CRASHING THE CLIMATE

HOW THE CAR INDUSTRY IS DRIVING THE CLIMATE CRISIS

#ClimateEmergency

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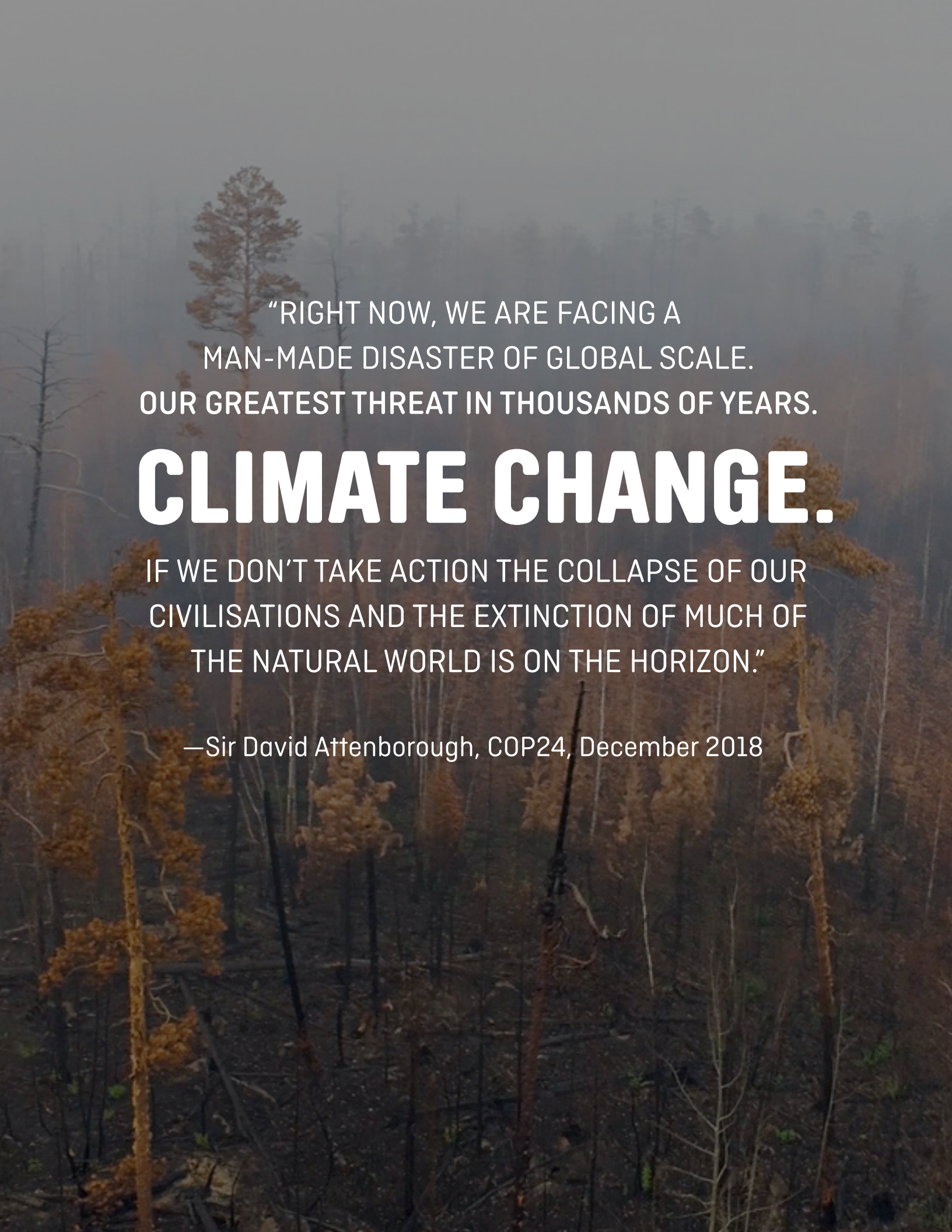
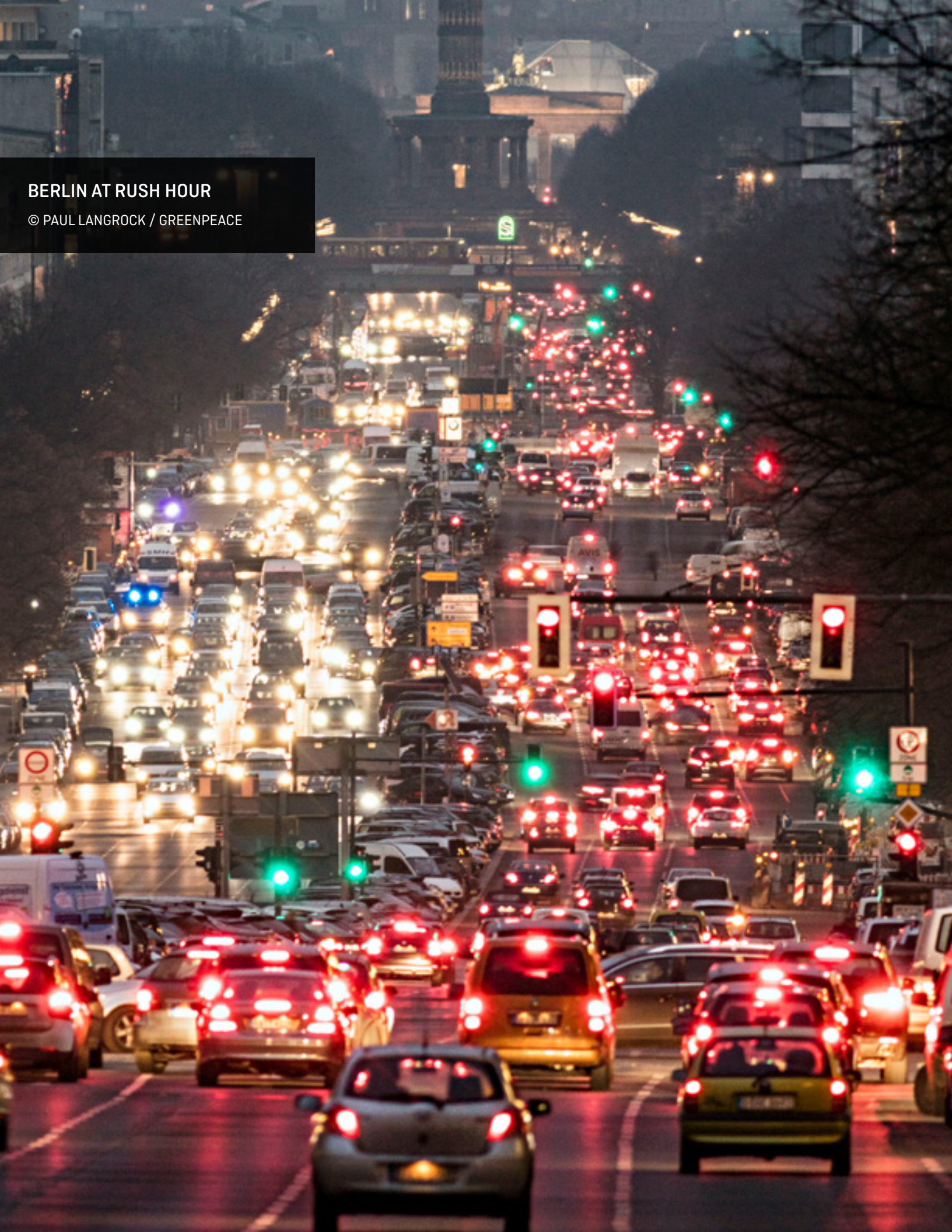


