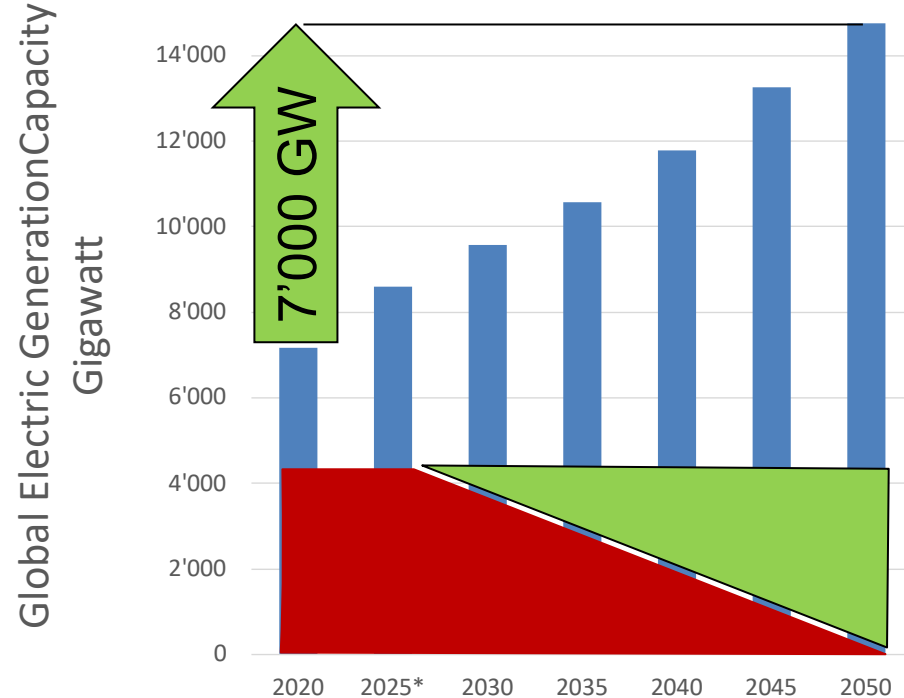It is a miracle that curiosity survives formal education.
Albert Einstein

Challenges ahead – Electricity / Power Generation

➢Build 7'000 new renewable
1'000MW Class Size Power pants
- Solar
- Wind
- Nuclear
- Hydro
- Biomass
- Geothermal
- H2, Methanol, Ethanol ……

➢Replace 4'000 existing fossil plants
➢of 1'000MW class with renewable

■Total 110 times installed capacity of Italy
■In 28 years – In ~100 countries

What this sums up to

BLR & PARTNERS AG
BUILDING VALUABLE BUSINESSES
BUILT ON VALUES

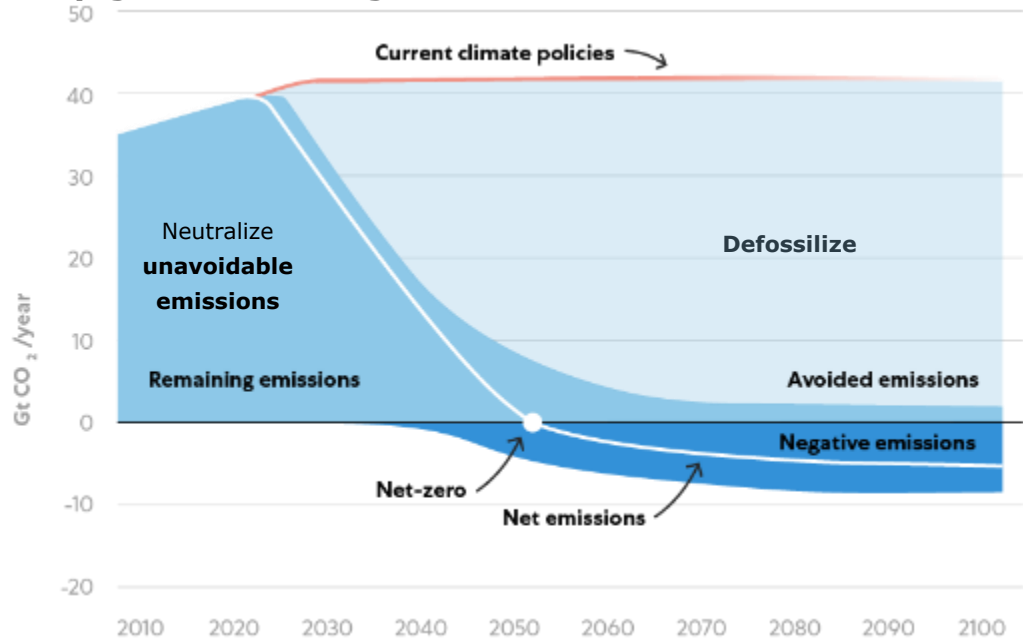|		Cost	writedown
■ **Power Generation**			
➤ 110 times Italy		33 trillion	(12 trillion)
■ **Mobility**			
➤ 1.4 Bill new cars @ 40'000 per car		56 trillion	(14 trillion)
➤ 200 Gigafactories Battery		0.300 trillion	
➤ 250 Li-mines @ 500'000'000		0.125 trillion	
➤ EV stations: 1'200'000 stations @ 120'000		0.150 trillion	(0.15 trillion)
➤ Dismantling Gas stations			(0.13trill)
■ Writing down 50% of refineries			(2.0trill)
■ Marine Transport 55'000 Cargo ships		11 trillion	
■ Air traffic 25'000 Airplanes		5 trillion	
■ **Total**		**~100+ trillion / 4tr/yr**	**(30 trillion)**

Solution space

- Solar / Wind / Hydro
- Nuclear
- Biomass
- Geothermal
- H2, Methanol, Ethanol,..
- NH3
- DACS
- Geo-Engineering
  → not a solution

Direct air capture required to achieve Net-Zero by 2050

How to keep global warming below 1.5° C

Source: Adapted from IPCC (2022) & United Nations Environment Programme (2021)

Next 10x scale-up under construction – groundbreaking July 2022

You can buy **permanent** CO2 removal on Climeworks.com – try it

How to achieve it in 28 years

An Issue???

■ **Is Money an Issue?**
➢100 – 200 trillion in 28 years   → 4-8 trillion a year   → not really

■ **Is Technology an issue?**
➢Solar, Wind, Hydro, Nuclear, Biomass, ….   → not really

■ **Worldwide no of Projects – can we handle it?**
➢Building 10'000 - 30'000 large projects / 28 years: ~1'000 projects / year
➢The world handles similar amount of large infrastructure projects   → not really
➢Producing the Windmills, Solar Panels etc   → Probably at our limit
➢Project management and skilled labor   → Probably at our limit

■ **Time to permit / Legal stability**
➢Any large type project takes   → 10-20 year to permit   **→ This will kill achieving**

We cannot survive
unless we change

We cannot change
unless we survive

Chief Seattle

……. And keep in mind:

*The society that puts
equality before freedom will
end up with neither.*

*The society that puts
freedom before equality will
end up with a great measure of both.*

(Milton Friedmann)