



SOLVING THE CLIMATE CRISIS: **POLICIES FROM GLOBAL YOUTH**



BY

AUDREY TJANDA

JINGJING HU

WUYANG ZHANG

ZECHUAN WANG

MORGAN NARINDRA

ANA MARCELA RODRIGUEZ ALEJANDRO



PREAMBLE

We are members of the Model G20 2021 Task Force, who met virtually from February 12-20, 2021.

We are all between the ages of 14, and 16 and we come from a variety of backgrounds from around the world, including Surabaya in Indonesia, Tabasco in Mexico, and Qingdao, Huhot, and Hainan in China.

As delegates at Knovva Academy's Model G20 Virtual Summit about climate change, we shared our international perspectives with the goal of providing critical information to the public: how to educate the population about climate change, and how to reduce greenhouse gas emissions.

In this position paper, we present our beliefs, observations, and policy recommendations from the viewpoints of teenagers who are directly represented in a body of discourse of the G20. We submit this paper for the consultation of non-governmental organizations and various international organizations.

We would like to stress the importance of allowing youth and teenage voices to be heard regarding global issues that affect us. We believe that through our voice, other youths will be influenced to take part in international affairs and other political actions. We would like to thank the G20 and Knovva Academy for giving us the opportunity to be involved in these discussions.

This preamble presents our beliefs, which have played an important role in our policy recommendations. We believe that our generation has to take relevant and impactful actions now if we want to mitigate climate change. To achieve a more sustainable future, all countries, individuals, and businesses should take part in preventing climate change from getting worse.

Ultimately, our work is shaped by the responsibility that we share, as youths with the power to slow climate change and build a better world for everyone in the future.

RESEARCH AND PROVIDING INFORMATION TO THE PUBLIC

Because of science, our understanding of climate change has broadened. This is crucial, because knowing about the impacts of climate change allows people to be more aware and think twice about their actions. Research will also help us reduce climate change through more efficient energy usage, such as environmentally friendly cars. Also, research can support us as we adapt to the effects of climate change and motivate us to limit its effects.¹ Yet, even with all the research that has been done, scientists are still trying to find ways to further limit climate change. For example, right now scientists are trying to produce hydrogen sustainably for use in zero-emission transportation. This is one of many efforts to help reduce climate change by using less fuel.²

Due to the **International Panel of Climate Change (IPCC)**, a UN Organization, countries already have the latest updates about climate change and projections

about what is to come.³ However, there are still many countries that aren't able to achieve the goals from the IPCC report for limiting global warming to 1.5°C.⁴ Therefore, we should set up a new organization which will enforce stricter guidelines on climate change based on research and science. This new organization will monitor carbon dioxide emissions in various places, as well as the damage caused by pollution. It will also develop some environmentally beneficial tools or machines to better protect the environment.

As stated earlier, the rational use of science and technology can improve and protect the environment. With the continuous development of the economy, the ecological environment has also been affected, so science and technology should be used to improve the ecological environment. This is why we propose the following policies.

1.

Increase the number of research teams that investigate how to avoid the impacts and reduce the causes of climate change.

Research is one of the most important factors that can reduce and alter the effects of climate change. Through research, we can predict the effects of climate change, such as the increase in sea levels which can cause flooding. Thus, we can be more prepared for future detrimental impacts.⁵ Norway has the highest score when it comes to researching climate change compared to other countries,⁶ and Norway is also the country that does the most to prevent the impacts of climate change.⁷ This shows why research is vital.

¹ National Academies Press: OpenBook, www.nap.edu/read/12782/chapter/2.

² Nunez, Christina. www.nationalgeographic.com/environment/article/global-warming-solutions.

³ Lindwall, Courtney. www.nrdc.org/stories/ipcc-climate-change-report-why-it-matters-everyone-planet#sec-actions.

⁴ Leahy, Stephen www.nationalgeographic.com/science/article/nations-miss-paris-targets-climate-driven-weather-events-cost-billions.

⁵ NCAS, <https://ncas.ac.uk/learn/why-is-climate-important/>.

⁶ Borgan, Eldrid. <https://sciencenorway.no/climate-change-science-policy/climate-change-is-a-bigger-field-of-research-in-norway-than-in-any-other-country/1765846>.

⁷ Somvichian-Clausen, Austa. <https://thehill.com/changing-america/sustainability/climate-change/526970-the-10-countries-most-likely-to-survive-the#:~:text=What%20they%20found%20is%20that,scarcity%20of%20food%20and%20water>.

