UNDER EMBARGO UNTIL WEDNESDAY, FEBRUARY 15, 00:01 am CET

2023 TomTom Traffic Index

The cost of driving has reached new highs around the world

- Average cost of driving increased 27% for a typical petrol car in 2022 vs 2021
- London city center was the slowest to drive through in 2022, with an average speed of 17 kmh (14 kmh peak hours)
- Dubliners lost the most amount of time to peak hour traffic, with drivers spending a further 28 hours more stuck in traffic compared to 2021*
- In Bogota, congestion at peak hours increases a petrol car's CO2 emission by 41%
- **Full ranking and interactive report at tomtom.com/Traffic-Index**

Amsterdam, Netherlands, 15 February 2023 - TomTom (TOM2), the specialist in geolocation technologies, today releases the 12th edition of its annual TomTom Traffic Index, a report detailing traffic trends across 389 cities in 56 countries, throughout 2022. For the first time, TomTom has assessed traffic in each city and the cost of driving in terms of time, money as well as the environmental impact for a driven kilometer.

The rising cost of driving in 2022

Workers have increasingly been heading back to the office, with travel times seeing a rise for 62% of the cities (242 out of 389). With inflation spiking around the globe and the ongoing climate crisis, TomTom looked at the economic and environmental impact of the return to higher traffic levels. Interestingly, despite the rising costs of driving globally, it continues to be a major mode of transport in most cities.

2022 saw an increase in energy prices due to several factors (disrupted supply chains, bad weather, lower investments, etc.) - and the Russian invasion of Ukraine, which greatly exacerbated the situation. With congestion, fuel consumption increased as well. Consequence: drivers around the world spent an average of 27% more to fill up their petrol tanks than in 2021, while those driving diesel cars shelled out 48% more in 2022 than the year before. With fuel prices hitting the roof, Hong Kong became the costliest city to drive in, with almost 1000€ (997€) spent by a driver commuting every day at peak hours*.

In major European cities, driving an electric vehicle proved to be an effective way of keeping travel costs lower and consistent – even more when charging at fast-charging DC stations. Data shows that in a city like London, EV drivers charging at a slow-charging point saved nearly half of what they would spend driving a combustion engine vehicle that relies on petrol. Moreover, the costs of driving an EV are

* on average, for a 10-kilometer journey driven twice a day (morning and evening) at rush hour

significantly less volatile, as 2022 showed that prices of fuel can easily fluctuate within the course of a year, while while electricity prices are less likely to change as frequently.

Ranking: The most expensive cities to drive

Average cost for 10.000 kilometers driven in 2022, in Euros.

City center	Petrol car		Diesel car		EV car (fast charging)	EV car (slow charging)
	2022	YoY diff.	**2022**	YoY diff.	**2022**	**2022**
Hong-Kong	1 986 €	+14%	1 511 €	+22%	n/a	n/a
London	1 792 €	+28%	1 665 €	+33%	1 466 €	895 €
Athens	1 662 €	+25%	1 335 €	+36%	1 137 €	685 €
Oslo	1 652 €	+33%	1 464 €	+37%	1 240 €	674 €
Paris	1 602 €	+16%	1 479 €	+28%	1 405 €	818 €

London, the slowest city center to drive in

In 2022, London (city center) emerged as the slowest city to drive in: in average, Londoners needed more than 36 minutes to drive 10 kilometers (17 kmh). During peak hours, the average speed in London's city center was only 14 kmh.

Ranking: Top 5 slowest cities to drive in

Average travel time for a 10-kilometer trip in 2022, in minutes/seconds

City center	2022	2021
London	36:20	34:30
Bengaluru	29:10	28:30
Dublin	28:30	26:50
Sapporo	27:40	26:50
Milan	27:30	27:50

City (Metro. area)	2022	2021
Bogota	24:40	22:50
Manila	24:30	23:10
Sapporo	24:20	23:50
Lima	23:50	22:30
Bengaluru	23:40	22:00

New working patterns have little impact on the time and money lost in traffic

With the widespread adoption of flexible working arrangements, many workers now have the option to work remotely, adopt a hybrid work schedule or even work flexible hours. With fewer commuters driving to and from work during rush hours each day, one would expect that people spent less time and money stuck in peak hour traffic. Surprisingly though, the time people lost in global cities to peak hour traffic only increased over the past year, with as much as 145 hours lost to traffic in Dublin*. By teleworking one day a week, a commuter in Dublin would save back 58 hours of his time*.

Ranking: Top 5 cities where most time is lost only due to traffic

Average yearly time lost in 2022 for a 10-km round trip (=20 km in total) driven daily at peak hours, in hours.

City center	2022	2021
Dublin	145 hrs	116 hrs
Bucharest	143 hrs	137 hrs
London	139 hrs	125 hrs
Bengaluru	134 hrs	129 hrs
Mexico-city	132 hrs	102 hrs

City (Metropolitan area)	2022	2021
Bogota	132 hrs	97 hrs
Bucharest	106 hrs	101 hrs
Manila	103 hrs	96 hrs
Bengaluru	101 hrs	84 hrs
Lima	100 hrs	85 hrs

* on average, for a 10-kilometer journey driven twice a day (morning and evening) at rush hour

The cost of traffic jams on the driver's wallet is also quite significant. In Paris, driving a petrol-powered car during rush hour increases the cost of driving by 40%, compared to driving during optimal times (when traffic is at its lowest). By teleworking one day a week, a Parisian driver would save 166€*.

