



Sierra Club Comments on the Draft Revised Methodology ACM0013 April 20, 2012

Thank you for the opportunity to comment on revisions to ACM0013 “Construction and operation of new grid connected fossil fuel fired power plants using a less GHG intensive technology” recently proposed by the CDM Methodologies Panel. The Sierra Club finds that the current methods for determining baseline and future emissions, economic attractiveness and available alternatives are seriously flawed and should not be used to evaluate whether proposed fossil-fuel fired power plants qualify for CDM credits. Accordingly, we support the efforts of the CDM Methodologies Panel to improve the objectivity and clarity of ACM0013. Unfortunately, while a number of the proposed revisions appear directionally correct, they do not resolve a number of issues that have arisen over the past few years concerning a large number of coal-fired power plants that employ the supercritical or ultra-supercritical pulverized coal technology (“SCPC” and “USCPC”) that is the proven choice of the marketplace in many developing countries.

GENERAL CONCERNS

Without discussion or explanation, the proposed revision eliminates the threshold requirement that a proponent of a new fossil-fuel fired power plant first consider whether other, less carbon intensive forms of electricity production are feasible alternatives.¹ In addition, the proposal only requires consideration of fuels that are used to generate the majority of electricity in the host country.² The effect of these provisions is to authorize CDM credits, not for environmentally superior projects, but for coal-fired power plants that are second-worst of all available choices, even though the cost of new SCPC plants is essentially the same as the cost of a new subcritical plant. This occurs because the proposed revision would continue the “Balkanized” procedure where a technology can be “high efficiency” in one country even if it is a “baseline” technology in other countries.

We support the proposed expansion of geographical area beyond the grid boundary of the host country and question the basis for any geographical constraint. Modern fossil-fuel fired power plants – either subcritical or supercritical – are designed and the major components manufactured in only a handful of countries. For this reason we suggest that the market penetration of a new technology on a country-by-country basis is largely irrelevant. Once a technology (e.g. supercritical operation) has

¹ See, Draft Revision to ACM0013, lines 169-242, 251.

² Thus, a source could not receive CDM credit under this methodology for employing natural gas instead of coal, but would receive CDM credit for using coal more efficiently.

achieved a market penetration of, say, 15 percent of new and recently installed units worldwide, it should be considered as the default baseline unless the project proponent can demonstrate unique factors that preclude its use. For this reason, we recommend that the language at line 27 of the draft be revised to provide for an evaluation based on the worldwide market that is then adjusted to reflect the social, economic, technical, and environmental circumstances of the project as they may be relevant. Further, given the potential for fossil-fuel power plants to consume all available CDM credits, we recommend that such credits not be awarded unless the project proponent incorporates substantial renewable energy/energy efficiency efforts in the project itself or demonstrates that such efforts are infeasible for reasons unique to the host country.

Approach 2 continues to disadvantage units that have advanced pollution control devices. One should not be able to claim that a unit is “more efficient” than its peers because it does not have flue gas desulfurization, selective catalytic reduction, or other modern pollution control devices.

The Information Note adopted by the panel cites to the difficulties associated with the “low signal-to-noise ratio” in the calculation of emission reductions resulting from the project activity. We agree with this characterization; the increased efficiencies associated with advancements in coal-fired technologies are often relatively small and ordinarily are not measured to the necessary level of precision. Moreover, the in-service operating efficiency of the unit depends on the manner of its use. A unit that is designed to operate as a base load unit will experience significantly lower operating efficiencies if it is operated at low loads, is cycled on and off, or is operated in a reserve capacity rather than the steady state, near full load conditions of the stated design efficiency. Often, the actual mode of operation is determined by the system operator, or (in merit order systems) by the market and may be beyond the control of the plant owner.

Having identified the issue of how to accurately determine both baseline and future project efficiencies, the proposed revisions do not attempt to address it. Nowhere does the proposal require a quantification of the uncertainty of the measurements and/or calculations underlying either the baseline or project efficiency or require that the proposed project demonstrate that the claimed improvement is greater than this uncertainty – and indeed, under the proposed method, the project can qualify if it demonstrates any amount of improvement. The attached data show a substantial variation in the year-over-year determinations of operating efficiencies of U.S. coal-fired power plants that in many instances is larger than the difference in the theoretical operating efficiency between supercritical and subcritical coal-fired power plants.

The Information Note identifies the lack of a consistent approach and lack of justification of assumptions in deriving the baseline efficiency as a problem to be addressed. We acknowledge that the proposal attempts to make improvements in this regard. We would add that a number of other factors that form the basis of the investment analysis – including the cost of construction, cost of fuel, length of loan term, and discount rate have been similarly inconsistent and unsupported in PDDs. The proposed revisions do not address these deficiencies and therefore do not sufficiently minimize the subjective nature of the investment analysis, where project proponents have in the past “cherry-picked” data to suit their objectives. The requirement that fuel costs must “take into account” price development in the country for the past 10 years prior to the CDM/PDD is a useful step in the right direction, but does not

require that the investment analysis should also anticipate future price increases using the trend from the past 10 years. Importantly, the investment analysis is limited to the levelized cost of electricity over many years and does not require an assessment of the impact of the proposed project on utility tariffs.

