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# POSSIBILITIES OF ASIA-EUROPE COOPERATION ON ENERGY SECURITY

**Abstract:** Energy and its security play a dominant role in shaping the security strategies of many nations. There are broad similarities in the energy situation in Asia and Europe, such as a high import dependency and dependence on the Middle East. Energy security is therefore an issue of common concern in the two regions. Energy security also has a strategic dimension given the strong interdependence between the two regions. Any policy option chosen by one region will also have an impact on the other region. These spill-over effects have to be taken into account in the policy decisions.

**Key words:** energy security, multilateral cooperation, international energy markets.

## 1. Energy security concept

Energy security may be defined as "the availability of energy at all times, in various forms, in sufficient quantities, and at affordable prices". Hence, energy security focuses on both physical availability and economic affordability. Both factors are closely interconnected and can be extremely detrimental for an importing country, with far-reaching implications on all aspects of its economic and even political stability.[1]

In the past, energy security focused primarily on securing energy supply (or securing an adequate match between supply and demand). This may be predicted with a short-term or a longer-term perspective: one objective may be to mitigate short-term disruptions to supply, while another is to ensure the conditions are right for investment to guarantee sustainable long-term supply.

Energy has formed a focus for economic cooperation within Europe both as the original foundations of the EU were laid in the 1950s and more recently during the negotiations to finalise the Internal Energy Market. The European Coal and Steel Community and the European Atomic Energy Community were established in 1951 and 1957, respectively, in order to both address the immediate energy needs

[1] P. Andrews-Speed, *Energy Policy and Regulation in China*, Kluwer Law International, The Hague 2004.

of western Europe and form the basis for wider economic cooperation which should reduce the risk of a further major war in Europe.

The concept of energy security as an international issue first came to prominence in the 1970s as a result of the disruptions to global oil supplies. During the 1990s most nations of the western world, and indeed many developing countries, ignored the issue of energy security. The first two years of this century have seen a renewal of concern for a number of reasons relating to the functioning of energy markets, to the sources of energy supply and to international security.

Today additional considerations are taken into account, in particular environmental considerations. The 2001 European Commission's Green Paper on energy security reflects the shift away from emergency preparedness and long-term supply security towards other objectives, in particular the growing importance of environmental protection, in relation to climate change.[2] The environment may be the limit to the use of fossil fuels, not the exhaustion of reserves. Also physical protection of the national energy infrastructure has emerged as an additional objective in a context of terrorist threats.

The quantity of energy traded internationally continues to grow in both volume and diversity. Twenty years ago crude oil and oil products dominated international energy trade. Gas is now an important component and gas markets are increasingly taking on a global character. The volume of internationally-traded coal continues is growing and cross-border electricity networks are expanding. These trends reflect a growing interdependence between energy suppliers and energy consumers which, on the one hand, should enhance energy security but, on the other, provides both suppliers and consumers with security concerns.

Recent years have seen the emergence of two further and interrelated perspectives. The first is the increasing need to take into account environmental impact in all energy strategies. Such environmental impact relates to the production, transportation and consumption of energy and the impact may be local, regional or global in scale. The second aspect is the ever-increasing requirement to formulate energy strategies which are publicly acceptable. This acceptability relates not just to environmental impact but also includes such issues as safety (particularly of nuclear installations), energy taxation and the rights of indigenous peoples and local communities.[3]

Recently we have observed the special nature of energy cooperation. The first is connected with the development of regional and global energy markets. The second change has been the rapid lowering of barriers to investment in the international energy sector. As a result, effective energy cooperation between two or more states requires long-term commitments between governments and between companies,

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[2] *Green Paper. Towards a European Strategy for the Security of Energy Supply*, European Communities, European Commission, Luxembourg 2001.

[3] J.V. Mitchell, A new political economy of oil, *The Quarterly Review of Economics and Finance* 2002, Vol. 42, pp. 251-272.

preferably underpinned by legally-binding agreements and possibly by permanent institutions.

## 2. Europe's role in energy relations

The energy situation in Europe is quite comparable to what can be observed in Asia. In particular oil is expected to remain the largest source of energy, leading to a persistent import dependence. When considering the whole Eurasian zone (including the Former Soviet Union – FSU), the zone holds 9.3% of proven petroleum reserves and almost 40% of world gas reserves, thus making the European continent basically self sufficient while also allowing for a fuel mix dominated by equal amounts of oil and gas (33% each), followed by coal, nuclear sources and hydroelectricity (respectively 18, 10, and 6%).[4]

In the European Union, a constrained use of coal (15%) is balanced by an important use of oil and gas (41 and 23%, respectively), with nuclear electricity representing 15% of the energy mix and hydroelectricity and other renewable energy sources accounting for 6%. Hence, the problem of GHG emissions is reduced and the flexibility to alternate between energy resources enhanced.