- Countries should have a minimum of one research team to research how to mitigate the effects of climate change.
- Twice a year, each research team should monitor the greenhouse gas emissions and pollutants that contribute to climate change.
- The research teams will also be responsible for researching how to increase the efficiency of environmentally friendly products and vehicles to cater to a larger market.

2.

Each nation should establish a website that regularly informs citizens about the effects of climate change on their country.

Climate change education and awareness is very important as it helps people comprehend how to tackle climate change; an understanding of climate change helps people live a greener lifestyle. It is why climate change education is part of UNESCO's Education for Sustainable Development program.⁸ Therefore, in order to further educate the general population regarding climate change, we encourage countries to create a domestic website to make sure that the population is educated on the latest news, data, and technology to fight climate change.

- The website should have a community function where citizens can express their concerns about climate change.
- Data, statistics, and news about internal climate change should be updated often (preferably every month) so the public is kept up to date about the current situation of climate change in their country. Some data, statistics, and news might include:
 - The increase in CO2 emissions compared to the previous month
 - News about the new environmentally friendly products and vehicles that have recently been released to the public
 - Warnings about any upcoming floods, heat waves, droughts, or other weather events caused by climate change, and how the public can deal with them

⁸ UNESCO <https://en.unesco.org/themes/addressing-climate-change/climate-change-education-and-awareness#:~:text=Education%20is%20an%20essential%20element%20of%20the%20global%20response%20to%20climate%20change.&text=Together%20with%20thirteen%20other%20UN,Education%2C%20Training%20and%20Public%20Awareness.>

3.

Create a global climate change promotion organization (GCCP)

As we all live on the same planet, we acknowledge that international cooperation is vital in combating climate change. This approach will foster more fruitful cooperation between countries to fight climate change together. Previous international organizations such as the UNFCCC and IPCC have been set up to enhance international cooperation. The IPCC has been criticized for its inaccurate predictions,⁹ but we hope that with the help of research from more experts from around the world, the GCCP's predictions will be more accurate. The GCCP will be built upon these research organizations while also making sure that every country is involved and provided with the latest information on climate change.

- One of the GCCP's purposes is to share experience regarding climate change. For example:
 - How to combat the effects of climate change, such as flooding or drought
 - How to increase the efficiency of green products and vehicles
- It will further enhance global collaboration by establishing exchange programs between experts from all around the world, and by sharing up-to-date data on climate change with countries in this organization.

4.

Countries should adopt technical and quantitative standards for controlling greenhouse gas emissions.

As a result of fossil fuel burning and massive deforestation, the concentration of carbon dioxide in the Earth's atmosphere has increased. Due to the greenhouse effect of gases such as carbon dioxide, the global average ground temperature has increased by about 0.3-0.6° in the past 100 years, and is expected to rise another 1-3° by 2030.¹⁰

- Globally, countries should implement bike-sharing schemes so that people can travel less by car and use bicycles for shorter distances.
- Countries should participate in green community building activities, create awareness about environmental protection, and advocate for a green lifestyle.

⁹ Schiermeier, Quirin <https://www.nature.com/news/2010/100202/full/463596a.html#:~:text=In%20addition%20to%20the%20Himalayan,been%20taken%20out%20of%20context.>

¹⁰ Toutiao https://www.toutiao.com/i6834678761883959820/?in_ogs=2&traffic_source=CS1118&utm_source=VV&source=search_tab&utm_medium=wap_search&prevent_activate=1&original_source=2&in_tfs=VV&channel=:

5.

Governments should implement a household waste classification system and also have an overall plan regarding climate change and waste.

Garbage is a complex mixture. In the process of transportation and open-air stacking, organic decomposition produces foul odor and releases a large amount of ammonia, sulfide, and other pollutants into the atmosphere. This includes more than 100 kinds of organic volatile gases, which contain many carcinogens and teratogens. Plastic film, paper, and dust are blown by the wind to form “white pollution.”¹¹ Dumping garbage carelessly can lead to it being burnt, which contributes to climate change. Furthermore, organic waste such as paper and kitchen waste release methane and carbon dioxide when it decomposes, which also contributes to climate change.¹²

- An international garbage sorting organization should be set up to collect data on how excessive waste harms the environment, then report their findings to the public in the form of videos.
- Schools should organize environmental protection clubs so that students can fully understand the responsibility and awareness needed for environmental protection.
- The government should issue policies to make residents aware of garbage classification to protect the environment.