"RIGHT NOW, WE ARE FACING A
MAN-MADE DISASTER OF GLOBAL SCALE.
OUR GREATEST THREAT IN THOUSANDS OF YEARS.

CLIMATE CHANGE.

IF WE DON'T TAKE ACTION THE COLLAPSE OF OUR CIVILISATIONS AND THE EXTINCTION OF MUCH OF THE NATURAL WORLD IS ON THE HORIZON."

—Sir David Attenborough, COP24, December 2018



BERLIN AT RUSH HOUR

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Greenpeace is an independent global campaigning network of independent organisations that acts to change attitudes and behaviour, to protect and conserve the environment and to promote peace.

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EXECUTIVE SUMMARY

For some decades, car manufacturers have claimed to understand the grave threat posed by climate change. They have displayed many alternative greener vehicles at motor shows, attracting much positive media coverage. Their advertising stresses their huge concern for our wellbeing and safety, and especially that of our children. However, their business decisions tell a very different story.

This report looks at the climate impacts of the world's 12 largest car manufacturers, providing new calculations showing the carbon footprint for which they were responsible in 2017 and 2018.[1] It demonstrates how they have repeatedly failed to respond appropriately to the climate emergency, and reviews the lack of progress made across five major markets: the USA, the EU, China, Japan, and South Korea. It sets out our demands for the industry to change radically or be consigned to history.

It's been nearly four years since the signing of the Paris Agreement, and the transition to a climate-friendly transport system emerged as an important priority. Carmakers must phase out diesel and petrol cars including hybrids urgently, with an end to new sales by 2028.[2] This will also bring other benefits, such as less traffic congestion and improved air quality. But the car industry's inaction is robbing us of that greener, cleaner and more survivable future.[3]

This transformation can't happen overnight. But we need a firm commitment from the industry's largest players to phase out internal combustion engines (ICEs) by implementing an action plan including a concrete timeframe. Car manufacturers continually refuse to do this. They lobby against robust climate-related regulation, fail to scale up production of zero emission vehicles effectively, and continuously promote the individual use and ownership of cars. Therefore, it is crucial that policymakers worldwide put in place regulations that secure rapid phase-out of diesel and petrol cars and offer alternative means of transport for the public.

As this report shows, improvements in fuel efficiency and updates to hybrid vehicles are no longer adequate solutions to the climate crisis. Instead they delay the fundamental change that is needed. And the current surge in SUV sales poses a further serious threat to our climate.

How manufacturers transform their business model is rapidly becoming the central question. If car companies fail to transition and diversify, they will be history. Those surviving in the future will be the ones producing smaller, lighter, and more energy-efficient electric vehicles. These vehicles will be designed and marketed to reduce individual use and ownership of cars, and built to be linked into smart grids powered by 100% renewable energy.

Greenpeace has been challenging car companies to take proportionate action on climate change since the early 1990s.[4] In this report, we show that, despite sustained warnings and growing scientific understanding of the gravity of the climate crisis, the car industry is still doing too little. The transition must start right now — before it is too late.

[1] The annual carbon footprint of an automaker is the sum of the lifecycle GHG emissions of the cars it sells in a given year. The lifecycle emissions comprise production, tailpipe, upstream, and recycling emissions. The lifecycle emissions comprise production, tailpipe, upstream, and recycling emissions.

[2] See details on page 4

[3] Freedom to Breathe: Rethinking urban transport, Greenpeace, 2018 **https://storage.googleapis.com/planet4-international-stateless/2018/01/1b96c158-air_pollution-transport_report-2018.pdf**

[4] Action at car show, Greenpeace archives, 12 September 1991 **https://media.greenpeace.org/archive/Action-at-Car-Show-in-Frankfurt-27MZIF3EBRY.html**

KEY FINDINGS

- **The car industry's 2018 carbon footprint equals 9% of total annual global greenhouse gas (GHG) emissions.** In total, the 12 manufacturers[5] analysed in this report are responsible for 4.3 gigatons (Gt) CO_2e. Extrapolating from this, the entire industry with the 86 million cars it sold in 2018,[6] is estimated to be responsible for a combined carbon footprint of 4.8 Gt CO_2e, equal to 9% of total global GHG emissions.[7] The combined footprint exceeds the total annual GHG emissions of the entire European Union (4.1 Gt CO_2e).[8] (See Chapter 3)

