



# ANNUAL REPORT 2017



# **Oxford Institute for Energy Studies**



**Annual Report 2017**

## About the Oxford Institute for Energy Studies

The Oxford Institute for Energy Studies (OIES), a non-profit making charity and Recognized Independent Centre (RIC) of the University of Oxford, was founded in 1982 as an independent centre for advanced research into the social science aspects of international energy.

In addition to conducting leading edge research on a wide range of current energy questions, the Institute is committed to exploring these through dialogue – between consumers and producers, government and industry, and academics and decision makers. This is reflected in the membership of the Institute and in the diversity of its research team, drawn from different national, academic, and professional backgrounds. Our aim is that co-operation between researchers and interaction with benefactors and external stakeholders, will lead to a more informed and balanced understanding of the behaviour, motivations, and objectives of the various economic forces, agents, and policy makers that operate in or influence the performance of international energy markets.

Research carried out at the OIES is designed to encompass the following disciplines:

- the economics of primary and secondary energy sources including petroleum, gas, coal, electricity, and renewable energy;
- the economics of electricity market design and regulation of electricity networks;
- the evolution of oil and gas price formation, market structures, and trading;
- the politics and social aspects of energy;
- the international relations of oil and gas producing and consuming nations;
- the economic development of oil-producing countries and the energy problems of other developing countries; and
- the economics and politics of the environment in its relationship with energy.

As a general policy, the Institute concentrates on research in energy issues of international significance.



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# Message from the Chairman

In 2017, oil market balances continued to tighten thanks to another year of strong oil demand growth and strong OPEC/NOPEC compliance. Towards the end of the year, the oil price traded above \$60/barrel and after many years of stock builds, crude and products inventories fell in 2017, though from a high level. As we enter 2018 there are many uncertainties particularly concerning the US shale response to a higher oil price environment, the impact of high oil prices on demand growth, and OPEC's exit strategy. Also, the geopolitical backdrop has deteriorated sharply in many parts of the world with unplanned outages on the rise. Longer term, climate change policies and disruptions in the transport sector have caused a shift in perception from oil scarcity to oil abundance and from peak supply to peak demand. These shifts are increasing the uncertainty facing energy markets, with implications on the behaviour of industry players.

I am pleased to report that the Institute continues to provide commentary and analysis to help inform the public debate about these changes, to reduce misunderstanding of the causes, and to provide insights into the workings of energy markets and of the prospects for future energy demand.

The Institute has expanded its research and remains unique in conducting academic research at the highest standard focused on oil, gas, and electricity, and on their markets and industries as well as on the policies that affect them.

There were over 60 pieces of research published last year in the form of papers, insights, comments, and the quarterly *Oxford Energy Forum*. There are now over 4,000 subscribers to the Institute's publication notification service, an increase of over 35 per cent on the previous year. Visitor numbers to the website remain steady at around 100,000 and total traffic to the site was close to half a million visits, drawn from all but seven countries of the world. The Institute's social media following continues to grow rapidly, with follower numbers increasing by over 60 per cent in 2017.

The Institute continues to build its research capacity. The quality, breadth, depth, and number of publications it has produced this year, as well as its increasing presence online, is evidence of the hard work and dedication of the Institute team – to enable this continuing growth the Institute has welcomed a number of new Fellows in 2017 and will continue to seek new talent in 2018.

On behalf of the Board of Governors I want to convey our appreciation to Prof. Gordon Clark, University of Oxford and to Prof. Margaret MacMillan, St. Antony's College, University of Oxford, on their resignation from the Board. I thank them for their support of the Institute's activities and look forward to welcoming their successors.

The Institute's capacity to continue with its research activities depends heavily on the continued generosity and support of its funders. We were therefore very pleased to welcome: Anadarko, ENI, Enel Foundation, ESB, ExxonMobil International, Falck Renewables, Nex Group, Ofgem, Sedigas, SNAM, and Tellurian Inc.

**Roger Ainsworth**

January 2018

# Director's Note

The Institute's main objectives are to undertake advanced research on issues currently affecting the world's energy sector, and to help inform the public debate and improve understanding of the political economy of energy. As an educational charity, the OIES is committed to the dissemination of the results of its research as widely as possible, both in academia and in the world at large, through its website, attendance at seminars and conferences around the world by its fellows, its own seminars and events, and its interaction with the media. The Institute's work is detailed in this report.

## Programmes

The Oil and the Middle East Programme and Natural Gas Research Programme are well established and continue to produce high quality research of international significance as well as work with a more regional and national focus. The Electricity Programme continues to grow and the 2017 launch of a multi-year research project studying the worldwide transformation of the electricity sector was well received and attracted support from 15 sponsors. Work to develop the Africa Oil and Gas Programme continues; historically, Africa has been one of the world's most neglected energy provinces but with new discoveries, particularly in Africa's formerly hydrocarbon-poor east, a new wave of developments has been sparked that is likely to change the face of Africa as an energy producer.

## Research and Dissemination

The Institute publishes a range of research publications and commentaries, all of which are made freely available on its website, with the exception of published books. This report highlights a selection of the papers published by the Institute in 2017 on a wide range of subjects. In addition to research papers, the Institute now publishes 'Oxford Energy Insights' and 'Oxford Energy Comments' (shorter papers, often devoted to current policy issues) while 2017 saw the addition of 'Oxford Energy Podcasts' to the Institute's output (these cover a variety of topics and provide in depth interviews with some of our authors). The Institute continues to publish its quarterly magazine, the *Oxford Energy Forum*, now in its 28th year.

## Staffing

There has been very little turnover of research staff. Altogether, over 40 researchers are listed in this Report – many of whom are part time. The mix reflects the Institute's policy of recruiting both experienced researchers, many with a background in industry, as well as academics from a variety of social science backgrounds.

Priorities for recruitment include further appointments relating to the economics and regulation of electricity.

The OIES–Saudi Aramco Fellowship, made possible by the generosity of Aramco Overseas Company, attracted numerous applications in 2017. Three OIES–Saudi Aramco Fellows joined us:

**Michael Hochberg** is an energy analyst with expertise in wholesale power markets, utility regulation, and renewable energy investment strategy. While working in the Global Energy and Utilities practice of PA Consulting Group, Michael helped launch and grow the firm's Mexico City office from two to more than ten consultants, and supported state-owned energy companies, independent power producers, and other investors in responding to the Mexican energy reform. Michael's experience also includes evaluating power market investment opportunities and risks in Mexico and elsewhere in Latin America. Prior to consulting, Michael worked at the Delaware Department of Natural Resources and Environmental Control, the White House, and was a Fulbright Scholar in Spain. His research has been published by the Middle East Institute, OilPrice.com, and the *Oxford Energy Forum*.

**Catarina Godinho** is a PhD candidate at the University of Cape Town, in the Management Programme in Infrastructure Reform and Regulation at the Graduate School of Business. Her research focuses on the political economy of power sector reform and development, with special attention on the sub-Saharan African experience. She has worked in energy research since 2013, focusing on issues relating to sustainable development, energy security, energy transitions, climate change mitigation, governance, policy implementation, and sector reform.

**Marijke Welisch** is a researcher at the Energy Economics Group (TU Wien). She holds a PhD in energy economics and a MSc in economics with a focus on econometrics and policy evaluation. Her main field of research is on policies to support renewable energy, specifically (model-based) analysis of auction designs for renewable energy support. Ms Welisch is involved in several large Horizon2020 projects on the energy transition. Further areas of expertise are electricity markets and cooperation mechanisms for the exchange of renewable electricity.

We were also pleased to welcome Andreas Economou and Donna Peng as research associates. In addition we welcomed five visiting researchers during the year:

- **Ghassan Alakwaa**, an energy analyst at APICORP;
- **Damilola Olawuyi**, an Associate Professor of petroleum, energy and environmental law at the HBKU School of Law and Public Policy, Doha, Qatar;
- **Jinfeng Sun** an Associate Professor at the School of Economics and Management, China University of Petroleum (East China);
- **Ezgi Avci-Surucu** a Doctoral Researcher at Rotterdam School of Management, Erasmus University;
- **Evgenia Vanadzina** a Doctoral Researcher at Lappeenranta University of Technology, Finland.

We have been fortunate to work with a number of contributing authors throughout the year, and we extend our thanks to the following for their contribution to the work of the OIES:

- **Paolo Agnolucci**, Senior Lecturer, UCL Institute for Sustainable Resources
- **Liz Bossley**, CEO, Consilience Energy Advisory Group Ltd
- **Lucy Corkin**, Rand Merchant Bank
- **Vincenzo De Lipsis**, Research Associate, UCL Institute for Sustainable Resources
- **Ferdinand Eibl**, King's College, London
- **Bill Farren-Price**, Petroleum Policy Intelligence
- **Ekaterina Grushevenko**, Senior Analyst, ERI RAS, Moscow
- **Harald Hackling**, ewi Energy Research & Scenarios
- **Klaus Hammes**, Chief Economist, Swedish Energy Agency
- **Dominic Haywood**, Energy Aspects
- **Daria Kirova**, National Research University, Higher School of Economics, Moscow, Russia
- **Miswin Mahesh**, Energy Aspects
- **Seyed Mirnezami**, Research Fellow – RISTIP, Sharif University of Technology
- **Tom Moerenhout**, PhD Candidate at the Graduate Institute for International and Development Studies in Geneva
- **Ben Montalbano**, Co-Founder, Petronerds
- **David Ramin Jalilvand**, Friedrich Ebert Foundation
- **Simon Schulte**, ewi Energy Research & Scenarios
- **Florian Weiser**, ewi Energy Research & Scenarios
- **Vitaliy Yermakov**, National Research University, Higher School of Economics, Moscow, Russia

## Activities and Events in 2017

In March the annual 'Middle East Day' was held, jointly with the LSE and with support from KFAS; it was entitled 'Energy Pricing Reform and the Design of Compensation Schemes in MENA'. The annual 'Gas Day', was held in November 2017, and was kindly supported by NEX Group. The 2017 'Oil Day' (kindly supported by Aramco and Argus Media) entitled 'The Oil Market Dichotomy: Supply Crunch or Glut', and the Inaugural 'Electricity Day' (kindly supported by the Brattle Group), were also held in November 2017. All our events were full to capacity reflecting the quality, depth, and breadth of the timetable for each event and the calibre of speaker that Institute events attract.

The Institute's annual 'Brainstorming Meeting' took place in Chantilly, France in May; we are very grateful to TOTAL for the generous sponsorship and support of this event.

## General

As a research institute, OIES continues to depend on the dedication of all involved. As shown in this report, the research productivity of OIES is extraordinary, and its reputation and influence continue to increase. The relaxed but productive research atmosphere, one of the main characteristics of OIES, owes a huge amount to the administrative staff, Kate Teasdale, Susan Millar, Karen Clark, Jo Ilott, and Hannah Shipton. The interactive and networking aspects of OIES continue to benefit greatly from the close historical and current relationships with its two sister institutions: the Oxford Energy Policy Club, which meets annually in St Antony's College, and the Oxford Energy Seminar, held annually at St Catherine's College.

Finally, we must acknowledge and thank our funders, sponsors, and friends for their kind support, without which the research conducted at the OIES would not be possible.

