

The Role of Angels in Climate Tech

Deanna Zhang

Goldenseeds - May 3, 2023

Goals for today

To convince you to...

- ▶ Invest **more in climate tech**
- ▶ Fund **non-venture models**
- ▶ Be **carbon champions**



Traditional role of angels

- ▶ Investing for equity in early stage company
- ▶ Getting company ready for the seed or Series A round
- ▶ Bridge between informal and formal investment

Equity investors at the seed, early and later stage of firm growth

| Informal Investors | | Formal Investors | |
|----------------------------|--|---|--|
| Founders, Friends & Family | Angel Investors (Typical investment size: \$25,000 to \$500,000) | Venture Capital Funds (Typical investment size: \$3 million to \$5 million) | |
| Seed Stage Investments | Early Stage Investments | Later Stage Investments | |

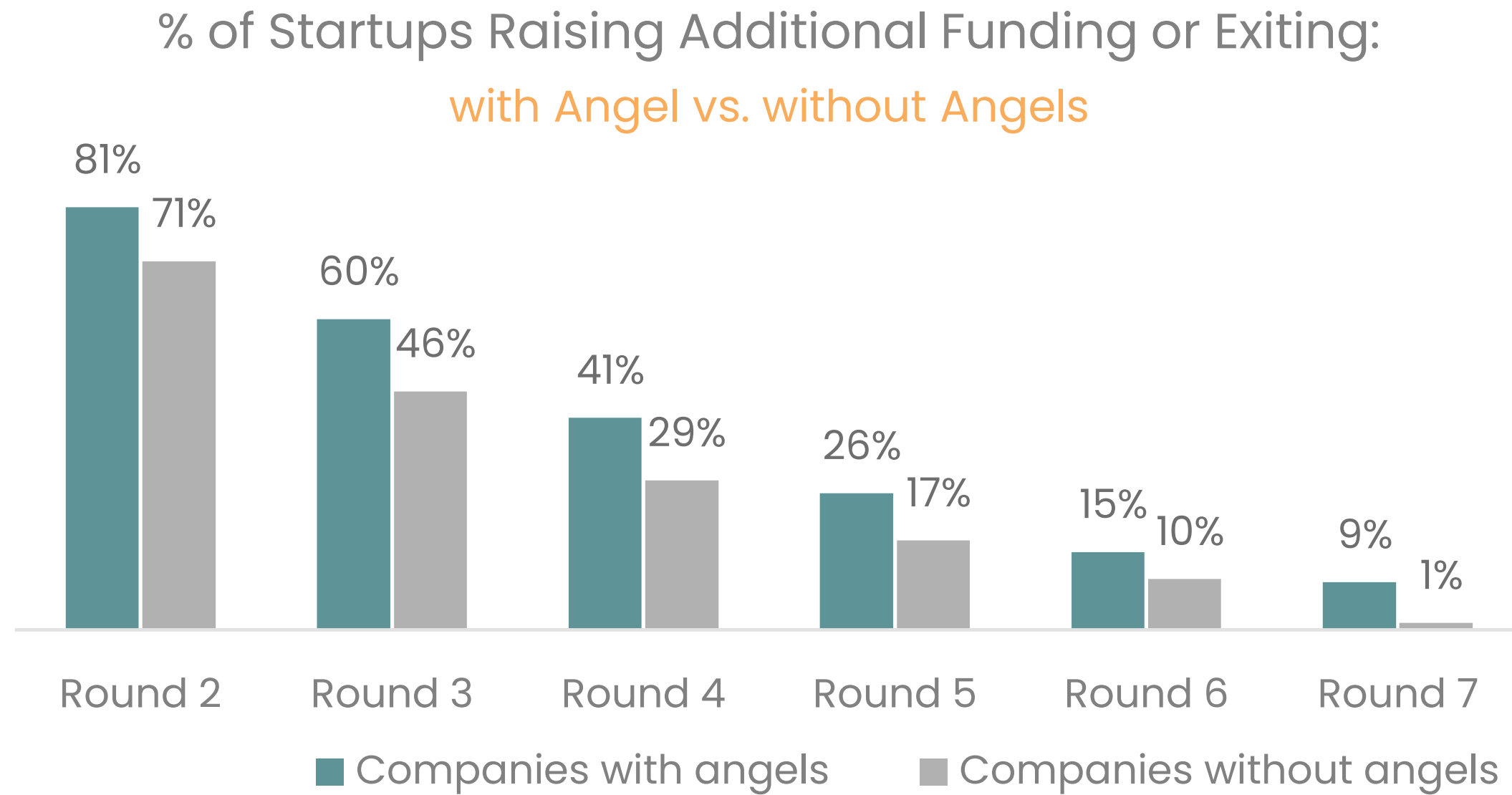


Financing Gap

Source: OECD 2011



Traditional role of angels



Source: Pitchbook, 2020



So what changes in climate
tech?



