



## The Asia–Pacific Nuclear Governance Architecture Part II: Shaping Regional Governance to Meet Regional Needs

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### Summary

*This Policy Brief complements Policy Brief 40 which assessed the current outlook for the peaceful uses of nuclear energy in the region to approximately 2030. This part of the study considers the regionally-based arrangements for nuclear governance and the extent to which they usefully reinforce and dovetail with the global governance arrangements. All regions have special requirements in the nuclear governance realm given their different political and economic circumstances, their geographical configuration and strategic location. The trick is to devise regional arrangements that supplement but do not replicate the global system and which also are tailored to realistic regional needs and expectations, rather than designing governance for its own sake. It turns out that in the Asia–Pacific nuclear governance at the regional level does provide some reinforcement of the global system. But this is mostly in terms of norm-reinforcement, declarations of principles and objectives and modest institutional frameworks. Currently the regional supplements to the global system come nowhere near realizing their potential in practical ways, such as in actually strengthening nuclear safety and security on the ground. There are also questions, requiring further research to answer, about how deep into national nuclear enterprises the various governance norms, legal requirements, recommendations and advice penetrate.*

### *Asia–Pacific Economic Cooperation (APEC) and the East Asia Summit (EAS)*

1. Despite being the only general region-wide consultative bodies,<sup>1</sup> neither APEC nor the EAS has shown much detectable interest in nuclear issues.<sup>2</sup> APEC did release a statement at its Vladivostok summit in 2012 in which the leaders agreed to “Ensure the safe and secure use of nuclear energy as a clean energy source in interested economies by sharing expertise, knowledge, best practices, improving nuclear safety standards and coordinating emergency response and preparedness mechanisms.”<sup>3</sup>

<sup>1</sup> APEC’s current membership comprises 21 members: Australia, Brunei, Canada, Chile, China, Hong Kong-China, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, South Korea, Chinese Taipei, Thailand, United States and Vietnam. EAS currently comprises 18 member countries: all of the ASEAN member states plus the ASEAN Three (China, Japan and South Korea), plus Australia, India, Russia, New Zealand and the US. Canada and the Latin American states of APEC are not represented, nor are the Hong Kong-China and Chinese Taipei.

<sup>2</sup> The author is grateful to his project research assistants Jenna Parker and Anthony James Heath for contributing to the research for this paper. The work was conducted as part of a project on Asia-Pacific Regional Nuclear Governance funded by the Carnegie Corporation of New York. For further project details see [www.nucleargovernance.com](http://www.nucleargovernance.com).

<sup>3</sup> APEC, Leaders Declaration, Vladivostok, 2012, ANNEX B-Strengthening APEC energy security, [http://apec.org/~media/Files/LeadersDeclarations/2012/2012\\_AELM\\_Declaration\\_AnnexB.pdf](http://apec.org/~media/Files/LeadersDeclarations/2012/2012_AELM_Declaration_AnnexB.pdf)

They also undertook to “Strengthen cooperation among interested APEC member countries and relevant international organizations in the sphere of peaceful uses of nuclear energy.” No notable action has eventuated. Similarly, the EAS issued its first and only statement on nuclear non-proliferation at its 2016 meeting in Vientiane, Laos, but it is unexceptional and foreshadowed no particular collective action by the EAS.<sup>4</sup> Notably it did not issue one on nuclear safety following the Fukushima disaster.

#### *Association of Southeast Asian Nations (ASEAN)*

2. Although it was the inspiration for and is still the guiding force behind the EAS, ASEAN has paid more attention itself to nuclear matters, much of it in the context of energy policy generally.<sup>5</sup> In 2008 ASEAN Ministers set up (as one of a series of six networks dealing with energy) a Nuclear Energy Cooperation Sub-Sector Network. It was to be “the responsible specialized energy body to shepherd ASEAN-wide cooperation and facilitate information sharing and exchange, technical assistance, networking and training on the use of nuclear energy for power generation purposes.”<sup>6</sup> Chaired originally by Vietnam, this role has now been assumed by Malaysia. The Sub-Sector Network held its sixth annual meeting in Putrajaya, Malaysia in April 2016, involving so-called Focal Points from Cambodia, Malaysia, the Philippines, Singapore, Thailand and representatives of the International Atomic Energy Agency (IAEA) and the ASEAN Centre for Energy. Non-regional “partners” from Canada, China and Japan also participated, but surprisingly not Australia, presumably because it does not have experience with nuclear power generation technology.<sup>7</sup>

