

Asia-Pacific Nuclear Governance Fragile, Fragmented but Fixable?

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Outline

- nuclear energy in Asia-Pacific to 2030 - a tale of two sub-regions*
- regional engagement with the global nuclear governance: non-proliferation; safety; security
- does regional governance fill the gaps?
- strengthening regional nuclear governance: top-down or bottom up?

Some definitions

Asia-Pacific

- North Asia: China, Japan, Mongolia, North Korea, South Korea, Taiwan
- Southeast Asia: Brunei, Indonesia, Malaysia, Singapore, Thailand, Vietnam, Laos, Cambodia, Myanmar, Timor Lesté
- Australasia: Australia, New Zealand, Papua New Guinea

Nuclear governance

All of the elements that combine to govern and regulate the use of nuclear energy internationally, including norms, treaties, agreements and other arrangements, organizations, mechanisms and programs.

Nuclear Power in Asia-Pacific (and South Asia)

	<i>Power Reactors Operable or in Operation</i>	<i>Power Reactors Under Construction</i>	<i>New Power Reactors Planned</i>	<i>Research Reactors</i>	<i>Other Stages of the fuel Cycle</i>
Australia				1	UM
Bangladesh			2	1	
China	30	24	40	16	UM, C, E, FF
India	21	6	22	4	UM, FF, R, WM
Indonesia			1	3	FF
Japan	43 (only 2 in operation in March 2017)			14	C, E, FF, R, WM
South Korea	25	3	8	2	C, FF
North Korea			1	1	UM, C, E, FF, R
Malaysia				1	
Pakistan	3	2	2	1	UM, E, FF
Philippines				1	
Taiwan	6	2		1	
Thailand				1 (+1 under construction)	
Vietnam				1	
Total	128	37	76	49	

Nuclear energy in Asia-Pacific to 2030

North Asia: a mixed picture

- China dominates
- Japan and Taiwan retreating
- modest expansion in ROK

Southeast Asia: none before at least 2030

- Malaysia's slow steady preparation
- Indonesia constantly procrastinating
- Thailand, Philippines cautious post-Fukushima
- Vietnam's shock cancellation

Vietnam's shock cancellation, Nov. 2016

- 4 reactors planned, 2 by Rosatom, 2 by Japan Atomic Power Company, providing 4,000 MW of electricity by 2030
- overnight construction costs for project (\$US18 billion) doubled since 2009, exceeding parliament's debt ceiling
- falling price of oil, gas and renewables, including hydro-electric power from Laos
- toxic chemical spill earlier in 2016 severely affected Vietnam's fishing industry
- IAEA urged Vietnam to delay to 'allow fuller preparation' (200-300 students sent abroad for training but Vietnam came to recognize it needed at least 2,000)
- security and proliferation apparently not a concern
- all SE Asian states face similar considerations

A tale of two sub-regions

Northeast Asia

- three nuclear weapon states in or close to the region; two states under a nuclear umbrella
- a nuclear pariah: North Korea
- some of the world's biggest generators of nuclear electricity
- exporters of nuclear technology, including reactors
- several states with sophisticated nuclear fuel cycle
- seemingly intractable nuclear waste problem
- governance concerns: nuclear deterrence stability, nuclear proliferation, nuclear safety and security; nuclear waste

A tale of two sub-regions

Southeast Asia and Oceania

- no nuclear weapon states (one umbrella state); all states in nuclear weapon-free zones
- no nuclear power reactors and uncertain prospects everywhere, but concern for preparing for possibility
- importers of nuclear technology
- no demand for enrichment/reprocessing
- growing demand for other peaceful uses, especially radionuclides
- governance concerns: trans-boundary effects of nuclear accidents (in Northeast and South Asia); nuclear transport; terrorism, including nuclear; radionuclide security

Regional involvement in global nuclear governance

NPT, safeguards, IAEA membership

- universal except for North Korea
- Additional Protocol/Small Quantities Protocol: universal except Brunei, but including Myanmar

Nuclear safety

- gaps in treaty participation in SE Asia (Malaysia, Thailand, Philippines)

Nuclear security

- again gaps in SE Asia in treaty and code of conduct participation
- strong Asian representation at Nuclear Security Summits but mixed participation in INFCIRC/869 and Nuclear Security Contact Group
- strong Megaports initiative involvement in SE Asia; Centres of Excellence

