Cutululis, Nicolaos Antonio
niac@dtu.dk
Department of Wind Energy - Senior Researcher
Integration & Planning

Research outputs:

**Lifetime estimation and performance evaluation for offshore wind farms transmission cables**
Research output: Research - peer-review › Paper – Annual report year: 2019

**Using time series simulation tool for assessing the effects of variable renewable energy generation on power and energy systems**
Research output: Research - peer-review › Journal article – Annual report year: 2019

**A review on optimal dispatch methods for ReGen plants**
Han, X., Hansen, A. D., Cutululis, N. A. & Bindner, H. W. 2018
Research output: Research - peer-review › Report – Annual report year: 2018

**Control Solutions for Blackstart Capability and Islanding Operation of Offshore Wind Power Plants**
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

**Experimental validation of frequency control from offshore wind power plants in multi-terminal DC grids**
Research output: Research - peer-review › Journal article – Annual report year: 2018

**Fast Control-Oriented Dynamic Linear Model of Wind Farm Flow and Operation**
Kazda, J. & Cutululis, N. A. 2018 In : Energies. 11, 12, 3346
Research output: Research - peer-review › Journal article – Annual report year: 2018

**Guest Editorial: Coordinated Control and Protection of Offshore Wind and Combined AC/DC Grid**
Research output: Research - peer-review › Editorial – Annual report year: 2018

**Guest Editorial: Coordinated Control and Protection of Offshore Wind Power and Combined AC/DC Grid**
Research output: Research - peer-review › Journal article – Annual report year: 2018

**High dimensional dependence in power systems: A review**
Research output: Research - peer-review › Journal article – Annual report year: 2018

**Large-scale wind generation simulations: From the analysis of current installations to modelling the future**
Research output: Research - peer-review › Conference article – Annual report year: 2018
MEDOW - Multi-terminal DC Grid for Offshore Wind, Final report
Research output: Research › Report – Annual report year: 2018

Minimizing Variance in Variable Renewable Energy Generation in Northern Europe
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Mitigating Turbine Mechanical Loads Using Engineering Model Predictive Wind Farm Controller
Research output: Research - peer-review › Conference article – Annual report year: 2018

On the Architecture of Wind Turbine Control Required for Induction-based Optimal Wind Farm Control
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

On the simulation of aggregated solar PV forecast errors
Research output: Research - peer-review › Journal article – Annual report year: 2018

Simulation of transcontinental wind and solar PV generation time series
Research output: Research - peer-review › Journal article – Annual report year: 2018

Statistical Analysis of Offshore Wind and other VRE Generation to Estimate the Variability in Future Residual Load
Research output: Research - peer-review › Journal article – Annual report year: 2018

Technical Feasibility of ancillary services provided by ReGen plants
Research output: Research › Report – Annual report year: 2018

Wind power within European grid codes: Evolution, status and outlook
Research output: Research - peer-review › Journal article – Annual report year: 2018

Asymmetrical Fault Analysis at the Offshore Network of HVDC connected Wind Power Plants
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Coordinated frequency control from offshore wind power plants connected to multi terminal DC system considering wind speed variation
Research output: Research - peer-review › Journal article – Annual report year: 2017
Ultimate design load analysis of planetary gearbox bearings under extreme events
Research output: Research - peer-review › Journal article – Annual report year: 2016

A heuristic for the synthesis of credible operating states in the presence of renewable energy sources
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Connection of OWPPs to HVDC networks using VSCs and Diode Rectifiers: an Overview
Research output: Research - peer-review › Paper – Annual report year: 2016

Coordination of Ancillary Services from Offshore Wind Power Plants to AC and DC Grids
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Coordinated Fast Primary Frequency Control from Offshore Wind Power Plants in MTDC System
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Coordinated Voltage Control in Offshore HVDC Connected Cluster of Wind Power Plants
Research output: Research - peer-review › Journal article – Annual report year: 2016

Dynamic Reactive Power Control in Offshore HVDC Connected Wind Power Plants
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Framework of Multi-objective Wind Farm Controller Applicable to Real Wind Farms
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Hydropower flexibility and transmission expansion to support integration of offshore wind
Research output: Research - peer-review › Book chapter – Annual report year: 2016

Improved Frequency Control from Wind Power Plants Considering Wind Speed Variation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Modeling of the dynamics of wind to power conversion including high wind speed behavior
Research output: Research - peer-review › Journal article – Annual report year: 2015
OffshoreDC DC grids for integration of large scale wind power
Research output: Research › Report – Annual report year: 2016

