

Global Energy Governance Reform and China's Participation

FINAL REPORT

**Energy Research Institute, NDRC;
Grantham Institute, Imperial College London**

June 2016

CONTENTS

EXECUTIVE SUMMARY	3
BACKGROUND	4
PROGRESS IN ENERGY GOVERNANCE DURING THE PROJECT PERIOD.....	5
Introduction.....	5
The Brisbane Summit of November 2014	5
International Energy Agency (IEA) and the Association	5
China's Engagement	6
A FIT FOR PURPOSE STRUCTURE	6
THE NEXT STEPS.....	7
G20 and ESWG	7
The International Energy Agency	8
The International Energy Forum	8
Energy Charter	9
China's Engagement in Energy Governance	9
Annex 1 PROJECT GUIDANCE AND SUPPORT GROUPS.....	10
Project Steering Committee	10
Senior Consultation Group in China	10
British Embassy in Beijing	10
Administration	10
Annex 2 G20 Principles on Energy Collaboration	11
Annex 3 the Activation of Association with IEA.....	12
Joint Ministerial Declaration on the occasion of the 2015 IEA Ministerial meeting.	12
What Association provides	12
- Participation in the IEA Meetings.....	12
- Training and Capacity Building	13
- Opportunities to work as secondee at the IEA Secretariat	13
- Energy Technology Network, Implementing Agreements and others.....	13
- Energy Efficiency Programme.....	13
Association will mark a new era of enhanced collaboration in three initial shared areas.....	13
- Energy Security	13
- Energy Data and Statistics	13
- Energy Policy Analysis.....	13
Next Ministerial Meeting.....	13
Annex 4 Acknowledgements.....	15

EXECUTIVE SUMMARY

This is the final report of a joint project on global energy governance reform and China's participation, involving China's Energy Research Institute (ERI) and the Grantham Institute at Imperial College London.

The project has had the benefit of an international senior Steering Committee and of a Senior Consulting Group in China. We have travelled widely and have engaged leading policy makers and experts around the world. As part of this process, we have issued three consultation documents.

The project has promoted more inclusive global energy governance and enhanced Chinese engagement. There has been significant progress in all the main areas where we and our Steering Committee have advocated change. We have been a part of the dialogue that has stimulated these changes and our contribution has been widely recognised. We believe that the international community will be better able to tackle global energy challenges, and China will have a more satisfactory role, as a result of these efforts.

The G20 has adopted its "G20 Principles of Energy Collaboration" and has called for international energy institutions to become more representative and inclusive. The role of the G20 energy working group has been enhanced, and G20 Energy Ministers now meet regularly.

China and the International Energy Agency (IEA) have activated their Association, and have developed a close relationship. China's National Energy Administration and IEA have agreed to set up an IEA-China Centre in Beijing and a senior Chinese energy official from National Energy Administration (NEA) is now working at the IEA in Paris. The IEA has set itself on course towards building a truly global energy organisation.

The Secretariat of the International Energy Forum will be headed by a Chinese national very soon, and China has signed the declaration of the International Energy Charter.

A fit for purpose global energy architecture is beginning to emerge. But there is more to do. The next steps that we recommend include:

- A programme of work at the G20 to deliver on the G20 Principles, initially under China's Presidency in 2016.
- Successful implementation of the IEA's Association with China and the potential IEA-China Centre.
- Taking forward the IEA's evolution so that the IEA can eventually become a genuinely global body.
- Continuing enhancement of the roles of the International Energy Forum and the Energy Charter.
- Continuing enhancement of China's capability to engage in global energy governance.
- Continuing progress of the different international energy organizations (G20, APEC, IEA, IEF, EC, OPEC, IRENA, WEC, IAEA, etc.) towards closer cooperation and a more united approach to maintaining world energy security.
- Making use of existing financial organizations, like World Bank (WB), Asia Development Bank (ADB), International Monetary Fund (IMF), Asia Infrastructure Investment Bank (AIIB), New Development Bank (NDB), etc., as the powerful support in the programme or projects of global energy governance.

