Energy Science and Technology

Date revised: 22 March 2021

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Date Coverage
1974 – 2016

Geographic Coverage
International

Subject Coverage
- Biology
- Biomedicine
- Chemistry
- Coal, Gas, Oil, Hydroelectricity
- Conservation Technology
- Direct Energy Conversion
- Energy Policy
- Engineering
- Environmental Science
- Geosciences, Geothermal Energy
- Hazardous Waste Management
- Human Genome Project Methodology
- Isotope/Radiation Technology
- Materials Handling
- Metals and Ceramics
- Nuclear and Thermonuclear Power
- Renewable Energy Sources (Solar, Wind, Biomass, Tidal Energy)
- Physics
- Synthetic Fuels

Update Frequency
Closed

Document Types
- Reports
- Books and Monographs
- Conferences, Symposia, Meetings
- Journal Articles
- Theses and Dissertations
- Patents
- Standards

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Active Power Controls from Wind Power: Bridging the Gaps
National Renewable Energy Laboratory (NREL), Golden, CO; Ela, E; Gevorgian, V; Fleming, P; Zhang, Y C; et al. Active Power Controls from Wind Power: Bridging the Gaps. (Jan 1, 2014).

Abstract (summary) Translate
This paper details a comprehensive study undertaken by the National Renewable Energy Laboratory, Electric Power Research Institute, and the University of Colorado to understand how the contribution of wind power providing active power control (APC) can benefit the total power system economics, increase revenue streams, improve the reliability and security of the power system, and provide superior and efficient response while reducing any structural and loading impacts that may reduce the life of the wind turbines or its components. The study includes power system simulations, control simulations, and actual field tests using turbines at NREL’s National Wind Technology Center (NWTC). The study focuses on synthetic inertial control, primary frequency control, and automatic generation control, and analyzes timeframes ranging from milliseconds to minutes to the lifetime of wind turbines, locational scope ranging from components of turbines to large wind plants to entire synchronous interconnections, and additional topics ranging from economics to power system engineering to control design.

Indexing (details) Cite
Subject
ACTIVE POWER CONTROL;
SYNTHETIC INERTIAL CONTROL;
PRIMARY FREQUENCY CONTROL;
AUTOMATIC GENERATION CONTROL;
NATIONAL RENEWABLE ENERGY LABORATORY;
NREL;
NATIONAL WIND TECHNOLOGY CENTER;
NWTC;
Wind Energy
Classification
17: WIND ENERGY
Title
Active Power Controls from Wind Power: Bridging the Gaps
Author
Ela, E; Gevorgian, V; Fleming, P; Zhang, Y C; Singh, M; Muljadi, E;
Scholbrock, A; Aho, J; Buckspan, A; Pao, L; Singhvi, V; Tuohey, A;
Pourbeik, P; Brooks, D; Bhitt, N
Corporate/institutional author
National Renewable Energy Laboratory (NREL), Golden, CO.
Grant
AC26-08GO28208, USDOE Office of Energy Efficiency and Renewable Energy Wind and Water Technologies Office.
Language
English
Language of abstract
ENG
Document type
Technical Report
Publication title
Active Power Controls from Wind Power: Bridging the Gaps
Pagination
154 pp
Publication type
Technical Report
Report number
NREL/TP-5000-60574
Publisher location
UNITED STATES
Notes
Medium: ED; Size: 154 pp.
Publication date
Jan 1, 2014
Date revised
2014-02-06
Source attribution
Energy Science and Technology, © Publisher specific
Accession number
1117060
Document URL
http://search.proquest.com/professional/docview/1498329377?accountid=137296
First available
2014-02-17
Updates
2014-02-17
Database
Energy Science and Technology (1974 - current)
## Search fields

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¹ A Lookup/Browse feature is available for this field in the Advanced Search dropdown or in Browse Fields.
² Click the “Field codes” hyperlink at the top right of the Advanced Search page. Click “Search syntax and field codes”, then click on “FDB command” to get a list of database names and codes that can be searched with FDB.

In addition to Search Fields, other tools available for searching are Limit Options, Browse Fields, “Narrow Results By” Limiters and Look Up Citation. Each is listed separately below. Some data can be searched using more than one tool.
Limit options
Limit options are quick and easy ways of searching certain common concepts. Check boxes are available for:

Abstract included
Short lists of choices are available for:
Source type, Document type, Language
Date limiters are available in which you can select single dates or ranges for date of publication and updated.

Browse fields
You can browse the contents of certain fields by using Look Up lists. These are particularly useful to validate spellings or the presence of specific data. Terms found in the course of browsing may be selected and automatically added to the Advanced Search form. Look Up lists are available in the fields drop-down for:

Author, Publication title, Subject, Classification

“Narrow Results by” limiters
When results of a search are presented, the results display is accompanied by a list of “Narrow results by” options shown on the right-hand panel. Click on any of these options and you will see a ranked list showing the most frequently occurring terms in your results. Click on the term to apply it to (“narrow”) your search results. Narrow Results by Limiters in Energy Science and Technology include:

Source type, Publication title, Document type, Subject, Classification, Author, Language, Publication date

Look up citation
If you need to trace a particular bibliographic reference, use the Look Up Citation feature. Find a link to this toward the top left of the Advanced Search page, or in the drop list under Advanced on any search form; click this and you will go to a page where you can enter any known details of the citation, including: Document title, Author, Publication title, ISSN, ISBN, Volume, Issue, Page, Publication date, DOI.

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