Towards a global governance of energy

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ABSTRACT

- Energy is vital to modern life on earth.

- During the next twenty years, total global consumption of primary energy sources will increase by 45%. Oil will provide 30% of global energy until at least 2030; natural gas 22%.

- Energy exists under imperfect market conditions: demand and offer for energy resources are unbalanced at the nation-state level; information regarding energy-resources is imperfect and incomplete; energy has important negative externalities affecting global climate.

- Since pure market-governance is insufficient, alternative cooperative coordination is required to manage global energy.

- In light of the unsatisfactory institutional landscape of global energy governance, reforms are necessary to existing institutions.

Towards a global governance of energy

Energy is vital to modern life on earth. And though there has been increasing emphasis in recent years on forms of renewable or “alternative” energy, current predictions hold that “traditional” hydrocarbon-based resources, such as oil and gas, will continue to provide the majority of the world’s energy needs well into the middle of the 21st century. Oil, for example, is estimated to provide 30 percent of global energy until at least 2030, while natural gas is expected to supply an estimated 22 percent (OECD, 2009).

Simultaneously, global energy needs continue to grow, as more and more nations join the ranks of the world’s developed economies. The recently
published World Energy Outlook 2010 (OECD 2010) suggests that China overtook in 2009 the US as the world’s largest energy user. During the next twenty years, it is estimated that total global consumption of primary energy sources will increase by 45 percent (OECD, 2009), led by record growth in the world’s “emerging” economies.

The geopolitical importance of energy is reinforced by three factors. First, primary sources of energy are unevenly distributed across the globe, thus demand and offer for energy resources are unbalanced at the nation-state level. This divides countries into consumers and producers of energy resources. Second, accessing and exploiting hydrocarbon resources requires informed investment decisions to be made, often ten years in advance of production and revenue generation, in order to ensure adequate supply at a future date. Yet information-exchange in this area is limited. Governments often keep secret the details of national energy production and consumption levels as a matter of national security. Compiling and sharing this information and harmonizing price signals requires global coordination. Indeed, many experts argue that the primary concern for oil and gas is not that worldwide production may hit a looming “peak” (whereby all known natural resources will have been effectively “discovered”), but rather that that insufficient investment today will lead to inadequate capacity in the future, causing shortages of available energy resources and, as a consequence, volatility in global energy markets (Harks, 2010). The IEA has in fact warned on several occasions how little investment has gone into oil exploration and development, as producers continue to concentrate on developing aging fields (Goldthau, 2010).

Third and finally, burning of hydrocarbons releases greenhouse gases (GHGs) into the earth’s atmosphere, contributing directly to global climate change and thus threatening the delicate balance of life on earth. This negative externality is not restrained by national borders. According to the Intergovernmental Panel on Climate Change (IPCC), the earth’s average temperature rose by 0.7°C during the 20th century. Scientific consensus holds that most or all of this increase is due to the release of GHGs through human activity. It is believed that without major policy changes, global emissions of CO₂ – just one of several
planet-warming GHGs – will more than double by 2050 (OECD, 2009). As a consequence, the IPCC predicts in its current business-as-usual scenario that global average temperatures could rise by 1.8-4.0°C before the year 2100. To put this into perspective, another 2°C increase carries the extreme risk of causing irreparable damage to the planet (Bordoff, 2009). Moreover, climate change is not just a threat in itself, but a “threat multiplier” that could magnify existing conflicts in volatile regions (Pascual, 2009).

In sum, energy drives all forms of activity – from manufacturing and construction, to transport and telecommunications. However, energy exists under imperfect and often poorly regulated market conditions, posing a number of challenges in its exploration, development, production and consumption. Since energy does not exist under “perfect” market conditions, alternative coordination is required to manage these issues: these alternatives are either hierarchic government or network coordination.

The absence of a world government to effectively intervene in the market to address these challenges means that a “top-down” solution is neither forthcoming nor, many would argue, desirable. Instead, it is up to nation-states and other international actors to jointly manage global energy, to the best degree possible, through mechanisms of collaborative global governance.

Such mechanisms of collaborative global governance must play three different functions: First, correct supply shocks and other market failures caused by the nation-states’ barriers to a global market. Second, lower transaction costs by disseminating information, thus helping direct investment through the creation of clear price signals based on reliable forecasts. Finally, set rules to deal with, in particular, the climate change issues (Goldthau, 2010), thus overcoming the tragedy of the (global) commons.

