

CLIMATE
CHANCE
2020

GLOBAL OBSERVATORY
ON NON STATE
CLIMATE ACTION

Summary

SECTOR-BASED REPORT

GLOBAL SYNTHESIS REPORT ON CLIMATE ACTION

BY SECTOR

2020, an unusual year shaking up all the observed trends from 2019.....	3
Key takeaways by sector.....	7
Energy	
Transport	
Road	
Rail	
Air	
Maritime	
Building	
Industry	
Textile	
Steel	
Waste	
Land use	
Socio-economic consequences of the Covid-19 crisis : a possible drawback for climate objectives	16
Can recovery plans and renewed State commitments to the Paris Agreement be compatible?	18
Trends among actors: diversifying climate action repertoires	20
In an era of carbon neutrality, actors are reshaping their climate strategies.	
Legal action and the revival of certain struggles place the climate at the heart of public debate and democratic expression.	
Annexes	23
<i>Annex I: Table of total CO2 emissions from G20 countries (MtCO2), exclusive of land use</i>	
<i>Annex II: Significant evolution in 3 key sectors (MtCO2)</i>	

- **2020, an
unusual year
shaking up
all observed
trends from
2019**
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The IPCC had set 2020 as the target year for emissions to peak and still have a chance of keeping to the pathway stipulated in the Paris Agreement. 2019 was therefore intended to be the last year in which greenhouse gas (GHG) emissions would increase.

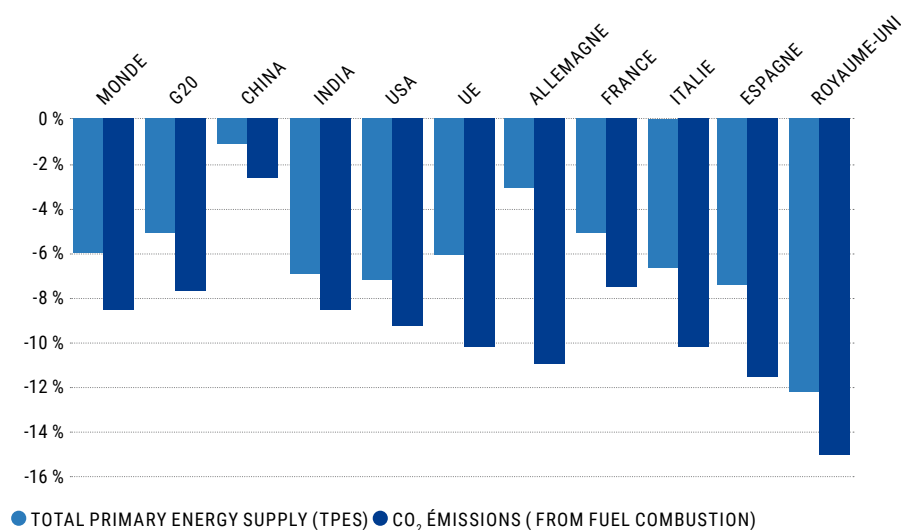
In 2019, GHG emissions rose by 0.6% to 43.1 gigatonnes of CO₂ equivalent (GtCO₂e), including land use change. This is a smaller increase than the previous two years (+2.1% in 2018 and +1.5% in 2017), after a levelling-off between 2015 and 2016, which still brings the global increase in emissions to 4% since the signing of the Paris Agreement, and the concentration of CO₂ in the atmosphere to record levels: 410 ppm on average in 2019, whereas humanity had never exceeded 300 ppm before the Industrial Revolution ([Global Carbon Project](#), 2019). With average temperatures 1.1°C higher than in the pre-industrial era, the year 2019 proved to be the warmest ever recorded in Europe and the second warmest on a global scale ([WMO](#), 2020).

The year 2020 started with a mixed situation, but with focused on the opportunity for States to present their progress and renew their Nationally Determined Contributions (NDC) at the COP26. However, the Covid-19 pandemic spread across the planet in early 2020 and inevitably disrupted the dynamics observed until now. The recession experienced in 2020 has been much more severe than that following the 2009 financial crisis. Global GDP could fall by 4.5 per cent, according to estimations by Enerdata and OECD ([Enerdata](#), 2020). However, the most industrialised countries have proved the most resilient, particularly China, which has already made a massive economic recovery. While these figures are still uncertain, due to the second round of lockdown in the autumn of 2020, it is interesting to note that this recession could lead to a faster decline in energy consumption (-5.9%) and an even faster decline in CO₂ emissions (-8.6%). The International Energy Agency (IEA) remains cautious and expects a 5.3% drop in energy consumption and a reduction in CO₂ emissions of only 6.6% ([IEA](#), 2020). As a reminder, the United Nations Environment Programme (UNEP) estimates that annual reductions of 7.6% in emissions of all GHGs through 2030 are necessary to achieve the objective of limiting global warming to 1.5°C, while reductions of 2.7% are needed to limit it to 2°C ([UNEP](#), 2019).

FIGURE 1

CHANGES IN CO₂ EMISSIONS (FROM FUEL COMBUSTION) AND ENERGY CONSUMPTION - PROJECTION 2019/20.

Source: [Enerdata](#), 2020



What broad lessons can be drawn from this Synthesis Report?

First and foremost, we observed that net reduction in demand and needs is a powerful factor in reducing GHG emissions.

The sectors related to energy production or use can be analysed according to the following triptych: decarbonisation, energy efficiency and net demand reduction. Though this observation may seem obvious in 2020 with the lockdown measures linked to the Covid-19 pandemic, it is nonetheless also relevant for observing trends from 2019. The first factor in the reduction of GHG emissions in electricity production in 2019 is the slowdown in economic growth and electricity consumption. Conversely, this same observation explains the difficult decarbonisation of these sectors. In the building sector, the meagre efficiency gains in 2019 do not compensate for the growth in electricity demand for appliances, or even the demand for building space. In the transport sector, sales of new vehicles continue to decline, although the trend towards higher-end vehicles and the success of heavier, more fuel-intensive SUVs undermines efficiency gains. Finally, our analyses of the steel and textile production sectors, show that the options for decarbonising these two sectors are limited. This observation calls for a reduction in the use of virgin materials, via either more circularity or by a net drop in demand.

Some positive signs of the transition accelerated with the health crisis.

