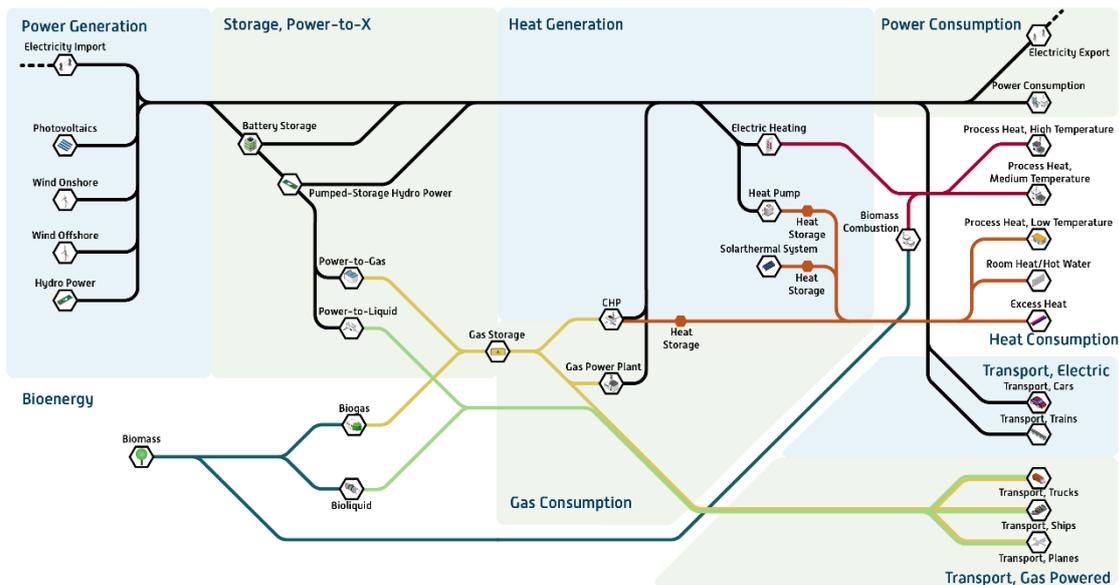


PHYSIKALISCHES KOLLOQUIUM

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SECTOR COUPLED ENERGY MODEL FOR THE EUROPEAN ENERGY TRANSITION

HENRIK TE HEESSEN
HOCHSCHULE TRIER

As the integration of renewable energy technologies into our energy systems intensifies, so does their inherent complexity. The future landscape will feature novel consumer and volatile generation systems, necessitating advanced storage technologies. A robust, interconnected system enabling seamless electrical energy transit can mitigate the need for additional generation and storage solutions. Consequently, innovative methods for analyzing energy production and consumption interactions within diverse system constellations are essential. Energy system models provide invaluable insights for constructing future energy systems. In this talk, the sector-coupled energy model (UCB-SEnMod) is presented, characterized by its modular structure, high flexibility, and broad applicability, allowing to model of various constellations. The software architecture facilitates mapping individual buildings, companies, regions, or even entire countries, showcasing its versatility.