

# Market failure

## Why the Clean Development Mechanism won't promote clean development

November 2004

### Introduction

As discussions on the second commitment period of the Kyoto Protocol gather pace the question of whether the Clean Development Mechanism (CDM) should be continued beyond 2012 and in what form is being addressed. Many governments and businesses are already expressing disappointment with the CDM, declaring it “cumbersome and unrewarding”, and “tangled in red tape”<sup>1</sup>. More worrying is that the CDM is failing in its mandate to promote sustainable development, most notably by not financing projects that help in the long-term transition of developing country energy sectors towards renewable technologies. Various modifications have been proposed, from restricting project eligibility through to making the CDM a sectoral based mechanism. Yet the problem is fundamental and stems from the CDM's structure as a project-based market mechanism in which the search for least-cost carbon credits is the paramount consideration. This sidelines projects like renewables by not rewarding the multiple benefits they provide. Three years after the Marrakech Accords kick-started the CDM<sup>2</sup>, it has become clear that the CDM's first mandate to help reduce Kyoto compliance costs is all but making impossible the fulfillment of its second mandate to promote sustainable development. A new way is needed.

### The CDM – current status

The question of whether the CDM is promoting sustainable development can be framed primarily in terms of whether it is promoting renewables in developing countries and thus assisting in the transition away from fossil fuels. The evidence to date, however, is that most industrialised country governments and corporations are using the CDM merely to reduce the costs of complying with their Kyoto targets and as such are searching for projects that deliver large volumes of cheap credits. These are most commonly projects that capture or destroy gases with high global warming potentials like methane, nitrous oxide (N<sub>2</sub>O) and hydrofluorocarbons (such as HFC-23) at existing facilities. Yet these projects merely shift the location at which emissions reductions are made through the Kyoto Protocol without delivering additional sustainable development benefits to host countries and do not help catalyse fundamental shifts in energy production and use<sup>3</sup>. A recent OECD overview of the CDM summarised the emerging trend:

*‘a large and rapidly growing portion of the CDM project portfolio has few direct environmental, economic or social effects other than GHG mitigation, and produces few outputs other than emissions credits. These project types generally involve an incremental investment to an already-existing system in order to reduce emissions of a waste stream of GHG (e.g. F-gases or CH<sub>4</sub>) without increasing other outputs of the system.’<sup>4</sup>*

<sup>1</sup> Comments made respectively by the Secretary of the Indian Ministry for Non-conventional Energy Sources and the Chief Executive of BP, Lord Browne.

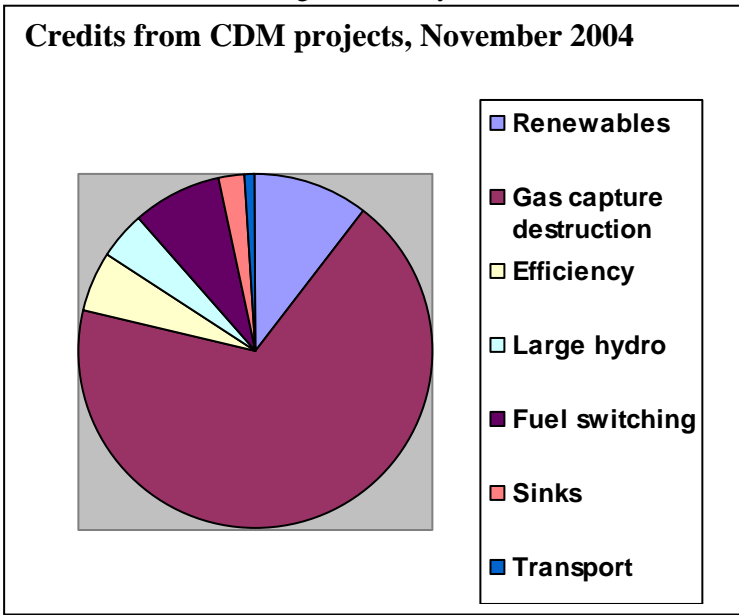
<sup>2</sup> The 2001 Marrakech Accords set out the basic rules and modalities for the CDM.

<sup>3</sup> Although landfill gas projects can result in improvements in local air quality from the reduction of noxious odors.

