

CSCAP MEMORANDUM NO. 28

Energy Security in the Asia Pacific Region



**A Memorandum from the
Council for Security Cooperation in the Asia Pacific (CSCAP)**

June 2016

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I. Introduction

The perpetuation of the Asia-Pacific's tremendous economic growth is contingent primarily on the price of economic inputs, most of all energy. Asia-Pacific countries are consuming increasingly vast amounts of energy every year. According to the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), the Asia-Pacific region accounted for 47.3 percent of global Total Primary Energy Supply (TPES) in 2015. Due to the region's lack of sufficient primary energy sources – having only 2.5 percent of global oil reserves and 8.2 percent of global natural gas reserves – Asia's energy needs are met with imported supplies. The region must diversify the sources of its energy supply.

Cooperation between states at a regional and sub-regional level is necessary to ensure a future of sustainable energy security. There is also a need for states to implement legislation at the national level to incentivise both a move towards low carbon energy sources and regional cooperation. Institutions such as ASEAN can play a central role in moving the region towards more cooperative and sustainable approaches to the energy mix.

This CSCAP Memorandum addresses regional energy security and the energy mix. In addition to specific aspects of the energy mix, it addresses the consequences of regional energy choices and presents future scenarios for regional energy security as well as tangible policy options to move the region towards greater cooperation in the energy mix.

II. General Findings

- Energy security is a complex dilemma and cannot be achieved by just attaining energy independence. Energy security should move beyond a state-centric approach to address human security, non-traditional and environmental issues. A working definition of energy security needs to go beyond the traditional notions of availability, affordability and reliability to also include sustainability. A conceptual framework could address the multi-dimensional issues of energy security that encompass global issues such as climate change; transnational issues that relate to interconnectivity and transboundary effects (for instance, of nuclear accidents); and the impact on local communities.

- Energy policies face a trilemma of security, affordability, and sustainability. There is no single technology that can address all three aspects simultaneously. For example, renewable energy sources (RES) reduce greenhouse gas emissions and costly energy imports. They also make a positive impact on energy poverty by providing off-grid solutions to rural areas. Asia remains one of the most dynamic regions for RES globally, both in terms of installed capacity and technology export. At the same time, RES still struggle with the variability of electricity generation, the lack of low-cost storage technologies and high – albeit decreasing – capital costs.
- Energy policies are national choices first and foremost. States in the region will place greater emphasis on national energy legislation and national benefits than cooperative regional choices. However, diversification of the energy mix and energy security is enhanced through regional and sub-regional cooperation. This can be achieved by collaborating to implement advanced energy technologies and building capacity in renewable energy sources.
- Regional cooperation must be underpinned by national environments that support the diversification of energy sources. A supportive national environment could include a) open markets; b) long-term and predictable legislation for renewables capacity building such as goals and target setting; c) full cost pricing of conventional sources; and d) incentives for renewable energy sources.
- Asia is increasingly considering nuclear energy sources in addition to renewables as states try to meet growing domestic demand for energy while reducing carbon emissions. This brings both opportunities and challenges. Nuclear energy can contribute to a low-carbon energy mix. To benefit from nuclear power, the region should cooperate to uphold strong nuclear safety and governance regulations. This should begin with the safe operation of nuclear power plants. To reduce the risk of a nuclear accident, an independent regulatory framework as per IAEA guidelines and properly trained personnel (including competent operators) will be essential for safe and sustainable nuclear energy development.
- Within the Asia-Pacific, sub-regional cooperation on specific energy security issues potentially leading to wider regional cooperation should be encouraged. Also, a network of centres of excellence on nuclear energy should be established to foster cooperation.

- ASEAN has a key role to play in promoting cooperation in the regional energy mix and energy security among both member states and non-member states in the Asia-Pacific. By promoting regional cooperation, ASEAN can build unity around this salient issue and further ASEAN centrality in the regional architecture.

Constructing Scenarios

Drawing on the above findings, the Study Group endeavoured to project these issues into the future to better inform long-term policy planning. Scenario planning methodology was used to highlight future scenarios for regional energy security and the energy mix

Scenario planning is a methodology that takes into account the uncertainty of future events and how to best plan and respond to them today. It is not predictive, but rather suggests narratives about the future and how to facilitate positive outcomes while mitigating negative outcomes. The future of regional energy security and the energy mix is inherently uncertain. However, the actions taken by regional states today can help bring about positive future realities. This CSCAP Study Group conducted a scenario planning exercise to gain a greater understanding of future scenarios of regional energy security and the energy mix, the impact of these scenarios, and what steps states can take to attain positive future scenarios while mitigating the impact of negative scenarios.

