WWF

We ♥ Clean Air

30 MINUTES CAN CHANGE YOUR WORLD

HOW 30 MINUTES CAN CHANGE YOUR WORLD

Let's assume it takes us **30 minutes to travel to work**, though some of us of course endure longer commutes. How we choose to make that journey to work or to school makes an incredible difference to the air we breathe.

Critically, 8.8 million people die from air pollution-related diseases every year. That's **500 people every 30 minutes**! The societal costs of i.e. our daily commute choices are staggering – **$285 million for the damage** done in each and every half hour.

Fossil fuels are the common culprit in air pollution and climate change. The result of the latter: polar ice is melting, sea levels are rising. Cities' inhabitants – that's most of us! – already feel the negative effects of extreme weather events and decreased quality of life. And it will get worse.

Yet the world **subsidizes fossil fuels to the tune of $268 million during that same 30 minutes** of our commute time. As much as three-quarters of road transport consists of short trips in and around cities. If we commute in a conventional car, it is literally fuel for the climate fire.

Yet real solutions are right in reach, and in some cases they are very easy. We can rise from our seats and take to the streets! We can get moving with positive impacts for our health and our world. **Electric bikes zip a commuter 12 kilometers in half an hour**, while conventional bikes can cover 8 kilometers in that same time frame. Walking briskly = 5 kilometers per 30 minutes.

Through active 30-minute commutes we can strengthen our hearts, lose weight, reduce stress, boost our moods, and achieve more energy, creativity, and productivity. All on the way to work!

Even in the world's most polluted urban areas outdoor exercise outweighs the negative aspects of pollution on most days. If we choose **public transport**, we'll still pollute less and get a bit more exercise in the process.

Thirty minutes equals about **450 breaths**. As we reclaim our cities through e-biking, biking, walking and public transport, we can reconnect with nature, the giver of oxygen for each of those precious breaths. And if we **rise up and demand infrastructural change** – more bike lanes, more express busses – our 30 minutes become a net positive for people, clean air, and the planet.

Read on – this report provides fast facts and here-and-now solutions for cleaner and healthier cities – together, our 30 minutes is all it takes.

Jennifer Lenhart, PhD
Global Lead, WWF Cities

START

The start of your commute!

500 *people could die from air pollution-related diseases. Fossil fuels from cars are a main contributor.*

$285M *is the estimated price tag for the social damages.*

$268M *is the estimated subsidy we hand out for fossil fuels.*

12KM *is how far we can go on an electric bike – 8km on a regular bike.*

30MIN *of active commuting can strengthen our hearts, reduce our stress, and prolong our lives.*

We arrive! In 30 minutes we took 450 breaths – provided by oxygen from Mother Nature.

How far will you get on your public transport in 30 minutes while reading a book or listening to music?

How many politicians can you challenge in 30 minutes, to provide the infrastructure you need to affect this change?

EVERY 30MIN

THE THREAT TO OUR HEALTH

Clean air is our birthright, courtesy of Mother Nature. Today it is becoming an increasingly scarce resource. Air pollution is a **major health risk** – outranking malnutrition, lack of exercise, and according to some, even smoking in its negative effects on our health.

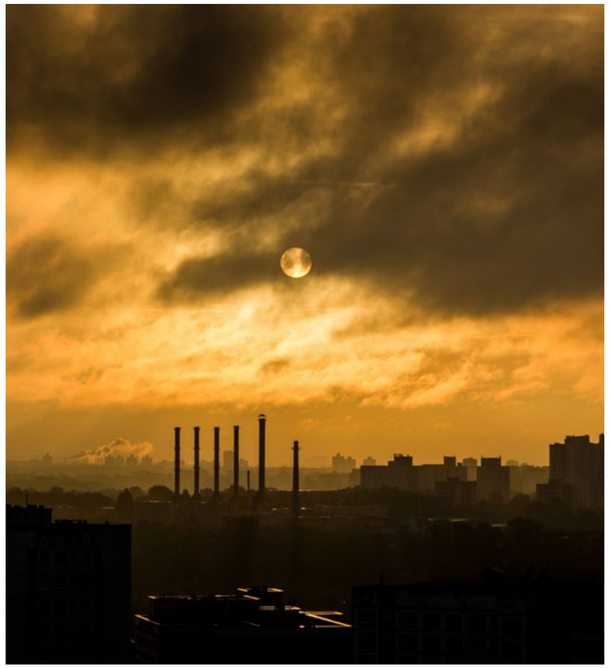
- Over **90% of urban residents** are exposed to polluted air, with traffic emissions the largest single source of that pollution.
- **Children**, more vulnerable than adults because of their more rapid breath cycles, are bearing the brunt of toxic air.
- New figures estimate deaths from outdoor air pollution – and resulting respiratory and cardiovascular diseases – may be 8.8 million annually. This is significantly higher than the World Health Organization (WHO) estimate of 4.2 million from 2016.