<sup>4</sup> Ellis, J., et al, “Taking stock of progress under the CDM”, OECD, June 2004.

The scale of these projects is huge. Of the 240 million credits being claimed up to 2012 by 111 projects at the time of writing, 40 million come from two HFC-23 projects and another 70 million from one N<sub>2</sub>O project; about 46% of all credits from these 3 projects alone. Two additional HFC-23 projects in India are awaiting successful registration of the first project in Gujarat, while a consortium of Japanese, Italian and Chinese partners are investigating a project spread across 12 HCFC-22 plants in China that would yield 60 million credits a year from 2008<sup>5</sup>. A February 2004 workshop in China put the total potential of HFC-23 projects at over 100 million credits per year<sup>6</sup>. Carbon market analyst Point Carbon has estimated that projects involving N<sub>2</sub>O and Perfluorocarbons (PFC) could yield up to 50 million credits a year<sup>7</sup>. And projects that capture methane from coal mines in China are beginning to enter the CDM approvals pipeline with huge carbon credit potential.

In comparison, renewables<sup>8</sup> projects generate about 25 million carbon credits up to 2012, roughly 10% of the total. This is less than the credits resulting from the single HFC-23 project in India and about a third of the credits that will be generated by the South Korean N<sub>2</sub>O project. While renewables projects are the most numerous project type, accounting for 41% of all projects, comparing credit volumes is a better way to judge how successfully renewables are using the CDM. The CDM involves industrialised countries buying carbon credits as a commodity so the percentage of credits indicates the proportion of total carbon investment flowing through the CDM to particular technologies. While in some cases renewables projects attract incrementally higher prices – the Dutch, for example, offer slightly more for credits from renewables projects – it is still the case that they will receive a small amount of the total spent on carbon credit purchases by industrialised countries.



Furthermore, while renewables projects are numerous now, if additionality testing is credibly applied their numbers will decline substantially<sup>9</sup>. Significantly, none of the remaining<sup>10</sup> renewables projects being developed under the Dutch Cerupt program have demonstrated additionality. The first Cerupt renewables project to seek approval - the Suzlon wind farm in India – was withdrawn in May 2004 because it was clearly a business as usual project<sup>11</sup>. Other

<sup>5</sup> Schwank, Othmar, “Concerns about CDM projects based on decomposition of HFC-23 emissions from HCFC-22 production sites”, June 2004. HFC-23 is a byproduct of HCFC-22 production.

<sup>6</sup> Ibid.

<sup>7</sup> [https://pointcarbon.com/article.php?articleID=4028&categoryID=147&PHPSESSID=2ca1a6441528ad0abab96a2ff3fd44ad&no\\_redirect=1](https://pointcarbon.com/article.php?articleID=4028&categoryID=147&PHPSESSID=2ca1a6441528ad0abab96a2ff3fd44ad&no_redirect=1)

<sup>8</sup> Renewables only includes hydro projects below 10MW. However, even if all 13 CDM hydro projects above this limit (which we categorise as large hydro) were included it would only increase the total carbon credits to 15% of the total. Also note that some projects have different project components which we count separately when comparing technologies. Thus, the 111 projects contain 128 components, of which 52 are renewables.

<sup>9</sup> Although this is also true of other project types, particularly large hydro and avoided fuel switching. See the publications section of [www.cdmwatch.org](http://www.cdmwatch.org) for more information on avoided fuel switching projects.

<sup>10</sup> There were 10 but three have either been rejected or dropped out.

<sup>11</sup> To see submissions on Suzlon go to [www.cdmwatch.org](http://www.cdmwatch.org).

high-volume renewables projects are also of questionable additionality. In contrast, the large non-CO<sub>2</sub> projects, and indeed most of the smaller ones, seem to be indisputably additional<sup>12</sup>.

It is also clear that many of the renewables projects are intended to “green” portfolios that rely on less attractive technologies for the majority of their credits. The World Bank’s Prototype Carbon Fund (PCF) – the biggest fund developing CDM projects - has 11 renewables projects in its portfolio<sup>13</sup>. Yet they will only generate about 6.5 million credits by 2012, compared to 10 million from a single coal-bed methane project in the same timeframe<sup>14</sup> and 6 million from the controversial Plantar industrial plantations project. The World Bank recently noted of the CDM that the “*The current distribution of projects may not be representative of the mature CDM market*”<sup>15</sup>. In future, the Bank suggests that participants may concentrate on “proven” project types that are cost-effective and have an approved methodology, citing as an example the concentration on landfill gas projects by Japanese corporations. The steady increase in such projects suggests this is correct, and at the time of writing landfill gas projects alone were claiming more carbon credits than all renewables projects combined up to 2012<sup>16</sup>.

