

# Access to Sustainable Energy for All With Gas



Gas Training Seminar

Abidjan, Côte d'Ivoire 4 – 5 November 2013

By invitation only

Organisers:



Co-organisers:



**“Access to  
Sustainable Energy  
for All With Gas”**

## Forewords of the Organisers



The International Gas Union (IGU), founded in 1931, is a global non-profit organisation that represents over 95% of the global gas market through its more than 120 members worldwide. Some of the IGU member companies and their home countries have in recent years gone through the process of building up an energy system where natural gas has become an important element of these countries' social and economic development. IGU will bring high-level experts with experience of these processes to the seminar to share their insight in successful use of this low-carbon fuel, presenting concrete examples and case studies from Egypt, Malaysia, Norway and Qatar. The intention is to initiate further discussions leading to investments in more African countries.



The United Nations Industrial Development Organization (UNIDO) promotes inclusive and sustainable industrial development in developing and emerging countries. The provision of affordable, reliable and low-carbon power supply will be the backbone of future competitive industries. UNIDO supports the fifteen ECOWAS countries in transforming their energy systems to more sustainable patterns. To reduce the dependence of expensive diesel generation the region needs urgently to shift to more sustainable sources such as natural gas and renewable energy options. Through this seminar UNIDO seeks to strengthen the capacities and knowledge of national policy makers on different natural gas and biogas options, best practices and business and investment opportunities.



Vast reserves of natural gas have been discovered in sub-Saharan Africa, but only limited volumes are being utilized domestically. The potential for gas contributing to enhanced access to energy in Africa is huge. Moreover, there are important cross-sectoral linkages and complementarities between natural gas and renewable energy and energy efficiency technologies. Under the established umbrella of the United Nations Sustainable Energy For All Initiative (SE4All), the training will seek to mobilize support for definitive actions leading to universal access to modern, affordable and reliable energy services across the ECOWAS region.



Since 1975, the Economic Community of West African States (ECOWAS) has worked towards promoting economic integration. ECOWAS has taken purposive strides towards ameliorating its energy challenges, for this reason the West African Power Pool (WAPP) and the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) were established. Natural gas and renewable energy play a major role in WAPP Master Plan Scenario as well as the ECOWAS Renewable Energy Policy (EREP). Major initiatives such as the West African Gas Pipeline (WAGP) were implemented under the auspices of ECOWAS. This training seminar is thus the right step towards a coordinated regional action in the natural and renewable gas sector.

## Seminar programme

### Day 1: Mo, 4 Nov 2013

- 08:30** Registration and coffee
- 09:00** **Welcome & introduction into the gas business**
- *H.E. Adama Toungara, Minister of Petroleum & Energy, Côte d'Ivoire*
  - *Dr Kandeh K. Yumkella, Special Representative, Secretary General & CEO, SE4ALL*
  - *Mr Dabire Bayaornibè, Director of Energy, ECOWAS*
  - *Mr Torstein Indrebo, Secretary General, International Gas Union (IGU)*
  - *Mr Akmel Akpa, Officer-in-Charge, Program Support & General Management, UNIDO*
  - *Mr Daniel Gnangni, Director General, Petroci*
- 10:15** **Sustainable Energy Perspectives of the ECOWAS region**
- *Mr Mahama Kappiah, Executive Director, ECREEE*
  - *Mr Alois Mhlanga, Industrial Development Officer, UNIDO*
- 10:30** **Electricity generation & combination of gas & renewables**
- *Mr Elbert Huijzer, Senior Strategist, Liander Asset Management, and Study Group Leader "Natural Gas and Renewable Gas", IGU With additional insights from TAQA Arabia, Egypt*
- 11:30** Coffee break
- 12:00** **Gas for households: LPG for cooking as the first step**
- *Mr Ho Sook Wah, Secretary General, Malaysian Gas Association*
- 12:30** Group-photo and lunch
- 14:00** **Gas for industrial development & implications for employment/jobs**
- *Mr Odd Ivar Biller, Senior Vice President, Norsk Hydro ASA With additional insights from PETRONAS and TAQA Arabia, Egypt*
- 15:30** Coffee break
- 16:00** **Monetizing gas resources for national development**
- Malaysia's experience  
*Mr Abdul Rahim Mahmood, Head of Strategic Research, Corporate Strategic Planning (CSP) Division, PETRONAS*
- 18:00** End of day 1
- 19:00** Reception