Compliance/Implementation

- Strong legalistic tendencies but also suspicion of transparency

**Figure 3: Participation of Asia-Pacific States in Global Nuclear Governance
Treaties, Arrangements and Organisations**

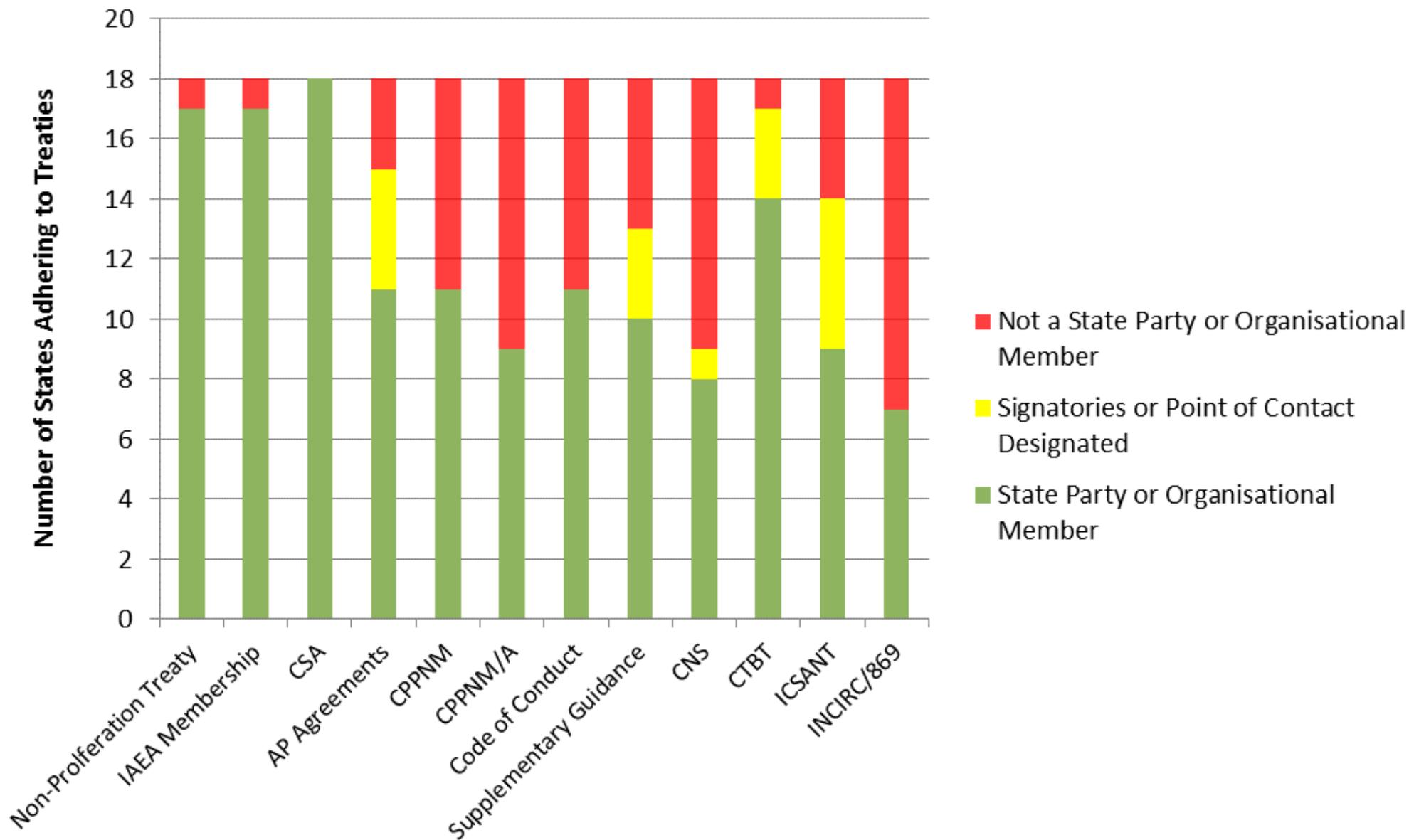
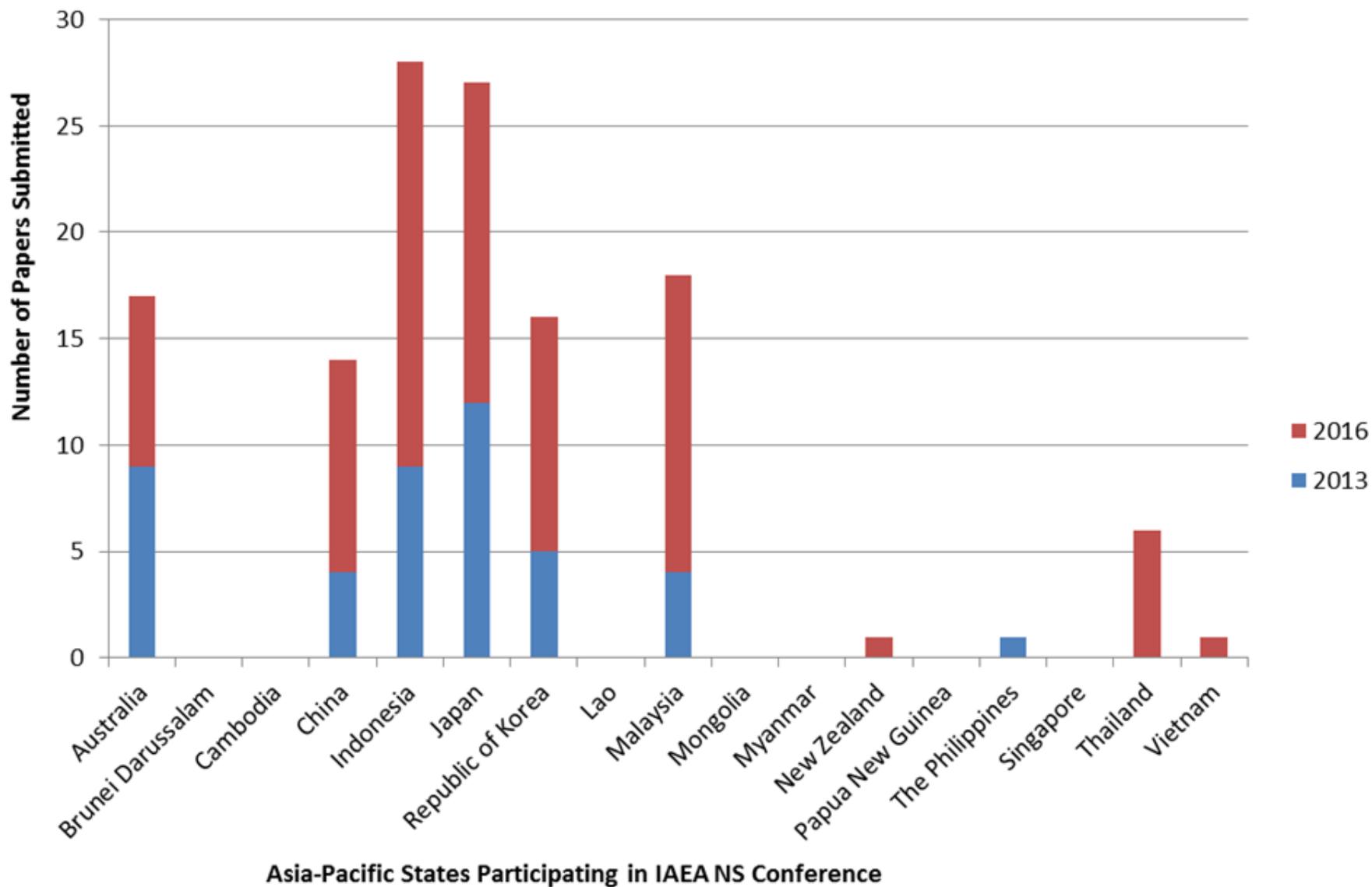


