COVID-19
BCG Perspectives

Facts, scenarios, and actions for leaders

Accelerating Climate Actions in the New Reality

Version: 22 June 2020

COVID-19

BCG Perspectives

Objectives of this document

COVID-19 is a global societal crisis

We at BCG believe that the COVID-19 outbreak is first and foremost a societal crisis, threatening lives and the well-being of our global community. Society now, more than ever, needs to collaborate to protect people's lives and health, manage mid-term implications, and search for lasting solutions.

Leaders need to drive an integrated response to navigate the crisis

It is the duty of health, political, societal, and business leaders to navigate through this crisis. A complex interplay of epidemic progression, medical response, government action, sector impact, and company action is playing out. This document intends to help leaders find answers and shape opinions to navigate the crisis in their own environments. It encourages thinking across the multiple time horizons over which we see the crisis manifesting itself.

Source: BCG

COVID-19 will be a journey with three distinct phases, requiring an integrated perspective

Flatten

Typically the initial phase after a pandemic outbreak–goal is to urgently **limit number of new cases**, especially critical care

Social distancing (lockdown) and partial business closures lead to **economic recession** with large employment impact

Fight

Finding **paths to collectively fight the virus, restart the economy, and support society in balancing lives and livelihood**

Increasing economic activity with recovering GDP, some business reopenings, and social distancing on a sustainable level

Future

Disease controlled through vaccine/cure/herd immunity and treatment within sustainable medical capacities possible

Reactivated economy with strong business rebound and job growth, social restrictions limited or completely suspended

All of the above five factors result in specific economic and social outcomes in each phase

Source: BCG

Executive Summary | COVID-19 BCG Perspectives

COVID-19 crisis provides a unique opportunity to governments and business leaders to accelerate climate actions and build a green recovery

- COVID-19 is expected to drive a ~5-10% drop in CO_2 emissions in 2020; however, this drop is very small compared with the required change in trajectory
- Annual investment of 1-3% of global GDP is required across countries to meet emission targets for a sustainable 2°C path
- Current stimulus packages to overcome the COVID-19 crisis add up to about $11T globally; less than 5% of the commitments are "green" measures
- Governments should focus on five action areas to scale the green recovery: prioritizing sustainability in stimulus strategies, creating green job opportunities, preparing for job transitions, leveraging blended finance, and rebooting multi-lateralism
- Business leaders and investors can support the green recovery by focusing on reducing cost by reducing carbon, scrutinizing supply chains, increasing resilience to climate risks, actively financing the green recovery, and integrating climate into the investment process

Across countries, efforts to flatten the curve continue; severe global economic downturn expected for 2020

- Globally, 4.2 million patients have recovered from COVID-19; the growth rate of daily new cases is about 2%[1]
- Increase in daily new cases is currently propelled by South America, Asia, and Africa
- Vaccine and therapeutics development continues to move at unprecedented pace; 12 vaccine candidates currently in phases I, II and III
- Latest economic forecasts from World Bank point to a 5.2% decline in global GDP in 2020; expected to rebound to 4.2% growth in 2021
- Only pharma and semiconductors currently at pre-crisis TSR[2] levels; 7 (out of 24) sectors with significant share[3] of companies with >15% default risk
- Investors want companies to prioritize ESG[4] agenda; net flow in ESG-focused mutual funds and ETFs[5] higher than traditional funds

We believe during this crisis leaders need to think along two dimensions:

Taking an integrated perspective on health/medical progression, governmental responses, societal reactions, and economic implications to understand business/sector impacts

Thinking multi-timescale in a Flatten-Fight-Future logic

1. Daily new case growth rate is calculated based on 7-day rolling average; 2. Total Shareholder Return; compared with 21 Feb 2020; 3. Retailing, Materials, Transport, Auto, Real Estate, Energy, Hospitality with > 10% of companies with probability of default > 15% as of 18 June 2020; based on top S&P Global 1200 companies; sectors based on GICS definitions; 4. Environmental, Social, and Governance; 5. Exchange-Traded Funds.
Source: BCG

Guide for leaders

Impact of COVID-19 on climate

Call to action for a green recovery

Updated analyses and impact

Epidemic progression and virus monitoring

Economic, business, and climate impact

COVID-19 Impact dashboard

As of 18 June 2020

Epidemic Progression

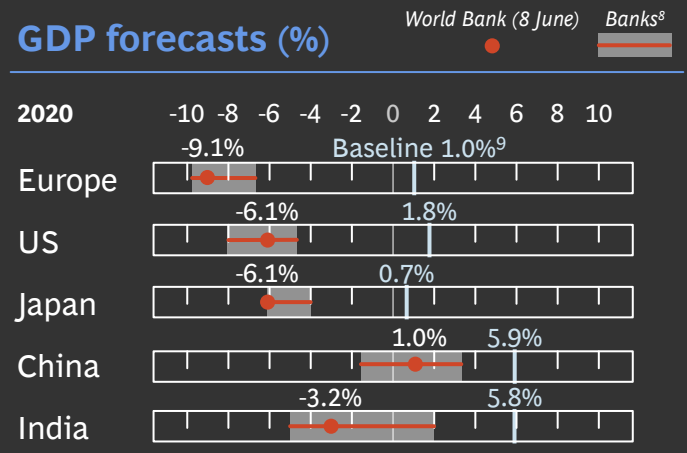
8.5M	4.2M	454K
# of cases	# of recoveries	# of fatalities

	11 June	18 June
Growth rate[1] of daily new cases	0.9%	1.7%
# of days of case doubling[2]	39	39
# of reported recoveries as % of total cases	47%	49%
# of tests / case[3]	18	18
# of tests / million[3]	54K	58K

	Vaccine	Treatment
Trials in pre-clinical stage and beyond[4]	167	137
Trials in Phase 1 and beyond[5]	12	57
Current est. timeline for approval & scale-up	9-33 months[6]	6-21 months[7]

Economic Impact

GDP forecasts (%)



Estimated employment impact

	Total employment 2019 (M)	Employees impacted[10] (M)	% of employees impacted
US	159	46	29%
UK	33	11	32%
Germany	45	12	26%
France	28	13	48%
Italy	23	8	35%
Spain	20	4	22%

Business Impact

Stock market performance[11]

	S&P500	NASDAQ	FTSE100	DAX	CHN SSE
20 Mar vs 21 Feb	-31%	-28%	-30%	-34%	-10%
18 June vs 21 Feb	-7%	4%	-16%	-10%	-3%

Total Shareholder Returns (S&P1200)[11]

First column: 21 Feb to 20 Mar; Second column: 21 Feb to 18 June

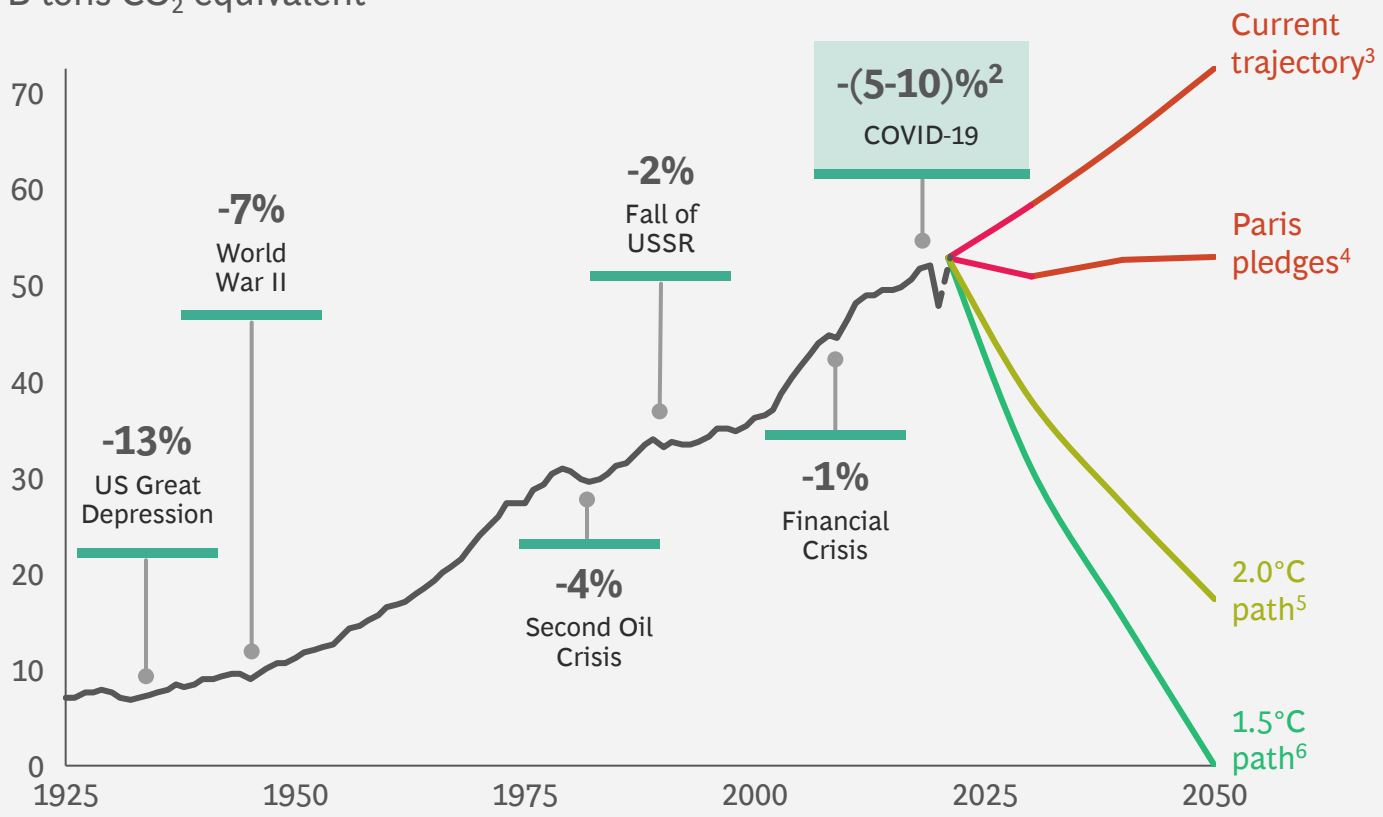
	Americas		Europe		Asia	
Pharma	-19%	3%	-20%	-1%	-22%	8%
F&B[12]	-26%	-7%	-24%	-11%	-12%	-2%
Telecom	-17%	-10%	-20%	-18%	-14%	-6%
Software	-30%	-1%	-32%	-9%	-28%	0%
Retail	-42%	-7%	-36%	-13%	-24%	12%
Capital goods	-38%	-13%	-35%	-15%	-29%	-5%
Auto	-47%	-20%	-45%	-19%	-32%	-13%
Real Estate	-42%	-26%	-26%	-26%	-22%	-12%
Energy	-56%	-28%	-45%	-29%	-41%	-23%
Banks	-41%	-25%	-44%	-35%	-26%	-13%