In electricity production, the priority given to renewables on grids and the drop in oil demand both enabled renewables to maintain growth while amplifying the devaluation of fossil fuels, especially the Oil majors. Cycling, at the crossroads of environmental and health challenges, has benefited from a sudden burst in popularity. Not only in Europe, but elsewhere in the world as well, this can now be considered a scaling-up process, and not just a simple surge limited to a few cities. After the shock caused by the closure of China's borders to imports of recyclable waste in 2018, the reintegration of local recycling channels in industrialised countries has become all the more urgent as the pandemic has caused recycling rates to fall and pushed up the price of virgin plastics.

At the same time, the crisis is reversing some encouraging trends observed in recent years.

There have been many impacts on access to clean electricity and households' ability to equip themselves with entry-level off-grid solutions in developing countries. Low oil prices have also enabled maritime freight companies to cushion the impact of the pandemic on their activities, while weakening some of their decarbonisation and depollution strategies. The drop in cost of petrochemicals also benefits the producers of virgin plastics - at the expense of recycled plastics - with high demands for Personal Protective Equipment (PPE) equipment.

Finally, the crisis has exacerbated some already worrying trends,

such as the weakening of controls to combat forest fires and deforestation in Brazil, and thwarted efforts in Indonesia, which had succeeded to curb the pace of its deforestation. Nevertheless, a positive effect of the pandemic could be how the role of forests and biodiversity as natural barriers to the circulation of pathogens, in addition to their role as carbon sinks, has recently been put in the spotlight and at the heart of public debates



Key takeaways

- The general decline in both energy use and production of goods and services constitutes a powerful factor in reducing GHG emissions. This was evident in 2019 and is so again 2020.
- The pandemic and its consequences have accelerated some progress made with regard to the transition, particularly electricity production, urban mobility and waste treatment.
- The crisis is also reversing some encouraging trends observed in recent years, such as access to off-grid energy in developing countries, efforts to reduce transport emissions, and efforts to protect forests.
- The shock of the plunge in demand and oil prices has ambivalent effects in the short term, but may well lead to structural changes in some sectors.



Synthesis Report on climate action

KEY TAKEAWAYS 2020

ENERGY

1 Electricity production emissions fell by 1.3% in 2019, due firstly to a moderate increase in economic growth and consumption, and secondly to the historic 3.1% decline of coal in the international mix, up to -19% in Europe and -15% in the United States. For the first time in the industrial era, low carbon energies (renewables and nuclear) have overtaken coal in the global electricity mix (37% vs 36% respectively). And subsidies for fossil fuels have fallen by 27% in 2019.



4 electric utilities have climate objectives aligned with the Paris agreement.

Source : World Benchmarking Alliance

2 In 2020, the drop in electricity consumption due to the Covid-19 pandemic has primarily affected coal-fired power plants, and renewable energies (RE) have seen their share in the global energy mix increase, due to their low operating costs and priority access to the network. The addition of coal-fired power plants in China no longer offsets plant closures in Europe and the United States. While recovery plans have set us on a mixed trajectory, with USD 13 billion being allocated to fossils in G20 countries, falling revenues are expected to reduce access to electricity in the world.

3 Asset losses and depreciation are accelerating in 2020 for major European and US groups in the oil and gas sector, reaching \$87 billion in assets. Their value on the stock market is sometimes surpassed by that of companies in RE. With falling demand and barrel prices that have fallen by an average of a third between 2019 and 2020, some of the oil majors are withdrawing from mega-projects whose profitability is weakened, or even reorienting themselves more seriously towards RE. As for the large electricity utilities, they are struggling to translate their

objectives into their transition and investment plans according to the World Benchmarking Alliance study. On the consumption side, direct purchases of renewable energy by companies in all sectors picked up quickly in the second half of 2020.



were powered by 100% renewable electricity in 2019.

Source : CDP

4 The actions of cities and regions demonstrate a growing ambition to mobilise their local players and their inhabitants in the energy transition. At the end of 2019, 58 cities or regions, including 44 in Europe, were being supplied with 100% renewable electricity through direct power purchase agreements and certificates, as well as through direct investments in their territory and elsewhere. More recently, they have become players in fossil fuel disinvestment through their public investment funds or their legal actions.

5 Citizens continue to transform into "prosumers" with twice as much solar capacity installed between 2012-2019 as 2007-2012. The crisis has seriously impacted the capacity to equip lower-income households in developing countries, which is less the case in high-income countries where solar electricity in the residential sector is driven by falling prices and local regulatory measures. Energy cooperatives are still marginal in capacity, but are increasing in number: 3,500 in 2019 in Europe. Finally, mobilization is growing against wind projects that local residents sometimes consider harmful to their private interests, the environment or health.



citizen-based renewable energy cooperatives in Europe in 2019

Source : REScoop



TRANSPORT

Road

1 The economic model of municipal public transport is being strained by the pandemic, which is demonstrating that funding it from users' fares alone is a challenge. Meanwhile, cycling, a key solution bridging health and environmental challenges, but which has yet to be consolidated, has also boomed in cities where it was previously still marginal: There are nearly 2,400 km of additional bicycle paths under construction or announced in Europe, and nearly 900 emergency measures in favor of cycling and walking around the world. As for shared mobilities, a handful of dominant free-floating players should emerge stronger, thanks to the acceleration of merger-acquisition activity in 2019, but are still struggling to find a sustainable business model.

882
measures

measures put in place to promote walking and cycling in response to Covid-19

Source : Pedbikeinfo

2 The growth of emissions in the road sector slowed in 2019 as sales of new vehicles declined. In 2020, SUV and premium vehicles have been more resistant to the economic shock of the Covid-19 pandemic, and their success continues to cancel out the efficiency gains that have been recorded in recent years. Global sales of electric vehicles (EVs) in 2019 (-14%) suffered less than the rest of the market (-28%) in the first half of the year: Europe even became the leading continent in EV sales (+42% of sales), surpassing even China, which is reducing its subsidies for EV purchases. While attention is focused on electrification, EVs still account for only 3% of sales, compared with 41% for SUVs.

3 Walking is making a tentative entrance in the mobility and urban development plans of cities like Paris and London but also in Brazil and various developing cities. However, apart from the widened popularity of teleworking, the reduction in the demand for motorised mobility, particularly due to the densification of living spaces, remains overlooked by municipal policies.



0,8 %

Only 0.8% of the world car fleet in 2019 will be electric, up 0.2% compared to 2018.

