

2. The G20 and its Role in Global Energy Governance

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Global energy supply is still far from sustainable. There is no comprehensive approach in global energy governance to steer a global energy transition. The G20 comprises countries that are of utmost importance for global energy governance, and might therefore be well placed to coordinate action and to achieve greater coherence. The G20 has made initial steps to formulate an energy agenda and to commission other institutions. This is an appropriate approach, but more concrete steps need to follow in order to accelerate an energy transition. One step could be to promote “sub-clubs”.

Global energy supply is far from being sustainable³

Torn between the twin challenges of climate change and energy security, the world is facing energy dilemmas (Bradshaw, 2010). While the international community agreed to limit global warming to 2°C or even 1.5°C in the Paris Accord in 2015, it is still unclear how this goal will be achieved. Action in the energy sector will be key, as it accounts for two thirds of global greenhouse gas emissions. Global energy supply is still heavily dependent on conventional sources,⁴ and thus heavily exposed to the associated environmental, economic and geopolitical risks. In 2014, conventional sources provided almost 90 percent of global final energy consumption.⁵ Even within the electricity sector, where the expansion of renewables has been most advanced, non-renewable sources still accounted for more than three quarters of power generation in 2015. Final energy for heating and cooling was 92 percent conventional, while fossil fuels even accounted for 96

percent of global fuel for road transport in 2015 (REN21, 2016).

There is an urgent need to immediately curtail and then phase-out the global use of fossil fuels (primarily coal and oil, but also natural gas in the longer term) if the goal of limiting global warming is to be achieved (IEA, 2015a; IEA, 2014). The world faces the Herculean challenge of promoting the transition from the conventional to a sustainable energy system while at the same time guaranteeing the supply of fossil fuels for a transitional period without simply perpetuating existing production and consumption patterns (Westphal, 2012). A shift in investment towards sustainable energy sources is key in order to avoid lock-in effects (Baake, 2016). Under the current price regime of low energy prices and in an era of abundant energy sources, price signals to turn away from fossil fuels are too weak or simply lacking. Policy measures will thus be of central importance to decarbonise the global energy system.

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⁴ Conventional energy sources comprise fossil energy (oil, gas and coal), nuclear energy and traditional biomass.

⁵ The mix of global final energy consumption in 2014 was as follows: fossil fuels 78.3%, traditional biomass 8.9%, nuclear power 2.5%, modern renewables 10.3%.

Nuclear energy requires special attention because it is related to specific threats. The approach to decarbonise electricity production by nuclear power generation comes with widely understood safety risks and the unsolved problem of radioactive waste (Quitow et al., 2016a). The geopolitical and security threats from proliferation are a tremendous challenge in a world of weak and failing states as well as transnational terrorism.

The ownership, access to and use of hydrocarbons has been a constant source of geopolitical tensions and conflict. Fossil fuels are unevenly distributed globally. Convincing those in control of fossil fuel resources to participate in a plan to phase out their means of wealth and abandon their mechanism of perceived leverage is a paramount challenge. Similarly, the shift away from fossil energy sources also entails a range of long-term economic risks, particularly those related to the risk of stranded assets or a devaluation of hydrocarbon deposits under a stricter climate regime.

Meanwhile, the success of a transition to a sustainable energy supply also requires attention to energy security. Energy security is generally defined as the availability of stable, secure and affordable energy at the time and place where it is needed. New forms of fluctuating energy sources require new technologies and institutional arrangements to guarantee electricity grid stability. Access to these modern technologies is becoming a key issue for social and economic welfare. In the developing world, many still lack access to modern forms of energy and are forced to rely on sources with negative health and environmental implications, while others lack access to any means of energy. An estimated 1.1 billion people (SE4All, 2016) worldwide – more people than living in the OECD world – lack access to electricity. In Sub-Saharan Africa, this is the case for two out of three people (see also Quitow et al., 2016b). Worldwide, 2.9 billion people (SE4All, 2016) – almost 40 percent of the global population – rely on traditional biomass for cooking, which is responsible for indoor air pollution. The prevalence of traditional biomass, in addition to burning of oil and coal, has massive negative impacts on air quality and human health. Providing universal access

to energy while maintaining progress toward climate goals poses tremendous challenges. Massive improvements around the world, in energy conservation, energy efficiency and renewable energies are urgently needed.