- Paying more attention to the industry as the implementing entity for achieving the goals of global energy governance, including the energy unions or associations like World Energy Council (WEC), World Petroleum Council (WPC), International Gas Union (IGU), International Green Energy Association (IGEA), World Coal Association (WCA), International Hydropower Association (IHA), World Wind Energy Association (WWEA), World Nuclear Association (WNA), World Association of Nuclear Operators (WANO), International Association for Energy Economics (IAEE), Global Energy Interconnection Development & Cooperation Organization (GEIDCO), etc.

Although this report signals the end of this particular project, the ERI and the Grantham Institute plan to continue to collaborate on energy governance issues and also intend to publish a book on the subject later in 2016.

BACKGROUND

“Global Energy Governance Reform and China’s Participation” has been a joint project of the Energy Research Institute of the NDRC and the Grantham Institute, Imperial College London. The project has run from 2013 to 2016. The project has been funded by the British Foreign Office Prosperity scheme, and we have been grateful for the support and assistance of embassy staff.

The project team has visited Beijing, London, Washington, Paris, New York, Brasilia, Canberra, Brussels, and Berlin and engaged with policy makers and experts around the world. We have conducted a number of workshops in Beijing and we have presented on two occasions to the Energy Sustainability Working Group (ESWG) of the G20. We have issued three Consultation Reports in [November 2014](#), [November 2015](#), and [March 2016](#). The November 2014 Report includes the statement of our Steering Committee.

Global energy governance has developed substantially over the period of our work, broadly on the lines that we have recommended. We are not, of course, claiming that all these major developments have been due to our project, but we believe that it has been a significant part of the dialogue, and in that we have been encouraged by the comments of leading participants.

We are grateful for the guidance of our Steering Committee, co-chaired by Lord Browne of Madingley and Minister Guobao Zhang, and of our Senior Consulting Group led by Wenke Han, Director General of the Energy Research Institute, and for the continuing support and assistance of officials of the British Embassy in China. (Annex 1)

However, the contents of this Final Report remain the sole responsibility of the Project Leaders;

- Prof. Yufeng Yang, Research Professor of Energy Research Institute of the NDRC, China.
- Mr Neil Hirst, Senior Policy Fellow of the Grantham Institute, Imperial College London.

Although this is the final report of this FCO Prosperity Project, collaboration between the ERI and the Grantham Institute on global energy governance will continue and we are planning a substantial publication later in 2016.

PROGRESS IN ENERGY GOVERNANCE DURING THE PROJECT PERIOD

Introduction

As set out in our first report, we believe that global energy governance has not kept pace with the changes in world energy. In their statement of November 2014 our Steering Committee asserted that there was a clear need for more inclusive structures that would enable China and other major developing nations to assume a position which befits their roles in energy markets. The Committee called on the G20 to deliver a strong message on the need for change and adopt a continuing leadership role in bringing it about. They also called for a process of consultation to enable the IEA to open its doors to major developing nations and to evolve into an inclusive body for international energy cooperation.

In our first report we also recommended that China should cultivate a modern energy governance capacity and should gradually become deeply involved in global energy governance, making full use of existing international frameworks.

Since then there has been considerable progress towards these goals.

The Brisbane Summit of November 2014

Under the 2014 Australian presidency, the G20 made three important contributions to the global energy governance.

Firstly, the Brisbane Summit communique put energy governance firmly on the G20 agenda with its agreed "G20 Principles on Energy Collaboration" (attached at Annex 2). Leaders agreed that "international energy architecture needs to reflect better the changing realities of the world energy landscape" and committed themselves to "work together to make international energy institutions more representative and inclusive of emerging and developing economies". Amongst other key statements on energy policy they also agreed to "enhance coordination between energy institutions".

Secondly, they inaugurated regular meetings of G20 Energy Ministers.

And thirdly they consolidated the role of the G20's Energy Sustainability Working Group (ESWG) of senior officials, which has continued to meet regularly and discuss a wide range of energy topics.

International Energy Agency (IEA) and the Association

At the Ministerial meeting of the IEA in November 2015 China, together with Indonesia and Thailand, formally activated their Association with the IEA (attached at Annex 3). Ministers described this as a "profound transformation". The Association provides for cooperation across almost all areas of energy policy and technology and for participation in the deliberations of the IEA at senior level.

Since then the IEA and China's National Energy Administration (NEA) have set out to build a Joint Energy Centre located in Beijing. This is now in process.