3. The ASEAN Centre for Energy was established in 1999 in Jakarta as a platform for discussion, information-sharing and capacity-building, including in the field of nuclear energy. In the nuclear area its focus is to strengthen cooperation in nuclear energy research and in emergency preparedness.<sup>8</sup> It also provides assistance to the Network’s meetings, which aim to enhance capacity-building in civilian nuclear energy and to pursue regional nuclear safety cooperation with dialogue partners. Recommendations are geared to supporting the Action Plans of Programme Area No. 7 (Civilian Nuclear Energy) under the ASEAN Plan of Action for Energy Cooperation 2016–2025.<sup>9</sup> At least one observer sees this as the most likely candidate for expanding nuclear governance in the region, although as in much of ASEAN-related activity there is a plethora of well-intentioned declarations and plans and a dearth of implementation.<sup>10</sup>

4. ASEAN’s greatest specific nuclear governance achievement remains the establishment of ASEANTOM in 2004. It involves all of the ASEAN member states, as well as Papua New Guinea as an observer. However, despite a name reminiscent of EURATOM, it is actually the ASEAN Network of Regulatory Bodies on Atomic Energy, rather than a fully-fledged intergovernmental body dealing with all aspects of nuclear energy like EURATOM. Its mandate is broad, aiming to strengthen “nuclear safety, security and safeguards within the ASEAN Community, by enhancing cooperation and complementing the work of existing mechanisms at the national, regional and international levels.”<sup>11</sup> It does not, however, have a standing secretariat but is supported by the

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Energy Agency.

<sup>8</sup> Comments by Dr Sanjayan Velautham, Director, ASEAN Centre for Energy, Jakarta, at Keynote Panel Discussion: ASEAN Development, Nuclear Power Asia Conference, Kuala Lumpur, 7–8 March 2017.

<sup>9</sup> See <http://www.aseanenergy.org/articles/6th-nuclear-energy-cooperation-sub-sector-networks-annual-meeting-increasing-aseans-capacity-in-civilian-nuclear-energy/>.

<sup>10</sup> Discussant, speaking under non-attributable Chatham House rules, at Workshop on Asia–Pacific Nuclear Governance, University of Melbourne and Institute for Energy Studies, National University of Singapore, 9 March 2017.

<sup>11</sup> See <http://aseantom.blogspot.com.au/>. Bizarrely, the ASEANTOM website seems to be hosted on an Australian site, while the link to the official site, [www.aseantom.net](http://www.aseantom.net), seems broken.

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<sup>4</sup> East Asia Summit Statement on Non-Proliferation, 8 September 2016, <http://asean.org/storage/2016/09/EAS-Non-Proliferation-Statement-Final.pdf>.

<sup>5</sup> I am grateful to Nur Azha Putra Bin Abdul Azim of the Energy Studies Institute, National University of Singapore for educating me in the complexities of ASEAN’s role in regional nuclear governance.

<sup>6</sup> See ASEAN Centre for Energy, <http://www.aseanenergy.org/programme-area/cne/>.

<sup>7</sup> Canadian High Commission, Canadian Nuclear Safety Commission, China General Nuclear Power Corporation, IAEA Integrated Support Center for Nuclear Nonproliferation and Nuclear Security, and Japan Atomic

ASEAN Secretariat in Jakarta. Its main activities to date have been a series of workshops. It does not seek to establish enhanced regulations for nuclear energy in the region, whether binding or not. Nor does it conduct inspections or peer review.

5. One recent focus of ASEANTOM has been radiological and nuclear emergency preparedness and response, following the Fukushima accident. Such a focus is also a reaction to new nuclear power plants being built in countries bordering Southeast Asia and plans by some ASEAN member states, so far unrealized, to acquire them. A significant issue for ASEAN countries is the possibility of nuclear accidents in North Asia that may have trans-boundary effects. A study funded by the European Commission assessed the feasibility of enhancing cooperation within ASEAN on the issue.<sup>12</sup> The project was carried out by the Joint Research Centre of the European Commission, in cooperation with regulatory authorities for radiation and/or nuclear safety in six ASEAN member states. The report, completed in February 2016 and followed by a regional workshop the same month, concluded that improvements are needed at both national and regional levels, including early warning systems, radiation monitoring networks, technical support to decision makers and the harmonization of standards for protective measures.<sup>13</sup>

6. In addition to ASEANTOM, there has been a series of ASEAN Regional Forum (ARF) Inter-Sessional Meetings on Non-Proliferation and Disarmament (awkwardly known as the ISM on NPD). The ARF is an off-shoot of ASEAN, established in 1993, that involves a much wider group of Asia-Pacific states and some from South Asia, as well as Canada, Russia and the United States.<sup>14</sup> Its current members are:

Australia, Bangladesh, Brunei, Cambodia, Canada, China, the European Union, India, Indonesia, Japan, Laos, Malaysia, Mongolia, Myanmar, New Zealand, North Korea, Pakistan, Papua New Guinea, the Philippines, Russia, Singapore, South Korea, Sri Lanka, Thailand, Timor-Lesté, the United States, and Vietnam. The group is notable for being the only regional forum in which North Korea participates. Meetings have focused on non-proliferation, disarmament and peaceful uses rather than broader issues of nuclear governance, although there has been some collaboration with meetings of the Council for Security Cooperation in the Asia Pacific (CSCAP), which do consider broader issues of nuclear governance.

