

Energy and the discourse on IFSD at Rio+20

Our Cases

Energy access and clean energy initiatives studied:

SELCO in India, Solar Home Systems in Bangladesh, Vattanak Palm Sugar Cook stoves in Cambodia, Pico-hydro systems in Laos and the Vietnam Biogas Programme

Policies and programmes that have been influential in promoting clean energy and providing energy access :

Nepal Biogas Support Programme, Renewable Energy Development Project in China, National Mission on Enhanced Energy Efficiency and the Rajiv Gandhi Grameen Vidyutikaran Yojana in India

Management of Risk

Japan's Shift of Energy Policy toward Decentralized Renewable Energy System after Fukushima, their experiences of feed-in tariff, management of future electronic waste of Solar PV panels and their Cool Biz and Super Cool Biz campaigns.

The UN Conference on Sustainable Development (UNCSD Rio+20) in June 2012 will deliberate on developing an 'institutional framework for sustainable development (IFSD)'. UN agencies are focusing on the new global initiative – Sustainable Energy for All. This commentary aims to provide inputs to the IFSD discourse from the Asia context, focussing on lessons that energy practices in Asia have to offer in addressing energy access and the expansion of clean energy.

Energy innovations to meet the challenge of energy access in Asia

Energy is closely linked with key contemporary challenges globally – climate change, food security, poverty and livelihoods, local environmental degradation, and social conflicts. Issues surrounding energy may well be one the key challenges for generations to resolve. Nearly 1.9 billion people in developing Asia are dependent on traditional biomass for cooking and 675 million people lack access to electricity. The Asia region is also the fastest growing region with huge needs of energy resources. The challenge of energy access has resulted in innovative energy interventions at the grassroots level.

The TERI-IGES-AEI study analysed innovative experiments and practice around the addressing of energy access and clean energy needs in Asia. Selected cases of project and policy innovations of developing Asia countries - South, South East and East. Japan has been included as a special country case as a major developed economy facing unique energy access issues in the post-Fukushima phase. The case is particularly relevant to understand sudden or major transformations in energy choices and perceptions of people.

Figure 1 Key roles and multi-actor involvement according to the CSD major groups typology

Detailed studies of the cases suggest that these involved multi-level and multi actor approaches as evident from mechanisms – finance, capacity building, technology diffusion and policy – central to the interventions, operated at various levels and through different actors. This is seen in the Figure 1 which uses the Commission for Sustainable Development (CSD) major groups typology.

| | SELCO India | SHS Bangladesh | Vattanak Cookstoves Cambodia | Pico Hydro Laos PDR | Biogas Vietnam | Biogas Nepal | REDP China | RGVY | REAP Mongolia |
|---|-------------|----------------|------------------------------|---------------------|----------------|--------------|------------|-------|---------------|
| UN and multilateral organizations | F P | F | | F | | | F P | | F |
| Bilateral | F | F C | F | F | F T P | F T P | | | |
| Member States | | F T P | P | | T P | F C T P | F C P | F C P | F C P |
| Women groups | F C | | | | F | F | | | |
| Youth groups | | | | | | | | | |
| Indigenous people | | | | | | | | | |
| NGOs | C T | C | C T | C | C | F | | | |
| Farmer groups | F | | C | | F | F | | | |
| Trade unions | | | | | F | F | | | |
| Business & industry | F C T | | F | F T | | T | C T | T | C T |
| Scientific and technological community | | | | | | | | | |
| Local authorities (including subnational) | F | C | | | F | C | C | C | |

F = Finance C = Capacity Building T = Technology P = Policy

What worked? What is needed for successful delivery of sustainable development outcomes?