1. Growth rate calculated basis rolling 7-day rolling average of new cases; 2. No. of doubling days based on 7-day average growth rate of total cases; 3. Median of values for top 15 countries by nominal GDP (except China); 4. Ongoing trials including pre-clinical, Phase 1 (first trial in humans), Phase 2, Phase 3, Phase 4 ; 5. Ongoing trials including Phase 1 (first trial in humans), Phase 2, Phase 3, Phase 4; 6. 9-month development current "best case" for first supply (12 months since Apr 2020), then likely to require time for scale-up and continuing to prepare for populations; 7. Remdesivir is approved now, could be more widely available by Jul-Sep 2020. For the next wave, estimated timeline is Oct '20 – April '22 (6-21 months). If first round of drugs being tested succeeds – then 6-9 months; if not – substantially longer; 8. For India, forecast is for financial year; for others, it is for calendar year; YoY forecasts; range from forecasts (where available) of World Bank, International Monetary Fund, JP Morgan Chase; Goldman Sachs, Morgan Stanley; Bank of America; Fitch Solutions; Credit Suisse; Danske Bank; ING Group; HSBC; As of reports dated 12 April 2020 to 18 June 2020; 9. World Bank January 2020 forecast; 10. Available cumulative data as of 18 June 2020 from mid-March 2020; includes increase in unemployment & employees covered by gov. wage support programs; US: unemployment insurance claims (data as of 13 June); UK no self-employment (data as of April) and Italy (data as of April) active & inactive unemployment; Germany: short-time work requests, may not actually utilized (data as of May); France: (data as of June); Spain: (data as of May); figures are changing rapidly and often being reported with a lag from the current date; 11. Sectors are based on Global Industry Classification Standard (GICS) definitions; Performance is tracked for two periods, first from 21 February 2020 (before international acceleration of outbreak) to 20 March 2020 (trough of the market) and from 21 February 2020 through 18 June 2020; 12. Food & Beverage. Source: WHO, World Bank, JHU CSSE, Our World in Data, IMF, Bloomberg, BCG, Eurostat (Europe), Gov't Wage Support & Unemployment figures & comments: UK Govt 5/12, Bloomberg 6/16 (UK), ISTAT 4/30 & FitchRatings 5/18 (Italy), U.S. Department of Labor 5/21 (US), Ministerio de Trabajo 6/2 (Spain), Ministere du Travail 6/5 (France), Arbeitsagentur 6/3 (Germany).

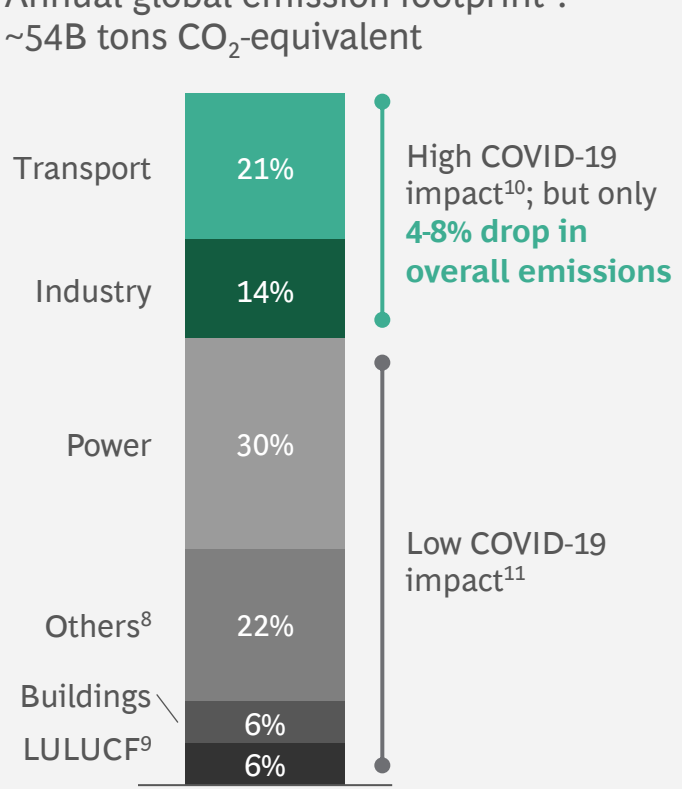
COVID-19 impact has led to largest drop of emissions since World War II; however, it's still small compared with overall global emissions

As of 19 May 2020

5-10% drop in greenhouse gas emissions[1], largest since World War II…



…but the overall impact is still small



1. Excluding Land Use, Land Use Change and Forestry (LULUCF); 2. Estimated annualized impact in 2020; 3. Assumes GHG emissions grow from 2018 at same rate as the Current Policies scenario in UNEP 2019 Gap report to 2050 (1.1% CAGR); 4. Assumes countries decarbonize further at same annual rate that was required to achieve INDCs between 2020 & 2030; 5. Assumes 25% reduction by 2030 and net-zero by 2070; 6. Assumes 45% reduction by 2030 and net-zero by 2050; 7. 2015-19 average; 8. Waste, Agriculture and Fugitive; 9. Land Use, Land Use Change, and Forestry; 10. 36% emissions decline from transport & 20% decline from industry until Apr 2020; 11. Resulting in 0-2% drop in overall emissions; Source: EDGAR 5.0, FAO, PRIMAP-hist v2.1, Global Carbon Project, IPCC, UNEP Emissions Gap Report, WRI, Nature – May 2020, BCG.

Unchecked climate change continues to pose a catastrophic economic and physical threat to society

As of 18 June 2020

Cities at risk

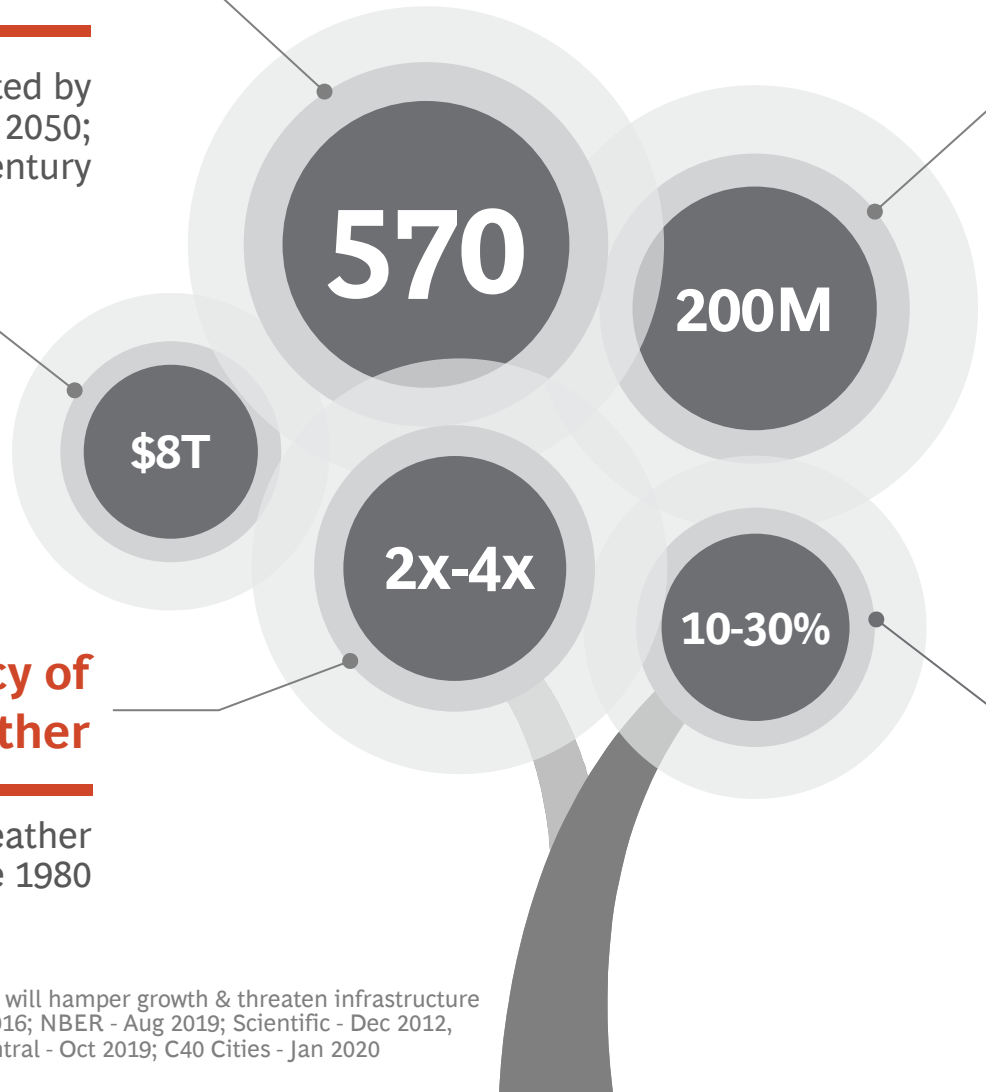
Cities likely to be affected by 0.5m sea level rise by 2050; 1-2m rise over the next century

Damages on the rise

Annual climate-related damage[1] by 2050

Increasing frequency of extreme weather

Increase in yearly weather catastrophes since 1980



Potential displacement

People potentially displaced by 2050

Economic slowdown

Global loss in GDP by 2100 (relative to no global warming)

1. Damage by increased drought, flooding & crop failures will hamper growth & threaten infrastructure
Source: The Economist - Aug 2017; The Guardian - Apr 2016; NBER - Aug 2019; Scientific - Dec 2012, EIU; PNAS - Jun 2019; MunichRe - Feb 2020; Climate Central - Oct 2019; C40 Cities - Jan 2020

Governments need to make significant investments to meet emission targets; strong global public support for climate actions visible

