



Building the Next Generation of Energy Transition Leaders

**– An analysis of unicorns, contenders and
champions being created**

All Aboard Fund | True North Institute | September 2026

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Executive summary: more climate-tech companies are reaching \$1B, but fewer are reaching global scale - a comparison of end-2021 to the present

UNICORNS (\$1B+)

345 → 390

End-2021 to today. Excluding China: 181 → 199

CONTENDERS (\$5B+)

115 → 110

End-2021 to today. Excluding China: 40 → 61

CHAMPIONS (\$20B+)

31 → 20

End-2021 to today. Excluding China: 14 → 15

- **The pipeline has widened.** Venture-backed energy-transition companies rose 68%, from 1,038 to 1,741, and climate-tech unicorns worth \$1B or more rose from 345 to 390.
- **The universe of large climate tech companies has shrunk.** As the clean-tech venture investing bubble peaked in 2021, we saw “Contenders” worth \$5B or more fell from 115 to 110 and champions worth \$20B or more from 31 to 20.
- **Seven new companies entered the champions tier (>\$20B).** These include Bloom Energy, Crusoe and First Solar. 18 previous “Champions” fell below \$20B, 13 of them Chinese, mostly solar, EV and lithium companies.
- **Outside of China, every tier grew:** unicorns 181 to 199, contenders 40 to 61, champions 14 to 15.
- **New entrants still created real value:** \$412B by the 49 new contenders and \$169B by the seven new champions, led by Bloom Energy (\$77B), Crusoe (\$28B) and LS Electric (\$21B).
- **North American and energy generation companies lead the value creation.** Of the \$412B, 41% came from North America and 45% from energy generation companies; but only 24 of the 49 new Contenders are American or European.
- **The gap is large.** We estimate the transition needs 100 to 120 Champions across 39 sub-sectors; there are 20 today.

Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old. Notes: Tiers are nested: every champion is also a contender and a unicorn. "Unicorn" here covers listed as well as private companies. Venture-backed counts: PitchBook screen of energy-transition companies with a venture deal by each date (19 Sep 2026 for today).

01

Context and definitions

The fifth energy transition, what we count as a climate-tech company and the three size tiers

The fifth energy transition: *the Electrotech Revolution*

	Epoch	Energy Transition Era	Primary Energy Source	Enabling Tech
	#1. Fire Age	~1M BC–3000 BC	Biomass	Controlled fire
	#2. Natural Mechanics Age (Kinetic sources)	3000 BC–1700 AD	Wind, water, passive solar, muscle (human/ animal)	Water wheels, windmills, sails
	#3. Coal Age	1700–1900	Coal	Steam engine, iron, railways
	#4. Oil & Gas Age	1900–2000	Petroleum, gas	Internal combustion engine, turbines, petrochemicals
	#5. Electrotech Revolution (Electrification Age)	1980–Present	Solar, wind, storage, advanced geothermal, biomass, fission	Semiconductors, photovoltaics, wind turbines, batteries, heat pumps, hydrogen, fission, new materials, power electronics, AI/ML

What we count: climate-tech pure plays in three size tiers, at two dates

We list every climate-tech pure play, private or listed, worth \$1B or more on 31 December 2021 and on 14 September 2026, and sort them into three tiers: **unicorns** (\$1B or more), **contenders** (\$5B or more) and **champions** (\$20B or more).

1. Valued at \$1B or more on the day

- Listed companies: market capitalisation in US dollars on the day (Bloomberg).
- Private companies: post-money value of the latest completed priced round, no more than five years old (PitchBook). Announced, pending or withdrawn deals do not count.
- The same rule applies on both dates, so neither year is flattered by hindsight or stale valuations.
- The tiers are nested: a champion is also a contender and a unicorn. "Unicorn" here includes listed companies.

2. Operates in climate technology

- 39 sub-sectors in eight groups (next page): energy, storage, grids, EVs and mobility, data centres and AI, industry, the built environment and other climate technology.
- Nuclear means new nuclear only: small modular and advanced reactors, fusion and new fuels.
- Companies were found through 23 clean-energy ETFs and indices (eight of them China-listed), seven published unicorn reports and a PitchBook screen.

3. Is a pure play, not a diversified group

- More than half of revenue from climate technology or clean energy, or the whole purpose of a pre-revenue company.
- Excluded: conglomerates (GE Vernova, Siemens Energy), legacy utilities and grid operators, uranium miners, carbon accounting and climate finance, and unlisted divisions of listed groups (Waymo).
- Included as judgement calls: Bloom Energy (fuel cells that run on natural gas today) and Crusoe (computing powered by gas and renewables).

The universe covers 39 sub-sectors; we estimate the transition needs 100 to 120 champions across them

Energy	#
Solar: modules, cells, polysilicon, trackers	6
Wind: turbines, blades, offshore	4
Geothermal: conventional and next-generation	2
Advanced Nuclear fission, SMRs, fuel	3
Nuclear fusion	2
Hydrogen and fuel cells	4
Sustainable aviation fuel	2
RNG, renewable diesel	2
Biofuels	2
Renewable power producers, developers and installers	4
Wave, tidal and other renewable generation	2

Storage	#
Batteries: cells, packs, materials, recycling	6
Long-duration and thermal storage	3

Grids	#
Grid equipment: transformers, switchgear, cables, HVDC	5
Grid software	2
Clean-power retailers and retail platforms	2
Virtual power plants, demand response	2
Power electronics: inverters, converters	4

EV and Mobility	#
Electric cars, trucks, buses and two-wheelers	7
eVTOL and electric aircraft	2
EV charging	3
Mobility services and autonomous driving	4

Industrial	#
Green steel	3
Green cement	2
Low carbon chemicals	3
Industrial efficiency enhancement	2

Data centres and AI	#
Renewable-powered data-centre developers	3
Clean-powered compute and AI cloud	4
Orbital and offshore data centres	2

Built Environment	#
Heat pumps	3
Efficient HVAC	2
Building insulation including windows	2
Building efficiency software, thermostats, etc.	2

Other Climate Technology	#
Carbon capture	3
Critical minerals: lithium, rare earths, battery materials	4
Water, waste and circular economy	3
Food technology	3
Agricultural technology	3
Earth observation and climate data	2

