



Energy Study Group Inception Meeting On Dealing With Energy Vulnerabilities: Case Studies Of Cooperation And Collaboration In East Asia

Organised By The RSIS Centre For Non-Traditional Security (NTS) Studies

CENTRE FOR
NON-TRADITIONAL
SECURITY STUDIES



ENERGY STUDY GROUP INCEPTION MEETING ON DEALING WITH ENERGY VULNERABILITIES: CASE STUDIES OF COOPERATION AND COLLABORATION IN EAST ASIA

PROCEEDINGS OF INCEPTION MEETING

**ORGANISED BY
THE RSIS CENTRE FOR NON-TRADITIONAL SECURITY (NTS) STUDIES**

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**S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES (RSIS)
NANYANG TECHNOLOGICAL UNIVERSITY (NTU)
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Executive Summary

Much literature on East Asia's energy security has focused on the dynamics of competition over resources and how potential conflicts could arise from this. While this analytical perspective identifies potential risks and problems, it precludes the possibility that interstate cooperation is possible.

Therefore, going beyond the themes of competition and conflict, the project titled *Dealing with Energy Vulnerabilities: Case Studies of Cooperation and Collaboration* endeavours to examine interstate cooperation and collaboration in East Asia against the backdrop of continuing geopolitical uncertainties and tension. Specifically, this project aims to examine how transnational projects of energy cooperation and collaboration have taken place in the region, despite the emphasis on geopolitics in determining policy.

The case studies adopted in this project centre on the 10 member states of the Association of Southeast Asian Nations (ASEAN), as well as China, Japan and South Korea. A key assumption underpinning this project is that shortages in and uncertainties over energy supplies – that is, energy vulnerabilities – constitute a normative part for these case countries under examination. Five research agendas are outlined: 1) stock-taking of trade in fossil fuels among East Asian states; 2) the 'Asian Premium' phenomenon; 3) developmental institutions and energy in East Asia; 4) energy vulnerabilities unique to East Asian societies; and 5) the benefits and barriers of regional Asian energy projects.

It is hoped that findings obtained from this project can stimulate debates about energy policymaking and institutionalisation in East Asia, and add value to the field of contemporary energy security studies in this region. For this purpose, on 4 June 2010, a closed-door, energy study group inception meeting was convened at the S. Rajaratnam School of International Studies, Nanyang Technological University. A total of 15 participants gathered to discuss the five proposed research agendas, with the goal of finalising the research roadmap for this project.

The project is about to move on to its second phase where commissioned writers will conduct individual research within an approximate six-month period. It shall culminate in a one-and-a-half day regional energy workshop tentatively to be held on 9–10 December 2010, during which the writers will present their research findings.

Research Agenda 1: Stock-taking of Trade in Fossil Fuels among East Asian States

Energy Outlook of East Asia and Challenges for Sustainable Development

Professor Kensuke Kanekiyo

Director

Institute of Energy Economics, Japan

According to Professor Kensuke Kanekiyo, the world faces twin-pillared energy risks, namely oil supply security (caused by increased volatility leading to violent changes in energy prices) and climate change. Despite great efforts to curb energy consumption and introduce non-fossil fuels, East Asia still needs to depend on fossil fuels heavily in the medium and long-term. Considering the supply and demand trends of fossil fuels, vulnerability of oil supply will be the most serious concern in the region's energy security considerations. Typical options in this regard are *oil stockpiling* against short-term supply disruption and *diversification of energy type and oil supply source* for mid- to long-term mitigation.

As a general trend, East Asia is the driver of world economy and also constitutes the world's largest energy market. Prof. Kanekiyo remarked that it is not a bad thing after all for East Asia to become a significant energy consumer as long as the region is not wasteful. East Asia's high energy consumption is a natural development since it has been increasingly pivotal in driving and sustaining world economic growth.

Given the projected increase in its carbon emissions, East Asia will be the key in worldwide efforts to counter global warming. However, Prof. Kanekiyo also pointed out that any aims to achieve significant reductions in carbon emissions by an early timeframe, say, 2020, are unrealistic (taking for instance Japan's ex-prime minister Yukio Hatoyama's plan for reducing emissions by 25 per cent by 2020) since reform of the energy structure in order to achieve these goals will require at least a decade (or more). Accordingly, there is a need to take action as early as possible.