Climate tech is dominated by hard tech and non-venture models

VC Deals in Climate Tech

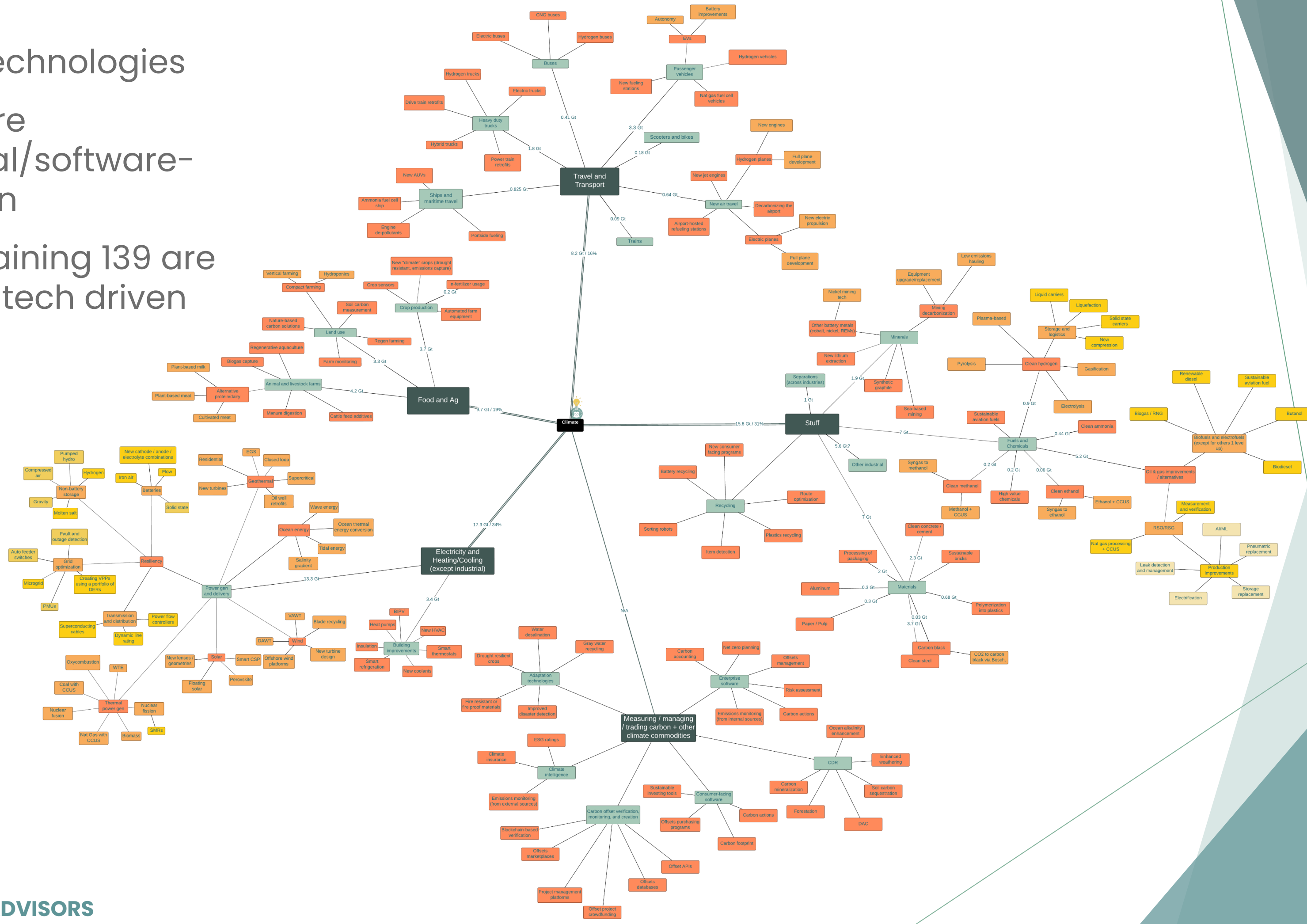


Source: CTVC



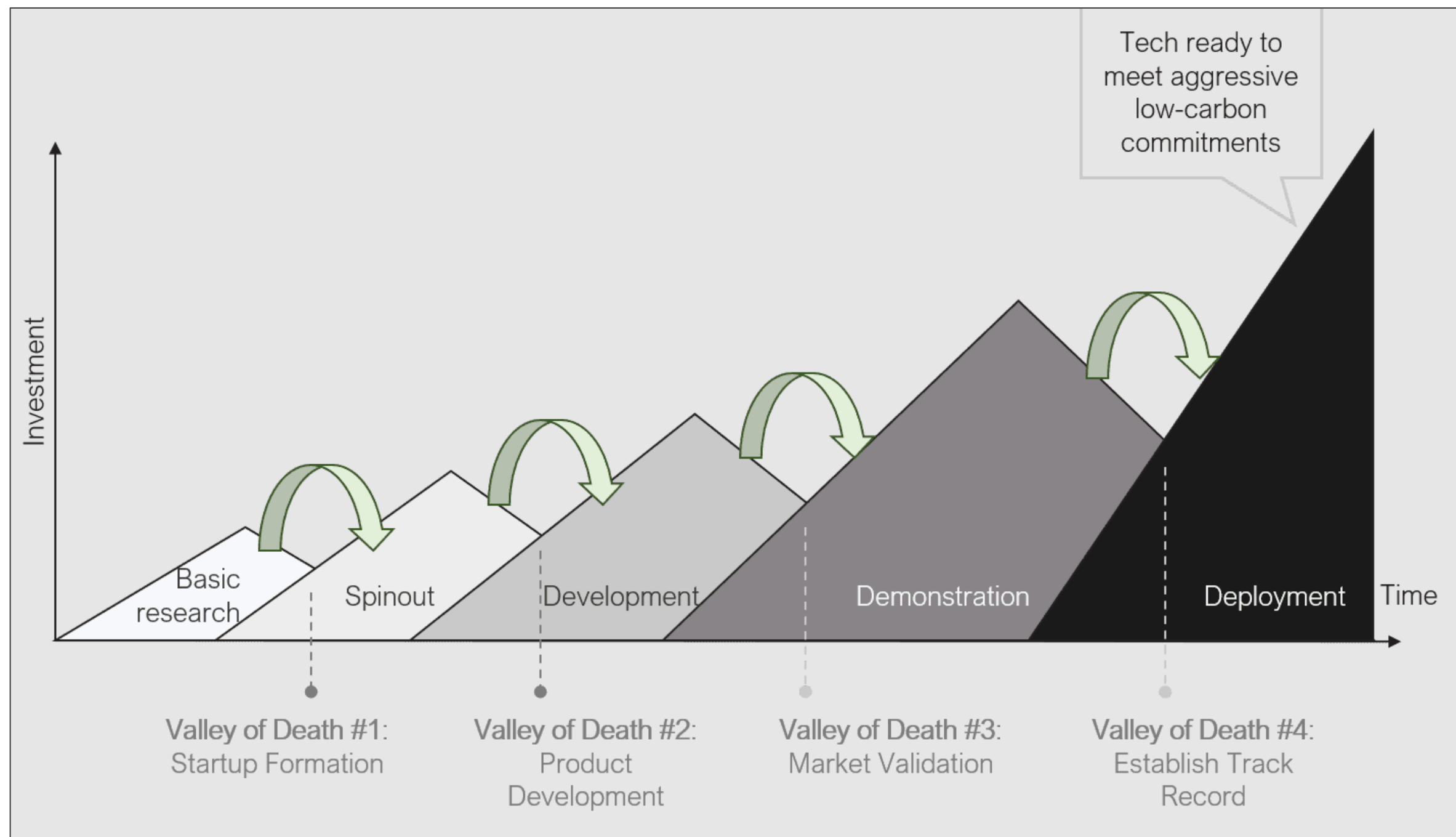
Climate tech landscape: FEST + C

- ▶ 170 technologies
- ▶ ~31 are digital/software-driven
- ▶ Remaining 139 are hard tech driven