Source: AIE

4 Transportation figures prominently in economic stimulus packages. Although soft mobilities are supported, these plans still strongly promote individual motorised mobility, including internal combustion vehicles. Yet car manufacturers have fallen far short of the standards that have applied since early 2020 and are typified by their avoidance strategies. By contrast, restrictions on urban access for polluting vehicles are multiplying and are showing to be efficient.

50%

of the world's urban population has easy access to public transport networks in 2019: from 75% in Europe to 40% in Asia.

Source : UNStats

Rail

1 The expansion of the global rail network in 2019 is more in line with the pursuit of economic growth and access to strategic resources than with a desire to decarbonise the mobility of passengers and goods. China is the sector's main investment force, internationally through the One Belt One Road initiative, and also through the expansion of its national network, which accounts for $\frac{2}{3}$ of all high-speed lines in the world.

75 % of the world's passenger lines were electrified by 2019.



Source : AIE

2 The electrification of lines continues to expand globally: today, $\frac{3}{4}$ of the passenger network and half the freight network are electrified. In some places, such as India, the lockdown has made it possible to undertake massive track electrification works. Less costly in terms of infrastructure, hydrogen-powered trains are on the rise in Europe, their growth notably driven by Alstom, strengthened by the takeover of its competitor Bombardier Transport.

38 % This is the observed growth rate of rail freight in Europe and China between 2017 and 2018.

Source : Ovrsea

3 Passenger transport by rail is still increasing (+3% between 2017 and 2018), but remains concentrated in a few countries and driven by the major Chinese high-speed line projects, climate and energy benefits of which are weakened by low demand. Where networks are already well developed, urban densification policies (Japan) and economic incentives (lower VAT on tickets in Germany) are proving effective in organizing a modal shift.

4 Rail freight remains closely linked to coal transport and access to strategic resources. In East Africa, it accompanies the major projects for the exploitation of ores and hydrocarbons (Kenya, Burundi and Rwanda), though some projects have been slowed by financial difficulties. On the rise in Asia, North America and Russia, but challenged globally by road freight, rail freight has proven to be resilient during the pandemic: for carrying health equipment from one country to another, but also for driving transcontinental freight activities along the OBOR network, which grew by 41% in the first half of 2020.

28 %

of the world's rail freight is for coal and fossil fuels

Source : AIE

Air

1 The continuous growth of GHG emissions from the commercial aviation sector over the last few years - 2% in 2019 and 29% since 2013 - has been halted by the Covid-19 pandemic. The air transport association IATA predicts a 68% drop in traffic over the year, which may not be recovered before 2024 due to the loss of household and business incomes.

2 The industry and NGOs have very different views on the impact of the sector's long-term trajectory. In the industry's carbon-neutral scenarios published in September 2020, they make the assumption that traffic will double by 2050, whereas the NGOs believe that the temporary drop in air traffic does not call into question the sector's cumulative climate impact nor its current trajectory, which is highly inadequate to achieve a 2°C scenario compatible with the Paris Agreement.

3 These two stakeholders are also disputing which figures to use. The International Coalition for Sustainable Aviation and other observers denounce the choice made by the International Civil Aviation Organisation (ICAO) to only take 2019 in consideration as the sole reference year for measuring the level of emissions beyond which airlines must offset their emissions from 2021 onwards, and instead of using the 2019-2020 average. In the United Kingdom, the Supreme Court ruled in favour of two NGOs and cancelled the project to expand London airport on the grounds that it did not take sufficient account of the Paris agreement as ratified by the British government.

4 The Covid-19 pandemic and the collapse in transport demand have forced states to step back in terms of fiscal plans. Although many countries had planned to introduce a tax on passengers or freight, the governments postponed these measures in 2020 and invested heavily in their national firms. €110bn in the G20 countries and €33bn in the EU, in the form of guaranteed loans, public aid and even nationalisation. Very little of this aid has been made conditional on binding environmental and social measures.

Maritime

1 The growth in international trade stalled in 2018, the latest year for which data is available. This, coupled with efficiency gains in international maritime freight, meant that GHG emissions from maritime transport actually decreased between 2017 and 2018 (-0.7%).

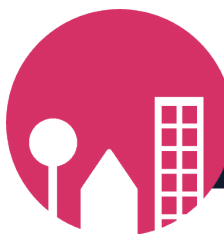
2 Until now, the use and transport of LNG has proved to be both a market opportunity and a decarbonisation strategy for maritime freight, while the IMO is targeting -40% emissions in 2030 in its strategy adopted in 2018. To meet the new IMO 2020 standards

on sulphur emissions, which came into force in January 2020, shipping companies have made a significant technological decision to use "scrubbers". This technology has already been adopted by more than 4,000 ships to purify exhausts without having to stop using traditional fuels.

3 There is a clash between the depollution and decarbonisation strategies of shipping companies. Methane (+150%) and black carbon (+12%) emissions from the maritime sector have been rising sharply since 2012. This is due to the popularity of two alternative fuels: liquefied natural gas (LNG), which companies are betting on for their decarbonisation, and very low sulphur fuel oil (VLSFO), to reduce air pollution. The adoption of open-circuit models of scrubbers, the most popular model but one that contributes to ocean acidification, is also impeded by the numerous bans imposed by States and port authorities around the world.

4 The restrictions in movement to combat Covid-19 have hit passenger shipping companies such as Brittany Ferries hard. But containerised freight (Maersk, Hapag Lloyd, HMM, etc.) has proved particularly resilient, despite the reduction in traffic, taking advantage of low oil prices and higher tariffs applied to containers and the difficulties experienced by the air transport industry in capturing the e-commerce market.

5 Covid-19 is also undermining the strategic options chosen to respond to the challenges of climate change and air pollution. LNG was already in overproduction before 2020 and is the energy product most affected by the fall in energy demand. Hundreds of LNG tanker journeys have been cancelled in 2020, and low prices in the short term do not point to a solid recovery in the long term. The fall in oil prices is also lengthening the return on investment for scrubbers, which benefits VLSFO.



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KEY TAKEAWAYS 2020

BUILDING

1 Emissions from the building sector increased by 1.5% in 2019 (10.08 GtCO₂) due to an increased demand in electricity from household appliances and air conditioning. Energy efficiency gains (~1%/year) do not compensate for this growth, and investment in energy efficiency could decrease by 10% in 2020. The absence of energy codes in two thirds of the countries and obsolete appliance standards mean that more than 5 billion m² were built in 2019 without energy performance requirements. Only ~35% of buildings' consumption are covered by codes or standards.