Ministers also announced that the activation of the Association was "a first step towards building a truly global energy organisation".

In June 2016 the Clean Energy Ministerial (CEM) set out their new Framework, in which they anticipate that the IEA will serve as the host for their Secretariat. The CEM includes a range of major developing and developed nations, as well as oil consumers and producers. This also represents a significant step in the opening up of the IEA to serve a more fully international group.

China's Engagement

China has long urged that the G20 should contribute to global energy governance. China has played a full part in recent developments and, of course, as G20 President, has a leading role in 2016.

The IEA Association and the potential IEA-China Centre with the IEA also represent significant enhancements of China's engagement in global energy governance. The appointment of Mr Yang Lei, a senior official from China's National Energy Administration, to work at the IEA Secretariat in Paris is a further significant step forward.

The appointment of Dr Xiansheng Sun, from the Research Institute of the China National Petroleum Institute, as the new Secretary General of the International Energy Forum is a further important sign of China's growing engagement and influence.

China has also engaged closely with the Energy Charter Treaty. Prof Yufeng Yang (co-leader of this project), has been engaged in research work at the Energy Charter Secretariat in Brussels, as a senior fellow, during 2015, and in May 2015 China became a signatory of the International Energy Charter, a non-binding statement of Charter objectives. Since early July 2016, the Energy Charter Secretariat has been engaged in drafting an MOU, together with Energy Research Institute (ERI), for a new Energy Charter Research Center to be affiliated to the ERI.

The report of Ms Julia Xuanatong Zhu, a Chinese official recently seconded to the IEA, on "China's Engagement in Global Energy Governance" (available on the IEA website) gives a comprehensive account of how China is playing a more influential role in global energy governance and has sought membership in, or established co-operation with, 26 entities.

A FIT FOR PURPOSE STRUCTURE

From these developments, the outlines of a fit for purpose global energy governance architecture is beginning to emerge. Key features of this would be;

- Leadership at the highest level from the G20
- The ESWG and the G20 Energy Ministerial, in support of the G20, as forums for reviewing global energy issues, proposing G20 initiatives, tasking international energy bodies, and facilitating cooperation between them.
- The IEA as a global body for analysis, policy and technology research and coordination, and emergency management acting, as requested, as a secretariat to the G20.
- The IEF, with most comprehensive membership, facilitating producer/consumer relations and global energy data collection, and coordinating joint work of other bodies, especially the IEA and OPEC, as requested in support of G20.
- The Energy Charter as a body with a specific legally binding framework for protecting international energy investment and transit gradually extending its global influence, especially in the Asia Pacific Region and Africa.

- Other important bodies, including the CEM, the International Renewable Energy Agency (IRENA), the International Partnership for Energy Efficiency Cooperation (IPEEC), World Energy Council (WEC), and the Global Carbon Capture and Storage Institute (GCCSI), pursuing their own well defined roles.
- Overall, an increasing degree of cooperation, and avoidance of overlap, between existing organisations facilitated through the guidance of the ESWG.

Each of the various bodies will, of course, continue to have its own governing body that determines its priorities and programmes.

There are another two dimensions that play a very important role in driving global energy governance forward. One is the financial organization, the other is industry.

- For any international energy organization, in order to realize its objectives, for example, to maintain the global energy security, to realize the energy (electricity) access in undeveloped countries and regions, to mitigate the global climate change, etc. , they should make use of existing financial organizations, like the World Bank (WB), Asia Development Bank (ADB), International Monetary Fund(IMF), Asia Infrastructure Investment Bank (AIIB), New Development Bank (NDB), etc. Because in implementing large programmes or projects, especially large engineering project, we always need financial support or a financial mechanism.
- Another important dimension is industry, because any good international collaboration cannot leave out the implementing entity, the enterprises. So the energy unions or associations will become more important for achieving the goals of global energy governance. For example, the World Energy Council (WEC), World Petroleum Council (WPC), International Gas Union (IGU), International Green Energy Association (IGEA), World Coal Association (WCA), International Hydropower Association (IHA), World Wind Energy Association (WWEA), World Nuclear Association (WNA), World Association of Nuclear Operators (WANO), International Association for Energy Economics (IAEE), Global Energy Interconnection Development & Cooperation Organization (GEIDCO), etc.

