

Energy Storage

Energy storage is the collection of energy produced at one time for use at a later time to reduce imbalances between energy demand and energy production. A device that stores energy is generally called an accumulator or battery. Energy comes in multiple forms including radiation, chemical, gravitational potential, electrical potential, electricity, elevated temperature, latent heat and kinetic energy. Energy storage involves converting energy from forms that are difficult to store to more conveniently or economically storable forms.

Period:	Period 3
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Educational management portal:	moodle.unitus.it
Objectives:	Analysis of the technologies and rationale for energy storage, instruments and methodologies for effective energy management in final uses
Programme:	EES: Pumped Hydro; Electrochemical storage; CAES; Hydrogen storage; Supercapacitors; flywheels. TES: sensible heat storage, latent heat storage, chemical heat storage. Power to gas systems. Standardisation
Pre-requisites:	i) Thermodynamics fundamentals. ii) Energy conversion systems fundamentals; iii) Renewable energy fundamentals
Study material:	<ul style="list-style-type: none"> ● Lecture slides; ● Reading material; ● Virtual reality material ● Additional literature handed out during the course / made available via Blackboard/Moodle