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The Reform of Global Energy Governance

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Executive summary

Introduction

ENERGY POLICY IS AT THE CENTRE OF SOME OF THE TOUGHEST CHALLENGES that the world faces. In taking energy policy decisions governments have to balance their priorities for security and cost of supply, the national and global environment, economic growth and development, jobs, poverty eradication, import dependency, resource income, technology leadership, and diplomatic relations. The collective outcome of these decisions determines, to a large extent, the rate and limits of global warming, the stability of energy markets, and the peaceful evolution of international relations in the energy field. That is why the institutions that facilitate multilateral government cooperation on energy policy, the subject of this report, are so important.

Of course the main actors in day to day energy supply, demand, and investment are profit making institutions operating within general international frameworks of trade, investment, intellectual property, and disputes resolution. Many bilateral agreements on economic cooperation and investment apply. One of the main objectives of multilateral government cooperation is simply to keep these avenues for trade and investment open.

This report is about the institutions for international energy cooperation between governments, and, how they need to adapt to meet today's energy policy challenges. It argues that international energy governance has not kept pace with the emergence of major developing nations, with the changing relations between oil producers and consumers, with the emergence of climate mitigation as a central energy policy issue, and with the technology revolution that is required. The report makes recommendations for reform, but also aims to be realistic about the difficulties of changing existing international institutions.

The report is written in the light of an international workshop held on 21 March 2012 that was hosted jointly by Chatham House and the Grantham

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Institute, Imperial College London. The report does not claim to represent the views of any individual participant. The workshop was a part of the Energy Security in a Multipolar World Cluster (ESMW), and we are grateful for the support and assistance of the cluster's coordinator, Exeter University.

Changing Face of International Energy Policy

Over the past few decades the cast list of leading players in international energy markets has changed, with the emergence of major developing countries such as the BRICS. For instance, China is now the world's largest energy consumer and also the largest emitter of CO₂. China may also be set to become the largest oil importer, while North America may be on a course to become increasingly self-sufficient.

There is increasing pressure on energy supply, driven primarily by the growing demand of dynamic developing economies. At the same time, some of the most accessible oil reserves are running down, and an increasing share of oil resources is under the control of OPEC countries and their national oil companies.

The international oil industry is being forced to turn to more difficult, costly, and politically and environmentally sensitive sources, and the market has become highly volatile.

Although oil prices are declining as this is being written, there is a real danger that the world economic recovery, when it comes, will once again be seriously impeded by peaking oil prices. There is also a possibility that periods of very low, unsustainable, oil prices can unsettle the economies of producer nations, greatly increase the perceived risk of energy investment, and undermine the economic case for alternatives.

Climate change, mainly due to energy related CO₂ emissions, now represents a grave threat. The door for limiting the average increase in global temperature to 2° C (the target agreed by world leaders in Copenhagen) is rapidly closing, and urgent action is needed to prevent average temperatures from rising considerably higher.

It is clear that to meet the competing pressures of energy demand and climate change a technological and behavioural revolution is needed in the way energy is produced, transmitted, stored, and used in both developed and developing nations.

Today's Structures for Energy Cooperation

The G8+5 developed an extensive programme of discussion and cooperation on low carbon energy policies, working closely with the IEA. However this came to an end in 2010, as the G8 no longer meets regularly with the "+5" following the creation of the G20.

Over the past few decades the cast list of leading players in international energy markets has changed, with the emergence of major developing countries such as the BRICS.

The G20 has the potential to provide leadership at the highest level on energy policy as on other matters. The UN provides the international framework for climate change negotiations through the UNFCCC. The International Energy Forum has very wide membership amongst producers and consumers, developed and developing nations and provides the most inclusive forum for energy policy dialogue. The International

Energy Agency (IEA) of the OECD countries is the core body for in-depth cooperation on energy policy and technology and collective security. The Energy Charter Treaty organisation, mainly active in Eastern Europe, aims to provide a secure framework for international energy investment and trade. In recent years a number of new bodies have been set up for cooperation on specific sectors of energy technology. The Clean Energy Ministerial provides an opportunity for Energy Ministers to meet to discuss low carbon policy and technology options. And, of course, OPEC is an association of oil producers which aims to manage volumes and prices on world energy markets.

The Issues

Engaging the Major Developing Countries in the IEA

The IEA is by far the most substantial and influential predominantly consumer nation body for international energy cooperation. The fact that the major developing countries are not members is a serious problem because it limits the scope for global cooperation and, for instance, as the IEA countries' share of oil trade declines so does the effectiveness of their oil emergency plans. Hilary Clinton has advocated Indian and Chinese membership of the IEA, and Henry Kissinger, the founding father, has called for evolution and said that the IEA "stands at a critical juncture". In their New Delhi Summit Communique, the BRICS nations have said, on global cooperation generally, that they stand ready work with developed and developing nations on world challenges. "Strengthening representation of emerging and developing countries in the institutions of global governance will enhance their effectiveness".

The IEA is working towards closer relations with "partner" countries, including China, India, Russia, Brazil, Indonesia, Mexico, South Africa. "Joint Statements" with China, India, and Russia, renewed in 2011, provide for them to attend a limited number of senior meetings and for a range of collaborative projects on technology, market analysis, energy policy, etc. The IEA's Executive Director, Maria van de Hoeven, has said that she is working on proposals to involve partner countries "in a more formal way". Regular meetings of IEA member countries plus

“partner” countries at Energy Minister and Director-General levels could re-build some of the momentum on international low carbon energy policy that was lost with the demise of the G8+5 as well as providing a forum for consumer energy issues, especially security of supply.

However, the IEA’s Treaty restricts membership to OECD countries. One of the clear messages underlined by experienced officials at the Chatham House/Grantham workshop was that it will be difficult to amend this Treaty, signed by all 28 existing IEA members. David Cameron, in a report to the G20 on global governance generally, has underlined the “huge amounts of political energy” needed to reform international institutions and urged working with existing bodies as far as possible. The Grantham/Chatham House workshop also recognised that expanding IEA membership to include major developing countries would have profound implications for the IEA and for the countries concerned. Expanding the IEA’s membership too quickly, before there was a shared concept of the reformed Agency’s role, could be very damaging. There was a consensus at the workshop that neither the IEA nor the partner countries were yet ready for enlargement, and that a period of “courtship” will be required.

Consumer/Producer Cooperation on Energy Markets

There remains a profound difference of view between the OPEC countries, who are committed to production quotas, and the IEA countries, who are committed to open energy markets, and for whom government attempts to control volumes and prices remain anathema. Nevertheless, when oil prices peaked at \$140 per bl in 2008, a common agenda to “bring stability... for the benefit of all” emerged from the Jeddah Oil Summit, building on a shared concern about the extreme volatility of oil markets. The areas identified for common action included investment, transparency, regulation of financial markets, better data (through the Joint Oil Data Initiative, JODI), shared market analysis, technology and energy efficiency. This agenda has been pursued jointly by the Secretariats of the IEA, OPEC, and IEF and progress was reported to the March IEF Ministerial.

In a speech earlier in 2012 in Abu Dhabi, Chinese Premier Wen Jiabao proposed multilateral coordination within the framework of the G20 to make the global energy market more “secure, stable and sustainable”. This approach would address energy market early warning, price coordination, financial supervision, security, and emergency planning. This builds on proposals by President Hu for a “New Energy Security Concept” set out at the St Petersburg G8 Summit in 2006. At the moment these are only outline ideas, still under consideration in China. Not all of them are comfortable for Western energy consuming nations, but there is considerable common ground with the 2008 Jeddah agenda.

