

# Competition in Markets for Ancillary Services? The implications of rising distributed generation

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## Abstract

Ancillary services are electricity products which include balancing energy, frequency regulation, voltage support, constraint management and reserves. Traditionally they have been procured by system operators from large conventional power plants, as by-products of the production of energy. This paper discusses the use of markets to procure ancillary services in the face of potentially higher demand for them, caused by rising amounts of intermittent renewable generation. We discuss: the nature of markets for ancillary services; what we really mean by ancillary services; how they are impacted by the rise of distributed generation; how they are currently procured; how they relate to the rest of the electricity system; the current state of evidence on ancillary services markets; whether these markets ever be as competitive as conventional wholesale energy markets, and offer some conclusions.

## Keywords

ancillary services, balancing energy, frequency regulation, reactive power, constraint management, reserves.

## JEL Classification

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