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# Avoiding the Failure of 'Atoms for Peace': Need for Ground Rules

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## Overview of 'Nuclear Renaissance'

- 438 nuclear power plants (approx. 370 GW(e)) in operation in 31 countries (as of the end of 2008)
  - Mostly located in OECD countries (80%)
- Supplying approx. 15% of electricity of the world
- 44 nuclear power plants under construction, more than half in Asia (2008)
- Enrichment facilities in 11 countries, commercial reprocessing plants in 5 countries (Japan is the only NNWS with reprocessing.)
- Since 2005, more than 25 countries expressed interests in nuclear power

# 'Nuclear Dense' East Asia

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- Need for a multilateral arrangement?
  - North Korea: Dangerous nuclear game continues
  - China: Emergence of nuclear giant
    - More than 100 plants planned
    - Unknown scale of fissile material stockpile
  - Japan: Troubled in fuel cycle programs
    - Largest fuel cycle as a NNWS
  - South Korea: Rising 'nuclear sovereignty'
    - Interested in reprocessing (discourse over pyro-processing)
  - Taiwan: Trouble in storage of spent fuel
  - Is a multilateral arrangement solution to deal with such problems?

# Middle East Driven into 'Nuclear Renaissance'

- More than a dozen of countries in the Middle East interested in nuclear energy since 2006
  - Poor records of adherence to safety, security and safeguards (“3S”) rules
  - Intensified business competitions in price and in conditionalities
- Economic and environment factors
  - Increasing energy demand, Energy security in the future
  - Climate change
  - Desalination
- “In the Shadow of Iran”?: Hedging 'Nuclear' Iran
  - Military threats
  - Regional power rivalries
  - Political and technological prestige

# Nuclear Plans and Regulations in Middle East

| Country   | Scale | Year  | Safeguards (AP) | Safety (CNS) | Security (CPPNM) |
|-----------|-------|-------|-----------------|--------------|------------------|
| Algeria   | 5GWe  | 2027  | N               | Y            | Y                |
| Bahrain   |       |       | N+SQP           |              |                  |
| Egypt     | 10GWe | 2015  | N               | Y            | N                |
| Iran      | 10GWe | 2009  | N               |              |                  |
| Jordan    | 5GWe  | 2015  | Y               | N            | N                |
| Kuwait    |       |       | Y+SQP           | Y            | Y                |
| Libya     | 1GWe  | 2050  | Y               | N            | Y                |
| Morocco   |       | 2017? | N               | Y            | Y                |
| Oman      |       |       | N               | Y            | N                |
| Qatar     |       |       | N+SQP           | N            | Y                |
| S. Arabia |       |       | N+SQP           | N            | N                |
| Tunisia   | 5GWe  | 2030  | N               | Y            | Y                |
| Turkey    | 4GWe  | 2015  | Y               | Y            | Y                |
| UAE       | 3GWe  | 2017  | SQP             | N            | Y                |

# Types of Proliferation Risks in Civil Use

- Fissile materials and their production facilities could be **diverted** into military purposes
  - Eg., CIRUS of India
- Civil programs could be exploited as a cover **to conceal military activities**
  - Eg., Iran's nuclear program
- **Withdrawal** from NPT after developing nuclear capabilities through civil program
  - Eg., North Korea

# Structural Problems of Proliferation

- Institutional deficiencies
  - Imperfection of IAEA Safeguards System
    - **Additional Protocol: Far from universality**, some countries determined not to ratify
    - **No way to assess 'intentions'** and rationality of activities
  - Vulnerable infrastructure in security and personnel management in many countries
    - **Rising risk of nuclear terrorism**
  - Technology floats rather freely
    - **Loose export controls**
    - Annoying past records (even of Japan)
- Political and security environment
  - Regional rivalries and instability (eg. Nuclear cascade in the Middle East?)
  - Nuclear Prestige

