



FSR Climate Annual Conference 2020

Thursday 26 November @ 10.50 - 12.40 CEST

Session on Renewable Policies

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Financing renewables in the age of falling technology costs

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ABSTRACT

Cost of renewable energies have dropped, approaching wholesale power price levels. As a result, the role of renewable energy policy design is shifting – from covering incremental costs towards facilitating risk-hedging. An analytical model of the financing structure of renewable investment projects is developed to assess this effect and used to compare different policy design choices: contracts for differences, sliding premia, fixed premia and a setting without dedicated remuneration mechanism. The expected benefit for electricity consumers from reduced risk and financing costs is approximated at the example of a 2030 scenario for Germany. Policies like sliding premia, previously evaluated as providing low-risk investment environments, provide for less risks hedging, when technology costs approach wholesale power prices. Contracts for differences provide in all scenarios the most effective hedge for investors against power prices uncertainty, enabling low-cost financing and reducing costs for consumers, while also hedging electricity consumers against high power prices.