Challenges in Energy Global Governing

The G20 and the Future of Energy Governance

T. Sainsbury, H. Wurf

Tristram Sainsbury – Research Fellow, G20 Studies Centre, Lowy Institute for International Policy; 31 Bligh Street, Sydney, NSW 2000, Australia; E-mail: tsainsbury@lowyinstitute.org

Hannah Wurf – Research Associate, G20 Studies Centre at the Lowy Institute for International Policy; 31 Bligh Street, Sydney, NSW 2000, Australia; E-mail: hwurf@lowyinstitute.org

The fraught history of energy governance means that despite the oil shocks of the 1970s and ongoing resource price volatility, today there are no effective global mechanisms for cooperation between energy-producing and energy-consuming countries. Furthermore, there are two conflicting challenges at the heart of energy governance – ensuring energy access for all and transitioning to a low-carbon future. This article argues that the current global energy institutions are ill equipped to provide the impetus for energy governance cooperation, and the solution will have to come from collective political will at the leader level. The Group of 20 (G20) could be part of the solution as the economic forum for the world's largest advanced and emerging economies, including both energy producers and consumers. This article gives a brief history of energy governance and the institutions that emerged in the second half of the 20th century. It explores the strengths and weaknesses of each institution, including the well-established International Energy Agency (IEA) and Organization of Petroleum Exporting Countries, as well as more recent players such as the International Energy Forum and the International Renewable Energy Agency. It goes on to explain how the lack of progress in reaching global solutions led to G20 interest in energy governance, and what that forum has achieved on energy cooperation so far, notably the G20 Principles on Energy Collaboration in 2014 and the meeting of G20 energy ministers in 2015. The article focuses mainly on how the G20 can progress the energy governance agenda, and what pragmatic options are available for the forum. In particular, it discusses how the G20 might spearhead reform of the IEA, support new initiatives and pursue a new platform for discussion within the G20.

Key words: energy governance, energy access, climate change, G20, International Energy Agency, OPEC, International Energy Forum, International Renewable Energy Agency, multilateralism

Introduction

In 2016, there are no effective global mechanisms for high-level cooperation between energy-producing and energy-consuming countries. Current global energy institutions are ill equipped to provide the impetus for energy governance cooperation, and the solution will need to come from collective political will at the leader level.

There have been huge shifts over the last decade in the energy sector through technology revolutions in shale oil and growing efforts to address climate change. Renewable energy, especially solar power, is becoming more cost efficient. Not only is the energy mix changing, but the dynamics between producers and consumers are also changing. The United States, previously

the world's largest energy importer, has transitioned into relative self-sufficiency through shale oil and gas. The largest consumers of energy are now the emerging economies, including China and India, which have been investing in renewable energy while still relying heavily on fossil fuels.

Existing energy institutions have struggled to keep across these developments. This article gives a brief history of energy governance and the institutions that emerged in the second half of the 20th century. The strengths and weaknesses of each of the institutions, including the well-established International Energy Agency (IEA) and the Organization of the Petroleum Exporting Countries (OPEC), as well as more recent players such as the International Energy Forum (IEF) and the International Renewable Energy Agency (IRENA), are explored in a comparative framework.

Today there are two essential challenges at the heart of energy governance – ensuring energy access for all and transitioning to a low-carbon future.[1] Energy access relies on "steady supply, robust governance, and an efficient and stable distribution system" [Wu and Wu, 2014]. Energy and climate change are inseparable and energy access will need to be pursued without further warming the planet beyond already dangerous levels. The world is still a long way from meeting these challenges, with significant lags in investment.

The lack of progress in reaching global solutions to the two energy challenges has coincided with G20 interest in the energy governance agenda. The G20 could be part of a solution as the economic governance forum for the world's largest advanced and emerging economies, including both energy producers and consumers. The G20 aims to create strong, sustainable and balanced growth for the global economy. Energy access is critical for this goal. Also critical is getting the optimal balance for the global energy mix, which depends on the right technology, capital and legal frameworks.

Although the forum has achieved limited outcomes on energy cooperation so far, there have been some successes with G20 members agreeing to the G20 Principles on Energy Collaboration in 2014 and the first meeting of G20 energy ministers in 2015. Energy is unlikely to lose relevance for the G20 with oil-producing countries increasingly unable to balance their budgets and investment needed to improve energy efficiency and mobilize renewables [Arezki, Mazarei and Prasad, 2015].

This article focuses mainly on how the G20 can progress the energy governance agenda, and what pragmatic options are available for the forum. It looks narrowly at the role of multilateral government groupings (while acknowledging the importance of private actors, especially multilateral energy companies). Specifically, it examines which groupings are best placed to find solutions to the two key challenges for global energy.

The central research question is whether the G20 can help to solve the fragmented system of energy governance. The G20 is voluntary and has flexibility compared with treaty-based organizations. In particular, this article discusses how the G20 might spearhead reform of the IEA, support new initiatives and pursue a new platform for discussion within the G20.

The Current Landscape

Energy Markets

Energy markets are prone to significant bouts of volatility. The more than 50% drop in oil prices in the second half of 2014 is one of six episodes of significant oil price decline over the

[1] Energy access depends on modern energy supply for people around the world from different energy sources and on the security of international energy markets.

past three decades [Baffes, Kose, Ohnsorge et al., 2015]. This uncertainty is compounded by political and economic unrest in many of the large oil-producing countries. OPEC acknowledges that social unrest in many parts of the world affects supply and demand.[2] Since the 1970s, there has been discussion about the need to stabilize or control oil prices. An open global economy with rules set by governance bodies is more desirable.