Global sustainable energy governance: weakly developed, but with significant recent advances

The challenges for global energy governance are paramount. Yet, for a long time, governments have been hesitant to engage in global cooperation on energy. This was primarily due to sovereignty concerns: energy policy is traditionally considered as a national task – and as a strategic good, crucial for the survival of a state and its political power in international relations (see, for example, Lesage et al., 2010). The United Nations – the primary forum for multilateral cooperation on a whole range of issues – has not been a strong actor with regard to energy policy. There is no inter-governmental energy organisation that covers the entire range of energy sources and is simultaneously open to universal membership. As an example, consider the most important international energy organisations: the International Energy Agency (IEA), the International Atomic Energy Agency (IAEA), the Organization of the Petrol Exporting Countries (OPEC) and the International Renewable Energy Agency (IRENA). Only IAEA and IRENA are open to all UN member states, while the IEA is the only international energy organisation that works on the whole range of energy sources. The latter is the major provider of data and analyses on global energy markets and policies. However, its membership structure, restricted to OECD countries, has come under increasing criticism as non-OECD countries such as China and India have become increasingly powerful players in energy markets.⁶ Given that non-OECD countries already accounted for 60 percent of global energy demand in 2013 (expected to be 70 percent by 2040), the continued exclusion of non-OECD countries is increasingly detrimental to the IEA's credibility (IEA, 2015b). Therefore, an association process is currently under way with major non-OECD energy powers. These changes within the IEA are in response

⁶ The IEA has also been repeatedly criticised for underestimating the potential of renewable energy. See for example Roehrkasten (2015) and Roehrkasten & Westphal (2013).

to a much larger transition: Decisions in emerging and developing countries will become the key drivers of developments in global energy markets.

However, in past years there have been significant advances in global governance in areas of sustainable energy (see also Roehrkasten, 2015). The official establishment of the IRENA in 2011 in particular is a major landmark. Its mere creation – and even more so its widespread membership with more than 145 member states – are remarkable considering the long history of failed attempts to address renewables in global fora prior to IRENA's creation (Roehrkasten & Westphal, 2013; Roehrkasten, 2015). In the same year as IRENA's official creation, the United Nations began to take an active stance on sustainable energy. The UN Secretary-General set up the Sustainable Energy For All (SE4All) initiative, which comprises three goals up to 2030: first, to double the share of renewables in global energy supply; second, to double the improvement rate for energy efficiency; and third, to ensure access to modern forms of energy for all. In September 2015, the UN General Assembly adopted Sustainable Development Goals (SDGs) that also include a goal on sustainable energy: to ensure, by 2030, access to affordable, reliable, sustainable and modern energy for all.⁷ With the adoption of the SDGs, sustainable energy finally became an integral part of the UN sustainable development agenda. However, amid these advancements, energy efficiency is still underrepresented beyond the International Partnership for Energy Efficiency Cooperation (IPEEC), founded in 2009 by the Group of 8 (G8) and now comprising 16 members. Today, there is no lack of institutions in global energy governance, as many have been created

since the 2000s. However, the governance structure remains highly fragmented: coordination and coherence are often missing.

G20: a steering committee for global sustainable energy governance?⁸

In theory, the G20 is well positioned to steer a global transition to sustainable energy. The G20 comprises major energy producers, consumers and key players in existing international institutions. Along with the G7 countries (Canada, France, Germany, Italy, Japan, the UK and US), the G20 includes the emerging powers Argentina, Australia, Brazil, China, India, Indonesia, Mexico, Russia, Saudi Arabia, South Africa, South Korea and Turkey as well as the European Union (EU).⁹ Thus, the G20 unites a representative group of industrialised countries and new powers whose energy futures will shape energy developments both in their own right and via their outreach as global and regional powers. The G20 includes all permanent members of the UN Security Council, and major financiers of international organisations. Overall, G20 members accounted for 77 percent of the world's total final energy consumption in 2014 and 82 percent of energy-related CO₂ emissions in 2012.¹⁰ Similarly, G20 countries host more than 80 percent of the world's installed renewable energy capacity, and the Report on G20 Deployment of Renewable Energy estimates that these countries hold most of the potential for renewables deployment from now until 2030 (G20, 2015). Last but not least, G20 members provided 90 percent of bilateral official development aid in the energy sector in 2014.¹¹

⁷ The targets of the energy SDG build on the SE4All goals. However, the target on renewable energy is less specific: it only foresees a significant increase of renewables, while the SE4All goal speaks about doubling the renewables share in global energy supply.

