CONSIDERATION129	PHES	Li-lon batterles	CsT	VRFB	A-CAES	LAES	ZNBR	Underground hydrogen	eTES	Na-ion batteries	Gravity
Economies of scale	Large opportunity to reduce cost per kilowatt for larger systems	Small opportunity to reduce cost per kilowatt for larger systems	Large opportunity to reduce cost per kilowatt for larger systems	Moderate opportunity to reduce cost per kilowatt for larger systems	Large opportunity to reduce cost per kilowatt for larger systems	Moderate opportunity to reduce cost per kilowatt for larger systems	Small (gel type) to moderate (flow type)	Large opportunity to reduce cost per kilowatt for larger systems	Moderate opportunity to reduce cost per kilowatt (depending on system type)	Small opportunity to reduce cost per kilowatt for larger systems	Moderate to large (depends on system type)
Geographical and site characteristics	Topography requirements Water requirements Large footprint	Flexibly deployed Utility scale has larger footprint Operating temperature 0–45°C	Solar resources Large footprint (including solar array)	Flexibly deployed Utility scale has larger footprint Operating temperature from -15°C to 50°C	Geological requirements Moderate above- ground footprint	Flexibly deployed Moderate footprint	Flexibly deployed Utility scale has larger footprint Operating temperature 10–45°C	Geological requirements Moderate above- ground footprint	Flexibly deployed Moderate footprint	Flexibly deployed Utility scale has larger footprint Operating temperature from -30°C to 60°C	Geographical and footprint requirements depend on system type
Construction times	3–7 years	8–20 weeks	<2 years	1–1.5 years	2.5–3.5 years	Expected to be 2 years	Approx-imately 9 months	1–5 years	Insufficient data	Insufficient data	1–3.5 years, depending on system type and site
Use of critical materials <sup>130</sup>	Low	High – lithium cobalt, nickel, manganese (varies by battery type)	Moderate – (depends on alloy type)	Moderate – vanadium	Low	Low	Low	Low	Low	Low	Low