## March 2018

# Research

The Institute publishes a range of research publications and commentaries, all of which are made freely available on its website, with the exception of published books. This report highlights a selection of the papers published by the Institute in 2017 and provides an overview of ongoing research. For a full list of published research in 2017, please see the end of this report or visit the OIES website, where a full list of published and planned research can also be accessed.

The **Oil and the Middle East Programme**, established in 2009, has cemented its reputation as a leading source of independent academic research on oil market issues. The programme is structured around four main themes: global oil market dynamics; production; the policy and the economics of resource-rich economies; and consumption and the development of emerging energy markets.

The Programme's 2017 research on *global oil market dynamics* continued to build on our core understanding of oil price cycles, the behaviour of oil market participants, and the impact of new supply sources. An important paper, published early in the year, explored how the oil price path could evolve in 2017 by assessing the various oil price risks under alternative forecast scenarios pertaining to future market conditions. This was complemented by a paper published later in the year which decomposed oil supply shocks into their exogenous supply (driven by exogenous geopolitical events in OPEC countries) and endogenous supply (driven by investment dynamics within the oil sector) components, offering a fresh perspective on the role of supply, flow demand, and speculative demand shocks in explaining the changes in the real price of oil over the last three decades. We also continued to follow the role of OPEC in international oil markets, through a paper examining the 'hard choices' faced by the cartel and its main player Saudi Arabia, in relation to a identifying a 'sweet' oil price range that could help keep the market in balance. Other output under this theme included research on oil benchmarks, investigating the imperfections at the heart of the Brent basket mechanism.

The Programme's second thematic area – *production* – covers the economic prospects for conventional and unconventional supply. Published research focused on North America, Russia, and the Middle East. We have developed a strong base of analytical research on understanding the dynamics of US shale, and in 2017 we updated this with a paper examining continued productivity growth across multiple US shale plays, identifying the factors contributing to this growth, as well as the potential economic constraints. This was complemented by a paper on the resilience of US shale exports – which in 2017 defied concerns relating to capacity constraints, effectively arguing that production growth and export growth go hand-in-hand. We also published a review of the prospects for Canadian oil sands in a changing oil price environment. Other research output on production included papers assessing the 'comeback' of Iranian energy by examining the merits of the Joint Comprehensive Plan Of Action (JCPOA) for the Iranian energy sector a year after its implementation, together with the uncertainties brought about by a change in regime in the USA, and the positive outlook for Russian oil production to 2020.

The Programme's traditional strength lies in analysing *the policy and the economics of resource-rich economies*, which is its third thematic area. In keeping with the current wave of reforms in MENA countries, our 2017 output focused largely on the design and impacts of pricing and energy subsidy reforms, while keeping in mind the need to avoid 'reinventing the wheel' in light of the already vast literature in this area. A paper focusing on Tunisia and Egypt highlighted the importance of taking into account the political economy of energy intensive industries and not just households when analysing subsidy reforms, and that resulting industrialist lobbying activity can seriously disrupt, decelerate, or even derail reform. Another important paper modelled the economywide adjustment mechanisms whose responses, in the face of potentially higher gasoline prices resulting from reforms in Kuwait, indicate that expatriate labour exit and a decline in oligopoly rents are two important yet seldom discussed adjustment mechanisms, with their own knock-on effects. Part of the Programme's remit has been to analyse current events shaping oil markets. Accordingly, we published a paper setting out some fundamental questions relating to Saudi Aramco's planned IPO, which was widely read; there was also a paper examining the impact of the 2017 'rift' in relations among GCC countries and the implications for oil and gas markets. Other output under this theme included research on local content and procurements requirements in MENA countries.

The Programme published three papers under its fourth thematic area – *consumption and the development of emerging energy markets*, focusing largely on Asia, within which China and India are arguably the most influential markets. One paper covered the role of China’s independent ‘teapot’ refiners in shaping global energy markets and another, India’s efforts to cut its oil imports by initiating upstream reforms. In 2017 we also published research on oil demand in transport, with a paper investigating the impact on gasoline demand growth in India and China of government targets for scaling up electric vehicles.

While the Programme will continue to expand upon its traditional strengths (in oil market dynamics, production, and the policy and the economics of resource-rich economies) and will cover new issues and geographical regions, we began 2018 with research focusing on peak demand, and we plan to continue expanding on demand-related themes by widening the scope of the Programme.

In late 2016, OIES launched a dedicated **Africa Oil and Gas Programme**. Its research focus is on up and coming oil and gas producers in east Africa, the impact of lower global energy prices on large producers in west and south Africa, and the activities and strategies of Chinese, Indian, and other Asian investors on the continent.

Research in 2017 included work on the prospects and risks for current and future oil producers in east Africa (Uganda, Kenya, and South Sudan), and an outlook on the direction of Angola’s oil industry after the fall in global oil prices. Research in 2018 will include papers on Libya and Ghana.

The foundation of the research output of the **Gas Programme in 2017** has been two papers by Jonathan Stern on the ‘Future of Gas’. The first focused on the European market and highlighted the fact that the gas industry needs a decarbonization strategy if it is to have a strong future in the region post-2030. The second paper extended the scope of the analysis to the rest of the world and underlined that in most non-OECD countries the concern is less about carbon emissions and more about affordability and air quality. In this context, the key focus for the gas industry (and especially the LNG industry) must be to cut costs and ensure that gas can be delivered to customers at wholesale prices no higher than \$8/mmbtu and preferably at below \$6.

Building on these two papers, much of our other research has been focused on sources of gas demand, the potential impact of new supply, environmental issues, the development of new technology, and the role of governments and geopolitics in determining the future of gas. On the demand side we have written about the development of demand in India, highlighting the regulatory challenges involved, the difficulties of developing new markets in Africa, and the opportunities being exploited in the Caribbean, where small island markets are being connected using small-scale LNG. We have also published research on the changing nature of the Turkish gas market and have provided a series of updates on European market issues, including a review of gas demand in the Balkan region.

As always, gas supply has also featured heavily in our research output. We have examined the potential for an LNG surplus to develop in the period to 2020 and have covered the emergence of Russia as an important new LNG producer. In addition, we have written on the major problems being encountered in the Dutch gas industry, where supply from its major onshore field, Groningen, is being significantly curtailed due to seismic activity. Finally, we have published two short papers on Qatar, the first in response to a decision to end the moratorium on capacity expansion and the second as a reaction to the embargo placed on the country by some of its Middle Eastern neighbours.

Beyond these traditional gas market themes, though, we have also published an expanding body of work on other key issues around the future of gas. A paper on biogas and biomethane provided an introduction to the potential for ‘green gas’ in Europe, while an Energy Insight on methane emissions highlighted one of the key challenges for the gas industry if it aims to improve its standing in the environmental community. We have also looked at the interaction between gas and renewables, with a particular focus on Africa as a region where the potential for synergy is high.

Regulatory issues have also been an important theme for the Programme. The topic of Brexit has generated a number of Comments, including on issues such as the EU ETS, the interaction between the UK and Irish gas markets, and the implications for UK security of gas supply. We have also continued to publish regularly on the progress of European gas hubs and have also analysed the risk of bottlenecks developing in the European system, as the EU continues its strategy of creating security through interconnection. We have also looked at the growing debate about the importance of Russian gas in Europe, and followed the debates around the

Nord Stream 2 pipeline, the OPAL pipeline, and the DG COMP investigation into Gazprom, with a series of papers.

The Russia theme has been further expanded with papers on Russian gas supply, demand, and exports, and also with an Energy Insight on the Ukraine situation. Other regional research has focused on South America and the potential for gas demand across a number of countries, while we have also continued to follow the growing demand for LNG in Asia, especially in China, in tandem with a new visiting fellow from the region.

In addition to this written output, the Gas Programme has also developed a series of Energy Podcasts, which to date have provided a number of 20–30 minute discussions of our research on Russia, China, LNG shipping, the St Petersburg gas exchange, the Dutch gas market, and the future of gas.

The OIES **Electricity Research Programme** was established in 2015 and in 2017 launched a multi-year research project that will study the worldwide transformation of the electricity sector, with particular emphasis on two trends: decarbonization and decentralization.

Our research pays special attention to public policy issues related to the decarbonization and decentralization of the power system and in 2017 it focused on four topics: renewable finance, the gas-to-power supply chain, decarbonization, and market design and network regulation.

Within the theme of *renewable finance*, we published a paper reviewing the latest developments in renewable energy finance in the MENA region, presenting options available to these nations to create vibrant clean electricity financing markets for renewables. The paper also suggests policy recommendations going forward.

Under the topic of the *gas-to-power supply chain*, we published a paper which focuses on the experience of Nigeria and Bangladesh. The paper identifies the most important factors that have facilitated or detracted from the performance of the gas-to-power supply chains in these countries and presents suggestions to improve their performance. It also discusses the extent to which the findings of this study can be generalized to other countries.

During 2017, we published two papers under the theme of *decarbonization*. The first paper compares the decarbonization policy approaches followed in Spain and the UK, in order to understand what works best and what lessons can be learned from their experience. It also includes an annex on the energy implications of Brexit. The second paper proposes guidelines for fiscal reform in the energy sector that will be compatible with efficient decarbonization.

In relation to *market design* we published two papers. One of these proposes a new approach to market design which will enable intermittent renewable sources to be accommodated; maintain overall system reliability while enabling consumers to put a value on their own supply security; provide clear signals to generators for investment and operation; and provide an ‘exit strategy’ allowing government intervention to be limited, in the long run, to the setting of framework conditions only. The second paper, on the other hand, focuses on reform of the electricity market. It proposes a seven-step condition-dependent evolution of power market design, where the government/regulatory authority plays the role of meta-coordinator, matching the adaptation of market-based coordination modules with a hybrid future where distributed energy resources coexist with centralized generation, while decentralized market participants trade with each other and with incumbents.

Finally we published a paper which looks into the issue of *network regulation and innovation incentive*. This paper reviews the evolution of electricity grids from technological and organizational perspectives and analyses the efficacy of existing incentive models in encouraging innovation. It shows that incentive mechanisms which fail to take uncertainty into account in the outcome of innovation efforts divert the attention of network utilities away from innovation, towards normal efficiency gains. It also provides recommendations for addressing the problem of innovation under regulation.

Research in 2018 will continue to focus on themes similar to those of 2017, with some modifications. We have planned for research on issues such as market design, auction design, and decarbonization – together with its interaction with liberalization.

On *market design*, we have a work in progress which attempts to evaluate the role of centralized coordination in electricity markets by asking what role government should play in electricity markets, what interventions

are justified, and how these interventions should be designed and implemented. Another paper on market design provides a review of the Helm Report and analyses selected issues in that report in more detail, with lessons for other countries beyond the UK. The *Cost of Energy Review* by Dieter Helm (which in practise focused on electricity) was published in October 2017. It contained a penetrating analysis of the political and technical challenges facing the UK electricity industry and a number of radical proposals for reform. In doing so, it raised some fundamental issues about the industry's future which merit consideration in their own right.

The third paper on market design will look into the experience of Australia. Australia provides an interesting case study as it has an energy-only market with a fair share of renewable resources, especially in South Australia. The paper tries to understand how this country has managed its decarbonization goals, what reform has been planned in the electricity market to accommodate renewables, and what lessons are of wider relevance.