8,800,000

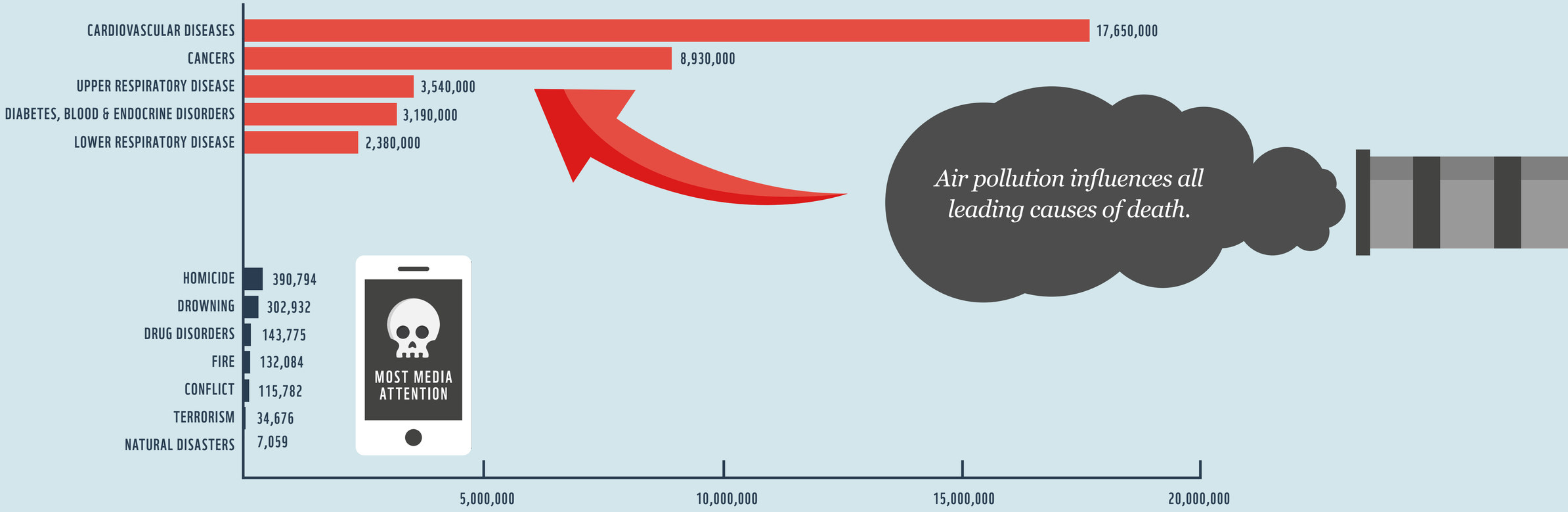
Estimate of yearly premature deaths caused by air pollution globally.

TAKE ACTION

Cities: To come to terms with air pollution, we need leadership. Health and environmental departments must work together, informing us of both pollution and its health effects. Redesign of our mobility infrastructure is key, prioritizing people over vehicles for a healthier way forward.



THE THREAT TO OUR HEALTH — GLOBAL CAUSES OF DEATH



Source: 'Our world in data', Oxford University and the Global Change Data Lab, 2016.

WHAT WE PAY AND WHAT WE FUND

As staggering as the deaths attributable to air pollution are, they aren't the only detrimental effect. Societies pay for air pollution many times over through hospitalization and health care cost, lost wages to sick workers, decreased business competitiveness, as well as crop losses and degradation of ecosystems and cultural heritage sites.

