

54% increase in hydrogen sector investment, long-term storage of electricity

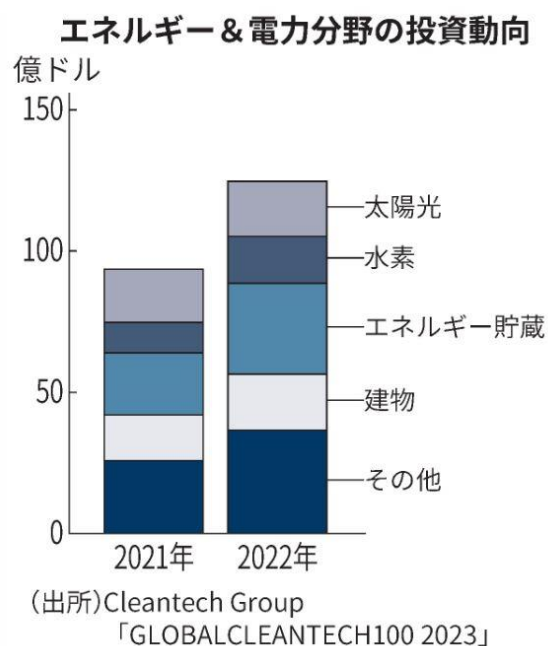
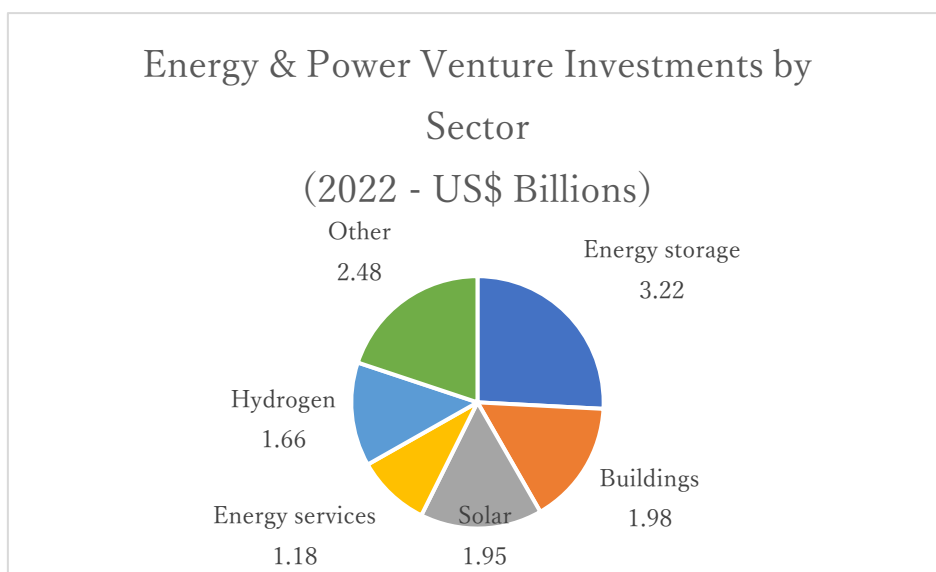


Chart above uses data below:



There is a growing investment in startups working on technologies to store surplus electricity generated by renewable energy sources such as solar and wind power for a long time. According to the U.S.-based research firm Cleantech Group, investment in global energy and power startups in 22 years increased by 3.11 billion dollars (about 460 billion yen) from 21 to 12.47 billion dollars. Investment in the hydrogen sector increased the most, with \$1.66 billion in FY22, up 54% from FY21.

Among investments in the hydrogen sector, investment in hydrogen production technologies through water electrolysis and other methods doubled from about \$640 million in 21 to about \$1.6 billion in 22. In the field of renewable energy, where power output is easily affected by weather and seasons, there are high expectations for technologies such as the "P2G (power-to-gas) system," which converts surplus electricity into gas such as hydrogen for long-term storage.

The energy storage sector accounted for the largest share of investment in energy and power in 2022. It was up 47% from FY21 to \$3.22 billion, accounting for about one-quarter of the total investment.

Ryoji Miyawaki, CEO of Arc-El Technologies (Fukuoka City), says, "We are shifting from short-term storage technologies such as lithium-ion batteries to investing in long-term storage." Investment is attracting attention in the development of next-generation energy storage technologies, such as flywheel energy storage systems, which convert electricity into physical energy and store it, and solid-state batteries, which are expected to extend the life of storage batteries.