**Day 2: Tue, 5 Nov 2013**

- 09:00**      **Market development: Fundamental requirements**
- How to incentivise investments?  
*Mr Akmal Zaghoul, Business Development General Manager, TAQA Arabia, Egypt With additional insights from Norsk Hydro ASA and PETRONAS*
- 10:30**      Coffee break
- 11:00**      **Country study on Egypt – part I**
- *Mr Rob Bennett, Board member & Managing Director, TAQA EPC Group, Egypt*
- 12:30**      Lunch
- 14:00**      **Country study on Egypt – part II**
- *Mr Rob Bennett, Board member & Managing Director, TAQA EPC Group, Egypt*
- 15:00**      **Financing options**
- *Mr Sunil W. Mathrani, Senior Energy Specialist, World Bank Abidjan office*
- 15:30**      Coffee break
- 16:00**      **Summary and closing**
- Summary of topics discussed & final questions
  - Discussion of topics that might be relevant for
    - a follow-up session with the same participants or
    - a more technical and detailed session with relevant experts
- IGU/ UNIDO**
- 17:00**      **End of day 2**

Looking at the current energy situation we see that nearly 1.3 billion people worldwide are still without access to electricity and some 2.5 billion people still rely on traditional biomass for cooking and heating – this is more than 35% of the world's population!

It is clear that this enormous development discrepancy needs to be overcome – and the key is to provide sustainable energy for all – specifically, there is a need for electricity 24 hours/7 days a week and for clean energy to ensure healthy living conditions. Health problems caused by indoor and outdoor air quality issues must be avoided.

This will also support an enhanced economic development and more jobs. For that reason, the UN and the World Bank jointly launched the Sustainable Energy for All initiative in 2011, which is a key priority of the UN Secretary-General who appointed Dr Kandeh K. Yumkella to be Special Representative and CEO of Sustainable Energy for All (SE4ALL).

The three main objectives of SE4ALL up to 2030 are:

- Ensure universal access to modern energy services
- Double the global rate of energy efficiency
- Double the share of renewable energy in the global energy mix

The gas industry can help achieve those targets.

There are certainly a lot of aspects to be considered. But there are four key factors that must be in place to realise a working energy system that can power an economic development. And these factors are:

- The political and legal framework (including the regulatory system) for the strategic sector energy
- Economics benefitting all stakeholders – and thereby having an incentive for development based on robust business models
- Availability of resources to provide the energy is very important – and West Africa has considerable energy resources, including gas
- Transfer of knowledge – this is essential to ensure that all stakeholders can benefit in the best possible way.

All those four factors, or “cornerstones”, you might call them, are important and must be combined to ensure a successful development.

There is a wide range of stakeholders involved in setting up a well-functioning energy system. In order to create a win-win situation it is essential that everyone can benefit from it.

Founded in 1931, IGU is a global non-profit organization representing more than 95% of the global gas market through its more than 120 members worldwide. Those members are active in all areas of the gas business and throughout the whole gas value chain. Furthermore, some of the IGU member companies and their home countries have in recent years gone through the process of building up an energy system where natural gas has become an important element of these countries' social and economic development.

IGU has the experience and knowledge to answer some of the fundamental questions in connection with the above mentioned success factors or “cornerstones”:

- How to build a diversified energy portfolio including gas?
- How to make use of the synergies of renewables and gas?
- How to initiate the building of robust infrastructures?
- How to use natural gas in the most effective and efficient way?
- How to support economic development through use of gas?

It is clear that upstream experience is well established in many of the West African countries. Aspects further down the value chain seem more interesting for discussion in order to provide input for a better understanding of the potential gas offers for the local and regional market development.

Gas can be used in many ways and in combination with other energy sources such as renewables to support an economic and specifically an industrial development. A sector of particular relevance is the power sector where natural gas can help provide both a stable base-load provision of electricity that will minimise the risk of blackouts, as well as meeting additional electricity needs. The transportation sector and domestic appliances are increasingly relevant.