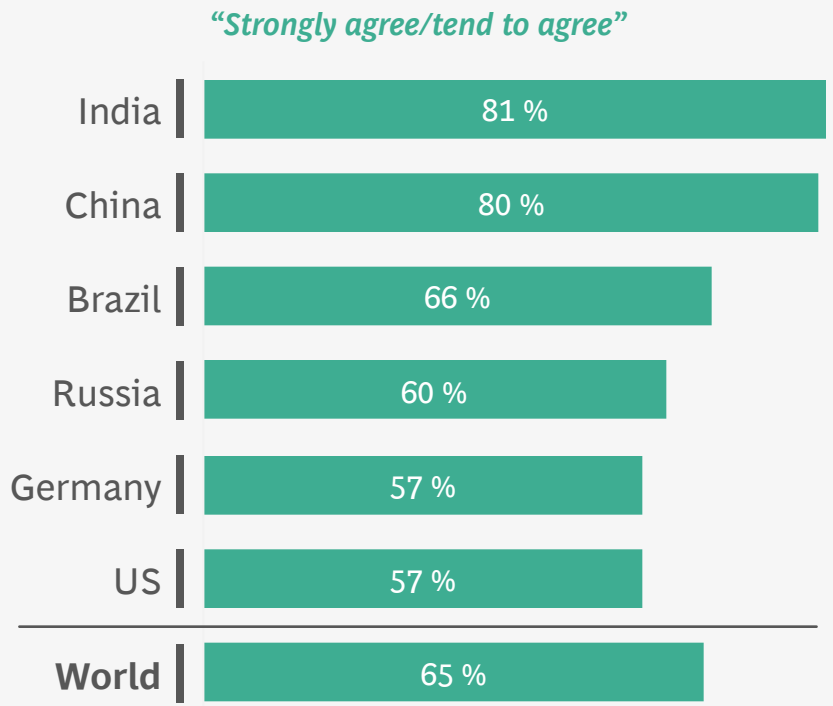
As of 20 April 2020

Imperative for governments to push required investments

	2050 Greenhouse gas emissions (B tons CO_2-equivalent p.a.)		Required investment[1] (% of GDP p.a.)
	Paris pledges	2°C path	2°C path
India	7.3	3.8	1.5-2%
China	13.3	3.7	1.5-2%
Brazil	1.2	0.5	1.5-2%
Russia	2.2	0.5	≥ 4%
Germany	0.5	0.06	1-1.5%
US	5.6	1.3	1-1.5%
World	50.0	17.3	1-3%

Strong public support for climate actions visible

Ipsos survey: Is it important that government actions prioritize climate change?[2]



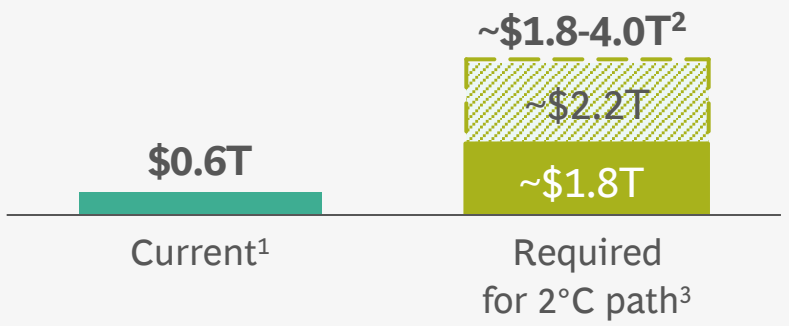
1. Investment depends on current emission volume & sector mix, ambition, GDP; investment to reach Paris pledges not included, but small in comparison 2. Survey results, April 2020; Full question: To what extent do you agree or disagree with the following: In the economic recovery after COVID-19, it is important that government actions prioritize climate change?; n = 500 to 1,000 per country; total of 28,039 online respondents aged 16–74; fieldwork dates 17-19 April 2020. Source: Ipsos MORI, World Bank; BCG

As stimulus measures continue to unfold, imperative for government leaders to push the green ambition further

As of 18 June 2020

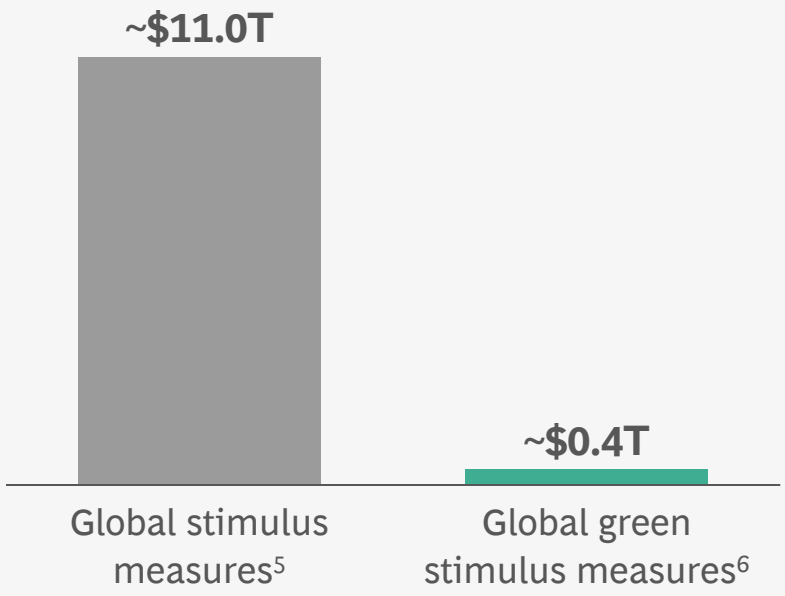
Current global annual green investments well below requirements to reach 2.0°C path

Current annual global government & corporate investments



As stimulus measures unfold, further potential[4] to push green ambition

Current global stimulus package[5] (G20) & green stimulus allocation



1. Average for year 2017-18; 2. Includes both adaptation (adjusting to the expected effects of climate change) and mitigation (reducing emissions); 3. Through 2050, year-on-year adjusted for inflation; 4. 'Potential' is defined as design of the stimulus package to allocate more share to green measures & further tranches of stimulus; 5. Data is represented for G20 countries, excl. India; EU figures still pending member state approval; 6. 'Green stimulus' defined as direct investments that also serve a strong environmental purpose; green stimulus countries include Canada, US, Australia, Germany, Italy, France, UK, European Union, China, South Korea; green stimulus measures are in addition to current annual investment shown on left-hand side. Source: The Climate Policy Initiative (CPI), IPCC, GCA, Vivid economics, BCG

Leaders have started to initiate actions to build green recovery into their COVID-19 response

As of 18 June 2020

South Korea: Moon pledges to safeguard jobs, industries with "Green New Deal"

With $22 billion plan, Israel ups 2030 renewable energy target from 17% to 30%

At LEAD on Climate 2020, 300+ Business leaders tell congress: we can build back better

Large global investor to begin abandoning companies heavily invested in thermal coal

Green recovery: Germany unveils plan for €40B climate spending surge

India's IREDA has set aside ₹100B for renewable energy projects in 2020

Investors With $12 Trillion Call for Green EU Recovery Plan

Post-pandemic "green shift" in transport could create up to 15 million jobs worldwide

Priorities for key stakeholders to achieve the green ambition

A Governments

01 Prioritize sustainability in stimulus strategy

02 Focus on green job creation opportunities

03 Prepare for job transitions

04 Leverage blended finance

05 Reboot multi-lateralism

B Business leaders & investors

01 Reduce cost by reducing carbon

02 Scrutinize supply chains

03 Increase resilience to climate risk

04 Finance the green recovery

05 Integrate climate into investment process

Source: BCG

Governments | Five priorities to scale a green recovery

A

01 Prioritize sustainability in stimulus strategy

Focus on both decarbonizing existing sectors and funding green growth sectors

Weave in green strings in stimulus packages (e.g., climate disclosure standards, sustainability targets)

02 Focus on green job creation opportunities

Prioritize green recovery investments and programs by job creation potential

Balance measures that address both mitigation and adaptation

03 Prepare for job transitions

Prepare to manage a 'just transition' of the workforce towards a zero carbon economy

Recognize that some sectors would have radically changed once economies restart[1]; actively drive reskilling

04 Leverage blended finance

Combine public and private funding to alleviate constraints

Set up project-capital-matching platforms[2]

05 Reboot multi-lateralism

Drive a coordinated climate response globally; ensure equitable resourcing

Focus on global public goods[3]

Deep-dive on following pages

1. Once economies restart, millions of people will go back to work - some into sectors that have been radically changed, e.g., lower carbon sectors growing and some high carbon sectors shrinking; 2. For example, trusted 3rd parties who help match demand for capital to supply through aggregating and screening climate projects; 3. Protecting natural carbon sinks such as forest, joint investments in promising emerging decarbonization technologies, cooperation and support in areas such as funding and technical capacity; Source: BCG

Prioritize sustainability in stimulus strategy | Need to incentivize decarbonizing existing sectors and promising new green technologies

A1

As of 18 June 2020

Existing sectors: Canada intertwined support to oil & gas industry with sustainability ambitions

$750M

Emission Reduction Fund ('ERF') set up to support workers and reduce emissions in the oil & gas sector

$1.7B

Cleanup of orphan & inactive oil & gas wells; grants for environmental site assessment, remediation and reclamation

2050
Net zero

Large companies receiving federal loans must report how they are contributing to Canada's goal of net zero by 2050

New technologies: Germany allocated part of stimulus to promising hydrogen technology

€9B

€7B allocated to national hydrogen strategy for cutting emissions; €2B additional funding for foreign trade partnerships

10GW

Industrial scale electrolyzers capacity by 2040; additional on- & offshore wind expansion to supply new electrolyzers

Hydrogen subsidies

Dedicated policy instruments such as subsidies for 'H2-ready' CHP[1] plants, carbon contracts & EEG[2] levies

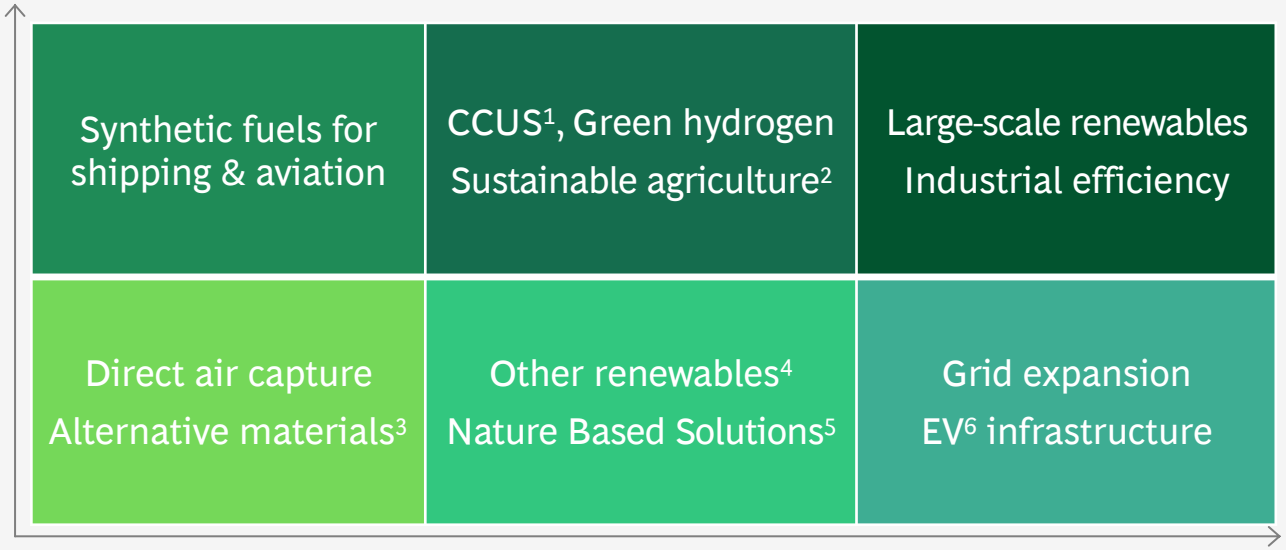
1. Combined Heat & Power; 2. ErneuerbareEnergienGesetz i.e., Feed-in Tariffs for Renewable Energy
Source: Neue Zürcher Zeitung, DW, Euractiv, Forbes, BCG

Focus on green job creation opportunities | Multiple sectors can be re-shaped to drive long-term 'greening' of the economy

A2

Multiple climate opportunities exist to boost growth in jobs

Non-exhaustive



Complement job growth potential with high impact **Adaptation investments**, e.g.