NATIONAL POLICIES

We know that humans are the catalyst for the changing climate, and we believe that stressing the importance of climate awareness around the world should be one of our highest priorities to bring us one step closer to a greener future.

Before the industrial revolution, the world’s carbon emissions were relatively low. In the mid-1700s, the global average amount of carbon dioxide was around 280 ppm.¹³ However, over time, our technological and mechanical advancements evolved until factories could manufacture goods for us. There are advantages that come with manufacturing, but there are also severe consequences, climate change being the biggest. As of January 2021, the world’s global average amount of carbon dioxide equals 415.24 ppm,¹⁴ and a majority of

comes from daily human activities like the use of transportation systems.

Additionally, in the 1950s, an average of 2.36 tons of carbon dioxide was produced per person, and this figure doubled to 4.83 tons per person in 2017.¹⁵ These facts prove that individuals around the world have increased their emissions, causing detrimental climate change. This is why countries need to stress the importance of climate awareness among the public and enforce national laws to ensure a stricter and more total course of action in which each member state will collectively contribute to guarantee the success of the proposed policies. This will ensure not only that climate change is reduced, but also that everyone is prepared for what is to come as a consequence of our actions.

¹¹ Zhuzhai.com <https://m.zhuzhai.com/mip/news/read-26773.html>.

¹² Secretariat of the Pacific Regional Environmental programme, July 2009, https://www.sprep.org/climate_change/PYCC/documents/ccwaste.pdf.

¹³ NOAA Climate.gov, <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>.

¹⁴ CO2.Earth, <https://www.co2.earth/>.

¹⁵ Our World in Data, <https://ourworldindata.org/grapher/co-emissions-per-capita>.

Ultimately, we believe that the following proposed policies will highlight the importance of communication between the nation and its people, as well as how raising awareness will help alleviate climate change.

1.

High school students with excellent abilities should be invited to participate in environmental simulations and product development activities in several countries (or in their own country) on behalf of international companies.

It has become a social trend for teenagers to take on more important positions and globalize multinational cooperation.

In today's international community, country-to-country cooperation is a mainstream trend with global leaders meeting through the United Nations, BRICS, and the G20 Summit. International cooperation undoubtedly provides opportunities for mutual monitoring while also greatly increasing efficiency.

Secondly, young people are emerging in many areas of the international arena. They are quicker to learn new ways of working, quicker to adapt to different work environments, and quicker to come up with solutions that make sense at this stage. Their ideas and approaches are more innovative and relevant.

- Countries should establish international companies to deal with today's global environmental problems. They need to select young people from across the globe and within countries who are knowledgeable about environmental change and have initial solutions.
- The role of the organization is to foster innovation and spread more knowledge about environmental protection among young people.
- The organization should find countermeasures and develop new environmentally friendly products through environmental simulation, thus improving sustainable energy technologies.

2.

Strengthen awareness about the importance of protecting the environment and advocate for a greener economic lifestyle.

Some of the main sources of greenhouse gases are transportation and electricity, which are widely used by the public but fall under the sector of energy (as shown in appendix A). We firmly believe that nations, along with their populations, can cooperate to reduce greenhouse gas emissions. It is clear that global greenhouse gas emissions will increase with the absence of climate knowledge around the world. As a result, we encourage member states to raise awareness of climate change — including its causes and effects, and how to respond to the effects — to educate their populations about the climate challenges we face both now and in the future. Raising climate awareness may be achieved in various ways, including:

- Preparing and producing new educational materials to teach climate change in educational institutions, which will help increase awareness among the younger generations. Some examples include:
 - a. Applying lessons and classes which specifically depict the issues surrounding climate change, as well as other global issues. These lessons will run every quarter of the year to ensure that students are aware of pressing and ongoing issues. Each nation should be given two years to ensure every school in the nation does this.
 - b. As an alternative to lessons that run every quarter, schools could instead implement climate change lectures in their school curriculum. Each nation should be given two years to ensure each school in the nation does this.
 - c. Organizing class activities to create posters on the topic of climate change. These posters could also be shared with the public on social media (as discussed in bullet point 2).
 - d. Organizing after-school activities or school groups in which students specifically discuss the topic of climate change. Teachers may analyze these after-school activities to identify exceptional students and invite them to participate in environmental simulations and product development activities on behalf of international companies (as mentioned above, in policy 1).
- Use media to ensure that the general public is aware of climate change, including billboards, posters, and flyers (posters that students make may be used on these public media as stated above). This public media should stress:
 - a. The causes of climate change, such as overuse of gas-powered cars
 - b. The effects of climate change, such as extreme weather patterns, which detrimentally affect infrastructure, agriculture, economy, and quality of life
 - c. What the public can do in order to decrease carbon emissions, such as walking or bicycling short distances instead of driving
 - d. How to respond to climate disasters and other emergencies

