



## Stochastic Programming for Fuel Supply Planning of Combined Heat and Power Plants

Guericke, Daniela; Blanco, Ignacio; Morales González, Juan Miguel; Madsen, Henrik

*Publication date:*  
2017

*Document Version*  
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

*Citation (APA):*  
Guericke, D., Blanco, I., Morales González, J. M., & Madsen, H. (2017). *Stochastic Programming for Fuel Supply Planning of Combined Heat and Power Plants*. Abstract from 2017 INFORMS Annual Meeting, Houston, Texas, United States.

---

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

# Stochastic Programming for Fuel Supply Planning of Combined Heat and Power Plants

Daniela Guericke<sup>1</sup> Ignacio Blanco<sup>1</sup>, Juan M. Morales<sup>2</sup>, Henrik Madsen<sup>1</sup>

<sup>1</sup>Department of Applied Mathematics and Computer Science  
Technical University of Denmark  
Asmussens Allé, 2800 Kgs. Lyngby, Denmark  
{dngk,igbl,hmad}@dtu.dk

<sup>2</sup>Department of Applied Mathematics, Málaga University  
Bulevar Louis Pastor, 29010 Málaga, Spain  
juan.morales@uma.es

The consumption of biomass to produce power and heat has increased due to the carbon neutral policies. Combined heat and power (CHP) plants often combine biomass with other fuels, e.g., natural gas. The negotiation process for supply contracts involves many uncertainties due to the long planning horizon. The demand for biomass is uncertain, and heat demand and electricity prices vary during the planning period. We propose a method using stochastic optimization to support the biomass and natural gas supply planning for CHP plants including short-term decisions for optimal market participation.