Understanding International Energy Initiatives – Phase II

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Outline

- Background and Objectives
- IEI Case Study Analysis
  - 11 case studies, government-based IEIs
- Findings from IEI Case Study Analysis
- IEI Coherence
  - Future energy problems
  - Technology penetration
- Recommendations

Background and Objectives

- Background
  - Collaborative energy-related initiatives ongoing in the APEC region are numerous, often inter-linked, and innately difficult to comprehend
  - People are generally dissatisfied with initiative progress
- Objectives
  - First phase: scope and elements
    - Actors and drivers for cooperation
    - Mechanisms to achieve initiative objectives
    - IEI taxonomy
  - Second phase: looking forward
    - Identify factors affecting the progress of IEIs
    - Investigate the coherence of IEIs into the future
    - Make proposals for new undertakings

IEI Case Study Analysis

Factors affecting the progress

IEI Case Study Analysis – 11 case studies

- Purpose of IEIs:
  - Enhance energy supply security
  - Minimize the negative environmental impact of energy consumption
- 11 cases, government-based IEIs

	Mode					
	Infrastructure Development	Financing Mechanisms	Regulatory Framework	Research & Development	Information Sharing	Capacity Building
Kyoto Protocol		☺	☺			
APP				☺		☺
Energy Charter Treaty			☺			
APEC 21st Century REDI	☺		☺		☺	☺
FutureGen	☺			☺		☺
INPRO				☺		
GenIV				☺		
KEDO+	☺					
GMS	☺		☺			
TAGP	☺		☺		☺	☺
NAGPF	☺			☺		☺

IEI Case Study Analysis – Methodology

- Background of IEI
  - Mission
  - Milestones/Development
- Factors affecting the progress of IEI:
  - Political
  - Economic
  - Business (private / public)
  - Social
  - Organisational (management of IEI)

Findings from Case Study Analysis – (1)

- The Role of Energy Industry
  - Energy industry and government cooperate – often asymmetrically-- in IEIs
  - Cooperation among both these actors is particularly important for the more complex IEIs (energy infrastructure, regulation, or finance)
  - Case studies suggest certain trends:
    - Environmental IEIs: driven by government
    - Infrastructure IEIs and Regulatory IEIs: driven by either party depending on circumstances
    - R&D IEIs: driven by both parties
- Unique Identity and Overlap
  - The international energy community perceives too much overlap among current IEIs
  - Much of this perception stems from IEIs failure to understand and broadcast their own identities
  - An IEI may have similar geographic coverage, similar actors, and similar objectives, but it does not necessarily overlap with another IEI if its mechanisms are unique
  - Such a situation is in fact desirable, as having numerous approaches to and perspectives on complex problem solving can increase overall robustness through diversity
  - Examples:
    - GenIV and INPRO: similar mission, different objectives
    - Kyoto and APP: similar mission, different mechanisms and actors

Findings from Case Study Analysis – (2)

- IEI Evaluation and Amendment
  - IEIs can stall if mechanisms are ineffective or objectives become irrelevant
  - This can happen as the result of IEI implementation environment changing or imperfect planning
  - Examples:
    - Energy Charter peer review mechanisms, Kyoto Protocol evolved from UNFCCC
- Effective IEI Implementation
  - IEIs require proper targeting and approach to have a good impact
  - However, IEIs also depend on effective organizational management for support and implementation
  - Three elements underlie strong organizational management
    - Strong senior-level commitment
    - Access to sufficient financial resources
    - Effective coordination within the IEI (between national and international levels, political and working levels, etc.)
  - Lacking any one of these three elements can result in “zombie” IEIs
  - Examples:
    - GMS, ECT, TAGP, INPRO, APEC REDI

IEI Coherence

Looking Forward

Future Energy Problems

- Efficiency
  - Technology penetration
  - Market development
  - Consumer behaviour
  - Energy efficiency information
- Nuclear
  - Capital financing
  - Fuel cycle management
  - Proliferation
  - Security
  - Guarantee of social responsibility
  - Human capital
- Renewables
  - Direct costs
  - Indirect costs
  - External benefits
- Energy transportation infrastructure
  - Market reform / energy industry restructuring
  - Project financing
  - Political risk
  - Institutional framework for cooperation
- Security
  - Price volatility
  - Transportation bottlenecks
  - Communication / coordinated response
  - Energy diversification
  - Market equality

Energy efficiency – Technology penetration

- Current IEI coverage
  - APP
  - ASEAN-EE&CSSN
  - APEC EWG – App. of New Tech
  - REEEP
  - WB – ASTAE
  - SEFI
- Example project activities
  - APP Power Generation and Transmission Task Force
    - Combustion optimization in coal-based power plant
  - APP Steel Task Force
    - State-of-the-art clean technology handbook
  - REEEP
    - Credit Risk Guarantees and Financing Mechanisms for ESCO-structured Energy Projects
  - WB – ASTAE
    - China, Energy Efficiency Financing Project (P084874)
- Commonly used modes
  - Education and capacity building in the private sector
    - organizing site visits and training sessions
    - EE implementation pilot projects publishing collaborative industrial best practices handbooks
  - Education and capacity building in the public sector
    - developing EE implementation strategies for particular sectors
    - training workshops for bank lending staff for EE projects
  - Financial mechanisms
    - providing loan guarantees to banks financing supply-side EE projects
    - establishing EE lending businesses within domestic banks by leveraging project loans

Which are most suitable for IEIs?