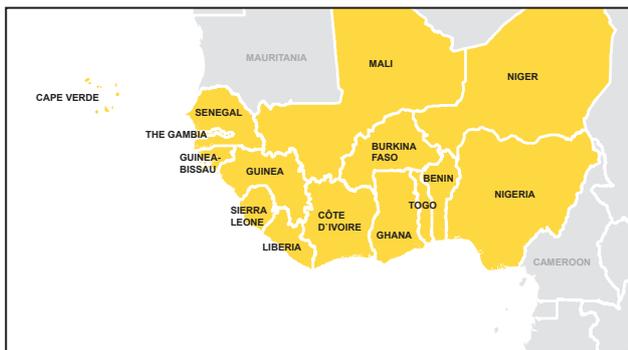
## Current energy-market in West-Africa

### ECOWAS-region

The Economic Community of West African States (ECOWAS) is a regional group of fifteen countries, founded in 1975. Its mission is to promote economic integration in "all fields of economic activity, particularly industry, transport, telecommunications, energy, agriculture, natural resources, commerce, monetary and financial questions, social and cultural matters ....."

### ECOWAS countries:

Benin, Burkina Faso, Cote d'Ivoire, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo



### Energy Challenges of the ECOWAS region

The ECOWAS region is facing interrelated challenges of energy access, energy security and climate change mitigation simultaneously. To address these challenges simultaneously an increased use of more sustainable energy options such as natural gas and renewable energy is necessary.

The lack of access to modern, affordable and reliable energy services is interrelated with a variety of economic, social, environmental and political development in West Africa. In "business as usual" scenarios – without considerable additional investment – energy poverty and its consequences for the economy and society will continue to be a predominant challenge in the ECOWAS region. West Africa, with around 300 million inhabitants equivalent to roughly one third of

Africa's total population, has one of the lowest modern energy consumption rates in the world. Access to electricity across the region is about 20% but wide gaps exist between the access rates in urban areas that average at 40% and in rural areas at 6% to 8%. The electricity networks serve mainly the urban centres and suburbs. The urban and rural poor in West Africa spend more of their income on poor quality energy services.

The electricity system in the region is facing challenges due to the growing gap between predicted demand, existing supply capacities and limited investment capital. Increasing diesel and heavy fuel import dependency, shortages and fluctuating prices are major concerns of countries and therefore require diversification of sources. Over 60% of the Community's electricity generation capacity is running on diesel or heavy fuel. In some countries the dependency reaches more than 90% of the electricity generation.

With climate change, another concern was added to the heavy energy agenda of the ECOWAS region. West Africa is so far responsible for only a fraction of global energy related GHG emissions. However, the energy sector will be highly impacted by mitigation and adaptation costs of climate change in the forthcoming decades. Climate change risks and the need for reliable and affordable energy supply to ensure energy security and energy access create a dilemma. On the one hand urgent investments are required. On the other hand, the expansion of electricity supply based on coal, diesel and heavy fuel will increase GHG emissions and interrelated negative climate change impacts which harm Sub Sahara Africa greatly. New energy infrastructure investments have a long life-time and determine the GHG emissions for the next 20 to 30 years.

### • Initiatives

Three initiatives, namely the West African Gas Pipeline (WAGP) project, the West Africa Power Pool (WAPP) and the ECOWAS Centre for Renewable Energy and Energy Efficiency, have been established with the goal to cooperatively provide the indispensable building blocks of a sustainable energy infrastructure network in ECOWAS. The aim of the WAGP, WAPP and ECREEE is to support the West African States to establish an open yet united economic space.

- Latest developments in some key gas-countries:

#### **Côte d'Ivoire<sup>1</sup>**

- Main generation capacity produced by hydroelectric and thermal power stations, expansion plans by government through public-private partnerships (partners include e.g. Alstom, Aggreko, and Bouygues)
- Use of gas for power generation is growing
- Plans for additional gas-pipelines to feed gas-power plants with gas
- Current ongoing pipeline-projects:
  - Abidjan-Bouake pipeline and
  - expansion of West African Gas Pipeline from Thana to Côte d'Ivoire to enable access to Nigerian gas

#### **Ghana<sup>2</sup>**

- Has about 800 billion cubic feet (bcf) of proven natural gas reserves, but the country does not produce dry natural gas at the moment
- Plans to build a natural gas pipeline to pipe associated gas on oil fields
- Imported 29 bcf of natural gas in 2011, mostly from Nigeria via the West African Gas Pipeline (WAGP)
- Most Ghanaians rely on biomass sources, particularly wood fuels and charcoal, for household needs. Government statistics place consumption of biomass fuels at slightly more than 60 percent of total energy consumption in Ghana. Being part of the Ghana Shared Growth and Development Agenda, Ghana would however like to reduce its dependence on wood fuels and charcoal by expanding its access to the national electric grid and developing oil and gas resources.
- Ghana relies heavily on hydroelectricity, which accounts for 85% of electricity generation. But droughts in the past have disrupted supplies, and the country hopes to increase electricity generation from natural gas.

