

Complex Renewable Energy Networks

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Loose ends from last time

Power to Gas

Power to gas describes certain concepts to store electric energy surpluses for times of need

Surpluses are used to split water into hydrogen and oxygen. Hydrogen can then be used either directly (gas grid, transport, etc.) or converted to methane (by combination with carbon dioxide)

Storage capacity of the German gas network in terms of energy: ca 200 TWh. In addition, losses in the gas network are small.

Power to Gas Concept

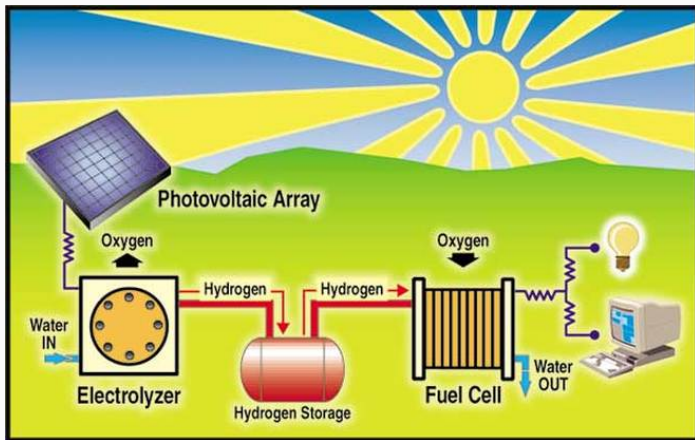
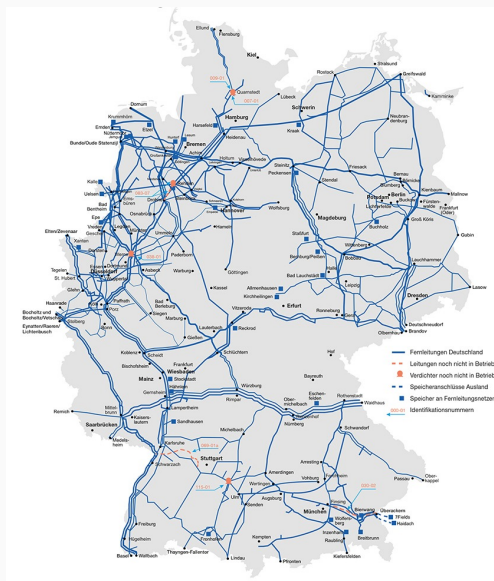


Figure 1: Buildipedia

German Gas Grid



Electrolysis

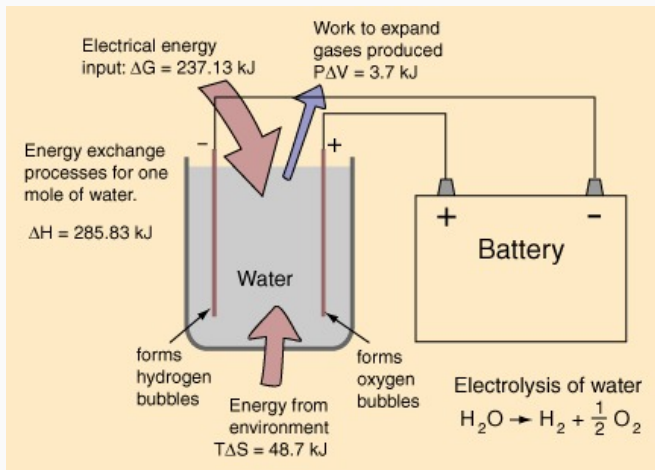


Figure 3: Hyperphysics, Georgia State University