- Efficiency
  - Technology penetration
  - Market development
  - Consumer behaviour
  - Energy efficiency information
- Nuclear
  - Capital financing
  - Fuel cycle management
  - Proliferation
  - Security
  - Guarantee of social responsibility
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  - Energy diversification
  - Market equality

Where are the gaps?

- Efficiency
  - Technology penetration
  - Market development
  - Consumer behaviour
  - Energy efficiency information
- Nuclear
  - **Capital financing**
  - **Fuel cycle management**
  - **Proliferation**
  - Security
  - Guarantee of social responsibility
  - Human capital
- Renewables
  - Direct costs
  - Indirect costs
  - External benefits
- Energy transportation infrastructure
  - Market reform / energy industry restructuring
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  - Political risk
  - Institutional framework for cooperation
- Security
  - Price volatility
  - Transportation bottlenecks
  - Communication / coordinated response
  - Energy diversification
  - **Market equality**

How to fill these gaps…

- Nuclear
  - Capital financing
    - Financial mechanisms for developing economies
  - Fuel cycle management
    - Financing mechanisms
    - Infrastructure
  - Proliferation
    - Regulatory framework
    - Capacity building
  - Human capital
    - Capacity building through international academies
- Security
  - Market equality
    - Regulatory framework to allow strategic activity among both buyers and sellers

Recommendations – (1)

- The Role of Energy Industry
  - When seeking to involve the participation of either government or business actors with an IEI of the other, consider how the other party's costs and benefits will compare to one's own.
  - While participation of both government and business together is often beneficial to the IEIs achieving its objective through leveraging each party's comparative advantages, it is rare to expect returns on IEI participation to be the same for everybody.
  - Unequal returns among government and business parties are not a problem as long as participants realize that the returns are unequal.

Recommendations – (2)

o Unique Identity and Overlap

- When planning or managing IEIs, be aware of similar endeavors which may share actors or objectives – particularly those operating in the same area.
- Direct coordination of activities or knowledge bases may be beneficial among such similar IEIs, but is generally not necessary – in fact, more value may be added to regional energy development by maintaining some distance so as to preserve diversity.
- Instead, take this opportunity to define a unique and specific identity for your own IEI so as to better differentiate it from other similar endeavors – be that through refinement of IEI objectives or mechanisms – and defend your own IEI's value to stakeholders.
- Coordination and collaboration is an option, but such synchronization might in fact be more useful among IEIs with similar objectives and mechanisms but with different actors or which operate in different areas, where direct competition for resources and other support is less of an issue.

Recommendations – (3)

o IEI Evaluation and Amendment

- Built-in evaluation and adaptation mechanisms are important for IEI sustainability.
- Repeated evaluation of the effectiveness of IEI mechanisms should be part of any IEI implementation strategy, and IEI managers should be given the power to recommend modifications on IEI mechanisms to the governing body.
- Moreover, IEI objectives should face a natural review by setting a termination date from the outset which can be extended only through positive action of the IEIs governing body.
- Such periodic, built-in mechanism and objective evaluations and modifications should apply to voluntary IEIs as well to ensure continued interest among and usefulness for actors.

Recommendations – (4)

- Effective IEI Implementation
  - Identify a "hero" (or group of heroes) who is willing to take the lead by guiding an IEI through its lifecycle and championing the IEI's value when faced with challenges such as shortages in financial resource or wavering senior-level commitment.
  - Such a hero takes de facto managerial ownership of the IEI (whatever its legal ownership structure) and helps ensure follow-through and consistency in the IEI despite personnel rotation.

Recommendations – (5)

- IEI Coherence and Future Gaps
  - To be effective, these areas for increased international cooperation may require goal-oriented member associations which do not currently exist.
  - Economies with particular interest in these issues should consider identifying other members who could bring most cooperative value to a new association.

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Differences between Kyoto Protocol and APP

	Kyoto Protocol	APP

Principle	• Cap and Trade
	  • based on the agreement under UNFCCC
		• Infusion of advance technology in industry
		  • promotion by members government

Mechanisms	• Joint Implementation • Emissions Trading • CDM	• “Market-driven”
Political	• Government commitment	• Government facilitation
Social	• Global level under United Nations	• Infusion of technology not restricted to any specific country
Organisational	• Environmental concerns	• Environmental concerns

Reducing GHG emissions