2 The Covid-19 pandemic has led to a shift in consumption from industry and the tertiary sector to households, mitigating the expected decrease in overall electricity consumption in 2020. However, the pandemic's consequences threaten access to clean energy for cooking, of which 37% of the global population is deprived, and in a context where informal housing is again on the rise since 2018. In Europe, where 15 to 24% of construction companies could go bankrupt, local authorities and governments see the economic recovery as an opportunity to implement their renovation strategies.

20 million

households will be equipped with heat pumps in 2019 and their growth is noticeable in all major heating markets.

Source : AIE

3 Very few codes and requirements apply to the existing building stock. Some municipalities are showing interesting results thanks to mandatory reporting of energy performance (Tokyo, Columbus, St Paul). Integrated renovation services at the local level (one-stop shops) are proving to be all the more relevant in overcoming the obstacles to renovation accentuated by the crisis, and are an instrument that the European Union wishes to disseminate widely.

418 buildings

are certified "zero net carbon" in 2020. 95 local authorities and companies are signatories to the Net Zero Carbon Buildings initiative

Source : WorldGBC

4 Local and regional codes for new buildings are more numerous: solar water-heating, solar cool roofs and rooftop gardens are among the most frequently imposed requirements. Subsidies, allowances and tax exemptions are also part of the incentives for such developments. Finally, some cities prefer to leave the choice of means to local players either through local emissions quota and trade systems (Tokyo, New York) or mandatory certifications (Singapore). Multi-stakeholder initiatives facilitate access to financing from local authorities or the development of a market dedicated to sustainable construction.

5 Multi-stakeholder initiatives are being developed to integrate building users' behavior and needs into renovation projects (data management systems, awareness-raising, etc.) and to develop building performance monitoring tools to this end (EPC, passports or notebooks, etc.). Reflections on the life cycle of buildings are leading to the integration of grey energy into certifications (NollCO₂ etc.), the creation of markets for more sustainable, biosourced or recoverable materials (2030 Palette, Madaster, etc.). Finally, a more "adaptive" approach towards recyclable or reversible buildings is emerging, which would make it possible to anticipate and adapt buildings to changes in usage, as in the case of teleworking accelerated by the Covid-19 pandemic.

6 million

Energy Performance Certificates (EPCs) are issued every year in European countries.

Source : BPIE



INDUSTRY TEXTILE & STEEL

Textile

1 GHG emissions due to the production and use of textile clothing and shoes are estimated to be 2.1 GtCO₂e per year, i.e. approximately 4% of global emissions. In addition to being responsible for 25% of the global water pollution, the sector has a carbon impact which has exploded in the last 30 years and which could still increase in the coming years.

2 The two main raw materials used by the textile industry are cotton and polyester, a synthetic fiber whose production has experienced a very strong growth in the last 30 years, rising from around 12 million tons in 1995 (25% of the market) to 58 million tons in 2019 (52% of the market). However, it is the product of high GHG-emitting petrochemical processes - the manufacture of 1kg of synthetic fiber emits 12kg of CO₂, making it one of the main sources of emissions in the textile industry today.

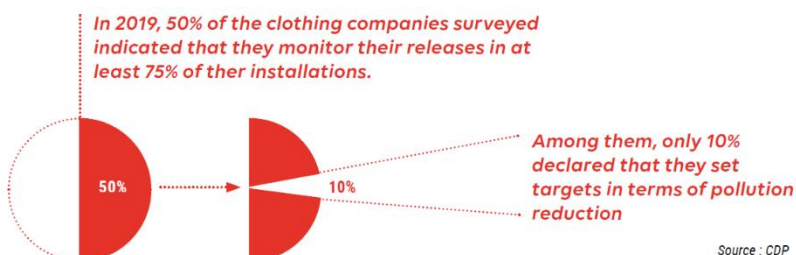


Organic cotton production has more than doubled in the space of 6 years, but reached only 1% of the cotton produced

Source : Textile Exchange



3 Public debate has recently focused on waste, an issue that has gained in importance since the Covid-19 pandemic which generated large volumes of unsold products due to the shutdown of activities in the highest consuming countries. While the last few years have seen the emergence of



numerous public measures and private initiatives aimed at promoting recycling and reuse, the climate issue and the reduction of GHG emissions from the sector are still struggling to be seen as a major issue in the eyes of stakeholders.



40 % have already purchased a second-hand item among people under the age of 24, compared to 20 % in the age group above 38 years (ThredUp, 2020)

Source : Thredup

4 Logic favoring sustainability and the reduction of environmental impacts are emerging among private actors, in parallel with ecological concerns among some consumers, but are rarely integrated into global strategies. Climate commitments from large groups are attempting to outline individual long-term trajectories, but they remain isolated. They are also criticized for not questioning a development model based on production growth. Thus, despite numerous initiatives, the climate and environmental impacts of the textile industry continue to grow rapidly.

Steel

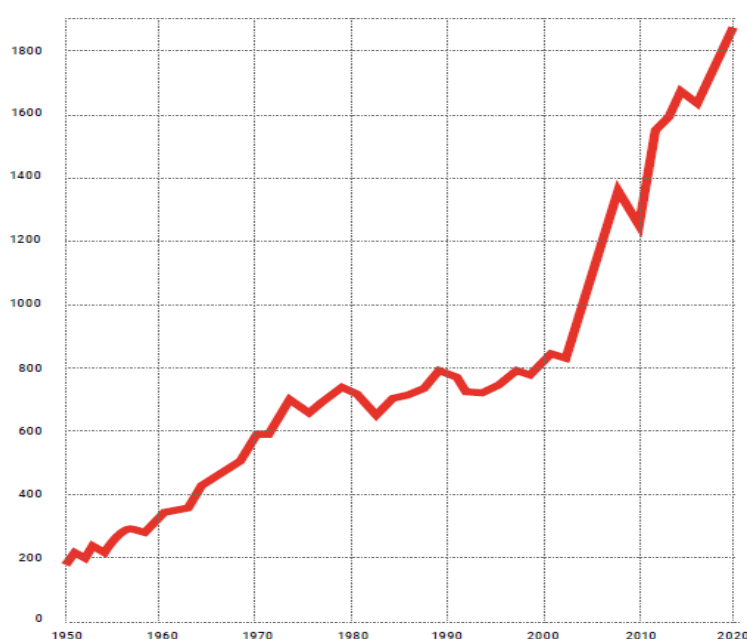
1 70% of steel is produced by coal-fired blast furnaces, mainly in China, a process that emits 1.8 tCO₂ per ton of steel. The remaining 30% comes from electric furnaces, the majority of which are located in the United States and the European Union and whose emissions depend on the electricity used. In total, the iron and steel industry is responsible for about 7% of global CO₂ emissions, more because of the large volumes involved (1,869Mt of steel having been produced in 2019) than because of the carbon intensity of production, which is among the lowest for base metals.

