# Carbon Emission Pledges & Corporate Decarbonization Initiatives: Introductory Remarks

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### The Net-Zero Movement

- More than  $\frac{2}{3}$  of all Fortune 500 companies have by now pledged to reduce their Corporate Carbon Footprints (CCF) to zero!
- Common **Net-zero Ambition**:
  - "XYZ will be carbon-neutral (net-zero) by 2050"
- Immediate Questions:
  - How do firms measure their carbon footprint?
  - What motivates these net-zero pledges? More "green-washing"?
  - How costly are net-zero pledges?
  - What public policy support
     <u>Ex:</u> carbon pricing, tax credits, contracts for cost difference...
     is required in order to have a business case for comprehensive decarbonization?

### The Utility Xcel

- 80 Mt CO<sub>2</sub> in 2020 (Scope 1)
- Goal: Sell 100% renewable electricity by 2050
- Milestone: 80% reduction by 2030 (relative to 2005 baseline)
- No stated goals regarding the sale of natural gas (Scope 3)

#### United Airlines

- Direct (Scope 1) emissions: 42 Mt CO<sub>2</sub> in 2019  $\rightarrow$  98% from jet fuel combustion
- Goal: Carbon neutrality by 2050
- Investments: Sustainable Aviation Fuels
- Offset program started through investment in Direct Air Capture company  $\rightarrow$  1point5

### Schlumberger (SLB)

### 2019 Emission Baseline Inventory

Scope 3

44.4 million

services

6.3 million

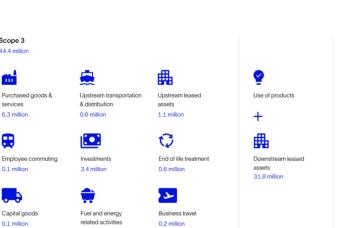
0.1 million

0.1 million

0.1 million

(All emissions stated in metric tons of CO2e)





# Schlumberger (SLB) - Decarbonization Goals Relative to 2019 levels:

- By 2025: 30% reduction in Scope 1 and 2
- By 2030: 50% reduction in Scope 1 and 2 30% reduction in Scope 3
- By 2050: 100% reduction, with minimal reliance on offsets Example: Biomass Energy CCS → BEECS

### Google

- Scope 3 covers employee travel and commuting
- Claim: Carbon Neutral since 2007
- Claim: Has already eliminated all legacy emissions by 2020

Google's justification for this claim...

# Corporate Carbon Footprints (CCF)

### CCF = Gross Emissions - Offsets

### Gross Emissions:

- Include Scope 1, 2 and 3 in Gross Emissions?
- Can Scope 3 emissions be measured?
   Example: Aircraft is delivered to an airline....
- Data collection and verification challenges
- Ultimately only direct (Scope 1) emissions matter?
  - Outsource carbon intensive activities?

# Corporate Carbon Footprints (CCF)

### CCF = Gross Emissions - Offsets

### Offsets:

- Voluntary Carbon Markets trade a wide range of offsets
- $\approx 80\%$  growth rate in 2022
- $\bullet$  McKinsey: Median offset price in 2022 was below \$5/ton of  $\mathrm{CO}_2$ 
  - "Low-hanging fruit" or simply "junk" offsets?
- ullet Some high-end "removal offsets" traded for  $\geq \$600/$  ton of  $\mathrm{CO}_2$