

## TRANSACTION COSTS AND THE CLEAN DEVELOPMENT MECHANISM

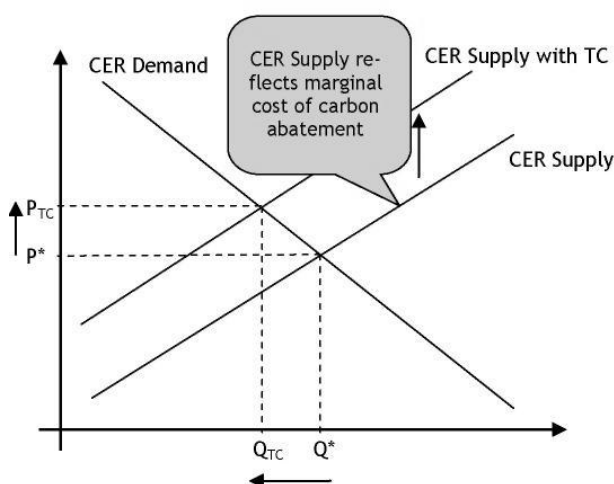
*Evgenij Kovalenko*  
Sumy State University, Sumy, Ukraine

On February 16, 2005, the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) came into effect with the support of 141 ratifying Parties. The Protocol seeks to reduce the quantity of anthropogenic greenhouse gas (GHG) emissions into the atmosphere by setting emissions reductions targets on 1990 baselines for all Parties between 2008 and 2012. The Protocol provides the participating Parties a significant degree of flexibility in meeting the reduction targets through the International Emissions Trading (IET), the *Clean Development Mechanism* (CDM) and Joint Implementation (JI).

CDM and the other flexibility mechanisms incur two categories of costs: those that can be attributed to the technical process of reducing GHG emissions, and those that do not contribute to GHG abatement directly, but are needed to establish project validity, to receive credit for GHGs removed, and to execute trades. It is this second category of costs that is also known as *transaction costs*. This transaction costs play a key role in the success or failure of emissions trading systems. Based on existing definitions in the literature, we define transaction costs in the context of this analysis as the *costs of producing or trading Certified Emissions Reductions* (CERs) that are not directly attributed to the technical process of reducing GHG emissions, and which are specific to the CDM process.

The literature and case studies of CDM projects reveal that total transaction costs can range between US\$20,000 up to US\$1 million, depending on the size and timeframe of the project (UNDP, 2004; CI, 2005). High transaction costs relative to total costs reduce the feasibility, value, and utilization of CDM projects (UNDP, 2003). As shown in *Figure 1*, transaction costs increase the cost of abatement and reduce the amount of CERs traded.

In order for a project to be worthwhile, the value of the CER must be significantly higher than the transaction costs incurred in its creation. High transaction costs increase investor wariness with respect to small-scale projects that yield low carbon emissions reductions. *Table 1* shows that transaction costs vary with project type and constitute a much larger portion of the overall cost within small-scale projects when compared to larger scale CDM initiatives (Michaelowa, 2003).



**Figure 1 Impacts of Transaction Costs on price and quantity of CERs**

The UNDP (2003) predicts that the implementation costs of CDM projects could decrease over time. This conjecture is presaged on learning-by-doing and general improvements in technology and infrastructures. Since the first reduction targets are due by 2012, there is increasing concern about reducing transaction costs in the early stages in order to generate a more stable and secure market, which can in turn generate sufficient reduction projects in the first crediting period. More importantly, certain transaction costs will have to be addressed directly in order to reduce them. It is therefore in the interest of Annex I and host countries to identify the most significant transaction costs and consider strategies to reduce them where possible.

**Table 1: Transaction Costs by Project Scale and Type (adapted from Michaelowa, 2003)**

| Size       | Project Type  | €/tCO <sub>2</sub> e |
|------------|---|----------------------|
| Very large | Gas power plants, geothermal, landfill methane capture, afforestation | 0.1                  |
| Large      | Wind, solar, industry energy efficiency                               | 0.3-1                |
| Small      | Boiler conversion, hydroelectric                                      | 10                   |
| Mini       | Housing energy efficiency, hydroelectric                              | 100                  |
| Micro      | Photovoltaic  | 1000                 |