Estimating the future costs of climate change from air pollution and emissions is hard. How to assign the real cost of species' extinction or displacement from rising sea levels? What's a realistic price tag for undoing the economic progress we have made since World War II, which the Intergovernmental Panel on Climate Change (IPCC) says is at risk? These figures are beyond monetary estimates.

Here's what we do estimate:

- Losses to the world economy due to air pollution in 2013 **were US$5 trillion** – between 2 and 7.5% of global GDP.
- **Lost wages** in that same time frame were **US$225 billion**. The source of these numbers, a World Bank and IHME (Institute for Health Metrics and Evaluation) study, says real costs are even higher.
- More recently weather- and **climate-related disasters** caused **US$320 billion in losses** in 2017.
- In that same year **fossil fuel subsidies** amounted to **US$4.7 trillion**.

US$5 TRILLION

Estimate of losses to the world economy due to air pollution.

TAKE ACTION

Find out what air pollution costs your city today, and how that compares to the environmental budget or fossil fuel subsidies.

AIR POLLUTION'S DOUBLE TOLL

$4,700,000,000

Estimate of subsidies for fossil fuels in 2017.

$5,000,000,000

Estimate of costs for global air pollution.

Sources: World Bank and Institute for Health Metrics and Evaluation (IHME) report, and International Monetary Fund (IMF) report on fossil fuel subsidies.

CUTTING THE FOSSIL FUEL DEATH TOLL, AND FAST

We have a common denominator with air pollution and climate change: fossil fuels.

In our cities, our homes, our workplaces, and in our cars, we are choosing outdated fossil fuel technologies that continue to pollute, putting everything we love at risk.

- **Cities account for 70% of carbon emissions** but also 80% of GDP.
- **Fossil fuels contribute three-quarters of greenhouse gas emissions** – and circa 65% of the deaths from air pollution.

To avoid the worst effects of climate change, Johan Rockström and the Stockholm Resilience Centre suggest we need to halve our emissions every decade going forward. This, the so called Carbon Law, increases our chances to meet the goals of the Paris Agreement and the IPCC's recommendation to limit warming to the 'safe' limit of 1.5°C. If we start now. This in turn could save 3.6 million people from premature air pollution deaths each year. Yet the extent of our climate and air pollution emergency compels us to cut emissions even faster.