On the issue of *auction design* we have three papers, the first of which provides a historical assessment of renewable and generation capacity development policies in both Brazil and Mexico. The paper reviews auction design and results in both countries and offers recommendations for the design and implementation of renewable energy policy tools, and auctions in particular. The second paper is critical about the use of auctions as a policy tool. It asks whether auctions are a useful market-based tool to complement other methods of resource development, or if instead they are a second-best option and a symptom of the fact that electricity markets themselves are broken and can no longer give appropriate signals. The paper looks at the general literature on auction theory as well as the experiences of auction design in a number of countries. The third paper on auction design will investigate the UK CfD auctions and the way in which auction design may have contributed to the low clearing price of less established technologies, especially offshore wind.

We also plan for the May 2018 issue of the *Oxford Energy Forum* (OEF) which is dedicated to electricity. This issue focuses on international (non-EU) experience of the interaction between the *liberalization and decarbonization* of electricity. It will cover a broad range of countries and regions including Australia, California, Brazil, Mexico, Colombia, Chile, South Africa, India, Russia, Ontario, Texas, Japan, and China.

Finally, our 2018 research agenda contains a joint paper with the Gas Programme about the decarbonization of heat in the UK and Europe. This study has two parts: one looking at the prospects for hydrogen in the UK; the other at issues in the rest of Europe. The aim is to consider the viability of the hydrogen option, particularly in terms of political viability.

# Journal and Website

## **Oxford Energy Forum**

The Institute's quarterly journal, now in its 28th year, continues to tackle topical issues facing the energy world. Issues covered in 2017 included: MENA energy pricing reforms, Mexican energy reforms, and natural gas demand in the next decade. Our thanks to the authors of all articles that appeared in *OEF* in 2017, to the editor, Bassam Fattouh, and to our guest editors.

## **Website: [www.oxfordenergy.org](http://www.oxfordenergy.org)**

The website contains full information on OIES publications, research in progress, and dedicated sections for the OIES Natural Gas Research Programme, Oil and the Middle East Programme, Electricity Programme, and Africa Oil and Gas Programme. The site also has information on the research interests of our staff, many of whom provide assessments of important energy events for the website's Energy Comment and Insight section.

The catalogue of papers and comment pieces on the OIES website continued to grow during 2017 with over 60 new publications added.

There are now over 5,000 subscribers to the Institute's publication notification email service, an increase of 25 per cent on the previous year. Visitor numbers to the website increased by 10 per cent over 2016 with some 200,000 unique visits. The Institute's Twitter following increased in 2017 to nearly 4,000 followers, and the Institute's LinkedIn page has over 3,000 followers.

In 2017, the Institute was mentioned in the press, on average twice per day, by, amongst others; *Al Jazeera*, *Bloomberg*, *Dow Jones*, *The Economist*, *The Irish Times*, the *FT*, *Platts*, *Reuters*, *The Times*, *Energy Intelligence*, *MEES*, the *Gulf Times*, *Interfax*, *The New York Times*, *Nezavisimaia Gazeta*, *China Energy News*, *The Telegraph*, *The Wall Street Journal*, *Dow Jones News*, and *Petroleum Economist*.

# Lectures and Seminars

As part of its commitment to education and its mandate, the OIES strives to disseminate the results of its research as widely, and in as many ways, as possible. Lectures and seminars enable the Institute's researchers to present the findings of completed projects and to expose work in progress to the criticism of colleagues in industry, government, and academia. In 2017, the Institute's research fellows, director, and programme directors gave numerous presentations and talks at many conferences, workshops, seminars, and meetings across the globe.

## XXVIII Annual Brainstorming Meeting

Since 1990, the Institute has been holding an annual 'Brainstorming Meeting', which draws together people from producing and consuming countries, national and private oil companies, governments, financial institutes, and other research organizations. The 28th such meeting was held 18–19 May in Chantilly, France with the kind support of TOTAL. Participants engaged in lively discussions on a wide range of energy issues. These included: the world economy; the geopolitics of energy; the oil market; the change in regulatory landscapes and benchmarks; gas and LNG pricing; and climate change and coal.

## 2017 LSE–OIES Workshop – Energy Pricing Reform and the Design of Compensation Schemes in the MENA

In March 2017, the LSE and OIES jointly hosted a workshop in London on energy pricing reforms in the MENA countries. The event, which was held at the LSE, was kindly sponsored by the Kuwait Foundation for the Advancement of Sciences (KFAS). There were five sessions covering topics related to energy pricing reforms including lessons from international experience, reforms and the deployment of renewables, and the impact on firms' competitiveness.

The workshop was attended by 35–40 academics, industry professionals, and policymakers.

## 2017 Oil Day – The Oil Market Dichotomy – Supply Crunch or Glut?

In November 2017, the OIES successfully held its annual 'Oil Day'. This year's event, kindly supported by Aramco and Argus Media, focused on four main themes: the outlook for the oil market; how different is US shale 2.0 in terms of business models, productivity gains, and changes in behaviour?; non-OPEC decline costs, breakeven costs, and the state of the long-term investment cycle; and, what next for OPEC?

The conference was attended by 35–40 key oil industry figures, representatives from IOCs, NOCs, financial institutions, price assessment agencies, the energy business community, as well as OIES staff.

## 2017 Gas Day

The OIES Natural Gas Research Programme organized its eleventh annual 'Gas Day' in October 2017, with three sessions dedicated to discussing current issues in the gas sector. The first session focused on the current relationship between Russia and Europe; it considered the potential for new export pipelines to be built or blocked, the possible impact of the DG COMP investigation into Gazprom's business practices in central and eastern Europe, and the possibility for a change in Russian gas export strategy. The second – entitled 'The Future of Gas' – discussed the prospects for gas in the global energy economy over the next two decades. Topics under debate included the potential for coal-to-gas switching in Asia, the possibility of renewable energy and battery developments undermining the role of gas in the power sector, the impact of Brexit on the European gas market, and the potential for CCS and hydrogen to decarbonize the UK gas sector. The final session was called 'LNG in Transition' and discussed the prospects for new US LNG projects, the opportunities for cost reduction in the LNG value chain, the role of aggregators and portfolio players in the development of new business models, and the potential for an LNG spot price benchmark being formed in the near future. The event, held at St Anne's College, Oxford, was attended by over 90 invitees, including sponsors of the OIES and the Natural Gas Research Programme and invited guests from the academic, media, and corporate sectors.

## **2017 Gas Programme Sponsors' Meetings**

The OIES Natural Gas Research Programme held its bi-annual sponsors' meetings on 17–18 April and 10–11 October 2016 at St Hugh's College, Oxford. The meetings, attended by the Gas Programme sponsors and authors from a range of countries and backgrounds (including academia, industry, and energy journalism), discussed ongoing research projects and progress reports.

The April meeting started with a session on gas in Europe, with the key topics being the Dutch gas market, the impact of Brexit, an update on Turkish gas demand, and a new research paper on bottlenecks in the European gas pipeline network. A review of the performance of European gas hubs concluded the discussion. The second session covered gas supply, with a discussion of long and short-term gas developments, a report on Algerian gas exports, an update on CIS gas issues, and a review of the current trends in European gas regulation. Session 3 covered the search for new sources of gas demand, with reviews of the growing markets in India and Africa, as well as a discussion of the LNG market in Brazil. A recent paper on Floating Regas and Storage was also reviewed as this has become a possible option for opening smaller markets. Session 4 then saw the focus turn to the Electricity Programme, with a lengthy discussion about the interaction between electricity and gas in the power sector, and a debate over the future of gas in power generation. In the afternoon, a Discussion Group on Russia was helpful, with invited guest Tatiana Mitrova answering questions for 90 minutes.

The October meeting started with a discussion, led by Jonathan Stern, on the future of gas, based on his recent research papers. The key conclusions were that gas needs to have both a decarbonization strategy and also a cost reduction strategy if it is to have a prosperous long-term future in the global energy economy. Subsequent discussions covered new sources of gas demand in Europe and Asia, including a major focus on the heat sector. Session 3 looked at gas supply, in particular in Norway and the Netherlands in a European context, and from the USA in a global LNG context. The second day saw a focus on two key regions: Africa and Russia. The African session discussed the potential for new pockets of demand to emerge in the region, and also addressed some of the key supply issues in north Africa, especially in Algeria and Egypt. The Russia session focused on export pipeline issues, EU investigations into Gazprom, the potential for a gas exchange in St Petersburg, and the gas relationship between Turkey and Russia. Finally, in the afternoon a China Discussion Group took place, with the key speakers being Michal Meidan, Jinfeng Sun, and Stephen O'Sullivan, who discussed the development of the Chinese gas market and took questions from the audience for a 90-minute session.

## **2017 Electricity Day and Sponsors' Day**

The first annual Sponsors' Day and Electricity Day were held on 7 and 8 November 2017. The purpose of the Sponsors' Day was to discuss the research we had carried out during the year and to exchange views about next year's research. For the Electricity Day, we invited a number of experts, in addition to the usual Electricity Programme sponsors, and discussed the key themes of the power sector; these included market design, decarbonization and decentralization, and electrification of heat and transport.

# Library

2017 saw the library extending its support to researchers, taking on new projects and continuing to supply key publications. Requests for information by OIES researchers more than doubled from 2016, with 117 individual requests. Loans of books to OIES researchers also increased to 448 loans.

The library took on a new project to help disseminate OIES research papers to a wider online audience. The last three months of 2017 saw the introduction of digital object identifiers (DOI) on the main research papers.

DOIs offer the opportunity to advertise the research papers on multiple online platforms, such as: databases, repositories, search engines, and in the citation elements of major journal publishers. DOIs also provide permanent and stable links which encourages their use in citations, online bibliographies, and other library systems.

DOIs were assigned to the main research papers going back to 2013. From October to December there were 1,293 clicks on the DOI links, bringing readers to the papers on the OIES website.

New visitors continued to discover OIES and its library by way of OLIS, where it fills a hole in the academic library collections that is not served by other university libraries. Requests were made by other university libraries throughout the UK and abroad for material held by the OIES library and made discoverable through OLIS.

OIES would like to offer thanks to the following organizations and publications for supplying – either free of charge or at substantially discounted prices – important trade journals, statistical sources, and other materials vital to our research work, which could not have been afforded otherwise: *Argus Media*, *Blackwell's*, *The Institute of Energy Economics: Japan*, *Live Media & Publishers: India*, and *MEES*.

# Research Team and Staff

**Christopher Allsopp CBE**, was Director of the Institute from 2006 to 2013, he is emeritus fellow of New College, Oxford; editor of the *Oxford Review of Economic Policy*; a director of Oxford Economic Forecasting; and author of the *Review of Statistics for Economic Policymaking* – also known as ‘The Allsopp Review’. He has previously worked at HM Treasury and the OECD, while at the Bank of England he was an adviser (1980–83) and a member of the Court of Directors (1997–2000) and of the Monetary Policy Committee (2000–03). He has had extensive involvement with domestic and international policy issues as a consultant to international institutions and private-sector organizations, and has published extensively on monetary, fiscal, and exchange rate issues, as well as the problems of economic reform and transition. His involvement in the economics of oil and other energy issues goes back to the shocks of the 1970s.