#### *Forum for Nuclear Cooperation in Asia*

7. The Forum for Nuclear Cooperation in Asia was established in 1999 as a successor to the annual International Conference for Nuclear Cooperation in Asia, which had been held since 1990. It describes itself as a “Japan-led cooperation framework for peaceful use of nuclear technology in Asia,”<sup>15</sup> which may account for its quirky membership. This comprises the larger states of the region with an interest in nuclear power, but is otherwise seemingly random. Because of Japan’s policies on non-cooperation with non-NPT states, Bangladesh is the only South Asian country represented. The smaller ASEAN states are also missing. Kazakhstan, a major uranium exporter, (but none of the other “Stans”), is a member, as is Mongolia. China is a member but Taiwan is not, presumably because China would not allow it, even though Chinese Taipei (Taiwan) was allowed to join APEC. The Forum meets at ministerial level, most recently in Tokyo in November 2016, and at senior officials’ level. The Forum also holds workshops and seminars, including, most recently, a joint seminar with the Asia Pacific Safeguards Network (see below).

8. The Forum for Nuclear Cooperation in Asia tends to focus on cooperation in radiation safety and management; research reactors;

<sup>12</sup> Europa News Summary, News Summary, “EU supports enhancement of regional cooperation on Radiological and Nuclear Emergency Preparedness and Response in South-East Asia,” [https://ec.europa.eu/europeaid/sites/devco/files/news-summary-epr-asean-17022016\\_en\\_1.pdf](https://ec.europa.eu/europeaid/sites/devco/files/news-summary-epr-asean-17022016_en_1.pdf).

<sup>13</sup> Typically, neither the report nor the workshop outcomes have been made public.

<sup>14</sup> See Asian Regional Forum, <http://aseanregionalforum.asean.org/>. Its objectives, outlined in the First ARF Chairman’s Statement (1994), are: to foster constructive dialogue and consultation on political and security issues of common interest and con-

cern; and to make significant contributions to efforts towards confidence-building and preventive diplomacy in the Asia-Pacific region.

<sup>15</sup> <http://www.fnca.mext.go.jp/english/>

“nuclear safety strengthening” and “nuclear infrastructure strengthening.” As part of the latter, it has a project on nuclear security and safeguards which aims to remind Forum countries “of the importance of nuclear security as well as nuclear safeguards, and to support human resource and infrastructure development through information exchange and discussion on approaches” by member countries.<sup>16</sup> One focus of the project has been “nuclear security culture development.”

#### *Asian Nuclear Safety Network*

9. Established in 2002, the Asian Nuclear Safety Network describes itself as “A regional nuclear safety network to improve safety of Nuclear Installations in the South East Asia, Pacific and Far East Countries.”<sup>17</sup> It was initiated by the IAEA, along with other regional networks. Its meetings continue to be arranged and supported by the IAEA and the Agency hosts its website.

10. The Nuclear Safety Network has a membership drawn from across the region that is almost identical to that of the Forum for Nuclear Cooperation (Bangladesh and Kazakhstan are members but not Mongolia). It has several non-Asian “supporting” countries (Australia, France, Germany and the United States), in addition to support provided by the IAEA. There are 17 “partner organizations,” mostly national nuclear authorities.

11. In 2009 it agreed on an “ANSN Vision 2020” and in 2010 a “Generic Action Plan” to implement the vision. It is not clear how close these documents are to being realized. In November 2011 the Asian Nuclear Safety Network Plenary took over implementation from the group that had drafted the Vision “in order to ensure high level commitment” from member states. This suggests that it had not advanced far. The Nuclear Safety Network’s main practical activity is to pool, analyze and share nuclear safety information and practical experience among its

members at the specialist level. The convening power of the IAEA in such activities is invaluable.

#### *Asia–Pacific Safeguards Network*

12. The Asia–Pacific Safeguards Network is a “professional network” of national safeguards bodies set up in 2009 at Australia’s initiative to improve the quality, effectiveness and efficiency of safeguards implementation in the region. Its activities include annual meetings, regional workshops and seminars. Its membership is selective. It includes the Canadian Nuclear Safety Commission, the US National Nuclear Security Administration and the IAEA, presumably to provide advice, encouragement and assistance on safeguards matters. In addition to the usual regional states involved in nuclear governance issues, Bangladesh and Myanmar are members. Membership is open to governments and government-affiliated organizations. The network has a rotating chair and secretariat, currently provided by Japan, after Australia’s four-year tenure as inaugural chair.<sup>18</sup> The network has sought links outside the region by concluding a Memorandum of Understanding with the European Safeguards Research and Development Association.

