

Designing electricity transmission auctions: an introduction to the relevant literature

EPRG Working Paper 1221

Cambridge Working Paper in Economics 1245

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Abstract The UK has ambitious plans for exploiting offshore wind for electricity production in order to meet its challenging target under the EU Renewable Energy Directive. This could involve investing up to £20bn in transmission assets to bring electricity ashore. An investment of this magnitude calls for an efficient mechanism to determine which projects get financed and ensuring that only those projects that are selected can be delivered at least costs to consumers. The electricity regulator's ongoing tender auctions are likely to work well for point-to-point transmission and for networks already built. However, it is still unclear what kinds of models could be considered for complex meshed offshore (and onshore) networks where licences are granted not only to own and operate, but also to build a transmission network. This paper provides an extensive survey on the current theory and experience of auctions. The main objective is to discuss the design of auctions for transmission assets in which bidding for packages of transmission assets is a possibility.

Keywords Energy Transmission; Auction Design; Combinatorial Auctions; Package Bidding

JEL Classification D44, L94

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Publication October, 2012
Financial Support EPSRC, Autonomic Power Grand Challenge