

Energy Markets

Global



Company Profile Capability Statement 2019

INDEX

DESCRIPTION.....	3
Company Profile	3
International Expertise	4
Client Base	4
ENERGY CONSULTANCY.....	5
Description.....	5
Energy Services.....	6
Regulatory Services	6
Gas and Power Engineering	6
Commercial Services	6
CORPORATE EXECUTIVE TRAINING.....	7
Description.....	7
Training Clients.....	7
PROJECT IMPLEMENTATION.....	8
Operation of Gas Distribution Networks	8
Gas Project Implementation Services	8
Project References for Project Implementation	8
KEY EXPERTS.....	9
Associates	9
Summary Profiles	9
International Experts.....	12
Peter CAMERON	12
Abdul Jalil JUMRIANY	13
David CAREW.....	13
Russell GRADY.....	14
Kim KEATS.....	14
Michael GROSSMANN	15
Guido MATTEI	15
Christopher LENNON.....	16
CAPABILITY STATEMENT.....	17

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DESCRIPTION

Company Profile

Energy Markets Global Limited is an international consultancy, training and implementation company, operating in the energy sector. We are based in London, UK and operate throughout the world, particularly in emerging markets.

Energy Markets Global cover all aspects of **midstream and downstream energy markets**, including **gas, gas to power, green gas, LNG, LPG, biofuels, renewable energies**. We concentrate on the **economic, commercial, regulatory, legal, policy and project development aspects of international energy businesses, plus gas and power engineering**. Our focus is international and our expertise is provided by a team of energy industry experts who have considerable practical industry experience across all areas of the value chain. We offer expertise in:

- Energy Consultancy
- Corporate Executive Training
- Project Implementation

Energy Markets Global have considerable experience throughout the world and in both the private and public sectors. Our experience covers the developed and deregulated markets of the UK and North America, currently deregulating and emerging gas markets throughout Europe, South East Asia and Latin America, plus extensive experience in Eastern Europe and the Former Soviet Union.

Based on our considerable international experience and expertise, we have a unique understanding of how local energy markets operate in countries and regions throughout the world.

We provide global expertise for local markets

International Expertise

Countries which we have worked in include the following:

EUROPE	MENA	AMERICAS	CENTRAL ASIA	ASIA AND FAR EAST
European Union European Commission Belgium Bulgaria France Hungary Northern Ireland Spain UK Non EU Europe Guernsey Isle of Man Bosnia & Herzegovina Russia Turkey Ukraine	Cameroon Egypt Mozambique Nigeria Tanzania Jordan Lebanon Libya Syria	Argentina Brazil Colombia Mexico Trinidad & Tobago	Afghanistan Kazakhstan Kyrgyzstan Tajikistan Turkmenistan Uzbekistan	Australia China India Indonesia Japan Philippines Singapore South Korea

Client Base

Our client base is in the commercial private and in the public sector. In the public sector we work for **Multilateral Institutions, Governments** and **Government agencies** around the world, including the: **Asian Development Bank (ADB), Department for International Development (DFID, UK), European Commission (various DGs and EuropeAid), World Bank Group.**

The **Private Sector** and **Corporate** client base covers the major players in the energy business worldwide, including among others:

EUROPE	LATIN AMERICA	ASIA AND FAR EAST	MIDDLE EAST AND AFRICA
Advantica GL (UK) BP (UK) Department of International Trade (DIT, UK) East Surrey Holdings (UK) Enagas (Spain) Endesa (Spain) EUAŞ (Turkey) Financial Times (UK) Gas Natural (Spain) Gaz de France (France) Gazprom (Russia) Guernsey Gas International Energy Group Lasmo (UK) Naftogas of Ukraine SBGI (UK) Shell (UK / Netherlands) TEDAŞ (Turkey) TXU (UK)	Chevron PEMEX (Mexico) Sítio do Brasil Texaco TGN	ENI Australia Ikon, Kinetic, Energy 21 (Australia) Korean Gas Corp. LG Caltex (Korea) NCOC (Kazakhstan) Perusahaan Gas Negara (Indonesia) Pertamina (Indonesia) Petrochina Institute for Energy Economics (Japan)	Agip Nigeria Emirates National Oil Company (ENOC, UAE) NNPC (Nigeria) SNH (Cameroon)

ENERGY CONSULTANCY Description

We help energy enterprises, energy users, multilateral institutions, Governments and Governmental bodies to develop, analyse and implement strategies for the rapidly changing energy environments around the world.

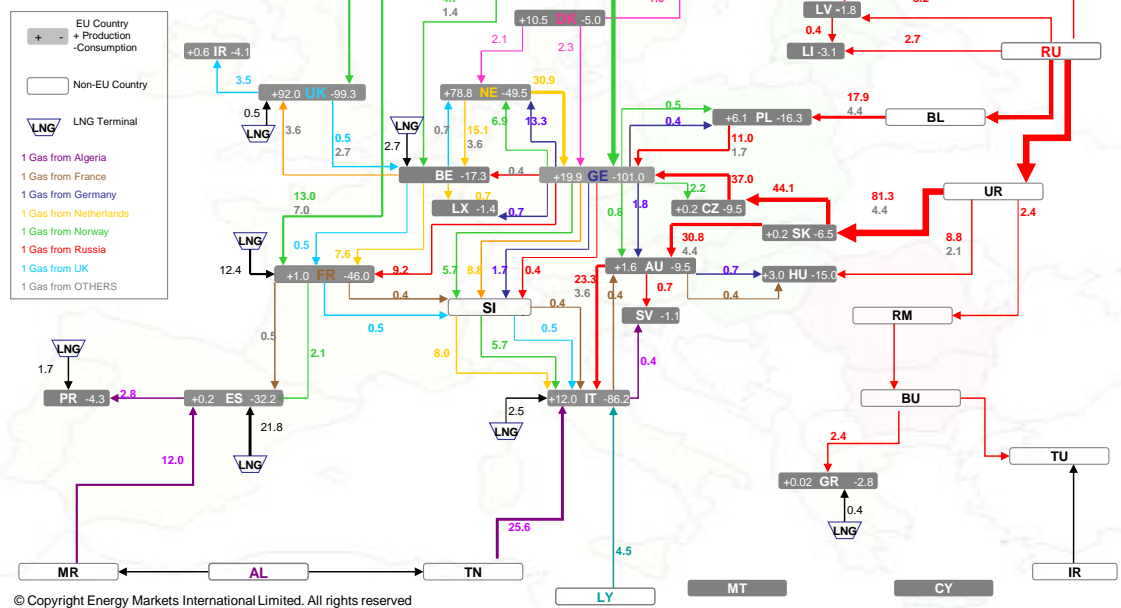
Energy sectors covered include all the midstream and downstream areas of:

- Natural gas;
- Electricity;
- Gas to power;
- LNG;
- LPG;
- Petroleum products markets;
- Midstream and downstream oil and oil products;
- Biofuels, Renewable energy, Climate change.

Energy Markets International

www.energymarketsinternational.eu

EU-25 Natural Gas Supplies 2005 billion cubic metres / year



Energy Services

Regulatory Services

- Economic Analysis
- Legal
- Regulatory Economics
- Regulatory support
- Pricing and tariffing services

Economic Analysis

- Economic and financial analysis
- Project appraisals
- Feasibility
- Due diligence
- Market studies
- Energy industry restructuring

Legal

- Petroleum (oil, gas, petroleum products) legislation
- Legal frameworks
- Gas and power contracts
- Gas Supply Agreements
- Power Purchase Agreements

Regulatory Economics

- Regulatory frameworks
- Contracts
- Network codes
- Studies of regulatory frameworks worldwide
- Design of regulatory structure
- Regulatory strategy
- Representing client to regulatory authorities

Tariffs and Prices

- Tariff design
- Periodic price control reviews
- Infrastructure tariffs
- Cost of service studies
- Incentive pricing studies
- Market pricing studies
- Price control mechanisms
- Electricity and Gas pricing

Gas and Power Engineering

- Technical standards and policies
- HSE policies and audits
- LNG and LPG technology and systems
- Pipeline and network studies and evaluations
- Asset costing and valuations
- Technical surveys
- Due diligence
- Midstream and downstream energy supply
- Power transmission and distribution systems
- Heat rates

Commercial Services

- Commercial support
- Strategic studies and reviews
- Feasibility studies
- Mergers, acquisitions and privatisations
- Modelling

Commercial Support

- Support for contract formulation and negotiations
- Economic and financial analysis
- Development of Critical Success Factors and Key Performance Indicators
- Risk identification and analysis
- Fuel supply contracting
- Purchasing and sales strategy
- Commercial management
- Business development
- Market research
- Business intelligence
- International tender preparation and management
- Project and business management (directing, team leading, project managing)

Strategic Studies and Reviews

- Corporate, strategic and business planning
- International corporate strategy planning
- Business restructuring
- Search for strategic partnerships
- Market segmentation and competitor analysis
- Opportunities to increase shareholder value

Feasibility Studies

- Commercial and financial project appraisal
- Commercial contracts and negotiations
- Identification of partners
- Country risk analysis
- Market studies

Mergers, Acquisitions and Privatisations

- Search for acquisition opportunities
- Search for strategic partners
- Evaluation and analysis of candidates
- Due diligence support and management
- Management of the acquisition process
- Post acquisition management support

Modelling and Forecasting

- Economic and financial evaluation models
- Asset valuations
- Supply and demand modelling
- Cost of service models
- Price forecasting models
- Quantitative analysis

CORPORATE EXECUTIVE TRAINING

Description

Our training capabilities include the design and running of training programmes to support capacity building, new projects, joint ventures or acquisitions. Activity coverage includes team effectiveness and development, and the design, development and running of appropriate training programmes to meet specific business needs. We also undertake manager and supervisor training programmes.