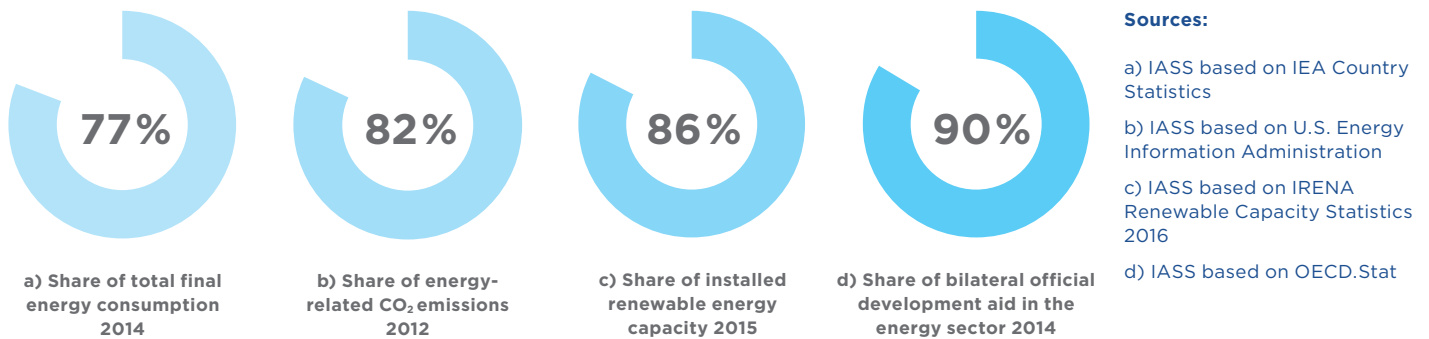
⁸ This refers to van de Graaf & Westphal (2011).

⁹ The selection of G20 countries beyond the G8 was based on their economic strength, geographic representation as well as further political considerations. It is important to note that the G20 is a self-appointed club and not an institution that has been legitimised by non-members.

¹⁰ Own calculations based on IEA, 2016 (for total final energy consumption) and IEA, 2016 (for energy-related emissions).

¹¹ Own calculation based on OECD, 2016.

