

Islanded Operation of Distribution Networks

Project Title: Commercial, Technical & Modelling

Energy Type: Networks

Client: DTI for Electricity Networks Steering Group

Location: UK

Project Size: All distribution networks in UK

Project Scope: The report details the work undertaken for the investigation into the technical, commercial and regulatory benefits and risks from the operation of distributed generation (DG) to power an islanded section of distribution network.

This work was commissioned by the DTI on behalf of Work Stream 5 (WS5) of the Technical Steering Group (TSG) to the Distributed Generation Co-ordinating Group. The end objective of the study is to provide a targeted benefit and risk analysis on DG islanding, based on case studies of actual network configurations, by examining the required regulatory, commercial and technical changes to allow islanding to occur.

The aims of Phase 1 were to:

- Review existing literature on the topic;
- Consult with selected Distribution Network Operators (DNOs), Ofgem and others to obtain their views on islanding;
- Establish and define commercial and technical criteria and drivers;
- Define the methodology and scope for the Phase 2 work, to submit a report and meet with TSG Work Streams and obtain approval of methodology.

The aims of Phase 2 of the study were to

- Meet with the DNOs to identify and agree two case studies for consideration;
- Model the case studies in order to quantify the technical and commercial risks, benefits and costs of islanding;
- Produce a case implementation plan for each case study;
- Produce the final report.

Key Achievements: Power systems modeling of the voltage and frequency dynamics of islanding distribution networks with connected generation.

Clearly identifying the technical issues and associated commercial, contractual and regulatory aspects of islanded operation.

Completion Date: Project commissioned December 2006

Further Information: Electricity Networks Strategy Group web site