Third Meeting of the Regional 3R Forum in Asia

Market demand as driving force for 3R technology transfer and the role of private sector

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The expected effects of 3Rs technologies

Diagram showing the unsustainable pattern of economy and the sustainable resource-efficient economy with 3Rs (Reduce, Reuse, and Recycle).
Market drivers on the demand side

- Substitutability between primary and secondary raw materials:
  - Depleting supply of primary raw materials and hence price increase
  - Better substitutability

- Project owner see 3Rs development as a mean to minimize costs or add revenue streams (electricity sales, Carbon Credits, steam…)

- Improvement of environmental standards lead to development of 3Rs technologies

- Green procurement

- Rising of public awareness
  - Environment preservation
  - sustainable production and consumption (SCP), extended producers responsibility (EPR)…

Those market drivers are still weak in Asia
Business-to-business technology transfer: Case study
An example of failure
A 70T/day biodigester plant in Thailand

Technology:
- front end and automatic treatment plant
- anaerobic digestion plant
- Gas holder to sell electricity in peak-period
- 625 kWe gas cogeneration set
- Production of compost from sludge

Economics:
- Investment Euro 3.60 million
- Pay back period is about 9 years after commissioning
Why did it fail?

• High O&M costs – initial budget did not cover the O&M

• Poor maintenance and operation of the facilities

• Lack of staff expertise

• Incomplete separation of non-biodegradable (separation blades are not working properly because of the waste packing which is different from Europe)

• Wrong design of the facilities (no modification to suit developing countries waste characteristics, staff expertise… same technology for Europe and Thailand!)
Why did it fail?

• Lack of incentive to operate the facilities when a landfill is also available although planned for inert waste only

• Lack of waste separation at source (communities are not involved)

• High cost of compost compared to commercial fertilizers

• Low quality of compost (no nutrients added)

Source: EC-ASEAN COGEN Programme Phase III
An example of Success
Historically, Thailand has relied extensively on fossil energies for electricity generation (especially on natural gas, above 70%). Considering the rise of fossil energies costs, the significant quantity of municipal/agricultural waste and the environmental protection awareness, the Thai government decided in 2001 to launch a subsidy scheme for Power Producers from renewable energies.
The VSPP program in Thailand

There is always money available when the return is right

NB: Clean Development Mechanism has also played a role in the inflow of money

High subsidies stimulated private investments to install 507.03 MW as of 2009 compared to 12.01 MW in 2006 (prior to the subsidies package): a tremendous yearly 248% increase!

About 200 million USD natural gas savings per year
Necessary conditions for a successful transfer of technology
3Rs transfer and implementation should succeed if…

- On the technological side:
  - Proven, easy to operate and cost effective
  - Community based and labor intensive
  - Adapted to local specific conditions and needs
  - When complex, proper training must be carried out

- Government and citizens:
  - Public environmental awareness
  - Political will
  - Conducive institutional, administrative, legislative and policy environment

- Country specificities:
  - Lack of resources
  - Land scarcity
  - Remote areas in vast countries

- Firm:
  - Corporate image
  - Consumer and regulation driven demand
  - Management will
  - Trainings
  - Incentives and taxes
  - Additional staff responsibilities
Involvement of the private sector – Example of CDM

• There are too many activities, we shall focus our analysis on LFG

• In Thailand, Malaysia, Indonesia and Vietnam altogether, there are 18 projects registered
  
  • 50/50 market share between developing and developed countries
  
  • 100% of the projects are private owned although some have been financed through governmental or international organizations scheme
  
  • One pilot project has been financed and developed by the Government of Thailand in Bangkok

In LFG, Developing countries are tapping CDM as much as developed countries

Although open to all parties, only the private sector, in LFG, has financed and developed projects
**Emphasize on the technical side – The CDM database helps**

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**Project 2217: Municipal Solid Waste-based Composting at Kolhapur, Maharashtra**

### Project title
Municipal Solid Waste-based Composting at Kolhapur, Maharashtra

### PDD appendices
- Appendix 1 - Enclosure (87 KB)
- Appendix 2 - Enclosure 1 (271 KB)
- Appendix 3 - Enclosure 2 (540 KB)
- Appendix 4 - Enclosure 3 (55 KB)

### Registration request form
(220 KB)

### Host Parties
- India: involved indirectly with approval (149 KB) and authorization (149 KB)
- Authorized Participants: Zoom Bio-Fertilizer Private Limited

### Other Parties Involved
- United Kingdom of Great Britain and Northern Ireland: involved indirectly with approval (82 KB) and authorization (82 KB)
- Authorized Participants: Conoco Phillips (UK) Ltd.