Meanwhile, IRENA has announced that "renewable energy projects across the globe are now matching or outperforming fossil fuels, particularly when accounting for externalities like local pollution, environmental damage and ill health" [Adnan Amin, quoted in Parkinson, 2015]. This is based on the 2014 report on Renewable Power Generation Costs in 2014, which concludes that "biomass, hydropower, geothermal and onshore wind are all competitive with or cheaper than coal, oil and gas-fired power stations, even without financial support and despite falling oil prices" [Parkinson, 2015; IRENA, 2015].

Climate change action will likely require countries to reduce greenhouse gas emissions from burning fossil fuels and shift toward renewable and alternative sources of energy. However, despite new developments, oil, coal and natural gas continue to make up 80.5% global energy consumption in 2016 [Economic Intelligence Unit, 2016]. The transition away from carbon-based energy remains an enormous undertaking. Divestment campaigns call for an immediate stop to fossil fuel-based energy (through removing investment capital from oil, coal and gas companies), but some fossil fuels will likely be needed for energy access in the short term around the world. New technology for clean coal may provide some respite, and new opportunities for climate financing and better deployment of renewables will also help increase energy access while moving away from carbon-intensive sources of energy.

There is also debate on how to price carbon to address the negative externalities associated with its consumption. This has been led by cap and trade programmes designed (but not implemented nationally) in the United States to control pollution and "reward innovation, efficiency, and early action and provide strict environmental accountability without inhibiting economic growth" [United States Environmental Protection, 2016]. The European Union has an emissions trading system. China announced in 2015 that it would implement a national cap and trade system to reduce greenhouse gas emissions [Mufson, 2015].

Energy Institutions

The oil crises of the 1970s led countries to cooperate on energy policy to attempt to match supply and demand, and to cushion shocks to the global economy that result from energy disruptions. As oil producers banded together to form OPEC, the IEA was formed as the collective response of energy-consuming countries that were starved of oil. The IEA remains the most influential multilateral energy organization and provides a significant body of technical energy expertise. For the next two decades, these two organizations remained the main vehicles for multilateral energy governance.

In the 1990s, a number of new organizations came into being as multilateralism flourished after the thawing of the Cold War. In 1991, energy ministers from OPEC and IEA countries met in Riyadh, Saudi Arabia, for the first IEF gathering. This became the most inclusive grouping yet, as major producers and consumers met to discuss supply and demand and the energy markets. The IEF claims to be the neutral facilitator of open dialogue on energy with key global oil and gas actors. Also in 1991, with the break-up of the Soviet Union, the Energy Charter Treaty came into effect. This is a legally binding treaty with the aim of ensuring energy access for European countries.

[2] See "Brief History" on the OPEC website at http://www.opec.org/opec_web/en/about_us/24.htm.

Around the same time, the challenge of responding to climate change and preventing global warming was elevated to the international arena in 1992 when the United Nations Framework Convention on Climate Change (UNFCCC) was negotiated in Rio de Janeiro, Brazil. While the urgency of climate change is driven by fundamental physical phenomena, political impetus is critical for the degree and timing of government responses. As climate change becomes more of a priority for governments, some momentum is building for a transition away from carbon-based fossil fuels responsible for global warming.

In 2009, IRENA was founded. The renewable energy agency is located in Abu Dhabi in the United Arab Emirates. The headquarters have been built to produce zero net carbon emissions and zero net waste [Block, 2009]. The UAE announced that IRENA will "enable Abu Dhabi, already one of the largest oil exporters in the world, to lead the way in renewable energy innovations as the country will become a global research and development hub" [Abu Dhabi Emirate, 2009]. This decision symbolizes the reality of moving away from carbon-based energy.

In 2015, energy governance is now fragmented across these six different forums (OPEC, IEA, IEF, Energy Charter Treaty, UNFCCC and IRENA), each with its own membership criteria, institutional history and specific mandate. Each has varying strengths and weaknesses, and plays an important role in performing some of the functions of energy governance, but no one organization brings together the world's largest producers and consumers in order to provide a coherent framework for energy governance across all types of energy. The IEF remains a meeting forum for energy ministers, and lacks the resources and mechanisms to be a leader-level forum with influence.

A success in modern energy governance has been the Joint Oil Data Initiative (JODI) facilitating collaboration among the IEA, OPEC and IEF to improve the transparency of oil data. However, quality data still remains a challenge for the energy markets. For example, China and India are both under pressure from the international community to be more transparent about their energy data.

Table 1 outlines the membership of G20 countries across the six forums outlined above and shows the uneven distribution of members within the current energy institutions. The functions of the specific organizations are outlined in more detail below.