**David Buchan**, Senior Visiting Research Fellow, joined the OIES in January 2007 and became Senior Visiting Research Fellow in August 2017. Educated in Oxford and Geneva, he began his writing career in 1970 with *The Economist*. In 1975 he joined the *Financial Times*, where he remained until 2006, rising to energy editor (2000–2002). He was a foreign correspondent posted in Brussels, Washington DC, and Paris, and when based in London he covered energy, defence, the Soviet bloc, and diplomacy. At the OIES, he specializes in the energy and climate policies of the European Union. Aside from writing *The Rough Guide to the Energy Crisis* (Penguin 2010), he has written two books for the Institute, namely: *Energy and Climate Change: Europe at the Crossroads* (OIES/OUP 2009) and, with OIES colleague Malcolm Keay, *Europe’s Long Energy Journey – towards an Energy Union?* (OIES/OUP 2015).

**Dr Thierry Bros**, Senior Research Fellow joined the Institute in October 2016 as Senior Research Fellow for the Gas Programme. Prior to that he was, from 2010 to 2016, Senior European Gas and LNG Analyst for Société Générale. He joined Société Générale in 2007 as a Senior Financial Analyst to provide recommendations on listed pan-European gas stocks and in-depth research on gas issues. From 2002 to 2007, Thierry was a Senior Oil and Gas expert at the French Ministry of Economy, Finance and Industry, where he represented France on oil markets and advised on emergency issues at the International Energy Agency, the European Commission, and the Energy Charter. His responsibilities included providing global oil and gas industry reviews to senior French officials and negotiating European directives. As a gas specialist, he reviewed the regulations governing the liberalization of the French gas market and supervised the Contingency Gas Plan. Prior to that, Thierry worked, for eight years at IFPEN, an oil and gas research institute. Thierry Bros holds a Master of Chemical Engineering from ESPCI ParisTech and a PhD from École Centrale Paris.

Thierry is the author of the book *After the US Shale Gas revolution* (Editions Technip 2012) and a co-author of the books *The European Gas Markets: Challenges and Opportunities* (Palgrave Macmillan 2017), *Géopolitique du gaz Russe* (Editions L’inventaire 2017) and *The Oxford Handbook of International Security* (OUP 2018). He is an advisory board member to Natural Gas World, an independent specialized website dedicated to global gas matters. He is a member of the EU–Russia Gas Advisory Council and an advisor for the World Energy Council – Global Gas Centre. He is also a visiting professor at SciencesPo Paris and a senior expert at Energy Delta Institute. Thierry regularly trains professionals for the trade association of the French gas industry (CFAFG).

**Bassam Fattouh**, was appointed Director of the Oxford Institute for Energy Studies in January 2014. He is also Professor at the School of Oriental and African Studies (SOAS), University of London and has published a variety of articles on the international oil pricing system, OPEC pricing power, the security of Middle Eastern oil supplies, and the dynamics of oil prices and oil price differentials. This work has appeared in *Energy Economics*, *The Energy Journal*, and *Energy Policy*. Dr Fattouh served as a member of an independent expert group established to provide recommendations to the 12th International Energy Forum (IEF) Ministerial Meeting in Cancun (29–31 March 2010) for strengthening the architecture of the producer–consumer dialogue through the IEF. Bassam Fattouh has also written widely on non-energy-related issues, with his work published in the *Journal of Development Economics*, *Oxford Review of Economic Policy*, *Economic Inquiry*, *Empirical Economics*, *Journal of Financial Intermediation*, *Economics Letters*, *Journal of Futures Markets*, *Macroeconomic Dynamics*, and in other journals and books.

**Laurence Harris**, Senior Research Fellow, is Professor of Economics at SOAS, University of London, where he was the founding head of the Department of Financial and Management Studies. At the Oxford Institute for Energy Studies his focus is on the increasingly important subject of Africa's energy issues and policy. Laurence Harris's other research interests, on which he has published many books and articles, are in finance, banking, macroeconomics, and development economics, and at OIES he is concerned with their connection to energy policy. His policy research has related principally to South Africa and sub-Saharan Africa.

Professor Harris is a Fellow of the Academy of Social Sciences, UK; a non-resident Senior Research Fellow of the United Nations University, World Institute of Development Economics Research; and a senior member of the African Economic Research Consortium. Laurence Harris is an alumnus of the London School of Economics. He has held faculty positions at the LSE; the University of California, Berkeley; Harvard University; Birkbeck College, University of London; The Open University; and the University of Zimbabwe. He has held visiting research positions at the International Monetary Fund; University of Cambridge; University of Rome 'Tor Vergata'; and Kobe University, Japan.

**Patrick Heather**, Senior Research Fellow, joined the Institute in June 2006. His works for the OIES include: the paper 'The Evolution and Functioning of the Traded Gas Market in Britain' (August 2010); a co-authored Comment with Jim Henderson, 'Lessons from the February 2012 European gas "crisis"' (April 2012); and the paper 'Continental European Gas Hubs: are they fit for purpose?' (June 2012). His paper, 'The evolution of European traded gas hubs' (December 2015) focused on the evolution of gas markets across the continent in the context of the European Commission's vision of a Single Energy Market (in gas); the paper described the 'path to maturity' of traded gas hubs and analysed their stages of development using both objective and subjective measures; he has since brought the results of that research up to date in a co-authored OIES Energy Insight with Beatrice Petrovitch, 'European traded gas hubs: an updated analysis on liquidity, maturity, and barriers to market integration' (May 2017).

Since 2004, Patrick has been an independent consultant focusing on gas market evolution in Europe, supply and demand dynamics, the impact of regulation on market outcomes, contracting strategy, and marketing strategies to take advantage of new market opportunities. Patrick has advised and given presentations to many different organizations, including the European Commission, the APX and ICE futures exchanges, and various producer and end user companies, financial institutions, regulators, and governments in Australia, Austria, Brazil, Britain, China, Estonia, France, Greece, Holland, India, Italy, Japan, Norway, the Philippines, Poland, Russia, Sweden, and Turkey. In 2006, he was appointed commercial adviser to South Hook Gas to assist them through the long commissioning phase of their world-leading LNG import facility in south Wales, which was successfully achieved in 2009. Patrick has over 35 years' experience of broking, trading, and risk management in the natural gas, power, oil, and oil products markets, and working as a gas market expert for European utilities and gas suppliers, British investment banks, and international oil majors.

**James Henderson**, Director Natural Gas Programme, succeeded Howard Rogers as Director of the Natural Gas Research Programme in October 2016, having joined the Institute in 2010 as Senior Research Fellow contributing works for the Gas and Oil Programmes covering Russian and CIS issues as well as global energy matters that affect the region. He has been analysing the Russian oil and gas industry for the past 20 years. Having been Head of Energy for Wood Mackenzie Consultants in the mid-1990s he moved to Moscow as Head of Oil and Gas Research for Renaissance Capital in 1997, and in 1999 became Head of Equity Research. Having returned to the UK in 2002 he became Head of Russia at Lambert Energy Advisory, while also studying for his doctoral thesis on partnership in the Russian oil and gas industry at the University of London, which he completed in 2010.

He is a BP Professor of Energy at the Skolkovo Management School in Moscow and lectures on energy issues at a number of universities in Europe. His publications include numerous papers on the Russian oil and gas sector, *Non-Gazprom Gas Producers in Russia* (OIES/OUP 2010), *The Russian Gas Matrix: How Markets are Driving Change* (co-editor) (OIES/OUP 2014), and the recently published *International Partnership in Russia* (co-author) (Palgrave Macmillan, 2014).

**Anouk Honoré**, Senior Research Fellow, joined the OIES Natural Gas Research Programme in 2004. Her research focuses on European natural gas issues, with particular emphasis on gas market fundamentals, energy policies, power generation, and the heat sector. Her main areas of expertise include building scenarios on natural gas demand and supply in 36 European countries (the 28 member countries in the European Union plus Albania, Bosnia and Herzegovina, Norway, Republic of Macedonia, Serbia, Montenegro, Switzerland, and Turkey). She also works on the natural gas markets in South America (Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Peru, Uruguay, and Venezuela). She is the author of various research papers and book chapters, and of the book *European Natural Gas Demand, Supply and Pricing: Cycles, Seasons and the Impacts of LNG Price Arbitrage* (OIES/OUP 2010). Before joining the Institute, she worked at the International Energy Agency (IEA) in Paris. Her work focused mainly on natural gas issues in the IEA's 29 member countries, but also in China and in Latin America. Dr Honoré holds a PhD in economics, an MA in environmental and natural resources economics, and an LLM in international administration (public law) from universities in Paris.

**Malcolm Keay**, Senior Research Fellow, joined the OIES in January 2005. His career has ranged widely across the energy scene, including roles in: the public sector, as director of energy policy at the UK DTI (1996–9) and division head at the International Energy Agency; the private sector, as senior managing consultant at Oxera; and the non-profit sector, working at Chatham House and the World Coal Institute. He has acted as an adviser for many energy studies, including as special adviser to a House of Lords committee inquiry into energy security in Europe, and director of the energy and climate change study for the World Energy Council. His research focuses on the implications of electricity market liberalization for the achievement of key energy policy objectives, particularly in relation to the environment. He contributed the chapter entitled 'Can the Market Deliver Security and Environmental Protection in Electricity Generation?' to *UK Energy Policy and the End of Market Fundamentalism*, edited by Ian Rutledge and Philip Wright (OIES/OUP 2011). This updated the analysis and conclusions of his 2006 monograph for OIES, *The Dynamics of Power*, to argue that governments have failed to develop policies which will enable them to meet their environmental targets in the context of liberalized markets, and that more interventionist approaches would be needed. His research interests also include EU energy policy; with David Buchan, he co-authored a book published by OUP in 2016 on *Europe's Long Energy Journey: Towards an Energy Union?*

**David Ledesma**, Senior Research Fellow, is an independent gas and LNG consultant focusing on gas and LNG strategy along the value chain, including the structuring of commercial arrangements, financing, and markets for pipeline gas and LNG projects. Since joining the Institute in November 2007, he has contributed chapters to several of the Institute's books, namely: *Natural Gas in Asia* (2008), *Natural Gas in the Middle East and North Africa* (2011), *The Pricing of Internationally Traded Gas* (2012), and was co-editor of the Institute's recent book *LNG Markets in Transition, The Great Reconfiguration* (2016). He has also published a number of OIES papers, including: 'The changing relationship between NOCs and IOCs in the LNG chain' (July 2009); 'East Africa gas – potential for export' (March 2013); and 'The future of Australian LNG exports: will domestic challenges limit the development of future LNG export capacity?' (September 2014). David also contributed the chapter 'Project Financing LNG Projects' to *The Principles of Project Finance* (Gower Publishing, 2012). He also gives numerous commercial training courses on gas and LNG in the UK and overseas, writes on gas and LNG, and presents regularly at conferences. During 30 years in the energy and utilities sector, David has worked on the development of complex integrated energy projects, negotiations at government level, and in the management of joint ventures. With Shell, he worked in Malaysia and the Netherlands, travelled extensively to Oman and Asia, and was a key member of the team that closed a major LNG project in the Middle East. He is an experienced commercial manager with hands-on experience developing and closing commercial gas transactions as well as developing business strategy. From 2000 to 2005, as director of consulting then managing director of the Gas Strategies Group (formally EconoMatters Ltd), David worked on and managed LNG and gas consulting assignments around the world. In May 2013 David was appointed as a non-Executive Director of Pavilion Energy, a subsidiary of the Singapore investment firm Temasek Holdings, and in August 2017 as a member of the Energy Advisory Committee of JERA. He has a degree in economics and geography from the University of Exeter.

