

An eye on demand

The CDM has done little to encourage demand-side energy efficiency – despite its large potential and low cost. **Anne Arquit Niederberger** and **Terry Fry** consider what should be done

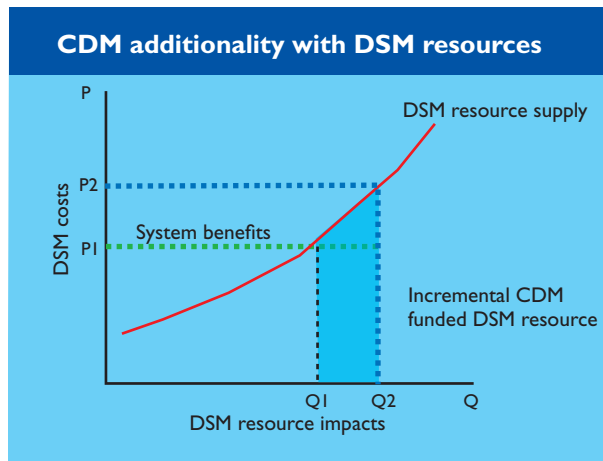
With the exception of waste heat/gas use in industry, the Clean Development Mechanism (CDM) has done little to encourage investment in energy efficiency, despite large, cost-effective mitigation potential.

The CDM Executive Board has recognised this problem and began targeted consideration of energy-efficiency projects under the CDM, including approaches to create a more enabling environment, at its 31st meeting. At EB 32 (June 2007), the board asked the UN Framework Convention on Climate Change secretariat to initiate work on ways of facilitating registration of such activities under the CDM. Simultaneously, the board has issued procedures and guidance for CDM programmes of activities (PoAs), which are potentially well suited to support large-scale energy-efficiency programmes (see pages S50–S51).

One promising vehicle for scaling up investment in end-use efficiency is implementation of demand-side management (DSM) programmes by utilities or other parties serving as the managing entity of a CDM PoA.

DSM is a term that was coined in the 1970s and refers to actions that influence the quantity or patterns of use of energy consumed by end users. Many DSM programmes were implemented after the 1973 energy crisis, and they are increasingly popular today for economic and environmental reasons, as well as to alleviate system reliability concerns due to rapidly growing (peak) demand, particularly in developing countries. The Indian Ministry of Power, for example, is planning a CDM programme to replace 400 million incandescent light bulbs with compact fluorescent lamps.

The benefits of broadly implemented programmes have led to policies that consider DSM as a utility system resource – on a par with supply-side generation resources – and which may complicate consideration of additionality under the CDM. The practice of DSM resource acquisition rests on definition of a ‘total resource cost’



(TRC) test. The TRC measures the net costs of a demand-side management programme as a resource option, based on the total costs of the programme, including both the participants’ and the utility’s costs, compared to the avoided utility system capital investment and energy supply costs. A variant on the TRC test is the ‘societal test’, which includes the effects of externalities (eg, environmental, national security), and uses a different (societal) discount rate.

The figure illustrates the DSM resource acquisition dynamic and how CDM issues may interact. Utilities acquire DSM resources through broad programmes funded by systems benefits charges (SBC, sometimes also known as public goods charges) set at or below the level of avoided system costs. At an SBC price of P1, the utility system will expect to acquire a DSM resource of quantity Q1. Chinese officials, for example, are examining study recommendations that China’s Jiangsu Province can acquire an “efficiency power plant” of more than 12,000MW over a 10-year period (and save more than 600,000 tons of carbon dioxide annually) by using utility-implemented SBC funds.

So how is utility DSM resource acquisition to be treated under the CDM? The CDM Executive Board decided at its 22nd session (in November 2005) to exempt national and sectoral policies that give comparative advantage to less emissions-intensive technologies (including pub-

lic subsidies to finance DSM programmes), if the policies were implemented after 11 November 2001.

However, the Executive Board has yet to articulate clearly how additionality issues in the context of SBC-funded DSM PoA will be addressed. There are two basic options to address additionality under the CDM for countries with DSM programmes already in place, consistent with the board’s prior decision:

- declare all DSM resource acquisition from DSM programmes established after November 2001 to be additional; or
- limit CDM crediting to only those DSM resources acquired above the level that the available SBC funding would achieve. DSM experts have for years advocated SBC-funded policy implementation on the rationale that it simply levels the playing field for DSM resources to compete with traditional supply-side utility resources – rather than providing a comparative advantage. From the latter perspective, eligibility under the CDM might start at price P1 and with the additional acquisition of DSM resources – made possible by additional CDM investment (P2 – P1) – defined as the difference in energy savings Q2 – Q1.

For countries that have not yet implemented DSM resource acquisition policies, their adoption should be encouraged under the CDM. This could be achieved by allowing full crediting of DSM resource acquisition, either indefinitely or for some predefined transitional period (after which the incremental resource approach would be applied). Appropriate exemptions could be made for lower per capita income countries.

It is important to facilitate carbon finance for energy efficiency investment and equally crucial that CDM credit markets value only additional emission reductions that would otherwise not have taken place. The optimal policy solution is worthy of further (and expeditious) discussion. The present lack of clarity creates a disincentive for countries to act on DSM policy and implementation, generating significant lost opportunities in terms of cost-effective energy savings and greenhouse gas emission reductions. Time is of the essence. ■

Anne Arquit Niederberger is Hoboken, New Jersey-based director of independent consultancy Policy Solutions. Terry Fry is a senior vice president in the energy and carbon management division of consultancy Nexant. E-mails: policy@optonline.net, tmfry@nexant.com