#### **Nigeria<sup>3</sup>**

- Nigeria had an estimated 180 trillion cubic feet (Tcf) of proven natural gas reserves as of the end of 2011, according to the Oil & Gas Journal (OGJ), making Nigeria the ninth largest natural gas reserve holder in the world and the largest in Africa.
- Nigeria produced about 1 Tcf of dry natural gas in 2011 and ranked as the world's 25th largest natural gas producer.

- The majority of the natural gas reserves are located in the Niger Delta.
- Most of Nigeria's marketed natural gas is exported as Liquefied Natural Gas (LNG), with the remainder consumed domestically and other portions exported regionally via the West African Gas Pipeline. Shell Nigeria Gas Limited (SNG), a Shell-owned gas sales and distribution company, also delivers Compressed Natural Gas (CNG) to industries as far as 62 miles away from existing pipelines.
- Nigerian LNG exports to the U.S. substantially declined in 2011, while the country's LNG exports to Japan more than tripled in 2011.
- The Soku plant provides nearly half of the feed gas to Nigeria's sole LNG facility.

## **Seminar-topics**

The training shall provide customised information to both policy makers and business people based on best practices and case studies as well as country studies. High-level experts from IGU will share their insight in successful use of gas, also in combination with renewable energy sources, presenting concrete examples from Egypt, Malaysia, Norway and Qatar.

### **Overview over some of the main discussion-points:**

## **1. Concrete gas usage options & contribution to energy efficiency**

### **Electricity generation**

- Gas as fuel to generate electricity

### **Combination of gas and renewables**

- How renewable gas/ biogas can also be used as fuel to generate electricity
- Options for the application of off-grid bio-methane power generation
- Options of combination of gas and renewables from solar generation
- Further options for the future

<sup>1</sup> Source: <http://www.ihs.com>

<sup>2</sup> Source: <http://www.eia.gov>

<sup>3</sup> Source: <http://www.eia.gov>

### Gas for households

- LPG for cooking as first step

### Gas for industrial development & implications for employment/ jobs

- Experience from Norsk Hydro in Norway and Qatar: In both Qatar and Norway main developments in the petroleum industry have taken place over the last 40 years and the two countries have developed different strategies for use of petroleum resources. Norway has established a few gas based industries and other domestic use of gas. Qatar has developed an impressive industrial cluster of industries based upon natural gas as feedstock and a gas fired power portfolio for heavy industries, general consumption and potential export.
- Norsk Hydro has been a core player in developing Norway's industrial basis based on natural resources. Its activities have comprised oil & gas; hydroelectric power; fertilizers; petrochemicals; aluminium; magnesium; fish farming. Today Hydro is a well-known aluminium and hydropower company.
- Hydro became the first industrial joint venture partner with Qatar, starting with fertilizers based upon natural gas; followed by vinyl and aluminium production.
- It shall be analysed to which extent experiences from use of gas in Norway and Qatar can be used in the development of West African petroleum resources.
- Case study example for Egypt: Working with one of the 27 Egyptian Governorates to deliver a high pressure transmission & distribution infrastructure, creating tax incentives for investors to build and expand an industrial area. In an area that previously suffered high unemployment numbers, the biggest industry being fishing (inland lake) – most people having to travel / relocate to Cairo for job opportunities (over 200 km round trip). More than 2,000 new jobs were created in 3 years, due to new business investment and existing business growth – companies moving from single shift working to business expansion and 3 shift – 24 hour production lines. These were long term sustainable job opportunities, creating a “social investment” in the region through the delivery of a natural gas infrastructure.

## 2. Monetising gas resources for national development: Malaysia's experience

- Governance model
- Balancing domestic needs versus external revenue generation
- Expanding gas usage and incentives for gas use
- Natural gas as catalyst for nation building

## 3. Market development

### Fundamental requirements & how to incentivise investments?

- Gas pricing, investments and rates of return
- Individual sector fuel pricing and incentives
- Import & custom duty levying
- Tax free zones/investment incentives

### Country study on Egypt

- The development of domestic gas in Egypt from the mid-70s, early pilots and their structure.
- The Governments strategy and economic reasons for natural gas as a domestic household fuel, displacing liquid fuels delivering billions of dollar savings in fuel subsidies.
- The development of the domestic household market and financing schemes
- Development of the Industrial/ Commercial markets
- Development of compressed natural gas for vehicles (including financing schemes)
- The barriers to further growth and the potential opportunities – i.e. Combined Heat & Power systems (CHP).