Overplanting in offshore wind power plants in different regulatory regimes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Possible Improvements for Present Wind Farm Models Used in Optimal Wind Farm Controllers
Research output: Research - peer-review › Paper – Annual report year: 2016

Spatio-temporal analysis of regional PV generation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Special Section on HVDC Systems for Large Offshore Wind Power Plants
Research output: Research - peer-review › Editorial – Annual report year: 2016

Variability in large-scale wind power generation
Research output: Research - peer-review › Journal article – Annual report year: 2015

Ancillary services from renewable power plants- RePlan project perspective
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

A New Coordinated Voltage Control Scheme for Offshore AC Grid of HVDC Connected Offshore Wind Power Plants
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Design tool for offshore wind farm cluster planning
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Electromechanical Drivetrain Simulation.
Research output: Research › Ph.D. thesis – Annual report year: 2015
Economic impact analysis of the demonstrations in task-forces TF1 and TF3 - Deliverable D15.1: WP15. Economic impacts of the demonstrations, barriers towards scaling up and solutions
Research output: Research - peer-review › Report – Annual report year: 2014

Impact of Offshore Wind Power Variability on the Frequency Stability of European Power System
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Index for Wind Power Variability
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Technical and economic impact analysis of the demonstrations in task-forces TF2 - Deliverable D15.2: WP15. Economic impacts of the demonstrations, barriers towards scaling up and solutions
Research output: Research - peer-review › Report – Annual report year: 2014

Threats and opportunities on the path to change power systems from fossil fuels to renewables

Unbalanced voltage faults: the impact on structural loads of doubly fed asynchronous generator wind turbines
Research output: Research - peer-review › Journal article – Annual report year: 2013

Weather radars – the new eyes for offshore wind farms?
Research output: Research - peer-review › Journal article – Annual report year: 2013

Wind Farm Aggregation Method for Dynamic Active Power Studies
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Wind Turbine and Wind Power Plant Modelling Aspects for Power System Stability Studies
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Analysis of Variability and Uncertainty in Wind Power Forecasting: An International Comparison
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

A Novel Wind Turbine Concept Based on an Electromagnetic Coupler and the Study of Its Fault Ride-through Capability
You, R., Barahona Garzón, B., Chai, J. & Cutululis, N. A. 2013 In : Energies. 6, p. 6120-6136
Research output: Research - peer-review › Journal article – Annual report year: 2013
Assessment of the impact of frequency support on DFIG wind turbine loads
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Capabilities and costs for ancillary services provision by wind power plants
Cutululis, N. A. 2013
Research output: Research › Sound/Visual production (digital) – Annual report year: 2013

Capabilities and costs for ancillary services provision by wind power plants. Deliverable D 3.1
Research output: Research › peer-review › Report – Annual report year: 2013

Cost-effective Primary Frequency Response at high Asynchronous Generation Levels
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Electromechanical Drivetrain Simulation
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Impact of High Wind Speed Shut-down in the Danish Power System
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Market and system security impact of the storm demonstration in task-forces TF2. Deliverable: D16.6: WP16. EU wide integrating assessment of demonstration replication potential
Research output: Research › peer-review › Report – Annual report year: 2013

Methods for Representations of Wind Power Plants for Active Power Studies
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Offshore Variability in Critical Weather Conditions in Large-Scale Wind Based Danish Power System
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Regime-based supervisory control to reduce power fluctuations from offshore wind power plants
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Report on Design Tool on Variability and predictability. D2.8: WP 2: Interconnection optimisation and power plant system services. Task 2.1: Power output variability and predictability
**Report with data for system behaviour at storm passage with original (uncoordinated) and coordinated control: Deliverable no: 12.2**

**Technical Capabilities and Challenges for Wind Power to provide Voltage Support Services**

**Using forecast information for storm ride-through control**

**Ancillary Services for the European Grid with High Shares of Wind and Solar Power**

**Using forecast information for storm ride-through control**

**Ancillary services: technical specifications, system needs and costs. Deliverable D 2.2**

**DC grids for integration of large scale wind power**

**DTU contributions to IEA Wind Annex 25 Phase 2**

**Inertial response from wind turbines: the impact on structural loads**

**Integrated analysis of wind turbines - The impact of power systems on wind turbine design**

**North Sea Offshore Wind Power Variability in 2020 and 2030**
Offshore wind power integration in TWENTIES and beyond
Sørensen, P. E., Detlefsen, N. & Cutululis, N. A. 2011
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