It seems highly desirable to take forward the Jeddah agenda energetically and to pursue the Chinese proposals wherever common ground can be found. However, it is questionable whether the present structure of three Secretariats reporting voluntarily to the IEF is strong enough. Stronger leadership

could possibly be provided by the G20, as Premier Wen suggests, or the IEA working through a more inclusive structure.

Low Emission Development

Most of the projected increase in global energy emissions arises from the continuing rapid growth and economic development of dynamic developing countries. This means that (although, in equity, developed countries must go first) curbing the emissions growth of developing countries is crucial for climate mitigation. These countries have made it clear that social and economic development are their “first and overriding priorities”, and this principle has been agreed in the Copenhagen Accord. International cooperation on energy policy and technology needs to focus, therefore, on helping these countries to articulate and implement low carbon development strategies.

The UNFCCC is developing institutions to promote this process. These include the Green Climate Fund and the Technology Mechanism with its Climate Technology Centre and Network. Developing countries have been encouraged to prepare National Appropriate Mitigation Actions (NAMA) and Technology Needs Assessments (TNA). And there is to be a register for developing country mitigation actions needing support.

The Technology Mechanism could be a pivotal organisation for the climate mitigation challenge. If it is able to engender a common understanding of realistic low carbon development options for developing countries on a technical and relatively non-political basis that would be a huge service to the UNFCCC process. Governments will need to put their best efforts into supporting its work. The IEA is in many respects the international body most suited to supporting the work of the Technology Mechanism and a closer association with major developing countries could enhance its legitimacy in such a role. However at present the IEA is not sufficiently oriented to the energy challenges facing developing nations and this is something that would need to change.

Technology Collaboration

When the IEA was set up in 1974, international collaboration on energy technology was one of its core objectives. Since then it has set up more than 40 international expert networks. In recent years these networks have been opened up to non-IEA countries. Their work is coordinated and supervised through the IEA’s Committee on Energy Research and Technology (CERT).

As the challenges of energy supply and climate change have become acute in recent years the need for cooperation on energy technology has again risen on the international agenda. But because of the limited membership of the IEA, and the desire to include developing countries, national governments have responded by initiating a plethora of new collaborative institutions rather than building on existing IEA networks. These new institutions are doing valuable work. But they lack coordination and, inevitably, duplicate the existing IEA network. Perhaps the horse has already bolted on this problem, which

is a consequence of the delay in IEA reform. Nevertheless, it is worth considering how greater coherence could be given to the institutions for international energy cooperation.

Conclusions and Recommendations

The IEA should press ahead with proposals for closer association with major developing and partner countries, such as China, India, Russia, Brazil, Mexico, Indonesia, and South Africa. Regular meetings of IEA and partner countries at Energy Minister and Director General levels could make a big contribution to the coordination of low carbon energy policy as well as to consumer nation energy security. Governments of developed and developing nations should support this process which is at the heart of the modernisation of global energy governance. Expanding the IEA's membership to include emerging energy consumer nations should be the ultimate aim, but this cannot be rushed. While the IEA should retain its commitment to open energy markets, it should also consider options for working more closely with OPEC countries towards achieving a common understanding of the balance and outlook of oil markets.

The IEA should discuss with the UNFCCC how it can best support the work of the Technology Mechanism, recognising that this may require the IEA to greatly increase its capability for analysing the energy policy options of developing nations. Governments should consider this topic as a priority for additional IEA funding.

The G20 should consider the establishment of a Working Group to review the future of global energy governance in consultation with the IEA, IEF, UNFCCC, Energy Charter Treaty, and OPEC, within the framework of the Russian presidency of the G20 in 2013 with the objective of presenting material to the 2014 summit. The Working Group should give immediate attention to the 2008 Jeddah agenda for market stability and on giving new impulse and direction to the joint work of the IEA, OPEC, and IEF Secretariats. It should also consider the options for setting up a clearing house, possibly hosted at the IEA, for the many international institutions for energy technology collaboration.

Governments should support the continued strengthening of the secretariat of the International Energy Forum, which is likely to be an increasingly important vehicle for energy policy discussions between energy consumers and OPEC nations. Efforts should continue towards the formation of a smaller representative inner council of the IEF able to manage its proceedings and identify areas where closer producer/consumer cooperation is possible.

Governments should give serious consideration to how the scope of the Energy Charter Treaty, or at least the main principles of the Charter, could be expanded to provide greater confidence for international energy investment and trade. This could be a fruitful topic for Asia/Pacific regional cooperation.

Introduction

All energy consumer governments have similar energy policy objectives, but with competing priorities. These include secure and affordable energy for economic stability, growth and development, and environmental protection. To a large and increasing degree the successful pursuit of these objectives requires international cooperation.

The spread of prosperity around the world requires a continuing rapid increase in energy supply, and this has profound implications for energy markets and for the environment. Only through a revolution in energy technology can we meet the increasing demand for energy services without a disastrous increase in energy related CO₂ emissions. Meanwhile the rise of developing countries such as the BRICS, and especially of China, as the world's largest energy user and CO₂ emitter, have changed the cast list of major players. The world has changed, and global energy governance will also need to change to meet the energy policy challenges of today.

Institutions cannot, of course, create cooperation where the political will is absent. But where opportunities for cooperation exist, appropriate institutions are essential for giving it effect.

Today's needs for international cooperation on energy policy

Changing Balance of the World Energy Economy

The rise of major developing nations has changed the international balance of economic power, now reflected, at the highest level of global governance, in the emergence of the G20. The rise of the BRICS, and other developing economies, means that the most developed OECD countries which traditionally accounted for the bulk of world energy demand, now account for less than 45%, and this share is continuing to decline. China is now the world's largest energy consumer and also the largest emitter of CO₂, and China's national oil companies are major players on the world energy scene. Other major developing nations are also experiencing rapid growth. Managing the inclusion of these new powers in global governance generally, so that they make peaceful contributions to world leadership, is a major objective of international diplomacy. This is especially true in the field of energy.

Politics of Oil

Modern economies are highly vulnerable to interruptions of energy supply and in the medium and longer term affordable energy is essential for economic growth and development.

Energy trade is worth about \$2.3 trillion p.a. or 16% of all international trade. Oil has regularly been used for wider political objectives and political influence is regularly used to gain access to energy reserves. Historically, oil has been a flashpoint for political tensions, sometimes to an extreme degree. Oil wealth has a proven ability to corrupt the governments of some nations, the so called "curse" of natural resources.

42% of oil production is from OPEC countries who aim to exercise government control over volumes and prices, and this proportion is rising. 58% of the world's oil production is from National Oil Companies and this share is also rising.

World energy demand has increased rapidly in recent years, with the spread of industrialisation to developing nations, and this is set to continue. World oil demand increased by 24% between 1990 and 2009 and is set to increase by a further 12% by 2025. While there is no absolute shortage of reserves, oil companies are being forced to turn to more difficult, costly, and politically and environmentally sensitive sources of supply to replace declining output from existing fields and meet rising demand, and this is adding to market tensions.