We are able to provide a complete seminar management service (delegate research, sponsorship, publicity, financial administration, venue arrangements, specialist speakers, event management) as part of an effective communication process to deliver an organisation's strategic aims.

We have considerable previous experience of designing and delivering in-house corporate programmes and international workshops. We have put together and delivered corporate training programmes with international energy companies, national energy companies, and governmental regulatory bodies, including:

Training Clients

EUROPE:	Bosnia and Herzegovina energy regulatory commissions British Gas Transco Electricité de France Gaz de France National Electricity Regulatory Commission (NERC) of Ukraine Parliamentary Committee on Energy, Ukraine State Energy Agency, Bulgaria
MIDDLE EAST AND AFRICA:	NNPC, PPPRA, NAPIMS, Government Ministries, Nigeria Agip, Nigeria Syrian Gas Company
AMERICAS:	Trinidad and Tobago Ministry of Energy and Gas National Energy Corporation (NEC), Trinidad and Tobago
ASIA AND FAR EAST:	Afghan Gas Afghan Ministry of Mines and Petroleum, Afghan Petroleum Authority ENI Australia Northern Caspian Operating Company (NCOC), Kazakhstan Korean Gas Corporation Kyrgyzgas and State Energy Agency of Kyrgyzstan Perusahaan Gas Negara, Indonesia PetroChina

PROJECT IMPLEMENTATION

Operation of Gas Distribution Networks

Energy Markets are expert in the design, operation and management of gas distribution networks around the world.

Gas Project Implementation Services

Due Diligence

- Management and co-ordination of due diligence teams;
- Economic and financial feasibility studies;
- Technical and operational evaluations;
- Market and supply assessments;
- Regulatory risk assessment;
- Valuations of assets, projects and companies, including financial modelling.

Integration and Operations

- Preparation of integration and acquisition plans;
- Management and co-ordination of the integration team;
- Provision of key specialist expertise in integration phase;
- Post acquisition evaluation and assessment;
- Provision of interim managers and key experts in initial operational phase.

Management Reviews and Audits

- Assessment of existing operational projects and companies;
- Review of business processes and management capabilities;
- Benchmarking – statistical and best practice studies;
- Health and safety reviews and audits;
- Development of critical success factors and key performance indicators.

Project References for Project Implementation

Design, Construction, Commissioning of Distribution and Transmission

- Denmark – municipality owned companies;
- Lithuania;
- Gaslink, gas distribution

Senior Director Roles in Management of Gas Networks

- Lithuania – Construction Director;
- Gaslink, Nigeria – Gas Distribution Company for Lagos, Chief Operating Officer, shareholder. We successfully built up the first and the largest gas distribution company in sub-Saharan Africa, to best international standards and in difficult operating conditions;

Technical Due Diligence

- South Korea – 10 city gas companies, including Daewan (South Seoul);
- Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan) – Gas Transport system.

KEY EXPERTS

Associates

We have as associates to Energy Markets International a wide range of very highly experienced, capable and successful experts with many years of experience in their fields. Among our experts and consultants are analysts, commercial and regulatory experts, energy financial specialists, modellers, gas and power engineering experts, energy lawyers and academics, among others. Our associates have many years of energy experience combined in many cases with academic qualifications and practice. We also have as associates past Chairmen, Chief Executives, and Board Members of major plcs. Our experts all have considerable international energy experience, in developed and developing energy markets.

The expertise within Energy Markets International and our associates is complemented by associations we have with other energy advisory firms, to ensure that we can offer a full range of expertise in the energy field.

Summary Profiles

Some examples of our experts (a selection from a fuller range of experts) include:

Name	Nationality	Yrs exp	Qualifications	Relevant areas of expertise
Peter CAMERON (Managing Director)	British	25	<ul style="list-style-type: none"> ▪ MBA (International Business), University of Bradford Management Centre, UK, 1985 ▪ BA (Hons), University of Birmingham, UK, 1981 ▪ Clifton College, Bristol, UK, 1977 ▪ Professional Associate of Institution of Gas Engineers and Managers ▪ Fellow of Royal Society of Arts ▪ Former Chairman of International Services Board of SBGI 	<ul style="list-style-type: none"> ▪ Gas and power commercial and regulatory ▪ Feasibility and economic analysis ▪ Regulatory economics ▪ Market studies, Tariff design ▪ British Gas, British Government ▪ Corporate strategy, Business planning ▪ Due diligence management ▪ Considerable international experience: Central Asia – Afghanistan, Central Asian republics ▪ Director and Team Leader
Abdul Jalil JUMRIANY (Legal)	Afghan	12	<ul style="list-style-type: none"> ▪ MBA (International Business), Brunel University London, UK, 2009 ▪ Budgeting Management, International Monetary Fund Institute (IMF), Singapore, 2007 ▪ External Debt Management, International Monetary Fund Institute, Washington DC, US 2005 ▪ BA (Commerce), Gulshan College, Karachi University, Pakistan, 2002. ▪ Aptech Computer Edu Institute, Electronic Application Computer Programme, 2000 	<ul style="list-style-type: none"> ▪ Budgeting and Financial Management in the Energy Sector. ▪ Gas and power commercial analysis ▪ Regulatory framework ▪ Commercial and Business Feasibility ▪ Investment Analysis ▪ Business Strategy and Implementation ▪ Project Management. ▪ Government Strategy, Afghan Gas, Afghanistan Government ▪ Policy and Promotion Management ▪ Policy Analysis ▪ Director in Petroleum (Upstream and Downstream Sector)

Name	Nationality	Yrs exp	Qualifications	Relevant areas of expertise
David CAREW (Gas and Power)	British / US	35	<ul style="list-style-type: none"> ▪ MBA, Aston University, ▪ BSc Electrical Engineering, University of Southampton, UK, 1981 ▪ Psychology and Philosophy, Open University, 2013 	<ul style="list-style-type: none"> ▪ Director, Energy Markets, Nigeria, 2009-Date ▪ Senior Vice President Emerging Markets, Invensys plc, Nigeria, Kazakhstan, India, Ghana, Angola, South Africa, 2005-2009 ▪ Gas and power engineering ▪ Gas and power commercial analysis ▪ Extensive software expertise, Pipeline design, Plant Automation Design, Economic Modelling, Trainer, Renewable energy analysis and feasibility studies, Asset management and plant improvement, Power and gas purchase agreements, Regulatory and Policy advise, Complex project negotiations, Project Management (Prince 2, Six Sigma intermediate) ▪ Senior Vice President, Advantica (now DNV-GL, formerly British Gas research and development arm), 2000-2005 ▪ MITS Logica, Australia & UK, Director of Utilities, UK, Singapore, China, USA, Middle East, 1998-2000 ▪ Bristol Babcock, Automation solutions, Director of Sales, 1989-1998 ▪ Northrop Corporation, Project Manager, USA & Saudi Arabia, 1982-1989
Russell GRADY (Gas Engineering)	British / Danish	30	<ul style="list-style-type: none"> ▪ BSc Mechanical Engineering ▪ HND Accounts ▪ Diploma Industrial Psychology 	<ul style="list-style-type: none"> ▪ Natural gas Chief Engineer ▪ Gas engineering ▪ Transportation and distribution networks ▪ Operations Director, Managing Director ▪ CEO Lagos gas distribution company
Kim KEATS (Economist)	British / Venezuelan	25	<ul style="list-style-type: none"> ▪ Master of Science (MSc), Economics, 1991, Birkbeck College, University of London, United Kingdom ▪ Bachelor of Science (Honours), 1987-1990 Upper Second, Industrial Economics, University of Warwick, United Kingdom 	<ul style="list-style-type: none"> ▪ MSc Economics ▪ Supported successful completion of some 42 GW and 496 MIGD of capacity with transaction value of USD 29 billion over past 14 years ▪ 3 years Tajikistan Economic feasibility study of 3.6vMW Rogun Hydroelectric Power Plant to provide power to Afghanistan ▪ 2011 led the team for analysis of long-term electricity dispatch and capacity expansion scenarios to support financing of 910 MW Kirikkale CCGT in central Turkey ▪ Malaysia: Prepared post-PPA analysis for two power plants for development of a 1,000 MW (Fast Track Project 3A) supercritical / ultra-supercritical coal fired power plant to be commissioned in October 2017 and another 2 x 1000 MW (Project 3B) coal plant at a new site scheduled to be in operation in stages in October 2018 and April 2019 ▪ Philippines: LNG-to-power project