The outlook for primary energy supplies, heat, and electricity is questionable for the Eastern Europe and Central Asia region, despite Russia and Central Asia's current role as a major energy supplier to both Eastern and Western Europe. In spite of the underlying resource base, the region as a whole will face an energy crunch unless investments of more than $3 trillion are made over the next 20 years, according to the new World Bank report. The demand for primary energy in the Europe and Central Asia region is expected to increase by 50% by 2030, while the demand for electricity is expected to increase by 90%.[5]

If energy production is to be maintained or increased to meet Europe's energy requirements, significant investment will be required. The projected needs for primary energy development from 2010 to 2030 are estimated to be at the level of almost $1.3 trillion in order to ensure the availability of oil, gas, and coal. In addition, the region's power infrastructure is in desperate need of upgrading. Electricity capacity has hardly increased since the early 1990s and plants are getting old. Investment needed in power sector infrastructure over the next 20 to 25 years is at the level of $1.5 trillion, with a further $500 billion required for district heating. This level of investment – more than $3 trillion – cannot be provided in this region by the public sector alone. Attracting private sector investors will require changing the investment climate to make it conducive to such investment.

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[4] L. Eder, P. Andrews-Speed, A. Korzhubaev, Russia's evolving energy policy for its eastern regions, and implications for oil and gas cooperation between Russia and China, *Journal of World Energy Law and Business* 2009, Vol. 2, No. 3, pp. 219-241.

[5] *Lights Out? The Energy Outlook in Eastern Europe and the Former Soviet Union*, World Bank Report, 2010.

Investing in energy efficiency achieves three goals, simultaneously and at the least cost: lower greenhouse gas emissions, better energy security, and more sustainable economic growth. An additional $1 invested in energy efficiency may save more than $2 in production investment. But much potential remains untapped because of the many obstacles to investments in energy efficiency, including inadequate energy prices and lack of payment discipline, a lack of information on the latest technologies, too few contractors and service companies, and financing constraints.

The use of renewable energy is of course subject to its availability and to its competitiveness with fossil fuels, but the tendency to greater liberalization and inter-fuel competition has helped render substitute fuels more easily available and economically viable. Consequently, Europe's fuel mix is more diversified than Asia's.

Enhancing energy efficiency in the Central and Eastern European countries is one of the objectives being pushed by the Energy Charter Secretariat. Under the Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA), all the signatory states are obliged to develop national strategies and domestic programs for the promotion of energy efficiency objectives. A similar scheme could be developed in the context of the Asia-Europe dialogue with a view to inducing and helping less advanced countries of the partnership to enhance energy efficiency.

## 3. Energy security – view of China

China has overtaken the EU as the world's biggest emitter of greenhouse gases on account of its rapidly expanding economy and dependence on coal, the dirtiest fossil fuel. In response to this problem, the Chinese government during the eleventh Five-Year Plan (2006-10) has accorded high priority to dealing with the issue of energy and air pollution; it is planning to reduce total emissions by 10% and to increase China's energy efficiency by 20%. Also, China has recently allocated large budgets towards developing new technologies and projects, including solar, wind, and biofuels. Moreover, China has set an energy target that foresees renewable sources accounting for 10% of electric power capacity by 2010 (expected 60 GW); 5% of primary energy by 2010; and 10% of primary energy by 2020. In the long term, China has set an objective of having 30% or more of its total energy requirements satisfied by renewable sources by 2050. Speaking at a special UN climate change summit on September 22, 2009, in New York, Hu Jintao laid out a new plan to tackle China's emissions, tying them to economic growth. China's new plan includes vigorously developing renewable and nuclear energy and cutting down on carbon dioxide emissions per unit of GDP by a notable margin by 2020 from the 2005 level. Meanwhile, China is now leading the world after the U.S. in terms of the sheer volume of its financial package, valued at €423 billion, earmarked for economic recovery. At the same time, China has allocated almost 40% of the fiscal stimulus

towards green investment schemes that will help to mitigate climate change, such as development of railways and other public transport infrastructure, energy grids, housing, and water management.[6]

As a result, its rapidly increasing renewable energy sectors such as solar, wind, and biofuel are a growing renewable energy market in China. This should offer great opportunities for energy technology companies in Europe,

