

Innovating in 2024: How to Navigate the Energy Transition



Chris Robinson
Senior Director

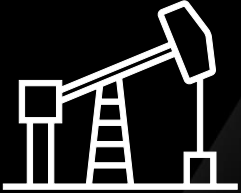


The
Deciding
Factor





**The question is when peak demand
for oil and gas will happen, not if**



THE STATUS QUO STRATEGY

CARRIERS:

Oil, gas



THE NEW FUELS STRATEGY

CARRIERS:

Oil, gas, biofuels, electricity, hydrogen



THE CHEMICALS STRATEGY

CARRIERS:

Primary and specialty chemicals



THE SEQUESTRATION STRATEGY

CARRIERS:

CO₂

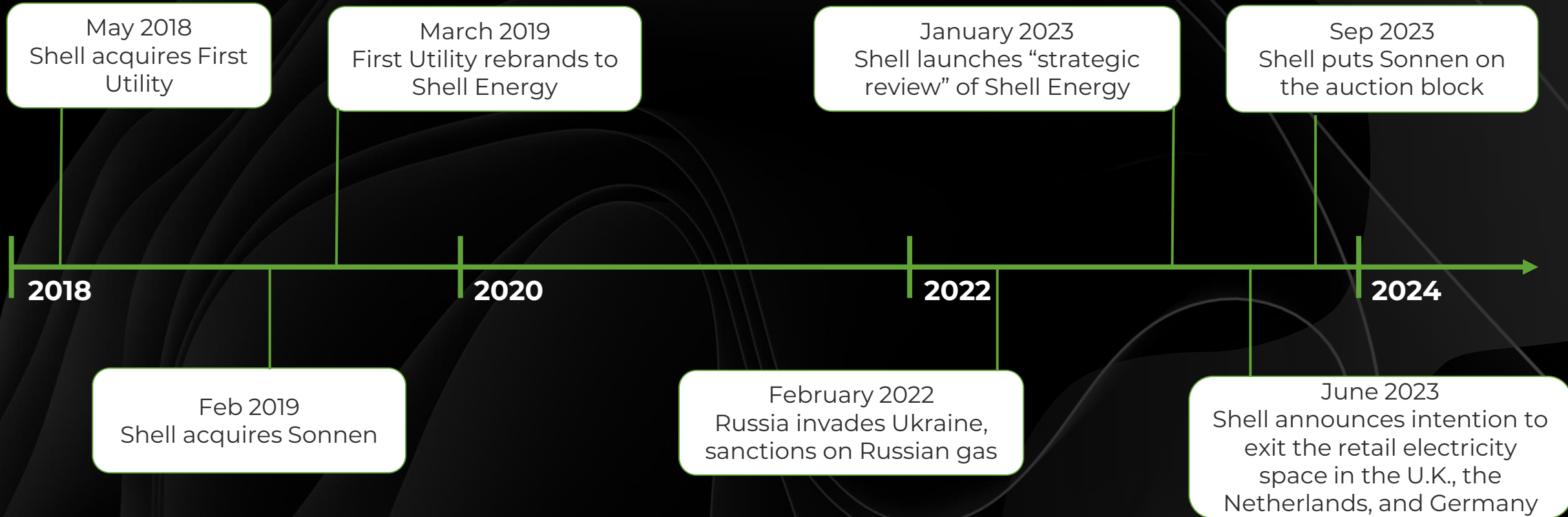


THE UTILITY STRATEGY

CARRIERS:

Electricity

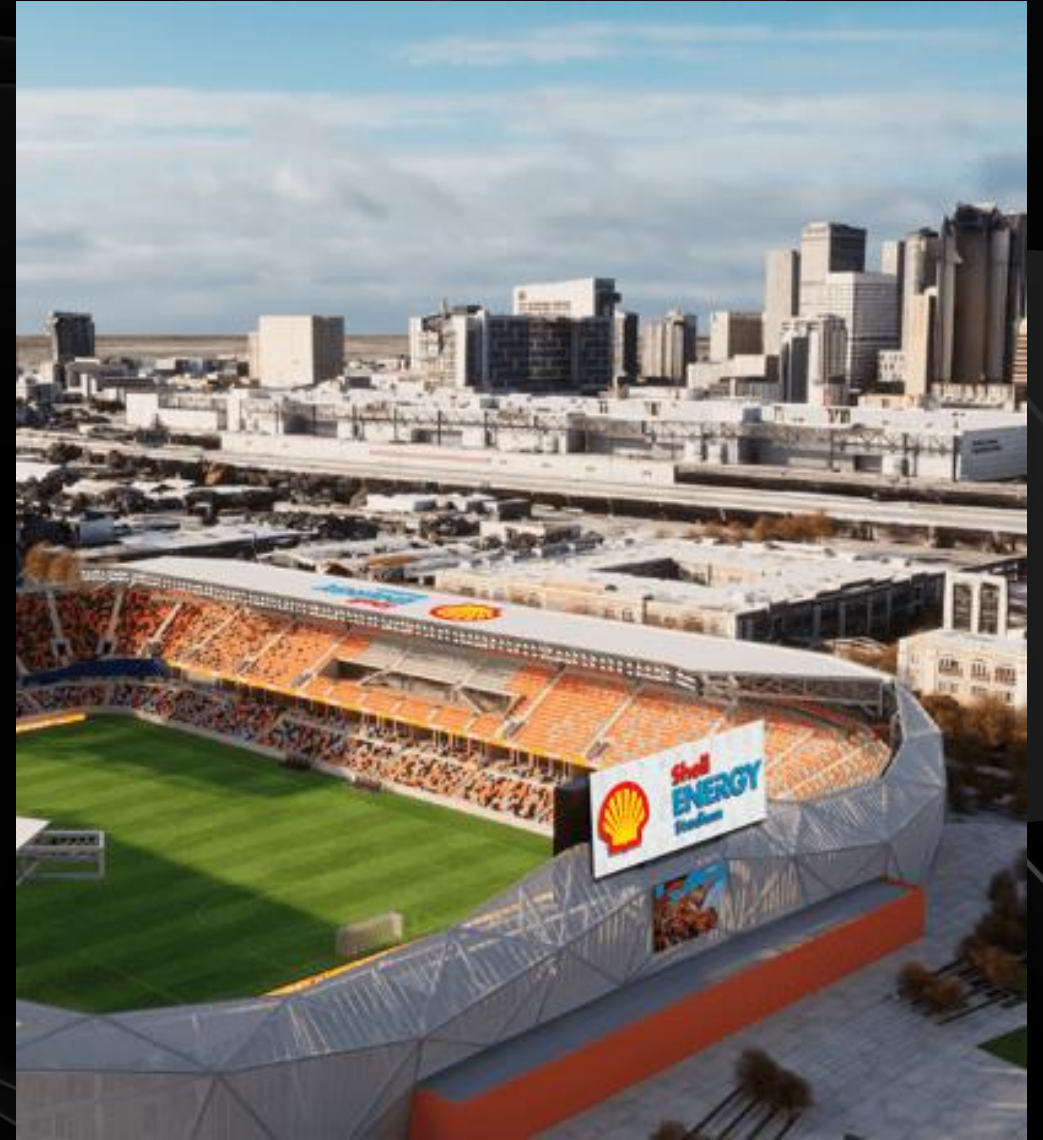
SHELL: THE UTILITY STRATEGY



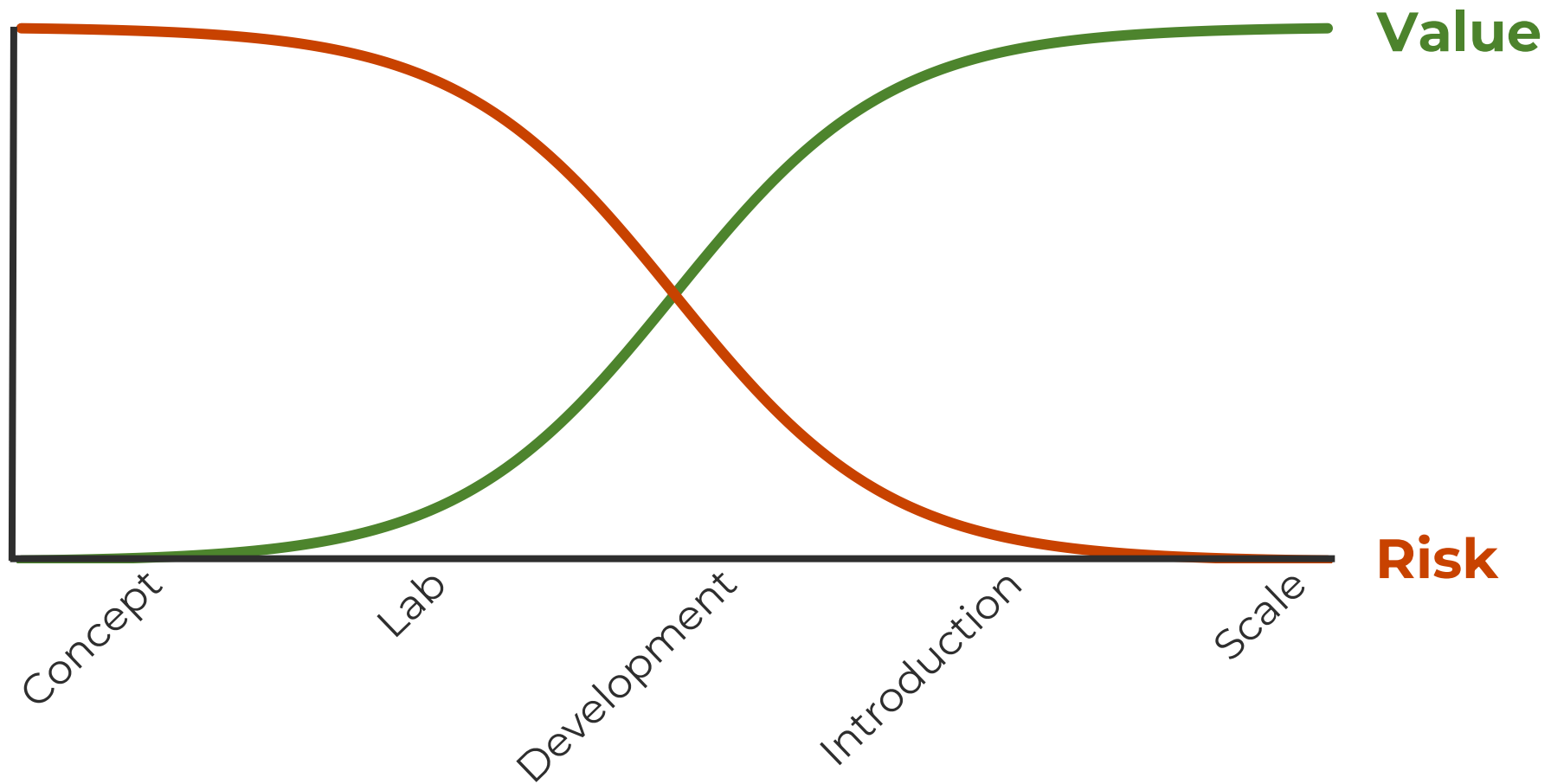
“ ”