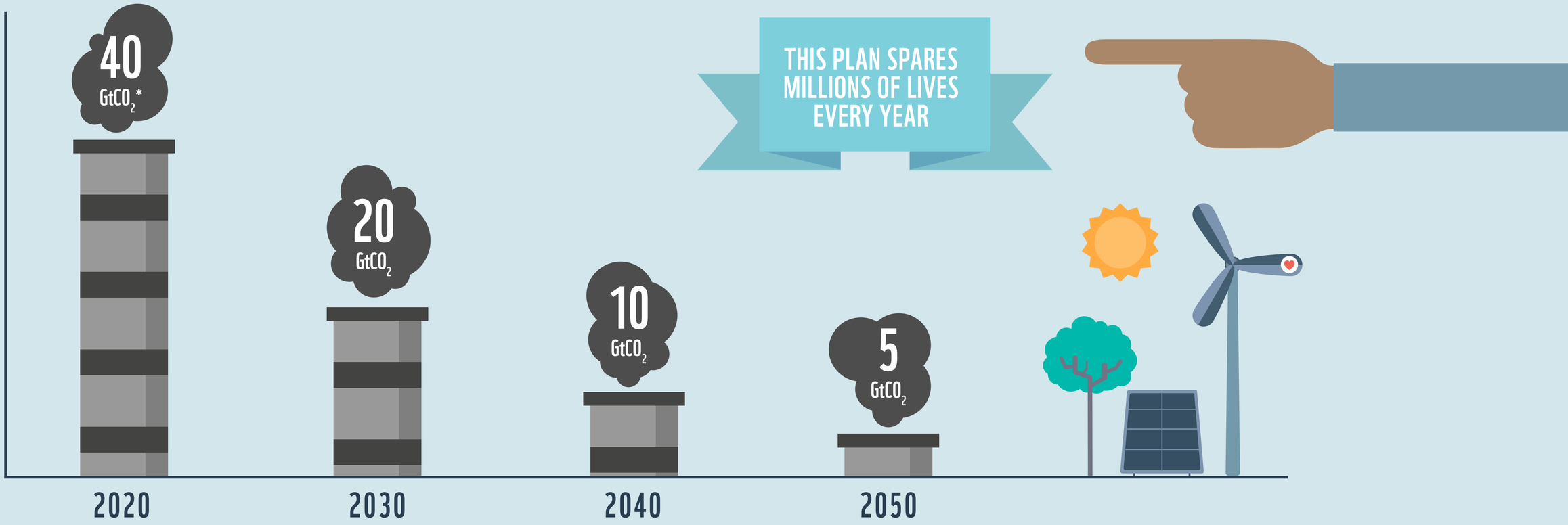
70%

Of carbon emissions are accounted for by cities.

TAKE ACTION

- Join WWF's One Planet City Challenge to assess your city's current emissions and receive guidance on high-impact reductions.
- Demand our city leaders set clear goals to end air pollution deaths.
- Advocate for goals and actions in line with the 'safe' limit of 1.5°C of global warming.
- Support coordination between health and environmental departments.

HALVING EMISSIONS EVERY DECADE



** GtCo2 = Gigatons of carbon dioxide.*

Source: Johan Rockström and the Stockholm Resilience Centre.

GETTING MORE URBAN GREEN

Living in cities – as most of us do – disconnects us from nature, but we can reconnect with it through every breath we take.

However, our ecosystems are currently degraded by air pollution, which leads to acidification and eutrophication. Climate change takes further toll, increasing wildfires and accelerating species extinction.

If we restore nature through reforestation, conservation and expanded urban green oases, it can in turn help us fight both air pollution and climate change, as trees cleanse the air and absorb carbon. And this work may well begin in and around the city.

Consider this:

- By 2030, **40% of protected areas on Earth will be less than 50km from urban areas.**
- Nature-based solutions currently receive just 2.5% of public climate financing.
- The potential of forest conservation and reforestation is huge: these initiatives can help achieve **up to 37% of our climate targets**, storing up to 5.9Gt of CO_2. (That's the equivalent of taking 1.2. billion cars off the road for a year!). They will of course also preserve our **biodiversity**.
- Connected parks and protected areas in cities also make a difference. In Chicago, nine out of ten native species are found in the city's metropolitan areas.

TAKE ACTION

- Urban parks are awesome – let's support plans for new and expanded green oases. Conserving 20% of land for green areas is key to biological diversity, as are efforts to connect parks and conserved areas for urban wildlife and native species corridors.
- Find your nearest forest – you might be surprised how close it is.

60%

Decline in population sizes of vertebrate species in less than 50 years.

By 2030, 40% of protected areas on Earth will be less than 50km from urban areas.

ELECTRIFIED TRANSPORT — THE TIME IS NOW

Air pollution deaths and our climate emergency mean we can't afford anything less than transformative transport solutions. The time to go electric is now.

Almost three quarters of road transport emissions come from short journeys in and around cities. That traffic is also the biggest source of air pollution – not to mention stress! Electrification of our public and private vehicles is essential to cut emissions, pollution, and noise. Electric, zero emission vehicles (ZEVs) are already here, making electrified transport an achievable goal. Can we achieve 100% Zero Emission Vehicles on new car sales by 2030? It is highly desirable, and commercially viable.

Consider this:

- We could have twice as many cars on our streets by 2040!
- Electric vehicles have zero exhaust emissions at street level and also significantly reduced CO2, nitrogen oxide and sulfur dioxide emissions.
- Replacing our conventional car with an electric vehicle (EV) cuts 1.5 tons of CO2 from the atmosphere each year of its lifecycle (with an EU energy mix).
- At current sales levels we will have 125 million EVs on the road by 2030. Increasing policy ambitions could boost adaptation to 220 million EVs by 2030.
- Ireland, the Netherlands and Slovenia already have set a 100% sales target of ZEVs (i.e. all-electric fleets!) by 2030.
- C40's Fossil-fuel Free Streets by 2030 Declaration is signed by cities such as Rome, Los Angeles, Paris, Mexico City, Tokyo, Vancouver and Santiago.

Of course electrified transport needs a corresponding transition to renewable energy, and EVs do not address urban congestion problems. Electrified car fleets will still occupy the city's most valuable asset: space!