To embark the way for successful cooperation with China, the EU should first of all commit to continuing investments in clean technology for the foundation of their future regional economies, demonstrating that it is possible to achieve economic growth and stability while at the same time producing a positive impact on the environment. It is important that the EU plays a leadership role in promoting the concept of sustainable development. At the same time, the environment and sustainable development should be accorded a central place in the EU's relations with China.[7]

## 4. Energy situation and outlook in Asia

In the face of energy supply and price volatility, as well as surging global demand, energy security has been traditionally viewed among Asian countries as a matter of ensuring adequate, affordable and reliable energy supplies. However, the projected increase in consumption of and reliance on fossil fuels also carry far-reaching environmental and socio-economic consequences beyond the notion of supply security. These concerns include climate change with its attendant problems of rising sea levels and risks posed to the ecosystem, as well as socio-political impact in the face of public dissatisfaction over rising energy prices.

While the world is contending with big players such as China and India, it is also of primary importance to zoom into the Southeast Asia region where there is huge potential for economic growth. The current situation in global oil prices has significantly impacted many of the developing nations in Southeast Asia. As these nations are developing, their demands for energy consumption have also been rising. Indonesia, once a net oil exporter, became a net oil importer in 2004, and the current high oil price has created a detrimental impact on the government's inability to sustain its fuel subsidies. The shortage of fuel for economic development could very possibly see the Southeast Asia region turning to nuclear energy as a viable solution for power generation. While civilian usage of the nuclear energy would address the twin agenda of energy security and climate change, it does carry along with it the risks of proliferation as well as the "sanitization of land" for waste disposal.

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[6] P. Andrews-Speed, X. Liao, R. Dannreuther, *The Strategic Impact of China's Energy Needs*, International Institute for Strategic Studies, Adelphi Paper No. 346, London 2002.

[7] *Policy Brief no. 9*, Institute for Security & Development Policy, September 30, 2009.

The Asia Pacific is currently one of the world's largest consumers of primary energy alongside Europe and North America, but, unlike the latter, Asian demand is growing at an extremely high annual rate. In 2002, whilst North American demand increased by a mere 1.7% and Europe posted negative growth, Asian energy consumption surged by 7.8% – a trend set to continue in the coming years.

As for oil, the region's indigenous resources are limited, and it is becoming incapable of meeting the growing demand. Although Asia Pacific holds 11% of proven oil reserves and 8% of proven gas reserves, as mentioned above, its oil reserves are dwindling and countries which were once exporters are now becoming net importers. Such is already the case of China and will soon be the case of Indonesia, Malaysia, India and Vietnam. Consequently, a greater part of Asia's energy comes from imports. Currently, imported resources account for 80% of Asian petroleum and 38% of gas supplies (via pipeline and LNG). Whilst Asia is self-sufficient for the majority of its gas, it is heavily dependent on the Middle East for its oil. The Middle East alone provides more than two thirds of the 800 mt of Asian petroleum imports, hence making it the source for more than half of total oil consumption in Asia. In other words, if the Middle East were to stop its exports, Asia Pacific would have to replace over half of its petrol supply. The ensuing energy security vulnerability is a fate shared by others. Europe, although with different characteristics, is equally bound to its suppliers.

## 5. Approaches to enhancing energy security

Governments have a major role to play in energy efficiency, not only in allowing energy tariffs to reflect costs, but by being proactive in setting and updating energy efficiency standards for homes, equipment, and vehicles, and in enforcing them. Governments should undertake energy efficiency programs in the public sector, inform the public on energy efficient technology options, and design cities with alternative means of transport.

This does not mean, however, that nationally determined policies by definition are either adequate or appropriate, particularly in dealing with events catalyzed by external actors. Sacrificing national energy security on the altar of the environment belies recognition of the strategies conducted by countries with an entirely different national security agenda.[8]

Second, policy decisions regarding and impacting on energy and power generation need to be viewed first within the context of how they serve the nation's energy security, and thus national security interests. After this exercise has been completed, a thorough review can be undertaken of how these same policies may impact on the environment and on the larger issue of climate change. Carrying out due diligence in

[8] *Strengthening Europe's Role in Global Energy Governance*, Global Public Policy Institute, 2-3 December 2009, www.globalenergygovernance.net.

this manner can help provide for better informed and more holistic decision-making across a broad landscape of policy areas well beyond energy *per se*, reaching into the foreign policy, national intelligence and regional defence and security domains. These are the complex, messy and uncertain worlds in which energy rests in the 21st century.[9]

Third, closing the gap between national security policy and energy requires both communities of experts to edge towards the other in understanding and appreciating each other's merit.[10]

Hence, energy security in the near future will be confronted not just by the projected increase in demand and consumption of primary energy sources such as oil and coal, but also by the environmental consequences of a parallel increase in GHG emissions. Against these emergent concerns, the concept of energy security has gone beyond the traditional notion of supply security to include other factors such as environmental and socio-economic impacts. The resultant interdependent nature of these problems brings to the fore the role of markets and governance, transcending the national level to involve nongovernmental actors and highlighting the need for more international cooperation.