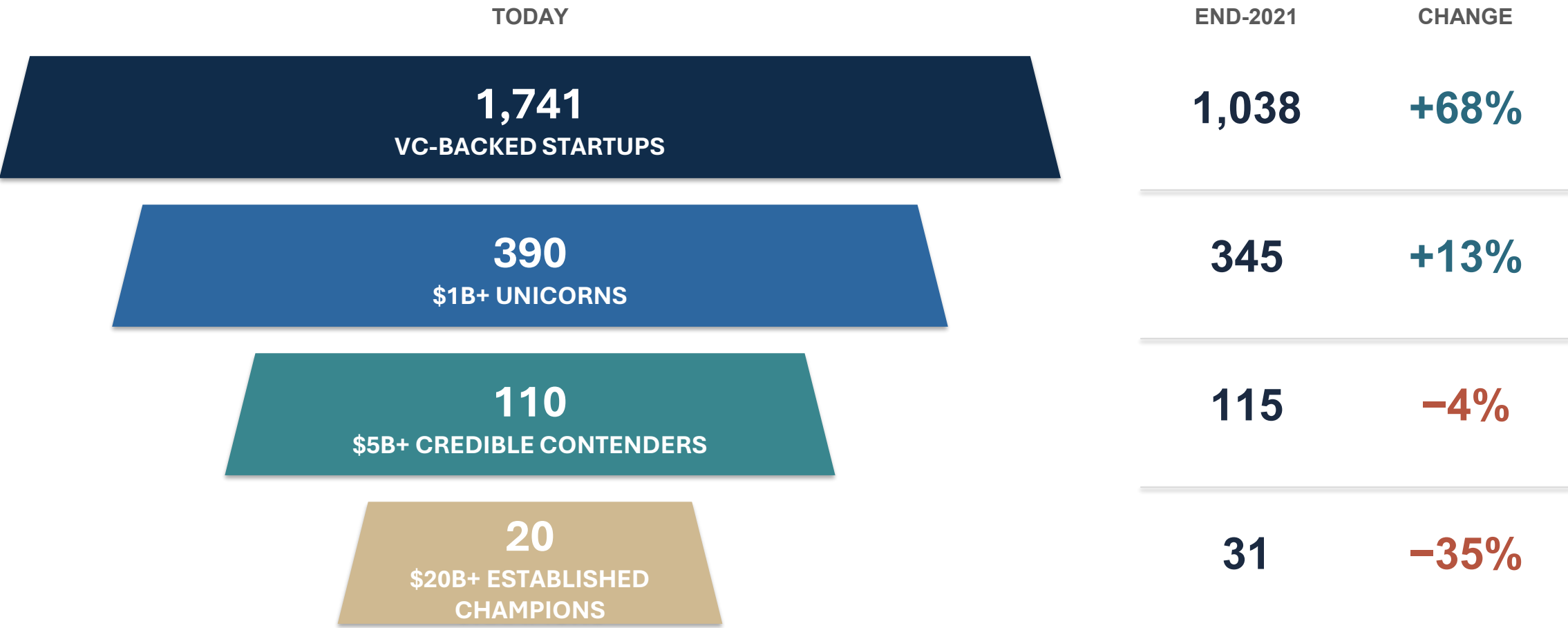
= illustrative number of \$20B+ champions each sub-sector needs (True North Institute estimate; 119 in total).

02

Inventory

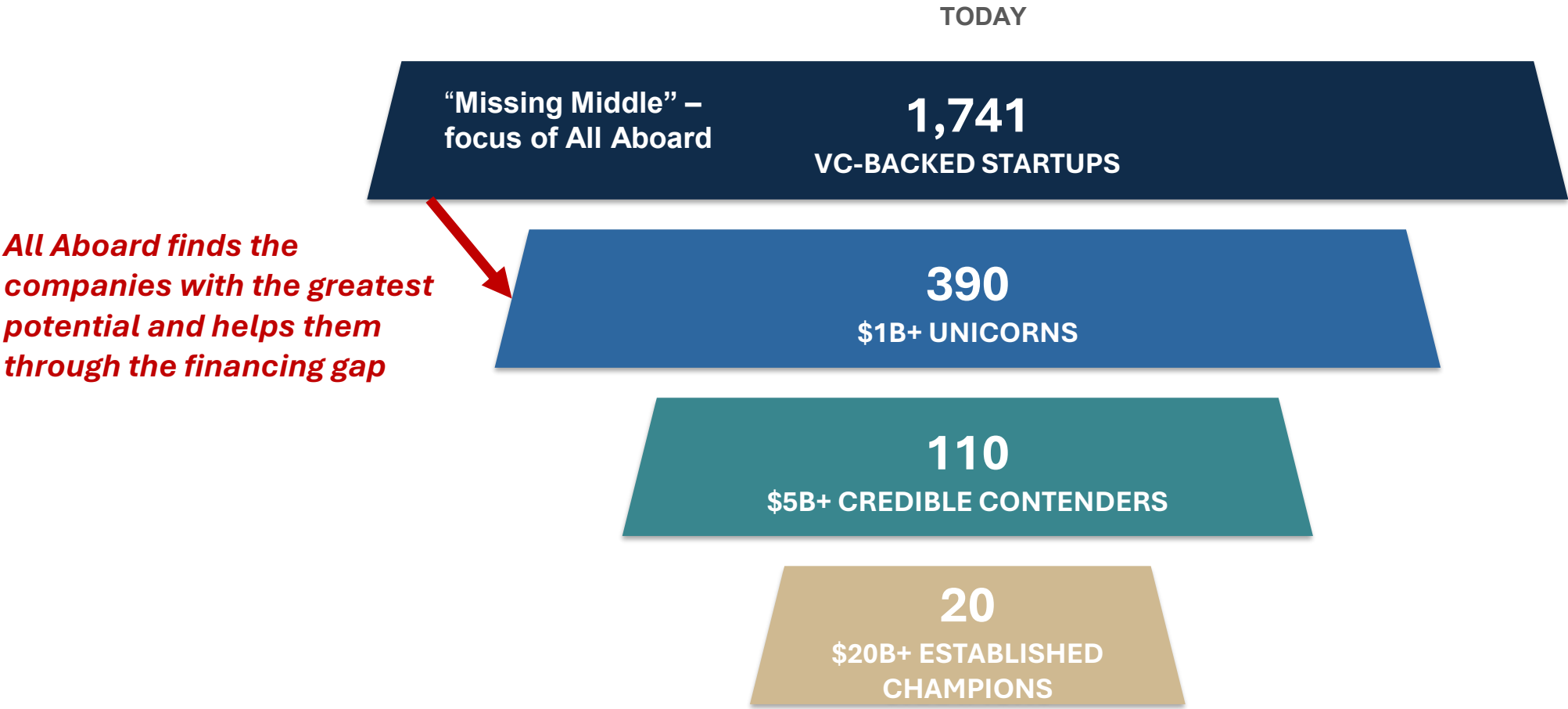
How many climate-tech companies exist at each size today, against the end of 2021