2 Today, the production of steel requires 61% less energy than in 1960. The stagnation of this progress in the last decade indicates that the margin for optimization may have reached its thermodynamic limit unless breakthrough technologies are introduced. However, the equipment used in the production of steel is heavy and has a long lifespan. Changing the manufacturing process could take decades, so

decarbonising the sector by 2050 require transformational investments from today.

3 In recent years, manufacturers have launched numerous pilot projects to explore technological solutions to reduce their emissions, projects whose schedules do not seem to have been too disrupted by the Covid-19 pandemic. The rapid increase in the production of pre-reduced iron ore since 2017 reflects the expansion of the electric power industry, which emits less CO₂ than blast furnaces. An ideal development scenario for the electric industry and scrap recycling, however, would still lead to emissions barely lower than today's if production continues to increase.

4 One process in particular gives hope for decarbonisation of the sector in the distant future: the use of "green" hydrogen, obtained by water electrolysis, for the production of pre-reduced iron. In fact, coupled with carbon-free electricity for the production of hydrogen and for supplying the electric furnace, this gives hope of an almost carbon-neutral production.



**WORLD STEEL PRODUCTION AND GROWTH RATE
FROM 1950 TO 2019**

Source : [World Steel Association](#), 2020



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KEY TAKEAWAYS 2020

WASTE

1 The Covid-19 pandemic has led to increased production of household and medical waste, posing difficulties for collection systems in cities like Seoul. In Europe however, some cities (Barcelona, Milan) have already seen a reduction in the generation of solid municipal waste. The pandemic and pressure from manufacturers have delayed announcements to ban single-use plastics anticipated by some cities and states in the United States, and delayed the calendar of reforms adopted in Australia. In addition, the 15 million informal waste pickers operating in the world are exposed to an increased risk due to the pandemic.

3 %

of the packaging of the 200 signatory companies of the Global Commitment coalition is reusable

Source : Ellen MacArthur Foundation

2 Single-use plastics are caught in a crossfire: on the one side, hindered by the extension of prohibition laws (in the Caribbean, Asia and in particular Africa), and on the other, promoted by the petrochemical industry looking for outlets in developing countries, where they encourage the expansion of urban waste management services to counter plastic prohibitions.

3 Plummeting crude oil prices have brought down the cost of virgin plastic, at the expense of recycled plastic, in a context of economic recession where manufacturers seek out the cheapest options in the absence of any obligation. Disposable medical equipment, used widely during the pandemic, now litters natural areas.

21

MILLION PEOPLE *in 180 countries mobilised to clean up polluted areas during the World Clean Up Day in 2019*

Source : Let's do it

4 The disruption of the international recycled waste market caused by the Chinese National Sword Policy has boosted illegal trafficking of waste from countries in the North to South-East Asia. Various states (USA, Japan, Australia, the EU, etc.) have reinforced legislation to encourage domestic recycling, while Chinese companies cut off from their supplies have started to invest abroad in North America to get closer to the resources required for their activities.

NO COMPANIES

rated A by "As you Sow" based on their plastic pollution prevention and management practices

Source : As you Sow

5 While consumer goods companies that made commitments in recent years have improved their transparency, few have engaged in an approach to reduce waste at source, opting for a circular approach based on recycling rather than re-use and reparability. The legal absence of extended producer responsibility (ERP) in numerous countries appears to aggravate this situation.

6 The ERP reforms in some Canadian provinces and/or new container deposit schemes in Australian provinces see local governments react to the crisis by focusing on multi-actor governance of waste collection and sorting systems. There is little consolidated data that provides an overview of the action carried out by cities and regions, yet they continue to explore solutions, such as pneumatic waste collection, pay-as-you-go systems, and more complex circular economy systems.



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KEY TAKEAWAYS 2020

LAND USE

1 All of the progress reports come to the same conclusion: the zero-deforestation commitments set for 2020 have not been achieved and emission indicators for the sector are in the red: 6.2 GtCO₂ were emitted by land use in 2019 compared to an average 5.5±2.7 GtCO₂ from 2009-2018. Rather than halving levels by 2020, as set out in the New York Declaration, deforestation went up by 44% from 2014 to 2018. In the Sahel, the Great Green Wall project launched in 2007 is a long way from its objectives and has had to alter its approach.

2 Forest cover continues to be threatened in a number of ways: primary tropical rainforests were subject to their third most destructive year since 2000. Forest fires, sometimes unprecedented, in the United States, the Arctic Circle and the United Kingdom broke records in 2019, emitting up to 6.7 GtCO₂, or 15% of global annual emissions. Natural forest regeneration is diminishing faced with the anthropization of forests and plantations of alien species.

159 MILLION DOLLARS *159 dollars invested in nature-based solutions through compensation in 2019*

Source : Donofrio et al., 2019

3 40% of the most influential companies from sectors at risk of deforestation, and 68% from the financial sector, have made no commitments concerning deforestation, and voluntary commitments have generated disappointing results. Around the world, companies, local and even national governments (Turkey, the US, Armenia, Pakistan, etc.) see reforestation and afforestation as a means to compensate

their emissions to move towards carbon neutrality. But the effectiveness of these colossal projects relies on effective long-term management of the species planted, as illustrated by the failure of the Turkish project.

4 In contrast, community management of land and forests has proved effective in reducing soil degradation and illegal deforestation, while involving local crops and practices in forest protection objectives. Indigenous communities, like in Ecuador, have pursued successful legal action to stop major projects that contribute to the artificialization of land.