Underlining the failure of the CDM to direct substantial new financial resources to renewables are recent calculations by WWF which show that the amount of financing that the CDM will mobilise is a fraction of not only existing investment and Overseas Development Assistance (ODA) flows, but of Global Environment Facility (GEF) financing<sup>17</sup>. WWF estimates that the CDM will result in US\$124 million per year for renewables, including not just the carbon credit revenues but the additional value of leveraged investment, which is estimated to be 6 to 8 times the revenues from carbon credit sales. This represents less than 0.5% of the annual renewables market in developing countries if current trends continue and less than half what is provided by the GEF.

Funding source	Amount US\$/Year <sup>1</sup>
Renewables investment in developing countries, 2005-2010. Annual average <sup>1</sup>	3,000,000,000
ODA renewables, 1989-99. Annual average <sup>1</sup>	986,000,000
GEF including leveraged investment <sup>1</sup>	295,000,000
Renewables CDM including carbon credits and leveraged investment up to 2012 <sup>1</sup>	124,000,000
GEF renewable energy expenditure, 2002 <sup>1</sup>	59,000,000
Carbon credits from CDM for renewable energy up to 2012 <sup>1</sup>	15,000,000

Table from Salter, L., “A clean energy future? The role of the CDM in promoting renewable energy in developing countries”, July 2004.

## A prophecy fulfilled?

The problems besetting renewables can hardly be seen as unexpected. The experience of renewables in liberalised energy markets has not been positive<sup>18</sup>, and it can come as no real surprise that they have not flourished in a market mechanism like the CDM. Indeed, alongside

<sup>12</sup> At the time of writing, however, the methodology for HFC-23 projects is under review and the first HFC-23 project to seek registration has been delayed by a request for review by three Executive Board members on a number of grounds. If these reviews return negative findings it will obviously affect our analysis.

<sup>13</sup> The electricity generation component of the Durban landfill project in South Africa is included.

<sup>14</sup> Email from World Bank Carbon Finance Helpdesk to CDM Watch, 20.7.04.

<sup>15</sup> Haites, E., for the World Bank Carbon Finance Business Unit, “Estimating the Market Potential for the CDM: review of models and lessons learned”, June 2004.

<sup>16</sup> 15 landfill gas projects are claiming 28 million credits; 52 renewables projects are claiming 25.

<sup>17</sup> Salter, L., “A clean energy future? The role of the CDM in promoting renewable energy in developing countries”, July 2004.

<sup>18</sup> A thematic paper for the Bonn renewables conference notes that “*privatising markets has made finance RE [renewables] more difficult*”; Sonntag-O’Brien, V., and Usher, E., “Mobilising finance for renewable energies”, June 2004.

the early hype that accompanied the CDM's birth were more sober analyses of how renewables would fare under the new mechanism. While the World Bank was promising in 2000 that its newly minted PCF would prioritise renewables, its own figures showed that carbon credits would only improve the project IRR for renewables by about 1 to 2 percentage points. Only months after the 2001 Marrakech Accords that finalised the CDM's rules Ecofys examined the opportunities for renewables and concluded: "*Various studies indicate a limited role for renewable energy projects under the Kyoto Mechanisms*". Moreover, they predicted that "*Kyoto Mechanisms dominated by least-cost approaches only would seriously limit the scope for renewable energy projects*"<sup>19</sup>, although noting a range of other influencing variables. NGOs warned that without rules designed to promote renewables projects in the CDM they would likely be sidelined by large volume projects and promoted a "positive list" approach that would restrict eligible project types. Notably, the above analyses were conducted at a time when the potential credit volumes from HFC-23 projects were not widely recognised.

