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Geography

Higher level and standard level

Paper 2 – resource booklet

7 November 2024

Zone A morning | **Zone B** morning | **Zone C** morning

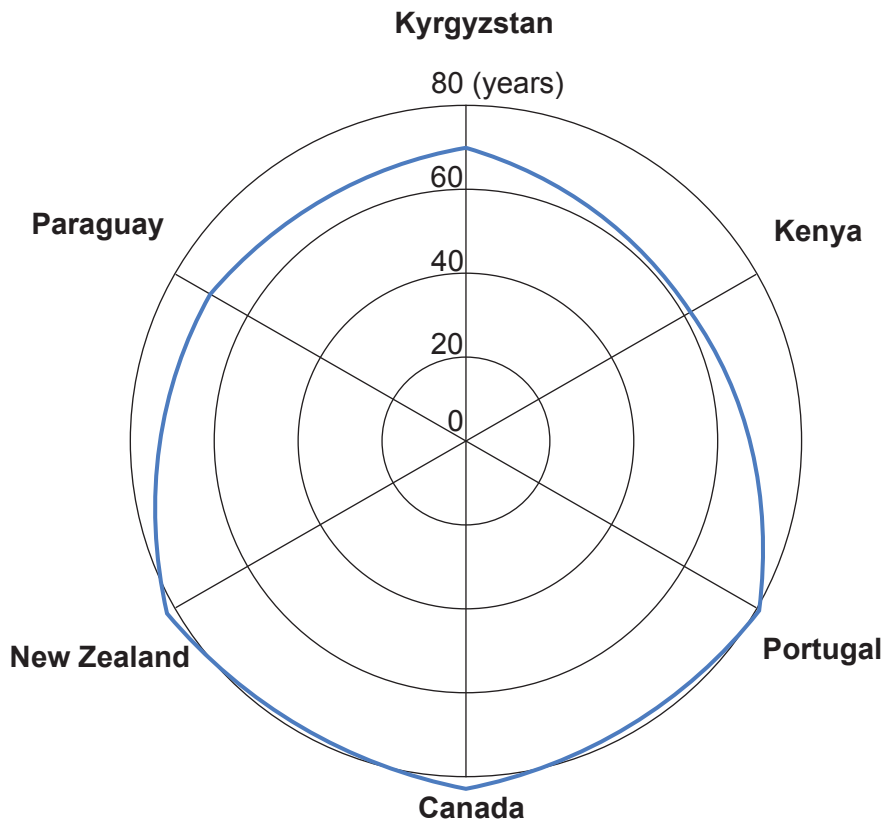
Instructions to candidates

- Do not open this booklet until instructed to do so.
- This booklet accompanies paper 2.

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1. **Changing population**

The chart shows the average life expectancy, in years, for six countries in 2021.



- 4. The infographic shows issues relevant to climate change and some possible mitigation strategies.

CLIMATE CHANGE

Estimated growth in carbon offsets by volume, 2010-2021

Volume (millions of tonnes of CO₂ equivalent)

Year	Volume (millions of tonnes of CO ₂ equivalent)
2010	120
2011	100
2012	100
2013	80
2014	90
2015	100
2016	80
2017	100
2018	110
2019	120
2020	200
2021	300

Equivalent to 0.8% of global greenhouse gas emissions

Key: — Carbon offsetting

The principle of carbon offsetting

A newly planted tree can take as many as 20 years to capture the amount of CO₂ that a carbon-offset scheme promises. We would have to plant many trees for decades to offset even a small percentage of global emissions.

Global Electric Car Sales Doubled in 2021

Global registrations of electric vehicles (incl. plug-in hybrids), by region*

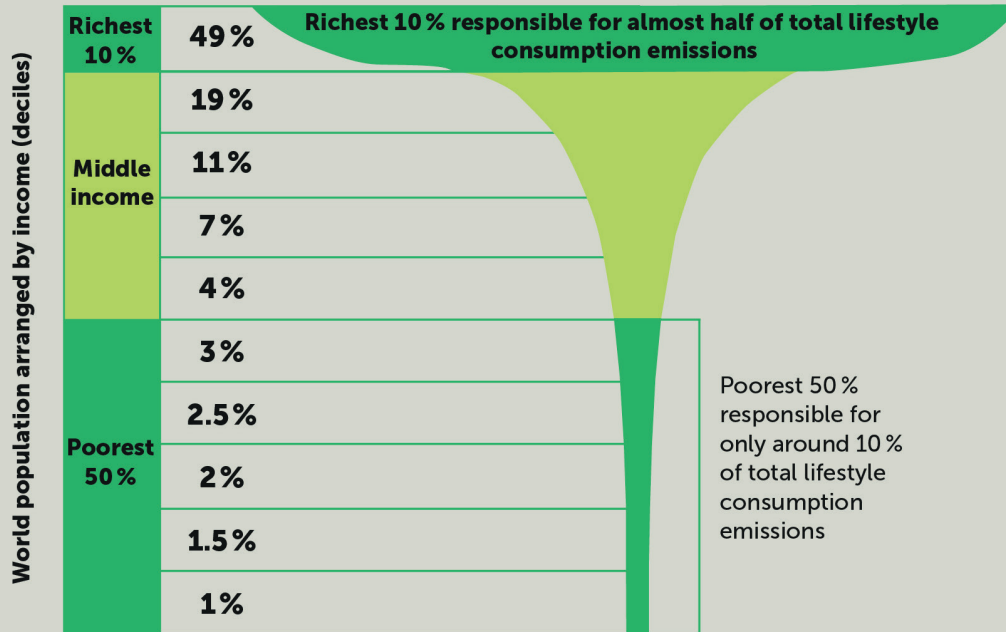
Year	China	Europe	United States	Others	Total
2012	0.1	0.1	0.1	0.1	0.4
2013	0.2	0.2	0.2	0.2	0.8
2014	0.3	0.3	0.3	0.3	1.2
2015	0.4	0.4	0.4	0.4	1.6
2016	0.5	0.5	0.5	0.5	2.0
2017	0.7	0.7	0.7	0.7	2.8
2018	1.0	1.0	1.0	1.0	4.0
2019	1.2	1.2	1.2	1.2	5.0
2020	1.5	1.5	1.5	1.5	6.0
2021	3.0	2.0	1.0	0.6	6.6