- **The top five emitters, VW (582m tons CO_2e), Renault Nissan (577m tons CO_2e), Toyota (562m tons CO_2e), General Motors (530m tons CO_2e), Hyundai-Kia (401m tons CO_2e),** were responsible for 55% of the industry's carbon footprint. (See Chapter 3)
    - **Volkswagen was the biggest climate culprit among carmakers in 2017 and 2018.** Its 2018 carbon footprint was 582m tons of CO_2e, exceeding the total annual GHG emissions of Australia (535m tons CO_2e). [9]
    - **German manufacturers VW, Daimler and BMW had a combined carbon footprint of 878m tons CO_2e in 2018,** exceeding the 2018 GHG emissions of Germany (866m tons CO_2e). [10]
    - **Ford, General Motors and Fiat-Chrysler-Automobiles had the largest carbon footprint per vehicle.** This is no surprise as particularly in the US, their sales have been dominated by large SUVs and pickup trucks.
    - **Hyundai-Kia's plan to aggressively increase the proportion of SUVs in its product portfolio will inevitably lead to higher GHG emissions.** It has not announced a full, or even partial, ICE phase-out plan in any market. (See Chapter 4)

[5.] The resulting carbon footprint covers the car branch of these corporates. Some of the companies also have subsidiaries that are for example producing trucks and buses (e.g. VW and Daimler). The climate impact of that part of their business has not been considered in this analysis

[6.] Global car market remains stable during 2018, as continuous demand for SUVs offsets decline in sales of Compact cars and MPVs, JATO, 21 February 2019 **https://www.jato.com/global-car-market-remains-stable-during-2018-as-continuous-demand-for-suvs-offsets-decline-in-sales-of-compact-cars-and-mpvs/**

[7.] Emissions Gap Report 2018, UNEP, published on 5 December 2018, **https://www.ipcc.ch/site/assets/uploads/2018/12/UNEP-1.pdf**

[8] Global Annex-I map, UNFCCC 2019, **https://di.unfccc.int/global_map**

[9.] Ibid

[10.] Klimabilanz 2018: 4,5 Prozent weniger Treibhausgasemissionen, Umweltbundesamt, 2019, **https://www.umweltbundesamt.de/presse/pressemitteilungen/klimabilanz-2018-45-prozent-weniger**

TABLE 1: CAR COMPANIES 2018 CARBON FOOTPRINTS

CAR MANUFACTURER	GHG EMISSIONS IN MILLION TONS	MILLION VEHICLES SOLD	AVERAGE LIFETIME GHG EMISSIONS PER VEHICLE IN TONS
VW Group	582	10.8	53.8
Renault-Nissan Alliance	577	10.3	55.7
Toyota	562	10.4	53.8
General Motors	530	8.6	61.3
Hyundai-Kia	401	7.4	54.0
Ford Motor Corp	346	5.6	61.4
F.C.A	305	4.8	63.1
Honda	283	5.2	54.1
PSA Group (incl Opel)	201	4.1	49.2
Suzuki	164	3.3	49.6
Daimler AG	161	2.7	58.7
BMW AG	136	2.5	54.4

- **There is a need to improve the availability of manufacturers' emissions data.** Carmakers, and a number of governments, need to improve their transparency about fleet emissions data. And comparable information about production emissions is almost non-existent. Detailed data should be made available to the public so progress can be tracked more easily and more precise assessments made about future transport emissions. The industry's lack of transparency is a significant threat to our climate and to long-term sustainability. (See Chapter 3 and 7)
- **Manufacturers are failing to transition and there is a lack of investment in solutions.** Of the 12 manufacturers evaluated, only one had set a timeframe to phase out ICE globally. All 12 companies have either no plans or insufficient plans for a transition compatible with the 1.5°C target. (See Chapter 4)
- **The gap between official test results and on-road CO2 emissions distorts reality and threatens the climate.** Test results that significantly overestimate a car's fuel efficiency and underestimate CO2 emissions harm the climate and deceive customers, who end up spending more on fuel. The supposed reduction in CO2 emissions looks much less impressive when real-world emissions are being considered. It remains to be seen whether the World-wide Harmonised Light Vehicle Test Procedure (WLTP) will bring the improvement needed. (See Chapter 4 and 5)
- **Progress in fuel efficiency has stalled or even reversed.** Improvements in average CO2 emissions from new cars sold in the US, the EU, China, Japan, and South Korea, which account for over 70% of the total global market, have stalled or even reversed. This shows that ICE technology has to be phased out as it cannot achieve the necessary emissions reductions. (See Chapter 5)