It is not, therefore, surprising that "resource nationalism" on the part of both producing and consuming nations is widely seen as a threat. Consumer countries are seeking greater "security of supply", while producing countries seek "security of demand". Producing and consuming countries share a concern about the volatility of oil markets, which threatens to destabilise their economies. The cost of oil imports alone represents, on average, about 5.5% of the GDP of the less developed countries, and therefore this problem is particularly acute for them.

There is little agreement on the cause of instability or on what would constitute an acceptable or sustainable price range. Nevertheless, shared concern about price volatility is opening up possibilities for greater cooperation between producers and consumers, and these are further enhanced by the rapid growth of energy consumption in many of the largest producing countries. OPEC producing countries who are seeing an increasing share of their oil and gas production taken up by domestic demand are increasingly interested, like the consumer countries, in policies to improve energy efficiency and in alternative energy technologies. The rigid producer versus consumer divide is looking increasingly out of date.

The risk of oil supply disruption, most commonly arising from political instability in the Middle East, remains a constant concern. Since the Arab oil embargo of the 1970s the most developed nations, through the IEA, have built up strategic oil stocks and coordinated their plans for managing oil shortages. This kind of planning is particularly important for handling emergencies because, in a crisis, "No-one is secure unless everyone is secure". However, IEA members, who were the dominant energy users and importers when the Agency was founded in 1974, now account for only about half of world energy demand and this figure is declining.

As the economies of major emerging countries expand, so does their demand for oil. Increasingly, these countries are investing in international oil production through their National Oil Companies and through a variety of agreements with resource rich countries. This investment is making an important

contribution to world oil supply and, generally speaking, the NOCs have traded their oil commercially, contributing to the depth of international markets. Nevertheless, suspicion and misunderstandings have been rife about this investment. One of the benefits of enhanced international discussion and debate could be a more widespread understanding of the benefits of this investment.

Oil companies are being forced to turn to more difficult, costly, and politically and environmentally sensitive sources.

Of course there are powerful national interests in play that can stand in the way of finding common ground. Trust, understanding, and good communications between the major players will be essential to enable the world to surmount the many potential tensions arising in the field of energy without major disruptions, and this underlines the need for closer international cooperation.

Politics of Gas

Gas has been thought of, traditionally, as a national or, at most, regional issue. However, this has changed in recent years with the rapid growth in the market for LNG, and also, to some extent, as a result of the construction of very long distance gas pipelines. The shale gas revolution that has taken place in the US has already had a significant effect on world energy markets, and shale gas technology may have the potential to open up major new gas supplies in other parts of the World. For these reasons, the IEA in its latest (2011) World Energy Outlook talks about the possibility of a "golden age of gas" and projects a rising share of gas in the global energy mix.

The founding of the Gas Exporting Countries Forum in 2001 raised concerns amongst consuming nations that a Gas OPEC might be in prospect. But global gas resources are sufficiently widely dispersed as to make this unlikely. The shale gas revolution may further diversify supply options, especially since shale gas resources appear to be located in some of the largest energy consuming regions. However, international gas pipelines certainly have raised security issues. Europe's high dependency on Russian gas has been seen as a potential problem for many years and was brought into focus in January 2009 when a payment dispute with Ukraine led to an interruption of supply with serious, if short term, consequences for Eastern European states such as Bulgaria. A number of new long distance gas pipelines have been constructed in recent years or are proposed. For instance the pipeline bringing gas to China from Turkmenistan, described by the IEA as the longest in the World, extends for 7,000 km across four countries.

These gas pipelines are creating new energy interdependencies between nations and further underline the need for a stable framework for international energy investment and trade. Trade in Liquefied Natural Gas (LNG) is now playing an increasingly important role in the world energy economy, and the question of how to deal with possible disruptions to LNG supply is becoming increasingly important.

The shale gas revolution may be creating a new dimension in the balance between energy supply and the environment. Gas can contribute positively to climate mitigation where it replaces coal. Nevertheless, the opening up of what may be a large and highly competitive new source of fossil fuels is bound to put additional pressure on the effectiveness of global arrangements for bringing carbon emissions under control. For instance although the substitution of gas for coal in the US has reduced American carbon emissions it may also be contributing to increased US coal exports and lower international coal prices.

Politics of Coal

Coal is the world's second largest source of energy, after oil, and has been, and remains, the main driver of the economies of rapidly growing developing economies such as China and India. However coal is widely dispersed around the world and relatively costly to transport. As a result only about 16% of coal is supplied through inter-regional trade, and this ratio is projected by the IEA to remain relatively stable. Because such a large proportion of coal is produced and used domestically, relatively small shifts in the share of imports in the biggest markets, especially China, can have big effects on international markets, and this has been seen in recent years. Both India and China will be challenged, in different ways, to produce the coal required for their continued economic growth, and if there was to be a big increase in the share of imports there could be a lot more pressure on international coal markets with associated commercial and political tensions.

Climate Change

The threat of disastrous climate change is one of the most critical challenges of global politics. Most human induced greenhouse gas emissions are energy-related, projected by the IEA at about 70% in 2020. So climate change is largely an energy problem. According to the IEA the door for limiting the average increase in global temperatures to 2°C, the target agreed by world leaders at Copenhagen, is already closing. Four fifths of the permissible emissions to 2035 are already "locked in" by existing capital stock. And, of course, climate change is a problem that can only be addressed at a global level. The need for far reaching action is urgent.

The UNFCCC is, and will remain, the only forum with legitimacy to conduct global climate negotiations. At the UNFCCC summit in Durban in 2011 all the parties agreed to adopt a universal legal agreement on climate change no later than 2015 to come into effect by 2020. Discussions on the content of this agreement have only just begun. But it is clear that in preparing their positions all countries will need to take account of their energy policy objectives in the round. For instance, the Copenhagen Accord, agreed at the UNFCCC in 2009, recognised

that "Social and economic development and poverty eradication are the first and overriding priorities of developing countries and that a low-emission development strategy is indispensable to sustainable development". Since almost all the projected growth in world CO₂ emissions is attributable to developing countries it is clear that (while developed countries, in equity, must make the first moves) these low emission development strategies will be crucial for the success of climate negotiations. This is largely a matter of energy policy and technology.

Greater internationalisation of energy policy appears to be an essential element for mitigating climate change.

Questions will arise over the fairness and compatibility of the policy measures and technology changes that different countries adopt. There will be pressure for sector compatibility to minimise carbon "leakage". Carbon trading requires a degree of compatibility of low carbon regimes. It remains to be seen whether commitments to the adoption of particular technologies will be a part of the equation of international agreements. Certainly it is planned that developed countries will help to finance the deployment of low carbon technologies in developing countries. And the large scale deployment of intermittent renewables is expected to require the expansion of "smart" electric

grids, able to balance the availability and supply of power and aid transfer across wide regions. In all these respects greater internationalisation of energy policy appears to be an essential element for mitigating climate change.

Technology Revolution

A revolution in the way that energy is produced, transmitted, stored and used will be needed to meet the challenge of climate change and, to some extent, also to relieve the pressures on fossil energy markets. Broadly this means greatly enhanced energy efficiency, low carbon power, advanced electric grids, and low carbon transport and heating and cooling options. The IEA have estimated that \$46 trillion of energy investment will be needed between now and 2050, in addition to their "business as usual" case to meet the Copenhagen 2°C target. National governments will need to create the economic framework for this investment but cooperation between governments on their technology strategies will be important bearing in mind that the industries that supply low carbon technology are largely international. International energy cooperation can help governments and the public to determine how they can most effectively take advantage of technological advances, whether in unconventional gas or the adoption of greener technologies.

