



Internship Proposal: Sustainable Energy without the hot air - Belgium

Background

irex Consulting is a straightforward business engineering consultancy specialized in the energy & utility sectors. We are experts in tackling operational business challenges across the entire value chain – production, sourcing & trading, grids, and supply.

Assignment

Context

Following suit of the book 'Sustainable Energy Without The Hot Air' written by David MacKay, the objective of the internship would be to give a comprehensive, realist view on whether or not being completely self-sufficient CO₂-neutral is a possibility for Belgium. This would entail a strategic study of local consumption demand relative to the availability of renewable production followed by an analysis and proposal of alternatives to bridge the gaps with a combination of fuel types and resources from neighboring countries.

Approach

1. Market study and data gathering: consumer consumption data, production data, grid constraints, economic and regulatory information
2. Scoping of the problem to be solved, definition of analysis approach & potential algorithm, hypothesis to be taken & end-goal of the study
3. Determine calculation methodology: define input, constraints, output and logic/formula
4. Build model: The model will be implemented in an environment to be defined
5. Results interpretation: Analyze and understand the results and perform sensitivity analysis based on the political decisions of Belgium & its neighboring countries, and the technological choices made.
6. Summarize results in a comprehensive overview & identify key success factors of a CO₂-neutral future in Belgium

Objectives

- Market study
- Set-up methodology for high-level modelisation of Belgian energy demand & supply network
- Identify challenges & key success factors enabling a CO₂-neutral future, both political & technological.

Preparation Material

- <https://www.withouthotair.com/>

Schedule Beginning of July -- End of August

Supervisor

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