* incl. passenger cars and light commercial vehicles (vans, light trucks)
Source: EV-volumes.com via IEA

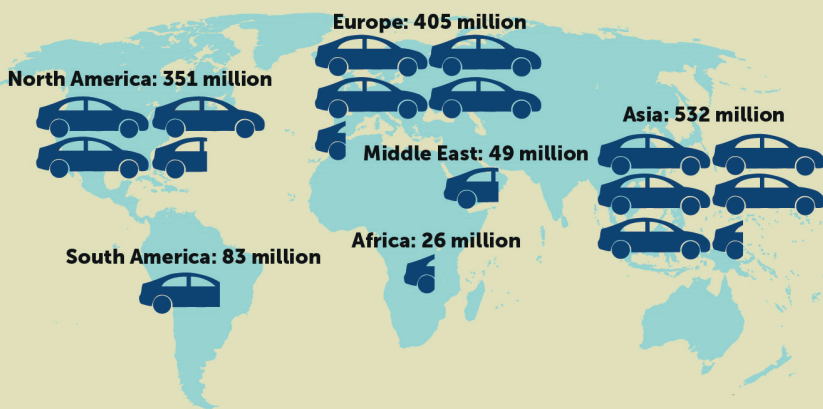
statista

CAUSES AND MITIGATION

Lifestyle consumption CO₂ emissions

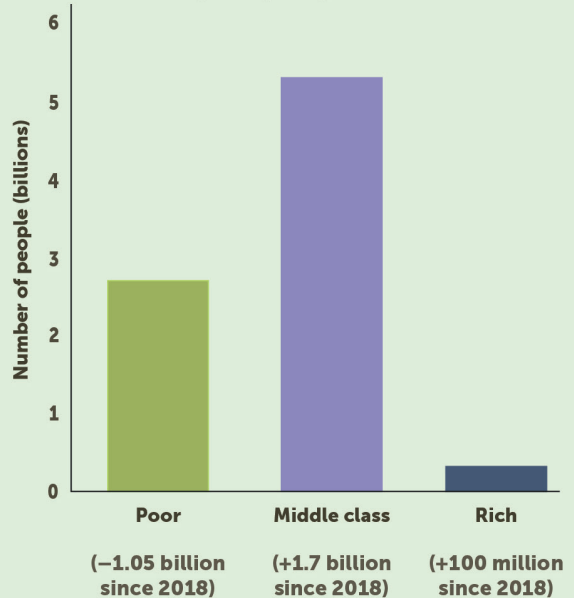


How many cars were there in the world in 2022?



Key: = 100 million cars

Projected change in wealth groups by 2030



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References:

1. Our World in Data, n.d. Life expectancy, 1770 to 2021. <https://ourworldindata.org/grapher/life-expectancy>. Licensed under CC BY 4.0 <https://creativecommons.org/licenses/by/4.0/> Source adapted. Data source from United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. Licensed under CC BY 3.0 IGO <https://creativecommons.org/licenses/by/3.0/igo/>.
4. [Estimated growth in carbon offsets by volume] Climate Change Committee, 2022. Voluntary Carbon Markets and Offsetting. [pdf] Available at: <https://www.theccc.org.uk/publication/voluntary-carbon-markets-and-offsetting/> [Accessed 25 September 2023]. Data from Ecosystem Marketplace (2022) State of the Voluntary Carbon Markets; World Bank data (2022) Total greenhouse gas emissions. Source adapted.

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[Global sales of electric vehicles] Statista. <https://www.statista.com/chart/26845/global-electric-car-sales/>. Licensed under CC BY ND 3.0 <https://creativecommons.org/licenses/by-nd/3.0/deed.en>. Data sourced from EV-VOLUMES.com via IEA.

[How many cars are there in the world in 2022?] Hedges & Company, n.d. *How many cars are there in the world in 2023?* [online] Available at: <https://hedgescompany.com/blog/2021/06/how-many-cars-are-there-in-the-world/> [Accessed 25 September 2023]. Source adapted.

[Percentage of CO₂ emissions by world population] This publication is an adaptation and translation of "EXTREME CARBON INEQUALITY: Why the Paris climate deal must put the poorest, lowest emitting and most vulnerable people first – fig. 1 – Oxfam - 2/12/15" and is published with the permission of Oxfam, Oxfam House, John Smith Drive, Cowley, Oxford OX4 2JY UK - www.oxfam.org.uk. Oxfam does not necessarily endorse any text or activities that accompany the materials, nor has it approved the adapted text.

[Projected change in wealth groups by 2030] World Data Lab., 2018. A global tipping point: Half the world is now middle class or wealthier. [online] Available at: <https://www.brookings.edu/articles/a-global-tipping-point-half-the-world-is-now-middle-class-or-wealthier/> [Accessed 25 September 2023]. Source adapted.