THE NEXT STEPS

G20 and ESWG

The G20 has started to develop its programmes for delivering its agreed Principles on Energy Collaboration. The Chinese Presidency is expected to pursue programmes of work in the areas of energy access, renewables, and energy efficiency, building on the work of the Australian and Turkish Presidencies.

Our most recent report of March 2016 contains our suggestions on how the G20 might contribute in the areas of energy R&D, security, and investment, and how the G20 could support the implementation of the agreement reached in 2014 at the Paris climate summit.

We also propose the creation of a G20 Energy Scholars Syndicate (G20- ESS) to facilitate on-going high level dialogue among the major states on crucial issues affecting the energy world. This would enable senior scholars, nominated by member states, to communicate directly and efficiently through a dedicated website. The ESS would offer analysis and insights to prepare the ground for the work of the ESWG.

One idea under consideration at the ESWG is that the G20 should seek advice from the IEA and IPEEC on how they could together create a unified Hub to deliver the G20 Action Plan on Energy Efficiency as well as the UN's energy efficiency Sustainable Development Goal. This seems an excellent example of the ESWG working to promote the efficient coordination of energy bodies on an important topic, and we think that it deserves serious consideration.

The International Energy Agency

Bringing the IEA up to date for the modern world is a vital element of global governance reform. The activation of the Association with China and others, is a most important development.

Delivering the benefits of the Association, including the IEA/China Centre in Beijing, should be regarded as a top priority.

We welcome the announcement by IEA Ministers that the activation of the Association is "a first step towards building a truly global energy organisation". There are strong reasons for building on existing bodies as far as possible in the development of energy governance, but if the IEA is not able to evolve in this way alternative structures will have to be considered.

This will not be an easy process. Members of the IEA will value its existing strengths. Potential partners may wonder whether the IEA can ever throw off the "DNA" of a restricted OECD body. The process is a matter for the Governing Board of the IEA, however, we believe that Chinese authorities, and indeed those of other major developing nations, should be willing to contribute their views, if requested.

In our report of March 2016 we set out a number of technical options that are open to the IEA to bring its framework up to date and widen participation. Some of these require amendments to the IEA's formal Treaty (the International Energy Programme of 1974), but others do not. The main hurdle is not the Treaty, but the need for all 29 members to agree on the desired framework for the future.

We hope that the next meeting of the Governing Board at Ministerial level, due in 2017, will take a further significant step forward.

The International Energy Forum

The recent election of Dr Xiansheng Sun as the Secretary General of the International Energy Forum will open up new opportunities to strengthen and enhance the organisation.

The IEF has the most comprehensive membership of all the energy organizations and its biennial meetings are the world's premier gatherings of Energy Ministers. Besides supporting these meetings, the IEF has three crucial roles in energy governance: to promote consumer/producer dialogue, to coordinate the gathering of energy data through the Joint Organisations Data Initiative (JODI), and to coordinate other joint activities, especially between OPEC and the IEA. This kind of coordination will become increasingly important in support of the G20 and the ESWG as they develop their leadership roles on energy governance.

Governments can improve the transparency and efficiency of oil and gas markets and perhaps moderate their volatility through the strengthening of these IEF coordinating activities. Governments should now be prepared to give the necessary support for a well-defined

programme of work that enables the IEF to deliver its unique contribution. There is great potential for the IEF to extend its functions, including the modelling of JODI data to provide useful and influential analysis and information.

Energy Charter

China should continue its close engagement with the Energy Charter Organisation, and participation in the process of modernisation, with a view to eventual accession. China will have to consider the legal implications carefully before full accession and, especially in view of the reform of the Chinese energy sector that is in process, accession is probably some years away. There are a number of preparatory steps available to China in the meanwhile. As a full member of the Charter, China will have the opportunity to be highly influential in its future development. Under the present sluggish state of the world economy, China has put forward the One Belt and One Road Initiative. This means there will be more and more overseas energy investment and energy transit projects. These need protection, based on rules and regulations. Clearly the Energy Charter Treaty is best placed to provide the basis of such rules.