26 22 *In Tanzania, 22 of the 48Mha of forested land belong to local communities, and their state improved*

Source : FAO

5 The Covid-19 pandemic has profoundly disorganized efforts to protect forests, and testimonials point to a sharp increase in illegal logging everywhere. The zoonotic nature of the Covid-19 virus, which points to a breakdown in natural barriers between species, has however contributed to putting the One Health concept at the forefront of reflections on a convergence between the agendas of climate, biodiversity and desertification conventions that regulate international cooperation on the environment.

100 *100 companies out of the 210 that have made commitments neither evaluate nor monitor their implementation progress.*

210

Source : Forest500

Socio-economic consequences of the Covid-19 crisis: a possible drawback for climate objectives

In addition to insufficient progress made in 2019 towards achieving the Sustainable Development Goals (SDGs) by 2030, most SDGs have been affected by the Covid-19 pandemic: *"the coronavirus epidemic has reversed some of the progress made in poverty, health care and education"* as highlighted in a report by the UN Department of Economic and Social Affairs (UNDESA) ([United Nations](#), 2020). However, the Paris Agreement climate goals and those of Agenda 2030 are closely linked and feed off each other ([Gonzalez-Zuñiga & al.](#), 2018; [Nerini, F. F., et al.](#), 2019): indeed, this is what underpins calls to develop a "One Health" approach, integrating human health, animal health and environmental services, and to better align the Rio agendas on climate, biodiversity and desertification. From this perspective, the increasing localisation of SDGs observed this year by the Global Taskforce of Local and Regional Governments highlights increased trust in local governments, which have proven their legitimacy in managing the health crisis at the local level ([CGLU](#), 2020).

As the most vulnerable have been the hardest hit, the pandemic has set back a number of key socio-economic indicators crucial to achieving the SDGs. After dropping since 2015, global poverty stalled this year. According to the World Bank's report on poverty and shared prosperity published in October 2020, *"The COVID-19 pandemic is estimated to push an additional 88 million to 115 million people into extreme poverty this year, with the total rising to as many as 150 million by 2021, depending on the severity of the economic contraction. Extreme poverty, defined as living on less than \$1.90 a day, is likely to affect between 9.1% and 9.4% of the world's population in 2020, according to the biennial Poverty and Shared Prosperity Report. This would represent a regression to the rate of 9.2% in 2017."* ([World Bank](#), 2020). Since 2019, level of food insecurity have climbed (25% of the population) and are now likely to worsen due to additional threats to the global food systems (SDG 1; [United Nations](#), 2020). Access to education has also been strongly affected, even as new generations need better training, and all the more so in less wealthy areas (SDG 4).

Some of the SDGs with the strongest causal links to the success of climate ambitions have been directly impacted. While energy demand has been satisfied by a more renewable mix during the lockdown period, there has been a decline in access to electricity and investment over the year (SDG 7), particularly in Africa. Given the inevitable impact of Covid-19 in cities due to their population density, new urban planning initiatives were rushed into place, not all of them climate-compatible. Fear of public transport has led to a rebound in the use of private cars, threatening an increase in air pollution, which is harmful to human health and CO₂ emissions (SDG 3). Similarly, one third of manufacturers and retailers of improved cookstoves temporarily ceased their activities in spring 2020. Due to financial difficulties, some households increased their reliance on wood for cooking. In 2018, 38% of the world's population still lacked access to electricity or gas for cooking (SDG 7).








Key takeaways

- The health/economic crisis is reversing progressive trends that have been tracked for several years or even decades by socio-economic indicators such as food security, access to clean energy, health and education.
- The fall in household income could jeopardise climate objectives, as energy solutions retained may be more economical but also more emissions and pollution intensive. For example the decreased popularity of public transport exemplifies a trade-off between human health priorities and emissions reduction.

Can recovery plans and renewed State commitments to the Paris Agreement be compatible ?

As citizens increasingly **make the link between environmental preservation, climate change and health consequences**, there has been an extraordinary surge in high-level political announcements. **In recent months, three of the world's largest economies have made climate commitments.**

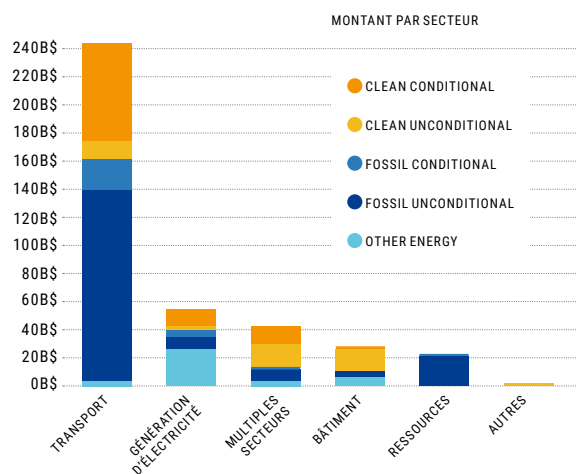
To everyone's surprise, not only China, but also Japan and South Korea have announced a net zero target date, namely 2060 for China, and 2050 for the other two. This is a simple but significant commitment for countries whose economies are massively based on coal (China's energy mix is 62% coal). On another level, the election of Democrat Joe Biden as president of the United States of America means the USA will be rejoining the Paris Agreement, a good sign for multilateralism. And lastly the European Union is also ramping up its ambitions despite the brutal health crisis of 2020. President Ursula von der Leyen is advocating a 2030 target of reducing greenhouse gas emissions by 55% as compared to 1990, versus a goal of 40% currently, as part of the Green Deal proposal put forward by the Commission.

Despite encouraging signs, at this stage the pandemic's immediate impact on international climate negotiations has been negative. The weakened COP process is struggling to effectively integrate non-state actors in the implementation of the Paris Agreement (weighed down by the poor track record of the Talanoa Dialogue). On top of this, the pandemic has led many countries to postpone release of their renewed contributions to the Paris Agreement (NDC), and to announce recovery plans that are in some cases not compatible with decarbonisation of the economy.

Energy Policy Tracker, an initiative led by six international economic and climate research centres, analysed the distribution of public funds committed to the energy sector (production and use) by G20 countries in their recovery plans, by sector (**fig. 2**).