III. Recommendations

Based on a discussion of 16 alternate scenarios, the Study Group presents two scenarios to best highlight the effect of regional cooperation, or lack thereof, on energy security.

Green Collaborative Region

Narrative: The Green Collaborative Region cooperates for a more energy efficient world that is climate friendly and protects the planet. States in the region recognise the need to cooperate both at a technological level and through norms and institutions for a sustainable energy future. There is high regional investment in energy efficiency measures and renewable technologies to diversify the energy mix away from conventional sources with a high CO₂ footprint. The region uses institutional structures such as ASEAN to enhance regional cooperation and promote climate friendly norms. Open market forces encourage high levels of cross-sector and cross-border investments in energy efficient industries. There is high connectivity through institutions, people-to-people engagement, and infrastructure commitments.

Policy Recommendations: Study group members recommended several policy measures to attain this scenario:

- (a) There should be more cross-investment, public-private partnerships, and joint research and development initiatives in the field of renewables and other low-carbon energy sources.
- (b) Regional states should further facilitate information sharing, transparency and emergency planning to promote confidence in our energy choices.
- (c) State and non-state stakeholders should enhance infrastructure cooperation and interconnectivity (e.g., power grids, pipelines, and regional oil and gas storage/reserves).
- (d) There should be regional and in some cases cross sub-regional energy trade in power and gas pipelines, as well as pooling and inter-connection of electric power grids. This would require regional cooperation and coordination to close existing gaps, and may require retooling existing institutions or creating new ones to facilitate such energy exchanges.
- (e) There is a need for cooperation in energy pricing issues (particularly natural gas/LNG) to address the issue of price volatility.

Tech-Driven State-Centric Region

Narrative: In the Tech-Driven State-Centric Region, states will continue to rely on conventional energy sources with a high CO₂ footprint. At the same time, states are investing in energy technologies to ensure national energy security and national benefits. These technologies include nuclear power, unconventional (especially fracking), clean coal technology, and renewable sources (when competitive with conventional sources). Regulatory frameworks support national efforts by promoting these industries in the domestic energy market. Protectionist measures are adopted to benefit the national economy. States focus on national interests in energy production rather than regional cooperation or the environment.

Policy Recommendations: Study group members cited a number of policy consequences from the second scenario and measures to mitigate negative outcomes:

- (a) There is a need for regional states to uplift environmental protection awareness and to realise that the diversification of energy sources will benefit employment, public health, environment, and social stability in states.
- (b) States need to address the negative aspects of state-centric approaches, including air pollution, damming, nuclear accidents, and downstream pollution. There is a need to encourage states to move towards a minimum CO2 footprint and for increasing state investment in clean and efficient energy technologies. This will help to realise rapid emission reduction as suggested at the Paris Climate Change Summit. As a clean, reliable, abundant and efficient energy source, natural gas may be capable of easing the world's transition into the age of renewable energies.
- (c) In this state-centric scenario there remains a need to address the traditional security considerations of securing cross-border production and transportation of conventional energy sources.

ABOUT CSCAP

CSCAP is a non-governmental (second track) process for dialogue on security issues in the Asia Pacific. Membership in CSCAP is on an institutional basis and consists of Member Committees. Current membership comprises Australia, Brunei Darussalam, Cambodia, Canada, China, the EU, India, Indonesia, Japan, the Democratic People's Republic of Korea, the Republic of Korea, Malaysia, Mongolia, New Zealand, the Philippines, Russia, Singapore, Thailand, Vietnam and the USA.

The functions of CSCAP are as follows:

- a. to provide an informal mechanism by which political and security issues can be discussed by scholars, officials, and others in their private capacities;
- b. to encourage the participants of such individuals from countries and territories in the Asia Pacific on the basis of the principle of inclusiveness;
- c. to organise various working groups to address security issues and challenges facing the region;
- d. to provide policy recommendations to various intergovernmental bodies on political-security issues;
- e. to convene regional and international meetings and other cooperative activities for the purpose of discussing political-security issues;
- f. to establish linkages with institutions and organisations in other parts of the world to exchange information, insights and experiences in the area of regional political-security cooperation; and
- g. to produce and disseminate publications relevant to the other purposes of the organisation.

Study Groups are the primary mechanism for CSCAP activity. As of May 2016, there were five CSCAP Study Groups. These are concerned with: (i) Energy Security; (ii) Preventive Diplomacy; and (iii) Non-Proliferation and Disarmament; (iv) Harmonization of Aeronautical and Maritime Search and Rescue; (v) Marine Environment Protection.

This memorandum was produced by the CSCAP Study Group on Energy Security and was approved by the out of session CSCAP Steering Committee Meeting on 15 June 2016.