100%

ZEV sales target by 2030 – set by Ireland, the Netherlands and Slovenia.

TAKE ACTION

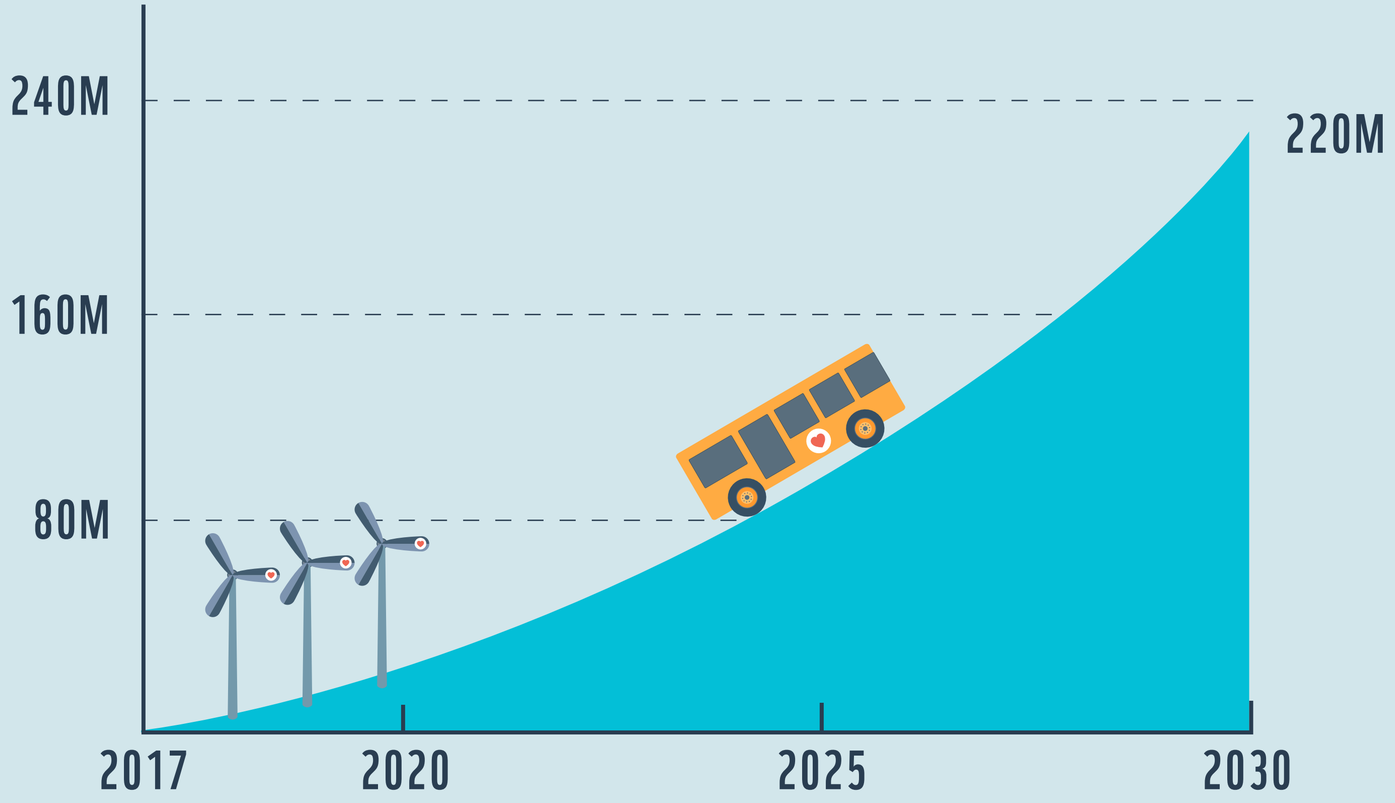
Cities can support EVs by:

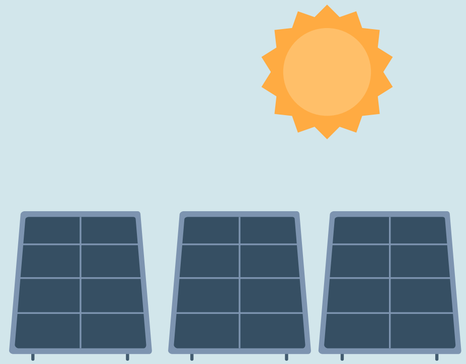
- Providing subsidies, charging infrastructure, parking priorities and fuel pricing.