- **Hybrids and plug-in hybrids are not solutions.** ICE hybrid vehicles, both conventional and plug-in, block the rapid deployment of real alternatives. Conventional ICE hybrids rely entirely on ICE engines for power so they cannot achieve the emission reductions needed. Plug-in hybrids can also produce significant CO2 emissions if not operated in an optimal manner, with mainly short trips. Particularly in Europe, the gap between real-world and test emissions for plug-in hybrids is significantly larger than it is for ICE cars. (See Chapter 5)
- **SUVs are making a difficult transition impossible.** Sales of sports utility vehicles (SUVs), have increased more than fourfold over the past 10 years, from 8% in 2008 to 32% in 2018 in Europe. In the US, SUVs have reached 69% of market share. Due to their higher weight and less aerodynamic body, CO2 emissions for SUVs are significantly higher than for similar non-SUV vehicles. An increase in sales of SUVs is one of the key reasons for stalled progress in CO2 emissions reduction. (See Chapter 6)
- **Companies must phase out ICE urgently and take action to move beyond producing ever more cars.** Climate change, and rapid innovation in the transport sector, mean we will need fewer cars in the future. To survive, car manufacturers must find alternatives to ever-increasing car production. Rather than continually promoting the purchase and individual use of cars, they must develop and provide innovative transport solutions that help reduce ownership. These could include car sharing and ride pooling services to complement public transport. (See Chapter 7)

WHY DOES GREENPEACE DEMAND CAR COMPANIES PHASE-OUT INTERNAL COMBUSTION ENGINE CARS NO LATER THAN 2028?

The German Aerospace Center (DLR) study on car transport, commissioned by Greenpeace Belgium, concluded that to achieve a 66 percent likelihood of keeping global warming below 1.5°C, diesel and petrol cars must be rapidly phased out in Europe with an end to new sales by 2025, and hybrids by 2028. Similar global modelling for decarbonising passenger road transport in line with the 1.5°C limit does not exist yet, but the European phase-out date provides a good benchmark for car companies.

Car manufacturers must act substantively and globally on this issue. It is not good enough to only phase out diesel alone, or to do so in just one region. Nor is it acceptable to dump high-pollution cars into other markets, when they are phased out in one. The DLR target date for Europe must be applied by the car industry globally, with ICE, including hybrids, phased out no later than 2028.

GREENPEACE DEMANDS AND RECOMMENDATIONS FOR THE CAR INDUSTRY

GOAL: ALIGN THE CAR INDUSTRY'S BUSINESS MODEL WITH 1.5°C TARGET

ACTION STEPS

Priority 1. Phase out all internal combustion engines, including conventional hybrids, with news sales ending by 2028 at the latest.

A. Disclose detailed annual reporting of GHG emissions, which includes brand-level CO2 fleet emissions on global and regional car sales, product level LCA data of every model, and supply chain emissions via its website in a publicly available format.
B. Set a company-wide target to phase out diesel and petrol cars, including hybrids, across all markets. And establish a clear strategy and concrete roadmap for 100% EV (battery and fuel cell electric vehicles) transition.
C. Work with employees, labour unions and other relevant third parties to minimise the impact of the transition on the workforce, including providing necessary reskilling and reallocation packages.
D. Advocate regional, national and global policies that align with the Paris Agreement's 1.5 °C target, such as strengthening CO2 regulation, government ICE phase-out plans, and renewable energy procurement.

