

建國科技大學 機械工程系暨製造科技研究所

科技英文 期末報告

科技英文

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期末報告

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出處：*Sajjad Ahmed a,c, Mohamed Elsholkami a, Ali Elkamel a, ↑,
Juan Du b, Erik B. Ydstie b, Peter L. Douglas a* *Applied Energy* 128
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1. 標題：應用能源

2. 摘要(翻譯)：

This paper proposes a new methodology to include financial risk management in the framework of two-stage stochastic programming for energy planning under uncertainties in demand and fuel price. A deterministic mixed integer linear programming formulation is extended to a two-stage stochastic programming model in order to take into account random parameters that have discrete and finite probabilistic distributions. This was applied to a case study focusing on

planning the capacity supply to meet the projected electricity demand for the fleet of electricity generation stations owned and operated by Ontario Power Generation (OPG). The objective of the proposed mathematical model is to minimize cost subject to environmental constraints. The case study is investigated by considering only existing technologies and also by considering the integration of new technologies that help achieve stricter carbon reduction requirements.

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本文提出了一種新的方法，包括財務風險管理下的需求和燃料價格的不確定性兩階段隨機規劃能源規劃框架。一個確定性的混合整數線性規劃製劑延伸，以便考慮到具有離散和有限概率分佈的隨機參數兩階段隨機規劃模型。這是適用於個案研究側重於規劃能力供應，以滿足對擁有和經營的安大略電力公司（OPG）發電站船隊預計電力需求。所提出的數學模型的目標是最大限度地降低成本受環境限制。該案例研究只考慮現有的技術，並考慮新的技術，幫助實現更嚴格的碳減排需求的整合研究。

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單字:

1. capacity 容量
2. environmental 環境
3. mixed integer linear programming formulation
混合整數規劃
4. programming model 編程模型
5. random parameters 隨機參數
6. probabilistic distributions 概率分佈
7. projected electricity 預計電力
8. generation stations 發電站
9. constraints 限制
10. minimize 最小化

句型分析:

1. A deterministic mixed integer linear programming
formulation is extended to a two-stage stochastic

programming model in order to take into account random parameters that have discrete and finite probabilistic distributions.

主詞+動詞+受詞+受詞補語

2. The objective of the proposed mathematical model is to minimize cost subject to environmental constraints

主詞+動詞+直接受詞+介詞+間接受詞

3. The case study is investigated by considering only existing technologies and also by considering the integration of new technologies

主詞+連綴動詞+主詞補語

主詞?
動詞?
受詞補語?