**Keun-Wook Paik**, Senior Research Fellow, joined the OIES in January 2007. He is an acknowledged authority on Eurasian energy, in particular on Sino-Russian oil and gas cooperation, China's natural gas industry, and DPRK's offshore oil exploration. (His recent research interest is extended to Russia's Arctic onshore gas development and LNG exports, Iraq's gas development, LNG export and related infrastructure development,

and east Africa's offshore gas development and the related domestic infrastructure development.) He is also currently an associate fellow of the Chatham House Energy, Environment and Development Programme. He is the author of *Gas and Oil in North-East Asia: Policies, Projects and Prospects* (London: Royal Institute of International Affairs, 1995), and co-author/supervisor of *China Natural Gas Report* (China OGP, Xinhua News Agency, and RIIA, 1998). Dr Paik has contributed over 50 papers to a myriad of publications including: *Energy Policy, Journal of Energy and Development, Geopolitics of Energy, The Pacific Review, Oil & Gas Journal, Petroleum Economist, FT Asia Gas Report, China Daily Business Weekly, China Brief, and Asia-Pacific Review*. His book *Sino-Russian Oil and Gas Cooperation: The Reality and Implications* (OIES/OUP 2012) has also been published in Chinese (in January 2013), Korean (in March 2014), and Japanese (in January 2016). In 2013, he was invited to become an adjunct professor by both Yonsei University (South Korea) and China Petroleum University (Beijing). In 2015, he was also invited to become a guest professor by Jilin University.

**Luke Patey**, Lead Senior Research Fellow of the Africa Oil and Gas Programme, is also senior researcher at the Danish Institute for International Studies and fellow at the Rift Valley Institute. He is author of *The New Kings of Crude: China, India, and the Global Struggle for Oil in Sudan and South Sudan* (Hurst 2014), which was shortlisted for the Africa-Asia Book Prize, and co-editor of *Sudan Looks East: China, India, and the Politics of Asian Alternatives* (James Currey 2014) with Daniel Large.

Patey has written for the *Financial Times, Foreign Policy, Foreign Affairs, The Guardian, The Hindu*, and *VICE News*. His commentary has appeared in *Bloomberg, The Wall Street Journal, The New York Times, the Financial Times, Reuters, Al Jazeera*, China Central Television (CCTV), the BBC World Service, and Radio France. He has also published scholarly articles in *African Affairs, the Journal of Modern African Studies, Journal of Contemporary China, Middle East Policy*, and *Third World Quarterly*. He has been a visiting scholar at the Centre d'études et de recherches internationales (Paris), Peking University (Beijing), and the Social Science Research Council (New York). He holds a BSc (Hons.) in commerce from Queen's University (Kingston) and an MSc and PhD from the Copenhagen Business School.

**Beatrice Petrovich**, Research Fellow, joined the OIES in November 2012 after conducting research on European gas hubs with the Institute in August 2012. Her first paper on European gas hub price correlation was published in October 2013. In 2014 and 2015 she published two papers investigating possible barriers to the creation of a single European gas market and the corresponding costs. Later, she published an update on the maturity and competitiveness of European gas markets together with Patrick Heather, Research Fellow at OIES. Since 2016 she has been involved in a joint research project with the research institute ewi, of the University of Cologne, aiming to assess the impact of past and future changes in gas demand and supply patterns on the European gas network and on gas prices; this has resulted into two joint ewi-OIES research papers. Beatrice is researcher and PhD candidate at the Institute for the Economy and the Environment at the University of St Gallen (Switzerland), where she investigates the non-financial motivations behind investment decisions in the energy sector and the implications for policy. Before that, she worked for five years at REF-E, a leading energy consultancy based in Milan (Italy). Among other activities, she specialized in the analysis of the energy market and energy regulation, and contributed regularly to the editing and writing of REF-E specialized publications. She holds an MSc in economics from the University of Milan Bicocca and completed a one-year exchange at the University of Glasgow. While at university, she collaborated on a research project in the field of experimental economics.

**Simon Pirani**, Senior Research Fellow on the OIES Natural Gas Research Programme, joined the Institute in September 2007. His research focuses on the development of natural gas markets, and changing consumption patterns, in the former Soviet Union. He was, most recently, editor of and contributor to *The Russian Gas Matrix: How Markets are Driving Change* (OIES/OUP 2014). Other publications include (as author or co-author) a series of OIES publications on the Ukrainian gas sector and Russo-Ukrainian gas relationships including: the Comment 'What The Ukrainian Crisis Means For Gas Markets' (2014); OIES papers including 'Elusive Potential: Natural Gas Consumption in the CIS and the Quest for Efficiency' (2011), and 'Central Asian and Caspian Gas Production and the Constraints on Export' (2012); and (as editor) the book *Russian and CIS Gas Markets and their Impact on Europe* (OIES/OUP 2009). He studied Russian at the University of London, wrote a doctoral dissertation at the University of Essex, and is the author of *The Russian Revolution in Retreat* (Routledge 2008) and *Change in Putin's Russia: Power, Money and People* (Pluto 2009). Prior to joining the Institute, he worked as a journalist covering the Russian and Ukrainian economies. Since 2012 he has been teaching Russian and Soviet

history at Canterbury Christ Church University. Since 2014, in addition to his work on natural gas markets, he has been undertaking a research project on the global history of fossil fuel consumption from 1950.

**Rahmatallah Poudineh**, Lead Senior Research Fellow of the Electricity Programme, joined the Institute in November 2014 to lead the Electricity Research Programme. He has several years of industrial experience and is the author of numerous academic articles, book chapters, and reports with a focus on industrial organization, policy, and regulation of the electricity sector. He is also co-author of a recent book on the economics of offshore wind power. Rahmat holds a PhD in Energy Economics from Durham University, for which he received the best thesis prize. He also has an MSc in Energy Economics and Policy from the University of Surrey, a Graduate Diploma in Economics and Finance from Queen Mary University of London, and a BSc in Aerospace Engineering from Amirkabir University of Technology (Tehran Polytechnic).

**David Robinson**, Senior Research Fellow, joined the OIES in July 2007. He is a consulting economist who advises on public policy and corporate strategy, especially in relation to energy and climate change. Recent research published by the Institute includes analysis of the following issues, among others: experience meeting the challenges of electricity sector decarbonization in the UK and Spain; problems facing the European electricity sector; a comparison of US and European electricity prices; the implications of the COP21 agreement for the natural gas industry; electricity demand response in Shanghai, China; the challenges of integrating renewable power in Europe; the prospects for coal and natural gas in the US electricity sector; and problems with regulation of wind power in Colombia. David runs his own consulting company (DR Associates), is an academic adviser to The Brattle Group of Economic and Financial Consultants, and was previously a director of NERA, where he was the co-chair of European Operations and of the Global Energy and Telecom Practices. He also worked at the International Energy Agency (IEA), and wrote his doctoral dissertation at the University of Oxford on the vertical disintegration of the international petroleum industry.

**Howard Rogers**, Chairman, Natural Gas Research Programme, joined the Institute in January 2009 and succeeded Jonathan Stern as Director of the Natural Gas Programme in October 2011; he was appointed Chairman and Senior Research Fellow of the Programme in October 2016. Prior to joining the Institute, Howard was with BP for 29 years, mostly in business development, strategy, planning, mergers and acquisitions, and negotiation roles in upstream oil and gas in European, North American, Middle Eastern, and FSU locations. In 1999, Howard joined BP's Gas and Power division and in 2003 he became Head of Global Gas Fundamental Analysis. He has a degree in Chemical Engineering and is a Fellow of the Institution of Chemical Engineers.

Howard has published research papers and authored book chapters on LNG price arbitrage between the regional markets of Asia, Europe, and North America, as well as on shale gas in the USA and UK, the interaction between wind power generation and gas in the UK, and the outlook for gas with CCS. More recently, Howard and Jonathan Stern have jointly written papers on the transition to hub-based pricing in Europe and the changing roles and risks of key players and also on the challenges to JCC pricing in Asian LNG markets.

**Anupama Sen**, Senior Research Fellow, joined the Institute in 2009. Her research interests lie in the applied economics of energy in developing countries, and her research has spanned the oil, gas, and electricity sectors, on which she has published extensively. In addition to OIES papers, her work has appeared in academic journals and professional publications such as the *Energy Journal*, and *Gas Matters*, as well as in several book chapters and Op-Eds. Anupama is a Fellow of the Cambridge Commonwealth Society and has been a Visiting Fellow at Wolfson College, Cambridge. She is also a Region Head on the Asia Pacific Desk at Oxford Analytica. She holds a BA (Hons) from the University of Mumbai, MSc from the London School of Economics, and PhD from Cambridge University where she was a Nehru Scholar.

**Jonathan Stern**, Distinguished Research Fellow of the Natural Gas Research Programme, founded the OIES Natural Gas Research Programme in 2003 and was its Director until October 2011 when he became its Chairman and a Senior Research Fellow; he became a Distinguished Fellow in October 2016. He is honorary professor at the Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee; visiting professor at the Centre for Environmental Policy, Imperial College London; fellow of the Energy Delta Institute, and a Distinguished Research Fellow of the Institute of Energy Economics, Japan (in Tokyo). From 2011–16 he was the EU Speaker of the EU–Russia Gas Advisory Council. He is the author and editor of several books, including: *Natural Gas in Asia: The Challenges of Growth in China, India, Japan and Korea*, the second edition of which was published by OIES/OUP in 2008; co-editor with Bassam Fattouh of *Natural Gas Markets in the Middle*

*East and North Africa* (OIES/OUP 2011); and editor of *The Pricing of Internationally Traded Gas* (OIES/OUP 2012). In 2014, his publications included papers (co-authored with other members of the Gas Programme) 'Reducing European dependence on Russian Gas: distinguishing natural gas security from geopolitics' and 'The dynamics of a liberalized European gas market: determinants of hub prices and roles and risks of major players'. He is author of two chapters in: eds. Anne-Sophie Corbeau and David Ledesma, *LNG Markets in Transition: the Great Reconfiguration*, published by OIES and KAPSARC in 2016. His most recent papers: 'The future of gas in decarbonizing European energy markets: the need for a new approach' and 'Challenges to the future of gas: unburnable or unaffordable?' were published by the Institute in 2017.