Name	Nationality	Yrs exp	Qualifications	Relevant areas of expertise
Michael GROSSMANN (Economist, Trading)	French / US	17	<ul style="list-style-type: none"> ▪ Executive Master in Energy Management, ESCP Europe, London, 2012 ▪ Professional Risk Mgr, PRMIA, 2008 ▪ MBA in corporate finance, University of Rochester (Simon), NY, 1994 ▪ BA in Russian Studies, Brown University, 1988 	<ul style="list-style-type: none"> ▪ Team Leader, Gas Master Plan Development, Afghanistan ▪ Commodities trading ▪ Feasibility and economic analysis (gas and power infrastructure) ▪ Financial risk management
Guido MATTEI (Renewable)	Italian	16	<ul style="list-style-type: none"> ▪ BSc + MSc Civil and Environmental Engineering, 2002 ▪ PhD in Energy, 2008, University of Rome “La Sapienza”, Italy ▪ Diploma in Solar Energy, Roma Province Administration ▪ Further Diplomas in Environmental Enterprise, Safety and Environmental Protection, Project Management ▪ Professional course in Climate Change, Exeter University UK 	<ul style="list-style-type: none"> ▪ Renewable energies; Energy efficiency, R&D; Energy policies, Climate Change, Environmental management; urban sustainable development, Air, M&E, PCM Project Cycle Management; LogFrame, ROM, PRAG, EU procurement; GHGs, regional development, energy financing, CDM, sustainable development, water and waste management, international evaluation procedures, SME finance; business administration, IPCC, LEED, CSO, gender
Christopher LENNON (Training)	British	23	<ul style="list-style-type: none"> ▪ MBA, University of Aberdeen ▪ LLB, University of Aberdeen ▪ Fellow of the Chartered Institute of Arbitrators ▪ Liveryman of the Worshipful Company of Arbitrators ▪ Member of the Association of International Petroleum Negotiators ▪ Freedom of the City of London 	<ul style="list-style-type: none"> ▪ Supply chain management ▪ Project management ▪ Purchasing and procurement management, E&P logistics ▪ Distribution network management ▪ Managing projects and optimising operational performance ▪ Refining ▪ Tutor, Middlesex University oil & gas MBA

International Experts

Peter CAMERON



Peter is a commercial and regulatory expert in the downstream energy sectors, particularly natural gas, a regulatory economist in liberalising and emerging markets internationally, a business planner, corporate strategist and business trainer. He has over 25 years industry experience including long term utility assignments in Central Asia, Nigeria, Argentina, Colombia, Ukraine, and the UK, and consultancy projects throughout the world.

He is the Managing Director of Energy Markets Global Limited, the international energy sector consultancy company.

Peter's main expertise is in the commercial and regulatory aspects of downstream energy projects, including leading and managing professional inter-disciplinary teams (engineers, lawyers, accountants, financial advisers etc), working equally in the private and public sector. His commercial and regulatory expertise covers contracts, energy and petroleum law, tariffs, market and feasibility studies with gas, gas to power, electricity markets, renewable energy and various petroleum products (including biofuels, LPG, gas to liquids, oil transportation, oil law).

He has been advising governments and companies (state and private) on the commercial and regulatory aspects of energy businesses in Europe, Africa and the Middle East, Former Soviet Union, Latin America and the Far East. He has advised on privatisations and acquisitions worldwide, leading due diligence studies, market studies and investment promotions.

He was Chairman of the International Services Board of the Society of British Gas Industries, and as such he represented the British Government on various gas sector events worldwide, and was a Member of the Inter-Governmental China-Britain Natural Gas Working Group. He worked for the British Government, promoting British exports and investments to Colombia.

Previously he was Corporate Planner for British Gas where he was responsible for preparing the corporate annual business plan and group strategy, advising on and leading many strategy reviews for various divisions of British Gas. He was also Project Co-ordinator for the privatisation of the Argentine gas industry, based in Buenos Aires, resulting in the successful acquisition of MetroGas. Before that he was a business planner, adviser and strategist in the small business sector.

In addition, Peter has had published two books on the energy sector, 15 articles and has presented at 17 international conferences.

Abdul Jalil JUMRIANY



Mr Abdul Jalil Jumriany is a policy and project implementation expert in providing Oil and Gas companies and Governments from different continents the opportunity to intern in emerging nations. Jalil has worked in different capacities for the Public and Private sectors and International Financial Institutions.” He was selected as a Chevening Scholar in 2008 and completed his Masters at Brunel University London.

Jalil served as a Director General of Petroleum Authority at Ministry of Mines and Petroleum, Afghanistan, where he implemented some major Oil and Gas projects in Afghanistan to give the Oil and Gas Industry a start in Afghanistan, Jalil has been involved in assignments and tenders with high net worth such as Amu Darya Basin Oil Blocks in 2011, where he was the head of the negotiations and designing team which resulted in contract to an affiliate of China National Petroleum Company that had a ten-year value of \$4.8 billion to Afghanistan.

Jalil has been involved in a Central to South Asian Gas Project, Turkmenistan-Afghanistan-Pakistan-India Natural Gas pipeline (TAPI) as a chief negotiator for Afghanistan. TAPI Project aims to export up to 33 billion cubic meters (bcm) of natural gas per year through a proposed approximately 1,800-kilometer (km) pipeline from Turkmenistan to Afghanistan, Pakistan and India.

Jalil worked extensively with Asian Development Bank, Turkmen Gas (Turkmenistan State Gas Entity) Afghan Gas (Afghanistan Gas State Entity), Inter State Gas System Limited (Pakistan Government Ltd Company for Import and Storage of Natural Gas), GAIL India Ltd (Indian Government Gas Transportation company) to prepare agreements (Gas Pipeline Framework Agreement, GPFA and Gas Sales and Purchase Agreement, GSPA).

Jalil previously worked for the World Bank in the Energy sector, as Advisor to Minister of Mines and also as Director General of Policy and Promotion for Petroleum and Mining Sector where, with a team, he drafted policies for the Oil and Gas sector and also negotiated Mining contracts for Copper, Gold and Iron Ore.

David CAREW



David is an engineer with over 30 years’ experience in the Energy sector. His bias is towards the technical, economic, and commercial aspects of the hydrocarbon and power value chain and is also an expert energy trainer. He has undertaken long-term project assignments in Saudi Arabia, Nigeria, China, Singapore, Kazakhstan, North America and the UK, including engineering and consultancy projects throughout the world.

David has advised Governments and companies (public and private) on the commercial, technical and economic aspects of energy markets in Africa, Europe, Far and Middle East and North America. His most recent engagement has been with the European Commission providing consultancy on the sustainability for all project

(SE4ALL) addressing the viability of various renewable energy projects in Nigeria including solar energy and waste to power. He also played a lead role in the pre-privatisation studies for the divestment of GenCos and DisCos. He was the lead consultant to the Ministry of Petroleum on LPG and Refining – and is the author of the “Future of Nigerian refining”.

Previously, David was Vice President Growth Markets for Invensys, Senior Vice President Advantica (the former research and development arm of British Gas), and Sales Director for Bristol Babcock.

Russell GRADY



Russell is a Mechanical Engineer with more than 30 years of experience and over 25 years in the Oil and Gas Industry. Russell has a Bachelor of Science in Mechanical Engineering, Higher Diploma in Accounts and a Diploma in Industrial Psychology. Russell is a member of ASME (American Society of Mechanical Engineers). His management experience spans a number of years in the gas industry, including Nigeria, former eastern block countries and Denmark. In Nigeria, he was Chief Operating Officer of Akute Power Company, East Horizon Gas and Power Company, Oando Gas and Power, Gaslink. He was also founding shareholder in Gaslink (gas distribution company for Lagos). He is a Director of WAIO Limited (a West African project development company in the energy sector).

Russell’s specialisms are in designing city gate, custody transfer metering system, district metering systems, industrial metering systems, domestic regulating and metering systems. In the Baltic States shortly after independence from Russia, he successfully introduced metering and SCADA systems and brought about a 60% reduction in gas consumption.

Kim KEATS



Kim started his career in economic consulting at London Economics in 1995 and joined the new London office of ICF International in 2000. He joined IPA Energy + Water Economics (now known as IPA Advisory) in 2007 developing and leading the transaction team based in London until the end of 2014 when he relocated full time to Madrid. He provides specialist transaction and regulatory support as a market and economic advisor for major power developers, power utilities, financiers and fuel suppliers. Over the past 14 years, Kim has supported the successful completion of 43 GW and 496 MIGD of capacity with a transaction value of more than USD 29 billion. His main areas of expertise are:

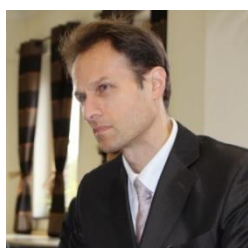
Transactions support: Providing feasibility studies and due diligence, evaluating contracts and market developments to support M&A, IPO, financing, and refinancing activities of developers, sponsors, fuel suppliers, and lenders.

