

**NON-BINDING BEST PRACTICE EXAMPLES ON THE
DEMONSTRATION OF ADDITIONALITY TO ASSIST THE
DEVELOPMENT OF PDDS, IN PARTICULAR FOR SSC PROJECT
ACTIVITIES**

This paper has analyzed various additionality arguments presented by the successfully registered small scale project activities and try to develop precedence and guidance to the futuristic Small scale projects (SSC) project.

This concept note is divided into three parts

1. Analysis of the existing registered SSC projects with respect to their arguments on the additionality.
2. Suggestions on development of good practice guidelines
3. Best practice additionality arguments

I. Analysis:

General:

1. Till date more than 750 projects are registered under the CDM of the Kyoto Protocol of which contribution of the Small scale project contribution is 353 (47%).
2. Type- I Renewable Energy (RE) contribute more than 63 % of the total project that has registered in the SSC category, followed by methane recovery projects 27%(Type – III) and the rest is energy efficiency projects.
3. Among the 63% RE projects biomass based projects constitutes 42%, followed by hydro, wind and solar by 38%, 19% and 1% respectively.
4. The share of Type –II projects are very less in comparison to the contribution from the rest of two types.
5. The SSC project constitutes 36%of the total rejected project activities

6. Most of the type –III project activities are from the Animal waste management sector and a low turnout from the industrial based methane recovery projects from the process effluents.

Additionality:

The additionality argument for about 50% of the registered PDD was analyzed and concluded the following:

1. If not all most of the registered PDD has influence of the additionality tool “**Tool for the demonstration and assessment of additionality**” though not completely applied.
2. In terms of application of additionality both the barrier analysis and the investment analysis has equal share.
3. If investment analysis is applied rest of the other barriers are excluded in comparable number of projects.
4. Most of the investment analysis has undertaken project IRR¹, followed by unit cost of generation between the alternatives.
5. Most of the SSC project has not undertaken sensitivity analysis for the projected project IRR.
6. The common practice barrier is widely used by most of the project activities.
7. Since most of the investment on Type –II project activities has good returns/payback concisely investment barrier has been excluded, however the technological barrier has taken the dominance in establishing the prohibiting barriers.
8. Type – III project activities has demonstrated the projects additionality by comparing the existing baseline condition of the representative sample.

II. Suggestions:

¹ Internal Rate of Return

It is to be advised that even the SSC projects should adopt the tools for demonstration of additionality in establishing their additionality, I am of the opinion that the impetus on the additionality has been relaxed for SSC projects bearing in mind the transaction cost adopted earlier by the CDM system and with the system at a nascent stage, however based on the recent development of zero registration fee for a SSC project with an annual estimated emission reduction less than 15Kt per annum and more so keeping in mind the narrow difference on between the estimated average annual emission reduction between a SSC and a regular scale project activity (excluding high GWP project activities) it is appropriate for the small scale project activities too to follow the tools for demonstration of additionality.

What so ever be the size of the project activity there should not be any compromise/relaxation in establishment of the additionality, since the definition of additionality is the same irrespective of volume of emission reductions.

All the credible alternatives available to the project activity should be discussed in the PDD.

An additional addendum² could be provided along with the guidance document to direct the project participants to incorporate list of various additionality issues that could be thought of for the implementation of the project activities and the PP could choose the relevant barriers that could affect the implementation of the project activity. A separate list of all additionality arguments possible needs to be provided for all the three type pf project activities.

A relevant scoring model/scale should be generated for all the three type of the project activities separately starting from most prohibitive for the implementation to less relevance. All such parameters identified as prohibitive issues could provide a traceable source of data in the PDD itself which could be replicated by other project participants

² A trial on various additionality arguments is provided in the later part of this paper.

belongs to the same project location, which again of my opinion fits into the famous phrase of the CDM “Learning by doing”.

Rationalization on the number of various numerical values needs to be presented in the PDD. i.e for example it would be difficult to give a single value for benchmark IRR, however it can be said that the benchmark IRR should be the least among the following options (a) Weighted average capital cost, (b) Prime lending rate as announced by the host country, (c) Interest to be paid for the banks by the Project participants, (d) investing companies track record on the returns (3 years average if not the options should be excluded) and/or (e) the investment return climate as presented by the concerned authorities (example IRR 16% for power project in India).

Guidance also needs to be provided on the common practice analysis and the penetration of such technology i.e. the comparison should be restricted to the identified potential Vs implemented and also any for any technology if the penetration is more than X % ,then it should be concluded as non-additional.

III. Best practice examples:

The paper has identified tried to establish good practice additionality exponents to the renewable energy sector and in similar way energy efficiency and other project types could also be approached.

Renewable Energy Projects:

Hydro Projects:

1. Low participation of Private investors in RE Vs State owned projects.
2. Commercial losses/weak financial strength of the state utilities.
3. Restricted access to international capital markets due to the size of the units (small scale)
4. No broad experience to emulate due to lack of existence of such selected project technology lack of previous examples