Prof. Kanekiyo outlined Japan as a case study of reducing vulnerabilities to oil supply disruption, including Tokyo's counter-policies which led to a reduction in oil dependence. However, he pointed out that Japan's dependence on the Middle East for oil was only reduced up until the mid-1980s; after which it returned to almost 90 per cent up to the present. Crude oil supply from Russia that is emerging recently may alleviate the situation. It is important to note that Tokyo has played a minimal role in this respect. Instead, it has been the private sector which has been actively involved in securing crude oil from Russia.

Discussion

One participant questioned if marine and aviation bunkering has been taken into account in the oil estimates, taking the instance of Singapore which is one of the world's premier bunkering centres. Prof. Kanekiyo remarked that different institutions take into account in varying degrees (or none at all) bunkering in their oil estimates. For example, the International Energy Agency takes into account marine and aviation bunkering but other institutions do not do so due to the complexities in estimation. Another participant pointed out that national accounting methods could potentially be motivated by parochial national self-interests, especially in global climate change negotiations.

Research Agenda 2: The 'Asian Premium' Phenomenon

The Asian Premium – Perceptions and Reality

Dr Tilak K. Doshi

Chief Economist, Energy and Environmental Economics, and

Principal Fellow, Energy Studies Institute

National University of Singapore

Dr Tilak K. Doshi first outlined some common perceptions of reasons behind the Asian Premium (the extra price burden shouldered by East Asian countries when importing Middle Eastern crude oil, compared to their European and US counterparts). They include the lack of competition due to high dependence on Middle Eastern crude oil, unresponsive price adjustment factors and rigid supply rules. Among a range of solutions, Dr Doshi pointed out, are asking the Middle Eastern oil suppliers to adopt Brent Crude rather than Dubai Crude as the reference price and united action by oil-consuming countries to strengthen their bargaining position vis-à-vis the Middle East. On the latter point, he remarked that this will run the risk of deterring oil investors.

However, as Dr Doshi argued, key government-funded research institutions articulated pressing concerns about the Asian Premium but these do not necessarily reflect perceptions of private oil companies with regard to the phenomenon. Northeast Asian oil companies variably see the Asian Premium as a phenomenon of market forces more so than discrimination practised by Middle Eastern oil producers towards the region. First of all, Middle Eastern oil producers do not set absolute prices but rather, set prices benchmarked against the reference prices in the regions they sell oil to. Such a reference price is a function of regional supply and demand dynamics, and this price dynamic applies as well to non-Middle East crude prices elsewhere – all of which influence crude prices for Asia.

Second, key attributes of the Far Eastern crude oil market are: 1) geographical asymmetry between incremental crude oil supply and demand (the majority of

global crude oil incremental demand is located in the Far East); and 2) structural difference between the Far East market and US/European markets. In other words, geography and economics determine the Asian Premium. Essentially, global patterns of crude oil trade are characterised by East Asia's heavy dependence on Mideast crude oil imports and the lack of viable alternative oil sources in the region.

Third, the difference in oil market characteristics between the Far East and US/Europe is one of demand. Far Eastern oil markets place huge premiums on security of supply to counter price volatility, and are thus willing to pay a higher price to secure long-term contracts as opposed to spot-trading (since spot prices though lower are more volatile). As a result, Far Eastern oil markets provide less flexible supply and demand responses compared to US/European oil markets whose responses are more elastic. After all, Dr Doshi pointed out, oil is sold and bought according to price elasticity. Further, the Asian Premium is not really an issue as East Asian governments pass on the price burden to consumers. Also, realistically, Middle Eastern oil producers desire to maximise their revenues and will naturally gravitate towards markets with greater potential, i.e. the US/Europe oil markets.