Market analysis: Preparing independent market analyses of the energy and water desalination industries since 1998. K4K's services range from high-level qualitative assessments to detailed quantitative power and desalinated water modelling and

forecasting, based on Kim's extensive industry knowledge and experience in working in more than 60 countries around the world.

Training: Providing specialist training to professionals in the finance industry since 2006, working in the City of London to combine theoretical knowledge with practical on-the-job insights. Kim is a former partner of the Electricity Policy Research Group and continues to contribute to industry periodicals, conferences and workshops.

Michael GROSSMANN



Michael Grossmann is an energy consultant and financial analyst with experience working within gas and power engineering firms as a project manager (for the Asian Development Bank and the European Union) and as an economist. He has carried out feasibility studies, as well as analytical studies of gas markets, infrastructure, and gas and power market regulation; he has taught on LNG economics. He has quantitative / statistical modelling skills.

He was Team Leader for the Gas Master Development Plan development for Afghanistan.

Guido MATTEI



Guido Mattei is a Renewable Energy expert with 16 years of experience. He is highly experienced in: Renewable energies; Energy efficiency, R&D; Energy policies, Climate Change, Environmental management; urban sustainable development, Air, M&E, PCM Project Cycle Management; LogFrame, ROM, PRAG, EU procurement; GHGs, regional development, energy financing, CDM, sustainable development, water and waste management, international evaluation procedures, SME finance; business administration, IPCC, LEED, CSO, gender.

Guido has been working as a technical consultant on many renewable energy and solar energy projects throughout the world for the last 12 years.

Guido has a Bachelor and Master Degrees in Civil and Environmental Engineering (2002), and a PhD in Energy (2008) from the University of Rome "La Sapienza" Italy, a Diploma in Solar Energy from Roma Province Administration, further Diplomas in Environmental Enterprise, Safety and Environmental Protection, and in Project Management, a professional course in Climate Change from Exeter University UK. His professional associations include:

- Member of UNECE GERE (Group of Expert on Renewable Energy)
- Member of UNOSP Infrastructure Advisor Pool of Experts SIPG (Sustainable Infrastructure Practice Group)
- Associated member of CIRPS Interuniversity Research Centre for Sustainable Development
- Member of ECPMA European Community Project Managers Association

- Member of EU-GCC Clean Energy Network II
- Member of MEDIES Mediterranean Education Initiative for Environment and Sustainability
- Member of Climate Change Economist web community
- Member of AESP Association of Energy Services Professionals
- Member of ALER Alliance for Rural Electrification
- Member of CIPORE Caribbean Platform on Renewable Energies
- Member of UNFCCC JI web community

Guido is Italian and speaks English and French.

Christopher LENNON



Christopher Lennon has 23 years experience within the oil and gas industry, initially working offshore on rigs in the UK and Norway before becoming involved with projects and supply chain issues. Chris works and consults extensively within the field of supply chain management. He is a contracts specialist and an international commercial arbitrator. He has the Freedom of the City of London; is a Fellow of the Chartered Institute of Arbitrators; a Liveryman of the Worshipful Company of Arbitrators and a member of the Association of International Petroleum Negotiators. He holds an MBA and LLB from the University of Aberdeen, as well as the Chartered Institute of Arbitrators DipICarb. He has over 12 years teaching experience at a number of Universities across a wide range of subjects.

CAPABILITY STATEMENT

2019:

Client:	World Bank (Ministry of Mines and Petroleum)
Project Name:	Development of a Gas Pricing and Gas Resource Allocation Regulation
Country:	Afghanistan
Year:	2019
Funding:	World Bank
Description:	<p>The project is to develop a concept and following regulatory guidelines for an approach to protect gas supplies to the power generation sector, plus a wholesale gas price regulation. The project consisted of:</p> <ul style="list-style-type: none"> • Concept of the gas allocation and gas pricing approach • Gas pricing analysis of alternative approaches • Options for gas allocation approaches in a market system • Regulations: Draft gas pricing and gas resource allocation regulations • Economic analysis

2018:

Client:	Ministry of Petroleum, Investment Advisory Team
Project Name:	Investment Support Preparation in advance of Oil and Gas Bidding Rounds
Country:	Egypt
Year:	2018 - 2019
Description:	<ul style="list-style-type: none"> • Advising and preparing Ministry for attracting international investment to new oil and gas bidding rounds in Egypt • Includes preparation of Information Memorandum, Data Room, investment promotion mechanisms, investor friendly regulatory alignment

Client:	DFID (UK Government)
Project Name:	Scoping Study for potential UK intervention options to support Afghanistan's Extractives Sector
Country:	Afghanistan
Year:	2018
Description:	<ul style="list-style-type: none"> • Detailed analysis of extractives (solid minerals) in Afghanistan, including coal, talc, precious and semi-precious stones • Institutional, industry and political economy analysis • Identification of options for successful interventions • Business case and feasibility analysis of identified options

Client:	DIT (UK Government)
Project Name:	Oil and Gas Benchmarking
Country:	Brazil
Year:	2018
Description:	<ul style="list-style-type: none"> • Represented UK at Oil and Gas Benchmarking Forum in Rio De Janeiro, Brazil • Advised on midstream and downstream gas market business structure and regulatory structure for development of Brazil's pre-salt gas plays

Client:	A private solid mineral mining company
Project Name:	Talc Mineral Exports Research and Market Making
Country:	Afghanistan
Year:	2018
Description:	Research into international markets for talc mined from Afghanistan. We researched the production and existing export routes for talc out of Afghanistan. We researched international markets and buying patterns of international buyers. We set up meetings with various international talc buyers to initiate direct buying from legal producers in Afghanistan rather than through Pakistani suppliers.

Client:	An association of European and Afghan oil traders
Project Name:	Afghanistan Petroleum Products Imports Review
Country:	Afghanistan
Year:	2018
Description:	We analysed and highlighted each of the main export markets for Petroleum products into Afghanistan, in particular those from Central Asian Countries, namely Turkmenistan, Uzbekistan, Kazakhstan, Russia and Iran. We highlighted the potential petroleum products market demand in Afghanistan and we produced a balance of duty paid imports and exempted products into the country.

Client:	National Power Training Institute of Nigeria (NAPTIN) West African Power Pool (WAPP) (USAID, ECOWAS)
Project Name:	Business Plan for Kainji, NAPTIN, Nigeria as an RCE
Country:	Nigeria (Abuja, Lagos, Kainji), Senegal (Dakar)
Year:	2017-2018
Description:	We prepared business plan and supporting financial analysis for making NAPTIN Kainji site an ECOWAS Regional Centre of Excellence for power sector training. We set out four options for development of the Kainji site and transformation into a West African regional centre of excellence.

2017:

Client:	Pertamina, Ipsos Business Consulting
Project Name:	Market Assessment in Natural Gas
Country:	Indonesia
Year:	2017
Description:	We prepared a gas strategy blueprint for developing a PNG to LNG market conversion. As part of this, we advised on the status of the regional and international LNG markets and the impact on Indonesia; researched, analysed and reported on case studies of conversions from pipeline gas to LNG, on international LNG to gas pricing structures using published and our own unpublished research data. We also contributed to and led one day in a three day strategy development workshop with senior corporation executives

Client:	EU DG Energy
Project Name:	Follow up to the LNG and Storage Strategy
Country:	EU
Year:	2017
Description:	A consortium of Tractabel, REKK and Energy Markets Global (EMG) was commissioned to carry out a follow up study to the LNG and storage strategy adopted by the European Commission in February 2016. EMG was responsible for the LNG parts of the study. In order to understand the main drivers for liquidity, flexibility and transparency in LNG globally, EMG constructed a database of every LNG liquefaction project worldwide; interviewed a wide range of LNG industry participants across the world; prepared case studies of trading in other relevant industries; analysed market, commercial and legal issues around LNG globally; developed scenarios for future LNG supply, demand and pricing; identified possible initiatives EU could take to increase liquidity, transparency and flexibility.

Client:	A Middle Eastern NOC (confidential)
Project Name:	Review of Options for Dubai LNG
Country:	UAE (Dubai)
Year:	2017
Description:	EMG provided an update on the Dubai LNG situation, how LNG can arrive into Dubai and how it can be delivered to consumers. The study included description of the current ownership and contractual structure surrounding LNG supplies to Dubai and other UAE states, including the FSRUs contracted by the Dubai Government, the pipeline gas imports and infrastructure, the Abu Dhabi liquefaction plant. EMG also identified the gas market structure, companies, regulation and extent of the existing gas network and Dubai gas market. We concluded with

recommendations for improving operations and security of supply.

Client: **A Middle Eastern NOC (confidential)**
Project Name: Analysis of LNG and pipeline gas markets and supplies in Asia
Country: Central, South and East Asia, Middle East
Year: 2017
Description: For a Middle Eastern NOC with Asian gas assets, we carried out an analysis of LNG and pipeline gas markets and supply in Asian markets, covering Central Asia, South Asia (Pakistan and India) and East Asia (China), recommendations for how to develop markets for the clients' gas reserves.