Hard tech climate tech has different valleys of death

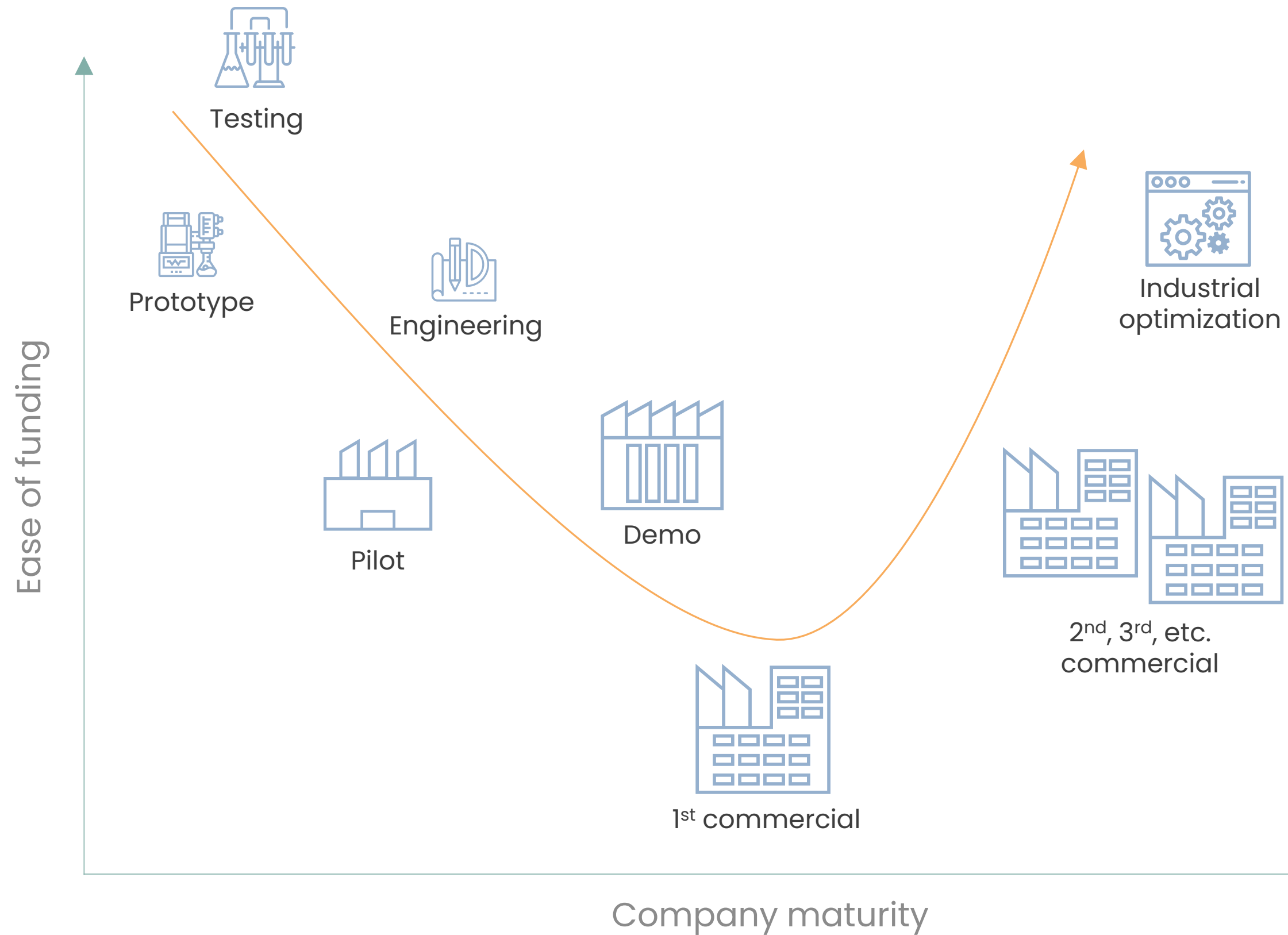
The four valleys of death for cleantech



Source: RMI



Valley is deepest at FOAK



*Based on the Valley of Death slide from LanzaTech's 2017 presentation



The space is also filled with non-venture models that need funding

- ▶ “Developers” of x asset or assets
 - ▶ **Businesses that focus on vendor or customer efficiency:** aggregating feedstock for biofuels
 - ▶ **Integrators of assets:** integrating carbon capture with carbon utilization
 - ▶ **Process efficiency in development via unique access to resources or partnerships:** revenue sharing between customer and developer of microgrid
- ▶ New service providers
 - ▶ **New ways of installing and maintaining energy assets:** network for heat pump technicians
 - ▶ **New ways of transitioning the workforce for climate tech:** climate tech training programs
 - ▶ **Professional/service organizations that pull together productive collisions:** accelerators/incubators
 - ▶ **New financing models:** providing lease buyout options for solar customers
 - ▶ **Consultants:** like me!

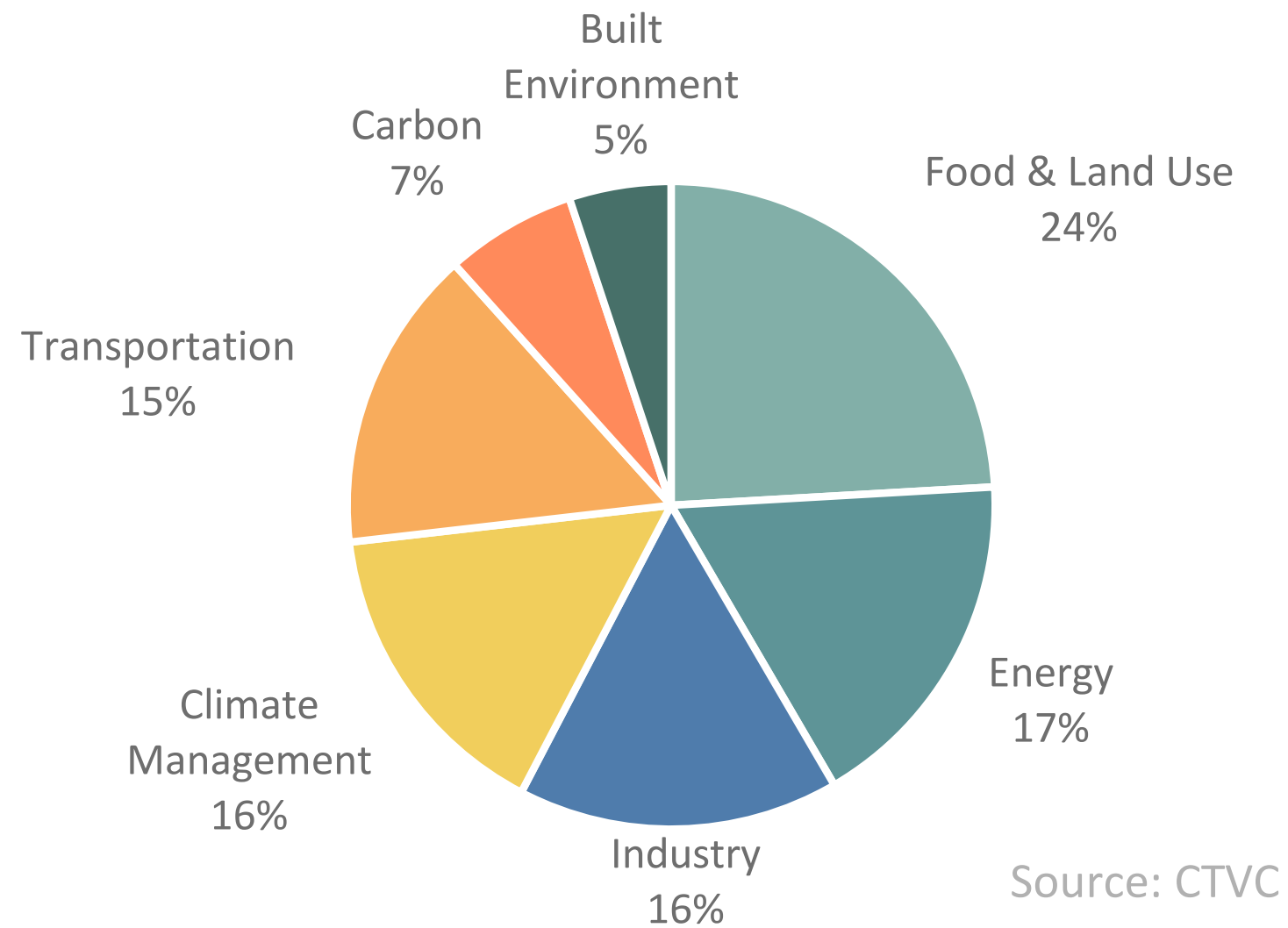


So what can angels do in climate tech?