- Upgrade coastal city infrastructure
- Technology-driven crisis response systems

1. Carbon Capture, Utilization, and Storage; 2: Based on leveraging technology to improve traditional levers such as irrigation, fertilizer use, crop rotation, pest control, storage etc.; 3. Alternative building materials; 4. E.g., biomass, biogas, small scale solar/ wind projects; 5. Includes supporting afforestation & reforestation measures, wetland restoration, etc.; 6. Electric vehicle; 7. Global Financial Crisis; 8. American Recovery & Reinvestment Act; 9. Renewable Generation, Energy Efficiency, Transit, Grid Modernization, Advanced Vehicles & Fuels, Carbon Capture; 10. A full-time job for one person for a year (between 2009 and 2015)
Source: US Executive Office - A Retrospective Assessment Of Clean Energy Investments In The Recovery Act, US Bureau of Labor Statistics, BCG

Example

Post GFC[7], 2009 Recovery Act[8] in the US led to clean energy job uptick

Law aimed at investment in economic future & macroeconomic recovery

$90B invested in clean energy[9] and related technologies led to job uptick

~900K New job-years[10] in clean energy[9]

~15% Clean jobs as % of new jobs[10]

Business Leaders and Investors | Five priorities to support a green recovery

B

01 Reduce cost by reducing carbon

Expedite energy efficiency programs & switch to renewable energy to realize significant savings

With restart, actively look at ways of working to reduce carbon footprint

02 Scrutinize supply chains

Create transparency into supplier emissions and introduce CO_2 into procurement & supply chain reconfiguration decisions

Commit suppliers to rigorous efficiency and emission reduction targets

03 Increase resilience to climate risk

Decarbonize portfolios and build resilience to the physical, regulatory, and demand risks induced by global warming

Drive improvements in ESG[1] performance, which investors are increasingly rewarding[2]

04 Finance the green recovery

Apply a lens of climate-related risks & opportunities when financing COVID-19 recovery efforts[3]

Scale investments in climate-related portfolios

05 Integrate climate into investment process

Emphasize importance of climate in investment allocation and stewardship activities

Push adoption of climate-related disclosures (e.g. standardized ESG[1] reporting); integrate climate risks into credit models

Priorities for Business Leaders

Priorities for Investors

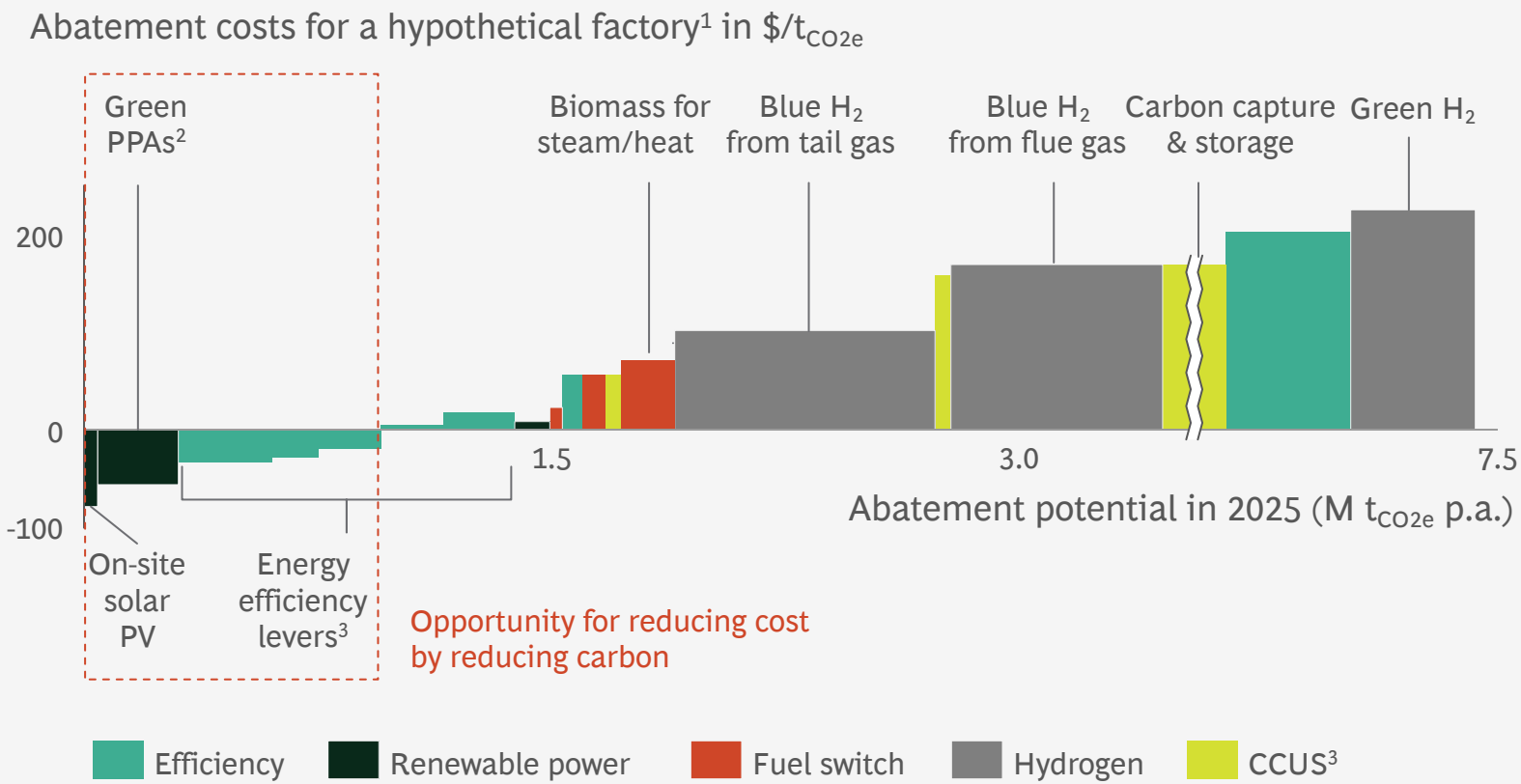
Deep-dive on following pages

1. Environmental, Social, and Governance; 2. ESG exchange-traded funds have fared significantly better during the crisis so far; 3. Investors can bring a green lens when supporting economies to restart and rebuild after CoVID-19 – through green bonds and other instruments Source: BCG

Reduce cost by reducing carbon | Expediting efficiency and renewable energy programs provides a good starting point for emission abatement

B1

Abatement costs & potential trade-off



1. Represents an average size factory in cement/steel/refining/chemical industry; 2. Power Purchase Agreements; 3. Carbon Capture, Utilization & Storage; 3 Improvements in process heating, process energy, pumps, compressors; 4. Compared to baseline year 2019
Source: BCG

Example

Oil & Gas company implemented emission reduction programs

Evaluated 200+ existing and new technologies for decarbonization

Developed concrete CO_2 reduction opportunities for individual refineries

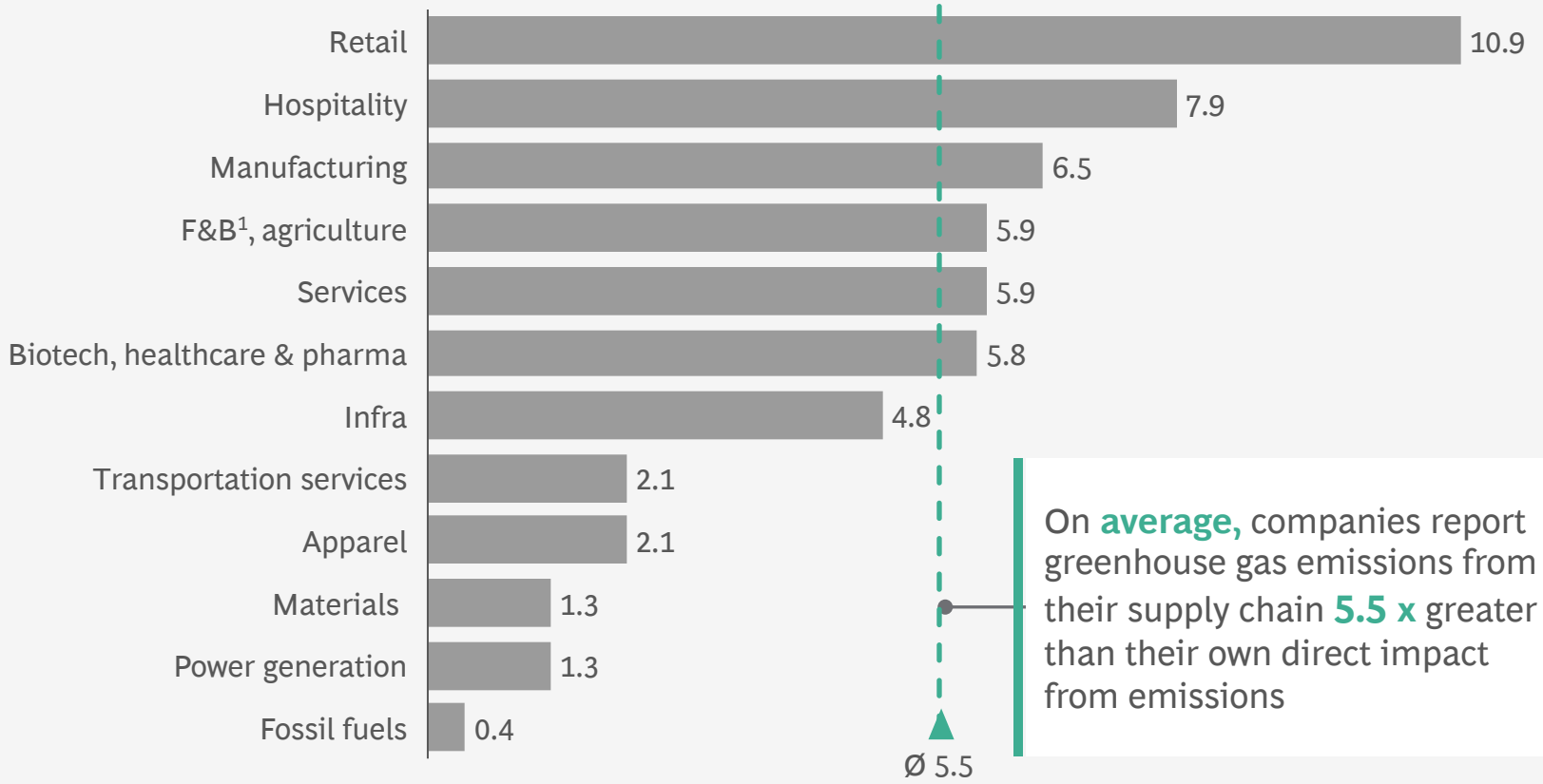
~25% Reduction in emissions targeted by 2025[4]