Table 1: G20 Country Membership in Energy Organizations

	G20	OPEC	International Energy Agency	International Energy Forum	Energy Charter Treaty	UNFCCC	IRENA
Countries (excluding European Union)	Argentina			•		•	•
	Australia		•	•	• [a]	•	•
	Brazil					•	
	Canada		•	•		•	
	China			•		•	•
	France		•	•	•	•	•
	Germany		•	•	•	•	•
	India			•		•	•
	Indonesia					•	•
	Italy		•	•	•	•	•
	Japan		•	•	•	•	•
	Korea		•	•		•	•

	G20	OPEC	International Energy Agency	International Energy Forum	Energy Charter Treaty	UNFCCC	IRENA
Countries (excluding European Union)	Mexico			•		•	•
	Russia			•	• [a]	•	•
	Saudi Arabia	•		•		•	•
	South Africa			•		•	•
	Turkey		•	•	•	•	•
	United Kingdom		•	•	•	•	•
	United States		•	•		•	•

Notes: OPEC = Organization of the Petroleum Exporting Countries; UNFCCC = United Nations Framework Convention on Climate Change; IRENA = International Renewable Energy Agency.

[a] Russia and Australia have signed but not ratified the Energy Charter Treaty.

International Energy Agency

The IEA is made up of 29 net oil importers. It was established in 1974 to maintain and improve systems for coping with oil-supply disruptions and operating a permanent information system on the international oil market. It currently has the most developed mandate for global energy governance to encourage energy security, economic development, environmental awareness and engagement worldwide.[3] The IEA is a treaty-based organization, which means that it contains a legal instrument; however, more general decision-making is based on consensus.

To achieve its first objective of managing disruptions in the oil supply, members are required to hold 90 days of oil stocks. However, existing members do not always comply. IEA members have fallen behind on their stocking obligations for limited periods and Australia is deliberately in breach of its obligations with no plan to comply [Downie, 2015a]. To achieve the second objective of operating an information system, the IEA engages in systematic data collection and analysis. Its annual publication of the World Energy Outlook remains the world's leading source of global energy statistics and analysis.

Currently, membership is only open to countries within the Organisation for Economic Co-operation and Development (OECD). Membership therefore involves many European countries and some new influential players such as Mexico. To put this constraint into perspective, about 90% of the growth in energy demand will come from non-OECD countries over the next quarter century [Wu and Wu, 2014].

The IEA has made efforts to show that it is working closely with non-OECD members including China, India, Russia, Brazil, Indonesia and South Africa. There are political tensions within the organization about future steps and the formal inclusion of non-members. In the event of membership expansion, the European countries will lose share and influence. New members will have to share data and promise to cooperate in crisis times. Holding oil stocks is a budgetary commitment that is not always easy to sell domestically.

So far, there are no indications of treaty reform or decoupling IEA membership from OECD membership. Instead, a gradual process is being taken and the large emerging markets have already been working closely with the IEA. There were positive developments at the IEA ministerial meeting in 2015, with association agreements established with China, Indonesia and Thailand to foster "deeper co-operation and collaboration" [IEA, 2015].

[3] See "About Us" on the IEA website at http://www.iea.org/aboutus.

As a small grouping, the IEA needs to open its membership if it wants to be at the centre of global energy governance arrangements.

Organization of the Petroleum Exporting Countries

OPEC is the oldest of the modern energy organizations, established in Baghdad, Iraq, in 1960. It was established to coordinate and unify petroleum policies among member countries, in order to influence prices and prevent shocks to the revenue of member countries. Its membership consists of 13 oil exporters, mainly in the Middle East.

The establishment of the organization represented a significant step toward states asserting influence over the energy markets through collaboration. However, attempts to stabilize energy prices in recent years have become increasingly problematic. Oil production has increased outside OPEC countries and new products increasingly compete with oil. The organization has lost influence.

OPEC operates as a closed club and membership is unlikely to expand. Indeed, Gabon and Indonesia have both left OPEC, in 1995 and 2008 respectively, although Indonesia's membership was reactivated on 1 January 2016. Both produced less oil than their OPEC counterparts, and fixed high member fees did not guarantee influence within the organization. OPEC members meet with IEA members in the IEF. The future of OPEC will depend on its collaboration with other forums and its internal coherence.

International Energy Forum

The IEF, based in Riyadh, brings together energy ministers from 89 major producing and consuming countries. Of these countries, 74 are signatories to the IEF Charter. The IEF is unique in that "it comprises not only consuming and producing countries of the IEA and OPEC, but also Transit States and major players outside of their memberships, including Argentina, China, India, Mexico, Oman, Russia and South Africa."[4]

Although the IEF has the broad representation that both the IEA and OPEC lack, it does not have any function beyond information sharing and is hindered by limited resources. So far, the IEF has not been able to develop a mandate beyond promoting dialogue. Dialogue plays an important role in information sharing and boosting cooperation, but the IEF is unable to provide solutions in a crisis. Its location in Riyadh is also politically sensitive for energy discussions. For example, in 2015, Saudi Arabia was perceived to be influencing the decisions of OPEC countries to pump more oil despite low prices [Crooks, 2015].

The IEF is aware of its unique position in energy governance. It followed and reported on the G20 energy-related meetings in 2015. It has played a role in bringing together OPEC and the IEA, and led G20 work on JODI, finance trading in energy markets and comparative work on energy outlooks However, it would require a revised mandate, a boost in funding and, probably, relocated headquarters to elevate its standing.

Energy Charter Treaty

The 1991 Energy Charter Treaty provides legal protection for energy trade and is legally binding. The signatories are mainly European and former Soviet Union countries, and the organization is a product of post-Cold War cooperation in Europe. China, the United States and

[4] See "Partners" on the IEF website at https://www.ief.org/about-ief/organisation/partners.aspx.