More companies are entering the pipeline; too few are progressing into global-scale champions



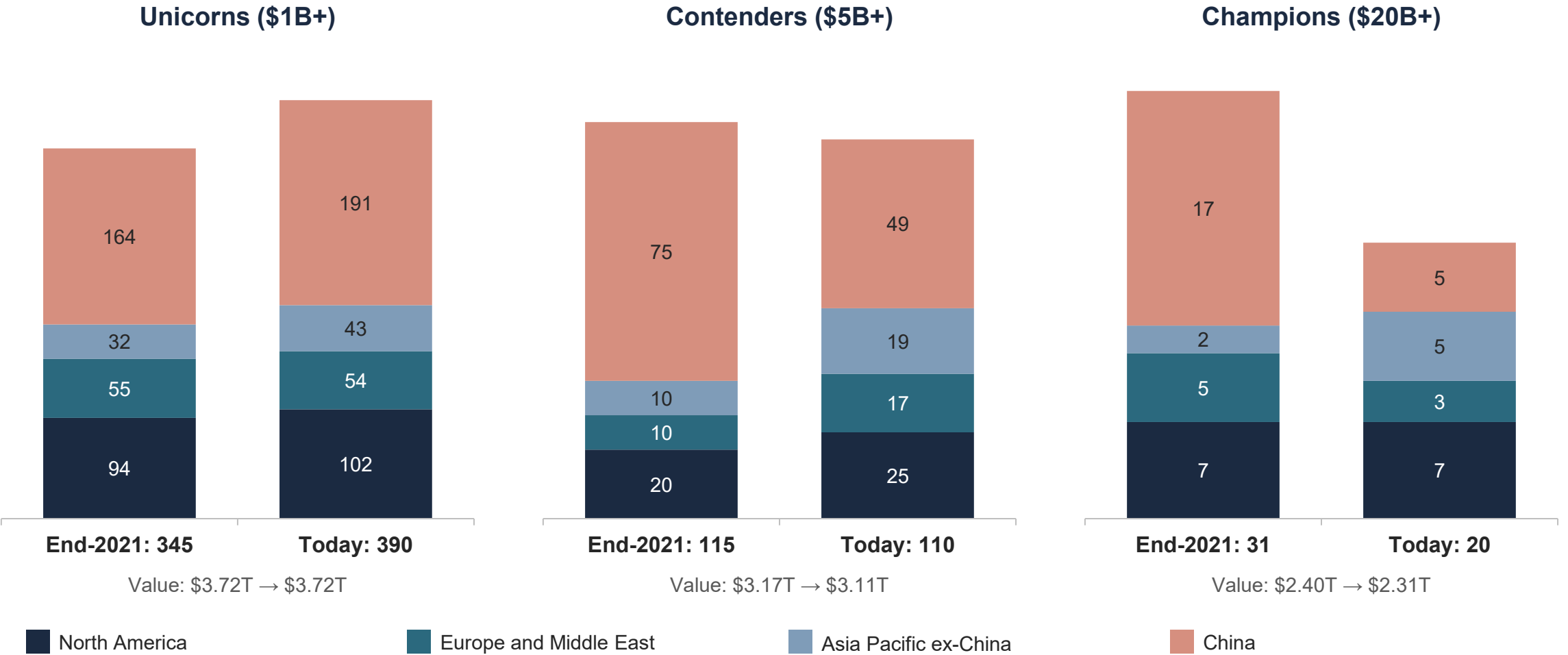
Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old.
Notes: VC-backed startups: PitchBook screen of energy-transition companies with a venture deal by 31 Dec 2021 and by 19 Sep 2026; it counts private venture-backed companies, while the tiers below also include listed companies, so the funnel describes the ecosystem rather than conversion rates.

The All Aboard Coalition is focused on getting more future champions out of the missing middle



Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old.
Notes: VC-backed startups: PitchBook screen of energy-transition companies with a venture deal by 31 Dec 2021 and by 19 Sep 2026; it counts private venture-backed companies, while the tiers below also include listed companies, so the funnel describes the ecosystem rather than conversion rates.

Outside China every tier grew; China's contenders fell from 75 to 49 and its champions from 17 to five



Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old. Notes: Number of companies in each tier on each date, by headquarters; China = mainland China and Hong Kong; Taiwan is in Asia Pacific; Asia Pacific includes two Latin American unicorns at end-2021 and one today. Value = combined value of the companies in the tier.

20 climate-tech champions are worth \$20B or more today; seven of them crossed \$20B since end-2021

North America 7 companies, \$1,646B	Europe 3 companies, \$79B	China 5 companies, \$421B	Asia Pacific ex-China 5 companies, \$161B
 (\$1,443B)	 (\$32B)	 (\$237B)	 LG Energy Solution (\$61B)
 (\$81B)	 (\$27B)	 (\$107B)	 (\$32B)
 Crusoe (\$30B)	 (\$20B)	 (\$27B)	 Barito Renewables (\$24B)
 (\$25B)		 (\$26B)	 (\$22B)
 (\$23B)		 HUADIAN (\$24B)	 (\$22B)
 First Solar (\$22B)			
 (\$21B)			

 Crossed \$20B since end-2021 (seven companies)