$1B+ Investment planned for CO_2 reduction initiatives

Scrutinize supply chains | Critical for companies to drive transparency into supplier emissions and introduce CO_2 into procurement decisions

B2

Ratio of supply chain emissions to own direct emissions



Example

Global automotive mfg. supported suppliers[2] to drive transparency

Created centralized reporting on emissions

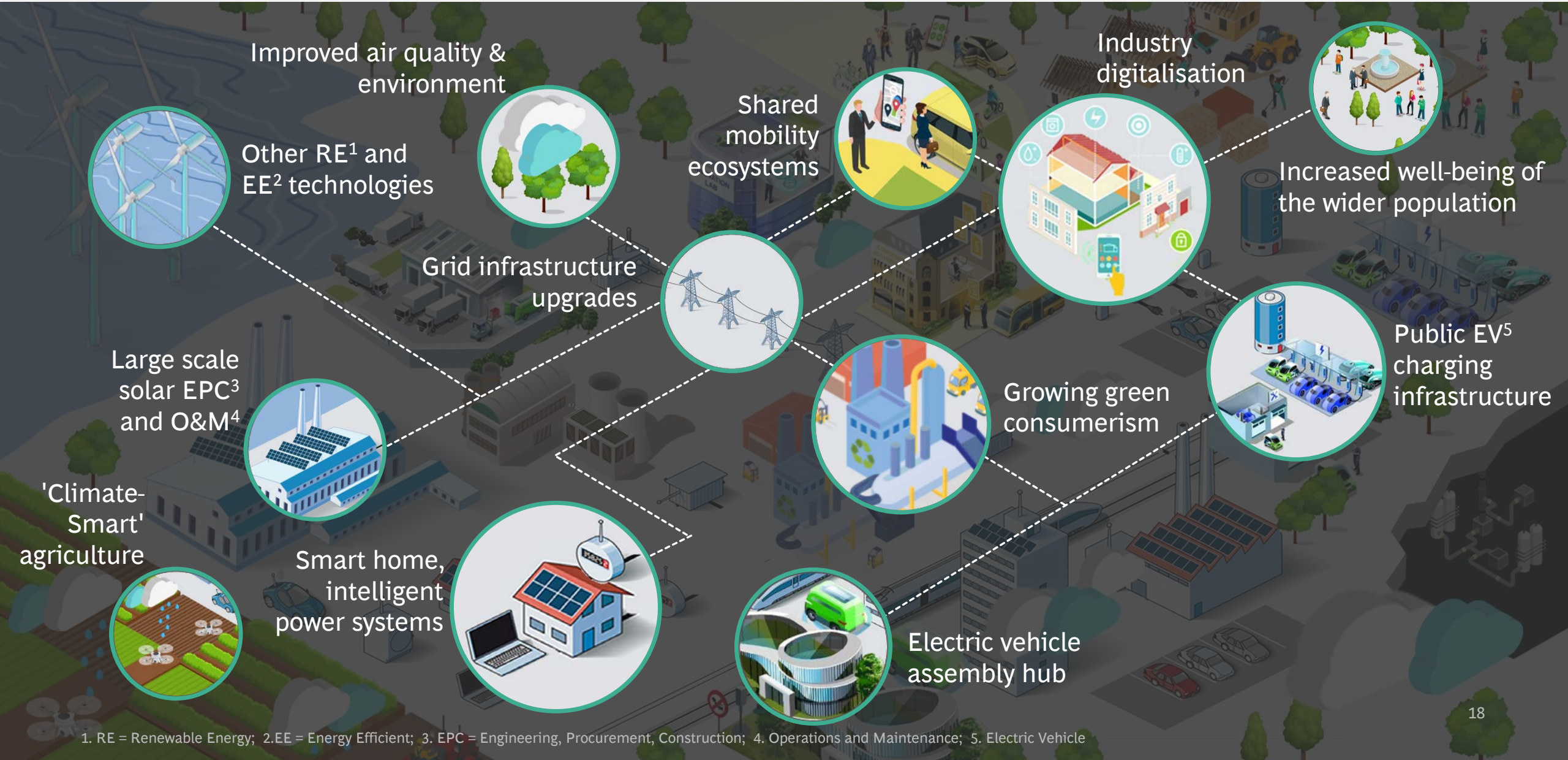
Increased transparency on share of renewables in energy consumption

Introduced ESG[3] in supplier evaluation to drive suppliers to take CO_2 emissions reduction measures

30M+ tons of CO_2 emissions reduced by suppliers participating in the program[4]

1. Food & Beverage; 2. Suppliers who participate in the Carbon Disclosure Project (CDP) Supply Chain Program; 3 Environment, Sustainability and Governance (ESG); 4. In 2019; Source: CDP Supply Chain Report 2018/2019, BCG

COVID-19 crisis provides a unique opportunity to accelerate climate actions in the new reality



1. RE = Renewable Energy; 2.EE = Energy Efficient; 3. EPC = Engineering, Procurement, Construction; 4. Operations and Maintenance; 5. Electric Vehicle

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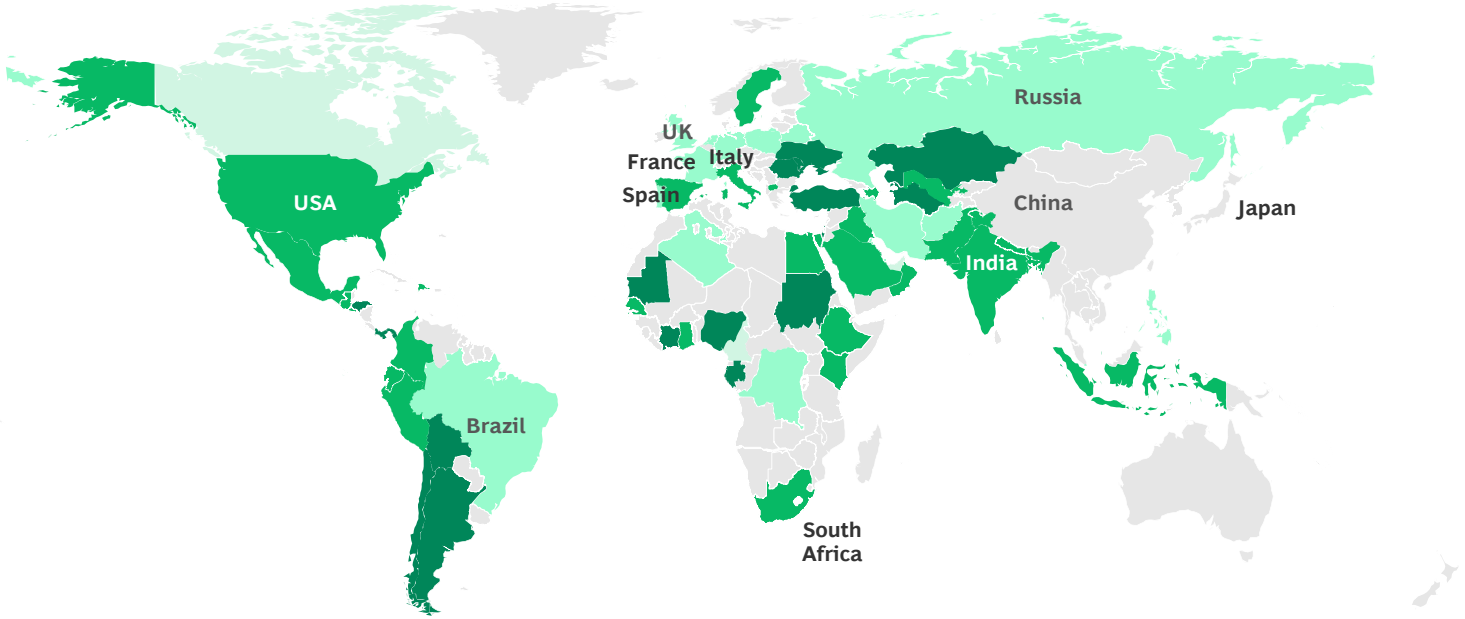
~4.2M reported recoveries so far; growth rate of daily new cases at ~2%[1]

As of 18 June 2020



Less than 100 daily cases[1]

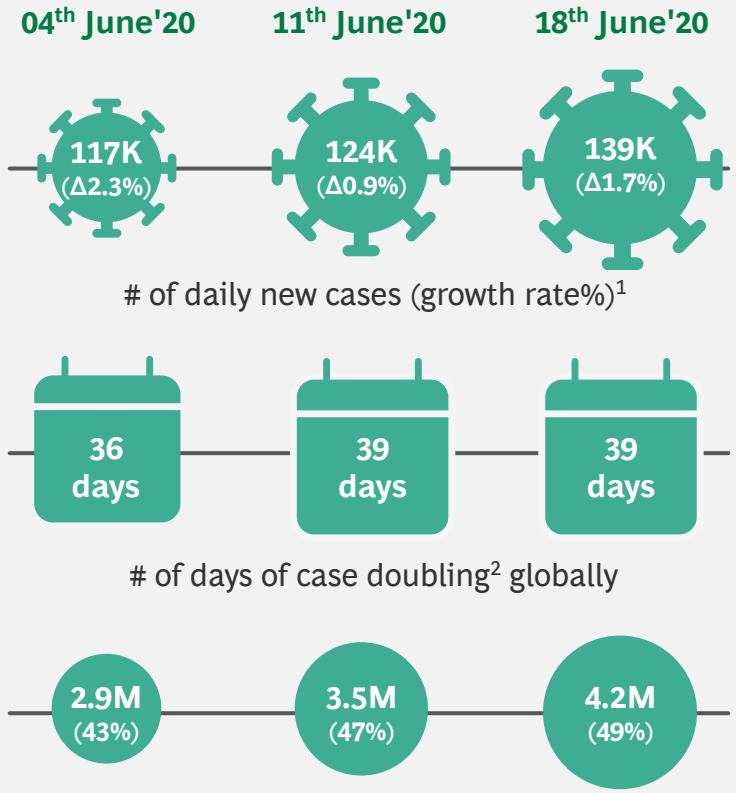
Daily cases' growth (≥100 daily cases)[1]