## 4. Financing options

- How can projects be financed with support from the World Bank system and other financing options



### Elbert Huijzer

Senior Strategist,  
Liander

Elbert Huijzer is senior strategist with Liander Asset Management. In this function he is responsible for developing, formulating and communicating a vision of long-term developments relating to gas and electricity networks, from social, political, technological, financial and economic viewpoints.

He has worked as research engineer, consultant and business manager in the gas industry since 1992. Since 2006 he is leading the Renewable Gas study group of the IGU Programming Committee on sustainability (IGU PGC A).

#### Liander

The Dutch based network company Alliander N.V. consists of the business units of Liander, Endinet, Liandon and Alliander AG. We ensure an uninterrupted supply of energy to our 3.0 million customers. The aggregated revenues of the business units for 2012 were approximately € 1.7 billion. Alliander N.V. shares are directly or indirectly held by Dutch provinces and municipalities.

Liander forms the core of the group, accounting for about 85% of revenues, and manages the gas and electricity networks in the provinces of Gelderland, Friesland, Flevoland, Noord-Holland and parts of Zuid-Holland. Distributing energy is an activity that is indispensable to society. Therefore, safety and reliability are at the heart of Liander's business. Liander also offers other services, such as building, managing, maintaining and upgrading connections to the gas and electricity grid and supplying energy meters.

Further information can be found on [www.alliander.com](http://www.alliander.com)



### Odd Ivar Biller

Senior Vice-President,  
Norsk Hydro ASA

Mr. Biller was during a period of 17 years the General Counsel for Norsk Hydro ASA, a Norwegian energy based company operating for more than a century. Prior to joining Hydro in 1980 Mr. Biller worked for the Norwegian Ministry of Finance, as Head of International Taxation and participating in the development of a designated tax regime for Norway's nascent petroleum activities.

During his tenure for Hydro the company was; an oil & gas operator on the Norwegian continental shelf for 1.3 mill b/d of oil equivalents and with exploration/ production in more than 15 countries; a top tier international fertilizers and aluminium producer; an integrated producer of polyvinyl petrochemicals; and a producer of hydropower for captive and public consumption.

Hydro today is an aluminum company integrated along the value chain from mining of bauxite to production of electrical power, aluminium oxide (alumina), aluminium metal, and flat rolled and extruded aluminium products.

Hydro has been a partner with Qatar Petroleum (QP) in Qatar since the 1969 in industrial production of fertilizers, polyvinyl petrochemicals, and aluminium, based upon Qatar petroleum resources. Today Hydro and QP jointly own Qatar Aluminium company (Qatalum), a world scale highly energy intensive aluminum metal producer which derives its electricity supply from a captive gas fired power plant.

Mr. Biller was from 2010-2012 Hydro's representative in Qatar and Managing Director of Hydro Technology Center Qatar. He continues to be Director of the Board of Qatalum.



### **Ho Sook Wah**

Secretary General,  
Malaysian Gas Association

Ho Sook Wah is the Secretary General of the Malaysian Gas Association since June 2010.

From 2006-2009 he was also the Chairman of the International Gas Union (IGU) Coordination Committee for the 2006-2009 Triennium. Prior to his appointment in IGU, he was the Managing Director/CEO of PETRONAS Management Training, a wholly owned subsidiary of PETRONAS.

He qualified as an Accountant in 1978 and is an Associate member of the Chartered Institute of Management Accountants, UK and a Chartered Accountant, Malaysia.

He has been with PETRONAS for the last 31 years, during which he has been exposed to a variety of functions including auditing, budgeting, Information Technology, Strategic Planning and Corporate Development. He was also involved in the long term gas strategy development for PETRONAS in 1995/96 as part of the Corporate Strategy Study.

In addition he was a Board member of WGC 2012, a company limited by guarantee, set up to organise the 25th World Gas Conference in Kuala Lumpur in June 2012.

#### **Malaysia Gas Association**

The Malaysian Gas Association (MGA), established in 1986, aspires to create synergy in realizing and harnessing the potential of the gas industry by driving the increased utilization of gas through research and development initiatives, while promoting its usage domestically and internationally. With a membership hailing from more than 130 corporate organizations, MGA is committed to making meaningful contributions to the gas industry through the organizing of gas and gas-related events, seminars, conferences and also in actively participating in worldwide gas activities under the auspices of the International Gas Union (IGU).