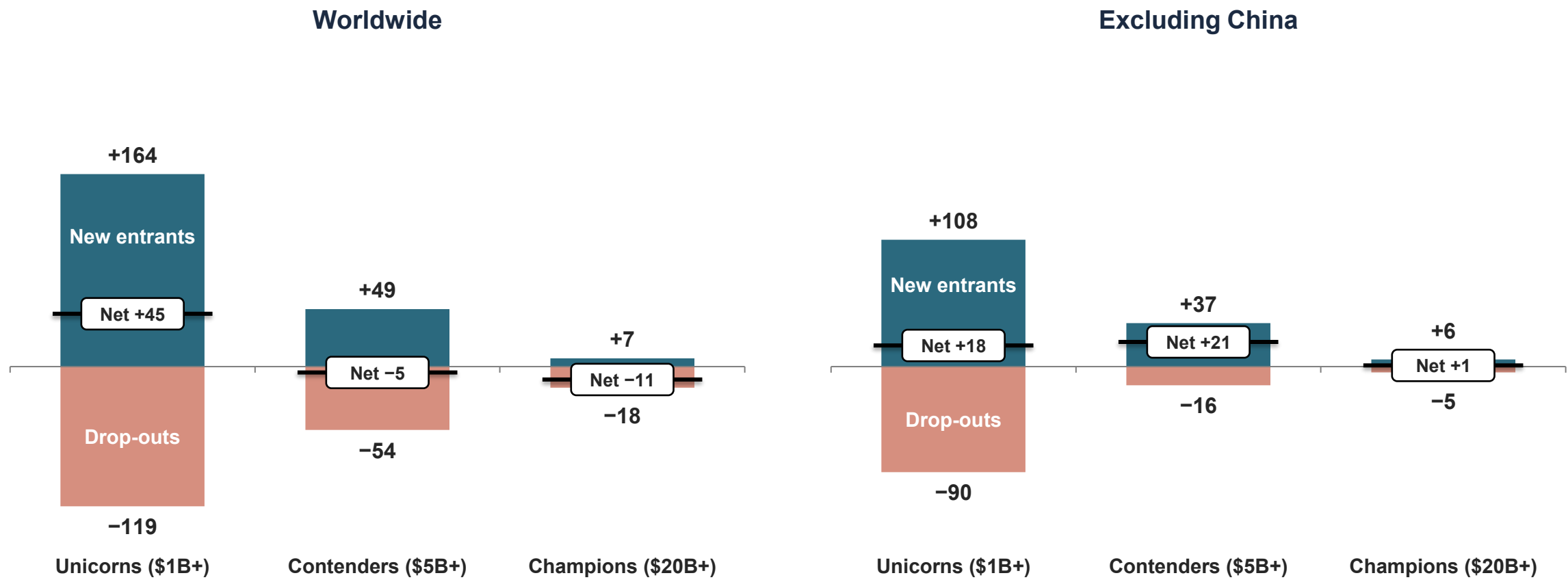
Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old.
Notes: Value on 14 Sep 2026 (Crusoe: last completed priced round). At end-2021, 31 companies were worth \$20B or more; 13 still are and 18 have fallen below (page 18).

03

Flows

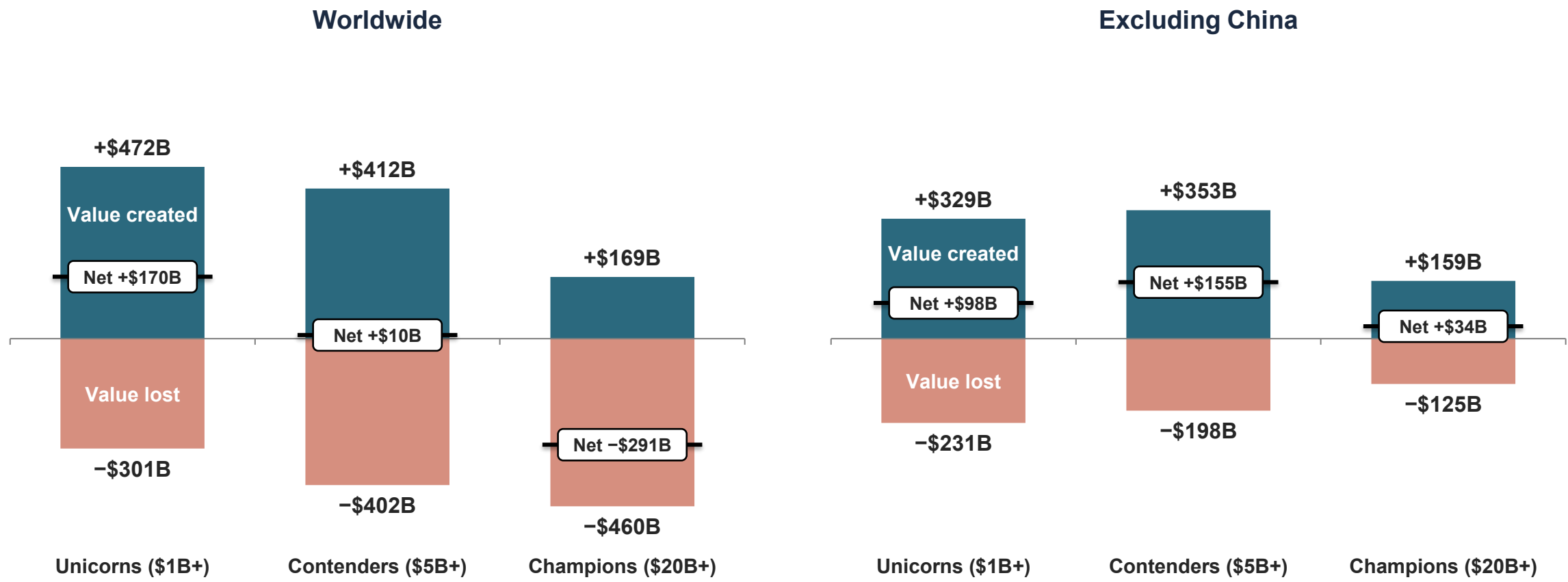
Which companies joined and left each tier between 31 December 2021 and 14 September 2026

Since end-2021: 164 new unicorns, 49 new contenders and seven new champions; worldwide, more contenders and champions dropped out than arrived



Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old. Notes: An entrant is worth at least the tier threshold on 14 Sep 2026 and was below it (or not yet a \$1B company) on 31 Dec 2021; a drop-out is the reverse: fell in value, acquired, failed or, if private, a lower or stale round. Net = entrants minus drop-outs.