<-5% | -5%-0% | 0-5% | >5%

185
Countries with cases[3]

8.5M [Δ1.8%][4]
Confirmed cases globally

454k [Δ1.1%][4]
Fatalities globally

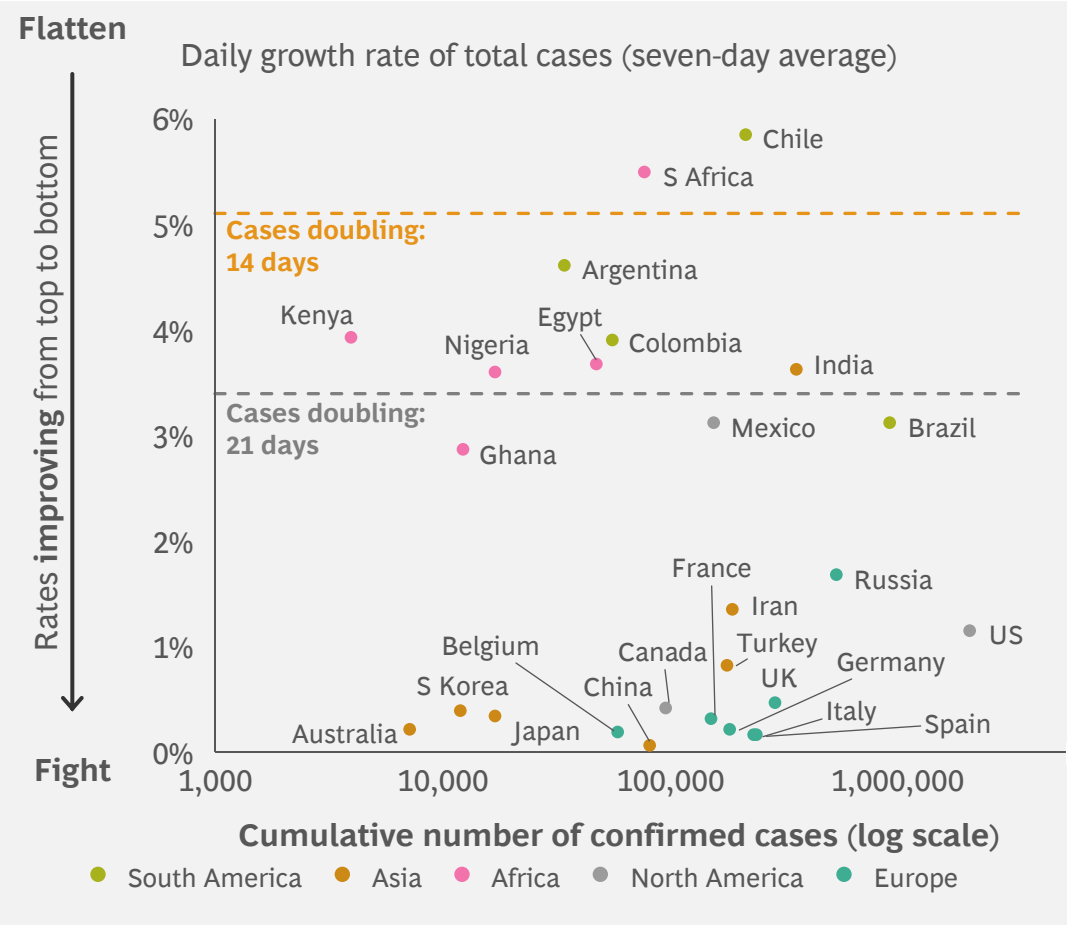


Note: Continued cases and fatalities are subject to different testing, propensity, reporting standards and hence are imperfect measures
1. # of daily new cases calculated as 7-day rolling average; growth rate calculated basis 7-day average; 2. No. of doubling days calculated basis 7-day average growth rate of total cases; 3 Basis Johns Hopkins CSSE; 4. Daily growth rate basis 7-day average
Source: Johns Hopkins CSSE; Our world in data; BCG

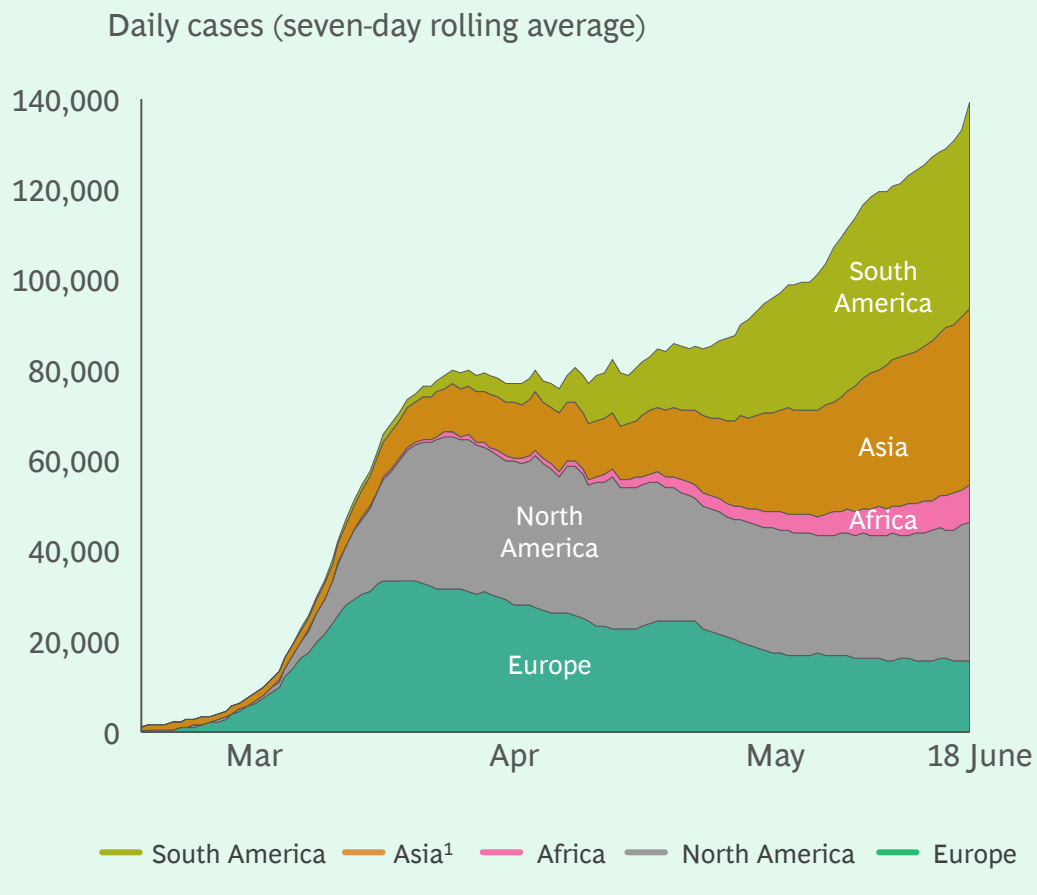
Daily new cases are increasing globally; propelled by South America, Asia, and Africa

As of 18 June 2020

Several European and North American countries continue to improve doubling rate…



… but countries in South America, Asia, and Africa witness an increase in daily new cases

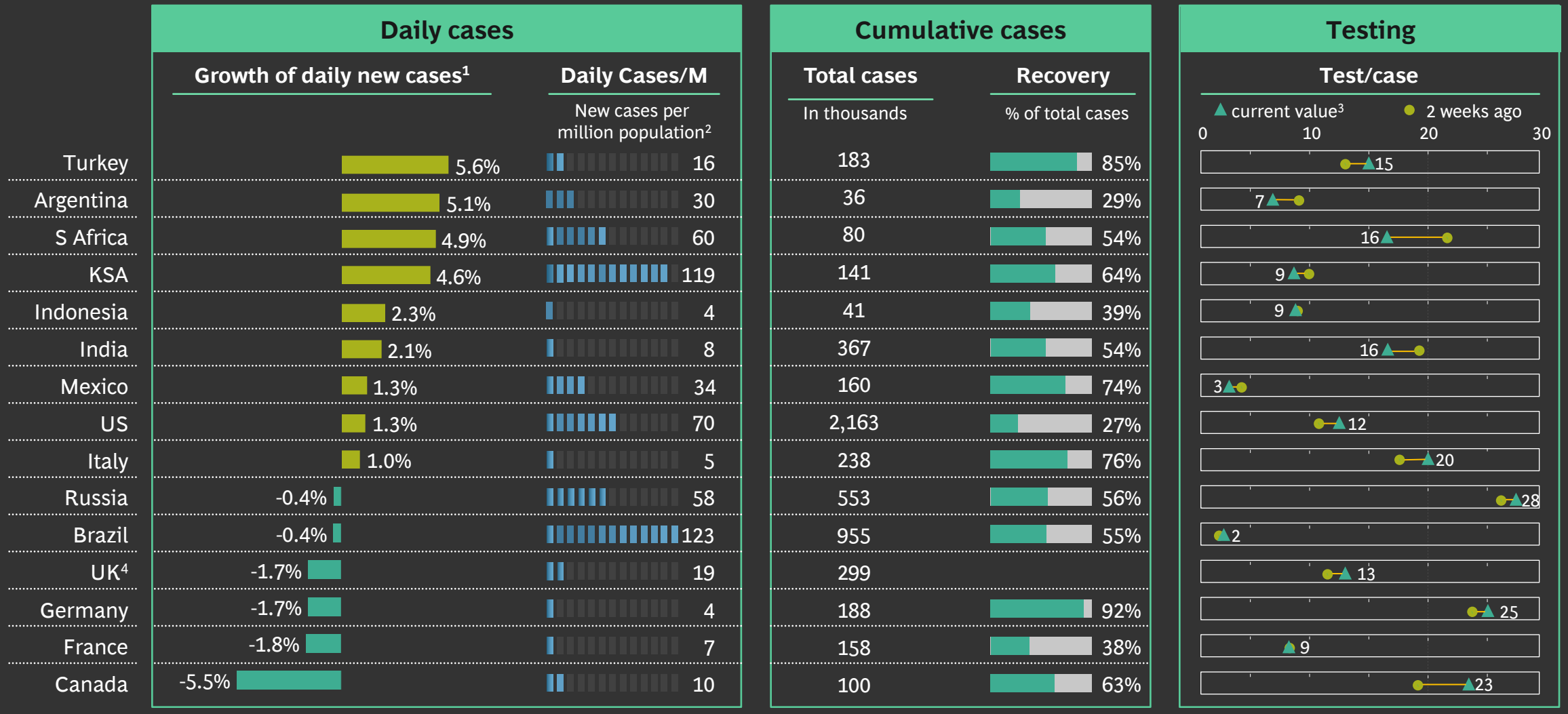


1. Includes Middle East & Oceania
Source: Johns Hopkins CSSE; Our World in data; BCG

Epidemic progression snapshot

As of 18 June 2020

Data shown only for G20 countries with 100+ daily new cases



1. Growth rate calculated basis 7-day rolling average of new cases; 2. 7-day rolling average; represented scale rounds up daily case/m to next 10th place; 3. Test/case data is not updated daily for a few countries, data represented is within last 1 week; 4 UK recovery data not available; Source: Our World in Data, John Hopkins, Worldometers, BCG