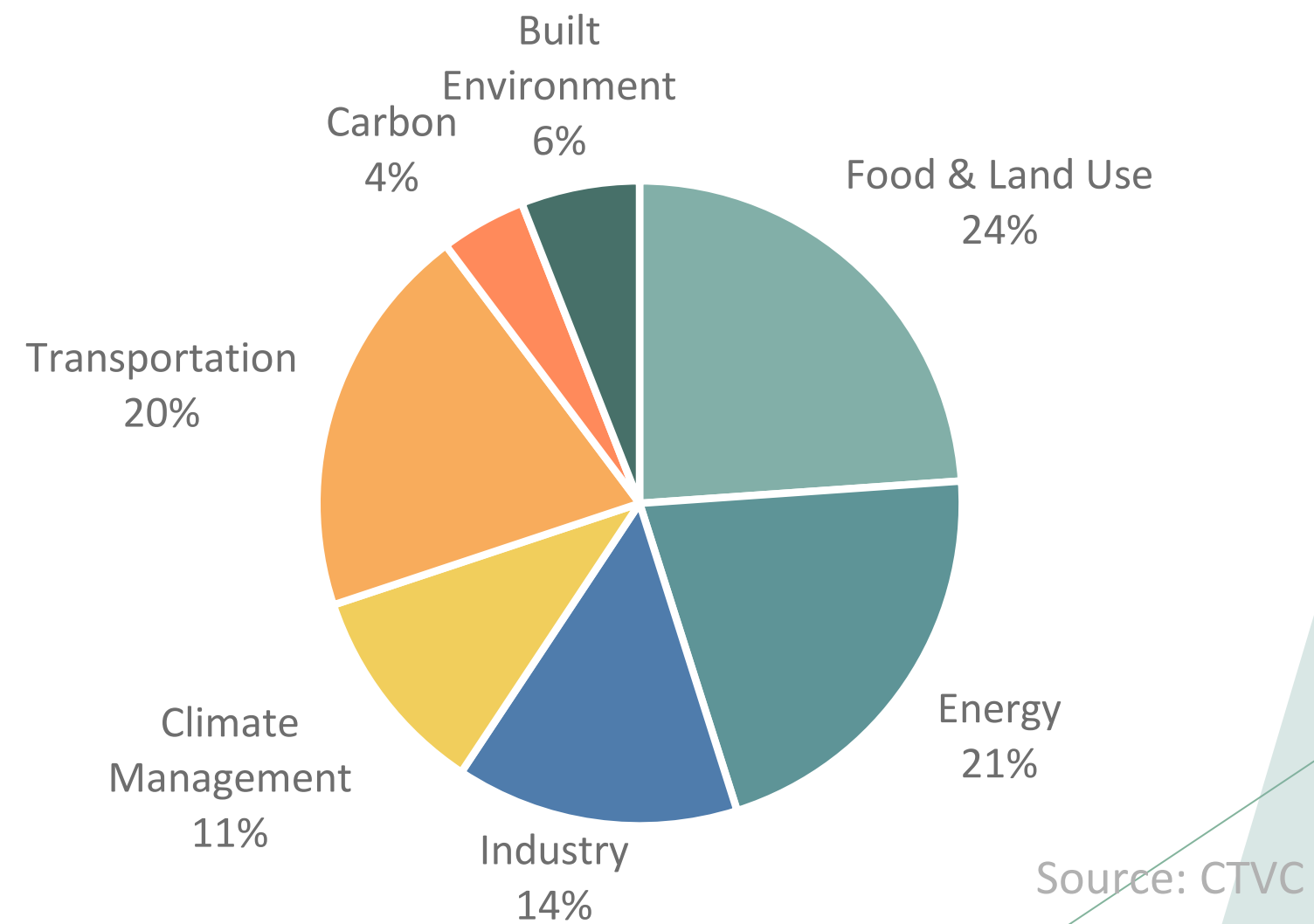


Invest in underrepresented technologies

Seed investments in Climate Tech (since 2020)



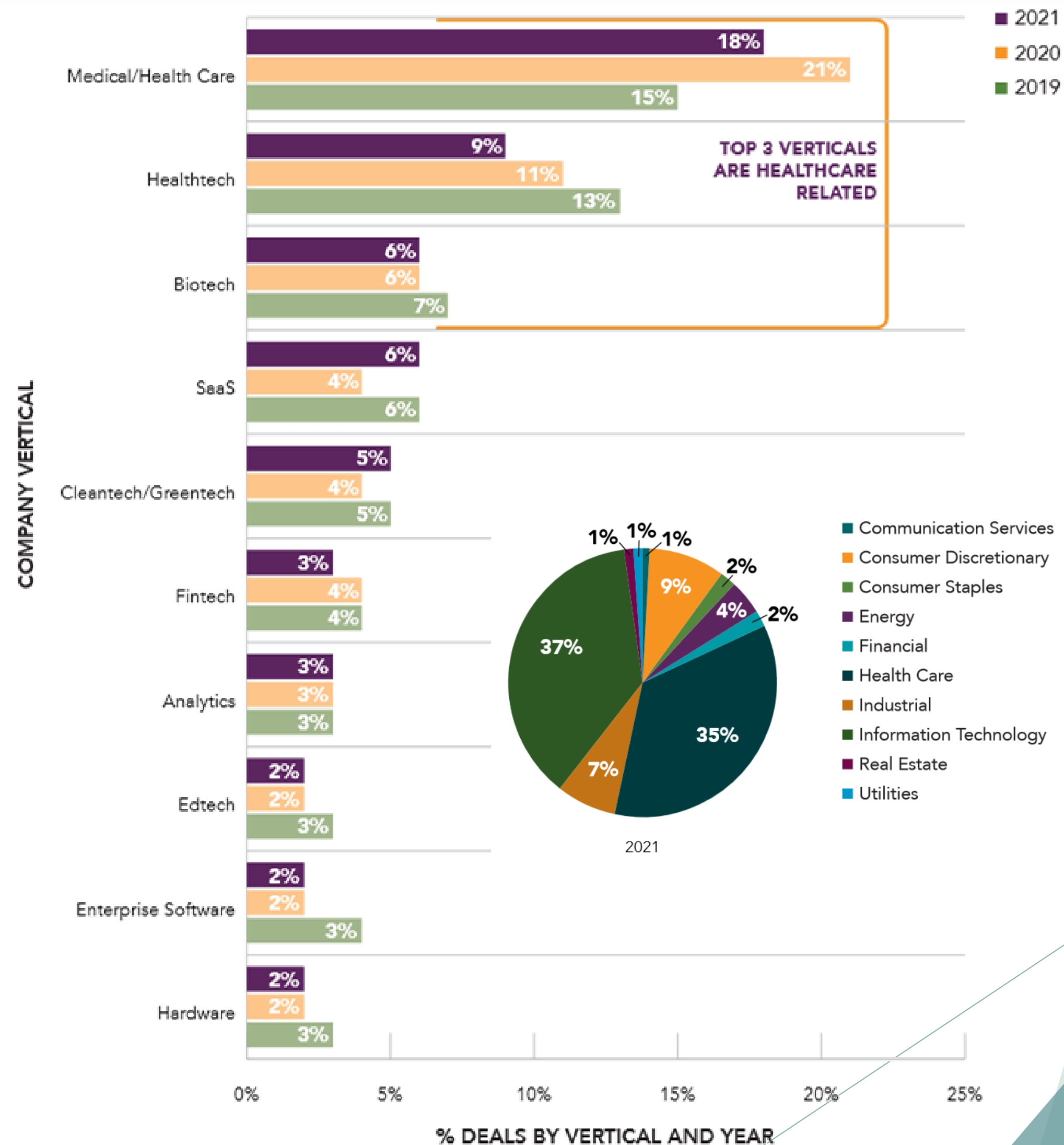
All VC investments in Climate Tech (since 2020)



► Industry and energy are underrepresented at the seed level

Invest more in general

Climate tech is only ~4-5% of Seed Investments right now



Source: Angel Capital Association



ETM ADVISORS

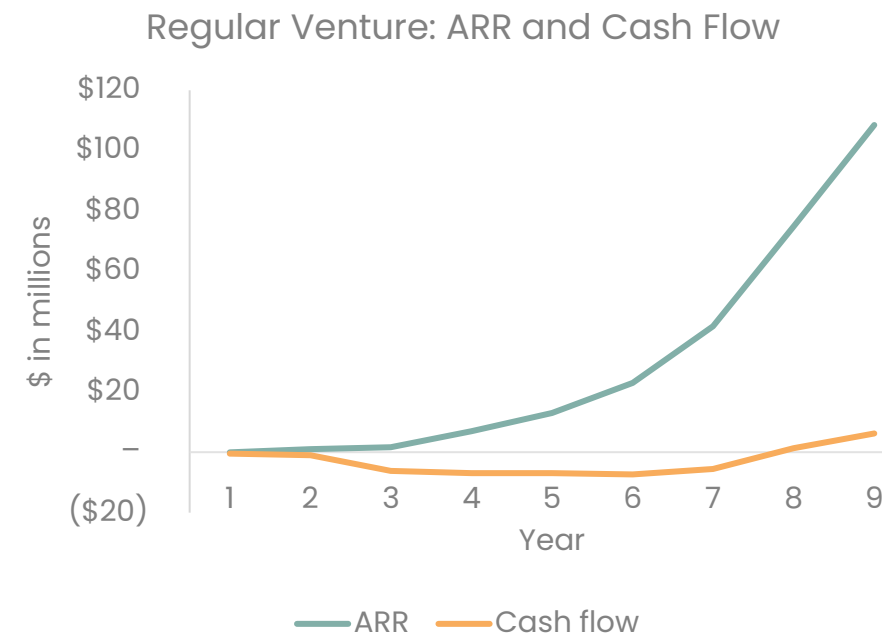
Invest in non-venture models

- ▶ **Look for seed stage developers & service providers** targeting unique inefficiencies
- ▶ **Invest with different criteria:**
 - ▶ Think about cash flow
 - ▶ Target an early exit strategy
 - ▶ Think through options with collateral
 - ▶ Lower your threshold for portfolio failure vs. traditional seed
- ▶ **Convertible notes**



How do I make money?