Shell launched a strategic review of its European retail businesses in January, citing “tough market conditions,” shortly after CEO Wael Sawan took office.

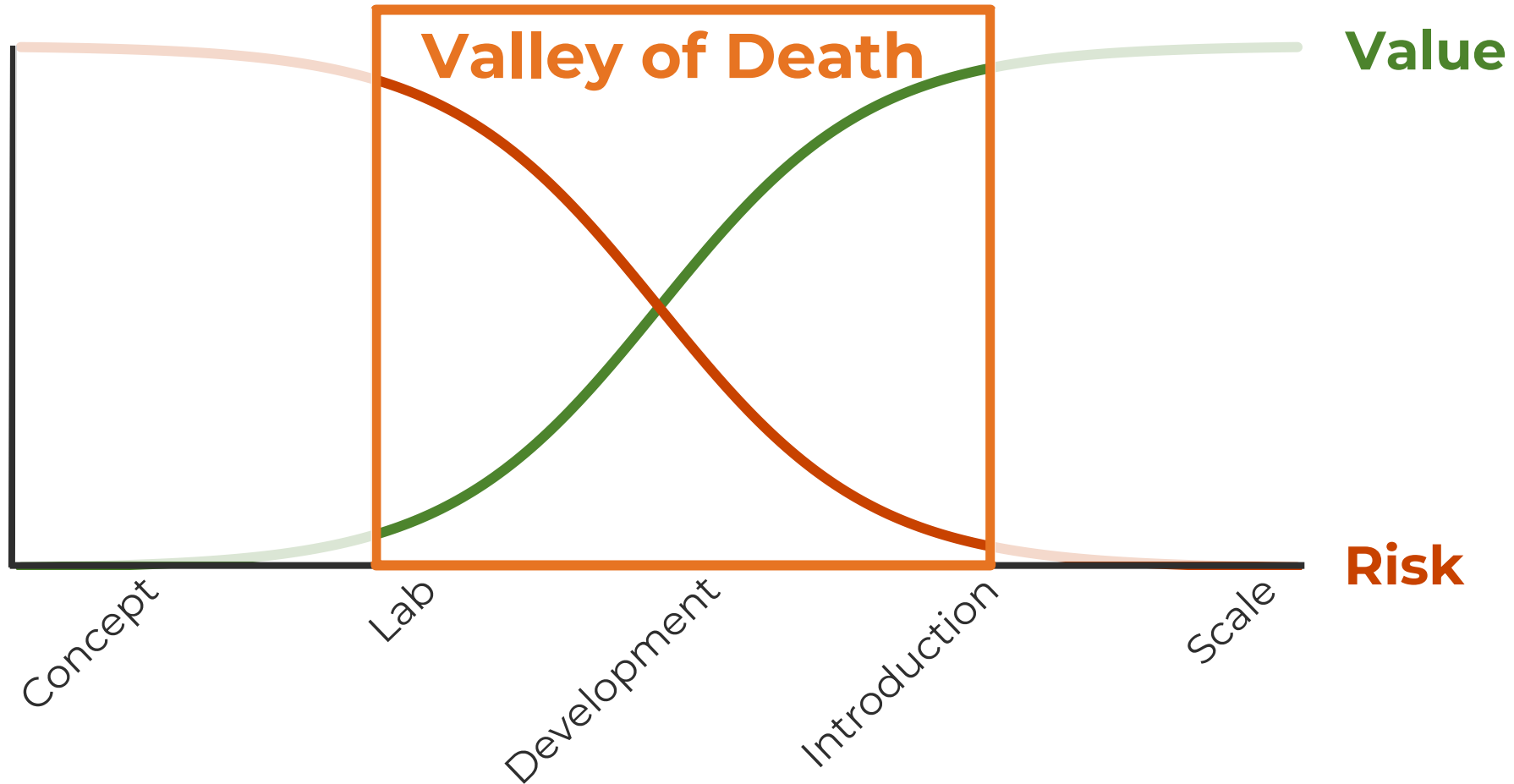
Shell company statement



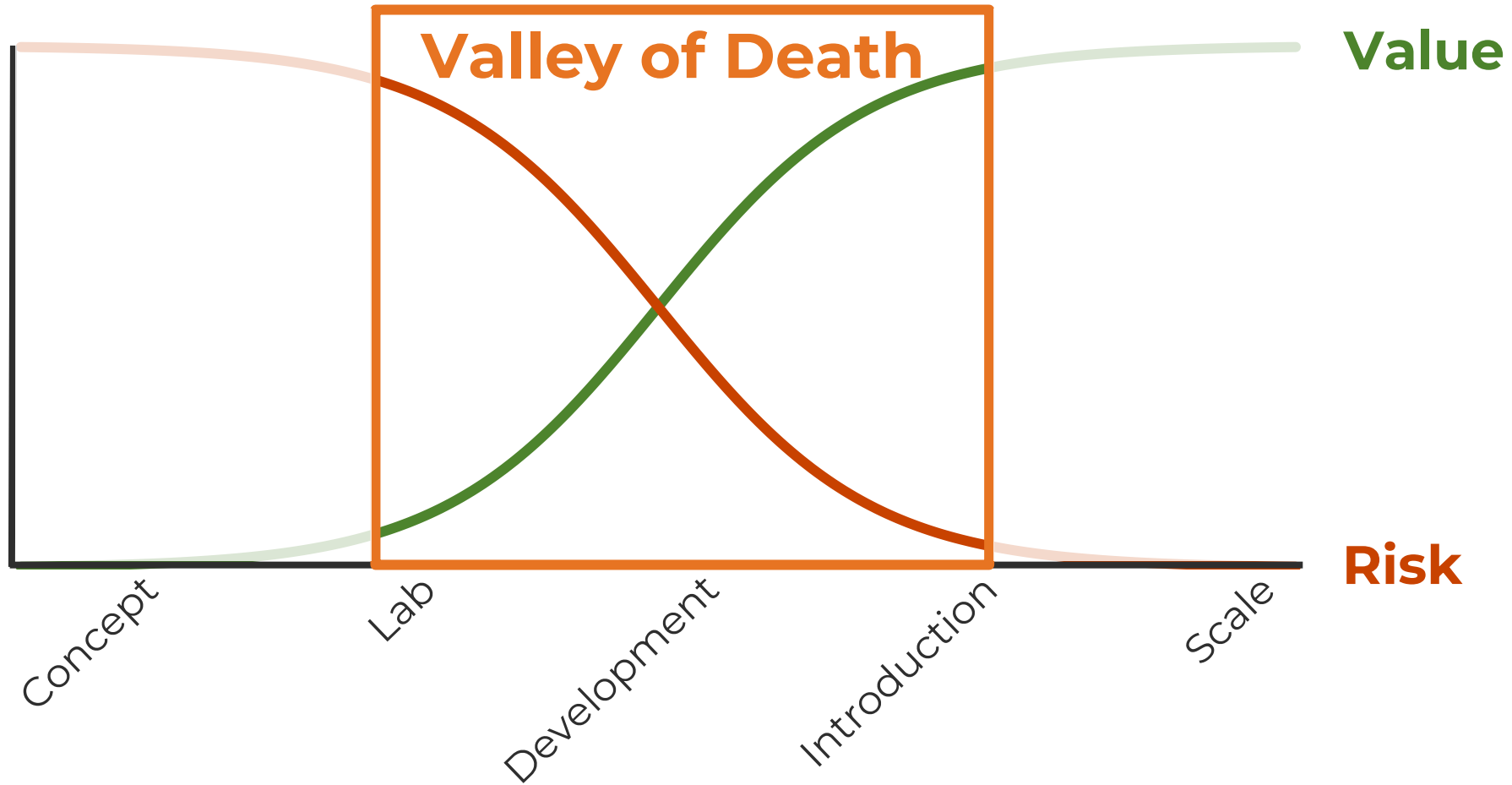
