

The Transformation of World Energy Governance: A Brief Overview Focusing on Energy Security

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INTRODUCTION

During the last half century, we witnessed a rapid change in world energy governance. The bipolar system, created by OPEC and the IEA in the 1970s, only lasted until the 1990s. Entering the 21st century, various international entities proliferated for international cooperation and dialogue on energy issues. As a result, a multilayered intergovernmental system has been formed for world energy governance. However, partly due to the lack of a comprehensive intergovernmental organisation/forum for energy governance, existing energy-related organisations/fora are focusing on the decarbonisation of energy systems rather than energy security, which remains an important criterion for energy policy.

This paper traces the history of world energy governance since the 1970s by observing the construction and function of various energy-related organisations.

'COLD WAR' TYPE BIPOLAR SYSTEM OF OPEC AND IEA AFTER THE 1970S

Up until the 1970s, energy supply and demand was dictated by market forces in most countries. Though the oil supply instability in Europe during the Suez Crisis (or the 2nd Arab–Israeli conflict) in 1956 led to the origin of the energy security concept, only a limited number of countries articulated concern over a stable supply of energy.

Two oil crises in the 1970s dramatically changed this state of affairs. Energy security became a major national interest for energy importing countries. International governance for energy issues first emerged after these geopolitical crises, establishing a Cold-war type bipolar system. Oil exporting countries, united in the Organization of the Petroleum Exporting Countries (OPEC), gained the right of price determination in international oil markets through an international cartel for oil supply restriction [1].

In response, developed countries in the Western Bloc, which were major customers of exported oil, formed the International Energy Agency (IEA) in 1974 under the framework of the Organisation for Economic Co-operation and Development (OECD) and pledged to build oil stockpiles in order to countervail oil supply restrictions by petroleum exporting countries [2]. As both OPEC and IEA were 'collective defence organisations' for major energy exporters and importers, the conflict of OPEC and IEA in the 1970s and 1980s can be described as a Cold-war type system.

However, this bipolar system could not endure for long. In the early 1990s, both OPEC and IEA waned in influence due to the changing international energy supply and demand dynamics. OPEC's power had been reduced as a collective defence organisation because oil was no longer the overwhelmingly dominant energy source. Partly due to oil importers' efforts to reduce dependence on oil, oil-substituting energy sources such as coal, natural gas and nuclear energy increased their share in the energy mix of oil importing countries. In addition, oil production outside OPEC members, for example in the North Sea, was promoted and further decreased OPEC's influence.

The decline of OPEC was a laudable success by the IEA and its member countries, but the IEA itself had also experienced a decline of prominence. Because of the globalization of the world economy, industrial activities in developing countries increased rapidly and their demand for energy grew in tandem. The most notable example was China after its 'reform and opening-up' in 1978. India followed China. In 1973, IEA members' share in world energy consumption (total primary energy supply) was just over 60%, but according to the latest IEA statistics, in 2014, it has fallen to less than 37%. Non-IEA countries' share has risen from 40% to 63% over the same period [3].

THE MULTILAYERED INTERGOVERNMENTAL SYSTEM SINCE THE 21ST CENTURY

Entering the 21st century, in addition to OPEC and the IEA, various international entities have proliferated for international cooperation and dialogue on energy issues. Similar to oil exporting countries, gas-exporting countries formed the Gas Exporting Countries Forum (GECF) in 2001, as natural gas had become increasingly important in international energy trade [4].

The IEA has been expanding its scope from primarily focusing on oil to covering other energy resources

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as well as energy efficiency. However, as for membership, its OECD framework hinders the IEA in fully involving developing countries. Though the IEA is making an effort to establish closer cooperation with major developing countries, such as China and India, and has introduced an Association country system, it is unlikely these Association countries will ever join the IEA as full members, even in the future.

Thus, specialised international organisations/fora have appeared for various energy issues, inviting major developing countries as their members. On the energy demand side, the International Partnership for Energy Efficiency Cooperation (IPEEC) was formed in 2008 [5].

On the energy supply side, the International Atomic Energy Agency (IAEA), whose major task was originally 'a watch dog' for nonproliferation of nuclear weapons, has expanded its role in promoting the peaceful use of nuclear energy in both a regulatory and policy context [6]. Since most countries possess renewable energy resources, such as solar, wind and sometimes geothermal and bio-energy, international cooperation for renewable energy is sought among many countries that are both a producer and a consumer of renewable energy. However, except for bio-energy, renewable energy resources are not suitable for international trade. Therefore, each country has to develop its domestic renewable energy resources and international cooperation is generally undertaken with the goal of increasing information sharing and technology transfer. The Renewable Energy Policy Network for the 21st Century (REN21) was launched in 2004 as a global multi-stakeholder policy network [7] and the International Renewable Energy Agency (IRENA) was established in 2009 as a formal international organisation [8].

Furthermore, a proposal by France and Venezuela to begin a dialogue between OPEC and the IEA resulted in the establishment of the International Energy Forum (IEF) in 1991 [9]. In 2002, the IEF decided to have a permanent secretariat to facilitate dialogue between energy producers and consumers. Though the IEF was established to create a channel between energy producers and consumers, it currently plays a relatively small role in world energy governance.