Four leading international vehicles play a key role in coordinating energy policy between (and among) consuming and producing states. Three of these institutions are energy-specific in their mission and purpose: the International Energy Agency, the International Energy Forum and the Energy Charter Treaty.
The other is the main global power “concert” in which energy and myriad other international issues are addressed by world leaders: Group of Twenty. Other institutions exist, but are geographically limited in scope (e.g. the European Union, NAFTA); have a yet undefined competency in energy (e.g. the United Nations, the World Bank and the WTO); or have been founded recently and their global impact is so far unclear (e.g. the International Renewable Energy Agency, Major Economies Forum on Energy and Climate).

The most prominent body representing the consumer side of the global energy equation is the International Energy Agency (IEA). Organization for Economic Cooperation and Development (OECD) formed it in 1974 as a response to the first oil embargo organized by OPEC. The IEA’s primary functions are twofold. First, it seeks to correct potential market failures by committing its members to maintaining oil stocks (equivalent to 90 days’ imports based on the previous year’s figures). Second, it seeks to lower transaction costs through the dissemination of information through, for example, its annual *World Energy Outlook*. The IEA has contributed greatly to stability in world oil markets, while gaining an international reputation for its technical expertise and non-ideological approach (Kohl, 2010).

However, as the balance of world energy consumption shifts from the “traditional” industrialized powers to the “emerging” economies such as China and India, the IEA’s potential to address future global market failures is increasingly called into question. The IEA only represents the consumer side of the energy equation and the world’s most developed countries. Yet the possibility of emerging economies to join the IEA is low due to current membership requirements. Neither China nor India has the strategic reserve capacity to meet the IEA’s requirements, and furthermore the countries may not currently meet the full list of criteria to become OECD members.

To the contrary, membership in the IEF is currently open to all countries. IEF organizes annual conferences preceded by a business forum for senior executives of leading companies in the oil and gas sector and related industries. The stated goal of IEF meetings is to foster mutual understanding between
consumer and producer nations. The IEF’s primary function is to lower transaction costs in energy markets. To this end, the organization has launched an ambitious data-sharing program known as the Joint Oil Data Initiative (JODI), which aims to address lack of transparency in the global oil market. Seven international organizations\(^1\) have been tasked with collecting data from IEF member countries, which together make up 90 percent of world oil supply and demand (Harks, 2010).

The ECT’s founding document, the European Energy Charter declaration of 1991, set the framework for cooperation based on the principles of nondiscrimination, sovereignty over natural resources and development of open and efficient energy markets. This was declaration was converted into a legally binding framework in 1994 with the signing of the ECT (Selivanova, 2010). The organization has a secretariat based in Brussels whose function is to monitor implementation obligations under the treaty as well as administrating the treaty’s annual conference and related subsidiary bodies.

The strengths of the ECT include that it is binding and takes into account the rules of other existing trade mechanisms such as the GATT and WTO. On the other hand, membership in the ECT remains limited, with important producing and consuming states having failed to either sign or ratify the treaty (e.g. Russia, the United States).

The Group of Twenty (G20) comprises 85% of global GDP and 80% of world trade, as well as over two-thirds of the earth’s population and more than 80% of the world’s energy use and carbon emissions. In late 2009, the G20 announced that it would become participating nations’ primary forum for economic cooperation amongst themselves, ostensibly replacing the G-8 in this competency. However, energy-specific cooperation is still in very early stages within the G-20. Overall, this venue’s drawbacks are due to its summit-type nature, without a formal mechanism for implementing and enforcing its members’ decisions.

\(^1\) APEC (Asia-Pacific Economic Cooperation), Eurostat, the IEA, the IEF, OLADE (Organización Latinoamericana de Energia), OPEC and UNSD (United Nations Statistics Division).
In light of the unsatisfactory institutional landscape of global energy governance, and in the absence of the possibility of creating ex-novo a full-fledged World Energy Organization, some reforms are necessary. The following are avenues along which incremental change of existing institutions should proceed:

- The International Energy Agency should hasten its outreach to emerging economies, modifying its membership requirements if necessary, to allow important new consumers such as China and India to join this regime;
- The International Energy Forum should continue to improve its Joint Oil Data Initiative (JODI): first, by convincing member states that sharing timely, relevant information is in their long-term best interest; and second, by working to reconcile its forecasting methodology with that of other key reports in the sector;
- The Energy Charter Treaty remains a conundrum based on the number of countries that have yet to sign and/or ratify the document, but it is still the best global model of an internationally binding treaty governing market rules for trade in the energy field;
- The Group of Twenty, despite differences in opinion between its members, should continue to use its high-profile platform to focus the international policy debate on the issue of energy.

Bibliography


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