Saudi Arabia are observers only. It is distinct in that member states that have signed the charter have agreed to investment-state dispute settlement to promote the stability of the energy sector and encourage investment. This is a much stronger legal mechanism than the consensus decision-making of the other energy groups outlined in this article.

International Renewable Energy Agency

IRENA is open to all United Nations countries and has a specific function to promote renewable energy and "supports countries in their transition to a sustainable energy future."[5] In March 2016, it had 145 members. The organization promotes all forms of renewable energy including bioenergy, geothermal, hydropower, ocean, solar and wind energy. Like the IEA, IRENA's greatest strength is gathering and disseminating information. Unlike the IEA and OPEC, the organization has a very broad membership. However, its mandate remains restricted to renewable energy.

United Nations Agencies

The UNFCCC is truly global with 196 parties. Its purpose is to facilitate negotiations among countries on commitments to reduce their greenhouse gas emissions. However, the treaty is non-binding and depends on individual country actions. Only the Kyoto Protocol legally binds developed countries to emission reduction targets.[6] However, it has weakened over time. China, India and the United States have not ratified the Kyoto Protocol.

The UNFCCC furthers the aim of transitioning to a low-carbon environment, but does not explicitly address energy access. It has struggled to achieve its primary mandate, with a string of high-profile failures, most prominently at the Copenhagen Conference of the Parties (COP) in 2009. The challenging structure of negotiations, toxic environment of "Planet UNFCCC," and a winners and losers dichotomy undermine the consensus needed for energy governance. The act of coordinating so many countries and the technical challenge of estimating the effects of emissions cuts make the UNFCCC an incredibly complex and bureaucratic organization.

The Paris COP in December 2015 was celebrated for the diplomatic efforts of the French government and lauded for providing new optimism about opportunities for a low-carbon transition. The centrepiece was an ambitious (and probably unrealistic) target of not warming the world beyond 1.5°C, but the actual pledges from governments equate to a warming effect between 2.5°C to 3°C [Jotzo, 2015]. To come close to reaching the target, the other institutions highlighted in this article will have to make concerted efforts to work within the UN framework.

In terms of longer-term thinking about energy, the UN Sustainable Development Goals (SDGs) have been established to pursue an agenda for global sustainable development. SDG 7 focuses exclusively on energy, aiming to ensure access to affordable, reliable, sustainable and modern energy for all by 2030.[7] While admirable, critics question how electricity will be brought to 1.2 billion people in just 15 years [Moss, 2015].

---

[5] See "Vision and Mission" on the IRENA website at http://www.irena.org/menu/index.aspx?mnu=cat&PriMenuID=13&CatID=9.

[6] See "Background on the UNFCCC: The International Response to Climate Change" on the UNFCCC website at http://unfccc.int/essential_background/items/6031.php.

[7] See "Energy for Sustainable Development" on the Sustainable Development Knowledge Platform website at https://sustainabledevelopment.un.org/topics/energy.

Enter the G20

Energy on the G20 Agenda

The G20 has been the most recent addition to global energy governance discussions. The forum was set up to facilitate cooperation among the world's largest advanced and emerging economies. Its origins lie in meetings of G20 finance ministers and central bank governors after the Asian financial crisis in 1999. The G20 was elevated to the leaders' level in 2008 and declared itself the "premier forum for international economic cooperation" at Pittsburgh the following year [G20, 2009].

Finance issues remain the mainstay of the G20 but the agenda has expanded into other areas of governance with the intention of mediating global economic challenges. It has been less effective at making substantive progress on issues where decision-making has not been driven by finance ministers and central bank governors, and energy has to compete with the 10 or so other priorities on the G20's agenda. Nevertheless, discussions on energy markets have been a common thread through G20 summits. G20 energy working groups since 2008 have focused on reducing price volatility in energy markets, improving energy efficiency, improving access to clean technologies, and promoting sustainable development and green growth [Downie, 2015b].

At the 2009 Pittsburgh Summit, climate change and energy issues received considerable attention. The key question for the G20 on climate has been on how it can add value to the UN negotiations. Climate change has been one of the most controversial aspects of the G20 agenda, with emerging economies (such as India) expressing the view that the G20 should not have a prominent role in advancing solutions to climate change because the UNFCCC is the preferred forum for negotiations [He and Sainsbury, 2015]. The Pittsburgh Leaders' Communiqué included rhetorical support for the UNFCCC ahead of the Copenhagen COP and investment in clean energy, renewables, and energy efficiency. Since Pittsburgh, G20 leaders have continued to affirm their support for the UNFCCC each year, and focused on climate finance, although the more constructive leadership and direction-setting role that the G20 has the potential to play has been overlooked.

Significantly, in Pittsburgh, G20 leaders ambitiously committed to end inefficient fossil fuel subsidies, agreeing "inefficient fossil fuel subsidies encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change" [G20, 2009]. This decision was made based partly on recommendations from the OECD and IEA that eliminating fossil fuel subsidies by 2020 would reduce global greenhouse gas emissions in 2050 by 10%. Since that commitment was made in 2009, fossil fuel subsidies have been reduced, although the subsidies have proven to be stubbornly tough policies to address domestically. In India and Indonesia, in particular, fuel subsidies form part of the social contract between government and society. Calls for the removal of production and exploration subsidies, such as from Barry Carin [2015], have not been acted upon.