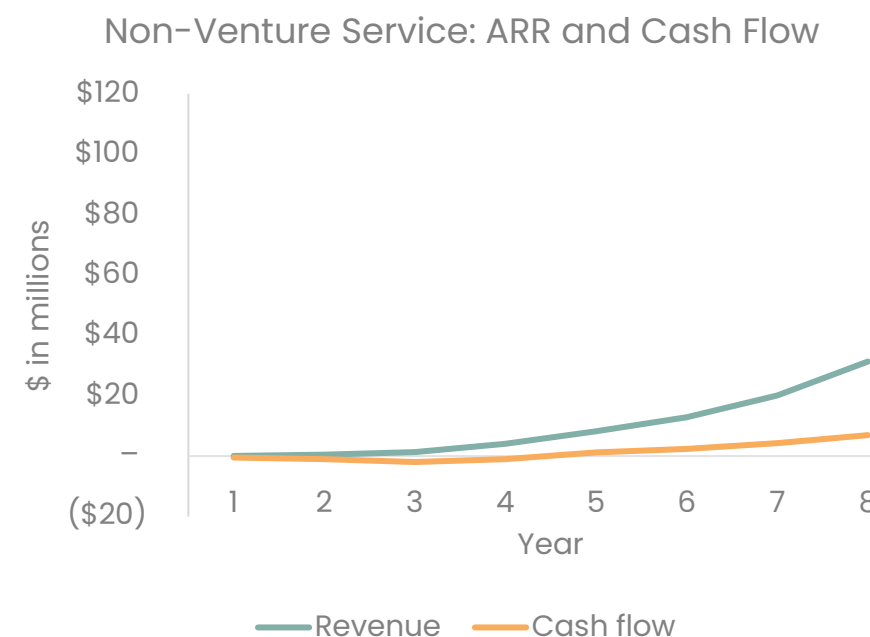
Traditional angel model



| (\$ in mm) | Age of startup (years) | | | | | | | | | | IRR | MOIC | |
|--------------------------|------------------------|-----------------|-------------|-----------------|-----------------|---------|-----------------|---------|-------|----------|-------|--------|--|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 (exit) | | | |
| Operating metrics | | | | | | | | | | | | | |
| ARR | - | - | \$1.0 | \$1.7 | \$7.0 | \$13 | \$23 | \$42 | \$75 | \$108 | | | |
| Cash flow | - | (\$0.5) | (\$1.0) | (\$6.2) | (\$6.9) | (\$6.9) | (\$7.3) | (\$5.6) | \$1.4 | \$6.2 | | | |
| Financing | | Pre-Seed | Seed | Series A | Series B | | Series C | | | | | | |
| Round size | - | \$0.5 | \$1.5 | \$7.5 | \$20.0 | - | \$50.0 | - | - | | | | |
| Valuation (Post-money) | - | \$2.5 | \$7.5 | \$20 | \$65 | \$100 | \$320 | \$486 | \$875 | \$1,100 | | | |
| Multiple of ARR | | | | | | | | | | 10.1x | | | |
| Returns | | | | | | | | | | | | | |
| Pre-Seed | | (\$0.5) | | | | | | | | \$64 | 83% | 128.5x | |
| Seed | | | (\$1.5) | | | | | | \$80 | 77% | 53.5x | | |

How do I make money?

Non-venture angel model + regular exit

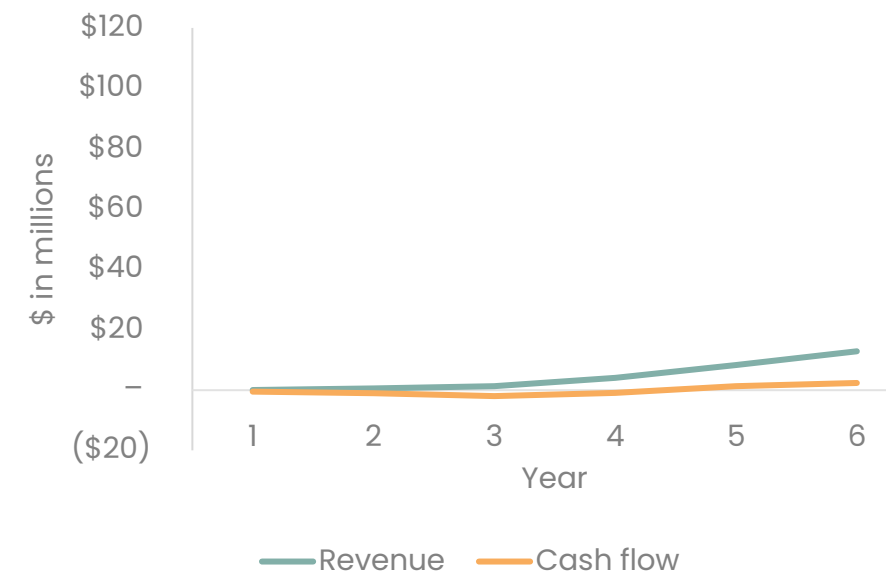


| (\$ in mm) | Age of startup (years) | | | | | | | | IRR | MOIC | |
|--------------------------|------------------------|---------|---------|---------|---------|-------|-------|-------|-------|------|----------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | 8 (exit) |
| Operating metrics | | | | | | | | | | | |
| Revenue | - | - | \$0.5 | \$1.3 | \$4.0 | \$8 | \$13 | \$20 | \$31 | | |
| Cash flow | - | (\$0.5) | (\$1.0) | (\$2.0) | (\$1.0) | \$1.3 | \$2.4 | \$4.3 | \$6.9 | | |
| Financing | | | | | | | | | | | |
| Round size | - | \$0.5 | \$1.5 | \$5.0 | - | - | - | - | | | |
| Valuation (Post-money) | - | \$2.5 | \$4.5 | \$12 | \$11 | \$16 | \$30 | \$54 | \$86 | | |
| Multiple of EBITDA | | | | | | | | | 10.0x | | |
| Returns | | | | | | | | | | | |
| Pre-Seed | | (\$0.5) | | | | \$0.1 | \$0.2 | \$0.3 | \$6.5 | 48% | 14.2x |
| Seed | | | (\$1.5) | | | \$0.2 | \$0.4 | \$0.8 | \$16 | 53% | 11.9x |

How do I make money?

Non-venture angel model + early exit

Non-Venture Service: ARR and Cash Flow



| (\$ in mm) | Age of startup (years) | | | | | | IRR | MOIC |
|--------------------------|------------------------|-----------------|-------------|-----------------|---------|-------|-------|----------|
| | 0 | 1 | 2 | 3 | 4 | 5 | | |
| Operating metrics | | | | | | | | |
| Revenue | - | - | \$0.5 | \$1.3 | \$4.0 | \$8 | \$13 | |
| Cash flow | - | (\$0.5) | (\$1.0) | (\$2.0) | (\$1.0) | \$1.3 | \$2.4 | |
| Financing | | | | | | | | |
| | | Pre-Seed | Seed | Series A | | | | |
| Round size | - | \$0.5 | \$1.5 | \$5.0 | - | - | | |
| Valuation (Post-money) | - | \$2.5 | \$4.5 | \$12 | \$11 | \$16 | \$30 | |
| Multiple of EBITDA | | | | | | | 10.0x | |
| Returns | | | | | | | | |
| Pre-Seed | | (\$0.5) | | | | \$0.1 | \$2.2 | 36% 4.7x |
| Seed | | | (\$1.5) | | | \$0.2 | \$5.6 | 41% 3.9x |

How do I make money?

