Definitions

Scenario: Is plausible and often simplified description of how the future may develop (IPCC, 2007). In energy system models, scenarios are described with a set quantitative assumptions. E.g. What is the energy demand, how much sun irradiation do we have, do we use CO2 taxes, do we allow the construction of new nuclear or not?

Energy system model: Mathematical representation of the energy sector designed to explore alternative scenarios. In a very simplified way, energy system models are a collection of technologies described by costs and efficiencies that use limited resources to produce energy services (heating, cooling, transport). These models rely on large datasets covering available resources, energy demands, and technological options. By combining all this information, an ESM can simulate how the system might evolve and usually searches for the “best” configuration, for example by minimizing costs or optimizing according to other criteria such as emissions or resource use.