Discussion

One participant suggested forming a 'Far Eastern oil market bloc' to resolve the Asian Premium problem. To that, many other participants acknowledged that this endeavour may be clouded with uncertainties if not impossible to achieve in the future. Another participant pointed out that, according to latest oil price statistics, it is apparent that recently the Asian Premium has been on a decline. *The Petroleum Intelligence Weekly*, as pointed out by one other participant, has recently argued that the Asian Premium has actually disappeared now. This interesting observation, Dr Doshi suggested, is possibly attributed to the entry of Russia into the oil market – presenting the Far East region with more choices of secure energy supplies and hence potential reduction in dependence on Middle Eastern oil producers.

Research Agenda 3: Developmental Institutions and Energy in East Asia

Developmental Institutions and Energy in East Asia

Mr Lye Liang Fook
Research Fellow, East Asia Institute
National University of Singapore

Mr Lye Liang Fook introduced the Network of East Asian Think-tanks (NEAT) in the context of developmental institutions and energy security in East Asia. As a Track-II framework, NEAT aims to meet twice annually to discuss and flag issues

of concern to policymakers at the Track-I level. Under NEAT, there is a working group on energy which met in 2005, 2006 and 2007. However, Mr Lye pointed out that final authority on the implementation of NEAT recommendations is found only at the Track-I level.

Next, Mr Lye discussed the extent of the effectiveness of NEAT. He argued that there is no correlation between the NEAT energy working group's recommendations and Association of Southeast Asian Nations Plus Three (ASEAN+3) energy cooperation. In fact, before the energy working group was created, some form of regional cooperation already existed. Also, Track-II research activities are largely sponsored by national governments, thus the working group's recommendations often reflect the national interests of these sponsor governments.

Nonetheless, Mr Lye suggested, there is still optimism for greater regional cooperation. He argued that national interests provide a sound, realistic basis for cooperation of mutual benefit, notwithstanding the mixed record to date. Three potential levels for exploring further regional cooperation, in the context of energy security in particular, are: 1) ASEAN; 2) ASEAN+3 (which is more formalised, for instance the ASEAN+3 Closer Energy Partnership); and 3) ASEAN+N. Worth mentioning are the three dialogue partners of ASEAN, namely China, Japan and South Korea. Energy cooperation among them has been less formalised and clouded by uncertainty. Hence, cooperation has largely remained as rhetoric. In sum, Mr Lye concluded that national interests may be more important for now; however, these diverse state-centric interests may gradually converge onto a common platform where the importance of regional cooperation for mutual benefit is duly recognised.

Discussion

Some participants questioned how regional institutions could tackle both energy security and environmental sustainability systematically, when national interests often obstruct regional cooperation in tangible areas, such as the transfer of clean energy technologies. This particular question sparked off a lively debate among the participants.

One of the participants argued that, rather than depending on regional cooperation to intensify, it might serve governments – particularly those in East Asia – better to strengthen national capacities (especially education, particularly with regard to bolstering national research and development capacities) to harness energy efficiently and effectively. In support, another participant pointed out that regional 'cooperation' to date has been merely institution-building; instead of there being true cooperation where tangible outcomes are achieved. One participant also noted that it is only logical to see countries preferring to safeguard novel clean energy technologies they create rather than diffusing them to other countries.

In response to these questions and doubts, Mr Lye argued that one should not regard national interests as precluding all avenues for regional cooperation. It was also pointed out that current levels of cooperation should not be seen merely as 'institution-building', since regional cooperation to date has prompted national governments to adopt best practices and pay heed to issues aired in the regional forums, such as those Track-II events hosted by NEAT. Moreover, cooperation has led to concrete, tangible projects such as existing bilateral gas pipeline projects in the region.

A question was also raised on the extent of independence exercised by Track-II institutions such as NEAT, given that some of these think tanks are heavily endorsed by national governments. Mr Lye pointed out that the limitations of Track-II institutions are influenced by a broad range of factors, and not just by the national self-interests of patron governments. These factors include the level of sensitivity of those pertinent issues in relation to national security, since energy in particular is regarded by many countries as a matter of national security concern. There are also diverse and complex national interests shaped by contextual differences faced by various countries.