FIGURE 2

VOLUME AND COMPATIBILITY WITH THE PARIS AGREEMENT OF AMOUNTS ALLOCATED BY THE G20 COUNTRIES' RECOVERY PLANS. Source : [Energy Policy Tracker](#), 2020



As of 21 October 2020, G20 members had pledged \$216 billion for investments linked to fossil fuels, or 54% of all public funds committed to the energy sector. Transport is by far the largest sector with \$243 billion dedicated to recovery plans. \$139 billion, or 57% of the sums promised to this sector, support the consumption of fossil fuels without any consideration for the climate. These sums are intended to save airline companies. The building sector is receiving the greenest investments, proportionally speaking, with four countries' budgets allocated to energy

renovation: the United Kingdom, Germany, France and Canada. The shift towards hydrogen as an alternative energy carrier also benefits from significant funding.

There are the key sectors of the transition at the heart of recovery plans, such as thermal renovation, industrialisation of hydrogen production (electricity storage, decarbonisation of industry and transport), revival of the debate on rail freight and relocation of economic activities. Nonetheless, the need to transform the models of certain sectors and mitigate their emissions has yielded to economic urgency. Thus, the support plans observed rarely include consideration for either environmental or socio-economic issues: this is particularly the case for car manufacturers, and stakeholders from maritime and air transport.

Local authorities were only slightly taken into account in the preparation of these emergency plans. In Europe, for example, the allocation of the *Next Generation EU* recovery plan remains very vertical and state-centred; the same applies in the long term for the Green Deal, unless discussions of the European Climate Pact lead to a stronger role for local authorities.

Key takeaways

- Since the Paris Agreement, States have struggled to mobilise funding in line with what is required for the 2°C pathway. Recovery plans and emergency aid are redirecting considerable financial resources towards sectors deemed a priority by States, sometimes without any concessions including for high GHG emitters.
- Already at the heart of the climate agenda in the run-up to a review of contributions to the Paris Agreement, the recovery plans strengthen the role of States in the strategic, economic and financial steering of the ecological transition.

Trends among actors: diversifying climate action repertoires

In an era of carbon neutrality, actors reshape their climate strategies

Although international cooperation coalitions and initiatives seem to be losing momentum in light of disappointing results for 2020 objectives (the poor record on forest protection —New York Declaration, Bonn Challenge, etc—is a sobering example of this), players seem to be more ready to question their own scope of activity.

Firstly, **large companies across all sectors have massively seized the tools of carbon offsetting in order to present net-zero strategies for 2030 or 2050.** While in some cases these objectives show that they take into account the transition risks that threaten certain sectors (such as Oil & Gas), the criteria for assessing carbon neutrality are still too uneven to allow standardisation of GHG emissions reduction efforts prior to offsetting. This is also the case for cities, which are particularly numerous in joining the Race to Zero campaign, which brings together 452 cities, 45 investors, 22 regions and 549 universities alongside the 1,101 companies converging around a set of shared criteria for carbon neutrality in 2050 (UNFCCC, 2020).

Despite the crisis, communities are scaling up certain instruments and policies to achieve their climate and environmental objective. By 2019, 58 cities and regions had achieved 100% renewable electricity supplies, thanks in part to direct renewable energy purchase contracts and green energy certificates. The municipalisation of energy production could give rise to “guarantees of origins” to the benefit of citizen cooperatives and big energy companies.

The proliferation of local and regional codes for new construction stands in stark contrast with the lack of regulation for existing buildings, although local integrated renovation services (e.g. one-stop shops) are becoming standardised. As Asian borders close to recyclable waste, Canadian provinces have responded by operationalising producer responsibility, while Australian states are creating deposit-refund programs.

At the individual level, new forms of deconsumerism also contribute to tightening the link between acts of production and consumption. Circularity and second-hand textile markets have been such a success that they are driving mass retailers to adopt this model. Meanwhile, the demand for the repair of electronic objects in Europe and the United States is prompting some companies to facilitate access to spare parts and offer repair service. With air traffic at a standstill, *flygskam* has been out of the spotlight. Many changes have been noted in mobility behaviour, including growing interest in cycling and the necessary infrastructure for urban centres, accompanied also by the breakthrough of the market for electric micro-mobilities. Finally, expansion of grid-connected residential solar installations in high-income countries does not seem to have been affected by the health crisis: on the contrary, their low cost makes them more competitive than ever with carbon-based electricity production.

Legal action and the revival of certain struggles place climate at the heart of public debate and democratic expression.

Following on from past years, we have observed how climate action increasingly features in the legal sphere, as for example, the multiplication of “climate disputes”, initiated by citizens, NGOs or even cities, against States or companies ([Torre-Schaub, M.](#), 2020). The *State of the Netherlands vs. Urgenda Foundation* case in December 2019 set a symbolic precedent. The Dutch State’s lack of climate ambition to meet its 2020 emission reduction targets and refusal to take binding measures to achieve them were officially declared illegal by the country’s Supreme Court. In France, the complaint filed by the commune of Grande-Synthe against the State for climate inaction led the Council of State in November 2020 to ask the government to demonstrate within 3 months that its efforts are in line with the low carbon national strategy and a 40% reduction in emissions by 2030, by undertaking an assessment of the public policies implemented. The State could then be obliged to take additional measures. Meanwhile, in the United States, a lawsuit filed by the State of New York against ExxonMobil for misleading its investors about its knowledge of the effects of climate change has resulted in a defeat for the plaintiffs ([Harvard](#), 12/12/2019). The Colombian Supreme Court ruling ordering the state to stop deforestation in the Amazon has yet to result in policy, but the progress of the Leticia Pact, initiated by the Colombian president in late 2019 to protect the Amazon, is in line with the spirit of this decision.

The court annulment of an extension to London’s Heathrow airport on the grounds that the project is not consistent with the Paris Agreement marks a turning point, however, by giving binding force to international climate targets ([The Guardian](#), 27/02/2020). The UN Human Rights Committee, a UN monitoring body, issued a groundbreaking decision on the asylum rights of climate refugees, following an appeal by a Kiribati citizen whose asylum claim was rejected

by New Zealand. The decision decrees that no country should deport a citizen facing conditions caused by climate change that endanger their life ([IISD](#), 30/01/2020).

Alongside low-carbon commitments, **a growing number of companies are using “corporate activism” to support the climate cause**, of which encouraging employees to take part in climate protests is just one example. Companies are increasingly under pressure from their shareholders to deliver climate commitments and results, as shown by shareholder activism during the 2020 Annual General Meetings ([Global Synthesis Report on Climate Finance 2020](#), Climate Chance).