Cities can limit cars by:

- Strategically closing streets or city centers to cars.
- Reducing car lanes and parking spaces.
- Implementing congestion charging.
- Speed control.

WE CAN HAVE 220 MILLION EVs ON THE ROADS BY 2030





The International Energy Agency's Global EV Outlook 2018 predicts the number of 'light duty' electric vehicles on the roads will reach 125 million by 2030. Rising policy ambitions to meet climate goals and other sustainability targets could raise that number to as high as 220 million by 2030.

THE ART OF EXERCISING WHILE COMMUTING

To improve human and planetary health, we can switch away from fossil-fuel based and sedentary lifestyles, to **active and renewable lifestyles**. The possibility is greatest in the city.

Cities planned at the human scale prioritize cyclists and pedestrians. After all, with an electric bike, commuting 10 to 15 kilometers is feasible for many city dwellers.

Benefits to active commuting include:

- Regular **physical activity helps protect us** from the leading causes of death: obesity and heart disease, cancer, mental illnesses, diabetes, and arthritis.
- Cars don't protect us from air pollution. In fact, some pollutants are higher inside our cars, due to proximity to the car in front of us. What protects you from air pollution is exercise.
- The benefits of walking and cycling trump the negative effects of air pollution in cities.
- Cycling produces quality of life, mental health, and sleep cycle benefits. It's also economically fruitful: in the European Union, cycling creates benefits estimated at €150 billion per year and prevents 18,100 premature deaths annually.

In stark contrast, a recent European Commission study put **the costs of motorized transport** in terms of the environment and public health at €800 billion per year. These costs may increase if physical activity continues to decline worldwide, as people perceive there's a shortage of time for exercise.

That drop in exercise is already responsible for **3 million deaths every year**. And around the globe children walking or biking to school has dropped from 82% to 14% over the last 30 years, our children take the toll for our changed behavior. Active commuting will save our lives and our planet.

€150 BILLION

Benefits created per year at current levels – in the European Union alone.

TAKE ACTION

Cities can contribute by:

- Encouraging bike-friendly workplaces and schools, as well as services within walking distance.
- Improving and expanding networks of protected bike lanes and building new bike 'highways'.
- Prioritizing bike parking.
- Providing bike share systems.
- Supporting bike repair stations.

AN ATTEMPT TO MEASURE THE BENEFITS OF CYCLING

BENEFIT	ESTIMATED VALUE
CO2 EMISSIONS SAVINGS	€560,000,000
REDUCTION OF AIR POLLUTION	€435,000,000
REDUCTION OF NOISE POLLUTION	€300,000,000
FUEL SAVINGS	€4,000,000,000
LONGER AND HEALTHIER LIVES	€73,000,000,000
FEWER WORKPLACE SICK DAYS	€5,000,000,000
BICYCLE MARKET GROWTH	€13,200,000,000
CYCLE TOURISM	€44,000,000,000
EASING OF ROAD CONGESTION	€6,800,000,000
SAVING ON CONSTRUCTION AND MAINTENANCE COSTS FOR ROAD INFRASTRUCTURE FOR MOTORIZED VEHICLES	€2,900,000,000
TOTAL ANNUAL BENEFITS	**€150 - €155,000,000,000**

Source: The Benefits of Cycling by the European Cyclist Federation, originally published in a support study for the European Commission.

PUBLIC TRANSPORT AND THE 'MODAL' SPLIT

Shifting us city dwellers from our habitual modes of transport to more sustainable options is a key task for local governments. After all, 73% of our transport emissions come **from journeys in and around cities**. While most cities have goals on making their 'modal split' cleaner and healthier, each city has a different starting point. There are places where healthy mobility is nearly non existent, and thus children, women, and the elderly are impacted the most. And yet, individual cars take up more space, use more energy, and cause more pollution than other modes.

But more cities are building infrastructure for mass transit, shared mobility, bikes and walking as part of seamless and integrated mobility management systems. In many places, solutions exist that can halve emissions by 2030, but an appropriate **incentive structure** for their swift implementation is often missing.