Energy in a Seamless Asia

Dr Chang Youngho

Assistant Professor

Centre for Non-Traditional Security (NTS) Studies

S. Rajaratnam School of International Studies (RSIS)

Nanyang Technological University, Singapore

For some countries such as those in ASEAN, Dr Chang Youngho pointed out, there is huge potential for renewable energy (RE) development in particular. However, given that demand has yet to meet the RE supply available, harnessing RE sources is not yet regarded as cost effective when financial returns are deemed unable to cover the capital investment costs. Lao PDR is a prime example where there are huge hydropower reserves yet insufficient demand to cover the capital costs (which are judged too expensive for the Laotian government).

Essentially, Dr Chang advocates cooperative competition in the field of energy cooperation in East Asia, through the increase in size of the regional market on a collective basis while individual regional states compete to capture larger shares of the pie in the integrated regional energy market. In order to realise the vision of a 'seamless Asia' in East Asian energy cooperation, he argued, infrastructure investments on an integrated basis is important. To effectively utilise the energy resource potential, especially RE sources, an integrated regional energy market is a viable option, he concluded.

Discussion

Some participants pointed out funding issues as a potential thorny area of concern, due to the exorbitant amount of funds required to propel action towards an integrated regional energy market. In response, Dr Chang argued that, first, a regional forum is needed to clarify doubts and issues concerning energy security in order to pave a path for concrete measures towards regional integration. There are also many issues other than funding which need to be addressed before the dream of an integrated regional energy market can be realised; such as the need to overcome political barriers and technological discrepancies among countries in East Asia.

A few participants remain sceptical of the prospect of a 'seamless Asia' concept for regional energy market integration. To this scepticism, Dr Chang pointed out that the European Union also took a long time to transform into an integrated market. Hence, he argued, it is premature to dismiss a similar possibility taking place in East Asia.

ReCAAP – Enhancing Regional Cooperation

Ms Lee Yin Mui

Assistant Director (Research)

Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) Information Sharing Centre (ISC)

Singapore

Ms Lee Yin Mui pointed out that the ReCAAP serves as a good model for regional cooperation in combating piracy and armed robbery against ships in Asia. She highlighted that to date, the ReCAAP comprises 15 member countries, including Norway, which is the fifteenth country and also the first country outside Asia to join ReCAAP. Norway's interest in joining ReCAAP is due to the many Norwegian vessels that pass through Asian waters; the country hence has a vested interest in the maritime safety and security of the Asian region. The ReCAAP will have a sixteenth member country – the Netherlands – which will officially become a member on 3 July 2010. Another non-Asian country that has expressed interest in joining the ReCAAP is Denmark.

The ReCAAP essentially embodies some key characteristics, first of all being the organisation's respect for the sovereignty of each member state. In fact, each member state deals with piracy and armed robbery incidents in accordance with their own national policies within their maritime jurisdictional water zones. The ReCAAP members also work by way of consensus while the organisation operates on voluntary funding by member countries in the form of monetary contributions or deployment of their personnel to contribute towards the work in the ReCAAP ISC.

However, not all ReCAAP Focal Points (i.e. the key cooperative agencies of member states) possess similar levels of capacity and capability. Nonetheless, the ReCAAP ISC works towards enhancing the capacity and capability of the Focal Points through capacity building programmes for all countries. The success of the ReCAAP can also be attributed to regional states not yet party to this agreement, Ms Lee pointed out. The case study of the February 2010 hijacking incident of tugboat *Asta* and its barge *Callista*, in which Malaysia (a non-member of the ReCAAP) provided valuable assistance, is testimony to this regional spirit of cooperation.

Discussion

One participant queried the proportion of energy vessels that fall victim to piracy and armed robbery at sea. Ms Lee commented that many vessels transit through East Asian waters, particularly through the Straits of Malacca and Singapore, and a handful of them are huge vessels such as crude oil tankers. Some participants suggested that the ReCAAP should look more specifically into the root causes of piracy and armed robbery at sea and endeavour to solve these problems. For instance, the ReCAAP may want to delve into the key sources from where most pirates and robbers originate and thus advise national governments on ways to tackle these issues at their root causes.