China's Engagement in Energy Governance

As outlined above, China has taken major steps to enhance engagement in global energy governance over the past few years. China has rapidly enhanced its capacity and is now, without doubt, a major player. China now has the opportunity, as President in 2016, to lead progress at the G20. The development of China's relationship with the International Energy Agency through the Association and the potential IEA-China Centre will also be highly influential. We have urged that, if requested, China should be willing to contribute its views to the IEA's process of evolution. As described above, China can contribute to the development of the Energy Charter and China could also take the opportunity of having a Chinese national as Secretary General to reinvigorate the International Energy Forum.

China is now an increasingly regular participant in international energy policy debate at the IEA and elsewhere, and there have been major improvements in China's energy statistics. These are both areas for further enhancement in the future.

In our first report of November 2014 we set out a number of recommendations as to how China could cultivate a modern governance capacity to make full use of existing international frameworks and participate in shaping and developing international rules and institutions. A lot of progress has been made since then, but there is still further to go to ensure that China's perspectives on major international energy policy issues are well understood by the international energy community and that China assumes a role in global energy governance that befits its status as a major participant in the world energy economy.

Annex 1 PROJECT GUIDANCE AND SUPPORT GROUPS

Project Steering Committee

Co-chairs;

Minister Guobao Zhang, Chairman of the National Energy Advisory Committee of China and former Vice-chair of National Development and Reform Commission;
Lord Browne of Madingley, former Group Chief Executive of BP;

Members

Dinghuan Shi, Counsellor of the State Counsel and former Secretary-General of Ministry of Science and Technology;
David Sandalow, Inaugural Fellow of the Columbia University Center on Global Energy Policy and former Assistant Secretary at the US Department of Energy.

Senior Consultation Group in China

Leader: Wenke Han, Director General of Energy Research Institute, NDRC

Members:

Jianmin Wu, former Ambassador to France
Haiyun Wang, General, Chair of Energy Diplomacy Research Center
Honglin Yang, former Ambassador to Bahrain, Iraq and Saudi Arabia
Jiankun He, former Vice Chancellor of Tsinghua University
Rongchun Bai, former Director General of Energy Bureau, NDRC
Dadi Zhou, former Director of Energy Research Institute, NDRC
Junfeng Li, Director General of National Center for Climate Change and International Cooperation (NCSC)
Xiansheng Sun, Director General of Economic & Technology Research Institute, CNPC
Yalan Li, Chair of Beijing Gas Group
Xihong Li, President of Sinopec in Saudi Arab
Yongping Zhai, Senior consultant official of ADB
Xavier Chen, President of Beijing Energy Club
Yuanhua Yang, Senior Fellow of Center for World Affairs Studies, Xinhua News Agency
Weidong Chen, Chief Energy Analyst of CNOOC Group
Hongtu Zhao, Vice Director of World Economics Research Institute
Nengquan Wang, Chief Economist of Sinochem Group
Weiguo Shan, Division Head of Economic & Technology Research Institute, CNPC

British Embassy in Beijing

Leo Geddes, First Secretary
Rachel Ambrose, Second Secretary
Vishan Carpen, Second Secretary

Administration

Lucy Maccormac, British Embassy
Laila Read, Grantham Institute
Christiane Morgan, Grantham Institute

Annex 2 G20 Principles on Energy Collaboration

16 NOVEMBER 2014

Sharing a common understanding that the international energy architecture needs to reflect better the changing realities of the world energy landscape, we, the leaders of the G20 countries, agree to work together to:-

1. Ensure access to affordable and reliable energy for all.
2. Make international energy institutions more representative and inclusive of emerging and developing economies.
3. Encourage and facilitate well-functioning, open, competitive, efficient, stable and transparent energy markets that promote energy trade and investment.
4. Encourage and facilitate the collection and dissemination of high quality energy data and analysis.
5. Enhance energy security through dialogue and cooperation on issues such as emergency response measures.
6. Rationalise and phase out inefficient fossil fuel subsidies that encourage wasteful consumption, over the medium term, while being conscious of the necessity to provide targeted support for the poor.
7. Support sustainable growth and development, consistent with our climate activities and commitments, including by promoting cost-effective energy efficiency, renewables and clean energy.
8. Encourage and facilitate the design, development, demonstration and widespread deployment of innovative energy technologies, including clean energy technologies.
9. Enhance coordination between international energy institutions and minimize duplication where appropriate.