Offshore Wind Power Prediction in Critical Weather Conditions
Research output: Research › Article in proceedings – Annual report year: 2011

Operation and Control of Wind Farms in Non-Interconnected Power Systems
Research output: Research › Article in proceedings – Annual report year: 2011

Coupling of HAWC2 and Matlab: Towards an Integrated Simulation Platform
Research output: Research › Article in proceedings – Annual report year: 2010

Dynamic security issues of autonomous power systems with increasing wind power penetration
Research output: Research › Article in proceedings – Annual report year: 2010

Grid fault and design-basis for wind turbines - Final report
Hansen, A. D., Cutululis, N. A., Markou, H., Sørensen, P. E. & Iov, F. 2010 Roskilde: Danmarks Tekniske Universitet, Risø Nationalaboratorium for Bæredygtig Energi. 42 p. (Denmark. Forskningscenter Risoe. Risoe-R; No. 1714(EN)).
Research output: Research › Report – Annual report year: 2010

Impact of fault ride-through requirements on wind turbine structural loads
Research output: Research › Article in proceedings – Annual report year: 2010

Integrating MATLAB/SIMULINK models for wind power systems into Power Factory
Constantin, A., Iov, F., Hansen, A. D. & Cutululis, N. A. 2010
Research output: Research › Conference abstract for conference – Annual report year: 2010

Power fluctuations from offshore wind plants
Cutululis, N. A. 2010
Research output: Research › Conference abstract for conference – Annual report year: 2010

Reliability indexes for offshore wind power production under extreme wind conditions
Research output: Research › Article in proceedings – Annual report year: 2010

Research output: Research › Report – Annual report year: 2010

Simulating Offshore Wind Power Variability over Power Systems Areas
Research output: Research › Article in proceedings – Annual report year: 2010
Wind. Developing Europe’s power market for the large-scale integration of wind power: Final report
Research output: Research › Report – Annual report year: 2009

European power system with large amounts of wind power In 2015 - Trade wind project
Research output: Research › Article in proceedings – Annual report year: 2008

Grid faults impact on the mechanical loads of active stall wind turbine
Research output: Research › Article in proceedings – Annual report year: 2008

Modelling of power fluctuations from large offshore wind farms
Research output: Research - peer-review › Journal article – Annual report year: 2008

Optimal control of wind energy systems: Towards a global approach
Research output: Research - peer-review › Book – Annual report year: 2008

Power electronics: Key-enabling technology for grid integration of wind power
Research output: Research › Article in proceedings – Annual report year: 2008

System aspects
Research output: Research - peer-review › Book chapter – Annual report year: 2008

TradeWind Deliverable 5.1: Effects of increasing wind power penetration on the power flows in European grids
Research output: Research › Report – Annual report year: 2008

Uncertainty on predicted cross border flows caused by wind forecast errors
Research output: Research › Article in proceedings – Annual report year: 2008

Wind turbine cut outs in a power system region
Research output: Research › Article in proceedings – Annual report year: 2008

Wind turbines structural loads during fault ride-through operation
Adaptive modelling of offshore wind power fluctuations

Analysis of the experimental spectral coherence in the Nysted Wind Farm

A survey of interconnection requirements for wind power

Dynamic wind turbine models in power system simulation tool DlgSILENT

Electrical components library for HAWC2

Grid faults' impact on wind turbine structural loads

Mapping of grid faults and grid codes

Modelling of wind turbine cut outs in a power system region

Models for assessing power fluctuations from large wind farms

Power Fluctuations From Large Wind Farms
Power fluctuations from offshore wind farms: model validation
Research output: Research › Article in proceedings – Annual report year: 2007

Power Quality Issues on Wind Power Installations in Denmark
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Proceedings of Nordic wind power conference (NWPC 2007)
Research output: Research › Report – Annual report year: 2007

Simulation of a flexible wind turbine response to a grid fault
Research output: Research › Article in proceedings – Annual report year: 2007

Specification of long-term load measurement technique: Work Package 1B.2 under the European Commission: Integrated wind turbine design (UPWIND)
Schmidt Paulsen, U., Cutululis, N. A. & Sørensen, P. E. 2007 Roskilde: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi. 28 p. (Denmark. Forskningscenter Risoe. Risoe-R; No. 1593(EN)).
Research output: Research › Report – Annual report year: 2007

Dynamic performances of control structures for wind-diesel systems without storage
Research output: Research › Article in proceedings – Annual report year: 2007