### What are the problems?

Fundamentally, the reason that the CDM is not promoting renewables projects is that despite the rhetorical trimmings the CDM is a market, not a development fund nor a renewables promotion mechanism. Its aim is to provide tradable emission reduction credits at the lowest cost in a limited timeframe, primarily up to 2012. Its aim is not to direct funding to projects that provide the greatest environmental and social benefit or that help direct a developing country down a sustainable development path in the long term. An increasingly frequent complaint about the CDM, not just in the NGO community<sup>20</sup>, is that the CDM is not "working" in that it is not driving sustainable development and not funding renewables. But the real problem is conversely that it is working perfectly in doing what a market-based mechanism is designed to do: discover and direct funding to projects that will produce the maximum volume of carbon credits for every dollar invested. The problem for renewables is that they require more investment to produce a carbon credit than most other available options.

While the CDM is *rhetorically* mandated to assist in achieving sustainable development and this should benefit renewables, no part of the CDM's architecture specifically monetises those benefits and as such they play a very limited role, if at all, in directing investment. NGOs have attempted to address the problem by developing the renewables-focussed Gold Standard that substitutes a political incentive for a commercial one, but this has so far been unsuccessful. For all the rhetoric about sustainable development, projects generate revenues through the CDM by reducing or storing a quantity of greenhouse gas emissions which are commodified as carbon credits and sold. The various co-benefits that these projects may create are not commodified and do not directly produce revenues through the CDM. Arguably, the CDM's project-based structure makes it almost impossible for the broader sectoral or national benefits provided by a renewables project to be rewarded because they are so difficult to quantify on a project level. Judging how many tonnes of a specified greenhouse gas have been reduced or stored by an individual project in a delineated project boundary as compared to a theorised business as usual scenario is complex enough. Yet quantifying and commodifying the additional benefits that a renewables project provides outside that boundary would be extremely difficult and prohibitively expensive for each individual project<sup>21</sup>.

Perversely, and perhaps more worryingly, the project-based structure also fails to penalise negative impacts outside the project boundary and can reward projects that, while delivering cheap carbon credits, undermine the broader goal of climate protection and sustainable

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<sup>19</sup> Ecofys, "Opportunities for renewables under the Kyoto Mechanisms", February 2002.

<sup>20</sup> Japan's MITI made this point in its draft paper on a future framework for the Kyoto Protocol: [http://www.meti.go.jp/english/policy/c\\_main\\_environment.html#2](http://www.meti.go.jp/english/policy/c_main_environment.html#2).

<sup>21</sup> Some developers do of course assert broader benefits.

development. At the time of writing an offshore oil production facility in Vietnam and two coal mines in China are claiming over 17 million carbon credits in the first Kyoto commitment period (compared to 25 million from all renewables projects combined) for capturing and using the methane released as part of their operations. While within the CDM project boundary this methane will arguably displace more carbon-intensive fuels and thus reduce greenhouse gas emissions, it is unavoidably the case that the revenues realised from the sale of carbon credits will directly subsidise coal and oil extraction in China and Vietnam - surely an outcome that is inimicable to the overall aim of not only the CDM but the Kyoto Protocol. A mechanism designed to promote sustainable development and climate protection should be reducing the number of coal and oil projects, not providing existing projects with a new revenue stream, and in the process diverting financing from renewables projects.

## Fundamentals

The dominance of large non-CO<sub>2</sub> projects in the market- and project-based CDM is inevitable. They involve relatively inexpensive, quick and common-practise additions to existing facilities which in return generate huge volumes of carbon credits because of the global warming potential of the gases they capture. HFC-23, for example, has a global warming potential of 11,700, while methane equals 21. That means that for each tonne of HFC-23 reduced about 11,700 carbon credits are created<sup>22</sup> at a cost of about US\$0.34 to \$0.51 per credit<sup>23</sup>. The carbon revenues from these projects can pay off the initial investment in less than a year. Such a short payback time will always be an attractive feature for investors, even more so given the uncertainty about the value of carbon credits beyond the end of the Kyoto Protocol's first commitment period in 2012.