Vaccine fast movers | 12 vaccine candidates already in clinical trials

As of 18 June 2020

1 Phase II/III

Oxford Univ. & AstraZeneca

Phase III recruitment underway; planned supply build-up of 400M+ doses by end of year (if approved)

2 Phase II

CanSino Biologics

Phase II advancement since Apr 2020; follow-up expected by Oct 2020

Moderna

FDA fast track designation in May 2020; Phase III on 30,000 patients planned for July 2020

4 Phase I/II

BioNTech & Pfizer ☆

Phase I/II data exp. by July 2020, with start of Phase III; distribution possible by Dec 2020 (if approved)

China National Biotec[1] ☆

Phase II trial in June 2020; expected completion of final trials by Nov 2021

Novavax

Phase I/II started in May 2020; data expected in July 2020 and final completion by Nov 2021

Sinovac ☆

Phase II trial in June 2020; expected completion by Aug 2020

5 Phase I

Chinese AMS[2]

CureVac[3] ☆

Imperial College London[4] ☆

Inovio[5]

Gamaleya Institute[6] ☆

155 Pre-clinical

167 Total

"By the beginning of 2021, we hope to have a couple of hundred million doses. I'm cautiously optimistic with the multiple candidates we have with different platforms."

Dr. Anthony Fauci, Member, White House Coronavirus Task Force

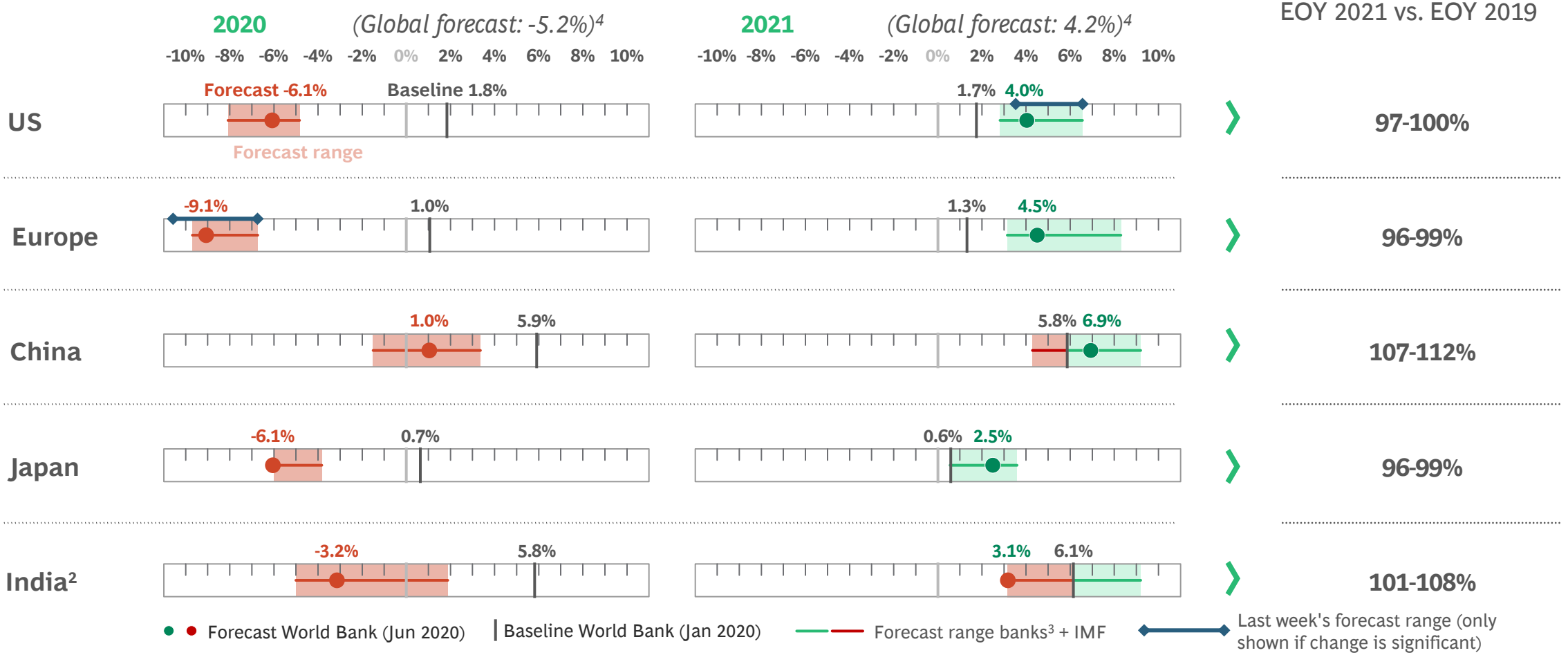
1. Listed as two candidates by WHO: Beijing institute of Biological Products / Sinopharm & Wuhan Institute of Biological Products / Sinopharm; 2. Chinese Academy of Medical Sciences and Institute of Medical Biology; Trial started in Mar 2020 with final completion expected by Apr 2021; 3. Phase I starting in June 2020; 4. Phase I funded by UK Government started June 15th 2020; 5. Phase I initial data expected in June 2020; Phase II/III trials start July/August 2020; 6. Called Gamaleya Research Institute; Trial started in June 2020 on 76 patients in Russia. Source: WHO (June 16th), Citeline Pharma Project (June 18th), Milken Institute (June 17th), Telegraph, Bloomberg, BCG

☆ Movement across phases, or update on on-going trial; in the last two weeks

Economic forecasts point toward severe downturn in 2020; rebound of global GDP not expected before 2021

As of 18 June 2020

GDP growth forecast vs. baseline



GDP level forecast[1]

EOY 2021 vs. EOY 2019

US	97-100%
Europe	96-99%
China	107-112%
Japan	96-99%
India[2]	101-108%

Note: As of reports dated 31 March 2020 to 18 June 2020, YoY forecasts 1. Range calculated with 25th & 75th percentile values of forecast range; 2. For India, forecast is for financial year; for other countries, the forecast is for calendar year; 3. Range from forecasts (where available) of World Bank, International Monetary Fund (April 2020), Goldman Sachs, JP Morgan Chase; Morgan Stanley; Bank of America; Fitch Solutions; Credit Suisse; Danske Bank; ING Group; HSBC; 4. Based on World Bank forecast Jun'20; Source: Bloomberg; World Bank; IMF; BCG

Only Pharma and Semiconductors currently at pre-crisis TSR levels; 7 sectors with significant share[1] of companies with >15% default risk

ECONOMIC, BUSINESS, & CLIMATE IMPACT

As of 18 June 2020

Based on top S&P Global 1200 companies

Categories based on TSR & net debt/enterprise value[2]

		TSR performance[3]			Companies with probability of default >15%[4]		
		21 Feb 2020 - 20 Mar 2020	21 Feb 2020 - 18 June 2020	04 June 2020 - 18 June 2020	21 Feb 2020	18 June 2020	04 June 2020 - 18 June 2020
Healthier sectors	Pharma	-20%	1%	→	0%	0%	→
	Semiconductors	-30%	0%	→	0%	0%	→
	Household Products	-16%	-1%	↗	0%	0%	→
	Software	-30%	-4%	→	9%	8%	→
	Tech Hardware	-26%	-4%	↘	0%	0%	→
Pressured sectors	Retailing	-40%	-6%	↘	0%	35%	→
	Food/staples Retail	-10%	-6%	→	0%	0%	→
	Materials	-32%	-8%	↘	4%	11%	→
	Health Equipment	-31%	-8%	↘	0%	0%	→
	Food & Beverage	-23%	-8%	→	0%	0%	→
	Prof. Services	-30%	-9%	↘	0%	0%	→
	Telecom	-17%	-10%	↘	0%	8%	→
	Media	-36%	-11%	→	0%	8%	↘
	Capital Goods	-35%	-13%	↘	2%	4%	→
	Financials	-35%	-13%	↘	0%	0%	→
Vulnerable sectors	Utilities	-30%	-14%	→	0%	0%	→
	Transport	-34%	-15%	↘	0%	32%	↗
	Auto	-41%	-15%	↘	0%	24%	↗
	Durable Goods	-39%	-17%	↘	0%	0%	↗
	Insurance	-39%	-21%	↘	0%	0%	→
	Real Estate	-39%	-25%	↘	0%	17%	→
	Banks	-39%	-25%	↘	0%	4%	→
	Energy	-52%	-28%	↘	0%	21%	→
	Hospitality	-44%	-29%	↘	0%	21%	↘