### **Abdul Rahim Mahmood**

Head of Strategic Research, Corporate  
Strategic Planning (CSP) Division  
PETRONAS

Mr Abdul Rahim Mahmood is currently Head of Strategic Research, Corporate Strategic Planning (CSP) Division, PETRONAS.

He has a BA Degree from the Victoria University of Wellington, New Zealand, and a Master of Business Administration (MBA) from the University of Aix-Marseille, France.

He has been with PETRONAS for the past 21 years, where he began his career at PETRONAS Gas Berhad, a gas processing and transmission company before progressing to the CSP Division. He has acquired extensive experience and well-rounded knowledge in gas business planning, strategic research and high-level advisory in macro-economy, energy and environment, geopolitics, E&P, gas and petrochemicals, energy megatrends and stakeholder management.

His current portfolio as Head of Strategic Research in CSP is focused on the provision of critical analyses and strategic insights on specific industry/business issues to support PETRONAS' growth and sustainability.

#### **PETRONAS**

PETRONAS was incorporated on 17 August 1974 as the national oil company of Malaysia, vested with the entire ownership and control of the petroleum resources in the country. It has since grown from merely being the manager and regulator of Malaysia's upstream sector into a fully integrated oil and gas corporation, ranked among the FORTUNE Global 500® largest corporations in the world.



## **Akmal Zaghoul**

Business Development General Manager  
TAQA Arabia

Worked his entire career (20 years) in the Egyptian & MENA energy / infrastructure Industry, starting in the state-owned LDC “Egypt Gas”, then he participated in the foundation of Genco Group (private sector) in late 90’s as the Egyptian gas market has been deregulated.

Mr. Zaghoul is now is the Business Development General Manager of TAQA Arabia holding group - fully responsible for the opportunities development of the group range of services; carried out by the identification and development of business opportunities and promotion of new proposed projects locally and regionally by leading/coordinating a multi-faceted team including technical, financial and managerial resources of the group's affiliated companies through a collaborative process. Currently, he is handling the renewables projects’ file, as well as developing new regional gas & power projects.

He has experience in a new start up CNG, Gas Distribution and Fuels/Lubes Marketing companies. He handled several feasibility studies for new projects as well market studies concerning gas downstream applications, as well as renewables projects. He performed local/regional market researches; in order to review regional markets and identify those countries / regions that will be initially receptive to the services as served by the group and maintain focus on those priority countries.

Mr. Zaghoul obtained his MBA in the International Business Administration from Ecole supérieure d’études commerciales (Paris), as well as an Energy Management Executive Diploma from Montreal University. He graduated from Cairo University with Bs.Sc. in Accounting.

Mr. Zaghoul is member of the IGU Marketing committee, the Egyptian Gas Association, the American Chamber of Commerce in Egypt, the Canada Egypt Business Council and the Egyptian Qatari business council.

### **TAQA Arabia**

TAQA Arabia is the largest private sector energy distribution company in Egypt with over 16 years of experience, investing and operating in Energy infrastructure including gas transmission and distribution, power generation and distribution and marketing of petroleum products.

Incorporated in Egypt, TAQA Arabia Group has successfully grown from a local service provider to a full-power regional competitor operating in seven of Middle East & Africa countries; UAE, Qatar, Jordan, Libya and Sudan, and is ranked among the top in its field. The group provides services through its 4 operating Arms; TAQA GAS, TAQA E.P.C, TAQA POWER and TAQA Oil Marketing. The group's large family of 3,400 employees manages 4 gas concessions in 12 Egyptian Governorates and 30 oil & gas fuel stations; it also generates and distributes more than 880 MW of power.



### **Rob Bennett**

Board member & Managing Director  
TAQA EPC Group

Board member & Managing Director for TAQA EPC Group, Part of the TAQA Arabia, Gas Group based in Cairo, Egypt.

TAQA is a multi – Utility organization with fully integrated businesses across the Gas, Water, Electricity, LNG / CNG, Natural Gas vehicles and liquid fuel sectors within Egypt. Previously, with 22 years experience working with the BG Group, UK and India, as well as 6 years with Royal Dutch Shell, Gas & Power International, in Egypt, Greece, The Netherlands & North Africa.