#### *The Council for Security Cooperation in the Asia Pacific (CSCAP)*

13. CSCAP is a significant “second track” initiative in the region involving academics, NGOs and officials which first met in 1993. Its membership comprises strategic studies institutes of at least 18 countries, including Brunei, North Korea and Papua New Guinea, which are traditionally under-represented in nuclear-related bodies in the region. It serves as a forum to discuss methods and processes for developing and managing nuclear energy programs in a safe, secure and proliferation-resistant manner. It holds workshops and seminars and develops recommendations for regional governments to

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[http://www.fnca.mext.go.jp/english/nss/e\\_introduction.html](http://www.fnca.mext.go.jp/english/nss/e_introduction.html).

<sup>17</sup>

<https://ansn.iaea.org/Common/WhatIsANSN/WhatIsANSN.aspx>

<sup>18</sup> For further information, see: Minnini, M. and Elkhamri, O., “Regional Cooperation to Strengthen Safeguards in the Asia–Pacific,” *DNN Sentinel*, Vol. II, No. 2, pp. 4–5, [https://nnsa.energy.gov/sites/default/files/nnsa/inlinefiles/DNN%20Sentinel%202\\_2\\_final.pdf](https://nnsa.energy.gov/sites/default/files/nnsa/inlinefiles/DNN%20Sentinel%202_2_final.pdf).

consider. It has set up several study groups and published academic studies.

14. CSCAP has developed a mutually beneficial relationship with the ARF. The CSCAP Weapons of Mass Destruction (WMD) Study Group has held meetings back-to-back with the meetings of the ARF Inter-Sessional Meetings on Non-Proliferation and Disarmament from the inception of the latter in 2009 through 2014.<sup>19</sup> In 2015, CSCAP initiated a new Nonproliferation and Disarmament Study Group, which has continued to meet back-to-back with the ARF Inter-Sessional Meetings on Non-Proliferation and Disarmament.<sup>20</sup> The current focus of the Study Group is to develop detailed recommendations for the ARF on topics that may build consensus in promoting non-proliferation and nuclear security among ARF member states. Although the current Study Group mandate expires in 2017 in conjunction with the expiration of the current mandate for ARF Inter-Sessional Meetings on Non-Proliferation and Disarmament, it is expected the study group will continue as long as the ARF continues to hold an Inter-Sessional Meeting on the topic.

15. The CSCAP Study Group has over the years produced a series of memoranda on a range of non-proliferation and nuclear security topics. These memoranda, which are approved by the CSCAP Steering Committee and considered consensus documents, provide specific policy recommendations to the ARF member countries.<sup>21</sup>

16. CSCAP's Nuclear Energy Experts Group, meanwhile, was revived in 2012 in response to the so-called nuclear renaissance in Asia. It had met previously about a dozen times between 1998 and 2003, focusing on nuclear energy safety and security. A major project was a

transparency initiative that included real-time monitoring of nuclear power facilities in China, Japan, South Korea and Taiwan on a website hosted by Sandia Laboratories in New Mexico. The site went inactive in 2013. The newly-reconstituted Nuclear Energy Experts Group had its last meeting in October 2015 in Singapore, which included a table top exercise based on a hypothetical nuclear reactor accident in Vietnam.<sup>22</sup>

#### *The Asia-Pacific Leadership Network for Nuclear Non-Proliferation and Disarmament (APLN)*

17. The APLN, established in 2011, is another second-track initiative, designed to support a nuclear weapons free world.<sup>23</sup> As a group of individuals who have held high executive or advisory positions across the Asia-Pacific, it works to promote policies in the region and beyond to effectively contain, diminish and eliminate nuclear weapons, and to create a security environment conducive to the achievement of those goals. Since its formation it has grown to 85 members from 15 countries and has broadened its agenda to cover all aspects of nuclear governance, including safety and security, in addition to non-proliferation and disarmament. As an advocacy group, the APLN aims to inform and energize public opinion, especially high-level policymakers. The group issues statements, holds conferences and workshops and publishes policy briefs and other research publications.

#### *Regional Cooperative Agreement (RCA) for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific*

18. The Regional Cooperative Agreement is a little-known, 40-year old intergovernmental arrangement among IAEA member states in Asia-Pacific, including South Pacific island states, and South Asia.<sup>24</sup> It was established in 1972 under IAEA auspices to promote, coordinate and implement cooperative research, de-

<sup>19</sup> I am grateful to Carl Baker, Director of Programs, Pacific Forum CSIS, Honolulu, for information on the CSCAP WMD Study Group and its relationship to the ARF ISM on NPD.