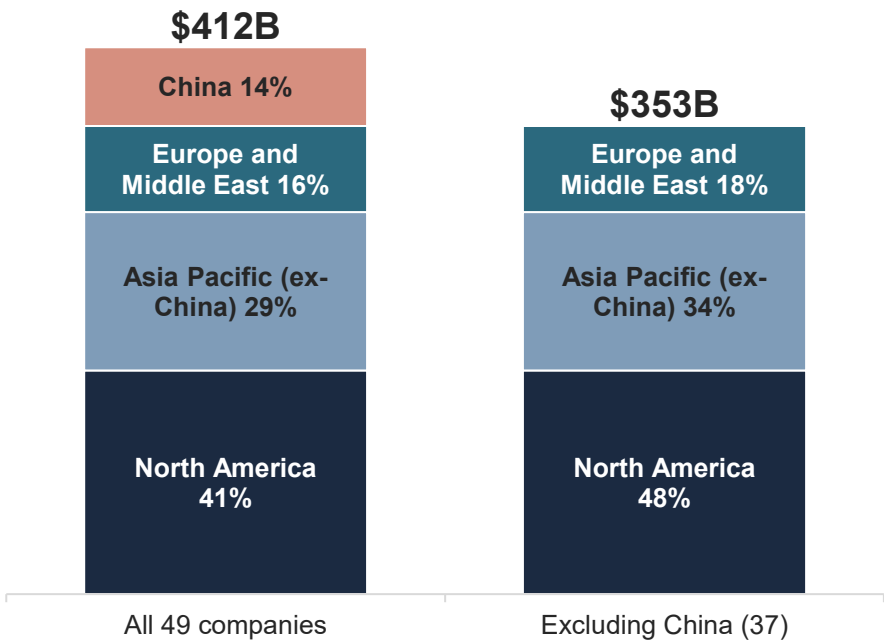
Value created by entrants against value lost by drop-outs: net positive at every tier outside China, negative at the top worldwide



Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old. Notes: Value created = value on 14 Sep 2026 minus value on 31 Dec 2021, floored at zero; a company with no price of its own at end-2021 (e.g. LG Energy Solution, then part of LG Chem) is measured from its nearest transaction, so a carve-out adds little. Value lost = end-2021 value minus value today (all of it for companies acquired or failed). Worldwide, the \$20B tier is net negative mainly because 13 Chinese champions of 2021 fell below \$20B. Net = value created minus value lost.

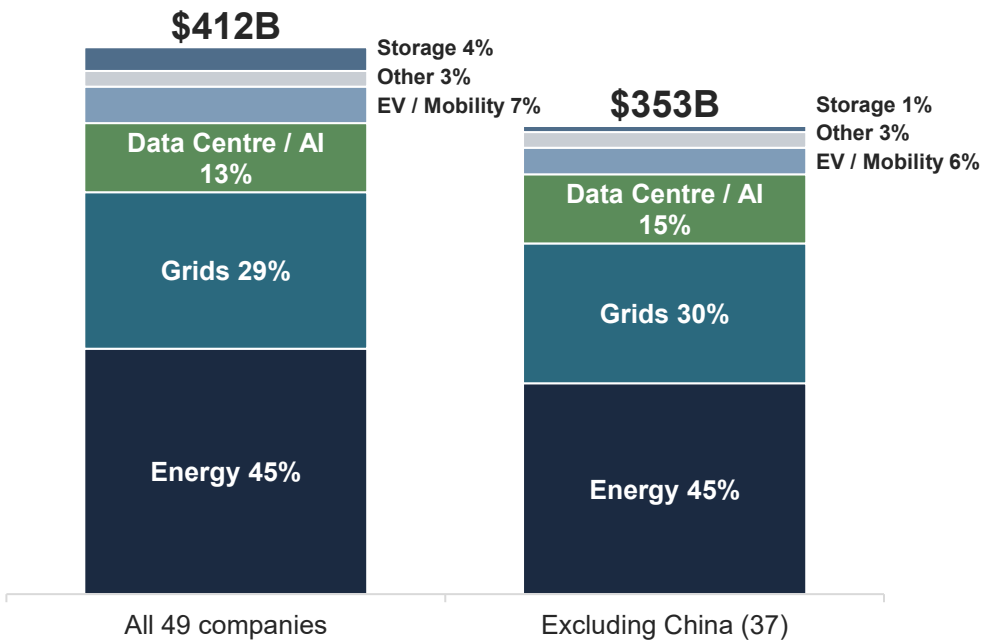
Where the \$412B created by the 49 new contenders came from: North America 41% and energy generation 45%

By region of headquarters: value created by the new contenders (\$5B+), \$B



Companies (all / excluding China): North America 14 / 14, Asia Pacific 13 / 13, Europe and Middle East 10 / 10, China 12