# Additional Concerns of Nuclear Renaissance

- Need to consider consequences of intensified competition in nuclear business
    - Fierce competition might lower the standard of safety, security, and safeguards (Deterioration of '3S' Norms) without proper rules.
  - Rising 'Nuclear sovereignty'
    - **Aspiration for nuclear technology** as a symbol of advancement
    - **Intensified politicization of issue of 'inalienable right'**
- ➔ Need for policy mechanisms and appropriate politics to deal with risks



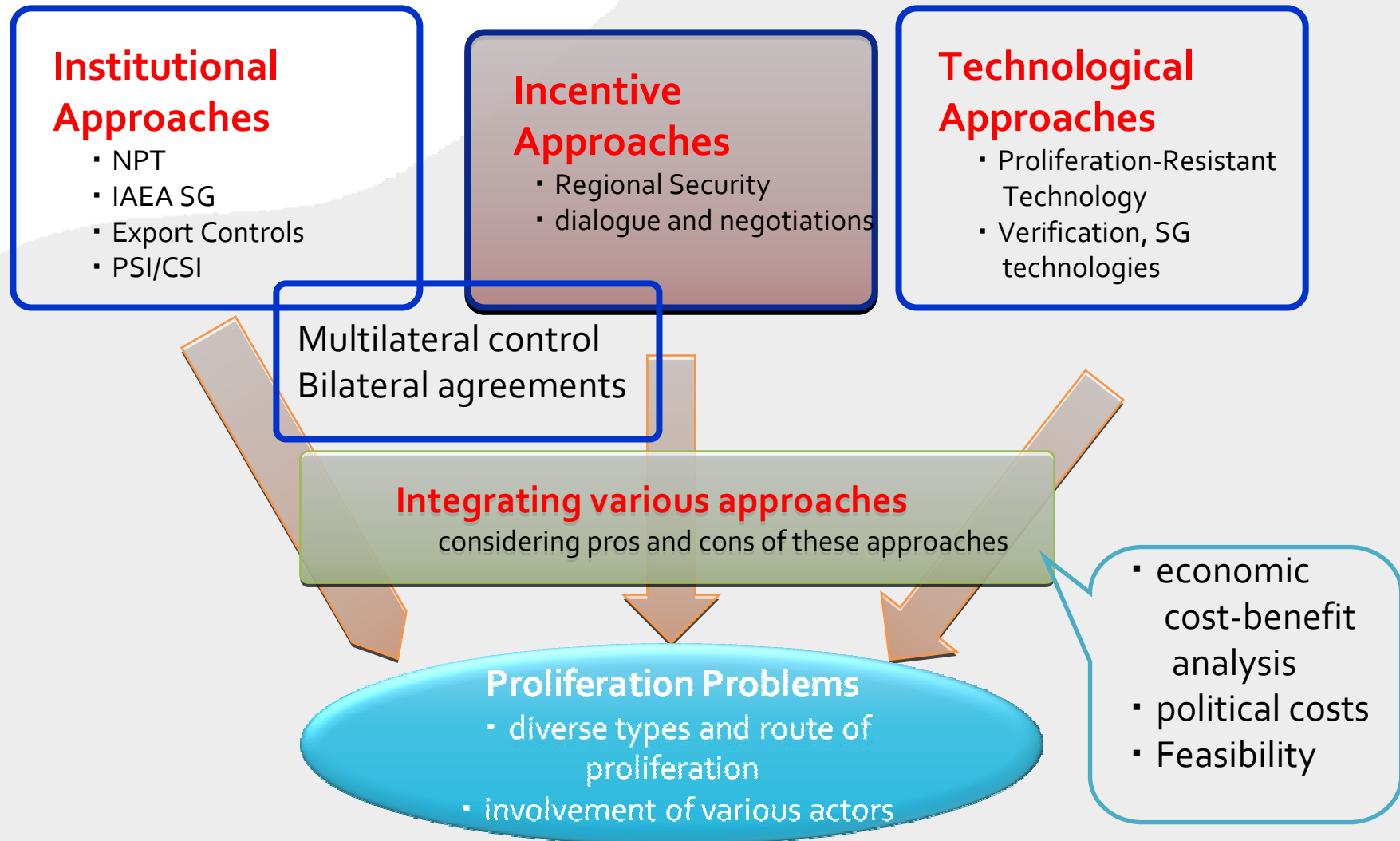
# Recently Proposed Instruments for Responding to Proliferation Concerns