Need for Change

Today's concerns about security of oil supply are similar in kind to those of 30 years ago. But in other respects the landscape of international energy policy has changed. This report argues that international energy governance has not kept pace with

the emergence of major developing nations, with the changing relations between oil producers and consumers, with the emergence of climate mitigation as a central energy policy issues, and with the technology revolution that is required.

Today's energy governance institutions

There is no shortage of bodies for energy cooperation. Indeed, after a rash of new foundations over the past decade there are arguably too many. Nor is poor performance the problem; on the whole the major international energy organisations are considered to be performing well within their spheres.

The G8 + 5

During the years 2005 to 2009 the G8 (Canada, France, Germany, Italy, Japan, Russia, UK, US) met with the "+5" (Brazil, China, India, Mexico, South Africa). This grouping worked quite effectively on a range of energy and climate change issues and was closely supported by the IEA. The 2005 Summit at Gleneagles also launched a "dialogue on clean energy, climate change, and sustainable development" which met on a number of occasions and was also supported by the IEA. Participants in this dialogue, besides the G8+5, were Australia, Indonesia, Nigeria, Poland, Spain, and South Korea. The fact that the G8+5 did not include OPEC members, and perhaps also that the "+5" were always at a slight distance, facilitated a homogenous programme of work and a close relationship with the IEA. But of course these were also the weaknesses of the structure. The "+5" were never fully integrated, on a basis of equality, into the G8 and when the G20 was born, reflecting the new realities of the global economy, the G8+5 ceased to exist (although the G8 continues to meet). The G8+5 cannot be resurrected, but there is no doubt that its demise has left a gap in global energy governance.

G20

The G20 had its first meeting at the Pittsburgh Summit in 2009 where leaders declared that it was "the premier forum for our international economic cooperation". In addition to the members of G8+5, the G20 includes Argentina, Australia, Indonesia, Korea, Saudi Arabia, and Korea, and the European Union is also recognised as a full member. Of course from the point of view of energy the inclusion of Saudi Arabia as a leading member of OPEC is of particular importance.

At the highest level the G20 now has the potential to provide leadership on energy as on other international issues. For instance, the most recent communiqué of the G20, from Cancun, included a section on energy markets and climate mitigation. The Chinese Premier Wen Jiabao has urged a greater role for the G20 on energy security. The G20 can send powerful top level signals, but the G20 is a meeting place and not an agency, and it will need strong supporting institutions to be the engine for effective energy cooperation.

UN

The UN has a major interest in energy matters. The United Nations Framework Convention on Climate Change (UNFCCC) is the only legitimate global forum for climate change negotiations. (Other bilateral and multilateral negotiations may have some legitimacy and, for instance, the EU conducts negotiations amongst its members). The UNFCCC is setting up a number of institutions designed to help developing countries to implement such strategies. These include the Green Climate Fund, and the Technology Mechanism, with its Climate Technology Centre and Network. Developing countries have been encouraged to prepare National Appropriate Mitigation Actions (NAMA) and Technology Needs Assessments (TNA). The UNFCCC has also agreed to set up a register for developing country mitigation actions seeking support. Much closer energy policy cooperation between developed and developing countries will be needed if these arrangements are to work effectively.

The Technology Mechanism of the UNFCCC is potentially a pivotal body for supporting developing countries in the development of their low carbon development strategies, especially if it is able to make progress on a relatively non-political professional and technical basis. A shared understanding of these strategies could also be enormously helpful for the allocation of the resources of the UNFCCC Green Climate Fund and other developed country support.

Other UN institutions involved in energy policy include the UN Development Programme (UNDP), the Food and Agriculture Organisation (FAO), the UN Industrial Development Organisation (UNIDO), and the UN Environment Programme.

The UN Conference on Sustainable Development (Rio Process) meets every ten years and provides a high level forum for reviewing, "the interlocking crisis of energy, development, and the environment". The original Rio meeting, or Earth Summit, was the parent of the UNFCCC.

Clean Energy Ministerial

The Clean Energy Ministerial is a group of 23 countries that includes the BRICS, major OECD countries, plus the UAE, that meets annually to discuss low carbon technology and policy options.

IEA

The IEA is by far the most substantial and influential body for international energy cooperation. It is the only major international body with the capability to engage and analyse energy policy in the round: that is to say, including environmental, supply, and security issues, as well as the range of energy technologies, how they fit together in national energy systems, and policies for deployment. It is concerned with demand as well as supply and, therefore with energy efficiency – possibly the most important topic of all for addressing the world's energy problems. This broad range is important because energy policy is highly integrated.

This report describes the IEA as a predominantly consumer body. Certainly its origins lie in the need to protect consumers from a supply crisis. But it is important to remember that the IEA membership also includes major producing countries such as the US, Norway, Canada, the Netherlands the UK and Australia. Probably the crucial distinction is that the IEA members are committed to open energy markets in a way that would not be consistent with OPEC membership.

The IEA was founded in the 1970s to combat the Arab oil embargo. It coordinates emergency preparedness and the use of strategic oil stocks, and organises extensive cooperation on energy policy, technology, and market analysis. It was made an associate of the OECD, largely as a matter of convenience at the time. It is a treaty organisation and the provisions of its treaty confine its membership to countries who are already members of the OECD. Almost all OECD members (28 in all) now belong. Of course when the IEA was founded these countries accounted for the great preponderance of international oil demand. Today IEA members account for only about half of world oil demand and this ratio is declining steadily (Annex).

The IEA has sometimes been caricatured as a rich countries' club primarily concerned with oil security. However in recent years the IEA has become much more engaged with climate change issues, with the demand side and with alternative energy technologies. It has greatly strengthened its links with major developing countries and is aiming to take this further. But the restrictions on its membership has meant that the IEA is not able to play a central role in addressing the world's energy problems and cannot provide the energy policy support that the G20 would need in order to do so. The IEA's oil security mechanisms are becoming less effective as its members account for an ever declining share of world oil trade and consumption.

The IEA has six main functions:

- It reports on the short and medium term oil and gas market outlooks.
- It is the most authoritative source for much international energy data. For instance, the UNFCCC relies heavily on IEA energy data for their assessment of CO₂ emissions.
- It coordinates the oil emergency preparedness of its members and their collective response to supply disruptions. For this purpose importing member countries are required to hold strategic oil stocks equivalent to 90 days of imports – an investment of some \$200bn in oil security.
- It coordinates energy policies through discussion, analysis, and regular "peer review" of the policies of each of its members.
- It reviews international energy developments and publishes extensive analysis, including the influential World Energy Outlook and Energy Technology Perspectives.
- Through a network of more than 40 technology networks (Implementing Agreements) it co-ordinates and promotes the development, demonstration, and deployment of technologies to meet the challenges of the energy sector.

IEF

The International Energy Forum (IEF) is the major body for dialogue between oil consuming countries and OPEC members. It has very wide membership including developed and developing countries, producers and consumers. It meets every other year at Ministerial level. It now has a small secretariat, based in Riyadh, and a new Charter. More recently, the IEF secretariat has been playing an increasing role, jointly with the Secretariats of the IEA and OPEC, in carrying out analysis and gathering data on the functioning of international energy markets including the Joint Oil Data Initiative (JODI). Recently its secretariat reported on guidelines for co-operation between NOCs and IOCs. As its name suggests, the IEF is primarily a forum for dialogue and networking. Its large and diverse membership makes it a rather unwieldy deliberative body and if it is to make the most of opportunities for cooperation between OPEC and consumers it probably needs to develop a smaller representative inner counsel.