To meet those Paris Agreement 1.5 °C aspirations, we need to catapult from good examples to overall **excellent global performance** in the percentage of city trips made sustainably all over the world.

Great examples to consider:

- In the Swedish town of Lund, 74% of trips are made sustainably.
- And in Pune, India, 60% of trips are made sustainably, with a local goal to increase this to 80% of trips. Investments are planned in public transport and infrastructure for bicycles and pedestrians.
- Though bike lanes in Tokyo are rare 16% of local trips are made by bicycle.
- Both Copenhagen and Amsterdam have invested heavily in bicycle infrastructure and it shows: in Copenhagen 41% of trips are by bike, while in Amsterdam the figure is 48%.
- We love the thinking of 8 80 Cities where cities' future mobility plans are designed with 8-year-olds AND 80-year-olds in mind.

60%

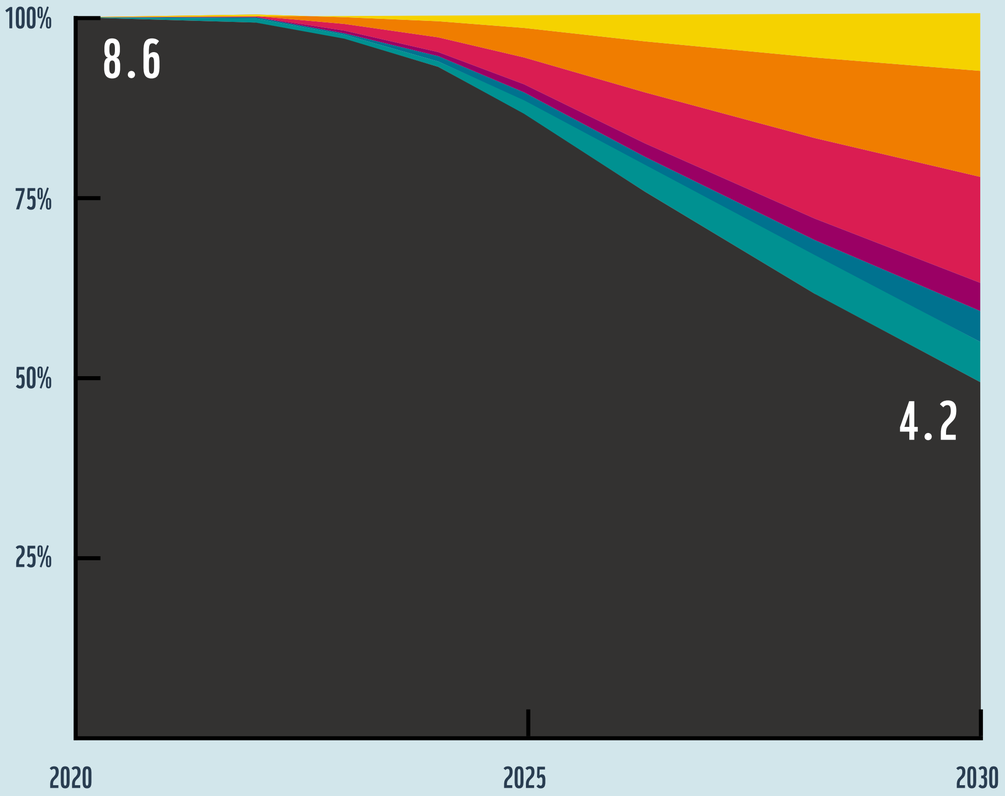
Trips made sustainably in Pune, India. The goal is to increase this to 80%.

TAKE ACTION

Cities can contribute with:

- Integrated mobility management.
- Coordinating bike share systems with public transport.
- Protecting areas for cycling and walking close to connecting public transport options.
- Prioritizing public transport that improves traffic flows, such as Bus Rapid Transport (BRT).
- Making public transport more attractive, affordable, frequent, reliable, clean, convenient, and safe.

HALVING TRANSPORT EMISSIONS



- MOBILITY AND ACCESSIBILITY
- MASS TRANSIT AND CYCLING
- ELECTRIC VEHICLES
- EFFICIENT SHIPPING
- LOW-EMISSION HEAVY VEHICLES
- REMOTE WORKING AND MEETINGS

Estimated 51% reduction of the annual emissions of the transport sector by 2030, which includes reduction of 0.08 Gt (2%) electricity and heat-related emissions.