Figure 1: Weight of G20 members in the global energy system



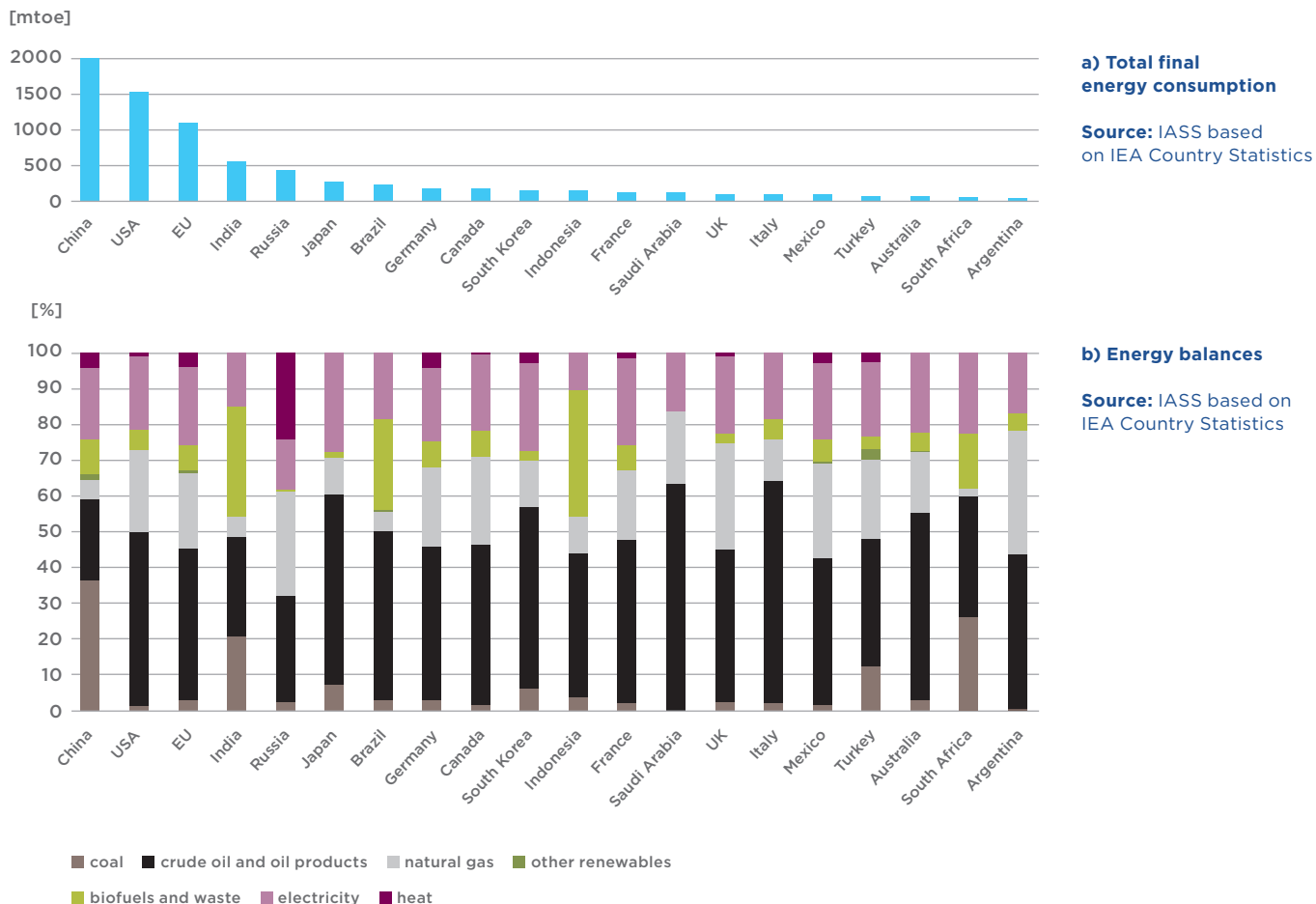
Given their sheer weight in the global energy system, any move by the Group will make a difference to the global energy mix and GHG emissions. If the G20 members agree on joint action, this has important international signalling effects and considerable influence on international policymaking. This could make the G20 an ideal forum to steer an energy transition by complementing existing institutions and bringing greater coherence to the global energy architecture (Huang, 2009; Lesage et al., 2010). Exercising such a “soft steering” function will include deliberating and coordinating national policies, but also encouraging international cooperation (Van de Graaf & Westphal, 2011).

Initiated in 1999 to coordinate the prevention of financial crises, the G20 nowadays covers a very broad range of issues and can work beyond specific silos, easing issue-linkage in international policymaking. In addition to its finance track, which is still core to the G20 agenda and covers issues of international finance and economics, the G20 nowadays works on a wide range of issues in its “Sherpa track”, such as sustainable development, energy, anti-corruption, climate change, employment and food security. The Group’s members have key roles in other energy institutions such as the IEA and the IRENA, enabling the countries to channel dialogue and drive stringent,

coherent action. Last but not least, the aligned platform for international business, B20, provides the G20 with the opportunity to straddle public-private sector lines. This is potentially a mechanism to be exploited by sequencing and channelling investments away from conventional fuels into sustainable energy technologies.

However, the G20 also consists of a very heterogeneous group of countries, such that finding common ground on energy matters is not an easy undertaking. The fact that the countries have very different positions and roles in the energy system is both a challenge and an opportunity. While China and the EU have by far the largest renewable energy capacities, installed capacities (particularly non-hydro renewables, which are often considered as ‘new’ renewables) in countries such as Saudi Arabia, Russia and Argentina remain very small. The G20 states represent a wide range of conduct in national energy policies and predominant structures in energy sectors. Whereas in some states the market is seen as the main coordination mechanism, others rely on state intervention and state-owned companies to secure their energy supplies. Moreover, many states still have regulated energy prices while in other countries prices have been liberalised.