In contrast, renewables projects have a financial profile that is the exact opposite of that favoured by the CDM. They are greenfield developments which are capital intensive, providing low rates of return and generating relatively small volumes of carbon credits. Given the current low price for credits and the fact that renewables only displace carbon dioxide emissions (with a global warming potential of 1) the revenues from the sale of carbon credits are usually small and do not significantly improve the project's Internal Rate of Return (IRR). Moreover, the prevalence of a commodity model for the purchase of the carbon credits - in which the credits are bought as they are delivered over the 10 or 21 year crediting period - does not directly address the major financial barrier for renewables projects which is their high upfront costs. The World Bank estimates that 95% of all existing transactions involving CDM and JI projects follow a commodity model<sup>24</sup>, and this trend seems set to continue. Yet early optimism about how the CDM could be used for renewables assumed that an investment model would be followed whereby debt or equity was provided in return for carbon credits, a structure which would have delivered the extra revenues where renewables projects need them.

Experience is also showing that most banks, which are already wary of developing country renewables projects, do not currently see carbon credits as enhancing a renewables project's appeal and are reluctant to lend against a carbon credit purchase agreement. Indeed, as Ellis et al observed in their CDM stocktake, if a renewable project's viability is dependent on carbon credits it may actually be adjudged even more risky<sup>25</sup>. The Green IPP network delivered a blunt assessment of the value of a carbon revenue stream in attracting financing for their projects:

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<sup>22</sup> There are emissions resulting from the process of decomposing the HFC-23 which are subtracted from the total credit amount. In the case of the Gujarat, India, project, for example, leakage was estimated at 1,224 tonnes of CO<sub>2</sub>, which is equivalent to 1,224 credits.

<sup>23</sup> Submission to the CDM Executive Board by Öko-Institute on Approved baseline and monitoring methodology AM0001, 7.10.04; <http://cdm.unfccc.int>.

<sup>24</sup> World Bank, State and Trends of the Carbon Market 2004, [www.carbonfinance.org](http://www.carbonfinance.org).

<sup>25</sup> Ellis, J., et al, "Taking stock of progress under the CDM", OECD, June 2004.

*“Banks, however, do not count the cashflow from the sale of emission reductions in evaluating few projects that are up for CDM evaluation. Most investors are also not counting the potential for revenue from the sale of carbon credits. Yet at the moment banks and equity investors are generally not willing to place value on a carbon credit purchase agreement”<sup>26</sup>.*

The hesitation of investors and financiers is caused by factors such as the lack of experience of carbon finance, the CDM’s unwieldy and time-consuming approvals process and the uncertainty about the value of carbon credits after the first Kyoto commitment period. Yet while this is a problem for all projects, large high-volume projects which can pay off their CDM investment costs quickly are less vulnerable.

Smaller credit volumes mean that renewables also suffer disproportionately from the transaction costs associated with approving a CDM project and monitoring its ongoing reduction of emissions. Transaction costs are generally similar regardless of project size. Thus, for projects with smaller credit volumes they are significant while for large projects they are often negligible. While a “small-scale” CDM project category exists to streamline the process for renewables and reduce these costs, they are still a disproportionately greater burden than for large projects. Notably, the 6 small-scale renewables projects being developed by the Finnish Government are relying on Finland paying for transaction costs<sup>27</sup>. Three of them are yielding such small volumes of credits - between 9 -20,000 over the 10 year crediting period – that it seems likely that the transaction costs will exceed the value of the carbon credits<sup>28</sup>.

### **Boutique credits**

Some buyers will undoubtedly be prepared to reward projects with additional sustainable development benefits by paying a premium for their credits, mainly for public relations reasons. But it is unlikely that “boutique” CDM credits will be more than a fraction of overall investment and credit volumes. The World Bank’s Community Development Carbon Fund (CDCF), for example, expects to generate about 7 million credits in total with about 60-70% available by 2012<sup>29</sup>. This is about half the 10 million credits that the PCF’s coal bed methane project will produce in that timeframe<sup>30</sup>. Early experience with “high quality” funds also shows that even with a higher price and political incentive renewables don’t necessarily come out on top. The first project unveiled by the CDCF – which pays nearly twice what the PCF pays for credits - is yet another landfill gas project. The next is a large hydro project of questionable additionality, meaning that the credits it generates are not only not high quality but likely fake<sup>31</sup>. And not only will these funds be marginal in terms of credit generation, but their existence can be seen as a tacit admission that left to itself the market will not finance high quality projects.