**Katja Yafimava**, Senior Research Fellow, joined the OIES Natural Gas Research Programme in November 2006. She holds a DPhil in Geography and an MPhil in Russian and East European Studies from Oxford University. She was an expert at the EU–Russia Gas Advisory Council during 2012–16. Prior to joining the Institute in 2006, she was an intern at Shell and at the Energy Charter Secretariat. She is the author of *The Transit Dimension of EU Energy Security: Russian Gas Transit Across Ukraine, Belarus, and Moldova* (OIES/OUP 2011). She is also the author and co-author of chapters in other books including *The Russian Gas Matrix: how markets are driving change* (OIES/OUP 2014), *Research Handbook on International Energy Law* (Edward Elgar 2014), *The Pricing of Internationally Traded Gas* (OIES/OUP 2012), *Russian and CIS Gas Markets and their Impact on Europe* (OIES/OUP 2009). She is also the author and co-author of several working papers on Russia–Ukraine, Russia–Belarus, and Russia–Moldova gas transit disputes; the latest in this series is a co-authored OIES paper 'Russian gas transit across Ukraine post-2019: pipeline scenarios, gas flow consequences, and regulatory constraints' (2016). She has published several OIES papers on EU and Russian gas regulation including: 'The evolution of gas pipeline regulation in Russia: third party access, capacity allocation and transportation tariffs' (2015), 'The EU Third Package for Gas and the Gas Target Model: major contentious issues inside and outside the EU' (2013), 'The OPAL Exemption Decision: past, present, and future' (2017), 'The EU Competition Investigation into Gazprom's sales to central and eastern Europe: a detailed analysis of the commitments and the way forward' (co-authored) (2017) and, most recently, 'The Council Legal Service's assessment of the European Commission's negotiating mandate and what it means for Nord Stream 2' (2017). She is currently working on a new paper 'Incremental and new pipeline capacity in Europe, and its implications for European security of supply'.

The following staff contributed to the work of the OIES in 2017. Their dedication and professionalism is essential to its continued smooth running.

- **Karen Clark** is responsible for the Institute's accounts.
- **Jo Ilott** provides administrative support for the OIES Natural Gas Research Programme.
- **Susan Millar** manages the Oxford Energy Policy Club and Oxford Energy Seminar.
- **Scott McLachlan** is responsible for the Institute's unique library.
- **Hannah Shipton** provides administrative support.
- **Kate Teasdale** is administrator and company secretary.

# Visiting Research Fellows, Research Associates

**Ali Aissaoui**, Visiting Research Fellow, retired from a long career by returning to the Oxford Institute for Energy Studies as a Visiting Research Fellow. He is also acting as an independent consultant, providing advice in his fields of experience and expertise. Ali has long been involved in extensive research on the political economy of petroleum, with a particular interest in exploring how political, institutional, socio-economic, and technological factors combine to shape energy policy. During recent years, working for a regional multilateral development bank, he has broadened his research perspective and sharpened his focus on energy investment, the investment climate, and financing across the Middle East and North Africa. In addition to informing policy decision-making, Ali regularly shares his research findings and puts them to use as a speaker, discussant, and peer reviewer. His involvement in relevant professional associations has given him opportunities to interact with fellow experts and to keep abreast of fast-changing global trends. In addition to the International Association for Energy Economics, Ali is a member of the Oxford Energy Policy Club, the Arab Energy Club, the Paris Energy Club, and the Algiers Energy Club.

**Robert Arnott**, Research Associate, is currently Executive Chairman of Norway-based Petrolia NOCO plc and IOT AS. He has previously held board-level positions at various E&P companies, most recently with Hurricane Energy plc, Rocksource ASA, Core Energy AS, and Spring Energy AS. He worked as a Senior Fellow at the OIES from 2001 to 2005, focusing on all aspects of mature oil and gas provinces, as well as the corporate strategies of the major upstream energy companies. He has a strong background in all aspects of exploration and production and is recognized for his research into the oil and gas industry. After working as a geologist and economist with Royal Dutch Shell, he began working in the City of London in 1991, holding senior positions as an oil and gas equity analyst at Goldman Sachs and Morgan Stanley for 10 years.

**Juan Carlos Boué**, Research Associate, is an oil industry consultant who started his career working for the international trading arm of *Petróleos Mexicanos* (PEMEX). He rejoined the OIES in 2010, having previously been a fellow at the Institute from 2000 to 2004. His professional activities have focused on petroleum, alternating between academia and industry. From 2005 to 2009, he was special adviser to the Venezuelan energy and petroleum minister and sat on the boards of most of the overseas refining ventures of *Petróleos de Venezuela* (PDVSA). He has written widely on the industrial economics of oil and gas exploration and production, petroleum refining industries, as well as on taxation and the political economy of oil in general. His current research concerns the governance mechanisms and legal structure underpinning the international oil industry. He is author of *A Question of Rigs, of Rules, or of Rigging the Rules? Upstream Profits and Taxes in US Gulf Offshore Oil and Gas* (OIES/OUP 2006).

**Michael Bradshaw**, Senior Visiting Research Fellow, joined the OIES in August 2008 and is also a professor at Warwick Business School, teaching in the global energy MBA programme. Before taking up this post in January 2014, he was professor of human geography at the University of Leicester. His PhD is from the University of British Columbia, Canada. His research is at the interface of economic and political geography, business and management, and international relations. In 2007, he was awarded the Royal Geographical Society's Back Award for his applied research on economic change in post-socialist economies. From 2008 to 2011, he was engaged in a programme of research funded by a Leverhulme Trust Major Research Fellowship that examined the relationship between energy security, globalization, and climate change. This led to the publication of his book, entitled *Global Energy Dilemmas* (Polity Press October 2013). He has also completed projects on the UK's *Global Gas Challenge* (2014) and *The Future Role of Gas in the UK* (2016), funded by the UK Energy Research Centre. He is co-editor of *Global Energy: Issues, Potentials, and Policy Implications*, published by OUP in 2015. He is currently writing a book on the geopolitical economy of natural gas for Polity Press. He is editor-in-chief of Wiley-Blackwell's *Geography Compass* and contributing editor of *Eurasian Geography and Economics*. In addition to his involvement with the OIES, he is an honorary senior research fellow at the Centre for Russian, European and Eurasian Studies at the University of Birmingham.

**Michael Xiaobao Chen**, Visiting Research Fellow, is a leader at Statoil's Marketing and Trading division, after having previously worked with Statoil's global upstream strategy and business development. Before joining Statoil, Michael worked as an energy economist in the Chief Economist Office of the International Energy Agency, leading Asian energy outlook, G20 global fossil fuel subsidy initiatives, and global oilfield decline rate analysis. His areas of expertise include: the Chinese gas and LNG markets; gas pricing; energy reforms and economic transition; strategy of NOCs; ASEAN energy markets; and upstream industry trends. Since joining the Institute in 2011, he has contributed a chapter to *The Pricing of Internationally Traded Gas* (OIES/OUP 2012) and published a paper entitled 'The development of Chinese gas pricing: drivers, challenges and implications for demand' (July 2014). Michael holds an MSc in economics from University College London and an MSc in development from the London School of Economics.

**Sylvie Cornot-Gandolphe**, Research Associate, is an independent consultant on energy and raw materials, focusing on international issues. Since 2014, she has collaborated with the OIES as a Research Fellow. She also works with the Energy Centre of the French Institute of International Relations (IFRI) as a Research Associate, with CycloPe, the reference publication on commodities, and with CEDIGAZ, the international centre of information on natural gas of the Institut Français du Pétrole (IFPEN). Sylvie has a long and proven experience in global gas and energy markets, gained during her past positions at IFPEN/CEDIGAZ, the UN/ECE, the IEA, and ATIC Services. She is the author of several reference publications on energy markets.

**Trisha Curtis**, Research Associate, is the President and co-Founder of PetroNerds, LLC. She co-founded the company in 2015 and began working full time at PetroNerds in January 2016. She was formerly the Director of Research, Upstream and Midstream, at the Energy Policy Research Foundation, Inc. (EPRINC) in Washington, DC. Since 2010, she has led extensive research efforts and major consulting projects, and has authored several reports on the North American upstream and midstream markets.

**Hakim Darbouche**, Research Associate, has been with OMV Upstream since 2013, working in Commercial, M&A, and Asset Management roles in the North Sea, Vienna (Corporate), and the Middle East. Hakim worked at OIES from 2009 to 2012, during which time he led the Institute's research on MENA natural gas markets and North African energy issues. He holds a BA from Sussex University and a PhD from the University of Liverpool.

**Ralf Dickel**, Senior Visiting Research Fellow, has worked as an independent expert on international energy trade since leaving the Energy Charter Secretariat in October 2010. In October 2004, he joined the Energy Charter Secretariat as Director for Transit and Trade, after heading the Energy Diversification Division at the International Energy Agency since 2001, being responsible for policy analysis of energy markets and of energy market reform. Before joining the IEA, he worked as Senior Specialist for Oil and Gas Policy for the World Bank, after a long career with Ruhrgas from 1980 to 1998, where he held various management positions both in the gas purchase and the gas sales departments. He managed and co-authored several publications at the IEA and the Energy Charter, amongst them: *Security of Gas Supply in Open Markets* (IEA 2004) and *Putting a Price on Energy* (Energy Charter 2007).

**John Elkins**, Research Associate, joined the OIES in January 2008 and has edited many of the Gas Programme working papers since then. He wrote the paper 'Natural Gas in the UK: an industry in search of a policy?' published in 2010. Elkins was formerly managing editor of the Gas Strategies publications department, responsible for *Gas Matters*, *Gas Matters Today*, and other publications; he still contributes regularly to *LNG Business Review*. He was for a number of years a regular presenter at the Gas Strategies 'Gas Chain' training course. He joined Gas Strategies as a consultant in 1995 after leaving British Gas HQ, where he held various posts involving liaison with regions on annual and peak forecasting methodology, and preparation of amalgamated national, annual, and peak supply and demand forecasts. He was secretary of the matching panel, which advised the British Gas board on supply/demand issues for company plans and negotiations with Ofgas, OFT, and the Monopolies Commission.

**Chris Le Fevre**, Senior Visiting Research Fellow, joined the OIES in September 2012. He has published working papers on gas storage in Great Britain (January 2013), the potential for natural gas as a transportation fuel in Europe (March 2014), the impact of UK energy policy on the gas sector (September 2015), and methane emissions in the gas industry (July 2017). Chris has worked as an independent energy consultant since 2002, specializing in commercial, strategic, and regulatory issues in the natural gas sector, with particular focus on European and former Soviet markets. Chris has worked in the oil and gas industry for over 30 years. He has

held a variety of positions to executive director level at Transco plc (now National Grid Gas plc) and British Gas. At Transco, he was the director responsible for implementing the 'Network Code' and for the introduction of domestic competition. His roles at British Gas included establishing operations in a number of European countries including Spain, the former German Democratic Republic (East Germany), Hungary, and the Czech Republic. Before British Gas, he worked for Shell in exploration and production companies in the Netherlands and Malaysia. He is also a contributor to Oxford Analytica and, until 2011, sat on the boards of the Northern Ireland Utility Regulator and the South Central Strategic Health Authority.

**Andy Flower**, Research Associate, has been working as an independent consultant since 2001. He specializes in the LNG business, where his areas of expertise include: strategy marketing, project structures, shipping, pricing, supply and demand, and project economics. He retired from BP in 2001 after 32 years, including 22 years working in the company's LNG and natural gas businesses.