By sector group: value created by the new contenders (\$5B+), \$B

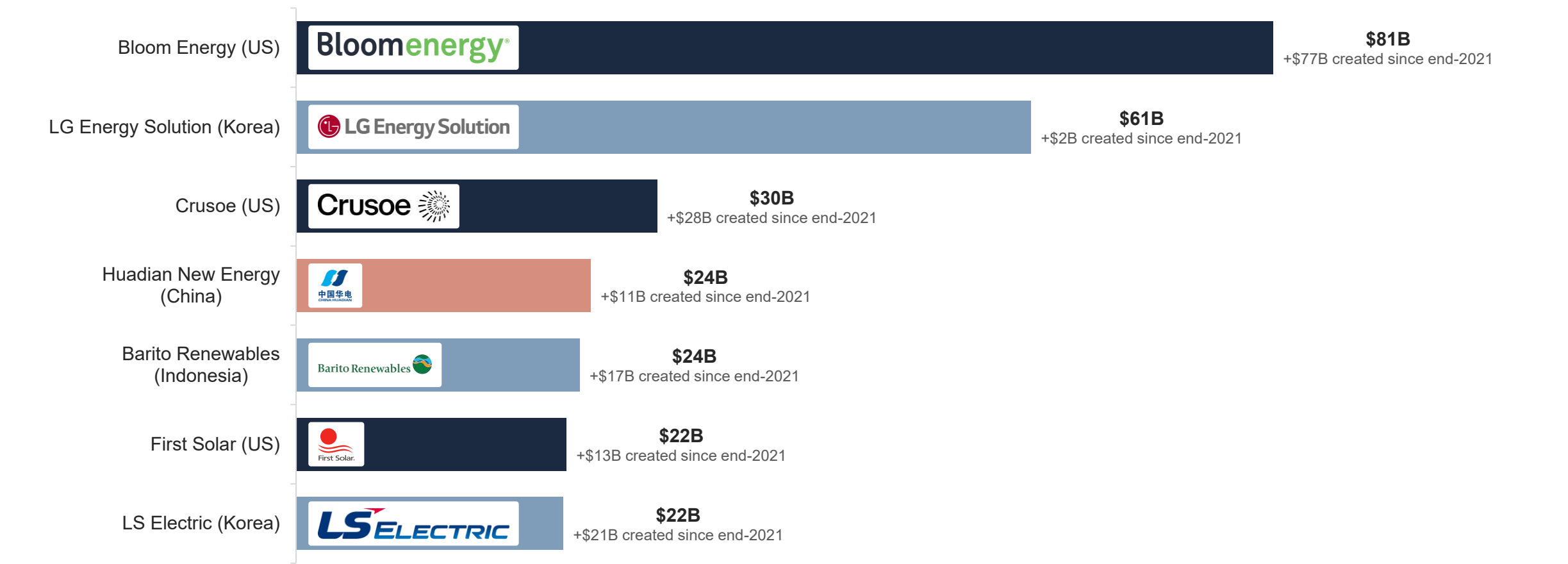


Companies (all / excluding China): Energy 17 / 14, Grids 12 / 10, Data Centre / AI 3 / 3, EV / Mobility 9 / 5, Other 3 / 3, Storage 5 / 2

Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old.
Notes: Entrants at \$5B+: worth \$5B or more on 14 Sep 2026 and below \$5B (or not yet a \$1B company) on 31 Dec 2021. Energy = generation technology, renewable power producers, new nuclear and fusion, fuel cells and hydrogen. Grids = grid equipment, grid software and clean-power retailers.

Seven companies crossed the \$20B threshold since end-2021 and created \$169B of value

(value 14 Sep 2026, \$B, and value created since end-2021)



Bars = value on 14 Sep 2026 (Bloomberg market cap in USD; Crusoe: last completed priced round). Entrants at \$20B+: worth \$20B or more today and below \$20B, or not yet a \$1B company, at end-2021. Value created = value today minus end-2021 value

Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old. Notes: Entrants at \$20B+: worth \$20B or more on 14 Sep 2026 and below \$20B at end-2021. Value created = value today minus end-2021 value; LG Energy Solution is measured from its \$59B IPO of Jan 2022, Huadian New Energy from its \$14B round of Aug 2021, Barito Renewables from its \$6.8B IPO of Oct 2023 and Crusoe from its \$1.75B round of Apr 2022.

18 of the 31 champions at end-2021 have fallen below \$20B: 13 are Chinese, mostly solar, EV and lithium companies

Sector	Company (headquarters)	Value End-2021, \$B	Value Today, \$B
Solar	LONGi Green Energy (China)	73	13
	Tongwei (China)	32	8
	Trina Solar (China)	26	4
	Enphase Energy (US)	25	5
	JA Solar (China)	23	3
	TCL Zhonghuan (China)	21	5
Electric vehicles	Lucid Group (US)	63	2
	NIO (China)	51	9
	XPeng (China)	43	10
	Li Auto (China)	33	12
Lithium and battery materials	Yunnan Energy New Material (China)	35	7
	Ganfeng Lithium (China)	30	13
	Albemarle (US)	27	14
	Tianqi Lithium (China)	25	10
Batteries	EVE Energy (China)	35	16
Renewable power producers	China Three Gorges Renewables (China)	34	16
	EDP Renewables (Spain)	24	15
Heat pumps	NIBE (Sweden)	30	9

THE 18 TOGETHER LOST \$460B

\$631B → \$171B

combined value, end-2021 to today

Remember, 2021 was a bubble period for climate-tech.

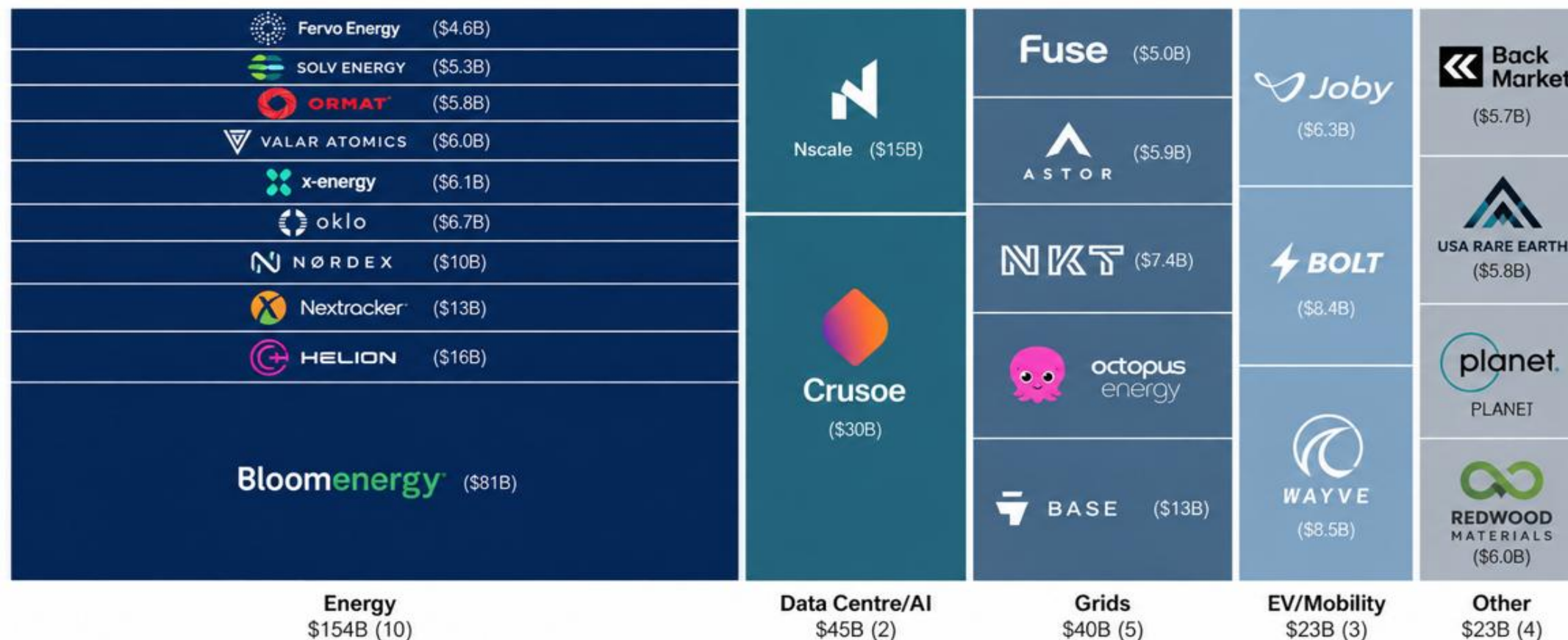
None failed over this period: every one is still worth more than \$1B. They fell in value, but all survived the bubble contraction.