<sup>20</sup> See <http://www.cscap.org/index.php?page=non-proliferation-and-disarmament-npd> for further details. One substantive product of the CSCAP meetings, apart from the gatherings themselves, has been a *Handbook on Preventing the Proliferation of Weapons of Mass Destruction in the Asia-Pacific* ([http://www.cscap.org/uploads/docs/NPD%202015/CSCAPWMDHandbook2016\(final\).pdf](http://www.cscap.org/uploads/docs/NPD%202015/CSCAPWMDHandbook2016(final).pdf)).

<sup>21</sup> A full list of CSCAP memoranda may be found at: <http://www.cscap.org/index.php?page=memoranda>

<sup>22</sup> For details, see: [https://www.csis.org/search?search\\_api\\_views\\_fulltext=NEEG](https://www.csis.org/search?search_api_views_fulltext=NEEG)

<sup>23</sup> See <http://a-pln.org/about/about/>.

<sup>24</sup> See: <https://www.iaea.org/technicalcooperation/Regions/Asia-and-the-Pacific/RCA/index.html>.



velopment and training projects in the peaceful application of nuclear science and technology among its parties. Currently, its members are: Australia, Bangladesh, Cambodia, China, Fiji, India, Indonesia, Japan, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Palau, Philippines, Singapore, South Korea, Sri Lanka, Thailand, and Vietnam.

19. While this is somewhat broader than the region under consideration in this paper, it does include all of the key Asia–Pacific states involved in nuclear issues except North Korea and Taiwan (Russia and the United States are also notably absent). There is a regional office in South Korea.<sup>25</sup> It holds annual meetings of Regional Cooperative Agreement National Representatives. Operating under the IAEA's Technical Cooperation program, it strictly confines itself to technical matters, despite efforts by outsiders to suggest that nuclear safety and security might be usefully considered under its rubric. Given the sensitivities of the IAEA about moving into potentially perilous political arenas the Regional Cooperative Agreement is unlikely to emerge as a vehicle for broader Asia–Pacific nuclear governance.

### Characteristics of Asia–Pacific Regional Nuclear Governance

20. As is clear from this survey, the most notable characteristic of regional nuclear governance in Asia–Pacific is the absence of a single body along the lines of EURATOM that is charged with handling all nuclear governance matters. In contrast, Asia–Pacific has a confusing plethora of relatively low-key institutions and arrangements for considering a range of nuclear issues. They have varying memberships, mandates (sometimes overlapping and contradictory) and limited funding, resources and organizational capacities. Often they are dependent on one or two states initiating activity and sustaining it. Australia, Canada, Japan, South Korea and the United States are notably active in various capacities, as are the European Union (EU) and the IAEA.

21. A second notable feature is the stark differences between the two sub-regions that comprise Asia–Pacific, both in terms of their nuclear capabilities, ambitions, and their governance arrangements. North Asia contains several nuclear-armed states and some of the world's largest users of nuclear-generated electricity. Many have sophisticated nuclear fuel cycle facilities. These states are concerned about nuclear accidents, terrorism and the stability of nuclear deterrence. They are larger, wealthier and more capable of strengthening their own national nuclear governance arrangements without outside assistance. They are also more acutely concerned about the risks posed by North Korea to non-proliferation, deterrence stability and nuclear safety and security. This has led to such multilateral governance phenomena as the Six Party Talks and intervention by the UN Security Council in the form of sanctions that are absent from Southeast Asia. The proximity of Russian and US nuclear capabilities to North Asia also plays into nuclear governance debates in that part of the region in a way that they do not in Southeast Asia.

22. Southeast Asian states, on the other hand, are more concerned with the non-power uses of nuclear energy, especially radionuclides, along with exploring potential future deployment of nuclear power plants, including small modular reactors. Their concerns about nuclear safety tend to focus on potential nuclear reactor accidents to the north and west that may have trans-boundary effects, as well as ensuring that the use and transport of radionuclides and nuclear waste (through their region) is appropriately governed. They are eager, by and large, for assistance from outside the region, including from their Asian neighbours, the IAEA, the EU and North America.

23. Meanwhile, nuclear concerns about South Asia are dominated by the India–Pakistan nuclear rivalry, as well as their strong interest in constructing new nuclear power plants (in addition to those being planned by Bangladesh). India and Pakistan have a long-standing aversion to perceived interference in nuclear governance in the sub-continent by outsiders. They have in turn only been invited selectively to join Asia–Pacific nuclear bodies, possibly

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<sup>25</sup> See <http://www.rcaro.org>.

because of the bilateral nuclear baggage they bring to any forum, but also probably because they have not shown any particular interest in joining.