Annex 3 the Activation of Association with IEA

Joint Ministerial Declaration on the occasion of the 2015 IEA Ministerial meeting.

Paris, France

November 18, 2015

1. We, the IEA and China, Indonesia and Thailand, met at the IEA Ministerial meeting in Paris on 17 and 18 November 2015 and jointly declare the Activation of IEA Association. We strongly welcome the achievement of this historic milestone in the development of global energy governance and hereafter China, Indonesia and Thailand will be called Association countries.

2. Activation of Association is expected to serve as a bridge and platform for wider-ranging and deeper co-operation and collaboration between IEA member and Association countries in the future. It is a key step towards building a truly global international energy organisation, fully reflective of future energy trends and the interests of both IEA members and Association countries, who have a critical expanding role across the entire range of global energy issues. To support the momentum of this profound transformation, the IEA will adopt an inclusive approach, adapting and evolving for the mutual benefit of IEA members and Association countries.

3. This new relationship builds upon the Joint Declaration on Association issued on the occasion of the November 2013 IEA Ministerial meeting. The 2013 Declaration stated that Association would provide a common forum for regular dialogue between the IEA Members and Association countries through the participation of Association countries in meetings of various IEA Standing Groups and Committees as well as IEA Ministerial meetings. As laid out in the 2013 Declaration, Association is intended to build upon the extensive bilateral work programmes that have been jointly developed and agreed by the IEA and individual Association countries in recent years.

4. This declaration on the Activation of Association follows extensive and comprehensive consultations carried out between the IEA and Association countries over the past two years, aimed at reaching an understanding on how to develop Association in a manner that captures both the benefits for and the responsibilities of IEA members and Association countries.

5. The success of this joint work, reflecting the best endeavours of all Parties to Association, acknowledges that strong and fruitful co-operation already exists, but also that the energy challenges of the future call for even stronger collaboration. We share the understanding that Association is a non-binding and progressive relationship that will have an evolving nature and that will serve as a basis for higher levels of mutual co-operation in the future. We will continue to work together to this end under this strengthened institutional tie.

6. In order to provide an efficient platform to work together in areas of mutual interest, the initial shared areas of co-operation under Association include Energy Security, Energy Data and Statistics, and Energy Policy Analysis. Energy Efficiency, Energy Technologies, Renewables, Electricity Security, Grid Integration and other issues of mutual interest of equal importance in the scope of Association. For its future development, Association is open for additional issues to be included, based on mutual benefits in pursuit of common interests.

7. China, Indonesia and Thailand are the first countries to become Association countries. We jointly express our strong desire to welcome more major emerging countries to join Association in the future acknowledging that global energy challenges require global solutions. With the Activation of Association today, we jointly recognise a new era for the IEA, for Association countries and for all.

What Association provides

- Participation in the IEA Meetings

8. Association countries are able to participate in the meetings of the IEA Groups, Committees and Working Parties listed below. Details of the procedure to attend these meetings will be specified later based on this declaration.

- Standing Group on Emergency Questions (SEQ)

- Standing Group on the Oil Market (SOM)
- Standing Group on Long-Term Co-operation (SLT) and Energy Efficiency Working Party (EEWP) under this Group
- Standing Group on Global Energy Dialogue (SGD)
- Committee on Energy Research and Technology (CERT) and Working Party on Energy End- Use Technologies (EUWP), Working Party on Fossil Fuels (WPF), Working Party on Renewable Energy Technologies (REW) and Fusion Power Co-ordinating Committee (FPCC) under this Group

- Training and Capacity Building

9. Association countries are prioritised when the IEA provides opportunities for training and capacity building in accordance with its purpose and constraints.

- Opportunities to work as secondees at the IEA Secretariat

10. Association countries are prioritised when the IEA provides secondees positions in accordance with their purposes and constraints.

- Energy Technology Network, Implementing Agreements and others

11. Association countries are prioritised in activities carried out under the IEA's Energy Technology Network, participation in Technology Implementing Agreements and special experts' events, and the provision of related publications.

- Energy Efficiency Programme

12. Association countries are prioritised in activities carried out under the IEA's Energy Efficiency Programmes and the provision of associated publications.