13 are Chinese, three American and two European.

13 champions of end-2021 are still worth \$20B or more, led by Tesla, CATL and BYD.

Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old. Notes: Every company worth \$20B or more on 31 Dec 2021 and below \$20B on 14 Sep 2026, grouped by sector, largest first within each sector.

24 US and European companies crossed \$5B since end-2021, plus Fervo Energy just below at \$4.6B: \$286B of value today including Fervo



Column width = the group's share of the 24 companies' value today (\$286B); segment height = each company's value today, largest at the bottom; none of the 24 is a flagged estimate.

Fervo Energy (listed 2026, \$4.6B) is shown although it is just below the \$5B cut-off. US = United States; Europe = EU, UK, Norway, Switzerland and Turkey; Israel (Enlight) and Asia Pacific (incl. Australia) are not shown.

Source: True North Institute analysis, September 2026. Listed companies: Bloomberg market capitalisation in US dollars on 31 Dec 2021 and 14 Sep 2026. Private companies: PitchBook, last completed priced round, no more than five years old.
Notes: Value on 14 Sep 2026. Companies headquartered in the US or Europe worth \$5B or more today and below \$5B, or not yet a \$1B company, at end-2021; Fervo Energy (listed 2026, \$4.6B) is shown although just below the cut-off.

The VC-backed energy transition universe has grown 68% since 2021, from 1,038 companies to 1,741

Number of VC-backed energy transition companies by critical sector, 2021 vs 2026

Critical Sector	# VC-backed 2021	# VC-backed 2026	Change	% change	Of which China (2026)
Nuclear Fusion	31	83	+52	+168%	18
Nuclear Fission / SMRs	34	58	+24	+71%	3
Geothermal	53	82	+29	+55%	3
Hydrogen	143	335	+192	+134%	128
Carbon Capture	120	284	+164	+137%	9
Energy Storage (Thermal Batteries)	50	85	+35	+70%	6
Energy Storage (LDES & Next Gen Battery Tech)	14	20	+6	+43%	4
Battery Materials & Critical Minerals	17	45	+28	+165%	9
Waste to Energy (BioFuels / Electrofuels)	198	245	+47	+24%	5
Other cleantech (see note 2)	378	504	+126	+33%	72
Total VC-backed Energy Transition technology companies	1,038	1,741	+703	+68%	257

Source: PitchBook saved search, exported 19 September 2026. The same screen was run using two deal-date cut-offs: 31 December 2021 (1,038 companies) and 19 September 2026 (1,741 companies).

Notes: (1) A company is included if it had completed at least one VC round by the relevant cut-off date—angel, seed, early-stage, later-stage or other VC—and either (i) was tagged to one of 11 PitchBook Emerging Spaces (Next-Gen Nuclear Fission, SMRs, Geologic Hydrogen, Hydrogen Energy, Geothermal Power, Thermal Batteries, Long Duration Energy Storage, Lithium Extraction Technology, Waste to Energy, Batteryless IoT Sensors or Renewable Ocean Energy), or (ii) matched one of six keywords: fusion energy, carbon capture, electrofuels, biofuels, smart grid or concentrated solar power. All companies in the 2021 cohort are also included in the 2026 cohort. (2) Each company is counted once and assigned to a single row. Companies with an Emerging Space tag are classified using their primary tag; companies identified only through a keyword search are assigned to the relevant keyword category. The rows therefore divide the full company set into mutually exclusive categories and should not be read as reproducing the earlier standalone sub-sector screens. The Other cleantech row includes smaller PitchBook categories such as smart grid, ocean energy and EV charging, together with keyword-only matches such as biodiesel, biomass and soil carbon; because keyword searches can capture broader thematic matches, this row may include some companies that are only indirectly related to the target themes. (3) Companies that subsequently failed or were acquired remain included in both cohorts, so the comparison does not introduce survivorship bias. (4) China: PitchBook's coverage of Chinese VC-backed companies begins on 1 January 2015. Earlier Chinese VC deals and Chinese companies without recorded VC backing are outside the scope of the dataset, so China is likely understated in both periods.

Hydrogen and carbon capture drove half the growth, and China's share of the universe rose from 10% to 15%

VC-backed energy transition companies by headquarters region, 2021 vs 2026

Headquarters region	# VC-backed 2021	# VC-backed 2026	Change	Share of universe 2021	Share of universe 2026
North America	494	719	+225	48%	41%
Europe (incl. UK)	314	516	+202	30%	30%
China (incl. Hong Kong, Taiwan)	102	260	+158	10%	15%
Rest of world	128	246	+118	12%	14%
Total	1,038	1,741	+703	100%	100%

Key Observations from comparing 2021 to 2026 (Today):

- Nuclear Fusion (+168%) and Battery materials (+165%) had the largest % growth, off of relatively small 2021 bases.
- Hydrogen added the most new companies +192, 128 of which from China.
- Carbon capture added 164 new companies, mostly from North America and Europe.
- China grew its VC universe the most: 102 to 260 companies, up 155% compared to North America +46% and Europe +64%.
- Long duration storage barely moved (14 to 20) and was flat in North America.
- Of the 1,038 companies that existed at end-2021, 184 (18%) are now out of business and 141 have been acquired.

Source: PitchBook saved search, exported 19.09.26; deal date up to 31 December 2021 (1,038 companies) and up to 19 September 2026 (1,741 companies); same criteria as the previous slide.

Notes: (1) Region is PitchBook headquarters country; Europe includes the UK, Switzerland and Norway; China includes Hong Kong and Taiwan (three companies in 2026). (2) PitchBook tracks VC and PE deals in Greater China from 1 January 2015 for companies that meet its backing criteria; pre-2015 Chinese deals and Chinese companies with only corporate or M&A activity are out of scope (PitchBook Help Center, APAC tracking scope). Chinese rounds are also less consistently disclosed than US or European rounds, so the China count is a floor, not a census. (3) Status of the 2021 cohort from the Ownership Status field of the 2026 export.