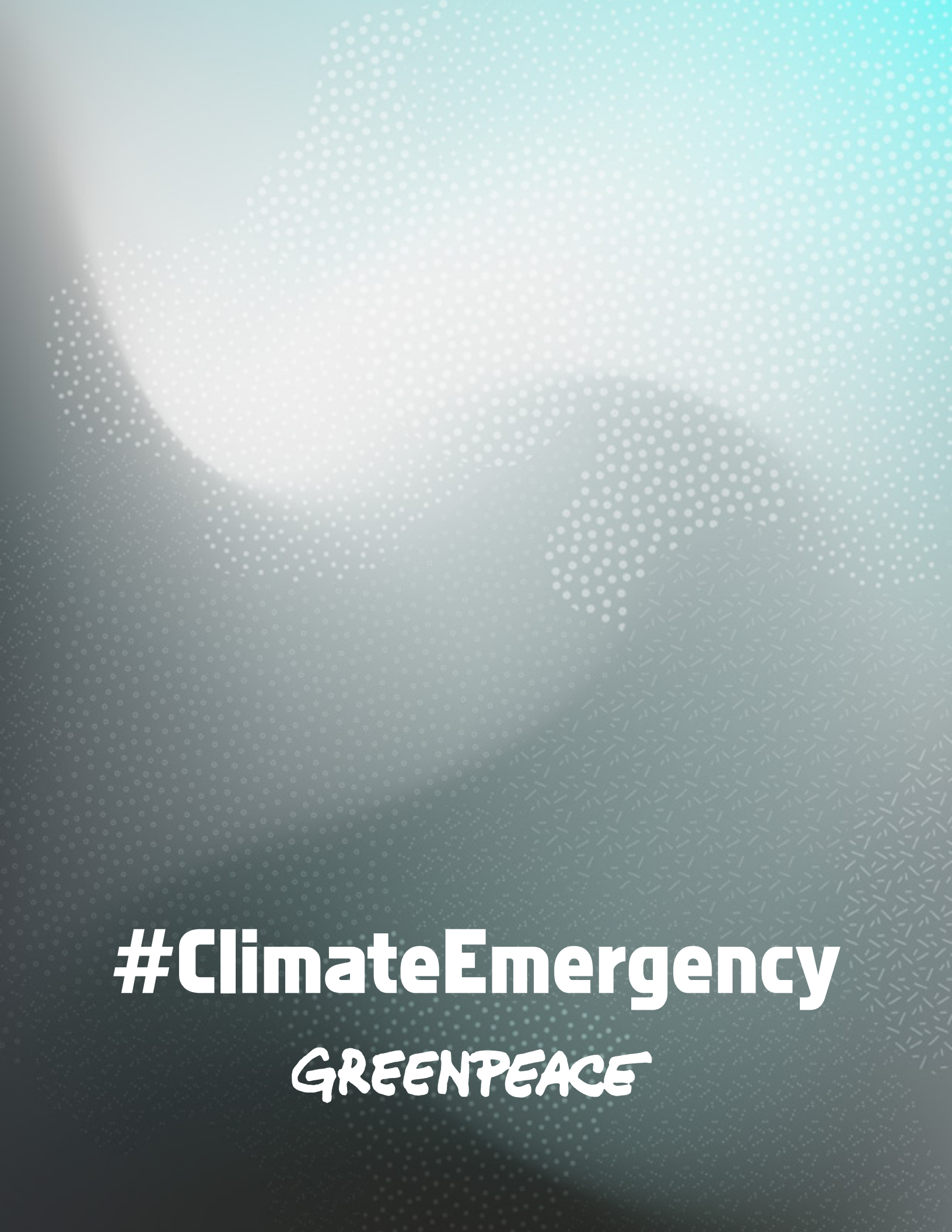
Priority 2. Build small, energy efficient electric vehicles and do so in a sustainable manner

A. Prioritise producing small, light electric vehicles.
B. Implement standards that minimise and prevent the social and environmental impacts of EVs and EV battery production.

- Advocate for a renewable energy power grid (EV charging and manufacturing).
    - Procure 100% renewable electricity in all production plants across all regions.
    - Work with the supply chain so they move to deploying 100% renewable energy and reduce GHG emissions.
- Establish procurement standards for battery supply so resources are used in a way that is environmentally responsible, efficient and respectful of human rights.
    - Establish transparent supply chains and best practice social and environmental standards in mining and processing raw materials for batteries.
    - Increase investment in research and development in battery technology to find sustainable alternatives to the current materials used such as cobalt and lithium.
    - Increase durability, longevity, reparability, energy efficiency, reuse and recyclability of batteries to minimise the use of virgin materials.

Priority 3. Move beyond producing ever more cars

A. Promote alternative business models that lead to reducing the individual use and ownership of cars.
B. Invest in mobility solutions that can reduce traffic growth.
C. Provide services that complements public transport, such as car sharing or ride pooling service.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