### **Race to the bottom**

Ultimately, the primary focus of the CDM on producing a tradable commodity in a specific project boundary at the lowest cost frustrates environmentally superior outcomes by directing investors and buyers away from projects with the most overall benefits. Buyers and investors favour projects that require the least investment, least technology transfer and that provide the least sustainable development co-benefits as these produce the cheapest credits. Interestingly,

<sup>26</sup> [http://www.asem-greenippnetwork.net/dsp\\_page.cfm?view=page&select=142](http://www.asem-greenippnetwork.net/dsp_page.cfm?view=page&select=142).

<sup>27</sup> Hämekoski, K., “Finnish CDM/JI Pilot Programme and experiences with the CDM”, in CDM Investment Newsletter, nr1/2004.

<sup>28</sup> The World Bank estimate transaction costs for small-scale projects to be US\$105,000. A project generating 9,000 credits at, say, US\$5/tonne will generate revenues of about US\$40,000. World Bank figure from Haites, E., for the World Bank Carbon Finance Business Unit, “Estimating the Market Potential for the CDM: review of models and lessons learned”, June 2004. CDM Watch wrote to the Finnish Government asking for an explanation of this but the question was not answered.

<sup>29</sup> Information contained in a response from the World Bank Carbon Finance Helpdesk, 4.11.04.

<sup>30</sup> Information contained in a response from the World Bank Carbon Finance Helpdesk, 21.7.04.

<sup>31</sup> The project is the La Esperanza project. The submission by International Rivers Network questioning the additionality of this project is at: <http://cdm.unfccc.int/Projects/Validation/view.html?ProjectId=383139767563127291&OE=DNV-CUK>.

an analysis of US led gasoline and acid rain trading programs makes an observation about their functioning which is directly applicable to the CDM:

*“Because trading focuses solely on reducing a single pollutant by an exact date and a precise amount at least cost, techniques and practises that deliver multiple benefits – eg. new ways of energy conversion, as well as conservation, and renewable forms of energy – are frozen out of the market”<sup>32</sup>.*

If the CDM continues to function as a project-based market mechanism designed to deliver cheap carbon credits then sustainable development in the CDM will only ever be a rhetorical flourish, and renewables will be frozen out.

Lastly, while this paper has focussed on renewables, the CDM has also proved unsuccessful at promoting projects that address energy efficiency and transport, both of which are critical to achieving sustainable development in the South and combating climate change globally. The one transport project seeking approval recently had its baseline methodology rejected, leaving it in doubt. And while the World Bank estimates that the potential for efficiency projects is significant, they note in a recent paper that: *“the limited number of projects to date suggests they face barriers not fully reflected in analyses of the achievable potential”<sup>33</sup>*. Currently there are 14 CDM efficiency projects, yet they account for only 5% of all credits. The combined total of credits being generated up to 2012 by all 67 renewables, efficiency and transport projects currently in the CDM – which represents 60% of all projects - is about 40 million, compared to 70 million being generated by a single N<sub>2</sub>O project.

### **CDM on the margins**

Any discussion about the future of the CDM must also address the fact that it, and the carbon market itself, exist on the margins of huge financial flows to carbon-intensive energy projects in the South. Globally, North-South flows of investment and governmental support through Export Credit Agencies (ECAs) and International Financial Institutions (IFIs) overwhelmingly favour fossil fuels, locking them into developing country energy systems to a degree that makes the new financial flows achieved by the CDM and emerging carbon market largely irrelevant. Strikingly, some of the most prominent participants in the CDM like BP, Statoil, Mitsubishi and the World Bank are simultaneously engaged in fossil fuel projects that directly stymie the stated intent of their CDM projects. The World Bank is currently the biggest single player in the CDM and one of the most enthusiastic promoters of a carbon market as a means of addressing climate change. Yet the US\$410 million that it manages through its six carbon funds (which invest in CDM and JI projects) is less than the US\$500-600 million it provides annually to fossil fuel extraction projects, and about one sixth of its total 2003 financing for fossil fuel related projects, estimated to be US\$2.5 billion<sup>34</sup>. And while the Bank continues to emit rhetoric about the carbon market and the need to address climate change, it recently rejected a recommendation from its own Extractive Industries Review to phase out financing of coal and oil extraction projects by 2008 and to utilise its lending to *“aggressively promot[e] the transition to renewable energy”*.

