

Role of LNG in Hybrid Energy Networks

Research Overview

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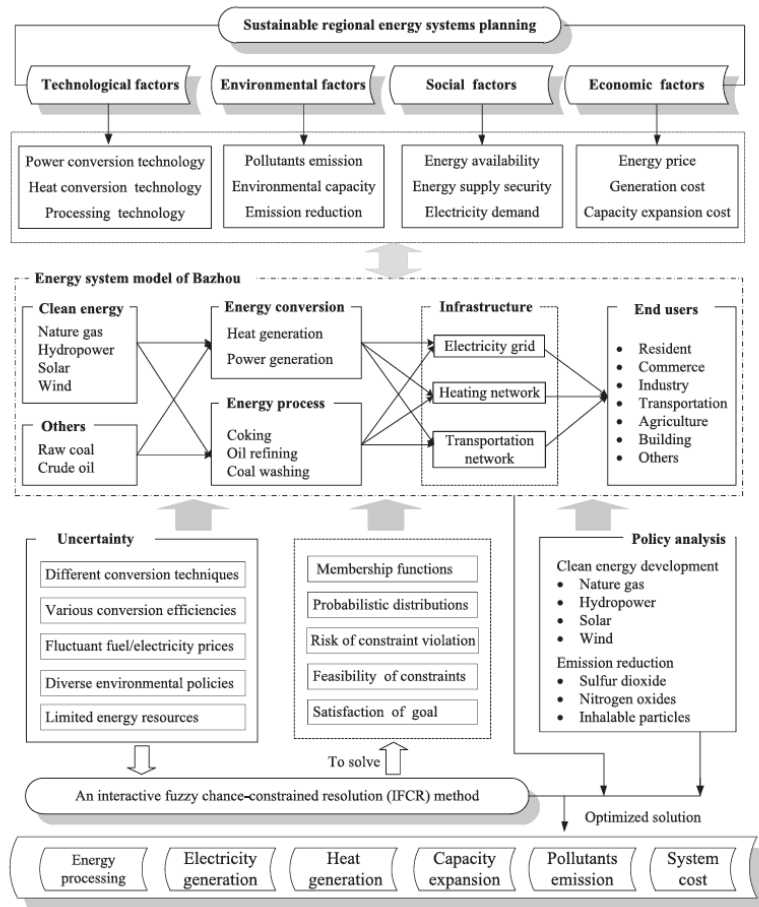
8th February 2018

Goal

Develop a **Algorithm** to manage the **hybridisation** of coupled, distributed, renewable multi-commodity energy networks in an **Urban** and **Industrial** environment from a **sustainable** point of view.

