Storage form	*Energy density*		*Cycle efficiency*
	kJ kg^{-1}	MJ m^{-3}	
Conventional fuels			
Crude oil	42 000	37 000	
Coal	32 000	42 000	
Dry wood	12 500[a]	10 000	
Synthetic fuels			
Hydrogen, gas	120 000	10	0.4–0.6
Hydrogen, liquid	120 000	8 700	
Hydrogen, metal hydride	2 000–9 000	5 000–15 000	
Methanol	21 000	17 000	
Ethanol	28 000	22 000	
Thermal – low quality			
Water, 100°C → 40°C	250	250	
Rocks, 100°C → 40°C	40–50	100–140	
Iron, 100°C → 40°C	~30	~230	
Thermal – high quality			
Rocks, e.g. 400°C → 200°C	~160	~430	
Iron, e.g. 400°C → 200°C	~100	~800	
Inorganic salts, heat of fusion > 300°C	> 300	> 300	
Mechanical			
Pumped hydro, 100 m head	1	1	0.65–0.8
Compressed air		~15	0.4–0.5
Flywheels, steel	30–120	240–950	
Flywheels, advanced	> 200	> 100	~0.95
Electrochemical			
Lead–acid	40–140	100–900	0.7–0.8
Nickel–cadmium	~350	~350	varying
Lithium ion (other advanced batteries)	700 (> 400)	1400 (> 300)	0.7 (> 0.8)
Superconducting		~100	~0.85

Table 5.5. Energy density by weight and volume for various storage forms, based on measured data or expectations for practical applications. For the storage forms aimed at storing and regenerating high-quality energy (electricity), cycle efficiencies are also indicated. Hydrogen gas density is quoted at ambient pressure and temperature. For compressed air energy storage, both electricity and heat inputs are included on equal terms in estimating the cycle efficiency (with use of Jensen and Sørensen, 1984).

[a] Oven-dry wood may reach values up to 20 000 kJ kg^{-1}.