24. Even within Asia-Pacific's two sub-regions there are marked differences in perceived nuclear governance needs. A small island state like Singapore, a major global entrepôt, is more concerned than others about potential smuggling of illicit nuclear materials through its facilities. It has therefore put great store in joining "coalitions of the willing" such as the Megaports Initiative and PSI. The Singaporean government has recently signalled an interest in equipping itself with a broad range of nuclear governance expertise.<sup>26</sup> Whether this is simply prudence or a desire to position itself as a regional leader remains to be seen.

25. A third notable characteristic, but not one peculiar just to Asia-Pacific is the emphasis on "soft governance." There is an abundance of initiatives, meetings, conferences, workshops, banquets and attendant photo opportunities. There are some relatively sophisticated websites. But there is little enthusiasm for going beyond the lowest common denominator standards and recommendations of the IAEA and other globally-oriented bodies for safety or security. There also seems to be little recognition that the Asia-Pacific might take the initiative in crafting higher region-specific standards for itself.

26. Even in terms of research, few of the bodies mentioned appear to be engaged in commissioning or undertaking significant research geared towards improving nuclear governance in the region. Two exceptions are: the EU-sponsored study into nuclear emergency preparedness and response previously mentioned and several confidential studies on nuclear safety commissioned after Fukushima by the Jakarta-based Economic Research Institute for ASEAN and East Asia (ERIA) and presented to

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<sup>26</sup> The Singapore National Research Foundation has funded multi-year projects on nuclear governance, including a joint one at the Energy Studies Institute and Centre for International Law at the National University of Singapore on "Policy and Law for Nuclear Safety and Security" as part of the Singapore Government's Nuclear Policy Research Programme.

the ASEAN Foreign Ministers Meeting and EAS. The research field is largely left to a few academic and non-governmental institutions, mostly on the margins of the region.<sup>27</sup>

27. A significant amount of training appears to be occurring in the region, but with apparently little concern for setting standards for such training or assessing its impact. In fact, there has been no attempt (at least publicly revealed) to systematically assess the practical impact of the multifarious regional activities on the effectiveness of nuclear safety, security and safeguards. In terms of national implementation legislation and regulation, there appear to be wide gaps between those promulgated by Australia, Japan, Malaysia and Singapore on the one hand, and those of Myanmar, Laos and Mongolia on the other. This is undoubtedly partly due to a lack of political attention and capacity. National sensitivities probably preclude intrusive investigations. National reporting systems, regional peer review (in addition to WANO's for nuclear safety) and increased public transparency could provide strong starting points.

### Enhancing the Asia-Pacific Regional Architecture

28. In an ideal and logical world there would be a single Asia-Pacific body for regional nuclear governance. It would handle safeguards, safety and security matters in the region.<sup>28</sup> It would supplement IAEA safeguards with additional regional measures designed to boost trust and confidence. It would issue binding nuclear safety and security standards tailor-made for the region (presumably based on but superior to

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<sup>27</sup> Including APLN and the Centre for Nuclear Non-Proliferation and Disarmament at the Australian National University; the Centre for Strategic and International Studies (CSIS)/Pacific Forum in Honolulu, the Nautilus Institute for Security and Sustainability in Berkeley, California; the Energy Studies Institute at the National University of Singapore; and studies by this author at the School of Social and Political Sciences at the University of Melbourne.

<sup>28</sup> See John Carlson, "An Asia-Pacific Nuclear Energy Community," APLN/CNND *Policy Brief*, No. 4 (Canberra: Centre for Nuclear Non-Proliferation and Disarmament June 2013), [http://aplun.org/briefings/briefings\\_view/Policy\\_Brief\\_4\\_%E2%80%934\\_An\\_Asia-Pacific\\_Nuclear\\_Energy\\_Community](http://aplun.org/briefings/briefings_view/Policy_Brief_4_%E2%80%934_An_Asia-Pacific_Nuclear_Energy_Community)

to those of the IAEA), organize inspections and peer reviews, work to increase transparency and public awareness, hold states and industry to account when violations of standards were detected, and be empowered to issue required penalties. It would be systematically and comprehensively embedded into the global nuclear governance regime.

29. Of course, this ideal is not possible in a region currently so fractured and disparate. Even considering the issue of membership throws up insuperable barriers that emanate from much wider international considerations than nuclear governance. North Korea and Taiwan are always fraught membership candidates. The different needs, expectations, economic conditions, nuclear ambitions and cultures of North Asia and Southeast Asia also militate against a comprehensive Asia-Pacific-wide nuclear governance structure (much less an even broader grouping that included South Asia and the South Pacific island micro-states). As ASEAN itself has recognized, it is probably preferable to try to knit the Southeast Asian states together first, while drawing on the involvement, expertise and assistance of states outside the sub-region as needed.