Figure 2:
Participation of Asia-Pacific States at the 2013 and 2016 IAEA Nuclear Security Conferences (Submission of Papers)



Regional nuclear governance: acronyms amok

- Southeast Asia Nuclear-Free Zone (**SEANFZ**); South Pacific Nuclear Weapon-Free Zone (**SPNWFZ**)
- Asia Pacific Economic Cooperation (**APEC**)
- Association of South East Asian Nations (**ASEAN**), Jakarta
 - ASEAN Regional Forum (**ARF**) Inter-Sessional Meeting on Nonproliferation and Disarmament (**ISM on NPD**)
 - ASEAN Network of Regulatory Bodies on Atomic Energy (**ASEANTOM**)
 - ASEAN Ministerial Nuclear Energy Cooperation Sub-Sector Network (**NEC-SSN**)
 - ASEAN Centre for Energy (**ACE**), (Jakarta)
- Forum for Nuclear Cooperation in Asia (**FNCA**)
- Asian Nuclear Safety Network (**ANSN**)
- Asia-Pacific Safeguards Network (**APSN**)
- Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific (**RCA**), Seoul
- Council for Security Cooperation in Asia-Pacific (**CSCAP**)
 - Weapons of Mass Destruction/Non-Proliferation and Disarmament Study Group (**WMD/NPD SG**)
 - Nuclear Energy Experts Group (**NEEG**)
- Centres of Excellence (**CoE**) collaboration
- World Association of Nuclear Operators (**WANO**), Asia Branch, Tokyo