In response, Ms Lee proffered that socioeconomic drivers largely determine these problems, which are, for the most part, up to individual governments to resolve for themselves. There are also practical difficulties that have to be contended with, among which is the fact that pirates and armed robbers may not all hail from one single country of origin but often operate in a group that consists of a mix of diverse nationalities. The ReCAAP, she pointed out, is not in a position to point fingers at specific countries and in the process run the risk of interfering with national sovereignty. Also, the ReCAAP essentially strives to share best practices among member states but not influence the working styles of individual governments. Furthermore, inter-agency coordination problems remain a perennial issue that hinders more in-depth interstate cooperation. Therefore, the ReCAAP works fine in the current context, based on the recognition that enforcement serves as a more practical approach to the risks of piracy and armed robbery at sea.

Some participants questioned the disparity in national capacities among ReCAAP member states. To this, Ms Lee commented that some regional states do not even have adequate infrastructure, which hence limits efficient collaboration sometimes. For instance, some member states have limited access to the Internet, a tool which is essential for regional information sharing. As such, she reiterated, capacity building remains highly crucial.

One participant highlighted studies which appeared to show that the more maritime incidents – such as piracy and armed robbery – are reported, the higher

will be the insurance premiums levied on ship-owners. To this, Ms Lee pointed out that the converse is true: the more the number of incidents reported, the greater the awareness among the maritime community about piracy and thus the higher the levels of vigilance. As such, the reduced levels of occurrences of piracy and armed robbery at sea should naturally help in reducing insurance premiums instead.

Research Agenda 4: Energy Vulnerabilities Unique to East Asian Societies

Energy Security in the Philippines: Opportunities and Challenges

Mr Kevin Christopher De Guzman Punzalan

Research Analyst

Centre for Non-Traditional Security (NTS) Studies

S. Rajaratnam School of International Studies (RSIS)

Nanyang Technological University, Singapore

Mr Kevin Christopher De Guzman Punzalan first highlighted the perennial problems faced by the Philippines in the realm of energy security. Among them are energy supply shortages, lagging development of energy infrastructure, as well as market privatisation which has led to considerable hikes in electricity prices to a level on par with those in the developed countries. While the Philippines does suffer from a range of energy vulnerabilities, there are also reasons for optimism; one of which is the country's huge developmental potential in RE sources. In addition, the country's RE laws have enabled substantial investments in the sector, which could contribute to more generation facilities and a more diversified energy mix.

Opportunities also abound for regional cooperation, Mr Punzalan suggested. One of the areas of cooperation can be the standardisation of incentives for RE development in Southeast Asia, so as to enlarge the regional energy market and attract greater levels of investments. One area for investment that remains underappreciated is the manufacture of support components for RE technologies, such as replacement batteries. Another tangible area of regional energy cooperation lies in sharing the country's experience in the operations and management of geothermal technology. In the field of civilian nuclear energy development, East Asia may also consider forging networks for nuclear fuel supply and waste management. Such cooperative ventures can considerably address the energy vulnerability of the Philippines.

However, he noted several potential hazards that the Philippine government will need to examine and rectify. First of all, Manila may need to evaluate its energy market deregulation policies; provide for more flexible and feasible arrangements to establish new contracts with independent power producers (IPPs); increase coordination between IPPs and the Philippine government; and monitor the

implementation of RE initiatives by the Philippine government, in order to encourage more investments in this area.

Discussion

One participant suggested the importance of bearing in mind the fact that RE developments cannot be implemented uniformly within and among countries due to contextual differences, such as geography and resource endowments. This very fact thus needs to be duly considered when contemplating regional energy cooperation. For instance, wind energy may be deemed applicable in some regions but not others, be they be within or outside national boundaries. Other participants responded by saying that reliance on a single RE source is counterproductive to energy security, and that a mixed basket of renewable sources is preferable.

It was also suggested during the discussion that, for some countries especially vulnerable to disruptions in fossil fuel supplies, there is potential for the utilisation of RE sources without even the need to consider requirements for base-load power capacities. This remark elicited a vigorous debate among some participants. Nonetheless, it was generally agreed that, taking national contextual differences into consideration, looking at a more holistic energy mix – one that includes all plausible sources be they fossil fuels or renewables – will be more realistic instead.

With respect to renewable sources, one participant opined that the upstream production factor remains a very important consideration. For example, some Asian countries do not conduct consistent surveys of their wind potential, which forms the basis for planning wind farms. Also, in the development of biofuels, preparation of feedstock at a reasonable cost presents a significant issue. Therefore, there is a need for appropriate legislation on proper and effective land use, as well as a social system to secure sufficient manpower in the agricultural sector, for instance.