**Ieda Gomes**, Senior Visiting Research Fellow, is a researcher and consultant specializing in energy strategy, natural gas and LNG supply, pricing, contracts, and market fundamentals. In a career spanning 30 years in the gas and energy industry, Ieda spent more than 13 years with BP, where she held senior positions, such as: vice president of new ventures for South Asia and the Middle East, president of BP Brasil, and vice president of regulatory affairs for BP Gas and Power. Prior to BP, Ieda was the CEO of the S. Paulo Gas Company (Comgas), the largest gas distribution company in Brazil. Ieda is currently a councillor at the Brazilian Chamber of Commerce in Great Britain, a director at the Department of Infrastructure of the S. Paulo Federation of Industries, a member of the advisory board of Comgas, and sits on the boards of directors of Bureau Veritas, Saint Gobain, Exterran Corporation, and InterEnergy Holdings. Ieda is a senior adviser of the Brazilian think tank FGV Energia and is an active member of International Gas Union (IGU), having served on the executive committee and is currently vice-chair of the Task Force Strategic Communication and Outreach. She has presented at several energy conferences and training courses and she is a member of the programme committee of LNG 19. She is a regular columnist for the specialized magazine *Brasil Energia*. Ieda has a degree in chemical engineering from Universidade Federal da Bahia, an MSc in energy from Universidade de S. Paulo, and a troisième cycle diploma from École Polytechnique Fédérale de Lausanne.

**Marianne Haug**, Senior Research Adviser, teaches energy policy and sustainable development at the University of Hohenheim in Stuttgart, Germany and serves as a member of the HORIZON 2020 Advisory Group on Energy at the European Commission. Following a career at the World Bank in Washington DC (inter alia as director and senior adviser to the president), she served as director at the International Energy Agency (IEA) in Paris (2001–5), and as chairman of the board at the Forum für Zukunftsenergien in Berlin (2006–9). Her present research and advisory interests focus on the innovation dynamics and growth of clean energy within a rapidly changing global economy.

**Charles Henderson CB**, Senior Research Adviser, retired from the Department of Trade and Industry in 1996, where he was head of the energy directorate. He is a former chairman of TOTAL's oil business in the UK (1998–2005) and a former member of the Monopolies and Mergers Commission.

**Paul Horsnell**, Research Associate, is head of commodities at Standard Chartered plc. He was previously managing director and head of commodities research at Barclays Capital, joining in 2003 from his role as JPMorgan's head of energy research. Prior to that, he was assistant director for research at the OIES and a research fellow in economics at Lincoln College, Oxford University. He is the author of *Oil in Asia: Markets, Trading, Refining and Deregulation* (OIES/OUP 1997), and (with Robert Mabro) *Oil Markets and Prices: The Brent Market and the Formation of World Oil Prices* (OIES/OUP 1993). He holds a degree in philosophy, politics, and economics, and a doctorate in economics, both from Keble College, Oxford.

**Mari Luomi**, Research Associate, is a Senior Research Fellow at the Emirates Diplomatic Academy (EDA), Abu Dhabi. Specializing in the politics and political economy of natural resources and the environment, Dr Luomi is an expert on international climate politics and climate and energy policy in the Gulf Cooperation Council nations. She holds a PhD in Middle Eastern Studies and has worked for research institutes in the fields of international affairs, regional studies, and energy studies in Finland, Qatar, and the UK. Dr Luomi was formerly the Vice-President of the Finnish International Studies Association, Researcher at the Finnish Institute for International Affairs, Post-Doctoral Fellow at Georgetown University in Qatar, and Research Associate with the OIES, to name just a few. As part of a team of thematic experts, she has provided independent reporting

on-site from intergovernmental negotiations on climate change; she has also written hundreds of news stories on multilateral developments in the fields of climate change and sustainable energy policy globally.

Her research publications include a broad range of working and briefing papers, academic journal articles, essays, books, and book chapters. She is also the co-editor of the recently-published volume *The Green Economy in the Gulf* (Routledge 2015).

**Richard Mallinson**, Research Associate, leads analysis of geopolitics and global energy policy at Energy Aspects, where he is also a founding partner. He is a specialist on the MENA region, and follows developments in Libya, Iran, and Iraq particularly closely. Richard focuses on how geopolitical events and trends impact on energy market fundamentals, particularly global oil markets. Prior to joining Energy Aspects, Richard spent more than six years working in central government functions in both the UK and Australasia. He has a deep understanding and track record of impact in all aspects of policy-making and analysis. He regularly provides media comment on geopolitical events and energy markets in publications such as the *Financial Times* and *Wall Street Journal* as well as appearing on CNBC, Bloomberg, the BBC, Sky News, and others. Richard holds a BA in Politics and International Studies from the University of Warwick and is a member of the Royal Institute of International Affairs (Chatham House).

**Michal Meidan**, Research Associate, leads analysis of Asian energy policies and geopolitics, with a particular focus on China. Before joining Energy Aspects in January 2016, she headed China Matters, an independent research consultancy providing analysis on the politics of energy in China. Prior to that, Michal held senior analytical roles at Eurasia Group in New York and London, and at Asia Centre-Sciences Po, Paris. She has authored numerous academic articles and edited the book *Shaping China's Energy Security: The Inside Perspective* (Asia Centre 2007). Michal also regularly provides comments for a wide variety of media outlets and is featured as a speaker at industry conferences. Michal holds a PhD in Political Science and East Asian studies from Sciences Po, Paris. She is an associate fellow at OIES. She is fluent in Mandarin, Hebrew, and French.

**Robin Mills**, Research Associate, is CEO of Qamar Energy (Dubai). He is an expert on Middle East energy strategy and economics. He is the author of two books: *The Myth of the Oil Crisis* (Praeger 2008) and *Capturing Carbon* (Hurst 2011), columnist on energy and environmental issues at The National, and comments widely on energy issues in the media, including the *Financial Times*, *Foreign Policy*, *Atlantic*, CNN, BBC, Bloomberg, and others. He worked for a decade for Shell, concentrating on new business development in the Middle East, followed by six years with Dubai Holding and the Emirates National Oil Company. He is a Fellow of the SIPA Center on Global Energy Policy at Columbia University, Senior Fellow of the Iraq Energy Institute, and was non-Resident Fellow for Energy at the Brookings Doha Center.

He holds a first-class degree in Geology from the University of Cambridge and speaks five languages including Arabic and Farsi.

**John Mitchell**, Research Associate, is also an associate research fellow at Chatham House. In November 2007, he received a lifetime achievement award for research from Saudi Arabia's King Abdullah at the opening of the Third OPEC Summit in Riyadh. He retired in 1993 from British Petroleum, where he held roles including: special adviser to the managing directors, co-ordinator for BP's subsidiaries in the western hemisphere, and head of BP's Policy Review Unit. In 1976–7, he was an academic visitor in the Department of Economics at the University of Cambridge. Mitchell is the author of numerous reports and briefing papers.

**Tatiana Mitrova**, Senior Visiting Research Fellow, is Director at the Energy Center (Skolkovo Business School), Head of Research in the Energy Research Institute of the Russian Academy of Sciences (ERI RAS), and Fellow at the Center on Global Energy Policy (Columbia University). Dr Mitrova has 20 years of experience in dealing with the development of Russian and global energy markets, including production, transportation, demand, energy policy, pricing, and market restructuring. She is leading the annual 'Global and Russian Energy Outlook Up To 2040' project. Dr Mitrova is a member of the Governmental Commission of the Russian Federation on the Fuel and Energy Complex. Dr Mitrova is a graduate of Moscow State University's Economics Department. She is an Assistant Professor at Gubkin Oil and Gas University and Visiting Professor at the Institut d'Études Politiques de Paris (Sciences Po) Paris School of International Affairs. She has more than 120 publications in scientific and business journals and four books.

**Donna Peng**, Research Associate, is an analyst at Aurora Energy Research. Before joining Aurora in July 2017, she worked with the Oxford Institute for Energy Studies as a Research Fellow, specializing in the analysis of extended gas-to-power value chains under different institutional and political contexts (the UK, China, Nigeria, Tanzania, and Bangladesh). Donna holds degrees in engineering, policy analysis, and economics from Delft University of Technology, Comillas Pontifical University, University of Waterloo, and McGill University.

**Jun Rentschler**, Visiting Research Fellow, is an Economist (YP) at The World Bank, working at the intersection of climate change and sustainable resilient development. Prior to joining The World Bank, he was a Doctoral Researcher at University College London (UCL), as well as a visiting research fellow at the Graduate Research Institute for Policy Studies in Tokyo. He also spent two years as a consultant at the European Bank for Reconstruction and Development (EBRD), working on energy efficiency and climate change projects. Before this, he worked as an economic adviser at the German Foreign Ministry, where he focused on economic and energy policy. Jun holds a MSc and a PhD in economics from UCL, specializing in the fields of development, climate, and energy. He has published widely on these topics, including in academic journals; his book *Fossil fuel subsidy reforms: A guide to economic and political complexity* is to be published by Routledge in 2018.

**Gulmira Rzayeva**, Research Associate, is a senior research fellow at the Center for Strategic Studies (SAM) under the President of the Republic of Azerbaijan, and Expert/Advisor of the World Energy Council's Global Gas Center based in Geneva. She is also on the board of directors of the newly established Institute for Effective Governance and Stabilization, based in Stockholm, Sweden and the Trade Forest trading company, based in London. Her areas of expertise include energy security (covering issues such as the energy policy of Azerbaijan and the Black Sea/Caspian region), the Turkish domestic natural gas market, and the south-east European gas market. As part of her engagement in these fields, she has worked at the Moscow Carnegie Center as a visiting research fellow and at the Aleksanteri Institute, Helsinki University.

**Ivan Sandra**, Research Associate, is CEO of Sierra Oil and Gas, a Mexican independent oil and gas company. Prior to becoming CEO of Sierra, Ivan held a number of leadership and technical positions, including senior partner at EY London (where he was responsible for global oil and gas in emerging markets) and president at Energy Intelligence. Until mid-2011, he was vice president of global strategy and business development at Statoil. He played an important role in Statoil's strategy re-set and in the origination of business development and M&A efforts worldwide. Prior to Statoil, he held other positions in industry, including: head of oil supply at OPEC, whom he represented at the UNECE Expert Group on Resource Classification at the UN in Geneva; vice president in the O&G investment banking team at Citigroup; associate vice president for oil and gas equities at Merrill Lynch; exploration geologist at BP; and commercial positions in Venezuela, Norway, and Egypt. He is an active member of the Oxford Energy Policy Club and of the Energy Policy Research Foundation, Inc. (EPRINC) in Washington DC, while in academia he is co-founder, board member, and lecturer in strategy at the executive energy MBA program at Vienna's Wirtschaftsuniversität (WU), and lecturer at the Executive Energy Program at Mexico's ITAM University. He has published and contributed to a number of books and publications. Ivan holds a BSc in geology from Baylor University, an MSc and MBA from Edinburgh University, and has attended the Berkeley Executive Leadership Program at the University of California at Berkeley.

**Amrita Sen**, Research Associate, is the founding Partner and Chief Oil Analyst at Energy Aspects. Amrita leads Energy Aspects' analysis and forecasting of crude and products markets. Her specialism is in energy commodities, particularly oil and oil products. Amrita's deep understanding of the complex relationships within the global energy sector and her wealth of industry contacts, together with 10 years of experience, allow for a unique perspective on market outlook. She holds an MPhil in Economics from Cambridge University, a BSc in Economics from the University of Warwick, and is pursuing a PhD in Economics at the School of Oriental and African Studies, University of London. She is a non-resident Senior Fellow at the Atlantic Council and was formerly Chief Oil Analyst for Barclays Capital. She is frequently featured in leading media outlets, including the *Financial Times*, BBC News, Reuters, Bloomberg, CNBC, *The Wall Street Journal*, and Sky News, and at leading industry events as a speaker, and is regarded as a leading authority on oil markets.