Investing in a new tech developer + exit at FOAK

| (\$ in mm) | Age of startup (years) | | | | | 5 (exit) | IRR | MOIC |
|--------------------------|------------------------|-----------------|-------------|-----------------|-----------------|----------|------|-------|
| | 0 | 1 | 2 | 3 | 4 | | | |
| Operating metrics | | | | | | | | |
| Revenue | - | - | - | - | - | - | | |
| Cash flow | - | - | - | - | - | - | | |
| Financing | | | | | | | | |
| | | Pre-Seed | Seed | Series A | Series B | | | |
| Round size | - | \$0.5 | \$2.0 | \$10.0 | \$30.0 | | | |
| Valuation (Post-money) | - | \$2.5 | \$8.0 | \$23 | \$75 | \$175 | | |
| Returns | | | | | | | | |
| Pre-Seed | | (\$0.5) | | | | \$8.8 | 104% | 17.5x |
| Seed | | | (\$2.0) | | | \$15 | 94% | 7.3x |

How do I make money?

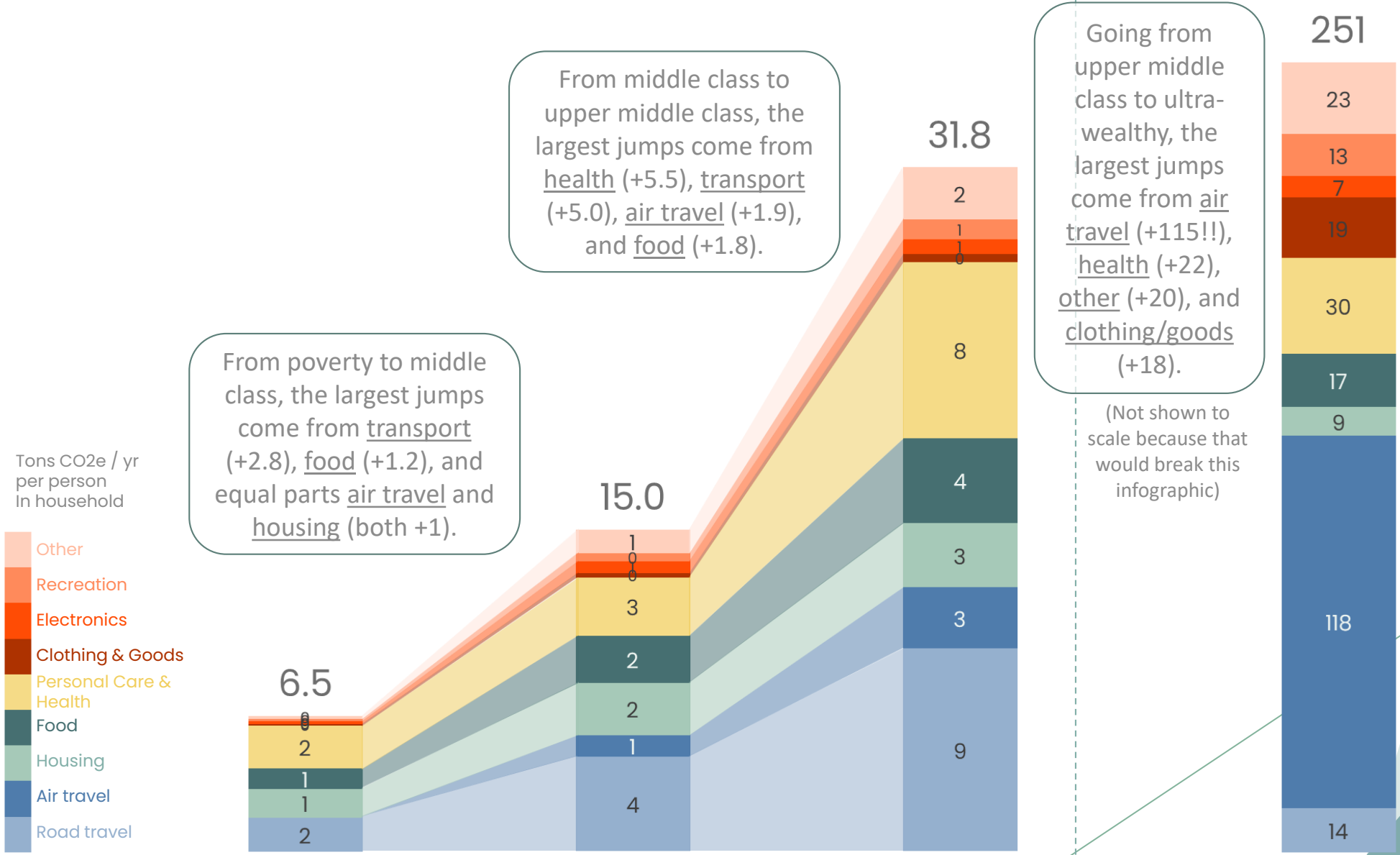
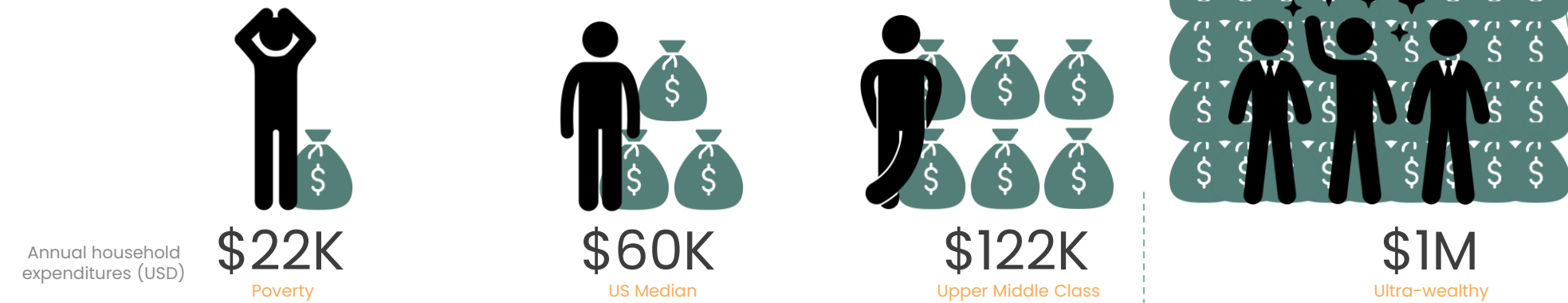
Investing in a commercial developer + exit at construction

(\$ in mm)

| | Age of project (years) | | | | | |
|--------------------------|------------------------|-----------------|-------------|----------|------------|-------------|
| | 0 | 1 | 2 | 3 (exit) | | |
| Operating metrics | | | | | | |
| Revenue | - | - | - | - | | |
| Cash flow | - | - | - | - | | |
| Financing | | | | | | |
| | | Pre-Seed | Seed | | | |
| Round size | - | \$0.5 | \$2.0 | - | | |
| Valuation (Post-money) | - | \$2.5 | \$8.0 | \$13 | | |
| Returns | | | | | | |
| | | | | | IRR | MOIC |
| Pre-Seed | | (\$0.5) | | \$1.9 | 93% | 3.8x |
| Seed | | | (\$2.0) | \$3.1 | 56% | 1.6x |

Being a carbon champion is also important

- ▶ A less obvious role for angel investors is to be low carbon champions for solutions aimed at consumers
- ▶ Building wealth is often inversely correlated with one's personal carbon footprint
- ▶ Angels can change that



*Estimated using household budget surveys from BLS. Airline travel provided by My World in Data, road miles provided by FHA, and average fuel economy provided by EPA. Emissions factors provided by Carbon Footprint and Climatiq. Housing data provided by EIA and used with Carbon Footprint's US power emissions factor.