Research Agenda 5: The Benefits and Barriers of Regional Asian Energy Projects

The Benefits and Barriers of Regional Asian Energy Projects

Dr Benjamin K. Sovacool

Assistant Professor

Centre on Asia and Globalisation, Lee Kuan Yew School of Public Policy

National University of Singapore

Dr Benjamin K. Sovacool first defined ‘regional’ energy projects as those which involve capital intensity, and which are of a geographical scale spanning across at least two or more countries. Regional energy projects, he pointed out, are

important for an array of reasons. Their size and economies of scale allow for a broader geographical span of involvement, thus potentially allowing for more resources to be harnessed. In addition, such cooperative ventures allow for the stockpiling of resources and for the leveraging of comparative advantages of various countries while avoiding the duplication of effort. The linking of national energy infrastructure helps distribute costs among countries. Lastly, he pointed out, energy cooperation helps engender a shared sense of energy vulnerability.

The case study of the Trans-ASEAN Gas Pipeline (TAGP) was used by Dr Sovacool to illuminate the potential issues of concern encountered in regional energy cooperation. He pointed out that, first of all, the values and motivations among the diverse range of stakeholders (totalling around 35 major actors, both corporate and government) converge and diverge at different points. In addition, a multitude of practical challenges – technical, economic, legal, political, social and environmental – hinder the progress of TAGP. Large regional energy projects typically face immense, multifaceted challenges. As such, there is a need to extensively manage, if not to avoid, those potential risks, Dr Sovacool argued. In the case of TAGP, he concluded, it is easier to talk than to take concrete action due to a range of barriers; including intensifying feelings of mutual suspicion among regional countries, and varying conceptions of energy security among the countries involved in TAGP.

Discussion

Taking specifically the case of the Energy Charter Treaty, some participants pointed out that there has been no progress due to the fact that China, Russia, the US and much of Southeast Asia remain non-signatories to this international framework. Further, this Treaty also lacks teeth – i.e. it does not possess enforcement powers in the case of non-compliance and other transgressions – which hinders effective energy cooperation.

One participant suggested that, besides the range of technical, economic, legal, political, social and environmental issues that need to be addressed in relation to TAGP; the supply and demand balance, such as the size of gas reserves as well as domestic and regional demand, must be duly considered. On the lack of progress witnessed in TAGP, some participants expressed scepticism for the prospect of further regional energy cooperation. In response, one participant argued that regional energy projects, besides practical utility, are embodiments of the 'regional spirit' that is to be fostered and encouraged for the broader goal of regional integration. Therefore, it is important to look at such initiatives from a wider political perspective.

Research Roadmap

Professor Zha Daojiong
Lead Researcher
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Nanyang Technological University, Singapore

The following points were formalised during the concluding discussion on the way forward for this project:

- a) A 1.5-day regional energy workshop is tentatively set for 9–10 December 2010 as a follow-on to this inception meeting.
- b) This project will culminate in an edited volume.
- c) Each lead discussant in this inception meeting (hereupon termed as an author as such) shall prepare a chapter of approximately 7,000 words or more, dealing with the specific topics brought up.
- d) Each author shall be paid a modest honorarium: USD 1000 (half upon receipt of the preliminary draft; another half upon receipt of the final manuscript).
- e) Each author will be sent by Professor Zha Daojiong, the project convener, an outline of pertinent research questions to be addressed in the particular chapter.
- f) Authors shall submit their preliminary drafts by 15 November 2010 (by then there will also be submissions of names of the recommended discussants to comment on the papers during the December 2010 workshop).
- g) In due course, each author will be expected to sign a contract of agreement to affirm his/her commitment towards contributing to this project. Specific details will be made known in due course.

It was also suggested that names of experts specialising in energy security issues in the Greater Mekong Subregion (GMS) can be highlighted for the purpose of this project. For this purpose, Dr Benjamin K. Sovacool has kindly recommended a book publication written on GMS energy security issues, in which a list of authors can be chosen from (see link: <http://www.earthscan.co.uk/?tabid=49419>).