More broadly, Point Carbon has estimated that the value of contracts in the global carbon market could reach US\$10 billion a year by 2008. Yet annual subsidies to fossil fuels are

<sup>32</sup> Moore, C., “Air pollution trading – marketing failure”; [www.acidrain.org/AN2-04.htm](http://www.acidrain.org/AN2-04.htm).

<sup>33</sup> Haites, E., for the World Bank Carbon Finance Business Unit, “Estimating the Market Potential for the CDM: review of models and lessons learned”, June 2004.

<sup>34</sup> Figure for extraction projects from <http://www.planetark.com/dailynewsstory.cfm?newsid=26412&newsdate=05-Aug-2004>; figure for total 2003 lending from [http://www.seen.org/pages/reports/WB\\_brief\\_0903.shtml](http://www.seen.org/pages/reports/WB_brief_0903.shtml). The comparison is worse when the non-additionality of some of the Bank’s carbon market projects is factored in, as they will not produce real greenhouse gas emission reductions, whereas all of the Bank’s fossil fuel project spending is additional. The Bank’s mandate limits it to projects that would not have happened without its involvement.

estimated at up to US\$235 billion, of which \$162 billion is in non-OECD countries<sup>35</sup>. If the amount of new money for climate-friendly technologies mobilised by the global carbon market continues to be less than 0.5% of annual fossil fuel subsidies then it will exist merely to enrich traders and consultants.

### What is to be done?

There are obviously variables which could improve the usefulness of the CDM for all projects, including renewables. Tougher reduction targets in the second Kyoto commitment period combined with certainty about the status of credits after 2012 will increase the price of credits and make financial institutions more willing to lend against credit purchase agreements. And as the low-hanging fruit are plucked from the vine, more expensive projects will be in a better position to attract investment. But if the CDM continues to function as a market, in which least-cost considerations dominate, then it will continue to be technology neutral and if there are cheaper options than renewables projects they will be preferred. Regardless of the future price of carbon the market will seek out the cheapest credits, not the best environmental outcome.

Even if one accepts the argument that future market conditions may produce more renewables projects through the CDM the delay that this implies is unacceptable and inconsistent with the many renewable energy action plans which emphasise the need for immediate action. In 2002, for example, the World Summit on Sustainable Development (WSSD) adopted a call in its final report “*with a sense of urgency, substantially (to) increase the global share of renewable energy sources*”<sup>36</sup>. Given this, and the overwhelming evidence of a changing climate, are we really to wait patiently for the CDM to work its way through the low cost options, hoping that no additional large volume project types don’t emerge unexpectedly as HFC-23 projects did?

If the aim of a future CDM-type mechanism is to continue finding cheap carbon credits for countries with reduction targets then perhaps few changes are needed beyond simplifying the project approval process. But the pretence that it will do more than that must stop. If Parties to the Climate Convention want a mechanism within the Kyoto framework that promotes sustainable development in the South then it must be a targeted technology transfer mechanism, not a technology neutral commodities market<sup>37</sup>. Its point of departure must be the promotion of projects that contribute to sustainable development, such as renewables, with the rules and modalities being designed to deliver this outcome. More important still is to address the context in which this future mechanism will function. If it operates within the current policy perversity<sup>38</sup> in which the Kyoto Protocol and CDM exist alongside massive North-South financial flows to fossil fuels then it will fail. A real solution to climate change and sustainable development must divert these flows, not create carbon markets alongside them.

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<sup>35</sup> Pershing, J., and Mackenzie, J., “Removing Subsidies: levelling the playing field for renewable energy technologies”; a Thematic Background Paper prepared for the International Conference for Renewable Energies”, June 2004.

<sup>36</sup> <http://www.johannesburgsummit.org/>.

<sup>37</sup> A range of action plans for the promotion of renewables in the South exist from the G8’s through to Greenpeace’s. A good summary of them is in the recent report from the New Economics Foundation: “The price of power”, [www.neweconomics.org](http://www.neweconomics.org).

<sup>38</sup> The phrase was coined in a May 2000 paper by WRI “The climate of export credit agencies”, in which they note: “Governments pursue one set of objectives through climate negotiations, while their finance and trade arms ignore the global environmental implications of their activities”, [www.wri.org](http://www.wri.org).