Responsible since 2007 in the position of Managing Director for A Design Engineering & Consultancy Group, a Procurement division and Construction Group.

In MENA Region, Responsibilities cover the TAQA subsidiaries, Qatar Gas Group (QGG), The Libyan Arab Gas Company (AGC) and an Abu Dhabi Branch. These strengthen the business growth within the wider North Africa /Gulf Region. The TAQA EPC Group undertake significant projects on behalf of the TAQA Arabia Group, as well as third party clients both in Egypt and the wider region.

#### **TAQA EPC**

TAQA EPC is the construction and design arm of TAQA Arabia that undertakes residential, industrial and commercial engineering and construction works for numerous projects in several countries. These works were performed in over 1 Million residential and commercial units, industrial factories, compounds, resorts, hotels, colleges and sporting clubs. TAQA EPC expanded its engineering and design capabilities to take advantage of new opportunities in LNG and re-gasification facilities. TAQA EPC provides a “one stop shop” for all gas Distribution and “multi utility works, from the High Pressure Transmission pipeline construction to the customers burner.



### **Sunil W. Mathrani**

Senior Energy Specialist  
World Bank Abidjan office

Sunil Mathrani is currently a Senior Energy Specialist with the World Bank, based in Abidjan, Côte d’Ivoire.

He began his career at BP before joining the World Bank. He has 30 years of energy sector experience, covering most aspects of electricity and petroleum across a very wide geographical area. He has been concentrating on West Africa since 2007.

#### **World Bank**

The World Bank is the leading global economic development institution which has recently set itself two ambitious goals: to push extreme poverty to no more 3 percent by 2030, and to promote shared prosperity and greater equity in the developing world. The organizations that make up the World Bank Group are owned by the governments of the nearly 190 member nations.





Organisers:



Co-organisers:



## Gas Training Seminar

4 – 5 November 2013,  
08.30 hrs - 18.00 hrs

### Golf Hotel

Cocody Riviera Golf  
Abidjan, Côte D'Ivoire  
[www.golfhotel-ci.com](http://www.golfhotel-ci.com)

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#### International Gas Union

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#### UNIDO

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Website: [www.unido.org](http://www.unido.org)

### Registration for the Gas Training

Seminar via: [Gas-seminar@ecreee.org](mailto:Gas-seminar@ecreee.org)

## Access to Sustainable Energy for All With Gas

Gas can be used in a lot of ways and in combination with other energy sources such as renewables to support economic and industrial development. A sector with specific relevance is the power sector. The transportation sector and domestic appliances are increasingly relevant.

The International Gas Union (IGU), founded in 1931, is a global non-profit organisation that represents over 95 % of the global gas market through its more than 120 members worldwide. Some of the IGU member-companies and their home countries have in recent years gone through the process of building up an energy system where natural gas has become an important element of these countries' social and economic development. IGU will bring in high-level experts with experience from these processes. They will share their insight into successful uses of this low-carbon fuel, presenting concrete examples and case studies, mainly from Egypt, Qatar and Malaysia.

### Welcome and introduction by:

- **H.E. Adama Toungara**, Minister of Petroleum & Energy, Côte d'Ivoire Ministry (tbc)
- **Dr Kandeh K. Yumkella**, Special Representative, Secretary General and CEO, Sustainable Energy for All
- **Mr Dabire Bayaornibè**, Director of Energy, ECOWAS
- **Mr Torstein Indrebø**, Secretary General, International Gas Union (IGU)
- **Mr Akmel Akpa**, Officer-in-Charge, Program Support & General Management, UNIDO
- **Mr Mahama Kappiah**, Executive Director, ECREEE
- **Mr Daniel Gnangni**, Director General, Petroci

### Experts:

- **Mr Ho Sook Wah**, Secretary General, Malaysian Gas Association
- **Mr Abdul Rahim Mahmood**, Head of Strategic Research, Corporate Strategic Planning Division, PETRONAS
- **Mr Akmal Zaghoul**, Business Development General Manager, TAQA Arabia, Egypt
- **Mr Rob Bennett**, Board member & Managing Director, Taqa EPC Group, Egypt
- **Mr Odd Ivar Biller**, Senior Vice President, Norsk Hydro ASA
- **Mr Elbert Huijzer**, Senior Strategist, Liander Asset Management, and Study Group Leader "Natural Gas and Renewable Gas", IGU
- **Mr Sunil W. Mathrani**, Senior Energy Specialist, World Bank Abidjan office