The first G20 reference to energy institutions came at the 2011 Cannes Summit, when leaders welcomed the IEF charter and the "commitment to improve dialogue between oil producer and consumer countries" [G20, 2011]. Leaders called for annual meetings and for more institutional cooperation in the form of the IEF, IEA and OPEC releasing a joint communiqué following these meetings. In 2012, Chinese premier Wen Jiabao proposed efforts at multilateral coordination on the global energy market through the G20 [Hirst and Froggatt, 2012]. At the World Future Energy Summit in Abu Dhabi in 2012, he suggested that "we may consider establishing, under the G20 framework, a global energy market governance mechanism that involves energy suppliers, consumers and transit countries under the principle of mutual benefit" [Wen, 2012].

The Russian G20 presidency in 2013 dedicated time to discussions on energy access and efficiency. This resulted in an agreement to continue to support and strengthen quality data for the JODI database. Leaders at the St. Petersburg Summit agreed to "enhance energy cooperation, to make energy market data more accurate and available and to take steps to support the development of cleaner and more efficient energy technologies to enhance the efficiency of markets and shift towards a more sustainable energy future" [G20, 2013]. The only reference to governance was through welcoming IEA efforts to deepen its engagement with non-members.

The Australian G20 Presidency and the Creation of Energy Governance Principles

During the Australian presidency in 2014, there was real progress made on the substantive energy governance problem, especially on how to structure global discussions on energy. At the Brisbane Summit, G20 leaders recognized that the current system of energy governance was not working and agreed to the G20 Energy Principles on Collaboration. Even the oil-producing countries of Saudi Arabia and Russia agreed that there needed to be change.

The principles highlight the central importance of energy access, and also make specific recommendations for reforming governance, for example, making existing institutions more representative and inclusive of emerging and developing countries, collecting and disseminating high quality data, and enhancing coordination between international energy institutions and minimizing duplication [G20, 2014a]. The principles are recorded in Table 2.

Table 2: G20 Energy Principles on Collaboration

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	Rationalize 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 G20 members' 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 among international energy institutions and minimize duplication where appropriate

Source: G20 [2014b].

The challenge remains how to turn these principles into action. Should some of the principles be prioritized? How do they interact with the UN goal to ensure access to affordable, reliable, sustainable and modern energy for all? In the interests of energy governance institutions, the principles to make international energy institutions more representative and inclusive, to encourage and facilitate the collection and dissemination of high-quality energy data, to en-

hance energy security through dialogue and cooperation, and to enhance coordination appear most pertinent. Interestingly, no energy institutions are named. This could be interpreted as a call for IEA reform, but this is not explicit.

Turkey in 2015 and Next Steps

Turkey's 2015 G20 presidency was structured around a narrative of three "I's": inclusiveness, investment, and implementation [G20, 2014b]. All three are relevant for energy governance: inclusiveness implies energy access for all, investment is important for ensuring energy access and boosting climate financing, and implementation is vital for progress on existing G20 commitments.

The focus on energy access was certainly an important aspect of development that the G20 should not ignore. The headline of the first energy ministers' meeting was a (voluntary) energy access action plan that reflected Turkey's inclusiveness focus. Through the action plan, G20 members will support electricity access in sub-Saharan Africa and share "knowledge, experiences and good practices" [G20, 2015]. Although Turkey's regional focus on sub-Saharan energy access (one of the most energy-poor areas in the world, with an estimated 600 million people without access to energy) is of varying degrees of importance to G20 members, this decision could demonstrate that the G20 will take more of a leading role in energy governance.

In 2015, the first ever G20 energy ministers' meeting recognized advancements in renewable energy, energy efficiency and the removal of fossil fuel subsidies. A toolkit of voluntary options on renewable energy deployment was produced to support the increased uptake of renewables into the energy mix of G20 members. Ministers also discussed implementation of the energy efficiency action plan that G20 leaders had agreed to in Brisbane in 2014, discussed G20 actions to deliver greater energy efficiency (for example, in vehicle emissions) and welcomed progress made over the previous 12 months (mainly by India and Indonesia) to phase out fossil fuel subsidies [G20 Energy Ministers, 2015].

While these actions represent a step forward, toolkits and voluntary options are vague and their implementation remains rooted in domestic policy processes. Robin Davies [2015] has noted that similar voluntary packages have been ineffective with regards to G20 action on development. Furthermore, the communiqué remained silent on energy governance, only indicating support for the UNFCCC process. However, China has scheduled an energy ministers' meeting for 29–30 June under its 2016 G20 presidency, and the implementation of the G20 Principles of Energy Collaboration is on the agenda [see G20 Energy Ministers, 2015].

With regards to these principles, it could be that the G20 initially expected the existing organizations (especially the IEA and IEF) to respond on their own terms. After the 2014 principles were adopted, the IEA appointed a new executive director, Fatih Birol, who has signalled renewed efforts to work with China and other emerging markets. Birol's first overseas visit in the new role was to China, where he announced "China is the most important player in the global energy market" and that his vision was "to develop a truly *International* Energy Agency during my tenure" [Birol, 2015]. However, there has been no clear indication of Chinese membership in the near future from either China or the IEA.