Association will mark a new era of enhanced collaboration in three initial shared areas

- Energy Security

13. We reaffirm our shared priority on the importance of taking common effective measures to meet oil supply emergencies by developing emergency response systems, taking into consideration the respective domestic circumstances of the Association countries.

14. We acknowledge our common intention to build and maintain emergency reserves and to collaborate with the IEA in their use at the time of emergencies, taking into consideration the respective domestic circumstances of the Association countries, including net exporters.

15. We highly value and share the intention to test the level of our preparedness to supply disruptions through the IEA's Emergency Response Exercises, Emergency Response Assessments or other means, taking into consideration the respective domestic circumstances of the Association countries, including net exporters.

- Energy Data and Statistics

16. We share the common interest in improving the consistency, coherence and timeliness of energy data at national level.

17. We highly value the role played by the IEA in global energy data and statistics and Association countries share the intention to further co-operate with the IEA in this area.

- Energy Policy Analysis

18. We share the common understanding on benefits of sharing best practices and challenges through the IEA's energy policy analysis.

19. We welcome the opportunity for such an analysis to be done for Association countries at a mutually convenient time and under agreed conditions.

Next Ministerial Meeting

20. We strongly welcome the Activation of Association at this landmark IEA Ministerial meeting held today in Paris and express our intention of deepening our collaboration and co-operation

before next IEA Ministerial Meeting in 2017.

Annex 4 Acknowledgements

The study benefited from input provided by Minister Guobao Zhang, Lord Browne of Madingley, Dinghuan Shi and David Sandalow from our project steering committee.

Experts from senior consultation group in China also made valuable contributions to the report, particularly Wenke Han, Jianmin Wu, Haiyun Wang, Honglin Yang, Jiankun He, Rongchun Bai, Dadi Zhou, Xiansheng Sun, Yalan Li, Xihong Li, Yongping Zhai, Xavier Chen, Yuanhua Yang, Weidong Chen, Hongtu Zhao, and Weiguo Shan.

We are also grateful for valuable inputs from Graham White CBE, former Director at the UK's Department for Energy and Climate Change, and from Hugh Jorgensen, visiting intern at the Grantham Institute.

Leo Geddes, Rachel Ambrose and Vishan Carpen from British embassy in Beijing provided very helpful guidance, assistance, and project support. Thanks also go to Lucy Maccormac, Laila Read, and Christiane Morgan, and Mengqiu Zhang in project administration.

The work could not have been achieved without the substantial support and co-operation provided by the staff of many government bodies, international organizations and energy companies worldwide, notably:

- National Energy Administration: Siqiang Wang, Lei Yang, Jun Gu, Huimin Pan, Jilin Xu, Xiaowei Wei, Baojun Han, Shuang Zhang, Xuantong Zhu, Yanzhong Li and Junxia Li;
- Central Leading Group Office on Financial and Economic Affairs: Zhijun Wang;
- Research Office of the State Council: Bi Fan;
- National Development and Reform Commission: Bin Li, Xiuhu Yue, Jinsong Si, Hongliang Wu, Zhenhai Han, Qin Zhang, Fujing Ye, Kun Zhao;
- China National Petroleum Corporation(CNPC): Haiyan Wang;
- Sinopec Group: Xiaoming Ke;
- China National Offshore Oil Corporation(CNOOC): Yugao Xu;
- Shenhua Group: Wenhua Jiang, Ruifeng Li;
- State Grid Energy Research Institute: Liping Jiang, Jianhua Bai;
- Beijing University: Libin Zhang;
- Xi'an Jiaotong University: Wenhua Shan;
- China University of Petroleum-Beijing: Shouhai Chen;
- China Energy Net: Liwen Feng, Xiaoping Han
- Energy Research Institute National Development and Reform Commission: Shixian Gao, Yuezhong Zhu, Fuqiu Zhou, Leihong Sun, Hu Gao, Qi Liang, Juan Wang, Jianguo Liu, Siyao Zhang, Weijing Gong;

Finally, we would like to thank the ERI interns who were involved in our works of different stages. Here we need to highlight Mengqiu Zhang, Miao Teng, Yani Zeng, Hui Wang, Xiaohui Sun, Jianan Su, Qihui Gao, Tianjia Yang, Junrui Deng.