Programme

- 08:45 – 09:00** **Registration**
- 09:00 – 09:15** **Welcome Remarks**
- Associate Professor Mely Caballero-Anthony
Head, Centre for Non-Traditional Security (NTS) Studies,
S. Rajaratnam School of International Studies (RSIS),
Nanyang Technological University, Singapore
&
Professor Zha Daojiong
Lead Researcher, Energy and Human Security Programme,
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S. Rajaratnam School of International Studies (RSIS),
Nanyang Technological University, Singapore
- 09:15 – 10:15** **Session 1: Stock-taking of Trade in Fossil Fuels among East Asian states**
- Lead Discussant:
Professor Kensuke Kanekiyo
Research Advisor, Institute of Energy Economics, Japan
- 10:15 – 11:15** **Session 2: The ‘Asian Premium’ Phenomenon**
- Lead Discussant:
Dr Tilak K. Doshi
Chief Economist, Energy and Environmental Economics, and
Principal Fellow, Energy Studies Institute, National University
of Singapore
- 11:15 – 11:25** **Break**
- 11:25 – 12:25** **Session 3: Developmental Institutions and Energy in East Asia – Part 1**
- Lead Discussant:
Mr Lye Liang Fook
Research Fellow, East Asia Institute, National University of
Singapore
- Dr Peter Hing
Associate Professor, Physics Department, University of
Brunei Darussalam

- 12:25 – 14:00** *Lunch*
- 14:00 – 15:00** **Session 3: Developmental Institutions and Energy in East Asia – Part 2**
- Lead Discussant:
Dr Chang Youngho
Assistant Professor, Centre for Non-Traditional Security (NTS) Studies, S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore
- Ms Lee Yin Mui
Assistant Director (Research), Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) Information Sharing Centre, Singapore
- 15:00 – 16:00** **Session 4: Energy Vulnerabilities Unique to East Asian Societies**
- Lead Discussant:
Mr Kevin Christopher De Guzman Punzalan
Research Analyst, Centre for Non-Traditional Security (NTS) Studies, S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore
- 16:00 – 16:10** **Break**
- 16:10 – 17:10** **Session 5: The Benefits and Barriers of Regional Asian Energy Projects**
- Lead Discussant:
Dr Benjamin K. Sovacool
Assistant Professor, Centre on Asia and Globalisation, Lee Kuan Yew School of Public Policy, National University of Singapore
- 17:10 – 17:30** **Closing Remarks**
- Professor Zha Daojiong
Lead Researcher, Energy and Human Security Programme, Centre for Non-Traditional Security (NTS) Studies, S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore

- *End of Meeting* -

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About the RSIS Centre for Non-Traditional Security (NTS) Studies

The **RSIS Centre for Non-Traditional Security (NTS) Studies** conducts research and produces policy-relevant analyses aimed at furthering awareness and building capacity to address NTS issues and challenges in the Asia-Pacific region and beyond.

To fulfil this mission, the Centre aims to:

- Advance the understanding of NTS issues and challenges in the Asia-Pacific by highlighting gaps in knowledge and policy, and identifying best practices among state and non-state actors in responding to these challenges
- Provide a platform for scholars and policymakers within and outside Asia to discuss and analyse NTS issues in the region
- Network with institutions and organisations worldwide to exchange information, insights and experiences in the area of NTS
- Engage policymakers on the importance of NTS in guiding political responses to NTS emergencies and develop strategies to mitigate the risks to state and human security
- Contribute to building the institutional capacity of governments, and regional and international organisations to respond to NTS challenges

Our Research

The key programmes at the **RSIS Centre for NTS Studies** include:

- 1) Internal and Cross-Border Conflict Programme
 - Dynamics of Internal Conflicts
 - Multi-level and Multilateral Approaches to Internal Conflict
 - Responsibility to Protect (RtoP) in Asia
 - Peacebuilding
- 2) Climate Change, Environmental Security and Natural Disasters Programme
 - Mitigation and Adaptation Policy Studies
 - The Politics and Diplomacy of Climate Change
- 3) Energy and Human Security Programme
 - Security and Safety of Energy Infrastructure
 - Stability of Energy Markets
 - Energy Sustainability
 - Nuclear Energy and Security

4) Health and Human Security Programme

- Health and Human Security
- Global Health Governance
- Pandemic Preparedness and Global Response Networks

The first three programmes received a boost from the John D. and Catherine T. MacArthur Foundation when the RSIS Centre for NTS Studies was selected as one of three core institutions leading the MacArthur Asia Security Initiative in 2009.*

Our Output

Policy Relevant Publications

The **RSIS Centre for NTS Studies** produces a range of output such as research reports, books, monographs, policy briefs and conference proceedings.

