

Green Certificate Markets, The Risk of Over-Investment, and The Role of Long-Term Contracts

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Abstract: *Several papers have recently analyzed the theory and implementation of renewable energy support schemes. The case for a renewable electricity standard (RES) in tandem with a tradeable green certificate (TGC) market has been largely based on efficiency considerations. Case study evidence is inconclusive, in part due to the short track record, but is not generally favorable. Here we reconsider the efficiency case, both static and dynamic, in light of special characteristics of renewable energy projects. We find that when exclusively high fixed-cost technologies comprise the eligible technology pool, the equilibrium form of contracting erases the principal efficiency advantages claimed for certificate markets. When low fixed-cost technologies compete alongside high fixed-cost technologies in the certificate market, we show that it is likely that long-term contracts will disappear, and the technological choice will be inefficiently shifted away from the high fixed-cost technology. We consider evidence from three well developed certificate schemes -- in Britain, Sweden, and Texas -- and find that it is broadly consistent with the theory here.*