ASEAN Plan of Action for Energy Cooperation (APAEC)

APAEC falls within the [ASEAN Socio-cultural Community Blueprint 2025](#), which is one of the three pillars in the ASEAN Community Vision 2025.

The ASEAN Ministers of Energy Meeting (AMEM) provides the overall guidance and advice on APAEC. APAEC is monitored by the Senior Officials Meeting on Energy (SOME).

SOME provides annual updates to AMEM on the progress of APAEC.

SOME is coordinated by the ASEAN Secretariat and the ASEAN Centre for Energy (ACE).

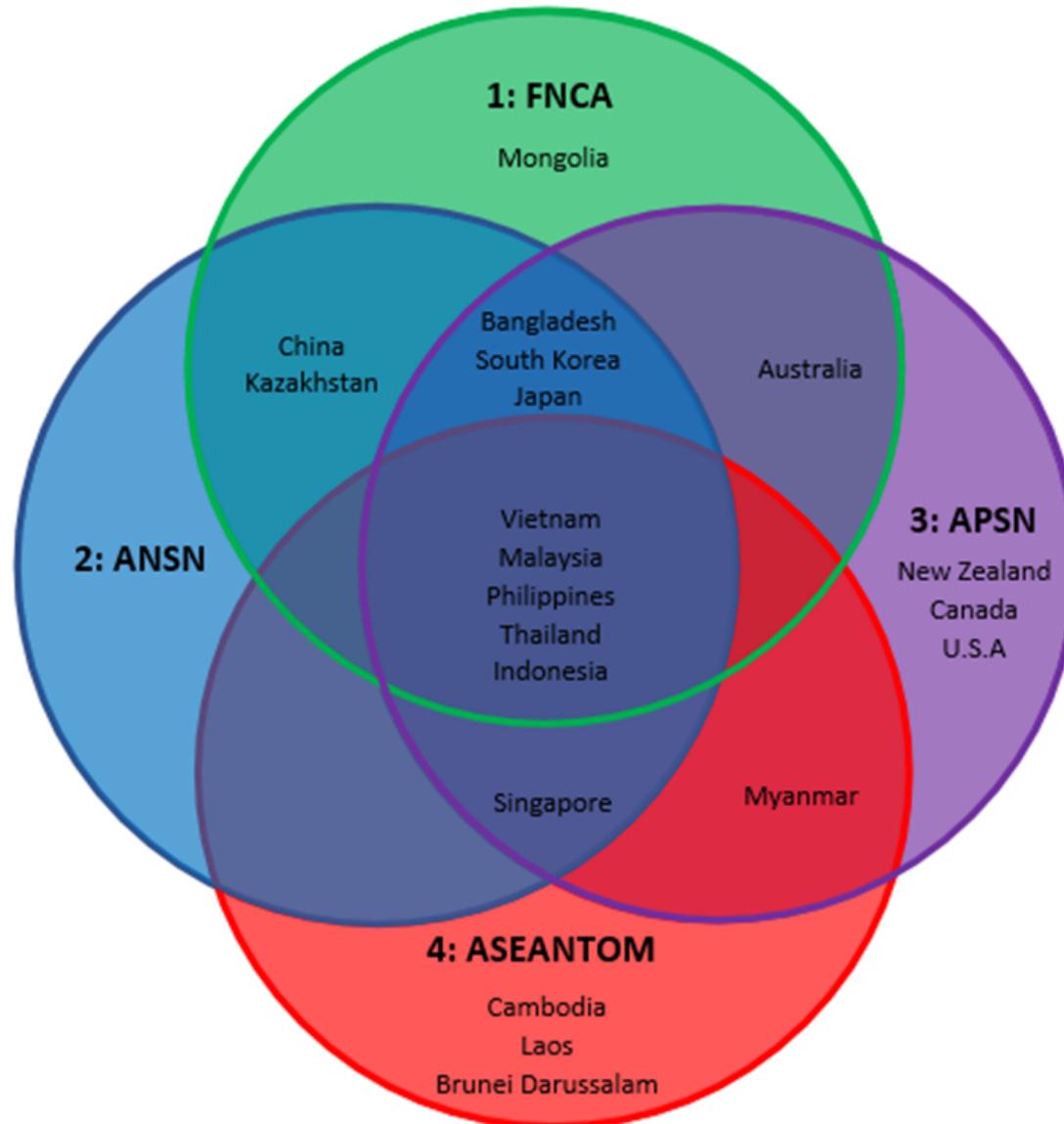
The implementing arm of SOME is the Nuclear Energy Cooperation Sub-sector Network (NEC-SSN), and commonly referred to as NEC-SSN.