Why angels over other VCs?

- ▶ Not limited by the cap stack
- ▶ Can be creative without governance issues
- ▶ Can work with startup more intimately
- ▶ Collateral can matter more
- ▶ May have more societal influence than an institutional

Reviewing the goals

- ▶ Invest **more in climate tech**
- ▶ Fund **non-venture models**
- ▶ Be **carbon champions**



Questions?

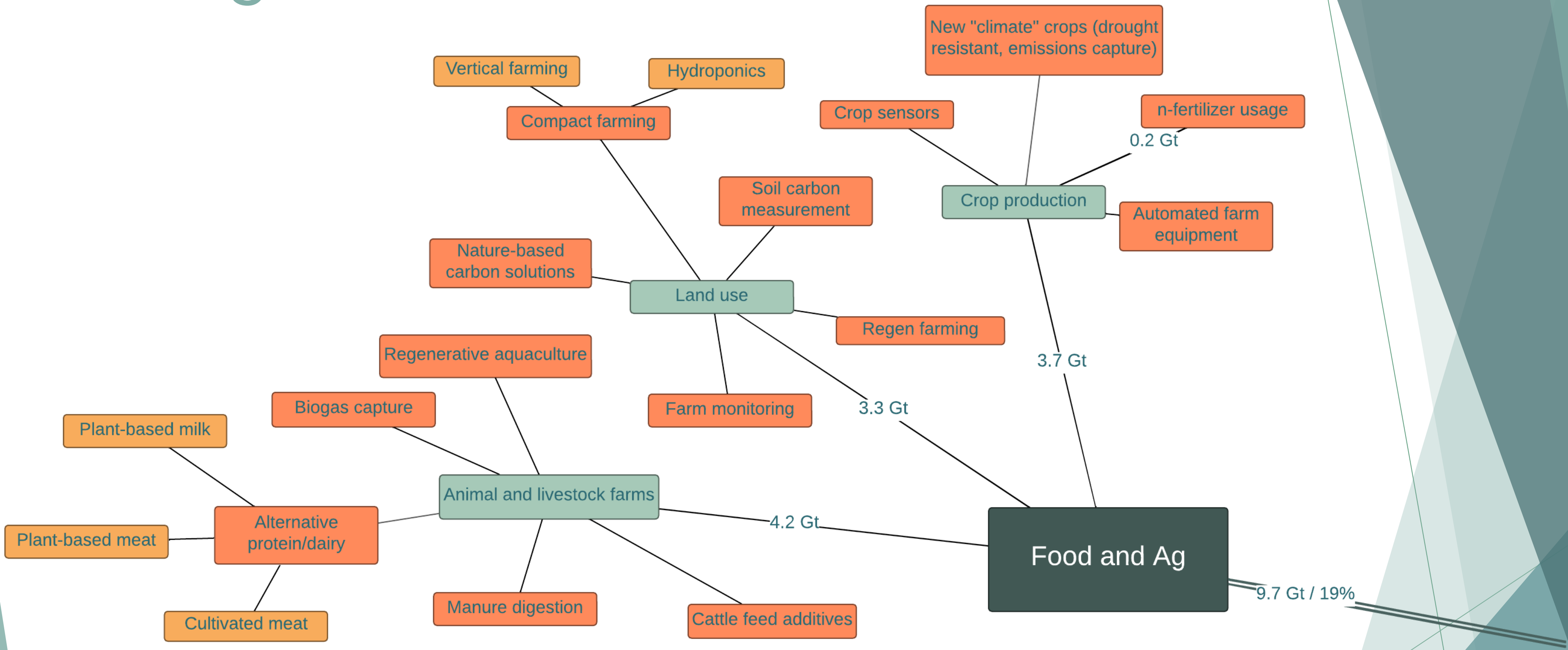
deanna@etm-advisors.com

Check out my blog: etechmonkey.com

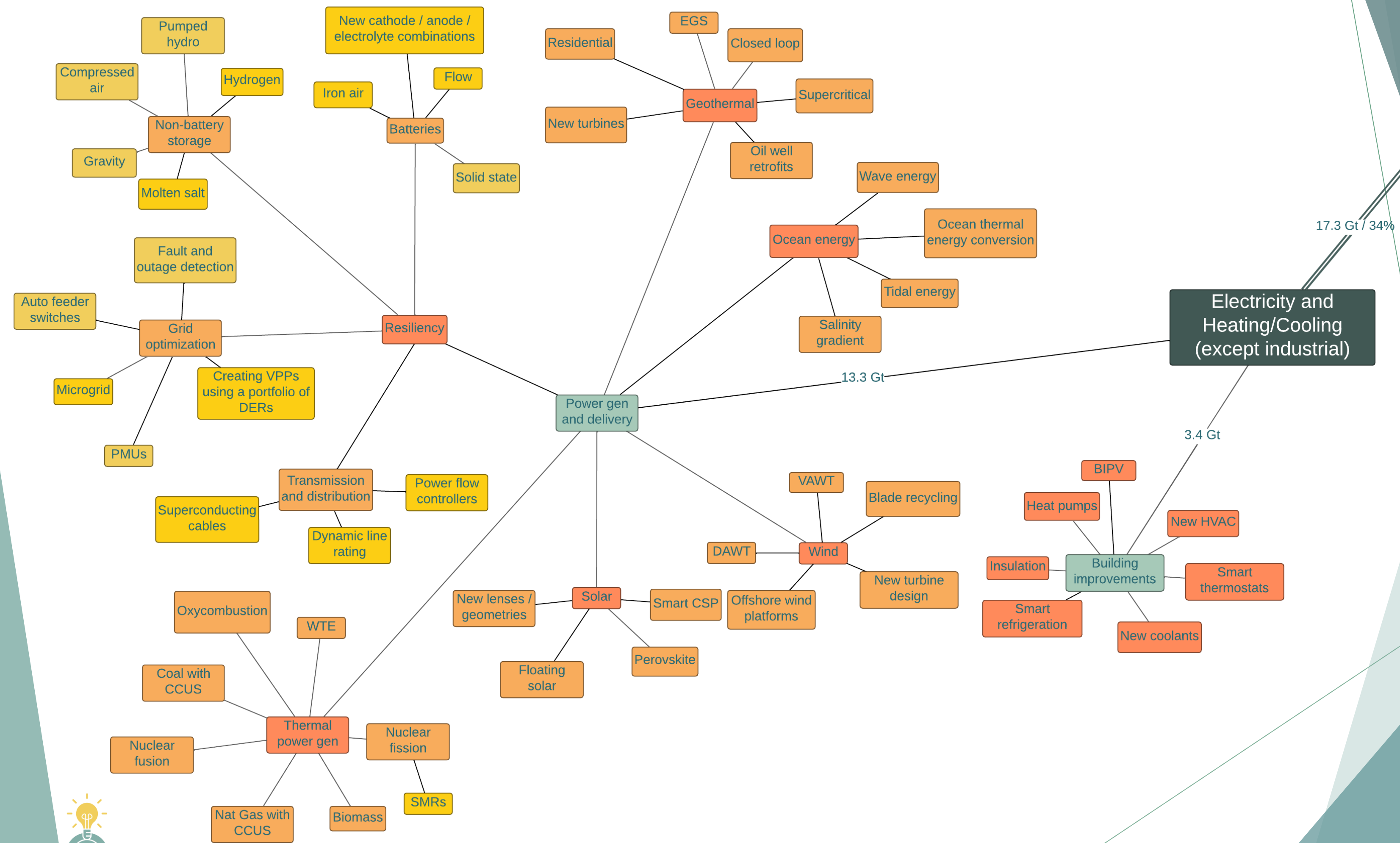


Appendix

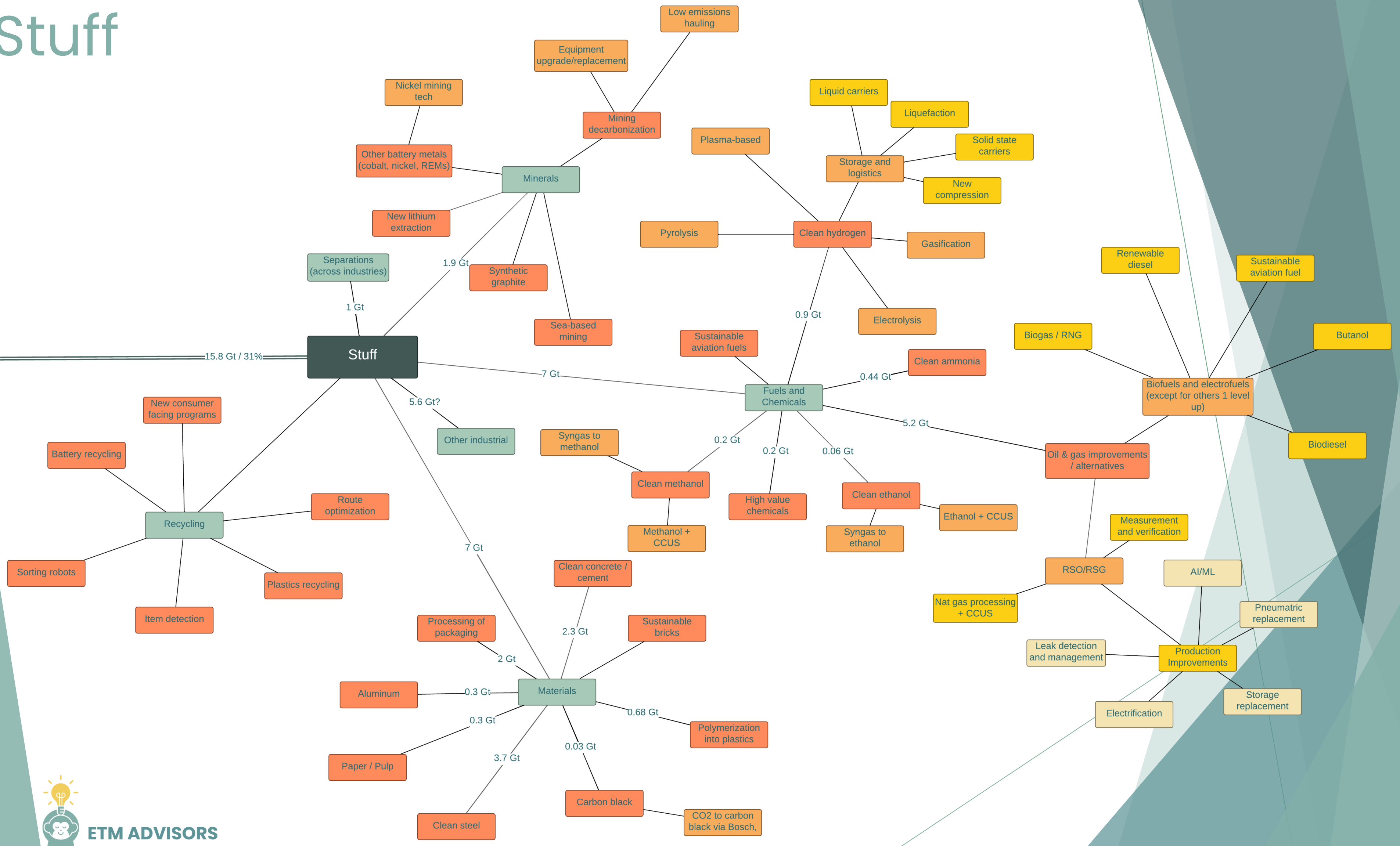
Food/Ag



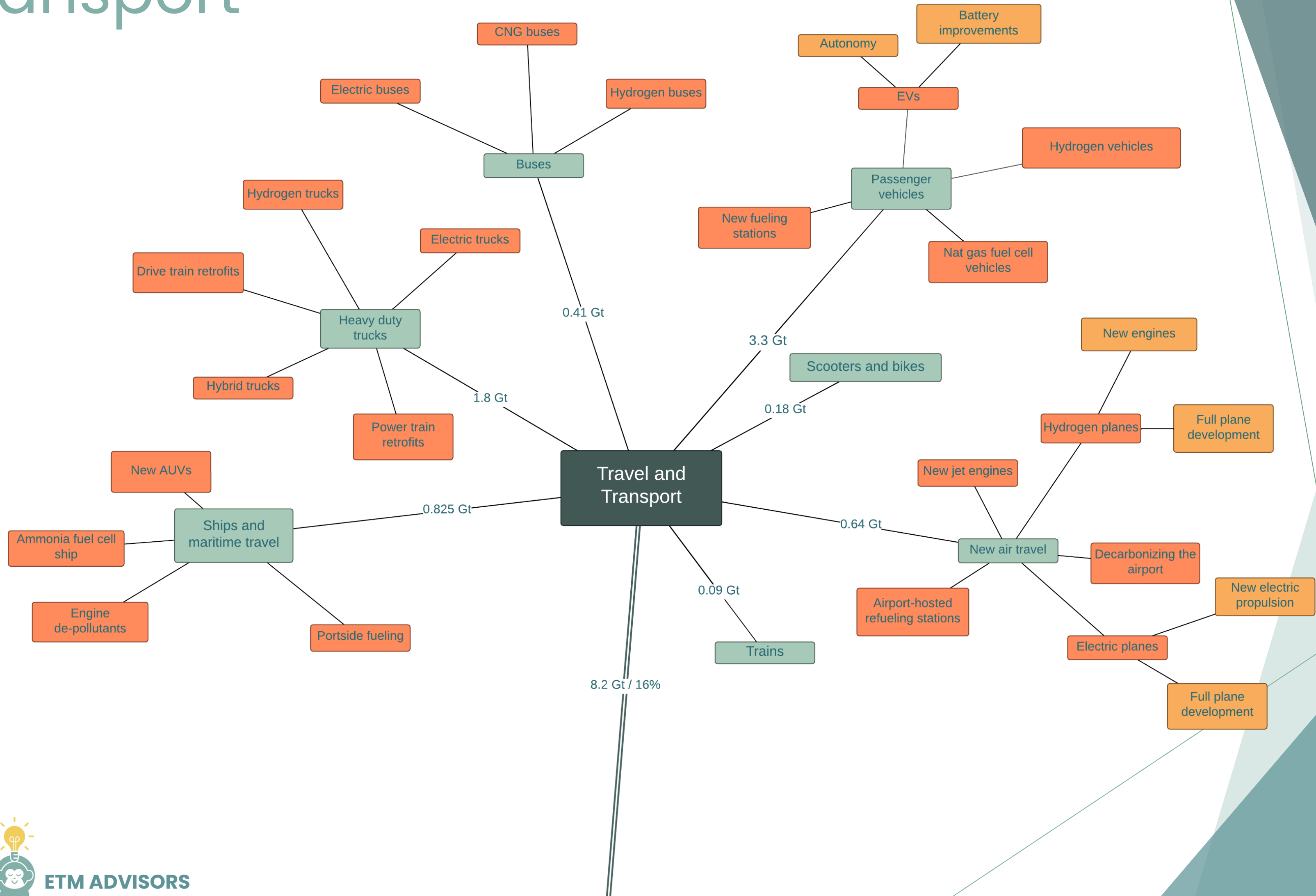
Electricity/Heating/Cooling



Stuff



Transport



Carbon