TURNING TECH INNOVATION INTO A BUSINESS



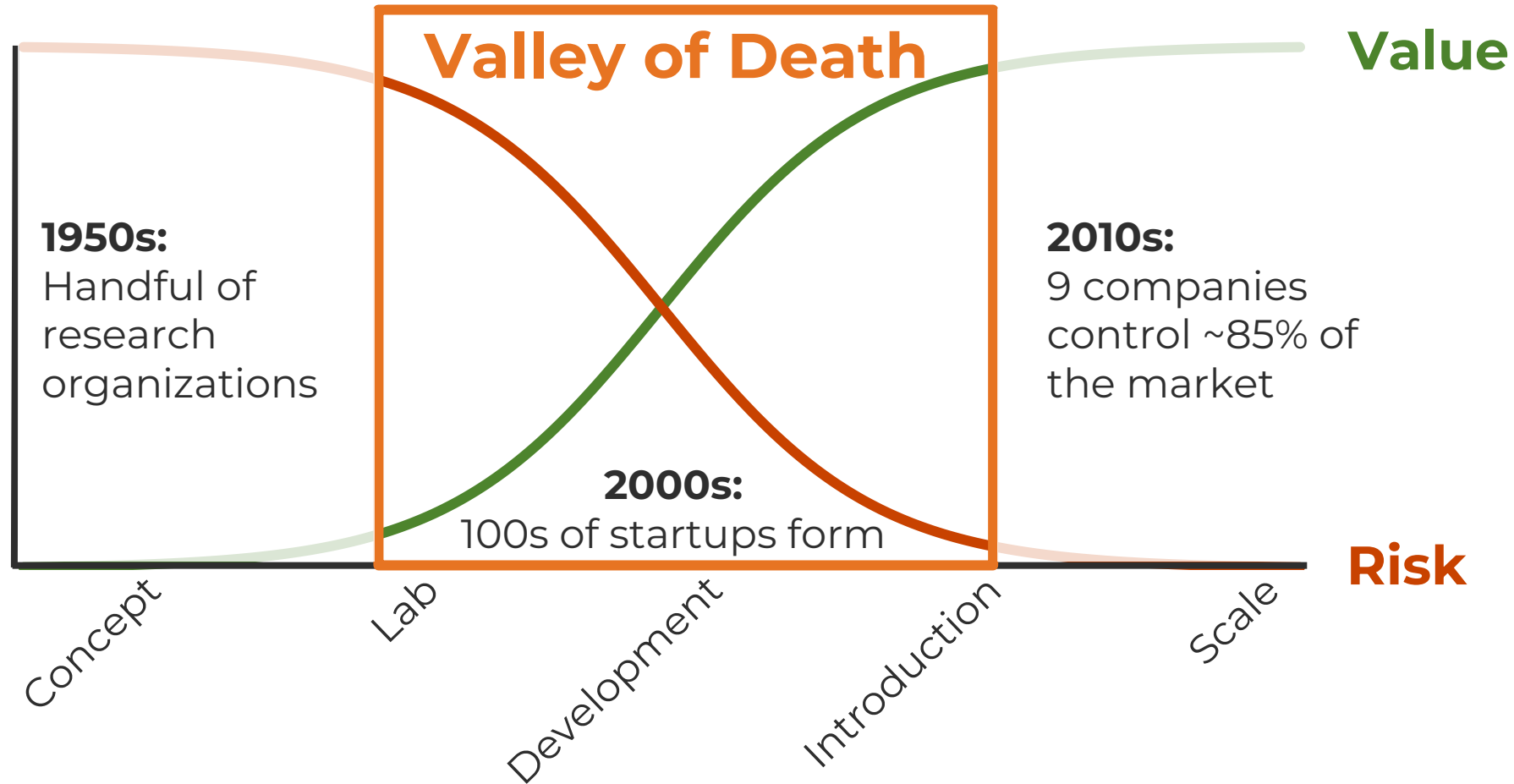
TURNING TECH INNOVATION INTO A BUSINESS



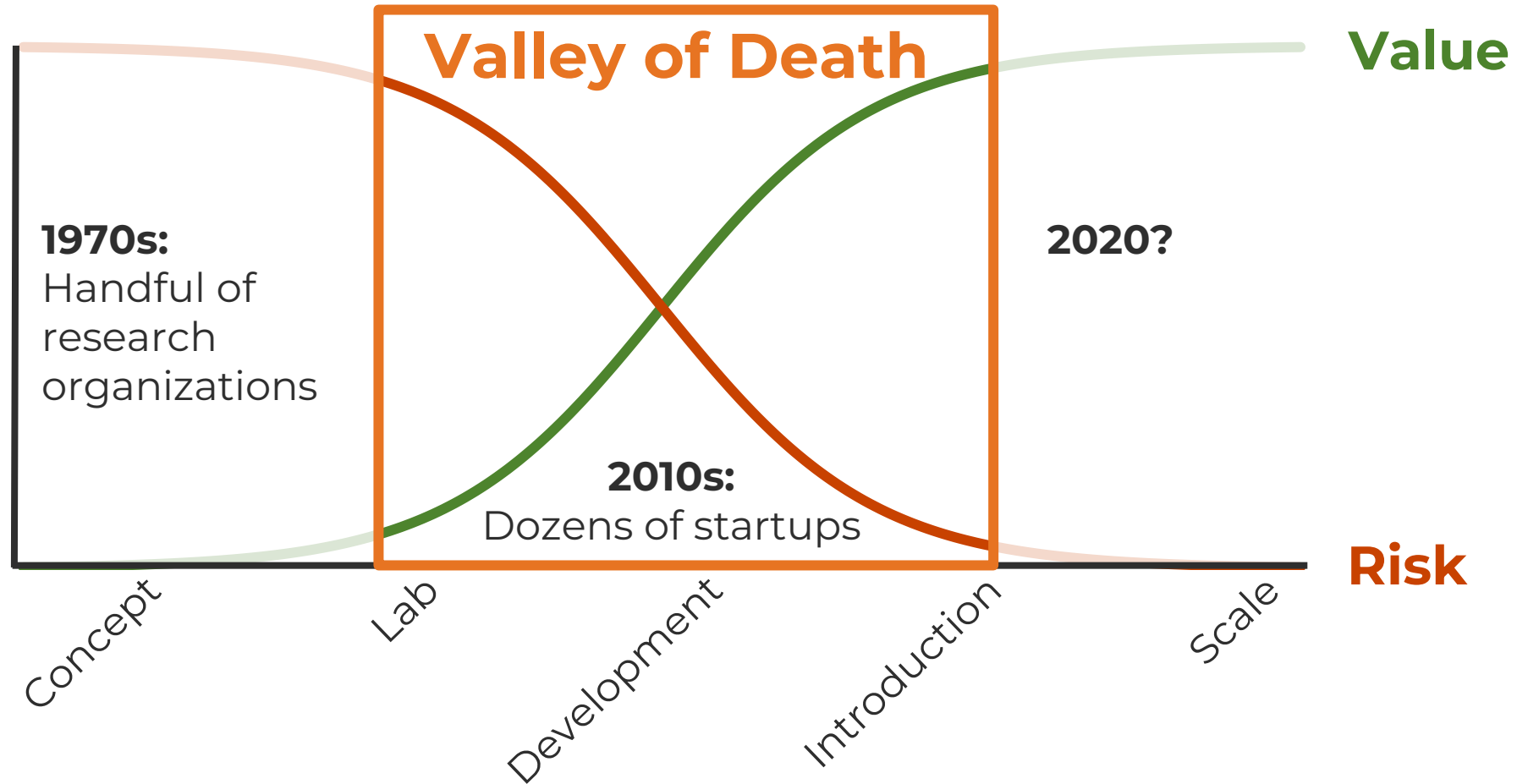
SURVIVAL OF THE FITTEST



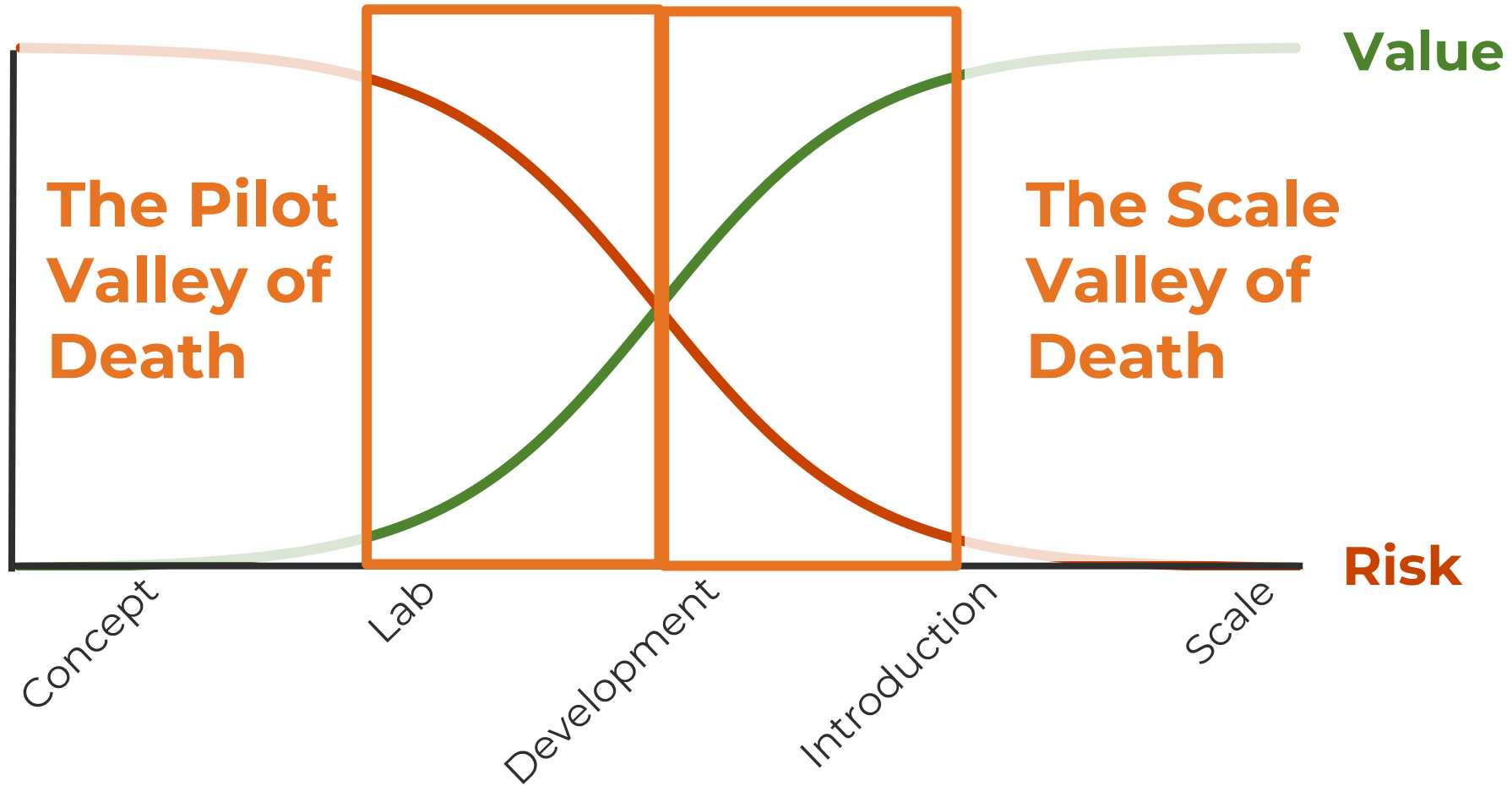
SURVIVAL OF THE FITTEST: SOLAR



