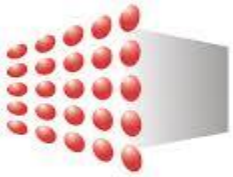
Energy Cooperation in Northeast Asia: A Regional Public Goods Approach



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Irkutsk
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Potential Benefits of Energy Cooperation

- Security of energy supply
  - Interruption, price/cost, technical efficiency
  - Physical security
- Reduced pollution from energy production and use.
- Safety and emergency response
- Social equity:
  - access to affordable modern energy
- ***These benefits have features of a public good***
- ***All are relevant to Northeast Asia***

Regional Public Goods: Principles & Application to Energy

Public goods

- 'Non-rival'
  - consumption of the good by additional actors does not reduce quantity of good available for others
- 'Non-excludable'
  - not feasible to prevent people from taking advantage of or consuming the good.
- Examples of pure public good:
  - security, law enforcement, information and clean air
- Common goods (non-excludable, partly rivalrous):
  - water supplies, fisheries, grazing land, forests and certain government services
- Key: under-supplied or over-used, or both
  - Therefore require government intervention

Regional public goods

Collective action by governments
Spill-over of benefits is regional

- Knowledge
  - Information, R&D, education, dialogue
- Infrastructure
  - Cross-border infrastructure, construction and operation
- Environment
  - Pollution prevention & clean-up
- Security (physical security)
- **Governance (intermediate public good)**
  - Shared standards, best practices, policies, cross-border regimes

– ***All are applicable to energy***

‘Aggregation technologies’ - incentives

- **Summation/ Weighted summation**
  - The sum of total contributions (eg CO2 abatement)
  - Different countries have different weights, eg SO2
  - Usually need formal agreement/treaty
- **Weakest link/weaker link**:
  - Depends on performance of weakest, eg network
  - Need to provide assistance
- **Best shot/better shot:**
  - Can be provided by one (or more) party; eg R & D
  - Need coordination, leadership
- **Threshold**
  - Total resources must reach a threshold, eg emergency response

Supporting & constraining factors

Supporting factors

- Common history/culture
- Common world view
- Perceived common threat
- Leadership by one or more nations
- High degree of political will from all states

Constraining factors

- Long-standing rivalries
- Need to amend laws, structures & systems
- Highly state-centred economies
- Reluctance to cede sovereignty
- The need to help weaker states
- Length of time to achieve benefits

Spill-over and governance institutions

- Geographic scope of regional institution:
  - Should match spill-over of public good
  - But also achieve economies of scale and scope
- Types of organisation:
  - Formal organisations
  - Networks
  - Research institutes
- Challenge is to match the organisations to the tasks in an economically and politically acceptable manner

Aggregation technology	Pure public good	Impure public good	Club good
Sum	Carbon emissions reduction		
Weighted sum	Dissemination of research results.	Reducing acid rain	Regional network construction. Events and meetings. Stock sharing system.
Weakest link	Maintaining network integrity & security		
Weaker link	Joint public pronouncements.	Market and reserves data.	
Threshold		Benchmarking data.	Emergency response team
Best shot	Early warning systems		
Better shot	Technology R & D . Best practices & standards Emergency stock construction. Sea-lane security??	Pollution clean-up. Emergency response. Analysis of data	Capacity building. Technology transfer. Loans/financing. Joint development. Bilateral networks.

Application to Northeast Asia Energy Cooperation

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Weighted sum	Dissemination of research results.	Reducing acid rain	Regional network construction. Events and meetings. Stock sharing system.
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Threshold		Benchmarking data.	Emergency response team
Best shot	Early warning systems		
Better shot	Technology R & D . Best practices & standards Emergency stock construction. Sea-lane security	Pollution clean-up. Emergency response. Analysis of data	Capacity building. Technology transfer. Loans/financing. Joint development. Bilateral networks.

Northeast Asia: supporting factors

- Geographic contiguity
- Complementarity in energy supply and demand, and energy mix
- Shared challenges among sub-groups of states
- Potential best shot/better shot nations

Northeast Asia: constraining factors

- Physical barriers (seas)
- Divergence in history, culture, economics and politics
- Long-standing rivalries & unresolved security challenges
- Importance of sovereignty
- A controversial country in a critical location
- Highly variable energy sectors

Best/better shot: easiest??

Fewest obstacles

- Early warning systems
- Technological R&D, and transfer
- Best practice laws, standards, rules etc
- Analysis of data
- Capacity building & training
- Financing
- Emergency stock construction
- Pollution clean-up

More obstacles

- Sea-lane security
- Joint development
- Bilateral grid construction

More difficult

Weighted sum & sum

- Reducing carbon emissions
- Reducing acid rain
- Regional network construction
- Emergency stock sharing

Weaker/weakest link

- Provision of market and reserves data
- Maintenance of network integrity and security

Many states will be unwilling or unable to supply