LQ optimal control of wind turbines in hybrid power systems
Research output: Research › Article in proceedings – Annual report year: 2006

Power fluctuations from large offshore wind farms
Research output: Research › Article in proceedings – Annual report year: 2006

Robust multi-model control of an autonomous wind power system
Cutululis, N. A., Ceanga, E., Hansen, A. D. & Sørensen, P. E. 2006 In: Wind Energy. 9, p. 399-419
Research output: Research › peer-review › Journal article – Annual report year: 2006

Some results concerning no-storage wind-diesel systems control
Research output: Research › Journal article – Annual report year: 2007

Using a nonlinear controller to optimise a variable speed wind power system
Research output: Research › Journal article – Annual report year: 2007
Projects:

Cluster supervisory control of large offshore wind power plants
Kavimandan, A., Cutululis, N. A., Das, K. & Hansen, A. D.
Marie Curie (EU-stipendium)
01/08/2018 → 31/07/2021
Project: PhD

Enhanced Frequency Control Capabilities from Wind Turbine and Plant
Lu, L., Cutululis, N. A., Larsen, G. & Sørensen, P. E.
Offentlig finansiering
15/08/2018 → 14/08/2021
Project: PhD

Advanced Wind Turbine Converter Control in HVDC-Connected Wind Power Plants
Arasteh, A., Cutululis, N. A. & Göksu, Ö.
Samfinansieret - Andet
15/05/2018 → 14/05/2021
Project: PhD

Blackstart and Islanding Capabilities of Wind Turbines
Jain, A., Cutululis, N. A., Das, K. & Göksu, Ö.
Marie Curie (EU-stipendium)
01/02/2018 → 31/01/2021
Project: PhD

WFCT: Wind Farm Control Trials
Simon, E., Hasager, C. B., Giebel, G., Kazda, J., Cutululis, N. A. & Courtney, M.
01/03/2017 → 31/12/2020
Project: Research

Design and optimization of electrical infrastructures in offshore wind power clusters
Pérez-Rúa, J., Cutululis, N. A., Das, K., Sørensen, P. E. & Stolpe, M.
Forskningsrådsfinansiering
15/05/2017 → 14/05/2020
Project: PhD

Baltic InteGrid: Integrated Baltic offshore wind electricity grid development
Pade, L., Bergaentzlé, C., Boscán Flores, L. R., Cutululis, N. A. & Das, K.
01/03/2016 → 30/09/2019
Project: Research

Control and stability of meshed offshore grids with diode rectifiers and VSC HVDC
Bidadfar, A., Sørensen, P. E., Akhmatov, V., Altin, M. & Cutululis, N. A.
Anden EU-finansiering
01/10/2016 → 30/09/2019
Project: PhD

Control and operation of offshore wind power plants connected via HVDC
Saborío-Romano, O., Cutululis, N. A., Göksu, Ö., Sørensen, P. E. & Zeni, L.
Samfinansieret - Andet
01/09/2016 → 31/08/2019
Project: PhD

PROMOTioN: PROMOTioN - PROgress on Meshed HVDC Offshore Transmission Networks
Cutululis, N. A., Sørensen, P. E., Göksu, Ö., Altin, M., Saborío-Romano, O. & Bidadfar, A.
01/01/2016 → 31/12/2019
Project: Research
Multi-objective wind farm control
Kazda, J., Cutululis, N. A., Courtney, M., Sørensen, P. E., Bottasso, C. L. & Meyers, J.
Institut stipendie (DTU)
15/12/2015 → 14/12/2018
Project: PhD

Development of an Applied Measurement System for Short Term Power Forecasting and Gust/Ramp Prediction
Simon, E., Courtney, M. & Cutululis, N. A.
Institut stipendie (DTU)
15/11/2015 → 31/01/2019
Project: PhD

Impact assessment and control of HVDC systems at the European level
Thams, F., Chatzivasileiadis, S., Enksson, R., Nielsen, A. H., Cutululis, N. A., Gomis-Bellmunt, O., Wehenkel, L. & Wehenkel, L.
Anden EU-finansiering
01/07/2015 → 05/12/2018
Project: PhD

Impact of wind power uncertainty on electric power system reliability
Nuño Martinez, E., Cutululis, N. A., Sørensen, P. E., Giebel, G., Kariniotakis, G., Van Hertem, D. & Kariniotakis, G.
Samfinansieret - Andet
15/11/2014 → 06/09/2018
Project: PhD