SURVIVAL OF THE FITTEST: AUTONOMY



THE SECOND VALLEY OF DEATH



RAW MATERIALS



**230
million**

=



**21
thousand**

COMPLEX INFRASTRUCTURE

5 years

Average
time projects spent
in interconnection
queue in 2022

<15%

Number of global
ports with
methanol or
ammonia terminals

INVESTMENT SCALE

USD 5.3 trillion

IEA's estimate of cost
of the energy
transition through
2030

>USD 3 billion

Cost estimate of
building a single H₂-
DRI plant

THE INNOVATION OPPORTUNITY

The Scale Valley of Death



LOWERCARBON[™]
CAPITAL



TEMASEK khosla ventures

BUILDING AN INNOVATION STRATEGY

Open Innovation

Sourcing ideas outside the company

Analyze and strategize;
keep options open

Internal Innovation

(Re)build own RD&I
capability

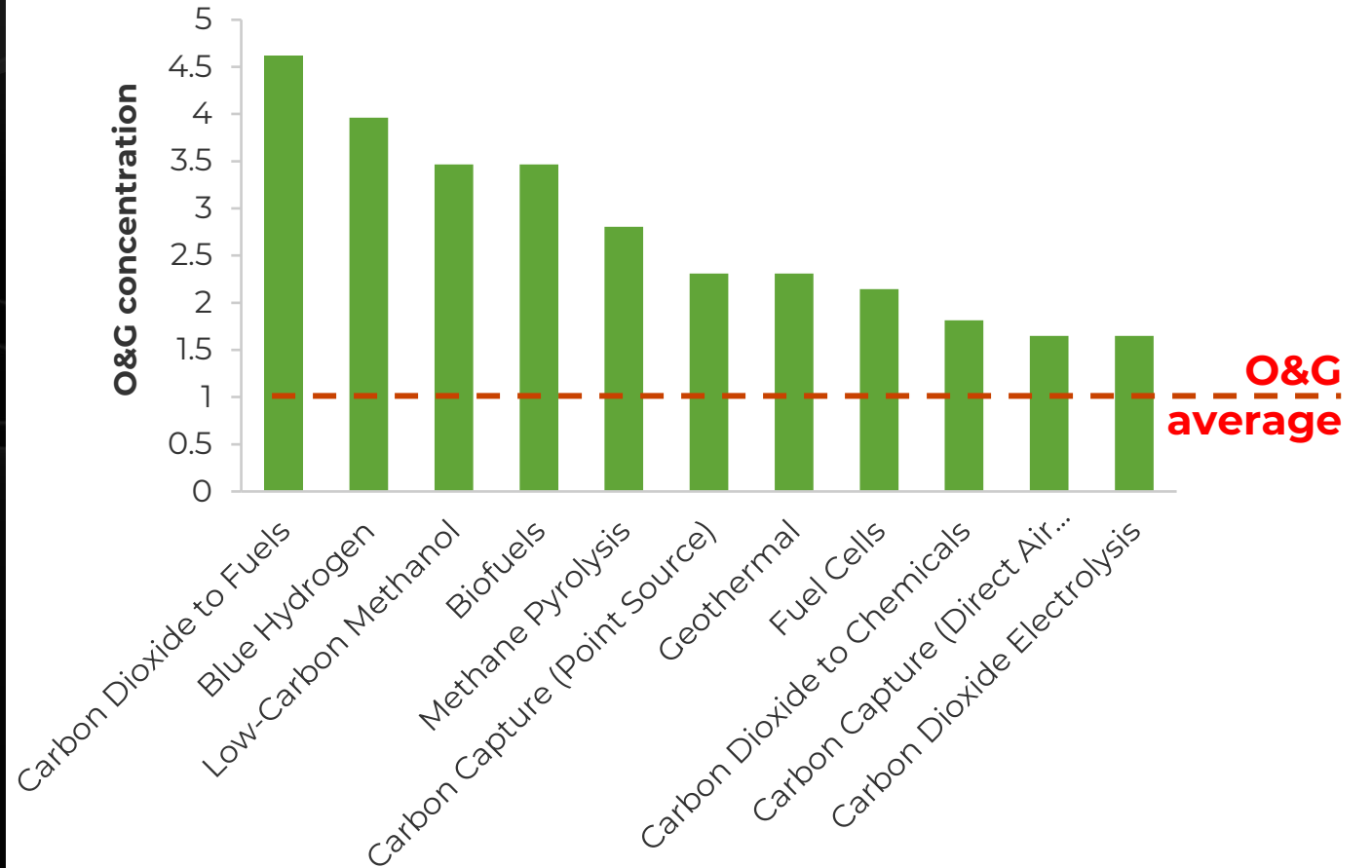
Act on choices and scale
new products and solutions