Client: **European Profiles**
Project Name: Energy Reform Advice
Country: Moldova
Year: 2017
Description: Advice for energy reform programme and drafting proposal.

2016:

Client: **Department of Petroleum Resources (DFID)**
Project Name: Nigerian Gas Network Code
Country: Nigeria (Lagos)
Year: 2016
Description: This project started the preparation for completion of a network code for implementation Identified outstanding items, implementation schedule, began industry consultation

Client: **Ministry of Petroleum Resources (DFID)**
Project Name: Nigerian National Petroleum Policy, Petroleum Fiscal Policy
Country: Nigeria (Abuja)
Year: 2016
Description: Drafted the new national petroleum policy and petroleum fiscal policies, managing a Ministry team of thirteen. They were well received by all the parties involved, Nigerian government and the corporate oil and gas sector (international and national). The National Petroleum Policy has now been gazetted, published and made part of Nigeria law.

Client: **Ministry of Petroleum Resources (DFID)**
Project Name: Nigerian National Gas Policy
Country: Nigeria (Abuja)
Year: 2016
Description: This was a fundamental new approach to gas policy in Nigeria, moving away from a national planning approach to a

project based approach based on open access, clear divisions of responsibilities and value chain segments, so as to attract new entrants to the national economy. It also included LNG exports, domestic gas market developments, infrastructure, managing a Ministry team of five. Within this was also included a detailed LPG policy, discussed with and agreed with the Nigerian LPG Association. Managed a Ministry team of four. The policy was well received by all the parties involved, Nigerian government and the corporate oil and gas sector (international and national). The National Gas Policy has now been gazetted, published and made part of Nigeria law.

2015:

Client: Ministry of Mines and Petroleum (DFID)
Project Name: Petroleum Promotional Materials
Country: Afghanistan
Year: 2015
Description: Preparation of promotional material summarising and setting out the state of the petroleum sector in Afghanistan and the opportunities for investors and new entrants. We evaluated existing data to confirm their accuracy and suitability, then drafted hydrocarbons promotional literature. We also delivered training on aspects of hydrocarbons to Ministry staff.

Client: Ministry of Mines and Petroleum, Afghan Petroleum Authority
Project Name: Oil and Gas Mini MBA
Country: Afghanistan
Year: 10/2015
Description: Design, preparation and delivery of executive Mini MBA in Oil and Gas for executives from the Ministry of Mines and Petroleum and the Afghan Petroleum Authority.

Client: EUD (Delegation of European Union to Nigeria)
Project Name: Energy Stocktaking Mission to Nigeria, under SE4ALL
Country: Nigeria (Abuja, Lagos, Port Harcourt)
Year: 2015
Description: Under the EU Sustainable Energy For All (SE4ALL) programme, led an energy stocktaking mission to Nigeria, covering business environment, power generation, natural gas, hydro power, solar power, waste to power, electricity distribution. There was a disparate team of some 11 experts working across the country.

Client:	Ministry of Energy and Natural Resources, EÜAŞ, TEDAŞ (EU)
Project Name:	Preparatory Studies towards Restructuring of State Economic Enterprises in a More Liberal Energy Market
Country:	Turkey
Year:	2014 to 2015
Description:	Electricity generation and distribution, strategy development. The project provided a detailed study into the European experience of the restructuring of state owned energy enterprises and the preparation of a strategic roadmap for the restructuring of two Turkish energy SEEs, the Turkish Electricity Distribution Company (TEDAŞ) and Electricity Generation Company (EÜAŞ). We provided a detailed comprehensive research and analysis into European energy restructuring, and we advised the two corporations on their own strategic repositioning and development.

2014:

Client:	Afghan Petroleum Agency
Project Name:	Petroleum Contract Management System
Country:	Afghanistan
Year:	2014
Description:	We set up a petroleum contract monitoring and site inspection system to help the APA management their petroleum contracts, containing 11 manuals and 8 appendices. We also delivered training in the use of the system, including exercises and a mock emergency.

Client:	National Authorising Officer, Government of Tanzania (EU Delegation to Tanzania)
Project Name:	Advisory support to Call for Proposals for petroleum sector capacity building at higher education institutions in, 10th EDF
Country:	Tanzania (Dar es Salaam, Arusha, Dodoma, Zanzibar)
Year:	2013 and 2014
Description:	The project was to support the selection of appropriate EU and Tanzanian partners to improve the Tanzanian petroleum sector higher education, making use of a €2m fund. We assessed the Tanzanian petroleum higher education sector and carried out a skills gap analysis; carried out the preparation of guidelines for applicants; evaluated applicants in a three stage process; carried out a final evaluation and selection of institutions to receive the €2m funding support.

Client:	Ministry of Mines and Petroleum, Afghanistan Petroleum Authority, Afghan State Gas Enterprise (World Bank)
Project Name:	Consultancy Services for Improving the Business Environment: Reform of the Afghanistan State Gas Enterprise ("Afghan Gas") - Corporatisation of Afghan Gas
Year:	2013 to 2014
Country:	Afghanistan (Kabul, Sheberghan and Mazar-e-Sharif)
Description:	EMG was engaged as Team Leader to lead the Corporatisation of Afghan Gas. The professional team included international experts (financial, accounting, engineering, market, legal) and national (social and personnel). The project covered management of due diligence and full assessment, gas market study with household survey, legal and regulatory assessment, industry and strategic advice to government agencies, generations of options for corporatisation and restructuring, gathering political support, extensive review of previous projects and capacity building on commercial and management topics.

Client:	Ministry of Mines and Petroleum (World Bank)
Project Name:	Hajigak Iron Ore Deposit Project
Country:	Afghanistan
Year:	2012-2014
Description:	In November 2011, the World Bank, through the Sustainable Development of Natural Resources Project, funded specialists to assist the government in (a) improving governance and regulatory frameworks to better administer the sector, and (b) the preparation and execution of a tender of the first four blocks in Hajigak. The Ministry of Mines awarded mineral rights to explore and develop four individual concession blocks of the Hajigak iron ore deposit.

Client:	Ministry of Mines and Petroleum, Afghanistan Petroleum Authority (World Bank)
Project Name:	Totimaidan Gas Tender
Country:	Afghanistan
Year:	2014
Description:	Design of gas tenders for Totimaidan oil and gas block: The team took part in drafting the Gas Sales and Purchase Agreement (GSPA) and the gas pricing strategy for the Government. This will result in the generation of billions of dollars in revenue for the country and will act a pillar for sustainable energy in the future.

Client:	Ministry of Mines and Petroleum, Afghan Gas (World Bank)
Project Name:	Sheberghan to Mazar Gas Pipeline Project
Country:	Afghanistan
Year:	2013-2014

Description: Extensive management support was provided to the 89 km pipeline project from Sheberghan gas fields (Khoja Gogardak) to Mazar-e-Sharif (Northern Fertiliser Power Plant, NFPP), to supply a sustainable flow of gas to the fertiliser and power plant. The Project had two phases: Phase One was to rehabilitate 15 km of the pipeline and Phase Two was to replace the 89 km pipeline with a new pipeline.

2013:

Client: **DABS (national electricity company) (IFC subcontract)**
Project Name: Business Planning for National Electricity Company
Country: Afghanistan
Year: 2013
Description: Business planning for DABS and IFC

Client: **Abu Dhabi National Oil Company (ADNOC)**
Project Name: LPG to Natural Gas Conversion Programme, Abu Dhabi
Country: UAE (Abu Dhabi)
Year: 2012 to 2013
Description: Project development and proposal for conversion programme from LPG to natural gas for ADNOC

2012:

Client: **Ministry of Petroleum Resources, Nigeria**
Project Name: Nigeria LPG conference
Country: Nigeria (Abuja)
Year: 2012
Description: International LPG gas conference held in Abuja: Prepared LPG policy documents, prepared conference materials, conference organisation including topics and breakout sessions, invited speakers

Client: **Scanpower (Private Project Development Company) Nigerian National Petroleum Corporation (NNPC)**
Project Name: Pre-Feasibility Study for LNG to Power Project, Nigeria
Country: Nigeria
Year: 11/2011 to 06/2012
Description: We carried out a pre-feasibility study for an LNG to power project in Lagos, Nigeria. We performed economic analysis, project scheduling, setting out the complete roadmap for development of and implementation of the project, markets analysis, cost analysis, financial and economic analysis, modelling.

2011:

Client:	Ministry of Petroleum Resources, Nigeria
Project Name:	Design of Pilot Programmes for Conversion for Urban and Rural Poor to LPG
Country:	Nigeria
Year:	2011
Description:	Design of pilot programmes for the conversion of urban and rural poor people to LPG: We carried out an energy access study, showing the distribution of urban and rural poor, their fuel consumption, fuel costs, conversion costs, ongoing costs. We analysed the negative health outcomes from existing fuels. We developed international case studies of LPG conversion programmes. We then designed a programme for the roll out of LPG conversion in two pilot States of Nigeria. The programme included a detailed budget.