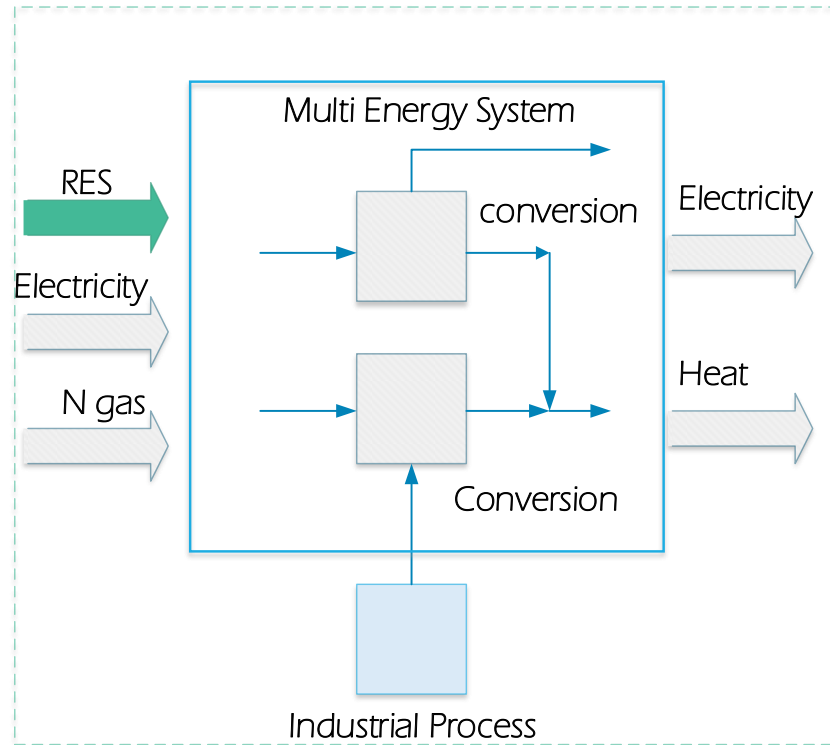


Goal

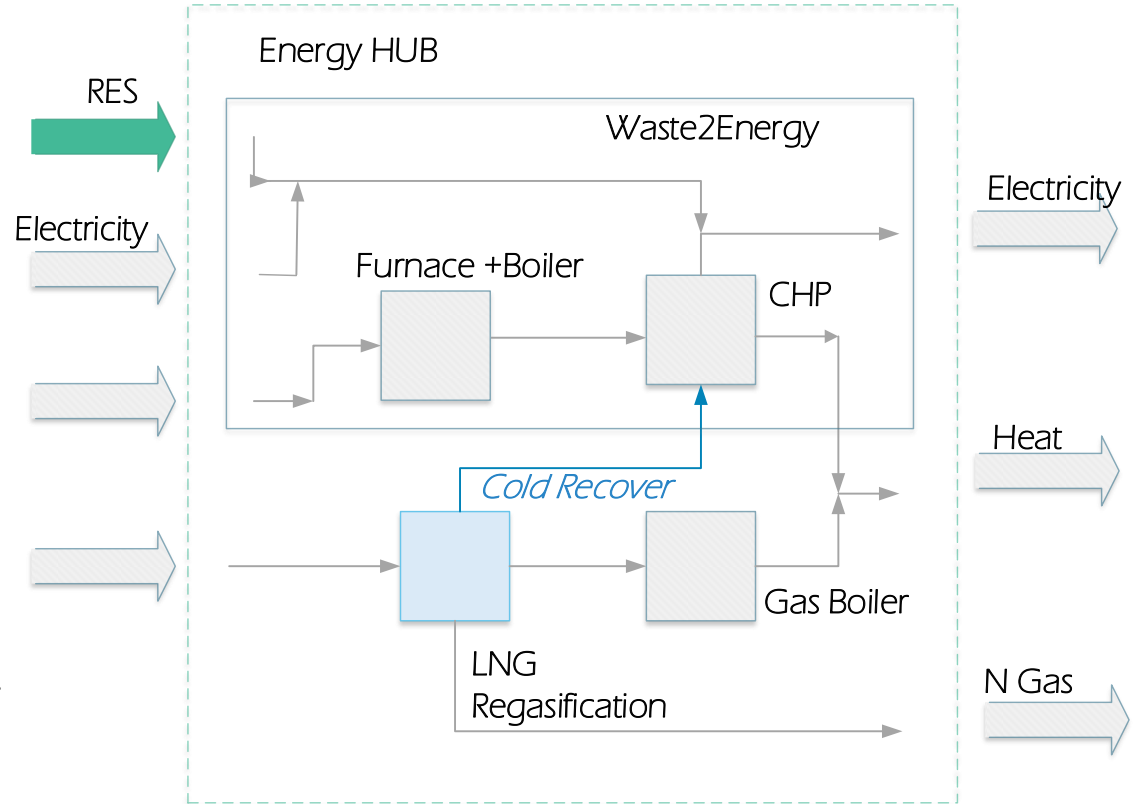


Example

Hybrid Energy Network



Current Case Study



Publication:

Montoya Cardona, J., Dam, J., & de Rooij, M. (2017). Role of LNG in an optimized hybrid energy network. 2017 6th International Youth Conference on Energy (IYCE) (pp. 1-7). IEEE.

Research questions

What factors and technology advancements will facilitate the sustainable integration of industrial process?

What is the potential of using integrated decentralized energy system to reduce the local imbalance volume between local energy demand and local energy generation?



Research questions

What would be the adequate algorithm for sustainable energy management with respect to current energy system requirement and market structures?

What is the added value of using industrial processes in hybrid energy systems in compensating for the uncertainties regarding renewable energy generation and market development?



Research Approach

Investigation energy management systems.

Investigation into process integration with distributed energy systems.

Develop Multi-objective optimization under uncertainty for dynamically energy management

Energy generation at the front door.

Demonstration (Practical Set-up)



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