The end of the Cold War also influenced the governance of international energy issues. In 1991, western countries signed the European Energy Charter (EEC) with Russia and western European countries in order to protect and promote their investment in the energy sector in the former Eastern Bloc. The EEC was later expanded to the International Energy Charter (IEC) with a small-scale permanent secretariat [10]. Thus, until recently, a multilayered intergovernmental system was used for world energy governance.

It should be noted that coal, the most traditional and abundant fossil energy resource, has no well-established international organisation/forum. This fact may result in the underrepresentation of coal in policy discussions on energy supply in individual countries, as well as globally. Although coal is the 'dirtiest' energy resource in terms of carbon-dioxides (CO₂) emitted through its consumption, it is still important for many developing countries in achieving their energy security due to its low cost and supply reliability.

"Cold War" Type Bipolar System (IEA vs OPEC) after the 1970s

Energy	Consumer		Supplier
	Developing	Developed	
Oil	-	IEA	OPEC
others	-	-	-



Multilayered Intergovernmental System since the 21st Century

Energy	Consumer		Supplier
	Developing	Developed	
Oil	-	IEA	OPEC
Gas	-	(IEA)	GECF
Coal	-	-	-
Nuclear	IAEA		
Renewable	IRENA		
(Crosscutting)	IPEEC, IFC, IEC		

Figure 1: The Transformation of World Energy Governance

GLOBAL WARMING AND ENERGY SECURITY

As the challenges posed by global warming have surfaced as a pressing issue in international fora, the energy security concept has declined in prominence. For climate change, an international governance has been pursued since the 1990s and was adopted through the Paris Agreement, under the United Nations Framework Convention on Climate Change (UNFCCC) dealing with greenhouse gases emissions mitigation, adaptation and finance, on 12 December 2015. As global warming is closely related to CO₂ emissions from energy consumption, existing energy-related organisations/fora are switching focus from energy security to decarbonizing energy systems.

As there is no single intergovernmental organisation/forum that comprehensively covers energy issues and widely involves both developed and developing countries, regional cooperation has become complementary to world energy governance. For example, the European Union (EU) in Western and Central Europe, Asia-Pacific Economic Cooperation (APEC) in the Asia Pacific region and the Association of South East Asian Nations (ASEAN) in Southeast Asia, among others. In

these regional organisations/fora, energy issues are discussed more from an environmental viewpoint rather than a security viewpoint.

For example, because energy security has been one of the top policy imperatives for most countries in the Asia Pacific region since the oil crises in 1970s, APEC, as a regional forum, has been particularly concerned with energy security. In September 2000, APEC Senior Officials considered what action APEC could take to respond to oil price volatility and directed its Energy Working Group (EWG) to analyse the issue in order to make recommendations on ways to strengthen regional energy security. The EWG developed the APEC Energy Security Initiative (ESI), which was endorsed by the EWG in September 2001, and by APEC Economic Leaders in October 2001 [11].

ESI is quite broad. Almost all energy issues are linked with energy security, including energy data, energy efficiency and renewable energy. While energy efficiency and renewable energy have become hotly debated issues in the EWG, they have gradually become discussed separately, in the context of global warming, rather than that of energy security, even though ESI continues to exist. APEC renewed its concern over energy security as recently as 2012. This time APEC focused on emergency preparedness. APEC started Oil and Gas Security Exercise (OGSE) in 2012 [12] and expanded to Oil and Gas Security Initiative (OGSI) in 2014, which includes OGS Network (OGSN) with bi-monthly newsletters and annual meetings and OGS Studies (OGSS) for research themes related to energy security [13].

Unlike environmental issues, the United Nations (UN) has not wielded strong influence over energy issues. Because climate change is now perceived as a common challenge to almost all countries, it is natural for the UN to fulfill the role of a global coordinator. In contrast, because there are competing interests between energy producer countries and consumer countries, or energy exporters and importers, it would be difficult for the UN to intervene in energy security situations. Since a world energy governance led by the UN is not yet foreseeable, the current multilayered intergovernmental system is expected to continue for the time being.

CONCLUSIONS

Currently, a multilayered intergovernmental system exists for world energy governance. In this system, three issues should be stressed in relation to energy security.

Firstly, coal, the most traditional and abundant fossil energy resource, has no well-established international organisation/forum. This fact may result in underrepresentation of coal in policy discussions related to energy supply in each country, as well as globally.

Secondly, in any case, there is no single intergovernmental organisation/forum that comprehensively covers energy issues and widely involves both developed and developing countries. As such, regional cooperation can be complementary to world energy governance, especially for energy security issues. Such regional cooperation includes, for example, the European Union (EU) in Western and Central Europe, Asia-Pacific Economic Cooperation (APEC) in the Asia Pacific region, the Association of South East Asian Nations (ASEAN) in Southeast Asia, among others.

Thirdly, in order to fill the gap created by the lack of a comprehensive intergovernmental organisation/forum, worldwide cross-sectional discussion and dialogue by non-governmental entities has become increasingly important. The World Energy Council (WEC) and the International Association of Energy Economics (IAEE) are fulfilling such a role in business circles and academia, respectively. In addition, collaboration between WEC and IAEE would be useful in order to bridge practitioners and intellectuals as they cope with the difficult task of world energy governance.

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