## 6. The role of multilateral cooperation

The challenge for Asia is to find a way to develop institutionalised measures for multilateral energy cooperation which can enhance, on the one hand, the security of energy supply and, on the other, the political security of the region.

The European approach emphasises the use of markets, both national and international, as well as the role of multilateral institutions. Markets alone cannot address all energy security concerns and direct intervention is needed where markets fail. The role of multilateral institutions is to promote the development of international energy markets in order to lower the cost of energy and promote the security of both supply and demand, and to provide mechanisms to cope with market failure.

Such multilateral energy cooperation requires a substantial political commitment from the participating governments, the willingness to invest in the building of mutual trust and the readiness to make short-term economic sacrifices for the long-term good of all the participants. The necessary consequence of such behaviour sustained over many years is the reduction of political tension and the enhancement of regional security.

There are broad similarities in the energy situation in Asia and Europe, such as a high import dependency and dependence on the Middle East. Energy security is

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[9] E.L. Morse, A. Myers Jaffe, *Strategic Energy Policy Challenges for the 21st Century*, James Baker III Institute for Public Policy, Rice University, 2001.

[10] K. Rosner, Closing the gap between energy & national security policy, *Journal of Energy Security*, 18.05.2010, www.ensec.org/.

therefore an issue of common concern in the two regions. Energy security also has a strategic dimension given the strong interdependence between the two regions. Any policy option chosen by one region will also have an impact on the other region. These spill-over effects have to be taken into account in the policy decisions of the various parties.

The rise in energy demand in Asia has substantially affected the global energy balance and will have obvious implications for the rest of the world, and Europe in particular. China's economic future depends to a large extent on how, if at all, it is able to solve its energy resource gap. In the context of a globalized economy, both Asia and the rest of the world have a stake in China's ability to keep one of the world's major economic engines going. The soundness of its approach to energy security is therefore of equal concern to China's global partners.

Finally, energy security exhibits to some extent the characteristics of a public good which may be usefully managed in a collective way. Beyond broad similarities, two major differences can be indicated between the two regions. The first one has to do with the much wider diversity of Asia, compared to Europe, and the second with the much longer experience accumulated by Europe in terms of regional cooperation. As a result, cooperative schemes in the two regions obviously do not work along the same lines. In the case of Asia, Japan has often taken the lead and supported efforts of regional energy cooperation financially or by providing technical assistance. Within the European Union, by contrast, cooperation has been conducted among equal partners.

Asian and European economies are major players on the international energy markets. They definitely have a high stake in stabilizing these markets and are in a position to do so, or at least to somewhat mitigate risks. Several of them already participate in cooperative schemes, in particular under the aegis of the International Energy Agency (IEA). Yet these mechanisms merely involve industrial countries and focus primarily on short-term supply disruptions. The rise of Asia as a whole, and China in particular, as one of the largest energy consumers in the world makes it all the more necessary to revamp existing mechanisms. In particular it renders arrangements such as the IEA far less relevant because the stabilization of the global energy market requires the participation of China.

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## MOŻLIWOŚCI WSPÓŁPRACY AZJATYCKO-EUROPEJSKIEJ W KWESTII BEZPIECZEŃSTWA ENERGETYCZNEGO

**Streszczenie:** Energia i jej bezpieczeństwo odgrywają dominującą rolę w kształtowaniu strategii bezpieczeństwa wielu krajów. Występują znaczące podobieństwa sytuacji energetycznej w Azji i Europie, takie jak na przykład duże uzależnienie od importu oraz zależność od Bliskiego Wschodu. Z tego powodu ta tematyka jest zagadnieniem, któremu poświęca się dużo uwagi. Bezpieczeństwo energetyczne dotyka także innego istotnego problemu – współzależności obu regionów. Każda polityka prowadzona w danym kraju będzie miała wpływ na ten drugi region. Dlatego trzeba brać pod uwagę taką współzależność, podejmując jakiekolwiek decyzje polityczne.