Although the G20 was relatively silent on the issue of energy governance in 2015, the energy organizations themselves have been engaging in G20 energy discussions. The IEA claims to have "actively supported G20 deliberations on energy by providing inputs to G20 Leaders' Summits, Finance Ministers, Sherpa meetings, meetings of the G20 Energy Sustainability Working Group (established in 2013) and more recently, to the first Energy Ministers meeting

in 2015."[8] The IEF similarly notes "the G20 Presidency of Turkey graciously provided the IEF the opportunity to express its views on the draft communiqué of the G20 Energy Ministers' Meeting" [IEF, undated].

Although the meeting of G20 energy ministers had symbolic value, energy ministers should aim higher in future meetings [Sainsbury, 2015]. Leaving energy governance in the hands of existing institutions is unlikely to lead to substantive change. If the G20 wants to make meaningful progress as articulated by its leaders in Brisbane, it will have to move all nine of the principles forward. It is not enough to recognize the challenge; there needs to be genuine discussion of empowering energy governance institutions and new initiatives.

Progress in Energy Governance through the G20

Promoting a premier arrangement for global energy governance – whether elevating an existing body, enhancing coordination of existing bodies or creating a new body – will be essential if G20 energy ministers want to make a substantive and lasting contribution to global energy governance. This article examines three opportunities for the G20 to build momentum in energy governance.

The G20 Calls for IEA Reform

The first option is that the G20 could encourage the expansion of IEA membership to include non-OECD countries. Ambitiously, the G20 could set a firm and ambitious timeframe by which G20 energy ministers and IEA members discuss such a reform.

There is value in the G20 encouraging IEA reform and supporting its efforts to engage with large emerging market and energy consuming countries – in particular, it would be a way to demonstrate progress of G20 principles two, four and five. This could be partly achieved by closer bilateral relations between the large emerging markets and the IEA, but the goal should be full formal membership of non-OECD members. Recent efforts by the IEA are important steps in this regard, but cannot be seen as a substitute for lasting change. Membership means that each country has a stake and shares risk. This is in contrast to a country that free rides by sharing data and gaining benefits, but not collaborating during a crisis.

However, such a course would be politically challenging. It would involve non-IEA G20 members influencing IEA institutional settings, which is unlikely to be viewed favourably, especially by small European members that are not in the G20 club. To make room for new members, existing members would need to give up relative voting power at the institution. Given that China is now the world's largest energy consumer and importer, and India and Brazil are major global energy players, the voting capacity of existing membership would be significantly diluted. The strict national interest of existing IEA decision-makers could prevent OECD countries from agreeing to expand membership to non-OECD members.

It would also be important to ensure that changes to the IEA treaty are discrete and narrowly targeted. That said, membership reform requires a broader consideration of the IEA's priorities and functions, and will need to reflect the interests and perspectives of new members. But there is a natural limit on how far membership of the IEA can extend, at least in the near term, given its role as a consumer forum, rather than a producer forum.

Another possibility is that China and India may not be interested in IEA membership. Both countries are pragmatic about energy governance, seeking the benefits of cooperation but unwilling to compromise on sovereignty. It has been observed that "the most fundamental ob-

[8] See "G20" on the IEA's website at https://www.iea.org/aboutus/globalengagement/g20.

stacle to China becoming an IEA member is Beijing's own hesitation" [Kennedy, 2011, p. 131]. India is also considering all governance options as it develops both renewable and coal-based energy [Saran, 2015].

There are some who believe that a global crisis could become the trigger for IEA reform [Downie, 2015b]. However, it would be dangerous to put faith in a crisis, given there has been price volatility and political instability in energy-producing countries over the past two decades that has proven insufficient to prompt global energy governance reform. Ultimately, the G20 will need to play its cards carefully on IEA reform. Too much interference could set back the reform process. Nonetheless, if the G20 does nothing, necessary IEA reform may come too slowly, and with muted ambition.

The G20 Supports New Initiatives

Another possible path is the creation of a new energy agency to fulfill a particular mandate. This could potentially be a regional grouping, for example an East Asian forum, or a political grouping such as the BRICS group of Brazil, Russia, India, China and South Africa.

In 2003, the Japanese government proposed the Hiranuma Initiative at the IEF meeting in Osaka, which aimed at maintaining energy stability in the Asian region and laid the groundwork for a potential Asian equivalent to the IEA [Toichi, 2003]. Energy ministers from Japan, Korea, China and the members of the Association of Southeast Asian Nations agreed to cooperate on natural gas development, information exchange and price negotiations with oil producers, but nothing more came of the initiative.

A new Asian energy body would need China, India and Japan, Asia's largest energy consumers, to agree to work closely together on an ongoing basis. To add regional heft to the decision, such an initiative would probably also need support from other Asian middle powers such as Korea, Indonesia and Australia.

The G20 will have to decide in such a scenario whether to provide political backing for new initiatives as they develop in the field of energy governance. Such initiatives should be supported if they are constructive additions to the global energy sector, but any regional solution is not ideal and could exacerbate the fragmented global energy architecture.

The G20 Sets Up Its Own Energy Platform

A third option is for the G20 to create a new platform for energy governance.

One possibility is to cement the regular meeting of G20 energy ministers in a permanent "global energy affairs chief coordinating platform," working in cooperation with the IEA and other energy agencies as appropriate.[9] The platform would be able to generate politically feasible, coordinated energy policies. G20 energy ministers could regularly meet to advance the G20 energy principles and facilitate cooperation and dialogue on issues such as energy access, renewable energy and energy efficiency, informed by analysis from the IEA. If a crisis were to occur, the G20 leaders could use the platform to inform their response.