30. An ASEANTOM with a wider remit should not, however, be ruled out. It could be gradually expanded to include matters beyond the purely regulatory, with higher level national representation than regulators alone. Obviously this body could not be immediately transformed into an Asian version of EURATOM, but it could evolve step by step to eventually deal collaboratively, systematically and synergistically with all aspects of nuclear energy in the region.

31. To begin with, ASEANTOM could be mandated to help all its members bring their national implementation measures to the same high level in terms of legislation, regulation and administrative systems. Capacity-building, training, peer review and sharing of lessons learned could all be part of the mix. Collective efforts could also be made through ASEANTOM to bring all member states into all of the major global governance instruments. The IAEA already assists in this effort with its regional

workshops, but it would be preferable coming from the region itself.

32. Four areas of focus that should particularly concern all Southeast Asian states are:

- Increased use and proper governance of radioactive sources;
- The logic of shared use of research reactors;
- Transport of nuclear materials, spent fuel and waste within and through the region;
- Nuclear liability and emergency preparedness and response in case of a nuclear incident/or accident with trans-boundary effects.

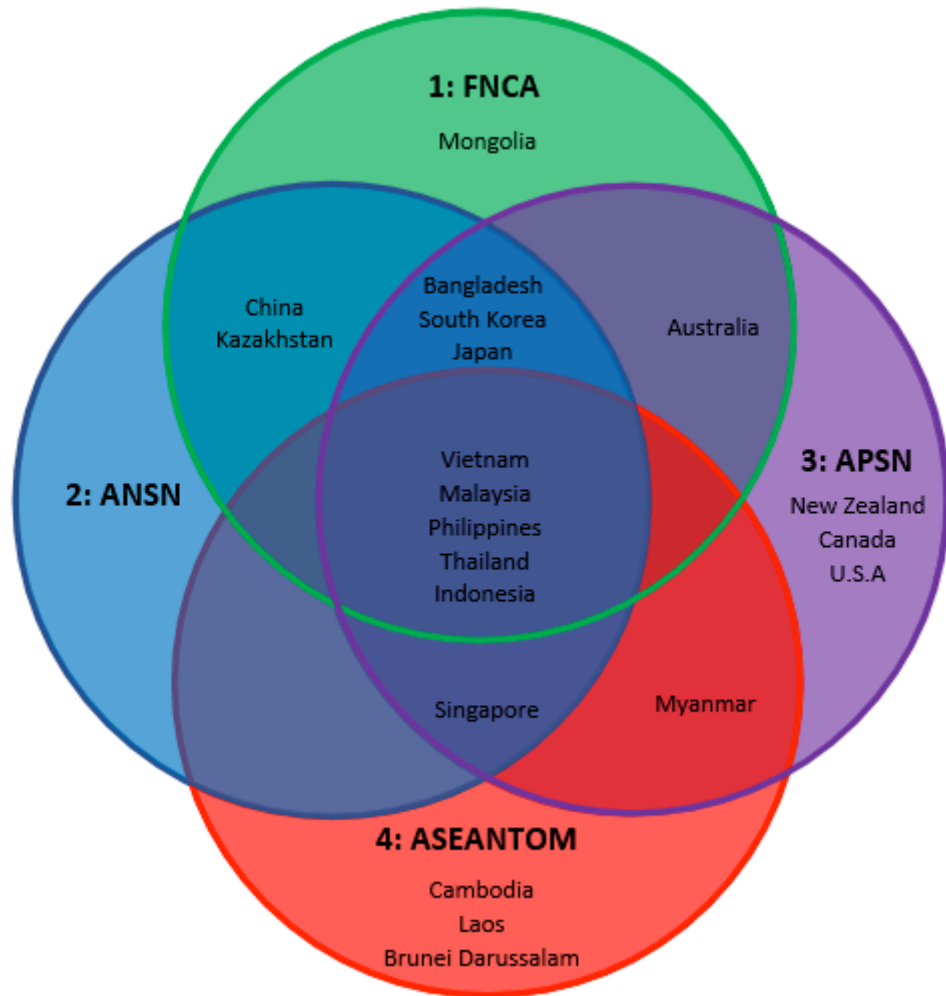
33. Workshops on nuclear governance in Southeast Asia attended by the author have often ended up focusing on these as the most pressing issues for governments to deal with. Since these are real issues that arise along with the benefits of nuclear technology for economic development that governments are obliged to care about, they could be springboards for strengthening nuclear governance in general and educating unsure governments about the dangers of nuclear terrorism and accidents. They would provide the basis for an organic “community building” approach to governance, which in the view of some observers, is the thing that ASEAN does best.<sup>29</sup> Rather than a Western-style top-down institutional approach, this serves to build communities from the bottom up.