In addition to the legal route and official processions of demonstrators, **industrial blockades or “occupations” of public spaces have now entered the collective action repertoire of climate activists, balanced at the frontier of law and civil disobedience**. In this area Extinction Rebellion is the organisation that receives the most media coverage. After four years of occupation and sabotage, two indigenous Ecuadorian groups, the Sapara and the Kitchwa, obtained a court decision to cancel a major oil drilling project in the middle of the Amazon rainforest ([Energy Transition](#), 09/01/2020).

In response, **several states have turned to the law to penalise militant forms of activism**, as in the [UK](#), where Extinction Rebellion is listed as an “extremist ideology” by the anti-terrorist police, or in the [US](#), where the Department of Homeland Security listed “Valve Turners,” a group of oil sands pipeline saboteurs, alongside mass murderers. Conversely, faced with growing awareness and civil society’s growing commitment to social and climate justice, **several governments are trying to strengthen citizen participation in the drafting of public climate policies**. In France, a group of 150 randomly selected citizens wrote up 149 proposals submitted to the government. In the United Kingdom, 108 citizens were selected at random to formulate recommendations for achieving carbon neutrality ([Carbon Brief](#), 10/09/2020) unveiled in early September 2020. These initiatives were inspired by the People’s Climate Parliament

(*Klimatriksdagen*) meeting in Sweden in 2014, and will be replicated in Wallonia in January 2021 ([La Libre](#), 30/09/2020), before perhaps finding their way to Spain, as Pedro Sanchez's government pledged in its Climate Emergency Declaration ([MITECO](#), 19/02/2020). Separately, the integration of communal management practices into national or UN forest governance frameworks or timber trade agreements also stems from this trend, of institutions incorporating practices and experiences from the field.



Key takeaways

- Although action coalitions and cooperation initiatives struggle to reach their objectives, a growing understanding and awareness coalescing around carbon neutrality over the past two years has influenced companies, cities and financial actors to take action on their emissions perimeters.
- Mass climate rallies, civil disobedience and legal actions are giving rise to a new arena to fight for climate justice. Outside institutional channels, this arena is taking over the climate language to challenge actors' behaviours, reverse economic sectors' trends and transform national and international action frameworks.
- Institutions have begun to respond by integrating the voices and skills of citizens into the formulation of climate policies. Examples include randomly selected citizen committees and experiments in community forest management, scaled up by national or international authorities.

Annex I: Table of total CO₂ emissions in G20 countries (MtCO₂), exclusive of land use

	2010	2015	2016	2017	2018	2019	Trends 2018- 19	Emissions/inh b (tCO ₂ /inhb)
World	n.a.	36.3	36.2	36.2	36.6	36.8		
G20	n.a.	n.a.	29,935.9	30,268.8	30,778.4	30,712.7	↘	n.a.
European Union	3,990.9	3,576.9	3,560.2	3,578.9	3,523.8	3,388	↘	n.a.
France	386.5	346.6	346.8	351.8	346.2	336.8	↘	4.6
Germany	826	794.5	801.2	786.5	765.4	719.2	↘	8.2
Italy	430	355	351.2	347.5	341.5	335.2	↘	5.3
United Kingdom	506.8	423	398.3	384.3	380.6	363.3	↘	4.5
Turkey	313.7	374.8	398.4	437.6	438.9	426.6	↘	5.2
United States of America	5,617.9	5,244.8	5,137.8	5,083.7	5,255.4	5,101.3	↘	14.9
Canada	596.2	622.2	612	623	634	624.3	↘	15.3
Argentina	n.a.	n.a.	203.3	195.8	181.6	179.3	↘	3.8
Brazil	441	524.2	485.2	491.6	463.1	465.3	↗	1.9
Mexico	484.9	492.5	502.3	493.6	496	483	↘	3.5
China	9,386.3	11,029.5	11,042.3	11,156.6	11,351	11,613.5	↗	6.8
India	1,749.2	2,276.8	2,306.2	2,429.3	2,550.3	2,582.2	↗	1.7
Japan	1,219.4	1,234.2	1,222.9	1,204.2	1,156.7	1,132	↘	8.2
Indonesia	418.1	526.9	524.4	564.7	609.5	647.6	↗	2.1
South Korea	642	694.3	710.4	721	723.2	685	↘	12.2
South Africa	442.2	440.5	442.2	444	456.3	461	↗	7.6
Russia	1,772	1,772.8	1,752	1,801.9	1,925.8	1,958.3	↗	12.1
Australia	415.7	406.3	417.5	422.4	421	416	↘	15.3

Source: Enerdata, Global Carbon Project

Annex II: Significant changes in 3 key sectors (MtCO₂)

Electricity and heat production						
	2015	2016	2017	2018	2019	Last inflection observed
United Kingdom	99.6	76.4	66.4	59.8	51	-48.7% (2015-19)
United States of America	1,918.2	1,840.4	1,771.3	1,800.1	1,648.6	-14% (2015-19)
India	905.5	872.4	928.1	972.3	950	-2.2% (2018-19)
Brazil	64.5	42.1	44.4	35.8	39.2	+9.5% (2018-19)
China	3,948.6	4,025.1	4,254.7	4,539.7	4,632.5	+17.3% (2015-19)
EU	996.2	952.5	940.9	879	759.5	-23.7% (2015-19)

Transport						
	2015	2016	2017	2018	2019	Last inflection observed
Germany	163.8	167.3	169.3	171.8	176.8	+8% (2015-19)
Mexico	151	156.4	151.9	157	150.2	-4.3% (2018-19)
South Korea	101	104	106.3	104.6	105.9	+1.24% (2018-19)
Japan	223	220.9	218.3	214.6	209.9	-5% (2016-19)
China	827	843	880.3	916.3	955.3	+15.5% (2015-19)
EU	893	916	9304	938	945.7	+5.9% (2015-19)

Residential and tertiary buildings						
	2015	2016	2017	2018	2019	Last inflection observed
Australia	115.9	118.4	115.4	111	108.4	-8.4 % (2016-19)
Japan	384.3	414.1	413.1	378.6	364	-12.1 % (2016-19)
South Korea	157.8	164.	169.3	172.9	160.5	-7.1 % (2018-19)
Canada	117.5	111.8	114.2	114.2	114.6	+2.5 % (2016-19)
China	1,642.5	1,752.4	1,890	2,003.8	2,095.1	+27.5 % (2015-19)
EU	1,097.6	1,086.4	1,068.2	1,021.6	951.8	-13.3 % (2015-19)



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