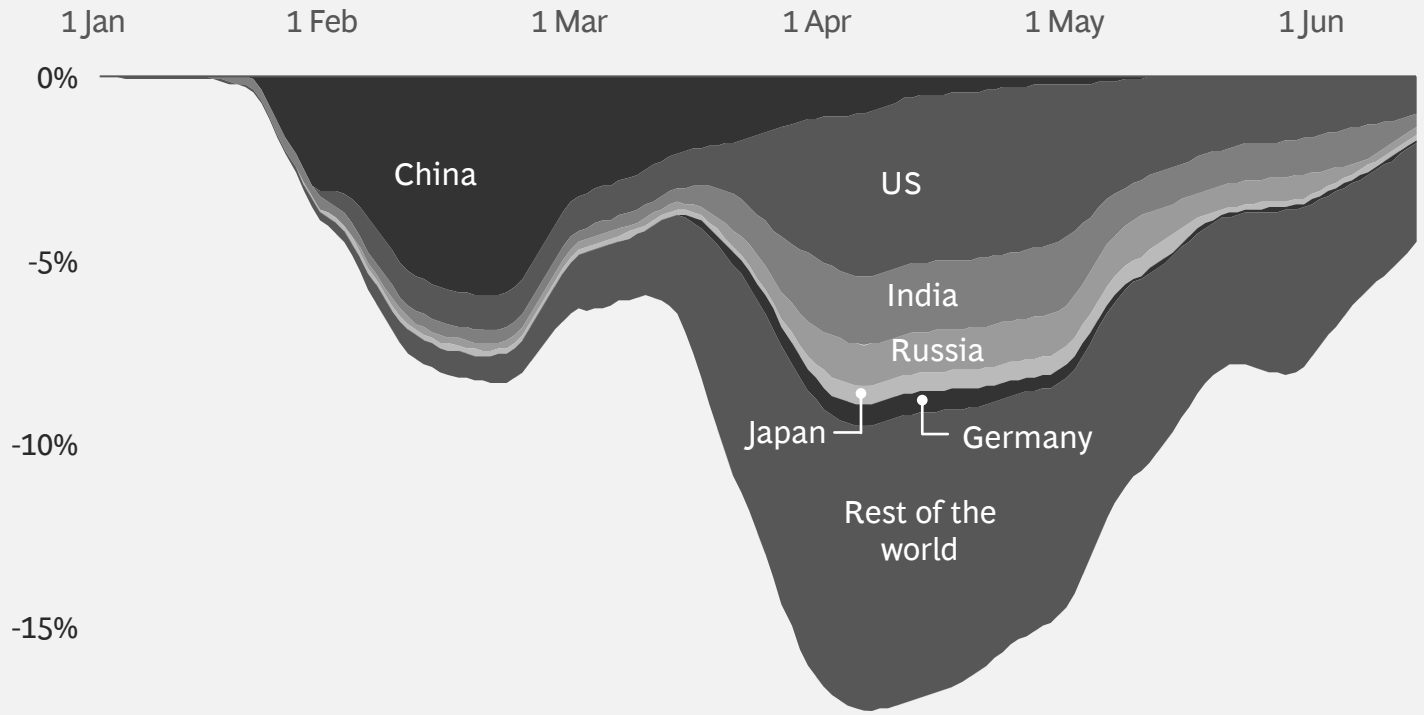
↗ Pos. trend ≥ 2%
→ No sig. change
↘ Neg. trend ≥ 2%

Note: Based on top S&P Global 1200 companies; Sectors are based on GICS definitions; 1. Retailing, Materials, Transport, Auto, Real Estate, Energy, Hospitality with > 10% of companies with probability of default > 15%; 2.Net debt & enterprise value from latest available balance sheet; Categories defined based on comparison with S&P Global 1200 median: healthy = TSR & debt/EV > median, pressured = TSR or debt/EV < median, vulnerable = TSR & debt/EV < median; 3. Performance is tracked for two periods, first from 21 February 2020 (before international acceleration of outbreak) to 20 March 2020 (trough of the market) and from 21 February 2020 through 18 June 2020 based on median; 4. Implied by 5-year Credit Default Swap based on median
Source: S&P Capital IQ; BCG ValueScience Center; BCG

Drop in emissions witnessed due to slowdown in surface transport and economic activity is reverting to pre-COVID-19 levels

As of 11 June 2020

Daily drop[1] in CO_2 emissions (%) during the year 2020



As countries restart, global CO_2 emissions are reverting

- from a drop of 17.3% in early-Apr
- to a drop of 4.5% in mid-Jun

Changes in surface transport contributed to ~50% of the drop

Annual drop in emissions to range from 5-10%, depending on restart variations across the world

Emissions rebound is a stark reminder that more needs to be done to tackle climate change

1. Mean 2009 emission of 100 Mtons / day is taken as base and 0% value. Data on the chart, thus, is analogous to Mtons/day
Source: Integrated Carbon Observatory System, Mature Climate Change, Global Carbon Project, The New York Times

Investors want companies to prioritize ESG[1] agenda; net flow in ESG-focused mutual funds & ETFs[2] higher than traditional funds

As of 07 June 2020

BCG COVID-19 investor pulse check

51%

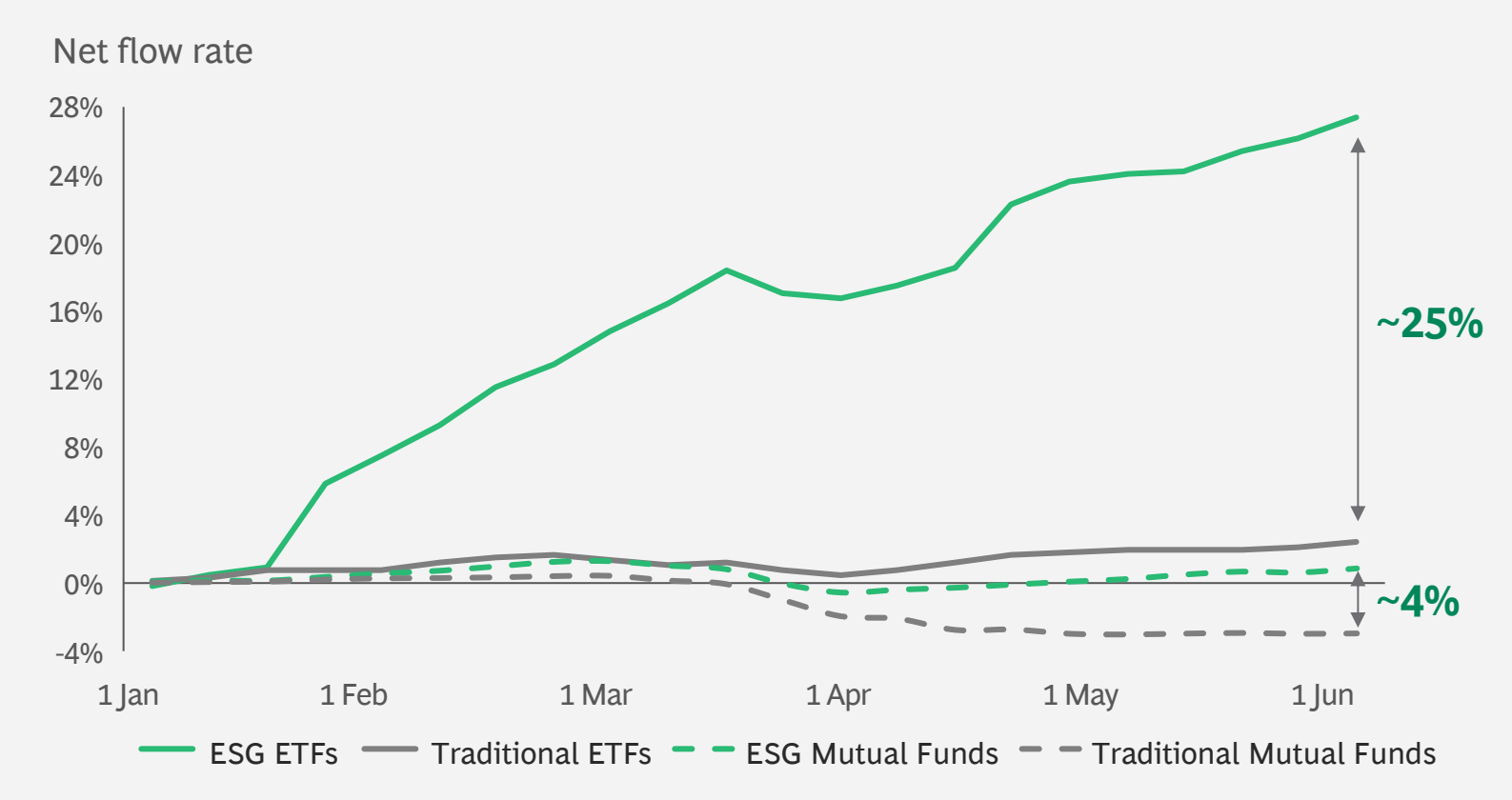
of investors believe companies should fully pursue their ESG[1] agenda as they navigate the crisis

Investors (%) who agree that "it is important for healthy companies to continue to fully pursue their ESG[1] agenda and priorities as they navigate the crisis, even if it means guiding to lower earnings per share or delivering below consensus"

As of 3 June 2020

ESG[1] funds show higher net flows than traditional ones

Cumulative net flow rate of mutual funds & ETFs[2]; % of end of year 2019 assets under management



1. Environmental, Social, and Governance; 2. Exchange Traded Funds;
Note: ESG funds aim to reflect investors' moral and ethical values through investments screened for or based on issues including the environment, alcohol, gaming, tobacco, civil/human rights, religious views, etc. Traditional funds are any other ETFs not considered sustainable; Analysis based on US, European (incl. offshore) and Asian (Japan, South Korea & Thailand) mutual fund & ETF products; Data reported represents ~60% of total US, ~75% of total European and ~75% of Asian country subset (~45% of total Asia [excl. China and Australia]) mutual fund & ETF market AuM; Money market funds excluded; Source: BCG's COVID-19 Investor Pulse Check, June 7, 2020; n = 150; Strategic Insight – Simfund; BCG analysis

Additional perspectives on COVID-19

COVID-19 BCG Perspectives

Edition #10

Value Protection & Acceleration Roadmap to Win in the New Reality

Edition #9

Future of Global Trade and Supply Chains

Edition #8

Galvanizing Nations for the New Reality

Edition #7

Sensing Consumer Behavior & Seizing Demand Shifts

Edition #6

Restructuring Costs, and Managing Cash and Liquidity

Edition #5

Revamping Organizations for the New Reality

Edition #4

Accelerating Digital & Technology Transformation

Edition #3

Emerging Stronger from the Crisis

Edition #2

Preparing for the Restart

Selected publications

Climate & Environment

Climate Should Not Be the Virus's Next Victim

Climate & Environment

Why Climate Change Is No Prisoner's Dilemma

Climate & Environment

The Net-Zero Challenge: Fast-Forward to Decisive Climate Action

Urban Infrastructure

How COVID-19 Will Shape Urban Mobility

People & Organization

Meetings and Email Are Here to Stay, So Make the Most of Them

Social Impact

Unlocking Tomorrow's ESG Opportunities

Healthcare

Learning from COVID-19 to Transform Global Health Systems

Public Sector

Generating the Right Returns from Stimulus Packages

Agriculture

Signs of Rebound Forecast a New Era for Agriculture

Source: BCG, World Economic Forum

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