

Entry 22 - Senior



Video Transcript

Imagine a world where energy flows effortlessly, powering our cities and towns with unparalleled efficiency. This isn't science fiction, it's the promise of super conductors.

Super conductors like aluminium and copper oxide conduct electricity with zero resistance and extremely low temperatures. This unique property is revolutionising the energy storage, making systems like SMES Superconducting Mega Energy Storage, critical for stabilising power grids.

When renewable energy dips, SMES systems can instantly release storage energy back into the grid, reducing our reliance on fossil fuels and keeping power stable. SMES systems store excess energy in a magnetic field with its superconducting coils. Unlike traditional batteries, the SMES can release this almost instantly making it ideal for rapid response situations.

Although cooling superconductors is energy intensive, the elimination of energy losses due to resistance makes it worthwhile. Our 20th century grid loses 10% of its energy due to heat. With superconductors we can make that 0%.

Superconducting cables can carry immense power through compact power lines allowing for underground installations and protecting infrastructure while cutting emissions. A single 17cm cable equates to the output of several nuclear power bombs.

To make SMES systems even better, enhancing superconducting materials, improving cryogenic systems and developing modular designs with drive efficiency and reduce costs. Integrating SMES with other technologies can provide balanced energy storage solutions.

Superconducting and SMES systems are key to a sustainable energy future, making our power grids more efficient, stable and environmentally friendly. If we join superconducting with Snowy Hydro, the possibilities for the world are endless. We can make this world completely emission free extremely quickly. Let's make a better world!