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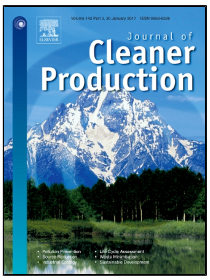

Clean production pathways for regional power-generation system under emission constraints: A case study of Shanghai, China

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Highlights

- A regional power-generation system modelling and optimization framework is constructed using Long-range Energy Alternatives Planning System (LEAP).
- Clean production pathways for Shanghai power generation system are explored under various carbon emission and particle matter constrained scenarios.
- Carbon emission constraints help promote capacity expansion for cleaner power plants such as wind power, solar power and integrated gasification combined cycle (IGCC).
- Natural gas combined cycle (NGCC) and gas distributed units will make breakthrough when the fuel price drops by approximately 50% or more.