INTERNAL INNOVATION

Lux analyzed the top 100 patent filers across all technologies we cover.

These are the technologies with the highest concentration of O&G activity.

O&G patent strengths



INTERNAL INNOVATION

ExxonMobil looks internally to scale climate tech

- Ended partnership with Global Thermostat
- Developed lithium project in Arkansas using direct lithium extraction



OPEN INNOVATION

Fundamental Research	Fundamental research groups collaborate on proof-of-concept projects targeting applications 15 years or more in the future.	Government Innovation	Government-sponsored innovation programs bring together startup and corporate partners to collaboratively advance one key technology.
Startup Acceleration	Accelerator programs address common problems for seed and pre-seed startups, such as customer discovery, business model development, and pitch practice.	Startup Incubation	Incubators support seed and Series A startups with shared office and lab space, introductions to industry partners, and optional mentorship opportunities.
VC Investor	Venture capital (VC) investor programs focus on providing access to early stage funding to pre-seed- and seed-stage startups either directly or through investor partners.	Corporate Innovation	Corporate-sponsored innovation programs bring together startup and corporate partners to collaboratively advance one key technology.

KEY TAKEAWAYS

1

Sustainability can't sacrifice profitability

Innovation activities must also have a clear business case.

2

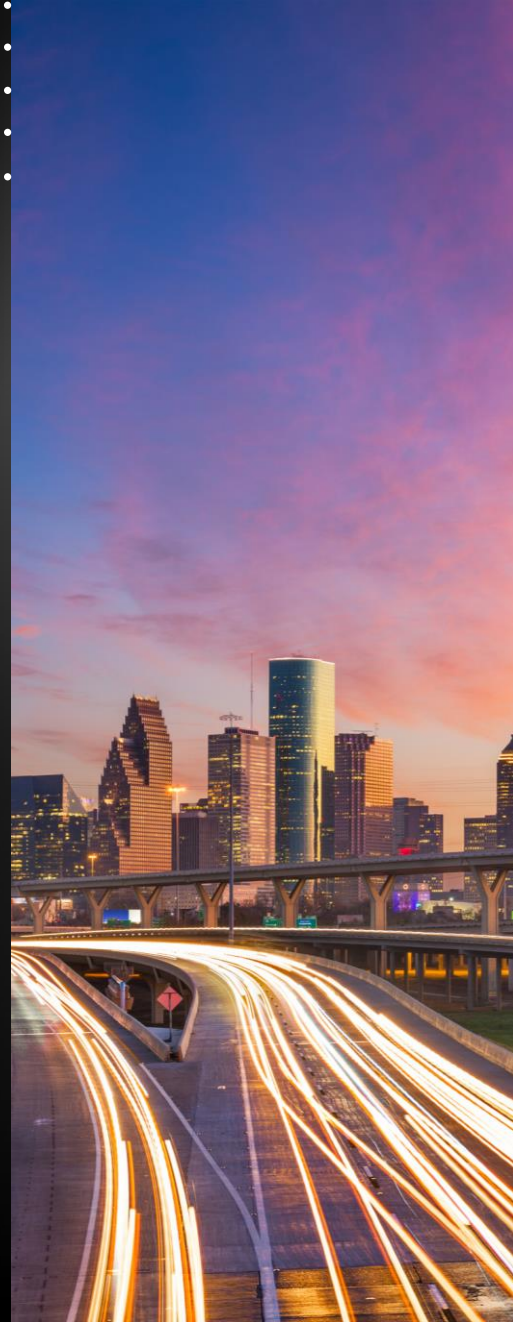
Opportunities to scale

Large investments in early stage climate tech over the last 10 years will create myriad opportunities in the valley of death.

3

Leverage internal and external innovation

Scaling climate tech isn't an either-or challenge; it's managing both.



Thank you

A link of the webinar recording will be emailed within 24–48 hours.

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The
Deciding
Factor

About Lux

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The “Lux Take” is trusted by innovation leaders around the world, many of whom seek our advice directly before placing a bet on a startup or partner — our clients rely on Lux insights to make decisions that generate fantastic business outcomes. We pride ourselves on taking a rigorous, scientific approach to avoid the hype and generate unique perspectives and insights that innovation leaders can’t live without.



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