Source: Exponential Roadmap, Stockholm Resilience Centre, 2019.

STREETS FOR PEOPLE AND NATURE

The promise of the sustainable city is density: efficient use of resources and active, affordable transport solutions. As we continue to urbanize, **the true scarce resource is land**. We need to make the best use of it, planning for integrated cities with work, homes and services within close proximity of one another.

Also, humans are not made to live surrounded by concrete and high rises alone. We need urban green (and blue!) spaces to filter our air, keep us cool, support biodiversity, and allow for recreation and enjoyment. Urban forest cover is found to be key in protecting city dwellers from depression, stress, and anxiety, yet currently **only 13% of us live in neighborhoods with sufficient tree cover**. To make room for dense yet green cities, something has to give.

There is a way to get the healthy cities we all need. Allocate less space to cars. After all, cities' downtowns often dedicate **50% to 60% of their public space to cars**! Replace car parking with biodiversity corridors built alongside walking and cycling paths. Space currently used for cars and fossil-fueled transport can be repurposed as clean-air-giving 'greenbelts'. By driving less and committing to active commutes, we will also get the added benefit of more space for people and for nature.

Green is great:

- Trees are air pollution absorbers, reducing the fine sooty particulates from traffic emissions by a quarter.
- Tree planting is a cost-effective solution to air pollution, second only to reducing transport emissions.
- When our children grow up with greener surroundings, they have up to 55% less risk of developing mental disorders such as depression or schizophrenia later in life.

"A couple of decades ago, it was perfectly normal to smoke cigarettes inside. Today, very few would do that. I think it's the same with cars in the city center: One day we will look back and ask ourselves why we ever thought that was a good idea."

Hanne Marcussen, Oslo's vice mayor

TAKE ACTION

Cities can contribute by:

- Reducing car parking spaces and car lanes, closing city center streets to cars, and implementing congestion charges.
- Dedicating more street space to pedestrians, cyclists, and greenery, to create greenbelts benefiting people and nature.

A LOW-CARBON CITY IS LUSH, LOVELY AND CONNECTED

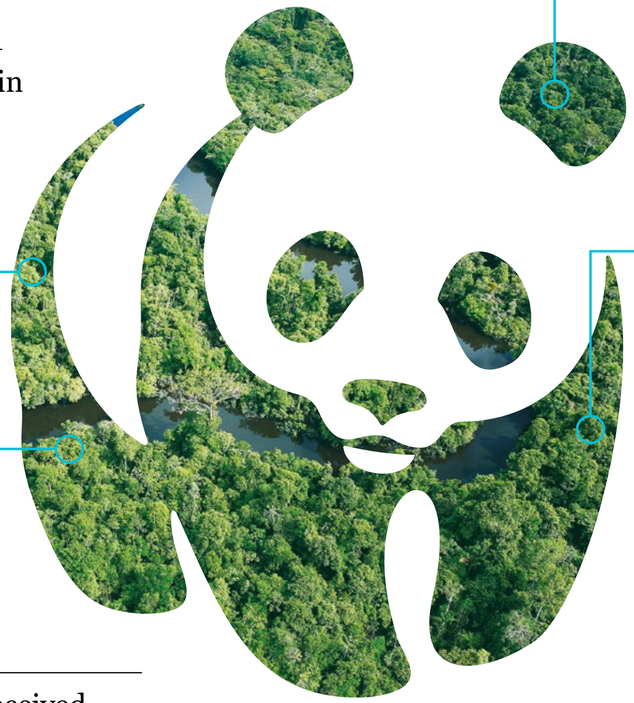
WE LOVE CLEAN AIR

1961

WWF was founded in 1961.

+100

WWF is active in nearly 100 countries on 6 continents.



+400

Global cities engaged in the WWF Cities program, primarily via the One Planet City Challenge.

+50,000

Citizen suggestions received on how to improve their cities via WWF's We Love Cities campaign.

WE LOVE CLEAN AIR

Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

www.panda.org

PANDA PHOTO: © SEOUL METROPOLITAN GOVERNMENT