### Sectoral scopes
- Waste handling and disposal

### Activity Scale
- SMALL

### Methodologies Used
AMS-II F. ver. 5 - Avoidance of methane production from decay of biomass through composting

### Amount of Reductions
30,430 metric tonnes CO2 equivalent per annum

### Fee level
USD 4586.0

### Validation Report
- Validation report (431 KB)
- Modalities of Communication (222 KB)
- Annex 2 (Add Project Participant) valid as of 28/07/2011
- Annex 2 (Change/update authorized signatory, name or contact details) valid as of 25/07/2011

### Public availability information
Link to information uploaded for public availability

### Registration Date
01 Apr 09 (view history)

### Crediting Period
01 Apr 09 - 31 Mar 19 (Fixed)

### Requests for issuance and related documentation
- Monitoring report [01 Apr 2009 - 31 Mar 2010 (640 KB)]
- Issuance request state: Issued
- CERs requested: 7900
- Serial Range Block start: IN-5-03716047-1-1-0-2217 Block end: IN-5-53724036-1-1-0-2217

[Full view and history]
Role of central governments to promote 3Rs
At the National level

- Internalize the positive and negative externalities by the market or the regulation
- Mitigate the investment barrier
- Facilitate the access conditions to commercial and public financing for 3Rs projects
- Create rewards (quantitative and qualitative) for firms that not only meet the pollution control standards but also implement 3Rs technologies
- Green procurement
- Create database, organize and spread reliable and relevant information
- Developing pilot projects (R&D)
- Facilitate the granting of licenses and permits for construction and operation of 3Rs

Address the market failures
At the International level

- Promotion of high level 3R policy dialogues at the regional, and international levels
- Establishing regional and international networks on the 3Rs
- Fostering international collaborative activities including those facilitated by bilateral aid agencies, UN and other international and regional organizations such as the Secretariat of the Basel Convention, UNCRD, UNEP, ADB, UN ESCAP…
- Public-Private Partnership (PPP)
- Close association of 3R activities with sustainable production and consumption (SCP), extended producers responsibility (EPR) and product design
- Encouraging day-to-day communication among customs, port, and maritime authorities to monitor transboundary movements of waste and to prevent illegal movements
Recommendations and Conclusion
Recommendations

• The establishing of a National 3R focal point, a well-organized institutional set-up, is a prerequisite for implementation of 3R and its sustainability
  • Promoting 3Rs activities by rising public awareness
  • Levying waste collection and disposal charge to all waste generating sources
  • Assist firms and local administrations to access international funding
  • Creation and management of a 3R Promoting Fund
  • Partnership development with local (communities, local governments…) and international (NGOs, UN…) organizations

• Financial and technical assistance for R&D

• Strong marketing campaign for “reused - recycled” products

• Government support for allowing access to land and other essential services as well as fast-tracking licenses and permits
• Market-based instruments such as subsidy and tax should be used:

  • Subsidization of 3Rs technologies (switching of subsidy from chemical fertilizer to organic compost – Subsidy on green electricity – differentiated taxation (customs tariff and corporate tax exemption for environmental friendly businesses)

  • Subsidy to preserve informal sector’s involvement in 3R activities and to recycled material-using factories and industries

  • Revenue generation through taxing polluting activities and products (high disposal costs)

  • Greater use of deposit-refund scheme for reuse and recycle of items (glass bottle or mobile phones for instance)
Conclusion

• 3Rs transfer and implementation in Asian cities, particularly for the wastes, still have many problems. The current regulation system is not perfect while the existing management and the collection facilities may not fit the present requirements.

• But Governments, NGOs, CBOs, and the private sector are working hard to improve this situation with several achievements and success stories waiting for duplication.

Transfer and implementation of environmental technologies including 3Rs is already a reality

• However, market failures and barriers remain creating room to central governments for action

• To drive the way forward, several countries are already elaborating National 3Rs strategies, creating 3Rs funds, promoting renewable energies...

Some of the recommendations mentioned earlier are already being implemented
Thank you for your kind attention and have a fruitful forum!