**Manal Shehabi**, Visiting Research Fellow, is a PhD candidate in economics at the University of Western Australia and holds IPRS and APA scholarships from UWA and the Australian government. She holds an MIA-Economics from the School of Government and Public Services at Texas A&M University; a BA (Hons) *magna cum laude* from Ursinus College, where she was a Queen Noor-Ursinus College Scholar; and diplomas from Harvard Business School Publishing and France's Université Marc Bloch. Her research focuses on the

economics of resource-rich countries, energy economics, applied macroeconomics, economy-wide modelling, and the political economy of petrostates. Her current research project quantifies the impact of petroleum price volatility on the Kuwaiti economy, and evaluates economic and energy policies through economy-wide general equilibrium modelling. Her work also spans energy-labour linkages, sovereign wealth funds, and the under-researched post-Gulf War economic recovery of Kuwait. Manal has expertise in energy and mining multinationals' transfer pricing; this was gained while working as an economist consulting for a Big Four professional services firm in the USA and Australia and then as the in-house expert for a multinational oil and mining services company. Prior to that, she successfully launched and managed a business public policy project in Texas, and researched investments in the oil industry in west Asia at UNCTAD.

**Adnan Shihab-Eldin**, Research Associate, is the director general of the Kuwait Foundation for the Advancement of Sciences (KFAS) and OPEC's former acting secretary general/director of research. He had served earlier as director of the IAEA's Department of Technical Co-operation (Vienna), director of UNESCO's Regional Office for Science and Technology (Cairo), director general of the Kuwait Institute for Scientific Research, and vice rector of Kuwait University (Kuwait). Dr Shihab-Eldin serves as board member/adviser to many national and international institutions and corporations. He received a BSc in electrical engineering, and an MSc and PhD in nuclear engineering, all from the University of California at Berkeley. He has published extensively and is a regular invited speaker at many international and regional meetings, covering many fields, including: energy policy, economics, technology and the environment; oil markets; nuclear power; and the management and development of science and technology in developing countries.

**Ian Skeet**, Research Associate, is a consultant to the OIES and former editor of *Oxford Energy Forum*. Between 1953 and 1985 he worked for Shell, where he was in charge of government and international relations from 1975 to 1985. Widely travelled in the Middle East, his publications include *Oman and Muscat: End of an Era* (Faber 1974) and *OPEC: Twenty-Five Years of Prices and Politics* (CUP 1988).

**Robert Skinner**, Research Associate, is a former director of OIES and has previously held roles as vice president of Oil Sands TOTAL E&P Canada Ltd, director of the International Energy Agency's policy office, assistant deputy minister for energy commodities (Canadian Government), and senior vice president at Statoil Canada. He is an executive fellow at the School of Public Policy, and energy research strategy adviser, at the University of Calgary, and he consults for industry, governments, and academic institutions in Canada and abroad through Kimacal Energy Strategies, his private consultancy based in Calgary. He is on the external advisory board of the Center for Energy Economics of the Bureau of Economic Geology at the University of Texas.

**Brian Songhurst**, Research Associate, has an honours degree in chemical engineering from Imperial College London and is a fellow of the Institution of Chemical Engineers. He has 50 years of experience in the oil and gas industry, working for engineering contractors, operators, and specialist consultants. He is a past chairman of the Institution of Chemical Engineers Special Interest Group for Oil and Natural Gas (SONG), which provides technical networking among its members to deliver best practices within the chemical engineering community. He has held senior positions in engineering, projects, and sales, and has led engineering and process design teams for gas processing, offshore oil and gas, refinery, and petrochemical facilities around the world. He recently retired and his last position was director of LNG for London-based consultancy ThyssenKrupp Uhde Energy and Power, for whom he managed a variety of LNG projects for both onshore and offshore (FLNG) applications. He was previously engineering manager with MW Kellogg, one of the world's leading LNG contractors, and facilities engineering manager with J Ray McDermott, one of the world's leading offshore contractors.

**Paul Stevens**, Research Associate, was educated as an economist and specialist on the Middle East at Cambridge and at SOAS. From 1973 to 1979, he taught at the American University of Beirut in Lebanon, interspersed with two years as an oil consultant. From 1979 to 1993, he lectured in economics at the University of Surrey, after which he became professor of petroleum policy and economics at the University of Dundee's Centre for Energy, Petroleum and Mineral Law and Policy (a chair created by BP), where he was appointed to an emeritus chair in January 2008. He has now joined, on a part-time basis, Chatham House in London as distinguished fellow. He has published extensively on energy economics, the international petroleum industry, economic development issues, and the political economy of the Gulf. He also works as a consultant for many companies and governments.

**Philip Wright**, Research Associate, is a fellow of the UK's Energy Institute and was formerly professor, then honorary professor, of energy policy and economics at the University of Sheffield. Over more than three decades, his research, publications, consultancy, and teaching have covered the gamut of energy industries and companies that operate in them. As well as contributing a critical perspective on the liberalization of gas and electricity industries, his work has also addressed the fiscal regime of UK oil and gas. His views and expertise have been sought by government organizations, international organizations, companies, trade unions, and universities in Europe and Latin America. Fluent in French and Spanish, he has been a visiting professor at the University of Montpellier 1 and at the University of Cartagena de Indias, Colombia. He is currently scientific director at the Observatorio del Caribe Colombiano in Cartagena de Indias, where he has been involved in various projects to improve the performance of the electricity supply in the nation's Caribbean region. These have included the development of a monitoring system to provide early warnings of problems which would delay the timely commissioning of new electricity network investment projects and, with his colleague Carmen Ocampo, an evaluation of the impact of a government electricity subsidy designed to assist the very poorest of households. Most recently, he and his colleague Lina Moyano, have written a study of the extent to which Colombia's new system of distributing resource industry royalties has had a direct impact on poverty in its Caribbean region.

# Accounts

## STATEMENT OF FINANCIAL ACTIVITIES (INCORPORATING AN INCOME AND EXPENDITURE ACCOUNT)

For the Year Ended 31 December 2017

### Independent Auditors Statement To The Members of Oxford Institute For Energy Studies

	Unrestricted funds £	Endowment funds £	Total 2017 £	Total 2016 £
<b>Income from:</b>				
Voluntary income	678,931	-	678,931	477,816
Incoming resources from charitable activities	670,346	-	670,346	555,031
Incoming resources from investments	229,825	-	229,825	206,093
<b>Total income</b>	<b>1,579,102</b>	<b>-</b>	<b>1,579,102</b>	<b>1,238,940</b>
<b>Expenditure on:</b>				
Raising funds	41,567	-	41,567	37,697
<u>Charitable activities</u>				
Projects and publications	831,611	-	831,611	843,294
Support costs	396,339	-	396,339	333,489
<b>Total charitable expenditure</b>	<b>1,227,950</b>	<b>-</b>	<b>1,227,950</b>	<b>1,176,783</b>
Other expenditure	31,791	-	31,791	28,283
<b>Total resources expended</b>	<b>1,301,308</b>	<b>-</b>	<b>1,301,308</b>	<b>1,242,763</b>
Net gains/(losses) on investments	436,718	303,169	739,887	651,535
<b>Net movement in funds</b>	<b>714,512</b>	<b>303,169</b>	<b>1,017,681</b>	<b>647,712</b>
Fund balances at 1 January 2017	3,453,740	3,937,364	7,391,104	6,743,392
<b>Fund balances at 31 December 2017</b>	<b>4,168,252</b>	<b>4,240,533</b>	<b>8,408,785</b>	<b>7,391,104</b>

The statement of financial activities includes all gains and losses recognised in the year.

All income and expenditure derive from continuing activities.

**OXFORD INSTITUTE FOR ENERGY STUDIES  
(REGISTERED NUMBER: 01676971)**

**Statement of Financial Position**

**At 31 December 2017**

	2017		2016	
	£	£	£	£
<b>Fixed assets</b>				
Tangible assets		29,142		15,398
Investments		7,760,584		6,832,549
		<u>7,789,726</u>		<u>6,847,947</u>
<b>Current assets</b>				
Debtors	28,437		30,084	
Cash at bank and in hand	781,561		629,267	
	<u>809,998</u>		<u>659,351</u>	
<b>Creditors: amounts falling due within one year</b>				
Taxation and social security	18,653		23,453	
Other creditors	94,036		44,892	
Deferred income	78,250		47,849	
	<u>190,939</u>		<u>116,194</u>	
Net current assets		<u>619,059</u>		<u>543,157</u>
<b>Total assets less current liabilities</b>		<u><u>8,408,785</u></u>		<u><u>7,391,104</u></u>
<b>Capital funds</b>				
Endowment funds - general		4,240,533		3,937,364
<b>Income funds</b>				
Unrestricted funds		4,168,252		3,453,740
		<u>8,408,785</u>		<u>7,391,104</u>

The financial statements were approved by the Trustees on .....

.....  
Prof R Ainsworth  
Trustee

.....  
L A Whitehead  
Trustee

**Company Registration No. 01676971**

**OXFORD INSTITUTE FOR ENERGY STUDIES  
(REGISTERED NUMBER: 01676971)**

**Statement of Cash Flows**

**At 31 December 2017**

	<b>2017</b>		<b>2016</b>	
	£	£	£	£
<b>Cash flows from operating activities</b>				
Cash generated from/(absorbed by) operations		140,282		(63,764)
<b>Investing activities</b>				
Purchase of tangible fixed assets	(29,665)		(13,461)	
Purchase of investments	(629,706)		(807,411)	
Proceeds on disposal of investments	441,558		639,332	
Interest received	229,825		206,093	
		<u>12,012</u>		<u>24,553</u>
<b>Net cash generated from investing activities</b>				
<b>Net cash used in financing activities</b>		-		-
		<u>152,294</u>		<u>(39,211)</u>
<b>Net increase/(decrease) in cash and cash equivalents</b>				
Cash and cash equivalents at beginning of year		629,267		668,478
<b>Cash and cash equivalents at end of year</b>		<u><u>781,561</u></u>		<u><u>629,267</u></u>

## **Independent Auditor's Statement to the Members of Oxford Institute for Energy Studies**

We have examined the summary financial statement for the year ended 31 December 2016.

### **Respective responsibilities of Trustees and auditor**

As explained more fully in the statement of Trustees responsibilities set out in the full annual financial statement, the Trustees, who are also the directors of Oxford Institute for Energy Studies for the purposes of company law are responsible for the preparation of the accounts and for being satisfied that they give a true and fair view.

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### **Opinion on other matter prescribed by the Companies Act 2006**

In our opinion, the summary financial statements are consistent with the full annual financial statements of Oxford Institute for Energy Studies for the year ended 31 December 2016 and complies with the applicable requirements of section 427 of the Companies Act 2006, and the regulations made thereunder.

Jonathan Cross FCA (Senior Statutory Auditor)  
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Chartered Accountants & Statutory Auditors  
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London  
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