ECT

The Energy Charter Treaty organisation was founded in the 1990s to promote international energy sector investment in Eastern Europe following the break-up of the Soviet Union. The Energy Charter provides a legal framework intended to build confidence and reduce the risks of international energy sector investment and trade. Its activities are still mainly confined to Eastern Europe. But international investment is vital for maintaining the balance of energy markets, and there is growing interest in at least the principles of the Energy Charter in other parts of the World. Wider application of Charter principles, for instance in the Asia/Pacific region, could make a useful contribution to investor confidence.

Sector Bodies

A number of new bodies for cooperation on specific areas of energy technology have been founded in recent years. These include the Carbon Sequestration Leadership Forum (CSLF), the International Partnership on Hydrogen and Fuel Cells (IPHE), the Renewable Energy and Energy Efficiency Partnership (REEEP), the Global Carbon Capture and Storage Institute (GCCSI), the International Partnership on Energy Efficiency Collaboration (IPEEC), and the International Renewable Energy Agency (IRENA). The Washington meeting of the Clean Energy Ministerial, in 2010, initiated 11 new technology specific projects for low carbon energy collaboration. All these bodies and initiatives play a useful role in relation to their specific technologies but, arguably, there are too many of them with overlapping functions and each competing for the time of technology officials. The absence of a central organisation for energy technology collaboration makes it difficult to co-ordinate their efforts.

There are many other high level bodies with an interest in specific areas of energy policy, including the World Trade Organisation (WTO) and various International Financial

Institutions, including the World Bank and its Global Environment Facility (GEF), the IMF, and Regional Development Banks. They have important parts to play in the energy scene but none has energy policy as its central focus.

Many regional and bilateral energy initiatives are also making useful contributions. These include the Energy Working Group of APEC and the ASEAN Plan of Action for Energy Co-operation. At their March 2012 meeting in New Delhi, the BRICS also decided to explore, "Multilateral energy cooperation within a BRICS framework".

What is wrong with the existing structure?

It is not difficult to point out the weaknesses in this structure of global energy governance. It tends to preserve the divide between developed and developing countries. As a result some of the key players are excluded from consumer cooperation on energy security and supply. This partly is a question of formal mechanisms, but also concerns the mutual understanding and trust that is needed to handle difficult situations.

We are not making the most of opportunities for cooperation between producers and consumers on the efficiency of energy markets. The programme of action agreed at the Jeddah Oil Summit of 2008 has been pursued jointly by the Secretariats of the IEA, OPEC, and IEF. Useful work is being undertaken. But this vital process needs stronger direction and support.

There is a lack of engagement between developed and developing countries on the energy policies that will need to underpin new international agreements on climate mitigation, and especially on the crucial topic of energy for economic development. The IEA is not sufficiently oriented to the energy challenges facing developing nations, and this leaves a big gap at the heart of this process.

The limited membership of the IEA and the perception of an adversarial relationship with OPEC, prevent the IEA from supporting the G20 in the way that it has supported the G8 in the past, and this makes it much more difficult for the G20 to provide effective leadership on energy cooperation.

There is a lack of coordination of the many bodies that have been created in recent years for cooperation on specific areas of energy technology and policy.

Elements of an improved structure

Domestic Energy Policies

All governments share broadly similar domestic energy policy objectives. These include security, diversity, and affordability of supply and environmental protection (including climate mitigation). All governments are looking for cost effective ways of improving energy efficiency and introducing advanced and low carbon technologies. There is no reason why co-operation on domestic energy policy could not be extended to include developing countries and perhaps in some areas also OPEC oil producers – bearing in mind the rapid growth of energy demand in OPEC countries.

Climate Change

Success in tackling climate change depends, to a considerable degree, on the articulation and implementation of low emissions development strategies in developing nations. International cooperation on energy policy needs to play a big part in this. The UNFCCC is developing institutions to promote this, including the new Technology Mechanism. But they will need strong international support, including the support of the IEA, to realise their potential.

Technology

Over the years the IEA has built up a structure of more than 40 international technology networks. These are coordinated through the IEA's Committee on Energy Research and Technology (CERT). Technology collaboration has rightly been identified as a crucial dimension of climate change mitigation and, as described above, this has led to the creation of a number of new collaborations in the most important areas. Unfortunately, mainly due to the limited membership of the IEA (and notwithstanding that the IEA's technology networks have themselves have been opened to non-members of the IEA), these have generally not been built on the IEA's networks but have, to some extent, duplicated them. There is an obvious need for better coordination

of these bodies, and the IEA could host a clearing house, but only if the IEA can establish a wider constituency for this role.

Global Markets and International Energy Security

There is less policy agreement on security and market issues. The IEA is committed to open competitive markets, whereas OPEC acts as a cartel aiming to manage the market through production quotas. The differences are not quite as sharp as they might seem, in practice, however. Pressure of demand and

There is a lack of engagement between developed and developing countries on the energy policies that will need to underpin new international agreements on climate mitigation

the limits of accessible low cost resources are now seen as the main causes of high oil prices, rather than OPEC quotas. There is agreement on all sides that extreme price volatility is good for no-one and that greater transparency and better information could help to reduce the uncertainties. This has already generated a work programme sponsored jointly by producers and consumers.

Emergency Planning

At a time of stress in oil markets there is a vital need for co-operation to keep international energy markets open and for collective emergency planning. These are the principles on which the IEA was founded, in response to the oil crisis, in 1974. All energy consumers benefit from these IEA policies, but their effectiveness is progressively declining with the OECD's share of international energy trade. China is building its oil stocks, and India intends to do so. There would be obvious benefits to all parties from co-ordinating the use of these stocks with those of the IEA. This is not just a question of formal mechanisms, but also requires the building of trust and shared analysis of oil market developments between consumer countries over time.

An Inclusive Global Organisation

All this points to the need for a genuinely global body for cooperation on energy policy including all major energy consuming countries and working with energy producers in areas where they have interests in common. It would build trust and mutual understanding between the major participants in energy markets. It would promote predictable legal and regulatory frameworks for international energy investment.

Such a body could support the G20 on energy policy matters and it would provide co-ordination for the many existing bodies for collaboration on particular technologies. It would co-ordinate the energy security strategies of all major consuming nations and it would provide a stronger base for the provision of energy market data and analysis. With the inclusion of major developing nations, it would play an important part in articulating low carbon development options needed to underpin the success of climate negotiations, and it would support the institutions of the UNFCCC.

Such a body could be created by reform of the IEA, to widen its membership to include major developing countries, or by reform of the IEF, to give it a much stronger decision making core and a larger secretariat, or it could be built from scratch.

A pragmatic approach

Reforming international institutions is a rocky road, especially (as would be the case with the IEA) if the chosen path requires treaty amendment. It is difficult to manage the agenda, and the process is apt to become a prolonged multilateral negotiation. Meanwhile valuable institutions are unsettled. Major institutional change takes time and requires the building of trust.

