

Master Project/Thesis

A comprehensive literature review on future energy systems

Background To meet the environmental targets there are significant efforts worldwide to integrate renewable energy resources in power system. However the intermittency of renewable resources bring significant challenges to the electricity providers in terms of flexibility. Hence, the future energy systems require innovative strategies that integrates multiple energy sectors and multiple energy vectors that interact at different levels, from demand to generation.

In contrast to the classical energy systems, the future energy systems are expected to be coupled; planned and operated as an holistic energy system. Hence several holistic approaches for future energy systems are introduced in the scientific literature, such as integrated energy systems, multi-energy systems, smart energy systems, smart grid, smart energy hub, etc. To understand the current state of art a comprehensive literature review of the future energy system is necessary. Figure 1 shows a schematic representation of an energy system where energy sectors and energy vectors interact withing the same system.

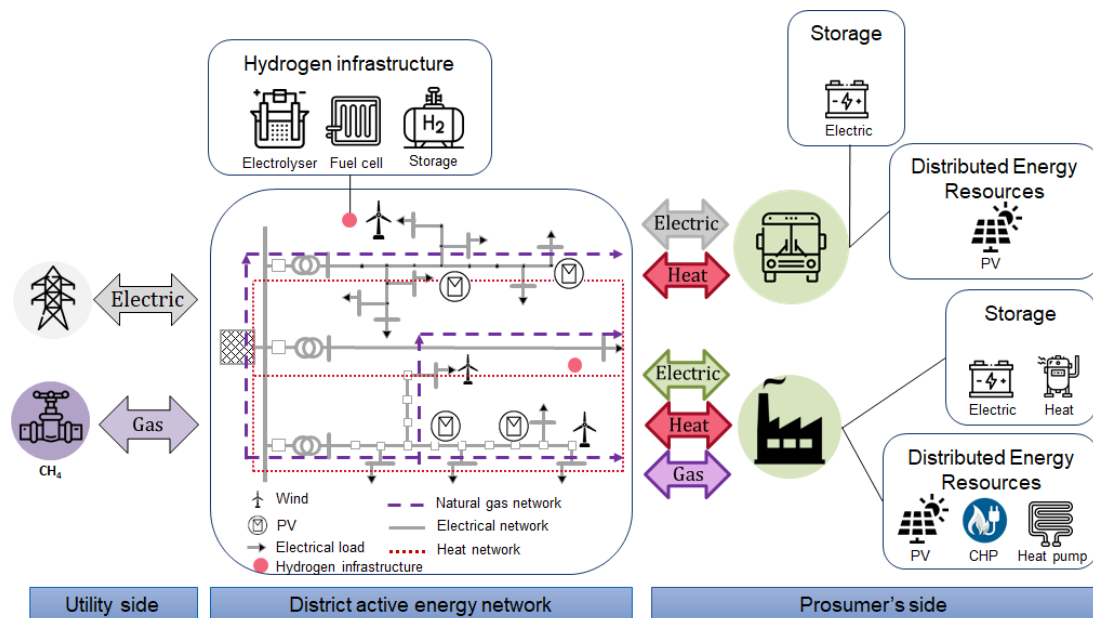


Figure 1: Schematic diagram of a holistic energy system

Research objectives

1. To attain a precise perception of future energy system based on the current approaches
2. To identify scientific research gaps in the current literature of future energy systems
3. To propose a holistic approach for the future energy system

Desired competencies:

1. Excellent scientific writing and communication skills
2. Independent work

If interested, please send your short application with CV (one page) and transcript to the below mentioned email address.

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