- Utilizing social media platforms to ensure that a variety of people from different age groups and geographical backgrounds are knowledgeable about climate change.
- Arranging annual public awareness campaigns as well as events in which the public can join. These events may include:
 - a. Climate expert speakers
 - b. Merging with climate organizations to further educate the public on climate change
 - c. Promoting products that are environmentally friendly and do not contribute to climate change

3.

Set up local organizations that focus on indigenous people and people in poverty to help them cope with the effects of climate change.

Alarmed by the significant number of climate disaster victims from the extreme weather climates, we seek to ensure that fewer people will be significantly affected. Notably, we need to guarantee the safety of those in indigenous communities and those in poverty who may suffer from food and water shortages or destruction of their homes as a result of climate impacts. If we aim to achieve 100 local organizations by the year 2030, we believe we can reach more people and help them more quickly. Thus, to further ensure that fewer people are harmed, we aim to set up a multitude of local organizations which will assist these victims in ways such as:

- Providing disaster relief packages for victims of disasters
- Providing care packages for the victims of disasters, calling upon volunteers as well. These packages will ensure that the victims are able to live comfortably for at least three months. Packages should include:
 - a. Food and water
 - b. Tents
 - c. Sleeping bags
 - d. Sanitary towels and packets
 - e. Clothing
 - f. Pamphlets on climate change and upcoming local events
- Providing aid in reconstructing specific areas that have been hit hard by climate disasters
- Further educating victims on how to prevent the destruction of their homes

4.

Member countries should enact laws that require specific building codes for construction in coastal areas or areas prone to flooding.

According to studies, ocean waves are more destructive as a result of global warming. They are a serious threat to the coastal ground, often causing flooding. Climate change will have numerous long-term effects on the atmospheric circulation system, global water vapor distribution, and precipitation patterns. Global warming also increases evaporation, leading to an increase in total water vapor. These factors all contribute to larger and faster flood flows.

¹⁶ To address this problem, countries can:

- Build more reservoirs, hydropower stations, and barrage dams
- Build more durable high-voltage power lines and residential housing
- Clear congestion on rivers by either altering or removing water blocking bridges, approach roads, piers, and cross-river engineering facilities.

REDUCING CO2 EMISSIONS THROUGH TRANSPORT AND AFFORESTATION

Since the beginning of the industrial era, due to the use of energy derived from fossil fuels such as oil, coal, and gas, anthropogenic emissions have considerably increased the concentration of carbon dioxide in the air.

CO2 is one of the greenhouse gases best known for its impact on climate change, but there are many others. They all retain heat from the sun when they reach the atmosphere, just like in a greenhouse. Our planet would be a block of ice without them, but when the amount of these gases increases and the balance is disturbed, the climate changes and behaves differently.

Throughout the Earth's history, there have been several "natural climate changes" or glaciations. Nowadays, however, anthropogenic activities such as transportation and industry cause climate disruption.

In recent decades, CO2 emissions into the atmosphere have skyrocketed, largely as a result of the use of fossil fuels.

In 2019, the increase reached 2.6% due to the large increase in forest fires. The UN agency explains that emissions from land use changes account for approximately 11% of the global total. Considering absorption by natural sinks such as forests, vegetation, and seas, the net annual balance of CO2 emissions into the atmosphere reaches 3 million tons per year. This excess CO2 concentration has increased the greenhouse effect, causing an increase in the average temperature of the atmosphere since the beginning of the industrial era, which has led to changes in physical-meteorological and environmental processes that have had negative biological, economic, and social consequences.¹⁷

¹⁶ Baidu.com <https://baijiahao.baidu.com/s?id=1623379457601899870&wfr=spider&for=pc>.

¹⁷ United Nations <https://news.un.org/es/story/2020/12/1485312#:~:text=En%202019%2C%20el%20aumento%20fue,genera%20en%20unos%20pocos%20pa%C3%ADses>.