- Establishing new institutional mechanisms
  - **Bilateral controls** through 123 agreements to supplement SG
    - Atoms for Peace ver. ME?
  - Strengthening **NSG guidelines**
    - Can exporting countries really agree?
    - Opposition by recipient states
  - **Multilateral Control** of Fuel Cycle and Assurance of Supply
    - No legal obligation to take part in
    - Take-back question
    - Risk in transportation
- Political - Security measures
  - Coordinated political actions vis-à-vis concerned states
    - Bringing multilateralism back in
    - Sanctions through UNSC?
  - **Dialogues** with such states
  - Providing security assurance to countries threatened (nuclear umbrella to Middle East?)



**Back to the  
Future?**

# Integrated Approach for Non-Proliferation



# Lessons from Atoms for Peace

- Unable to establish a multilateral control of fissile materials: only in the statute of IAEA
  - Repeated attempts of multilateralization of fuel cycle resulted in reiteration of 'inalienable right'... (eg. INFCE in 70s)
- Atoms for Peace was Atoms for Alliance
  - US shift in approach from multilateral control to bilateral control through bilateral cooperation agreements
    - In 1955 and 56, more than 50 bilateral cooperation agreements were concluded. (The Soviet followed the suit.)
    - As a result, **proliferation seeds were spread around...**
    - Bilateral arrangements could **not control deals between third parties.**
    - Cooperation used for strengthening alliance and friendships. (**Non-proliferation was a secondary factor**, which is different from the current trend.)

# Pros and Cons of US 123 Agreement

- Pros
  - Recipient countries would **politically commit themselves to refrain from pursuing national nuclear fuel cycle in exchange for the assurance of fuel supply**
  - Diversion into military purpose would cause the stoppage of cooperation and withdrawal of materials and equipments
  - Expressing political commitments each other
- Cons
  - **No legal requirement of ratification of AP**, nor of introduction of near-real-time surveillance system
  - **Not applied to transactions with third parties**
    - Can withdrawal of US cooperation be an effective deterrent?
- **Question on universal application** of 123 agreement: India, UAE may be OK, but what about other countries?

# Pros and Cons of Multilateral Approaches

- Pros
  - At least it can provide one of **criteria of proof of non-interest in military diversion**
  - Give **economic incentives**
  - Strengthen cooperation among like-minded countries
- Cons
  - Remain as a **voluntary** arrangement
    - Determined proliferators would not join.
    - Cannot punish countries not joining the arrangement?
  - Without **take-back arrangement** for spent fuel, it cannot be an attractive offer for countries with a small sized nuclear program: that the United States cannot do.

# Challenges Ahead: Agenda for the Alliance

- Need for introducing **universal rules and regulations in areas of '3S'** (but not easy)
  - In particular, universalization of Additional Protocol
  - Code of conduct in international transaction in nuclear business
  - Export control (NSG's new guidelines)
  - They also **serve setting a level playing field** for American and Japanese nuclear industries.
- Increasing **transparency and accountability** in nuclear programs and industry
  - Setting a **criteria of assessing 'intention'** = multilateral control could be helpful even if it is voluntary one.
  - Evaluating economic and technical **rationalities and feasibility**
  - It may become a serious challenge for Japan...

# Further Challenges Ahead

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- Addressing regional security concerns
  - Strengthen both sticks and carrots to countries concerned
- Beyond 'rallying round the flag' or 'show the flag'!
  - In particular, re-establishing the confidence on **U.S. leadership role**
  - Sound and strong partnership among like-minded countries: **US-Japan global partnership** should take the lead
  - How to **avoid the serious divide between 'nuclear haves' and 'have-nots,'** which might be created by new mechanisms: The problem is that the logic does not matter... : Can Japan play a role?



Thank you very much