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<sup>29</sup> See Anthony Milner, “Will ASEAN Continue to be the Cornerstone of Malaysian Foreign Policy: The ‘Community-building Priority,’” The Tun Hussein Onn Chair in International Studies Lecture, 2015, Institute of Strategic and International Studies (ISIS) Malaysia, Kuala Lumpur,



**Figure 1: Overlapping Membership of Select Asia-Pacific Nuclear Organizations and Arrangements**



34. ASEAN states have, for instance, a natural, mutual interest in collaborating on implementing strong governance measures in the event that nuclear power plants are deployed in the sub-region. Those states considering future acquisition of nuclear power would be advised to start early to prepare themselves, both in governance terms and in terms of expert capacity. Indonesia, Singapore, Malaysia, Thailand and Vietnam are beginning to do this at the national level, but building a sub-regional community to do so is vital. The IAEA provides a useful Milestones document and assistance.<sup>30</sup>

ASEAN states could collectively be more active at the IAEA in ensuring sufficient attention is paid to this region and its needs, using as particular entry points the areas of: safeguards strengthening measures; radioactive sources security; and emergency preparedness and response. ASEANTOM would seem to provide the basis for growing such a system.

35. For its part, the IAEA should seek to nudge its Southeast Asian interlocutors towards a more rational, integrated system for delivering technical assistance and nuclear governance generally. Although the RCA already exists as a framework for coordinated technical cooperation its membership is too broad to cater to ASEAN states' specific needs and is too divorced from non-technical issues like safety and security. The IAEA should indicate its strong preference for involvement in fewer small regional entities but greater involvement in a coherent regional structure. The IAEA will have to overcome its own programmatic "stove-piping," as least in terms of this region, to be able to do so.<sup>31</sup>

36. As for the wider region beyond Southeast Asia, an attempt should be made to universalize membership of the various bodies (notwithstanding the usual challenges of including

North Korea and Taiwan) and ensure that all states are party to all of the major multilateral treaties. Unfortunately, the region has duplicated the traditional stove-piping of nuclear governance, also seen at the IAEA itself, between safety, security and safeguards. It would also be useful for all the various bodies identified in this study to meet periodically to exchange information and plans, especially in areas where synergies may be possible. APEC, EAS, the IAEA and CSCAP could collaborate to bring such a meeting about.

37. For a start, it may be helpful to agree on a definition of the wider region and its sub-regions and which states are eligible to become members, so that over time, memberships can converge or move to the most appropriate body. A merger of bodies should then be contemplated. Obvious candidates are the Asia-Pacific Safeguards Network, the Forum for Nuclear Cooperation in Asia and the Asian Nuclear Safety Network. The Regional Cooperative Agreement and Forum for Nuclear Cooperation in Asia also seem unnecessarily duplicative. Currently, the only broadly region-wide bodies, APEC and EAS, appear to have little interest in matters nuclear.

A new security organization for the region that would encompass nuclear governance issues seems many years off. The best course for the broader region (outside the more compact ASEAN sub-region) would seem to be to establish ways that the various arrangements and mechanisms can interact more systematically, share information more regularly and work towards eventual collaboration and merger.

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<sup>30</sup> See IAEA, "The Milestones approach," <https://www.iaea.org/NuclearPower/Infrastructure/milestones/index.html>

<sup>31</sup> See Trevor Findlay, *Unleashing the Nuclear Watchdog: Strengthening and Reform of the IAEA*, Center for International Governance Innovation, Waterloo, Ontario, 2012, <https://www.cigionline.org/publications/unleashing-nuclear-watchdog-strengthening-and-reform-iaea-policy-brief-no-23>

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The **Centre for Nuclear Non-Proliferation and Disarmament (CNND)** contributes to worldwide efforts to minimize the risk of nuclear-weapons use, stop their spread and ultimately achieve their complete elimination. The director of the Centre is Professor Ramesh Thakur. See further <http://cnnd.anu.edu.au>.

The **Asia Pacific Leadership Network (APLN)** comprises over eighty former senior political, diplomatic, military and other opinion leaders from fifteen countries around the region, including nuclear-weapons possessing states China, India and Pakistan. The objective of the group, founded by former Australian Foreign Minister and President Emeritus of the International Crisis Group Gareth Evans, is to inform and energize public opinion, and especially high level policy-makers, to take seriously the very real threats posed by nuclear weapons, and do everything possible to achieve a world in which they are contained, diminished and ultimately eliminated. The co-Convenors are Professors Chung-in Moon and Ramesh Thakur. The Secretariat is located at the East Asia Foundation in Seoul, Republic of Korea. See further [www.a-pln.org](http://www.a-pln.org).

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