Client:	Ministry of Petroleum Resources, Nigeria
Project Name:	Development of Nigerian Domestic LPG Market
Year:	2011
Country:	Nigeria
Description:	Development and implementation of policy framework for the development of the domestic market for LPG in Nigeria: We carried out a review of the current LPG market (potential market and sources of supply), a strategic policy framework, proposed legislative changes, a regulatory framework, composition of an LPG public affairs directorate, and we held an LPG investors conference.

Client:	NAPTIN (National Power Training Institute of Nigeria)
Project Name:	NAPTIN Business Plan, Nigeria
Country:	Nigeria
Year:	2011
Description:	We prepared a detailed business plan for the newly established National Power Training Institute of Nigeria.

Client:	Ministry of Power
Project Name:	Petroleum Industry Bill
Country:	Nigeria
Year:	2011
Description:	Carried out reviews of Petroleum Industry Bill and Gas Transportation Network Code (with Adam Smith International)

2010:

Client:	Ministry of Mines and Petroleum (DFID)
Project Name:	Support to First International Hydrocarbons Licensing Round, Afghanistan
Country:	Afghanistan
Year:	2010
Description:	Support to international oil and gas licensing round (with Adam Smith International): We presented international best practice in petroleum tendering and its application to Afghanistan, as part the analysis after the first largely unsuccessful licensing round in Afghanistan. After the post round analysis, of which this formed a part, the second attempt at the first licensing round was much more successful.

Client:	Ministry of Petroleum Resources, Nigeria
Project Name:	LPG Supply, PNG Distribution, Renewable Energy
Country:	Nigeria
Year:	2010
Description:	Study into LPG supply, pipeline natural gas (PNG) distribution and renewable energy: We reviewed the current and potential market for LPG, gas distribution and renewable energy, and made recommendations on how to develop those markets.

Client:	Energy Commission of Nigeria (UNDP)
Project Name:	Biofuels Policy for Nigeria
Country:	Nigeria (Abuja, Adamawa)
Year:	2009 to 2010
Description:	We assessed the development potential of modern bio-energy in Nigeria, covering bio-energy development potential, role of bio-energy in expanding access to modern energy services, development entry points. We analysed the Nigerian situation in detail, conducted international case studies (EU Renewable Energy Directive and Colombia case study) plus two pilot case studies of Nigerian states.

Client:	European Union Delegation (EUD) to Nigeria
Project Name:	EU-Nigeria Energy Dialogue
Year:	2009 to 2010
Country:	Nigeria (Abuja, Lagos, Adamawa, Anambra, Enugu, Nasarawa)
Description:	For the Delegation of the European Communities in Nigeria, we initiated an energy dialogue between Europe and Nigeria in advance of the launch of the 10 th European Development Fund. During two months a team investigated the energy situation in Nigeria, including visits to various States and energy sites, and interviewed many representatives of Government, energy companies, NGOs and industrial

consumers. We developed around 14 recommendations of interventions, initiatives and actions the EC could adopt to develop the energy situation in Nigeria, in Europe's interest.

2009:

Client: **ECOWAS Renewable Energy Centre**
Project Name: Business Plan for ECOWAS Renewable Energy Centre
Country: West Africa (Nigeria, Cape Verde)
Year: 2009
Description: Full business plan to support initial launch fund raising: We prepared and wrote the business plan for the new Ecowas Renewable Energy Centre, headquartered in Cape Verde, which received some €70m initial funding as a result of the business plan.

Client: **Senate Committee for Petroleum**
Project Name: Senate Committee investigation into MT Tuma
Country: Nigeria
Year: 2009
Description: For Nigerian government Senate Committee for Petroleum investigations advised on the status of MT Tuma, a petroleum vessel in Brazil awaiting maintenance.

Client: **Senate Committee for Petroleum**
Project Name: Senate Committee investigation into Escravos GTL plant
Year: 2009
Country: Nigeria
Activities performed: For Nigerian government Senate Committee for Petroleum investigations advised on the status of Escravos GTL plant

Client: **Ministry of Petroleum Resources and Department of Petroleum Resources**
Project Name: Reviewing and Drafting Gas Regulations, Nigeria
Country: Nigeria
Year: 2009
Description: For the Ministry of Petroleum Resources and oil & gas regulator, we reviewed and drafted upstream and downstream gas regulations, covering purpose of the regulations, definitions, development (exploration and production), gas flaring, pipelines (transportation and distribution), powers of the Minister (particularly relating to downstream), facilities, LNG, CNG; and we reported on technical gas regulations in a selection of other countries.

Client: **Regulatory Authorities in Bosnia and Herzegovina (Bosnian, Croatian, Srpska), (EU)**
Project Name: Energy Regulatory System in Bosnia and Herzegovina
Country: Bosnia and Herzegovina

Year:	2008 to 2009
Description:	For the various energy regulators, advised on gas tariff methodologies and third party access.

2008:

Client:	A US based financial adviser
Project Name:	Gas Market Advice, Egypt
Country:	Egypt
Year:	2008
Description:	Advised a US based financial investor on the Egyptian gas market and specifically on the strategies and activities of a major Egyptian energy company

Client:	International Energy Group
Project Name:	Independent Distribution Network Operator regulatory intervention
Country:	UK
Year:	2008
Description:	For an international energy company, supported interventions with regulatory authorities regarding independent electricity network operations and licensing in a UK independent distribution network area. This was part of a proposal to provide electricity distribution operations to the London Olympics site.

Client:	Guernsey Gas Company
Project Name:	Carbon emissions
Country:	Guernsey, Channel Islands
Year:	2008
Description:	For an international energy company, advised on carbon emissions, energy supplies and energy efficiencies to the Channel Islands

Client:	A Spanish energy consultancy (Mercados EMI)
Project Name:	Support to Energy Consultancy, Spain
Year:	2005 to 2008
Country:	Spain
Description:	Support to a Spanish based energy consultancy on the natural gas sector internationally.

Client:	Institute of Energy Economics of Japan (IEEJ)
Project Name:	Industry Briefing
Country:	Nigeria
Year:	2/2008
Description:	We advised and briefed a Japanese institute on Nigerian gas sector, the key players, contacts and prospects.

Client:	Various Nigerian Government organisations
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Project Name:	Energy Sector Training Programmes
Country:	Nigeria, UK
Year:	2008 to Date
Description:	Energy sector training programmes for various clients (including NNPC, NAPIMS, Ministry of Power, PPPRA, NAPTIN) on energy topics.

2007:

Client:	Society of British Gas Industries (SBGI) Department of International Trade (DIT, British Government)
Project Name:	Market and Scoping Studies
Country:	Nigeria
Year:	2007 and 2003
Description:	For the Society of British Gas Industries and the UK Government Department of Trade and Industry we carried out two separate market studies and also led a business development team, developing the potential for business opportunities in the gas industry for British business.

Client:	EU DG Energy
Project Name:	Study on impact of 2004 enlargement on the European Union in area of energy, EU
Country:	Belgium
Year:	2007
Description:	Led the gas sector aspects of a major project analysing the impact of the 2004 EU Enlargement on the European energy markets (with Mercados EMI).

Client:	Perusahaan Gas Negara (World Bank)
Project Name:	Domestic Gas Market Development Project, Gas Pricing and Open Access Frameworks, Indonesia
Country:	Indonesia
Year:	2007
Description:	Domestic gas market development project; for PGN, the national gas transporter and distributor, we prepared a gas pricing framework and third party access framework for the Indonesia-Singapore gas pipeline. The objective was to assist an Indonesian gas distribution and transportation company to prepare sound gas pricing and access frameworks

Client:	An international energy investor
Project Name:	Forecasts of fuel input prices
Country:	Philippines
Year:	2007
Description:	For an international investor, analysed forecast fuel input prices and the factors affecting them for power generation plants in the country, including oil, LNG, pipeline gas, coal.

2006:

Client:	A large Spanish industrial consumer
Project Name:	Options for Gas Purchasing, Spain
Country:	Spain (Madrid)
Year:	2006
Description:	For a large Spanish industrial consumer, analysed and described options for gas purchasing direct from producers overseas, including supplies contracting, international and Spanish gas transport and LNG options, and LNG and gas price forecasts.

2005:

Client:	Ministry of Mines and Petroleum (ADB)
Project Name:	Gas Regulatory Framework, Afghanistan
Year:	2005
Country:	Afghanistan
Description:	We established a legal and regulatory framework for Afghanistan. Final report contained: a draft framework gas law, proposals for a regulatory secretariat, a gas sector road map, template gas sales agreement and pricing, billing and metering, recommendations and next steps.

2004:

Client:	Asian Development Bank (ADB)
Project Name:	Regional Gas Transmission Improvement Project in the Central Asian Republics
Country:	Central Asian Republics (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan)
Year:	2003 to 2004
Description:	The general objective was to identify projects which the ADB could support so as to improve gas transmission across the Central Asian Republics. This was a major project on identifying opportunities for improving regional natural gas transmission and trading. The project included market studies, tariffs, Governmental and institutional relations (with Sofregaz)

Client:	Ministry of Mines and Industry (ADB)
Project Name:	Gas Development Master Plan, Afghanistan
Country:	Afghanistan
Year:	2003 to 2004
Description:	We produced a comprehensive Gas Master Plan for Afghanistan (with Sofregaz), including: comprehensive energy sector review, energy balance, pricing, oil and gas reserves, gas market study, gas transmission and distribution networks, economic analysis and tariffs, environmental

impact review, sources of financing. Ten years later, we could test our predictions against actual outcomes, and they proved the most accurate of all studies made, in terms of recoverable reserves, production rates, downstream demand predictions and infrastructure requirements. We also obtained and interpreted geological resource data from Russia for Afghanistan (first and only international project to do so).