1. ***Mechanisms for coordination and cooperation*** amongst different agencies or stakeholders are the important features contributing to success in all of the cases studied. Existence of different stakeholders with clear roles and mechanisms for interaction and coordination across the value chain are key to successful interventions. The cases suggest that a bottom up approach may not be enough by itself, but it may need to be accompanied by national or global support measures & coordination.
2. ***A needs based customized approach to energy service delivery*** has been useful in financing as well as technology adoption and energy access. Traditional 'hard' paths to energy provision have high costs, need economies of scale for their success and require standardization of products, but the new 'soft' paths emphasize customization according to need, and yield long term benefits albeit at a higher upfront cost borne by the customer. In a way reduced scope is what promotes more innovation in implementation of clean energy.
3. ***A distributed strategy across technology and governance levels*** for clean energy development will link what is happening in the market and at the grassroots back to the lab and to those who make policies based on such feedback loops. The close grass root orientation is enabling greater sociological input that is being sought in rethinking institutional and technical design for energy delivery
4. More than making a technology or measure available, it is important to ensure that it enjoys ***acceptability and a buy-in from the target group***. In the Asian case studies, either the user buy in element has been built in from the start or introduced later. To this effect, substantial investments are made to understand the user requirements and customize the products. Capacity building is important for introducing or developing a technology as well as absorption of the technology introduced
5. ***Market development strategies and development of market driven programmes*** requires more participation from businesses, final consumers, financing entities (government or independent banks) and market regulators that can provide benchmarking standards to main product quality and ensure technology delivery. NGOs have played a major role in capacity building along with national, sub-national levels and industry, important for introducing or developing a technology as well as absorption of the technology introduced. Initial funding in the form of innovative financing when supported by market development strategies prove immensely helpful to energy access projects.
6. ***Innovative finance mechanisms*** that lay emphasis on self-sustainability, away from grant based approaches. Initial funding in the form of innovative financing when supported by market development strategies and customized packages prove immensely helpful to energy access projects. Major sources of feasibility-viability gap financing have been multilateral and bilateral funding. New financing models such as carbon financing are being explored to ensure self-sufficiency and financial sustainability.
7. ***Appropriate risk regulatory frameworks*** are needed to address the management of wastes from selected technologies (for instance solar PV panels) so that manufacturers can design solar modules, which are safer and easier to reuse and recycle, and markets to be developed for the same. Given the scale of programs planned, (for instance nuclear) the need to address risk perceptions of people post Fukushima is also important.

Key messages for the design of an IFSD

Message 1

Distributed strategies work in delivering sustainable development outcomes

- Informal arrangements are producing solutions: Collaborative dialogues; informal policy networks. CBOs- NGO partnerships, research fora are effective in producing outcomes
- A distributed strategy is needed not just across technological developments, but also across governance levels and frameworks for clean energy development that will link what is happening in the market and at the grassroots back to the lab and to those who make policies based on such feedback loops.
- Sociological inputs at the grass roots and local level help rethink institutional and technical design for energy delivery
- In the light of natural or man-made disasters (such as terrorism), the concept of 'smart community' in energy is useful

Message 2:

Catalytic Mechanisms are required for improved coordination

- International Clearing houses" for ideas, science, experience, technologies, and local knowledge
- "Centres for transfer of green technology" and improved energy practices
- "Light Houses and early warning systems" to warn and steer development that is off-course
- "Incubators of energy innovations"
- "Financial match making" between project developers and commercial banks, corporate investors, clean energy equity funds and carbon funds
- "Learning networks or Institutionalized Communities of Practice" to share experiences and knowledge.

Message 3:

Achieving and sustaining energy transformations require support and flexibility

- Supporting networks of institutions that work to strengthen the linkages between energy and development through a focus on learning and capacity building,
- Flexible policies to respond to variable local market conditions; customization according to demand. It is important not to develop "one-size-fits-all" policies.
- Standardization of processes that can be instrumental in scaling up successful projects and practices from one developing country/region to another
- Appropriate risk regulatory frameworks that address local risk perceptions

Message 4:

Innovative financing mechanisms are required that lay emphasis on self-sustainability

- Multilateral and bilateral institutions need to play a key role in financing of initiatives in conjunction with the national governments. MFIs can provide matching funds such as co-financing, loans or direct equity co-investment to be directly involved in the projects.
- Financial sector policies or banking practices would need to be more sensitive to energy access and RE&EE initiatives. Need for some risk funds to help support decentralized, customized initiatives.
- The emergence of new financing institutions such as microfinance that have involved women self-help groups and farmers
- Need of tailor made financial packages to further enhance uptake of the intervention.
- CDM mechanisms need to be strengthened, streamlined and simplified to be effective with small and local entrepreneurs

TERI, IGES and AEI

*Learning from emerging energy innovations in Asia: Contributing to
the discourse on an Institutional Framework for Sustainable
Development*

Supported by AEI, Energy for All Initiative of the ADB

New Delhi, 2012