Training

Based in RSIS, which has an excellent record of post-graduate teaching, an international faculty, and an extensive network of policy institutes worldwide, the Centre is well-placed to develop robust research capabilities, conduct training courses and facilitate advanced education on NTS. These are aimed at, but not limited to, academics, analysts, policymakers and non-governmental organisations (NGOs).

Networking and Outreach

The Centre serves as a networking hub for researchers, policy analysts, policymakers, NGOs and media from across Asia and farther afield interested in NTS issues and challenges.

The **RSIS Centre for NTS Studies** is also the Secretariat of the Consortium of Non-Traditional Security Studies in Asia (NTS-Asia), which brings together 20 research institutes and think tanks from across Asia, and strives to develop the process of networking, consolidate existing research on NTS-related issues, and mainstream NTS studies in Asia.

More information on our Centre is available at www.rsis.edu.sg/nts

** The Asia Security Initiative was launched by the John D. and Catherine T. MacArthur Foundation in January 2009, through which approximately US\$68 million in grants will be made to policy research institutions over seven years to help raise the effectiveness of international cooperation in preventing conflict and promoting peace and security in Asia.*

About the S. Rajaratnam School of International Studies, Nanyang Technological University

The **S. Rajaratnam School of International Studies (RSIS)** was established in January 2007 as an autonomous School within the Nanyang Technological University (NTU). **RSIS'** mission is to be a leading research and graduate teaching institution in strategic and international affairs in the Asia-Pacific. To accomplish this mission, **RSIS** will:

- Provide a rigorous professional graduate education in international affairs with a strong practical and area emphasis
- Conduct policy-relevant research in national security, defence and strategic studies, diplomacy and international relations
- Collaborate with like-minded schools of international affairs to form a global network of excellence

Graduate Training in International Affairs

RSIS offers an exacting graduate education in international affairs, taught by an international faculty of leading thinkers and practitioners. The teaching programme consists of the Master of Science (MSc) degrees in Strategic Studies, International Relations, International Political Economy and Asian Studies. Through partnerships with the University of Warwick and NTU's Nanyang Business School, **RSIS** also offers the NTU-Warwick Double Masters Programme as well as The Nanyang MBA (International Studies). The graduate teaching is distinguished by their focus on the Asia-Pacific region, the professional practice of international affairs and the cultivation of academic depth. Over 200 students, the majority from abroad, are enrolled with the School. A small and select Ph.D. programme caters to students whose interests match those of specific faculty members.

Research

Research at **RSIS** is conducted by five constituent Institutes and Centres: the Institute of Defence and Strategic Studies (IDSS), the International Centre for Political Violence and Terrorism Research (ICPVTR), the Centre of Excellence for National Security (CENS), the Centre for Non-Traditional Security (NTS) Studies, and the Temasek Foundation Centre for Trade & Negotiations (TFCTN). The focus of research is on issues relating to the security and stability of the Asia-Pacific region and their implications for Singapore and other countries in the region. The School has three professorships that bring distinguished scholars and practitioners to teach and do research at the School. They are the S. Rajaratnam Professorship in Strategic Studies, the Ngee Ann Kongsi Professorship in

International Relations, and the NTUC Professorship in International Economic Relations.

International Collaboration

Collaboration with other Professional Schools of international affairs to form a global network of excellence is a **RSIS** priority. **RSIS** will initiate links with other like-minded schools so as to enrich its research and teaching activities as well as adopt the best practices of successful schools.

For more information on the School, visit www.rsis.edu.sg

CENTRE FOR
NON-TRADITIONAL
SECURITY STUDIES



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