Prime Minister Cameron generally took this line in his report to the G20, in November 2011, on the question of global governance generally. He recognised, in general, the problem of the "incoherence" of international institutions as barrier to effective co-operation. "There are a large number of established institutions and processesin.....areas such as energy. The solution in many cases is not formally changing mandates or creating new bodies. Such changes can consume huge amounts of political energy.Rather, existing institutions should be given clearer and stronger political direction to work together".

In a section that may be particularly relevant to energy, "Many existing standards were drawn up by institutions set up originally to help advanced economies to address their common interests.....governance in these institutions should be flexible and find ways – that do not necessarily involve membership – to ensure that new actors can be involvedon an equal basis".

However, the report also recognises that there are priority areas "where improvements to governance matter most" where institutional changes are needed, for instance in the case of the Financial Stability Board.

As a practical matter, therefore, it is important to look at the options for step by step change, building on existing institutions, and especially those for "soft" changes that do not require new or amended international treaties.

Enhancing the roles of the Existing Institutions

The G20

In a recent speech at the Abu Dhabi future energy summit, Chinese Premier Wen Jiabao proposed multilateral co-ordination in the framework of the G20, to make the global energy market more "secure, stable, and sustained". He said that energy prices had been separated from underlying supply and demand as a result of speculation, economic fluctuations, and other factors. This approach would address energy market early warning, price co-ordination, financial supervision, security, and emergency planning. In suggesting that these issues be addressed through the G20, however, there is no reason to think that Premier Wen had in mind the creation of any new institutions.

The G20 is, of course, well placed to provide leadership at the highest level, but in the absence of a secretariat, and with its Chair rotating each year, it is not so well placed to deliver sustained programmes of cooperation. The G20 can give a lead but it cannot, itself, be the institution for day to day cooperation.

One possibility would be to create a G20 sub-group on energy, to work with the main multilateral energy organisations, IEA, IEF, OPEC and the Energy Charter Treaty Organisation, on the modernisation of the governance structure. Another way in which the G20 could pursue Premier Wen's proposal might be by giving its support and providing a better structure to the programme work (described below) that the IEF, OPEC, and IEA Secretariats are doing jointly to promote the efficiency of energy markets, including JODI.

A number of participants in our workshop are sceptical that the G20 could play a leading role in reforming global governance. This is partly because of the culture of the G20, as an annual meeting of leaders and not an institution or agency. It also reflects recognition of the position of Saudi Arabia on the G20 as the representative of OPEC oil producers and the Gulf region. The presence of Saudi Arabia has the advantage that any G20 energy initiatives will have regard to the perspective of OPEC oil producers. But it also rules out the G20 as the forum for taking forward specifically consumer initiatives. As long as a substantial consumer/OPEC divide continues to exist, the role that the G20 can play will, to some extent, be limited.

However the G20 is probably the only body with the legitimacy and potential to provide a strong impulse for change in global energy governance at the very highest level. The G20 has taken an interest in global governance, especially in the area of finance. And, of course, one of the major players, China, has called for the G20 to have a role. For these reasons we make recommendations, below, for action by the G20, even though we realise that the realism of this will depend on energy governance rising, as a result of events or changing sentiment, to the very top of the international political agenda.

Evolution of the IEA

Some voices for change

There have been many calls for development of the IEA. Henry Kissinger, who was a leading figure in creating the IEA, said in his address to the IEA Ministerial Conference in 2009, "The IEA now stands at a critical juncture. The world has changed considerably since 1973. In order to be effective in this new landscape the IEA must be prepared to evolve with it".

In her 2009 confirmation hearings as US Secretary of State, Hilary Clinton was more specific. "The IEA should be laying the groundwork now for eventual Chinese and Indian membership in order to achieve the benefits of: 1) Increasing energy policy coordination with rapidly growing energy consumers like India and China; 2) Maximising the opportunity for agreeing on energy standards and principles like transparent energy markets; 3) ensuring the coordinated release of strategic petroleum reserves during a major oil market disruption; and 4) maintaining its position as the voice of the world's major energy consuming nations.The IEA was created as an institution that represents the interests of major energy consuming nations. If its membership does not change to reflect who those nations are today, its authority and effectiveness will erode".

"Full membership would likely require the modification of the original 1974 International Energy Program Treaty Agreement that created the IEA, but the range of options potentially available to integrate China and India into the IEA have not yet been explored.The State Department will support these efforts, up to and including revision of the International Energy Programme" (i.e. the IEA's founding treaty).

The last Executive Director of the IEA, Nobuo Tanaka, was a strong advocate for enlarging IEA membership to include major developing countries. The present Executive Director, Maria van der Hoeven, is more cautious, "OECD membership is a constraint.....It is not something that I will be able to change.....". However under her leadership the IEA is working towards closer relations with major emerging nations, "We are working on proposals.....they are intended to involve those countries in a more formal way than is the case now. We want to develop more institutional, more binding agreements with those countries".

The Legal Position

The IEA's founding treaty ("Agreement on an International Energy Programme") specifies that the Agency is "open for accession" only to members of the OECD. Changing this provision would require agreement, and formal ratification through national treaty procedures, by all existing member countries, of whom there are currently 28. Once the treaty was opened for amendment members might wish to raise other issues. And some members might need a lot of persuading. As Mrs van der Hoeven said in her recent interview, some of them "realise better than others" that the world around them is changing.

Treaty change is possible, and may eventually be necessary, if the IEA is to occupy centre stage on world energy cooperation, but, as David Cameron implied, it will require strong political leadership. For the moment, even Hilary Clinton, the only leader to come out explicitly in favour of enlargement, also suggested exploring the full range of options for integrating China and India under the existing treaty.

IEA Change within the Existing Treaty

IEA Structure

The Governing Board of the IEA consists of representatives of all 28 member states. They meet at senior official level (Director-General in most countries) four or five times a year and at Ministerial level every other year. There are five sub-committees ("Standing Groups"):

- Emergency Questions – emergency preparedness and collective response
- Oil Market – short and medium term oil market outlook
- Long Term Co-operation – energy policy (security, efficiency, environment)
- Global Dialogue - partnership with countries who are not members
- Research and Technology – co-ordination of more than 40 technology collaborations ("Implementing Agreements")

A smaller group consisting of the larger member countries plus rotating representatives of the smaller countries, which meets for dinner on the night before each meeting of the Governing Board, provides an informal inner council.

The treaty contains rules for decision making and assigns voting weights to members. However, in practice almost all of its activities are “soft” in the sense that they are carried out through debate and consensus. Although the Governing Board meets every other year at Ministerial level participants in the IEA tend to regard its proceedings as “non-political” in the sense that a lot of its work centres on expert analysis and shared experience and politically contentious decisions are rare.

The one area where IEA membership imposes very specific obligations is emergency response. All oil importing members must maintain emergency oil stocks equivalent to 90 days of imports and, in the event of an emergency, comply with very specific measures of collective response, which may include stock draw and demand restraint. In practice, the complex treaty provisions for emergency response have become unwieldy, and the Agency has relied in recent years on a simplified mechanism put in place by agreement.