The traffic index also allows us to determine the impact in CO2 emissions when we drive during rush hours. For example, a Londoner who uses his petrol car every day to go to work emits 1.1t of CO2 per year*. By working from home one day a week, that would be 227 kg fewer emissions that he'd emit.

Ranking: Cities with the highest CO2 emissions per vehicle at peak hours

Average annual CO2 emissions based on a 10-kilometer round trip (=20 km total) driven daily at peak hours, in kg of CO2

City center	**Petrol car**
	At peak hours
London	1133 kg CO2
Paris	1092 kg CO2
Manila	1047 kg CO2
Bucharest	1032 kg CO2
Bengaluru	1009 kg CO2

City center	**Diesel car**
	At peak hours
London	1067 kg CO2
Paris	1058 kg CO2
Nice	1012 kg CO2
Ankara	1011 kg CO2
Manila	997 kg CO2

2023 TomTom Traffic Index: New year, new methodology

For this edition of its Traffic Index, TomTom has modified its approach to calculating the costs of driving. This year, we're assessing the time per mile driven, and simulating how long it takes to complete a 10-kilometer journey within a city. For the first time, we also worked on 2 analysis zones: the metropolitan area of each city (varying according to the size of the agglomeration), and the city center, which corresponds to the complete road network within a radius of 5 kilometers around the center.

This methodology gives TomTom a deeper insight into traffic that more closely represents real-world driving conditions. It also allows for a more accurate comparison of driving conditions between cities, as the new method also identifies cities where the infrastructure (ratio of express lanes, traffic lights, speed limits, etc.) supports a faster or slower base speed. This new method quantifies the time and money drivers lose to road traffic, serving as a foundation for them to reconsider their travel behavior and make informed choices that benefit them as well as the environment.

Find out more about the TomTom Traffic Index and discover how your home city fared in 2022 at www.tomtom.com/Traffic-Index

END

Notes to Editors

About the TomTom Traffic Index

Urban mobility is a key contributor to issues such as climate change, health and economic development and the TomTom Traffic Index has become the barometer of mobility patterns around the world. TomTom's traffic data, which is powered by 600 million connected devices, is an authoritative indicator of how people move, economic activity levels, global trade and much more. For years, TomTom's Traffic Index has been used by analysts, corporations and the media to explain a world in flux.

* on average, for a 10-kilometer journey driven twice a day (morning and evening) at rush hour

Which data does TomTom use for the Traffic Index?
We source our traffic flow data from over 600 million devices, such as in-dash car navigation (7 out of 10 connected in-dash navigation systems in passenger cars currently sold in Europe are powered with TomTom Traffic), smartphones, personal navigation devices and telematics systems. Each day, TomTom collects from these sources over 61 billion anonymous GPS data points around the world, covering a total distance of 3.5 billion kilometres driven. This real-time data is archived and accessible as historical data right away. Based on this historical data, TomTom can assess speed profiles and traffic patterns for each time of the day and each day of the week. 58 billion driving hours have been accumulated in TomTom's historical traffic data over the past decade.

2023 TomTom Traffic Index: new methodology
For this edition of its Traffic Index, TomTom has modified its approach to calculating costs of driving. Previously, our data scientists calculated congestion (= time lost in traffic) by measuring the additional time required to complete a trip compared to how long that same trip would take in free-flowing traffic – the given congestion levels were the ratio between driven times vs. base times.
This year, we're assessing the time, cost and CO2 emission per km driven, and simulating how long it takes to complete a 10 km (or 6 mile) trip within a city, for typical EV, petrol and diesel cars. For the first time, we also worked on 2 analysis zones: the metropolitan area of each city (varying according to the size of the agglomeration), and the urban ultra-center (within a radius of 5km around the ultra-center).

Costs of driving
TomTom defines the cost of driving as the amount of time, fuel and CO2 used per km. The cost of driving is the difference between the figures in optimal traffic conditions and the actual average figures, considering the extra amount of average time spent on the road. TomTom collects real-time fuel prices for thousands of stations around the world. To assess fuel costs, TomTom data is based on country-averaged daily pricing over 2022.

Emissions Methodology
Emission from traffic is directly proportional to a vehicle's energy consumption. To raise those consumption models, TomTom used the PHEM (Passenger car and Heavy-duty Emission Model) simulation tool developed by the Graz University of Technology (TU Graz). PHEM calculates the energy required to perform any observed driving maneuvers (speeds, accelerations) from TomTom data for different road profiles, and estimates the resulting emissions, based on the vehicle efficiency, vehicle and energy type (Petrol, Diesel or electric), as well as speeds.

The TomTom Traffic Index report is available online
At tomtom.com/Traffic-Index, anyone can discover where their city ranked in 2022, how travel times changed year-on-year, and how much their driving habits cost. Drivers can see the most congested days and even most congested hours of the day – and figure out the best times for them to commute.

About TomTom:

Billions of data points. Millions of sources. Hundreds of communities. We are the mapmaker bringing it all together to build the world's smartest map. We provide location data and technology to drivers, carmakers, businesses, and developers. Our application-ready maps, routing, real-time traffic, APIs and SDKs enable the dreamers and doers to shape the future of mobility.

Headquartered in Amsterdam with 4,000 employees around the globe, TomTom has been helping people find their way in the world for over 30 years.

www.tomtom.com

For further information:

Media Relations

mediarelations@tomtom.com

Investor Relations

ir@tomtom.com

* on average, for a 10-kilometer journey driven twice a day (morning and evening) at rush hour