

# Everything you need to know about liquid metal batteries, rare earth metals and StarLink

Brought to you by

Tech Curiosity

2021

# Bloomberg - VW battery

- VW will shift the majority (80 percent) of EVs in its pipeline towards a single next-generation battery format. Production of the ‘unified battery cell’—which boasts a prismatic instead of a cylindrical or pouch-style design—will begin in-house in 2023.
- The cost target for EVs is \$80/kWh for parity with low-cost gasoline cars.
- Volkswagen aims to recycle 95% of each battery pack—everything except the separator. The automaker launched a pilot recycling plant in January 2021.
- [Video 1](#), [Video 2](#) (start :20-7:44)

# Liquid metal battery technology

- An **all-liquid metallic battery** produces a current when two dissimilar metals combine to form an alloy. Charging reverses the process of reforming the original metals. Since the metals and the electrolyte need to be in liquid form for necessary ion mobility for the reactions to take place, the battery must operate at very high temperatures. This however permits very high current densities, an order of magnitude greater than in conventional batteries, which make the liquid metal battery suitable for electrical power grid applications.
- [Video 1](#) (start :10-1:58) [Video 2](#) (start 4:47-8:00)

# Rare Earth Elements

- [Neodymium Is In Demand And China Controls Its Supply](#)  
(start :00-5:05)
- [How the US plans on rivaling China in the production of critical earth minerals](#)
- [Why China's control of rare earths matters](#)
- [Recycling rare earth magnets](#) (start :32-1:53)

# StarLink (is real)

- [Starlink Review: FAST Internet from Space](#) (start :47-7:03)
- [Starlink Review: How good is Elon Musk's satellite internet?](#)