Further information on CSCAP can be obtained from the CSCAP website at www.cscap.org or by contacting the CSCAP Secretariat:

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CSCAP Memoranda

CSCAP Memoranda are the outcome of the work of Study Groups approved by the Steering Committee and submitted for consideration by the ASEAN Regional Forum and other bodies.

- Memorandum No.27 – Implementation of United Nations Security Council Resolution (UNSCR) 1540
Author: Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific
Date published: April 2015
- Memorandum No.26 – Towards an Effective Regional Security Architecture for the Asia Pacific
Author: Study Group on Regional Security Architecture
Date published: June 2014
- Memorandum No.25 – Maritime CBMs, Trust and Managing Incidents at Sea
Author: Study Group on Principles for Good Order at Sea
Date published: June 2014
- Memorandum No.24 – Safety and Security of Vital Undersea Communications Infrastructure
Author: Experts Group on Vital Undersea Communications Infrastructure
Date published: May 2014
- Memorandum No.23 – Enhancing Water Security in the Asia Pacific
Author: Study Group on Water Resources Security
Date published: January 2014
- Memorandum No.22 – Non-Proliferation of Weapons of Mass Destruction
Author: Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific
Date published: September 2012
- Memorandum No.21 – Implications of Naval Enhancement in the Asia Pacific
Author: Study Group on Naval Enhancement in the Asia Pacific
Date published: August 2012
- Memorandum No.20 – Ensuring A Safer Cyber Security Environment
Author: Study Group on Cyber Security
Date published: May 2012

- Memorandum No.19 – Reduction and Elimination of Nuclear Weapons
 Author: Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific
 Date published: February 2012
- Memorandum No.18 – Implementing the Responsibility to Protect (RtoP)
 Author: Study Group on the Responsibility to Protect (RtoP)
 Date published: September 2011
- Memorandum No.17 – Promoting the Peaceful Use of Nuclear Energy
 Author: Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific
 Date published: June 2011
- Memorandum No.16 – Safety and Security of Offshore Oil and Gas Installations
 Author: Study Group on Safety and Security of Offshore Oil and Gas Installations
 Date published: January 2011
- Memorandum No.15 – The Security Implications of Climate Change
 Author: Study Group on the Security Implications of Climate Change
 Date published: July 2010
- Memorandum No.14 – Guidelines for Managing Trade of Strategic Goods
 Author: Export Controls Experts Group (XCXG)
 Date published: March 2009
- Memorandum No.13 – Guidelines for Maritime Cooperation in Enclosed and Semi-Enclosed Seas and Similar Sea Areas of the Asia Pacific
 Author: Study Group on Facilitating Maritime Security Cooperation in the Asia Pacific
 Date published: June 2008
- Memorandum No.12 – Maritime Knowledge and Awareness: Basic Foundations of Maritime Security
 Author: Study Group on Facilitating Maritime Security Cooperation in the Asia Pacific
 Date published: December 2007
- Memorandum No.11 – Human Trafficking
 Author: Study Group on Human Trafficking
 Date published: June 2007

- Memorandum No.10 – Enhancing Efforts to Address Factors Driving International Terrorism
 Author: Study Group on Enhancing the Effectiveness of the Campaign Against International Terrorism with Specific Reference to the Asia Pacific Region
 Date published: December 2005
- Memorandum No.9 – Trafficking of Firearms in the Asia Pacific Region
 Author: Working Group on Transnational Crime
 Date published: May 2004
- Memorandum No.8 – The Weakest Link? Seaborne Trade and the Maritime Regime in the Asia Pacific
 Author: Working Group on Maritime Cooperation
 Date published: April 2004
- Memorandum No.7 – The Relationship Between Terrorism and Transnational Crime
 Author: Working Group on Transnational Crime
 Date published: July 2003
- Memorandum No.6 – The Practice of the Law of the Sea in the Asia Pacific
 Author: Working Group on Maritime Cooperation
 Date published: December 2002
- Memorandum No.5 – Cooperation for Law and Order at Sea
 Author: Working Group on Maritime Cooperation
 Date published: February 2001
- Memorandum No.4 – Guidelines for Regional Maritime Cooperation
 Author: Working Group on Maritime Cooperation
 Date published: December 1997
- Memorandum No.3 – The Concepts of Comprehensive Security and Cooperative Security
 Author: Working Group on Comprehensive and Cooperative Security
 Date published: December 1995
- Memorandum No.2 – Asia Pacific Confidence and Security Building Measures
 Author: Working Group on Confidence and Security Building Measures
 Date published: June 1995
- Memorandum No.1 – The Security of the Asia Pacific Region
 Author: CSCAP
 Date published: April 1994