Abstract

In Brazil, two policy instruments have been used recently to promote investments in renewable energy: the Clean Development Mechanism (CDM), an international market based instrument to reduce emissions of greenhouse gases, and PROINFA, a national policy based on feed in tariffs. However, PROINFA legislation has not created incentives for the combination of both policies, and they are seen by electricity generators as rival instruments. As a consequence, only a few joint PROINFA-CDM wind projects were developed so far. This study aims for contrasting and analyzing the financial attractiveness of these two policy instruments in the context of investments in wind energy in Brazil. The methodology used is based on cash flow analysis and, complementary to the deterministic analysis, a sensitivity analysis and a risk analysis using Monte Carlos simulation are also performed. The study discusses in detail the value of all parameters used in the analysis, and apart of the financial feasibility study, a technical feasibility study is also performed for a real project condition in Brazil. It was found that that CDM revenue is not high enough to make a wind project feasible with current electricity price paid to energy generation, i.e. the incentives of a national renewable energy policy are necessary to make a wind energy projects feasible in Brazil. Furthermore, the conditions for the feasibility of the CDM project are presented and the potential effect of the combination of both policies in the profitability of the project and in the reduction of subsidized electricity price are estimated. Finally, the risk of relying in CDM revenue to make the project feasible is discussed. It is concluded that although CDM can be used to reduce the costs of the Brazilian renewable energy program and further promote investments in renewable energy, policies to combine the existing instruments should consider the risk that CDM adds to the project development.