Coordinated control of wind power plants in offshore HVDC grids
Marie Curie (EU-stipendium)
15/03/2014 → 06/03/2018
Project: PhD

Wind Power Plant System Services
Offentlig finansiering
15/12/2011 → 19/03/2015
Project: PhD

Electromechanical Drivetrain Simulation
Forskningsrådssfinansiering
15/03/2012 → 24/08/2015
Project: PhD

Offshore Wind Park Control Assessment Methodologies to Assure Robustness and Fault tolerance
ErhvervPhD-ordningen VTU
01/09/2012 → 20/01/2016
Project: PhD

Integrated design of wind power systems
Institut, samfinansiering
01/02/2009 → 18/06/2012
Project: PhD
PECD: Pan European Climate Data
Marinelli, M., Cutululis, N. A. & Hahmann, A. N.
01/11/2012 → 31/07/2014
Project: Research

Power Fluctuations from Large Offshore Wind Farms
Sørensen, P. E., Cutululis, N. A., Madsen, H. & Pinson, P.
01/10/2004 → 30/09/2008
Project: Research

EASEWIND: Enhanced Ancillary Services from Wind Power Plants
Cutululis, N. A., Hansen, A. D. & Altin, M.
01/09/2011 → 31/08/2014
Project: Research

EERA-DTOC: EERA DTOC: European Energy Research Alliance Design Tools for Offshore wind farm Clusters
01/01/2012 → 30/06/2015
Project: Research

GARPUR: GARPUR - Generally Accepted Reliability Principle with Uncertainty modelling and through probabilistic Risk assessment
Cutululis, N. A. & Sørensen, P. E.
01/09/2013 → 31/08/2017
Project: Research

TWENTIES: TWENTIES - Transmission system operation with large penetration of Wind and other renewable Electricity sources in Networks by means of innovative Tools and Integrated Energy Solutions
Sørensen, P. E., Cutululis, N. A., Maule, P., Litong-Palima, M. & Altiparmakis, A.
01/04/2010 → 30/09/2013
Project: Research

SIMBA: SIMBA - Simulation of balancing
Sørensen, P. E., Cutululis, N. A., Litong-Palima, M. & Maule, P.
01/01/2010 → 31/12/2014
Project: Research

REServiceS: Economic grid support from variable renewables
Cutululis, N. A.
IEE
01/04/2012 → 01/10/2014
Project: Research

MEDOW: Multi-terminal DC grid for offshore wind
Cutululis, N. A.
FP7-PEOPLE
01/05/2013 → 31/03/2017
Project: Research

Activities:

Connection of offshore wind farms
Cutululis, N. A. (Guest lecturer)
5 Feb 2019
Control challenges for grid integration  
Cutululis, N. A. (Guest lecturer)  
17 Jan 2019

Reducing Turbine Mechanical Loads Using Model-optimized Dispatch for Power Control of Waked Wind Farms  
Kazda, J. (Guest lecturer), Cutululis, N. A. (Guest lecturer)  
31 Oct 2018

EERA Joint Programme on Energy Storage (External organisation)  
Cutululis, N. A. (Member)  
1 Apr 2018 → 31 Mar 2021

Mitigating Turbine Mechanical Loads Using Engineering Model Predictive Wind Farm Controller  
Kazda, J. (Guest lecturer), Karl Merz (Other), John Olav Tande (Other), Cutululis, N. A. (Guest lecturer)  
17 Jan 2018

Simulation of Bayesian Optimization Based Wind Farm Power Maximization Technique Using Dynamic Wake Meandering Model  
Kazda, J. (Guest lecturer), Cutululis, N. A. (Guest lecturer), Juan Gratacos (Other)  
27 Jun 2017

Framework of Multi-Objective Wind Farm Controller Applicable to Real Wind Farms  
Kazda, J. (Guest lecturer), Göçmen, T. (Guest lecturer), Giebel, G. (Guest lecturer), Courtney, M. (Guest lecturer), Cutululis, N. A. (Guest lecturer)  
28 Sep 2016

I E T Renewable Power Generation (Journal)  
Cutululis, N. A. (Editor)  
2016 → …

Activity: Talks and presentations › Conference presentations

Activity: Membership › Membership of research networks or expert groups

Activity: Talks and presentations › Conference presentations

Activity: Talks and presentations › Conference presentations

Activity: Talks and presentations › Conference presentations

Activity: Talks and presentations › Conference presentations

Activity: Talks and presentations › Conference presentations

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