Figure 2: Final energy consumption of G20 members 2014



G20's evolving energy agenda

The G20 began to take action on energy matters under the US presidency in 2009, when G20 members declared their intention to phase out harmful and inefficient fossil fuel subsidies. Since then, the G20 has continued to exchange on and monitor the phasing-out of fossil fuel subsidies in cooperation with existing energy institutions, including the IEA, OPEC and OECD. In addition, the World Bank published reports tracking fossil fuels subsidies. In 2013, the G20 endorsed a methodology for voluntary peer reviews. In 2016, China and the US became the first countries to release peer reviews on their fossil fuel subsidies.

The second area of 'early' energy cooperation within the G20 dealt with oil market functioning. It was complemented by a transparency initiative pushing the work of the Joint Organisations Data Initiative (JODI) to obtain better data on oil and gas markets as well as gaining more insights into price reporting agencies. Common concerns over oil price volatility, detrimental to both consumers and producers, were a driver of this process. Natural gas was a single issue, co-organised with the International Gas Union in 2015.

Since the Mexican Presidency in 2012, the G20 has addressed energy issues more comprehensively. An energy working group was established, which since the Russian presidency of 2013 functions under the title Energy Sustainability Working Group. The G20 Summit in Brisbane, Australia, in 2014, endorsed the G20 Principles on Energy Collaboration and expanded collaboration to energy efficiency, access to energy and renewable energy. The first G20 Energy Ministers Meeting took place under the Turkish presidency in 2015. In the area of energy efficiency, the G20 adopted a first Action Plan in 2014. Energy efficiency has been prominent in G20 action plans, as it represents a ‘low-hanging fruit’, i.e., an area in which the group’s members can easily agree on expanding their activities. In 2016, the collaboration on energy efficiency was further expanded through the G20 Energy Efficiency Leading Program, which contains 11 key areas for collaboration, led by different countries. The G20 has mandated the International Partnership for Energy Efficiency Cooperation to organise the Group’s work on energy efficiency. In 2015, under the Turkish presidency, the G20 endorsed an Energy Access Plan, focusing on Sub-Saharan Africa. Under the Chinese presidency in 2016, collaboration on energy access has been expanded to include the Asia-Pacific region. At the core of the G20 action on renewable energy is the toolkit of voluntary options that was developed by IRENA and adopted by the G20 in 2015. At the Energy Minister Meeting in Beijing 2016, the G20 furthermore emphasised the importance of the UN 2030 Agenda on Sustainable Development and the Paris Agreement for the G20 energy agenda.

Conclusions and outlook

The G20 unites a set of countries with very distinct and diverse policies and perspectives. Against this background, the group tends to focus on less controversial issues. Consequently, the G20 has only partly lived up to its potential as a steering committee. The initiative to phase out inefficient fossil fuel subsidies shows that countries prefer to pursue and commit to policies that are already under way. Nevertheless, exchange and deliberation on policy approaches has value per se, and should not be underestimated in its long-term impact. The G20 builds on the principle of voluntariness and on ‘soft’ modes of steering. It does

not aim to establish legally binding declarations or strong commitments on goals, but rather focuses on agenda setting, coordination among G20 members, knowledge exchange and the involvement of international organisations. It provides an opportunity to meet on an equal footing and to create a dialogue on energy topics. This provides an important setting to exchange national views and standpoints. A major step forward seems to consist of mandating energy ministers to meet annually.

A promising approach, moreover, is that the G20 partners cooperate with other international institutions, including IEA and IRENA. This can help to develop these organisations’ “Think-and-Do Tank” functions. It enhances, for example, the outreach and networking functions of the IEA. Assigning the institutions with tasks can also shape new paths towards sustainable energy and provide for greater continuity based on their function as multipliers for their respective members. The G20 can complement and add coherence to the global energy institutional landscape by entitling existing institutions to carry on its initiatives. If this is designed appropriately, with a clear long-term mandate, then such an approach can ensure continuity on the respective subject beyond individual agenda-setting by each revolving presidency.

An assessment of G20 and international energy governance initiatives must take into account the long lead times and timespans of the energy sector. In that respect, it is very early to judge the real impact of this deliberative and delegating process. Yet, concrete action to steer investments in the right direction is needed. The close links to the business community and the respective agencies must be exploited more efficiently for this purpose, in addition to leveraging “sub-clubs” of willing states.

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