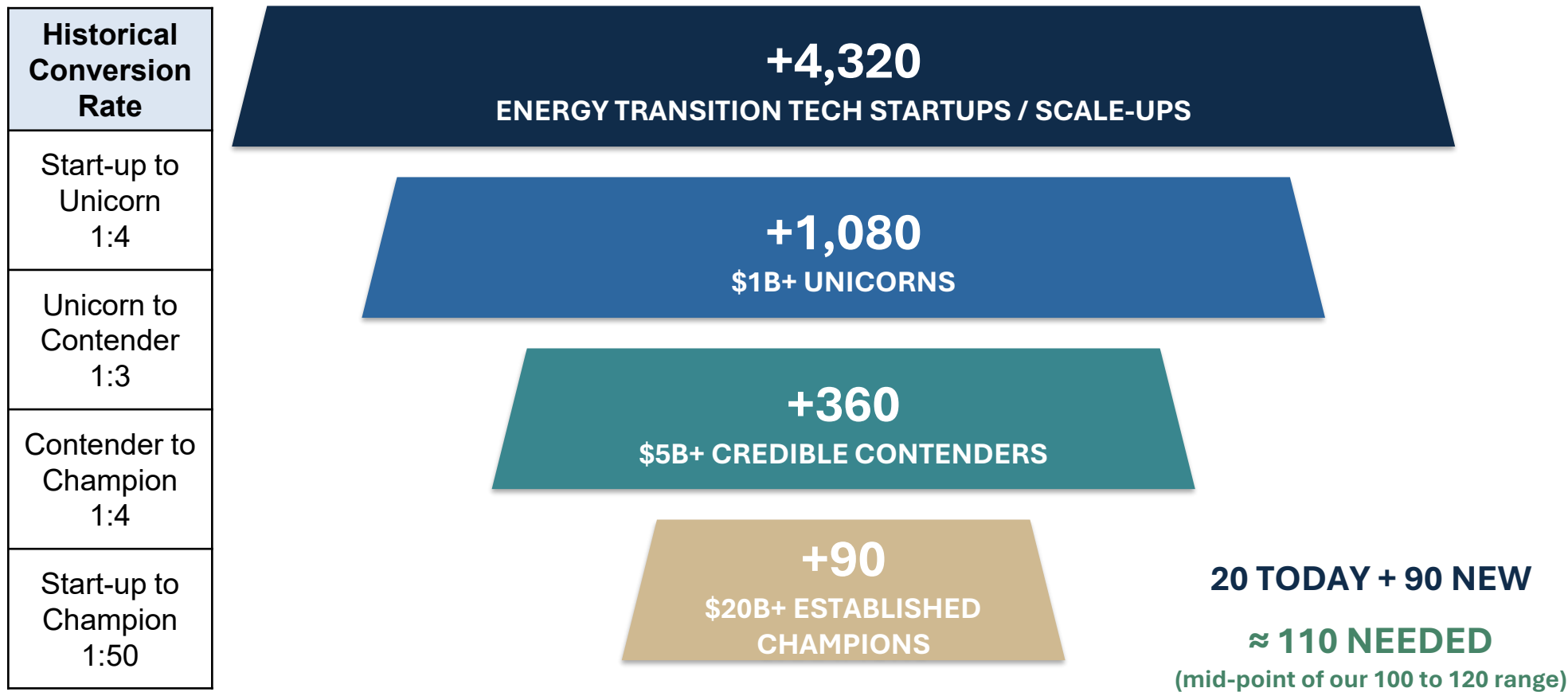
04

Implications

How many more champions the transition needs, and what that means for investors

How many more do we need? An illustrative pipeline for about 90 more champions

Illustrative additional pipeline required to produce about 90 more \$20B+ champions, on top of the 20 today



Note: illustrative. Champions may emerge from venture-backed companies and from incumbents; "unicorns" and "contenders" include listed companies. 20 today = climate-tech pure plays worth \$20B or more on 14 Sep 2026 (page 12).

All Aboard's Strategic Premise

Collaborative investing is the
key to breakthrough next
generation energy
technologies

In conclusion.....

- The world does not have a shortage of energy innovation. It has a shortage of new energy companies that successfully make the journey from innovation to industrial scale.
- We need perhaps 90 more global champions. And those champions aren't going to be built by any one venture firm, growth investor, infrastructure fund or strategic.
- They will be built by coalitions of capital, expertise and relationships working together across that journey.
- That is the premise behind All Aboard.
- Our coalition brings together investors who collectively see an enormous share of the best innovation in this industry. We can identify the companies that are working. We can validate them collectively. We can build stronger syndicates around them. And, critically, we can help bring the next pools of capital into those companies at the point where they need to scale.
- Our ambition is not simply to invest in the fifth energy transition. It is to help build its champions.
- If, ten years from now, many of the names on that list of 100 to 120 future champions came through this coalition, then All Aboard will have done what it was created to do.

All Aboard Co-Investment Coalition

Activate
capital

Ara

Breakthrough
Energy

C>PRICORN
TECHNOLOGY IMPACT FUND

CLEAN ENERGY
VENTURES

CONGRUENT
VENTURES

DC
>C

e⁻ ENERGY
IMPACT
PARTNERS

FUTURE
VENTURES

G2
Venture Partners

GenZero

GIGASCALE
CAPITAL

JUST
CLIMATE
by generation...

lightrock

khosla ventures

NGP

OBVIOUS
VENTURES

Prelude
Ventures

S2G

SPRING LANE
CAPITAL

Publication Note

This publication was produced by the **True North Institute** in our capacity as a collaborator with the All Aboard Coalition and Co-Investment Fund. True North is the family office of Stan Miranda, who is supported by the head of investments, Jack Haynes, both based in London.

The report reflects a simple but important reality: not everything goes up and to the right in the journey of building and backing the companies driving today’s energy transition. Investing in the technologies defining the 5th Energy Transition is inevitably a bumpy ride. Yet, as this report demonstrates, the winners, for many years, have been creating hundreds of billions of dollars of value.

Capturing that value depends critically on identifying the technologies and companies most likely to become long-term leaders—and then mobilising sufficient capital to support them through the “missing middle” between venture funding and full commercial scale. Fostering that syndication of capital is precisely why the All Aboard Coalition was created.

The primary source of data for this report is PitchBook, supplemented by Bloomberg and Currence (formerly Sightline).

Any errors, omissions, or misinterpretations are the responsibility of the True North Institute.



Stan Miranda
Founder and Chief Executive Officer



Jack Haynes
Partner, Head of Investments