[NEC-SSN was endorsed in 2010 and had its first meeting at Singapore in 2011.](#)

The NEC-SSN comprise representatives from the ASEAN energy market ministries/regulators.

The current Chair of NEC-SSN is Malaysia given that it is also the current Chair for ASEAN. The NEC-SSN Chair is rotated among member states

Figure 4: Overlapping Membership of Select Asia-Pacific Nuclear Organizations and Arrangements



Characteristics of Asia-Pacific regional nuclear governance

- absence of a single body, like EURATOM but large number of consultative, networking and technical assistance bodies
- organizationally incoherent, overlapping memberships and mandates
- limited funding, resources and human capacity
- tendency towards grand declarations and plans, conferences, banquets and photo opportunities
- the most comprehensive regional intergovernmental bodies (APEC and East Asia Summit) stay away from nuclear
- ASEAN a major player in multilateral energy policy 'coordination' in SE Asia; also draws in external states through ARF
- outsiders have stimulated small, varied initiatives (Australia, Japan, South Korea, EU, IAEA, US)
- no movement towards higher regional standards or guidance above the IAEA's

What can be done? Some alternatives

- 1) Abandon the Asia-Pacific region-wide approach
- 2) Top-down, institutionalist approach: rationalize the current governance miasma
- 3) A bottom-up functionalist approach: gradual community-building
- 4) A combination of all three

Abandon the Asia-Pacific region-wide approach?

- Asia-Pacific impossible to define to everyone's satisfaction
- Strategic, political, economic and cultural characteristics of sub-regions preclude common nuclear governance arrangements
- Most of the larger region-wide bodies do not deal with nuclear anyway
- Some benefits to wider scope: North Korea in CSCAP; Taiwan (China) and Hong Kong (China) in APEC
- Some smaller bodies with quirky membership include valuable additions: Bangladesh, Kazakhstan, Mongolia; Australia, Canada can provide useful inputs
- Sub-regions need to cooperate: SE Asian concern about Fukushimas to the north and west; nuclear transport through archipelago; nuclear terrorism
- Nuclear Security Centres of Excellence in Northeast Asia have potential for collaboration with SE Asian states

Top-down, institutionalist approach

- institutionalist approach would ideally rationalize all of existing bodies, merging them into one EURATOM-like organization with universal regional membership
- gains in effectiveness and efficiency, political potency at global level, including at IAEA
- impossible to imagine one institution for entire region: no obvious leadership within or outside the region
- possible for ASEAN? ASEANTOM the obvious candidate; ASEAN Ministers via Nuclear Energy Sub-Sector Network could be drivers
- but again depends on leadership: Indonesia? Vietnam? Malaysia? Singapore?

Bottom-up functionalist approach

- builds on real perceived need for specific aspects of nuclear governance
- in ASEAN sub-region draws on negotiation culture of trust and community-building ('the ASEAN way')
- integrate nuclear governance into sub-regional concerns:
 - transboundary accidents: nuclear emergency, response, liability to
 - burgeoning use of radioisotopes; over-supply of research reactors
 - nuclear transport within and through the region
 - ensuring Milestones are met for future nuclear reactor deployments
 - meeting public concerns about nuclear
- not neat, orderly or necessarily logical but may be most effective approach

Conclusions: letting 100 flowers bloom

- impossible to work with Asia-Pacific as a region and impossible not to
- ASEAN is obvious candidate for a rationalized, coherent approach, perhaps through ASEANTOM and Ministers meetings, focusing on ASEAN's specific governance concerns
- convene meetings of various small bodies networks to explore synergies and cooperation (ARF, IAEA or CSCAP to lead?)
- IAEA and other donors could lever multiple assistance programs to encourage rationalization and coordination
- functionalist approach should be pursued where effective: nuclear security cooperation; collaboration in meeting IAEA Milestones on path to nuclear energy.