5. Technological risks due to performance uncertainty.
6. Hydrological and geological conditions of the project location
7. Possible design failures
8. Vulnerability to natural events like the earthquake and droughts
9. Bureaucratic institutional development frame work
10. Long processing time for the feasibility studies, approvals and permits.
11. Location disadvantage/Site selection limitations - Disparity in allocation of good sites for example to govt owned power institutions /less risk projects to government.
12. Availability of debt funding and higher interest rates.
13. Market and regulatory risk
14. Lack of private participation
15. Exploitation of power plants in the backward regions
16. Unattractive economic returns on the investment
17. Limited access to financial resources.
18. Future capacity addition plans of the host country
19. Macroeconomic policies of the host country
20. Higher installing cost due to inadequate transmission lines to feed the generated RE power which in turn lead to lengthy of the transmission lines, higher transmission losses and loss of revenue
21. Climate related issues
22. Sudden and substantial changes in the legal process
23. Implementation of excessive tax by the local government for RE projects.
24. Directing the private parties to supply certain amount of energy at free of cost or at subsidized price to the electricity transmission company.
25. Special fees on account of review the project feasibility by banks with out assuring for lending the loan.
26. Preclusion by commercial banks from providing any long-term debt financing to local companies.
27. Requirement of high level of guarantees required to finance an energy project
28. Lack of adequate commercial agreements

29. Most of the utilities do not have a satisfactory credit risk,
30. Reduction in the contribution of the hydro power sector in the total grid mix
31. Initial investment cost (cost/MW)
32. Delay in statutory approvals leading to increase in cost over run
33. Higher interest rates
34. Hydrological barriers – water discharge, monsoons, flash flood, cloud bursting etc.
35. Political risks in terms of ever changing governments /their policies
36. Transaction costs of identifying and negotiating with multiple power off-takers and maintaining supply-demand balance,
37. Payment risks associated with the off-takers
38. Legal deficiencies inherent in the self-supply scheme
39. Lack of legal remedies in the event of unilateral termination

Wind power project

1. High Cost per unit of generation
2. High upfront cost/MW
3. Metrological issues
4. Length of the transmission line
5. Expertise of the investor in the sector
6. Penetration of such technology in comparison to that of the identified potential
7. Upfront capacity charges (part of capital cost + agreed ROR) not available for RE but for thermal energy
8. Lack of necessary support from the off-takers during the drought induced energy shortfalls.
9. No guarantee of price stability for its electricity,
10. Calculation of unconducive tariff by the local regulatory firms (example: calculation of avoided cost tariff based on the most expensive thermal unit displaced)
11. Low capacity utilization factor

12. Fluctuation in the power tariff
13. Non-availability of spares for the critical component
14. Unreliable Wind speed etc.
15. Rich resource competition between the fossil vs renewable in a fossil fuel rich country.
16. Importing the manufacturing technology/components.
17. Alternative tax systems, reduction in tax concessions, disproportionate hike in interest rates
18. Limited number of wind mask / unrealistic demonstration sites - resulting in wide variation from predicted wind turbine generation and actual generation creating doubts about the viability of wind projects
19. Delay in sanctioning by the regulatory authorities / State agencies
20. Inadequate capacity at dedicated substations resulted in shutting down of wind turbines even during peak wind speed periods with loss of generation and hence revenue loss to the Wind farm owners.
21. Connecting WEGs to weak and rural feeder lines in the absence of dedicated substations
22. Penalties for excess Reactive Power (RkVAh) consumption
23. Absence of third party sale
24. Difficulties in availing the contractual agreements like the PPA and their enforceability.
25. Inadequate power evacuation facilities, along with inadequate capacity of substations
26. Long gestation project.
27. Delay / defaults in payments by the State owned utility

28. The wind generators and the grid are constantly subject to natural elements such as high winds and rain and a calamity such as a severe thunderstorm and lightning can damage the generators and/or the grid.
29. Non availability of insurance to liquidated damages as power generation losses etc.

30. Very high insurance premium.

Biomass

1. High interest rate for the debt
2. High capital cost (cost/Mw)
3. Availability of the fuel and the seasonal price differences of the fuel.
4. Deviation from the company core business to RE power business
5. Uncertainty and frequent fluctuations in the power tariff fixed by regulators
6. Penetration of the technology with the potential identified Vs Actual.
7. Disturbance in the power grid/low capacity feeders.
8. Constant availability, collection, transportation and storage of the fuel
9. Long period of inflation in the host country experienced a strong devaluation which in turn precluding commercial banks from providing any long-term debt operation.
10. The lack of a long-term debt market
11. Cultural barrier
12. Lack of infrastructure facilities.
13. Fuel characteristics and its associated issues like the corrosion/deposition/improper heat transfer profile etc.
14. Unconducive regulatory conditions.
15. Performance uncertainty or low market share of the new technology adopted
16. Institutional barriers
17. Limited information ,Managerial resources, Organizational capacity,
18. Financial resources, or
19. Capacity to absorb new technologies,
20. Operational difficulties
21. Capacity to design and manufacture the components.
22. Non performance possibilities of the adopted technology.
23. performance uncertainties
24. Operational difficulties of the installed equipments.
25. Lack of technical know how

26. Lack of sufficient policy and program.
27. Capital availability for such technologically advanced RE project options with no precedence.
28. The application of this technology calls for sophistication of operational practices and skilled manpower for maintenance.
29. Cascading or domino effect of failure in critical production areas if the generated power is connected to process industry.

Biogas projects:

1. Technology penetration involved widely in the region (Type of processing technology) - Open lagoon vs. anaerobic treatment with methane recovery
2. Investment barrier – low returns from the project activity in comparison to that of the other alternatives available to the project activity
3. Lack of skilled manpower to operate and maintain the facility

Conclusion:

I am of the strong opinion that the additionality tool must be used by SSC projects in similar to that of the regular scale project.

I thank the CDM – EB for providing me this opportunity to exhibit my views in the captioned subject.

Thanks

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