam Value Eng. Ahmed S. Aseeri - GAP-Tech (CEO) -KSA	
11:50 - 13:00 PRAYER & LUNCH			
13:00 - 13:50			
Performance of an Interconnected Hybrid Wind-Solar-Power Utilities Energy System Dr. Maamar Taleb - University of Bahrain, Bahrain	Cool Roofs Eng. Saleh, Al-Zahrani - Saudi Aramco, KSA	Industrial Energy Efficiency: A sustainable journey - Mr. Bilal Abdallah , Du Pont, KSA	
NOMADD: The Fully Automated, Waterless, Solar Panels Cleaning Solution Mr. Georg Eitelhuber , NOMADD - KSA	Energy efficient buildings in GCC by designing with thermal mass Dr. Raad Kadhum - University of Bahrain, Bahrain	An Integrated MILP Model for Optimal Operation of a Network of Gas Oil Separation Plants: An Industrial Case Study Eng. Esshaq Hassan - Saudi Aramco, KSA	
13:50 - 14:05 COFFEE BREAK (15 Mins)			
14:05 - 16:05 SPECIAL SESSION (UNEP): Energy and the Post-2015 Development Agenda			
ADJOURN			