However, such a proposal has many limitations.

A new platform needs to avoid duplication with the existing energy forums, particularly in terms of data sharing or dialogue as with the IEA and IEF. A G20 platform would need a comparative advantage in providing recommendations and harnessing energy ministers to act, and leaders if necessary.

[9] Personal communication with H. Yu, 2015.

There are also two long-term challenges. The first challenge is how to include non-G20 countries that are important energy players. There are many oil-producing countries outside the G20 and the rules-based international order that play an important role in global supply. The second challenge is that the G20 is not a "doing" body. Long-term policy actions from an informal, consensus-based organization like the G20 typically run into actions that are solely in the domestic jurisdiction of member states. A proliferation of studies, reports, plans, data collection mechanisms and activity-level pilots ventures into territory where the G20 has traditionally had difficulty in adding value.

Establishing the G20 as a permanent policy body should not be seen as a substitute to lasting governance reform. Instead, the G20 has proven that it is better as a steering committee for governance and providing support for other initiatives, rather than as a doing body. It is also complicated by its reputation as an elite club, which has consequences for establishing a new global institution. Ultimately, the voluntary and flexible nature of the G20 is both its greatest strength and its greatest weakness.

Conclusion

It is possible that the G20 could take all three paths canvassed here – strengthen the IEA, support new initiatives as they arise and set up a new energy governance platform. These actions are not mutually exclusive. The G20 energy ministers' meeting should be seen as a temporary solution to trigger necessary discussions about the state of global energy governance.

The two energy challenges for the world – of ensuring energy access for all and transitioning to a low-carbon future – will not go away. Indeed, they will only become more pressing in the short and long term. While the paths outlined above would constitute progress, it is time to think of the big picture in terms of a new energy governance structure. The nine principles laid out by the G20 leaders at Brisbane have the potential to precipitate long-term change. But if the G20 does not act, energy governance could well progress without it in a different forum.

References

Abu Dhabi Emirate (2009) "Abu Dhabi Wins the Race for IRENA Headquarters." 1 July. https://www.abudhabi.ae/portal/public/en/abu_dhabi_emirate/government/news/news_detail?docName=ADEGP_DF_138954_EN&_adf.ctrl-state=m5i7upc10_4&_afrLoop=3072376949911246#! (March 2016).

Arezki, Rabah, Adnan Mazarei and Ananthakrishnan Prasad (2015) "Sovereign Wealth Funds in the New Era of Oil." *IMF Direct* [blog], 26 October. https://blog-imfdirect.imf.org/2015/10/26/sovereign-wealth-funds-in-the-new-era-of-oil/ (March 2016).

Baffes, John, M. Ayhan Kose, Franziska Ohnsorge and Marc Stocker (2015) "The Great Plunge in Oil Prices: Causes, Consequences and Policy Responses." Policy Research Note 15/01. Washington DC: World Bank. http://www.worldbank.org/content/dam/Worldbank/Research/PRN01_Mar2015_Oil_Prices.pdf (March 2016).

Birol, Fatih (2015) "Standing Together: A New Era of IEA-China Cooperation." Remarks to the Chinese Academy of Social Sciences, Beijing, International Energy Agency, Paris, 9 September. http://www.iea.org/newsroomandevents/speeches/150909_CASS.pdf (March 2016).

Block, Ben (2009) "Abu Dhabi Chosen to Host IRENA." Worldwatch Institute, Washington DC, http://www.worldwatch.org/node/6179 (March 2016).

Carin, Barry (2015) "Cognitive Dissonance and the G20: The 2 Degree Target, Stranded Assets and Exploration Subsidies." In: Tristram Sainsbury, ed *The G20 at the End of 2014*. Sydney: Lowy Institute for International Policy. pp. 65–67. http://www.lowyinstitute.org/files/g20-at-the-end-of-2014.pdf (March 2016).

Crooks, Ed (2015) "The U.S. Shale Revolution." *Financial Times* 24 April. http://www.ft.com/cms/s/2/2ded7416-e930-11e4-a71a-00144feab7de.html (March 2016).

Davies, Robin (2015) "The 'Indivisibility of Prosperity': Can the G20 Address Development?" In: Mike Callaghan and Tristram Sainsbury, eds., *The G20 and the Future of International Economic Governance*. Sydney: NewSouth Publishing. pp. 150–67.

Downie, Christian (2015a) "Australia Is Not Meeting Its IEA Oil Reserve Targets." *Interpreter* [blog], Lowy Institute for Public Policy, 5 February. http://www.lowyinterpreter.org/post/2015/02/05/Australia-not-meeting-IEA-oil-reserve-targets.aspx (March 2016).

Downie, Christian (2015b) "Energy Governance: Can the G20 Drive Reform?" In: Mike Callaghan and Tristram Sainsbury, eds., *The G20 and the Future of International Economic Governance*. Sydney: NewSouth Publishing. pp. 119–31.

Economic Intelligence Unit (2016) "World Energy Mix, 2016." Economist Group, London, http://www.eiu.com/industry/Energy (March 2016).

G20 (2009) "G20 Leaders Statement: The Pittsburgh Summit." Pittsburgh, 25 September. http://www.g20.utoronto.ca/2009/2009communique0925.html (March 2016).