IEA members are bound together not only by the treaty, but also by a set of “Shared Goals” centred around the principle of “free and open energy markets”

The IEA is already taking major steps to engage major non-member countries, especially China, India, and Russia, Brazil, Mexico, Indonesia, and South Africa in its work. China, India, and Russia have now attended a number of Ministerial level meetings of the Governing Board as observers. “Joint Statements” with China, India and Russia, renewed in 2011, provide for them to attend a limited number of meetings of the Governing Board at official level and sub-committees as observers and cover a range of collaborative projects on technology, market analysis, energy policy, etc. China, for instance has a “hot line” to the IEA on emergency response and has participated in emergency exercises. The IEA has an “Energy Technology Platform” which is open to major developing countries, and membership of the Implementing Agreements has also been opened to non-members of the IEA.

As a legal matter countries such as China or India could participate, by agreement, as observers in almost all the activities of the IEA without formal treaty change. The potential for this is limited by the willingness of developing countries to invest in an organisation where they do not share control and by the willingness of IEA members to share the benefits of the IEA with countries who do not also share the costs and responsibilities. The question of full commitment to the responsibilities, costs, oil stocking obligations, and voting rights that go with treaty membership has to be faced at some time, but, arguably, can be deferred to some extent while mutual confidence is built through less formal cooperation. Mrs van de Hoeven has said that she is working on proposals that will give partner countries a more formal relationship with the IEA and “more institutional, more binding agreements”, and this seems like a good approach.

One of the most significant barriers to closer relations between developed and developing countries on energy policy is the differences of view on international energy (especially oil) markets. Developing country leaders tend to be quite

distrustful of the oil market which they sometimes view as being dominated, at least in the short term, by speculation. This speculation is seen as serving powerful western interests and being to the detriment of developing countries as “outsiders” to the system. The developed countries who are today’s members of the IEA certainly share concerns about oil price volatility and support efforts to root out market abuse. But they are committed to the free market as the most efficient framework for investment and supply and view oil trading as an inevitable part of that.

It was clear from discussion at the Chatham House/Grantham workshop that neither the IEA nor China is yet ready for Chinese membership of the IEA. One of the themes of the workshop discussion was that a period of “courtship” is required, and that the course of true love can be unsettled if the topic of marriage is pressed prematurely!

IEA Committees

The main IEA committees (Standing Groups) are specified in the treaty, which also confines their membership to member countries. There is nothing to stop the IEA from offering ad-Hoc or Regular Observer status, but it cannot offer full membership or any voting rights. The Governing Board has wide powers to establish new “organs necessary for the implementation of the programme”, but it must be questionable whether these could effectively take over the functions of Standing Groups.

IEA the Way Forward

The IEA should be willing to offer ad-Hoc and then Regular Observer status to major developing countries, and indeed producing countries, where it is convinced that they will contribute positively to the work of a Committee. Plainly some committees are easier to open up than others. It is hard to see why any country with a substantial participation in Implementing Agreements should be excluded from the CERT. The Oil Market and Long Term Co-operation committees could benefit from the participation of major developing countries and, perhaps, also oil producers. Emergency Questions should probably remain confined to countries that actually participate in the emergency response mechanism.

However, experience at the IEA and at the OECD suggests that major developing countries are not primarily concerned with status on Committees and (at least while the IEA as a whole is perceived as dominated by Western interests) will identify, in a hard headed way, joint activities that are of real benefit to them.

The most promising way of building up relations with major developing (“partner”) countries, therefore, may be through enhanced programmes of mutually beneficial activities. In some of these partner countries may essentially be taking part in existing IEA activities. These might include:

- An IEA review of the energy policy of a partner country.
- Analysis of particular energy policy issues of importance to partner countries.

- Closer involvement by a partner country in the IEA's emergency response mechanisms. This might involve full participation in emergency planning with a "drop lock" option to participate in emergency measures.
- Enhanced programme of training, secondments, and statistical exchanges.
- Increased participation in the IEA technology network.
- Increased participation in energy market analysis including the IEA's flagship publications World Energy Outlook and Energy Technology Perspectives.

But the IEA will also need to be prepared to engage in issues and projects of concern to partner countries and which have not hitherto been a major focus for the Agency, anticipating, to some degree, the changes that wider membership would make to the organisation.

These might include:

- Greater involvement in energy for development and energy access issues, including support for UNFCCC institutions.
- Driving forward the agenda, arising from the 2008 Jeddah oil summit (see below), for improving the efficiency of the oil market with OPEC and IEF.

Any such programme of enhanced activities, if it is to be substantial, raises the question of funding, including the willingness of non-members to fund activities that may be of particular interest to them. The mechanism of Voluntary Contributions already enables non-member Governments, and indeed non-government organisations, to fund IEA activities.

The proposals that Premier Wen made for multilateral co-ordination in the framework of the G20, to make the global energy market more "secure, stable, and sustained" are not all comfortable ground for the IEA. Nevertheless, it is worth discussing with the Chinese what role the IEA could play in this, and how the IEA might support the G20 on energy topics.

The IEA could follow the example of some OECD committees in holding special joint events with non-IEA G20 members.

The BRICS, in the Communiqué of their 29 March Summit in New Delhi, said "We envision a future marked by global peace, economic and social progress and enlightened scientific temper. We stand ready to work with others, developed and developing countries together, on the basis of universally recognised norms of international law and multilateral decision making, to deal with the challenges and the opportunities before the world today. Strengthened representation of emerging and developing countries in the institutions of global governance will enhance their effectiveness in achieving this objective." The IEA could attempt to follow up with the BRICS what their proposal for "strengthened representation of emerging and developing countries in the institutions of global governance"

means in the energy field and how the IEA could facilitate this.

In broadening its engagement with non-member countries, the IEA's strategic objectives should be to position itself as the G20's secretariat on energy matters, as the coordinator of international government cooperation on energy technology, and as the main channel for cooperation with OPEC countries on energy market efficiency issues. Progress in these areas should eventually open the door for membership enlargement.

However, it is probably misleading to think that the transformation of the IEA into a genuinely global consumer body could be achieved through step-by-step measures. If the IEA is to occupy the central role outlined above, its fundamental orientation as a west dominated institution will need to change. That can only be achieved through a high level negotiation led by leading members and non-members. Evolutionary measures towards wider engagement can help to prepare for this, but at some stage it will require the high expenditure of "political energy" referred to by Prime Minister Cameron.

"We envision a future marked by global peace, economic and social progress and enlightened scientific temper."

International Energy Forum and Producer/Consumer Dialogue

The International Energy Forum is not a treaty organisation and is already, to some extent in the process of evolution with the establishment of its secretariat and its new Charter. The Forum is a "neutral facilitator" which places no legal obligations on its members. The fundamental aims of the Forum, as set out in the Charter, are:

- Fostering mutual understanding and awareness of common energy interests among its members.
- Promoting a better understanding of the benefits of stable and transparent energy markets.....
-promoting.....energy market transparency, stability, and sustainability.
- Promoting the study and exchange of views on the inter-relationships among energy, technology, environmental issues, economic growth and development.
- Facilitating the collection, compilation and dissemination of data, information, and analyses.

Under its new Charter, the IEF remains largely a discussion forum. This is largely the result of its wide membership and the differences in outlook between OPEC oil producers and many consuming countries. To play a bigger part in energy governance the Forum would need to establish an inner leadership group of more manageable size and a more substantial secretariat with greater resources to manage the Forum's business.