Client: **Syrian Gas Company (EU)**
Project Name: Regional Restructuring of Energy Companies, Scoping and TOR for a large project, Syria
Country: Syria (Damascus and Homs)
Year: 2003 to 2004
Description: Gas market developments and regulation following the separation of the Gas Company from the state owned oil and gas company. We made recommendations for development of the Syrian gas market and company. We advised on further work and drafted Terms of Reference for further regional and national consultancy support from EU funds. We provided a series of interactive training workshops to senior executives of the gas company and delivered case studies on gas company restructuring and strategic planning. We contributed to the ECMEDA programme seminar and advised Mashreq members (with BCEOM, France)

Client: **Ministry of Fuel and Energy and Ukrtransnafta**
Project Name: Odessa-Brody Oil Pipeline, Ukraine
Country: Odessa, Russia
Year: 2003 to 2004
Description: We advised on direction of use of Odessa-Brody oil pipeline, including reversing its proposed flow. We provided the complete analysis of the project and made recommendations in the form of a final report and a full presentation to the Working Group, consisting of representatives from Ukraine, Russian and Belorussia. We considered the European markets and regional supplies of sweet and crude oil, the economics of different pipeline options, alternative oil transit routes.

Client: **Mashreq Members**
Project Name: EU MEDA seminar programme
Country: Mashreq countries, France
Year: 2004
Description: Seminar and supporting advice to Mashreq members (with BCEOM, France). Provided advice to Palestinian Authority.

Client: **Petronas**
Project Name: South Korea gas market study
Country: South Korea
Year: 2004

Description: Market research projects for Petronas, the Malaysian NOC, carrying out city gas distribution market studies. Studied the relationship between economic growth, energy demand and natural gas consumption (with AER).

2003:

Client: Engie (formerly Gaz de France)
Project Name: Gas regulatory advice
Country: France
Year: 2001-2003
Description: For a major European gas utility, carried out a number of separate studies into aspects of the UK gas sector and how lessons could be applied in continental Europe, also on opportunities for business development in the British gas sector, including transportation pricing, distribution, auctions (especially capacity auctions)

Client: Naftogas Ukrainy
Project Name: Corporate Strategy for National Oil Holding Company, Ukraine
Country: Ukraine
Year: 2003
Description: Corporate strategy development: For Naftogas Ukrainy (Ukrainian oil and gas holding company), we advised on development of corporate strategy (with KPMG), we scoped out the approaches and the strategic business environment.

2002:

Client: Society of British Gas Industries (SBGI)
 Department of International Trade (UK Government)
Project Name: China Gas Market Research
Country: China (Beijing, Shanghai, Guangdong)
Year: 2002
Description: Carried out a gas distribution market study and represented the British Government as a Member of the China Britain Natural Gas Working Group, between the British and Chinese governments. The SBGI, British trade association for the onshore gas industry, supported by DIT (UK Government), commissioned a market study into the gas market of China. We also represented the British Government as a Member of the China Britain Natural Gas Working Group, between the British and Chinese governments, and gave various presentations in various locations in China and in UK on natural gas markets and regulation.

Client:	Kyrgyzgas (World Bank)
Project Name:	Kyrgyz Gas Reform
Country:	Kyrgyzstan
Year:	2002
Description:	Advised Kyrgyzgas on gas sector reform and strategy development

Client:	Kyrgyzgas, State Energy Agency (DFID)
Project Name:	Kyrgyz Gas Tariff Reform
Country:	Kyrgyzstan
Year:	2001, 2002
Description:	Provided gas tariff reform advice

Client:	Shell Gas and Power
Project Name:	City gas distribution due diligence
Country:	South Korea
Year:	2002
Description:	Full due diligence studies for three city gas distribution companies (Daehan South Seoul, Chongju, Pusan, Kumi), managing a team of three. This was a due diligence study into the assets of the former Enron company in South Korea which had been put up for sale.

Client:	Chevron (Caltex)
Project Name:	City gas distribution due diligence
Country:	South Korea
Year:	2002
Description:	Due diligence into Daehan South Seoul city gas distribution company (with ICF and AER). Energy Markets contributed by providing a full gas market review including South Korean national gas market study including analysis of national five year plans, gas supply and contract options, detailed South Seoul market study and projections, including international comparisons of average consumptions, penetration rates pricing analysis, detailed demand forecasts by sector and under different sensitivities

Client:	Bulgargaz, State Energy Agency (British Government FCO)
Project Name:	State Energy Agency, Bulgaria
Country:	Bulgaria
Year:	2002
Description:	Strategy development workshop and study on gas sector and restructuring of Bulgargaz: For State Energy Agency, Bulgaria, advised on strategy development for restructuring of the Bulgarian gas sector, through a strategy development workshop with Director of State Energy, senior executives from State Energy Agency and Bulgargaz.

Client:	A Major International European Gas Company (confidential)
Project Name:	Valuation of InterconnectorUK
Country:	UK
Year:	2002
Description:	For a major international gas company, analysed and valued the InterconnectorUK (the UK to Belgium gas interconnector), using a variety of valuation methods.

Client:	Shell Gas and Power
Project Name:	Regulatory studies
Country:	Various (California USA, India, Mexico, Nigeria, Saudi Arabia, South Korea, Taiwan, Turkey)
Year:	2002
Description:	Review of regulatory regimes in a number of countries, including California, India, Mexico, Nigeria, Saudi Arabia, South Korea, Taiwan, Turkey.

2001:

Client:	Shell
Project Name:	Arab Gas Pipeline Feasibility, Jordan
Country:	Jordan (Aqaba, Damascus)
Year:	2001
Description:	Market feasibility and project structuring for Arab Gas Pipeline: We carried out pre-feasibility studies as part of the analyses for the Arab Gas Pipeline, taking gas from Egypt across the Red Sea to Aqaba and then onshore to an anchor power plant at Rehab in northern Jordan. We provided a combined markets and engineering team, carried out a market study on the non industrial and power generation market in the country, technical assessment, conceptual determination of pipeline distribution networks; developed capital and operating cost estimates. We also advised on regulatory and project structural issues in Jordan.

Client:	East Surrey Holdings (shareholders of Phoenix Natural Gas, Belfast)
Project Name:	Gas Market Study
Country:	Northern Ireland
Year:	2001
Description:	PNG is involved in gas distribution in Northern Ireland. As part of its plans to develop the business (in particular opportunities along the route of the N-W gas transmission pipeline (Belfast to Londonderry) and the North-South Ireland pipeline) Energy Markets carried out various studies. We carried out a detailed gas market study along the pipeline route from Belfast to Londonderry. We also reviewed the potential for financing from different sources including EU, EIB and UK government programmes.

Client:	Total (previously Elf Connect)
Project Name:	Due diligence for an energy acquisition
Country:	UK
Year:	2001
Description:	For a UK energy acquisition, conducted full due diligence studies, market studies, full regulatory case analysis, data room management, drafted the due diligence report.

Client:	Isle of Man Government, Manx Energy, Calor Gas
Project Name:	Economic Feasibility: Conversion of Isle of Man from LPG to NG
Country:	Isle of Man, Great Britain
Year:	1999 to 2001
Description:	Feasibility study, market studies and analyses, financial and project structuring for conversion of the island economy from LPG to natural gas: we conducted a full economic feasibility into the diversification of energy in the Isle of Man, through gas from an offtake from the UK-Ireland gas interconnector and through electricity interconnectors with the UK mainland. We developed a report analysing the market, the availability and cost of supplies, the required investments, the environmental and regulatory issues, and an economic appraisal of the project both from an investor and government viewpoint. We delivered a copy of the project evaluation model developed for this study. We carried out a full market study, including power generation, commercial and residential, including the existing LPG market and the natural gas market in the Isle of Man. We subsequently advised the Manx Government on the financial and project structure. We subsequently managed the conversion of the island from LPG to natural gas usage.

Client:	CWC
Project Name:	Energy Hub of Europe, Oil and Gas Conference, Ukraine
Country:	Kiev, Ukraine
Year:	2001
Description:	Helped organize and participated in the First Oil and Gas Conference: Ukraine, Energy Hub of Europe, in Kiev.

Client:	Shell
Project Name:	Analysis of Opportunities along the Gas Transit (Brotherhood Pipeline)
Country:	Ukraine, Slovakia and Czech Republic
Year:	2001
Description:	Gas transit and markets analysis: we studied opportunities for gas market development along the Brotherhood pipeline route through Ukraine, Slovakia and Czech Republic. We described the markets along the Brotherhood pipeline gas transit route,

the economics of supply from Russia to Germany and commercial opportunities along the route.