As proposed, the baseline scenario is determined by an investment analysis that compares the economic attractiveness of the proposed plant and a baseline plant. Two options are presented for determining “the power plant that most likely would be constructed in the baseline scenario:” (1) an 80th percentile “planned” unit test and (2) an 85th percentile “recently constructed” unit test. Under the “planned unit” test, the design efficiency of all sources within the geographical constraint that have received permits and commenced, but not completed construction, would be determined. The technology employed by the unit that represents the capacity weighted 80th percentile of this group would then represent the baseline technology.³ Under the “recently constructed” test proposed by the Panel, the baseline scenario would be based on the in-service performance of the 85th percentile of “recently constructed”⁴ units, as adjusted by an annual efficiency improvement factor calculated based on historical in-service data for plants in the geographical area. For the reasons stated earlier, we agree that a comparison of “past actual” performance vs. “future design” performance overstates the difference in fuel efficiency and should not be used. Further, we believe that the range in the rate of improvement cited in the proposal signals that this issue will likely be controversial. For these reasons we believe the Panel’s second option should not be adopted.

We support in concept the first option’s attempt to obtain more contemporaneous data by looking at plants underway rather than those that are already built since the latter were designed at least 5 years ago. However, we do not believe that the Panel has identified a workable means of obtaining the needed data. The detailed design work, operating characteristics, and contract terms are ordinarily considered confidential business information that would not be provided to third parties, especially for “baseline” projects that have not sought CDM support. Since different engineers make different underlying assumptions in developing design figures, merely comparing published efficiency claims (which may reflect contract guarantees rather than actual anticipated performance) is not likely to be sufficient. We note that this issue arises under the “recently constructed” test as well.

In addition to design and performance information, the detailed project cost information that would be needed for a transparent and reviewable investment analysis is often confidential and may have project specific provisions that preclude direct comparison of costs. Detailed cost breakdowns for existing and recently constructed plants are not available in the public literature and may not be available even to a proposed project sponsor. The draft methodology attempts to address this issue by requiring the submission and use of the investment analysis that was actually used by a project sponsor.⁵ This effort is directionally correct, but is virtually impossible to enforce, especially as it relates to a baseline project that the project proponent (or the vendor) may have little or no real interest in.⁶

³ It should also be noted that the definitional difference proposed for SCPC and USCPC units is arbitrary and does not in fact denote a different technology.

⁴ Nominally within the past five years.

⁵ Draft revision, line 161

⁶ Under generally-accepted principles of contract law, a purchaser would be liable for the costs of developing a bid for a project that it was not seriously considering.

TECHNICAL ISSUES

- The proposed minimum efficiencies are based on the average of the in-service performance of units in China and are far too lenient. While the concept of a floor is useful, at the proposed levels the floors will undercut the effort to develop realistic efficiency data.
- The definition of “base load” unit is not consistent with the design approach for such units. We recommend that the definition be revised to “not less than 5,000 hours.”
- The “range” for “similar units” is too small. We recommend that all units within a range of 50 percent to 200 percent of the capacity of the proposed unit be considered “similar.”
- We agree that, where the permit is more than 5 years old and the permittee has not commenced construction, the facility should be excluded from consideration – but not all facilities where the permit is more than 5 years old.
- The use of 5 facilities as the minimum number in the “peer group” is inconsistent with the application of an 85th percentile test as it would, in effect, require that all facilities (100th percentile) employ the technology, since 4 out of 5 is only the 80th percentile. Recommend that this be raised to 6 facilities.
- The language at line 112 regarding contracts is vague as to the scope of contracting needed.
- The language at line 166 would seem to preclude evaluation of a subcritical project using domestic coal compared to a supercritical project using imported steam coal. We do not understand the rationale for this approach as long as both fuel sources are evaluated as against both technologies.
- We support the comment at line 494 that requires a demonstration of efficiency at optimal load; not derived from historical operational data and object to the line 328 approach of using historical operational data.
- We question why projects that have received CDM support in the past should be excluded from consideration of the baseline as the market evolves.
- Specifying a higher load factor for a proposed project than for baseline (line 278) seems to be an error, in that it lowers the LCOE for the proposed project compared to baseline.

CONCLUSION

Thank you for your efforts towards resolving the existing flaws in ACM0013. While we believe the current draft contains important improvements, there are a number of issues that remain to be addressed. We hope these will be resolved in the next iteration, and we stand ready to work with you and provide further comments as you work through the outstanding issues.