When oil prices rocketed to \$140 per bl in the summer of 2008, Saudi Arabia hosted an Oil Summit at Jeddah for major producers and consumers. A joint statement by Saudi Arabia and the Secretariats of the IEA, IEF, and OPEC said that "current oil prices and their volatility are detrimental to the global

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economy and, in particular, the economies of least developed countries". Efforts were needed to, "improve the efficient operation of the oil market" and, "bring stability...for the benefit of all". The areas identified for action included investment, transparency and regulation of financial markets, better data (through JODI), shared market analysis, technology, energy efficiency. A follow-up Ministerial meeting held in London later that year set up an Expert Group to consider the architecture of the producer/consumer dialogue and options for reducing oil price volatility. In the light of the Expert Group advice, the IEF Ministerial at Cancun in 2010 agreed the principles of the new IEF Charter (adopted at Riyadh in 2010) and a joint work programme for the IEF/OPEC/IEA Secretariats, mainly on improving transparency and examining the links between financial and energy markets.

Some have suggested the possibility of a "grand bargain" between energy producers and consumers. (e.g. Robert Zoellick, October 2008). But there is no agreement on what such a bargain might contain. Certainly the idea of trying to agree price ranges and volumes is anathema to many major consuming countries committed to free markets.

However, the developed nations do find themselves in a nuanced situation of urging the need for higher levels of investment on producing nations and NOCs while pressing ahead with their plans to implement sustainable policies and technologies which, if successful, will eventually reduce fossil oil demand.

A common understanding between producers and consumers of the likely profile of future energy demand and supply seems highly desirable and, at least in part, can address the producers' call for security of demand. Regular discussions between the OPEC and IEA Secretariats are already contributing to such a common understanding. The JODI data initiative of the IEF, OPEC, and IEA Secretariats has the potential to take this further and has already made significant progress. But it suffers from under-funding and its complex structure.

Similarly, there is no agreement on the causes of price volatility in the oil market. But there is widespread recognition that the impact of speculation and price volatility is a cause for concern which merits further analysis. This also has been taken forward jointly by the three Secretariats. A G20 Study Group made a useful report on commodity markets in general in November 2011.

It is possible that the G20 could take a lead in driving forward these joint IEA, OPEC, IEF projects and giving them a stronger mandate. In doing so they would, at least in part, be giving effect to the call of Premier Wen for the G20 to promote cooperation to make the energy market more secure, stable and sustainable.

Energy Charter

The principles of the Energy Charter could contribute to a significantly more stable environment for international energy investment. Ratification of the Charter itself entails specific legal obligations that some governments may find difficult. But the more evolutionary step of adopting the principles of the Charter in multilateral, regional, and bi-lateral energy forums could make a significant contribution in the meanwhile.

An Entirely New Structure

If it turns out not to be practicable to adapt existing institutions for energy collaboration to the needs of today then it may become necessary to adopt an entirely new structure. One suggestion is that this

might be built around the G7 plus the BRICs, with the secretariats of the major international organisations in attendance. Except for the exclusion of Mexico and South Africa, this grouping is not very different from the G8 plus 5 summit group that has met in the past. However on these occasions the “G8” and the “5” did not really function as a single group and, for instance, tended to have separate communiqués. There would be quite a lot of resistance to the creation of such a new group, which might be seen as duplicating existing structures to some extent. But it should not be ruled out if other options fail. The IEA’s proposals for forming a wider group with partner countries could, perhaps, be regarded as a step in the same direction.

Conclusions and recommendations

Some of the world’s most profound and pressing problems are on the agenda for global energy collaboration. It is vitally important to adapt the structures of global energy governance to the task. There is much that can be done within the framework of existing institutions, and we need to press ahead with this urgently. Fundamental reforms will be more difficult, and will require a period of confidence building. But they remain essential to provide inclusive global energy governance that is genuinely fit for purpose in the modern world.

The IEA should press ahead with proposals for closer association with major developing and partner countries, such as China, India, Russia, Brazil, Mexico, Indonesia, and South Africa. Regular meetings of IEA and partner countries at Energy Minister and Director General levels could make a big contribution to the coordination of low carbon energy policy as well as to consumer nation energy security. Governments of developed and developing nations should support this process which is at the heart of the modernisation of global energy governance. Expanding the IEA’s membership to include emerging energy consumer nations should be the ultimate aim, but this cannot be rushed. While the IEA should retain its commitment to open energy markets, it should also consider options for working more closely with OPEC countries towards achieving a common understanding of the balance and outlook of oil markets.

The IEA should discuss with the UNFCCC how it can best support the work of the Technology Mechanism, recognising that this may require the IEA to greatly increase its capability for analysing the energy policy options of developing nations. Governments should consider this topic as a priority for additional IEA funding.

The G20 should consider the establishment of a Working Group to review the future of global energy governance in consultation with the IEA, IEF, UNFCCC, Energy Charter Treaty, and OPEC, within the framework of the Russian presidency of the G20 in 2013 with the objective of presenting material to the 2014 summit. The Working Group should give immediate attention to the 2008 Jeddah agenda for market stability and on giving new impulse and direction to the joint work of the IEA, OPEC, and IEF Secretariats. It should also consider the options for setting up a clearing house, possibly hosted at the IEA, for the many international institutions for energy technology collaboration.

Governments should support the continued strengthening of the secretariat of the International Energy Forum, which is likely to remain the main vehicle for energy policy discussions between energy consumers and OPEC nations. Efforts should continue towards the formation of a smaller representative inner council of the IEF able to manage its proceedings and identify areas where closer producer/consumer cooperation is possible.

Governments should give serious consideration to how the scope of the Energy Charter Treaty, or at least the main principles of the Charter, could be expanded to provide greater confidence for international energy investment and trade. This could be a fruitful topic for Asia/Pacific regional cooperation.

About the Grantham Institute for Climate Change

The Grantham Institute is committed to driving research on climate change, and translating it into real world impact. Established in February 2007 with a £12.8 million donation over ten years from the Grantham Foundation for the Protection of the Environment, the Institute’s researchers are developing both the fundamental scientific understanding of climate change, and the mitigation and adaptation responses to it. The research, policy and outreach work that the Institute carries out is based on, and backed up by, the world-leading research by academic staff at Imperial.
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ANNEX

The changing balance of global oil demand, trade, and import dependency:

Oil Demand (mb/d)

	2010	%	2020	%	2035	%
OECD	42.5	53	40.0	47	35.7	40
North America	22.6	28	21.4	25	19.3	21
OECD Europe	12.7	16	12.0	14	10.6	12
China	8.8	11	12.2	14	14.9	16
India	3.2	4	4.2	5	7.5	8
World	80.1	100	85.0	100	90.3	100

IEA WEO 2011 Projection: excludes marine bunkers

Regional Oil Imports (mb/d)

	2010	%	2020	%	2035	%
OECD	23.6	70	21.2	59	16.8	40
North America	8.4	25	6.2	17	2.8	7
OECD Europe	8.5	25	9.0	25	8.7	21
China	4.7	14	8.0	22	12.6	30
India	2.4	7	3.4	9	6.8	16
World	33.5	100	36.1	100	42.1	100

IEA WEO 2011 Projection: excludes marine bunkers

Percentage Oil Import Dependency

	2010	2020	2035
OECD	55	53	47
North America	37	29	14
OECD Europe	67	76	83
China	54	65	84
India	74	83	92

IEA WEO 2011 Projections

Table showing the evolution of oil imports for the US, EU, China, India, OECD, non-OECD (From data underlying Fig 3.19 in WEO 2011)