Client: **Société Nationale des Hydrocarbures (SNH, underwritten by Ecoface)**
Project Name: Development of a Gas Code and its Application Texts, Cameroon
Country: Cameroon
Year: 2000 to 2001
Description: Gas Industry Structure: Conducted a market study of the gas market and potential opportunities for investors in Cameroon. We also drafted a project structure and guidelines.

Client: **Engie (formerly Gaz de France)**
Project Name: China corporate strategy
Country: China, France
Year: 2001
Description: Advised Engie on gas market investment opportunities and their strategy development in China.

Client: **Total (previously Elf Connect)**
Project Name: Due Diligence for an Energy Acquisition, UK
Country: UK
Year: 2001
Description: Elf Connect was operating in the provision of independent gas transportation and distribution networks, supplying industrial and housing estates. We conducted full due diligence studies, market studies, full regulatory case analysis, data room management, drafted the due diligence report.

Client: **Shell Gas and Power**
Project Name: Gas transport pipeline costs
Year: 2001
Country: Trinidad and Tobago
Description: Developed pipeline costs for gas transport

2000:

Client: **Shell**
Project Name: Market Study and Delivered Cost Analysis, Jordan, Lebanon, Syria
Country: UK (London)
Year: 2000
Description: Gas market feasibility studies: We carried out three separate studies into the feasibility of developing gas market projects in three Levant countries, through UK based desk research. We analysed and considered the potential future gas markets, in

power generation, industrial and distribution markets; estimated infrastructure development costs and arrived at estimated delivered costs to customers. We subsequently led market studies in country to confirm demand and cost estimates, covering markets in anchor power plant, industry, city distribution market.

Client: **Ukrtransgas (EU)**
Project Name: Rules of Access to Gas Transmission System, Ukraine
Country: Ukraine
Year: 2000
Description: Gas transport Network Code: For the gas transport company of Naftogas Ukrainy, designed Rules of Access (Network Code) for gas suppliers to gain access to the gas transportation system. Giving presentations on international experience; presentations on options for Ukraine; designed draft Parameters and Rules of Access.

Client: **DG Energy, EU**
Project Name: Trading Opportunities & Promotion of Transparency in the EU Internal Gas Market
Country: Belgium
Year: 2000
Description: Prepared a high profile study into the development of gas trading after implementation of the EU Gas Directive (with Rambøll)

Client: **Enagas**
Project Name: Review of Access Tariff Regimes & Recommendations for Structure of Third Party Access Rates
Country: Spain
Year: 1999 to 2000
Description: For Spanish gas transport company, advised on international transport tariffs and suggested methodologies for transport tariffs in Spain (with London Economics)

Client: **Two Energy Suppliers**
Project Name: Northwest European Transmission Pricing
Country: UK, Belgium, Netherlands, and Germany
Year: 2000
Description: Supervising complex modelling, advising on electricity and gas markets and prices

Client: **MetroGas (Buenos Aires Gas Distribution Company)**
Project Name: International gas cost pass-through methodologies
Country: Argentina
Year: 2000

Activities performed:	For Buenos Aires gas distribution company, advised on international gas cost pass-through methods. This included a detailed analysis of Colombian gas cost pass through methodologies.
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1999:

Client:	PetroChina (CNPC) (World Bank)
Project Name:	Technical Assistance in advance of stock market listing
Country:	China
Year:	1999
Description:	Advised on oil and gas market regulation, in advance of part privatisation of a state oil and gas company and listing of PetroChina on the New York Stock Exchange, in particular developed options for development of downstream gas markets.

Client:	National Electricity Regulatory Commission (EU)
Project Name:	Gas Expert to Energy Regulatory Commission, Ukraine
Country:	Kiev, Ukraine
Year:	1997 to 1999
Description:	Regulatory support to NERC: For National Electricity Regulatory Commission of Ukraine (NERC) and for Ministry of Economy, appointed gas expert to advise on gas sector reforms and liberalisation, EC TACIS programmes, assisted UK study tour (a series of projects over four years)

Client:	National Electricity Regulatory Commission (EU)
Project Name:	Advice to Gas Market reform, Phase 2, Ukraine
Country:	Ukraine
Year:	1999
Description:	Regulatory support: Drafted gas sector licenses (with Denton Wilde Sapte lawyers), designed and produced gas storage tariffs

Client:	Shell Gas and Power
Project Name:	Search for international partner
Country:	Brazil
Year:	1999
Description:	Corporate partner search: Researched and advised on international partner for a gas distribution concession, drew up a shortlist and investigated the suitability of different international energy companies, including financial strengths, operational expertise, technical skills, manpower, international experience and other criteria.

Client:	Lasmo plc.
Project Name:	The Gas Market in the Southern States of Brazil, concentration on Parana

Country:	Brazil (Paraná State)
Year:	06/1999 to 07/1999
Description:	<ul style="list-style-type: none"> • Conducted a study into the opportunities for gas from Paraná State. The study considered the Paraná market and other South Eastern States, discussing mainly the power generation and industrial markets; • The study also discussed pricing issues, alternative competitive supplies, from Brazil, Bolivia and Argentina, and alternative scenarios for delivered city gate prices.

Client:	An oil major (BP)
Project Name:	Brazil market study
Country:	Brazil
Year:	06/1999
Description:	Conducted a study into the electricity market in Brazil, concentrating on the power generation market in South East Brazil.

Client:	Control Risks Group
Project Name:	Management Review
Country:	Brazil
Year:	1999
Description:	For a corporate acquisition in the power sector, we conducted a review into the management of the company being acquired.

Client:	RWE Power (previously PowerGen)
Project Name:	Preparation of Gas Supply Costs
Country:	Brazil (Southern States)
Year:	1999 to 1999
Description:	For a European energy producer, built up and produced costs of delivered gas to various power plants in southern Brazil along different competing pipeline routes (with ALTEC Consultoria Ltda).

Client:	An Oil company (Sitho do Brasil)
Project Name:	Generation of Gas Supply Costs
Year:	03-06/1999
Country:	Brazil
Description:	<p>Analysing fuel supply costs to power plants in southern Brazil</p> <ul style="list-style-type: none"> • In advance of the privatisation of the Federal owned power generation company Gerasul, for this US investor, we prepared gas supply costs for power generation plants in Santa Catarina State in the south of Brazil, taking into account the costs of transportation via various competing international transportation routes; • For this we had to collect or estimate pipeline construction costs from the various different supply routes, including from Argentina, and compare those with the costs of

delivered gas through the Bolivia-Brazil pipeline, with tariffs extracted from the contract for that pipeline;

- We modelled the results and arrived at the costs of delivered gas to the various power generation sites. We were also able to work out at physically where it would be worthwhile to switch to an alternative pipeline gas supply route.

1998:

Client: National Electricity Regulatory Commission (EU)
Project Name: Advice to Gas Market reform, Phase 1, Ukraine
Country: Ukraine
Year: 1998
Description: Advised on regulation and licensing (with PwC)

Client: Transportadora de Gas Del Norte
Project Name: Rolled in Versus Incremental Cost of Capital Study
Country: UK (London), Argentina (Buenos Aires)
Year: 06/1998 to 07/1998
Description: For an Argentine gas transport company, advised on capital cost allocation methodologies internationally for gas network extensions

Client: Government of the State of Tasmania, Australia
Project Name: Investment Promotion, Search for Strategic Investor, Tasmania, Australia
Country: Australia (Tasmania)
Year: 1998
Description: Search for strategic investor: For Government of Tasmania in Australia, assisted with arranging and running a financial roadshow, and selecting strategic partner for Government to develop the island's energy economy (Duke Energy chosen)

Client: Australian gas retailers (Ikon, Kinetic, Energy 21)
Project Name: Gas supply function
Country: Australia
Year: 1998
Description: For all Australian gas retailers, as part of planning for the newly liberalised Australian gas market, analysed gas supply planning function, and for an oil major described the gas retail function in the UK market.

Client: Shell Gas and Power
Project Name: Regulatory Issues for Greenfield Gas Development
Country: Dominican Republic
Year: 1998
Activities performed: For an oil major, advised on regulatory issues for greenfield gas development

Client:	Ministry of Economy (EU)
Project Name:	Advice to Joint Ukraine-World Bank working group on reform of gas sector
Country:	Ukraine
Year:	1997 to 1998
Description:	Gas market reform advice: Appointed gas expert on regulation under TACIS programme to assist the Ukrainian government (Ministry of Economy) in the joint Ukrainian – World Bank working group on gas market reform. This was related to a World Bank loan to Ukraine and was the only one of nine working groups that met all the conditions.

1997:

Client:	DG Energy, EU
Project Name:	Advice on Lessons from First Gas Directive, EU
Country:	Belgium
Year:	1997
Description:	EU Gas Regulation, First Directive: Reported on issues during development of the first Gas Directive and recommended solutions, many of which were adopted in the Second Gas Directive

Client:	Korean Gas Corporation
Project Name:	Regulatory Training Programme
Country:	South Korea
Year:	1997
Description:	Delivered regulatory training to executives of Kogas