All this data shows why it's very important to reduce CO2 emissions by various means. The current situation is already worrying, and if we continue in this way, there will be catastrophic threats to our livelihoods, our economy, and our planet. Therefore, in order to slow down — and eventually reduce — our CO2 emissions, we propose the following policies.

1.

Countries and the implementation of electric cars

Climate scientists say that reducing the use of vehicles is one of the simplest ways to scale back planet-warming gas emissions. The transportation sector creates the largest amount of harmful emissions, and most of that comes from cars and trucks.

To lower the emission of greenhouse gases, we recommend the following steps.

- Governments should allocate funds for converting to electric cars, and support their production.
- Countries that don't use electric cars should begin using them in order to reduce their dependence on average cars that produce more CO2 emissions.
- Governments should design new legislative frameworks to regulate the use of electric cars.
- A living lab should be established in each geographical area. Living labs are open innovation ecosystems, created to carry out innovative projects that focus on experimentation in everyday life. All living labs combine and adapt different user-centered methodologies to better fit their purpose, and user participation is essential. A unique feature of living labs is that the activities take place in real environments to get a complete picture of the projects, so these research and innovation processes can take place in public or private environments. They can be set in a street, in a house, in an organization, or even throughout an entire city or industry. Such an approach allows all parties involved to consider the overall performance of a product or service and its possible adoption by users. A living lab is an experimental environment, and conducting research in this way is expected to produce better results, as it can be used to design, explore, test, and refine new policies and regulations in real scenarios, assessing their potential impacts prior to implementation.

These labs will develop, test, and apply a set of innovative, complementary, and quality solutions, oriented to improve the efficiency of electric cars and their important contribution to reducing CO2 emissions. Research and innovation activities will support the long-term transition to zero-emission mobility in all modes of transportation. In addition to technological innovations in vehicles, emphasis will be placed on raising public awareness, sustainable planning, integrating new forms of mobility, and suggesting measures to ensure the lowest level of CO2 emissions.

Governments should also map and identify the best recharging sites. These sites should then be selected and converted into recharging centers for various recharging needs, especially in cities.

- Charging centers should mix multiple public charge points to meet all needs: slow chargers for parking and driving, fast chargers for long distance commuters, and high-use electric vehicles such as cabs, ride-sharing services, or small delivery vehicles.
- As Uber and alternative ride-hailing corporations add traffic and pollution to cities, all Transportation Network Companies (TNC) and cabs in massive cities should be electric by 2025. Therefore, all medium and large cities should set up vast networks of charging centers by 2025 to meet these new charging needs.
- In the case of batteries, their cells should be used for energy storage.

2.

Countries around the world should jointly establish a forest protection organization.

Forests are an important factor in mitigating the effects and causes of climate change. This is because forests help keep the climate stable. They do this by regulating the ecosystem and playing an important role in the carbon emission lifecycle. Scientists say that by 2030, if we continue to promote afforestation and lower deforestation, they have the ability to mitigate a third of the effects of climate change.¹⁸ This is why we think that establishing a global forest organization is crucial to prevent the effects and causes of climate change.

- Countries involved in this organization should be required to send professional teams to other countries to monitor forest damage and prevent illegal timber trade. They will also record relevant data and submit a monthly monitoring report.
- The organization should also be responsible for researching and using science and technology efficiently to better care for forests.
- Countries involved should also be encouraged to form advocacy groups within their own countries. These advocacy groups will increase awareness of forest protection among the general public. They may also carry out tree planting activities in primary and secondary schools.

¹⁸ IUCN <https://www.iucn.org/resources/issues-briefs/forests-and-climate-change#:~:text=Forests%20are%20a%20stabilising%20force,that%20can%20drive%20sustainable%20growth.&text=Increasing%20and%20maintaining%20forests%20is%20therefore%20an%20essential%20solution%20to%20climate%20change>.

3.

States should cooperate in the construction of transnational watercourses and in the trading of renewable energy resources.

- A scientific investigation team should be set up to carry out field visits and route planning in various countries, ensuring that countries can make full use of water resources and alleviate disasters such as droughts or floods.
- At the same time, the scientific investigation team should cooperate with the relevant experts to plan the construction of the transnational waterways.
- Countries should share resources in order to learn from each other and establish friendly and cooperative trade relations. They should increase the trade of renewable energy to reduce their dependence on non-renewable energy.