G20 (2011) "Cannes Summit Final Declaration – Building Our Common Future: Renewed Collective Action for the Benefit of All." Cannes, 4 November. http://www.g20.utoronto.ca/2011/2011-cannes-declaration-111104-en.html (March 2016).

G20 (2013) "G20 Leaders Declaration." St. Petersburg, 6 September. http://www.g20.utoronto.ca/2013/2013-0906-declaration.html (January 2015).

G20 (2014a) "G20 Leaders' Communiqué." Brisbane, 16 November. http://www.g20.utoronto.ca/2014/2014-1116-communique.html (March 2016).

G20 (2014b) "G20 Principles on Energy Collaboration." Brisbane Summit, 16 November. http://www.g20.utoronto.ca/2014/g20_principles_energy_collaboration.pdf (March 2016).

G20 (2015) "G20 Energy Access Action Plan: Voluntary Collaboration on Energy Access." http://www.g20.utoronto.ca/2015/G20-Energy-Access-Action-Plan.pdf (March 2016).

G20 Energy Ministers (2015) "2015 G20 Energy Ministers Communiqué." Istanbul, 2 October. http://www.g20.utoronto.ca/2015/151002-energy.html (March 2016).

He, Fan and Tristram Sainsbury (2015) "The G20 in 2016: How Can China Contribute?" In: Mike Callaghan and Tristram Sainsbury, eds., *The G20 and the Future of International Economic Governance*. Sydney: NewSouth Publishing. pp. 233–50.

Hirst, Neil and Anthony Froggatt (2012) "The Reform of Global Energy Governance." Grantham Discussion Paper, 1 December. London: Chatham House. https://www.chathamhouse.org/publications/papers/view/188185 (March 2016).

International Energy Agency (2015) "Joint Ministerial Declaration on the Occasion of the 2015 IEA Ministerial Meeting Expressing the Activation of Association." 18 November. Paris: International Energy Agency. https://www.iea.org/media/news/2015/press/IEA_Association.pdf (March 2016).

International Energy Forum (undated) "3rd G20 Energy and Sustainability Working Group Meeting." Report on the meeting in Izmir, Turkey, 1–3 September 2015, https://www.ief.org/events/3rd-g20-energy-and-sustainability-working-group-meeting (March 2016).

International Renewable Energy Agency (2015) "Renewable Energy Generation Costs in 2014." January. http://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Power_Costs_2014_report.pdf (March 2016).

Jotzo, Frank (2015) "Paris Agreement: Signaling Change for Decades to Come." *Interpreter* [blog], Lowy Institute for Public Policy, 17 December. http://www.lowyinterpreter.org/post/2015/12/17/Paris-agreement-signaling-change-for-decades-to-come.aspx (March 2016).

Kennedy, Andrew B. (2011) "China's Petroleum Predicament." In: Jane Golley and Ligang Song, eds., *Rising China: Global Challenges and Opportunities*. Canberra: ANU E Press. pp. 121–36.

Moss, Todd (2015) "SDG Seven: Update the 'Modern' in Universal Modern Energy Access." *Views from the Center* [blog], Center for Global Development, 2 April. http://www.cgdev.org/blog/sdg-goal-seven-update-modern-universal-modern-energy-access (March 2016).

Mufson, Steven (2015) "With Cap and Trade Plan, China Adopts Emissions Policy That Couldn't Get Through U.S. Congress." *Washington Post* 28 September. https://www.washingtonpost.com/news/energy-environment/wp/2015/09/28/with-cap-and-trade-plan-china-adopts-emissions-policy-that-couldnt-get-through-u-s-congress/ (March 2016).

Parkinson, Giles (2015) "Graph of the Day: The Plunging Cost of Renewables." RenewEconomy, Neutral Bay, Australia, 19 January. http://reneweconomy.com.au/2015/graph-day-plunging-cost-renewables-49704 (March 2016).

Sainsbury, Tristram (2015) "G20 Lacking Ambition on Climate Change." *Interpreter* [blog], Lowy Institute for International Policy, October. http://www.lowyinterpreter.org/post/2015/10/07/G20-lacking-ambition-climate-change.aspx (March 2016).

Saran, Samir (2015) "Indian Exceptionalism and Realistic Responses to Climate Change." *Interpreter* [blog], Lowy Institute for International Policy, September. http://www.lowyinterpreter.org/post/2015/09/10/Indian-exceptionalism-and-realistic-responses-to-climate-change.aspx (March 2016).

Toichi, Tsutomu (2003) "Energy Security in Asia and Japanese Policy." *Asia-Pacific Review* 10(1), pp. 44–51. doi: 10.1080/13439000301608.

United States Environmental Protection, Agency (2016). "Cap and Trade." February. https://www3.epa.gov/captrade/ (March 2016).

Wen, Jiabao (2012) "China Committed to Green and Sustainable Development." Remarks made at the World Future Energy Summit, United Arab Emirates, China News and Report, 16 January. http://www.china.org.cn/report/2012-03/01/content_24774830.htm (March 2016).

Wu, Jianguo and Tong Wu (2014) "Goal 7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All." *UN Chronicle* 51(4). http://unchronicle.un.org/article/goal-7-ensure-access-affordable-reliable-sustainable-and-modern-energy-all/ (March 2016).