DELEGATES OF THE ONLINE MODEL G20 TASK FORCE



Jingjing Hu
-China



Wuyang Zhang
-China



Zechuan Wang
-China



Audrey Tjandra
-Indonesia



Morgan Narindra
-Indonesia



**Ana Marcela
Rodriguez Alejandro**
-México



BIBLIOGRAPHY

- Borgan, Eldrid. "Climate Change Is a Bigger Field of Research in Norway than in Any Other Country." Sciencenorway, 3 November 2020, <https://sciencenorway.no/climate-change-sc>.
- "Climate Change Education and Awareness." UNESCO, 10 December 2018, <https://en.unesco.org/themes/addressing-climate-change/climate-change-education-and-awareness#:~:text=Education%20is%20an%20essential%20element%20of%20the%20global%20response%20to%20climate%20change.&text=Together%20with%20thirteen%20other%20UN,Education%2C%20Training%20and%20Public%20Awareness>.
- "CO2 emissions break another world record: catastrophic global warming threatens the planet | UN news." United Nations, United Nations, 9 December 2020, <https://news.un.org/es/story/2020/12/1485312#:~:text=En%202019%2C%20el%20aumento%20fue,genera%20en%20unos%20pocos%20pa%C3%ADses>
- "Earth's CO2 Home Page." CO2.Earth, <https://www.co2.earth/>.
- "Forests and Climate Change." IUCN, 17 February 2021, <https://www.iucn.org/resources/issues-briefs/forests-and-climate-change#:~:text=Forests%20are%20a%20stabilising%20force,that%20can%20drive%20sustainable%20growth.&text=Increasing%20and%20maintaining%20forests%20is%20therefore%20an%20essential%20solution%20to%20climate%20change>.
- Lindwall, Courtney. "The IPCC Climate Change Report: Why It Matters to Everyone on the Planet." NRDC, 21 November 2018, www.nrdc.org/stories/ipcc-climate-change-report-why-it-matters-everyone-planet#sec-actions.
- Leahy, Stephen. "Most Countries Aren't Hitting Paris Climate Goals, and Everyone Will Pay the Price." Science, National Geographic, 10 February 2021, www.nationalgeographic.com/science/article/nations-miss-paris-targets-climate-driven-weather-events-cost-billions.
- "News & Features: NOAA Climate.gov." News & Features | NOAA Climate.gov, 14 April 2021, <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>.
- Nunez, Christina. "Global Warming Solutions." Environment, National Geographic, 10 February 2021, www.nationalgeographic.com/environment/article/global-warming-solutions.
- "Per Capita CO2 Emissions." Our World in Data, <https://ourworldindata.org/grapher/co-emissions-per-capita>.
- "Read 'Advancing the Science of Climate Change' at NAP.edu." National Academies Press: OpenBook, www.nap.edu/read/12782/chapter/2.
- Somvichian-Clausen, Austa. "The 10 Countries Most Likely to Survive the Imminent Threats of Climate Change." TheHill, 21 November 2020, <https://thehill.com/changing-america/sustainability/climate-change/526970-the-10-countries-most-likely-to-survive-the#:~:text=What%20they%20found%20is%20that,scarcity%20of%20food%20and%20water>.
- Schiermeier, Quirin. "IPCC Flooded by Criticism." Nature News, Nature Publishing Group, 2 February 2010, <https://www.nature.com/news/2010/100202/full/463596a.html#:~:text=In%20addition%20to%20the%20Himalayan,been%20taken%20out%20of%20context>.

BIBLIOGRAPHY

- “Waste and climate change.” Secretariat of the Pacific Regional Environmental programme, July 2009, https://www.sprep.org/climate_change/PYCC/documents/ccwaste.pdf.
- “What are the hazards of garbage to human life and environment?” Zhuzhai.com, 20 March 2020, <https://m.zhuzhai.com/mip/news/read-26773.html>.
- “What harm and impact will excessive carbon dioxide emissions cause to Earth?” Toutiao.com, 5 June 2020, https://www.toutiao.com/i6834678761883959820/?in_ogs=2&traffic_source=CS1118&utm_source=VV&source=search_tab&utm_medium=wap_search&prevent_activate=1&original_source=2&in_tfs=VV&channel=.
- “Why Is Climate Important?” NCAS, <https://ncas.ac.uk/learn/why-is-climate-important/>.
- “Will Ocean waves be higher in the future? Scientists: more destructive, threatening coastal developing countries.” Baidu.com, 3 January 2019, <https://baijiahao.baidu.com/s?id=1623379457601899870&wfr=spider&for=pc>.

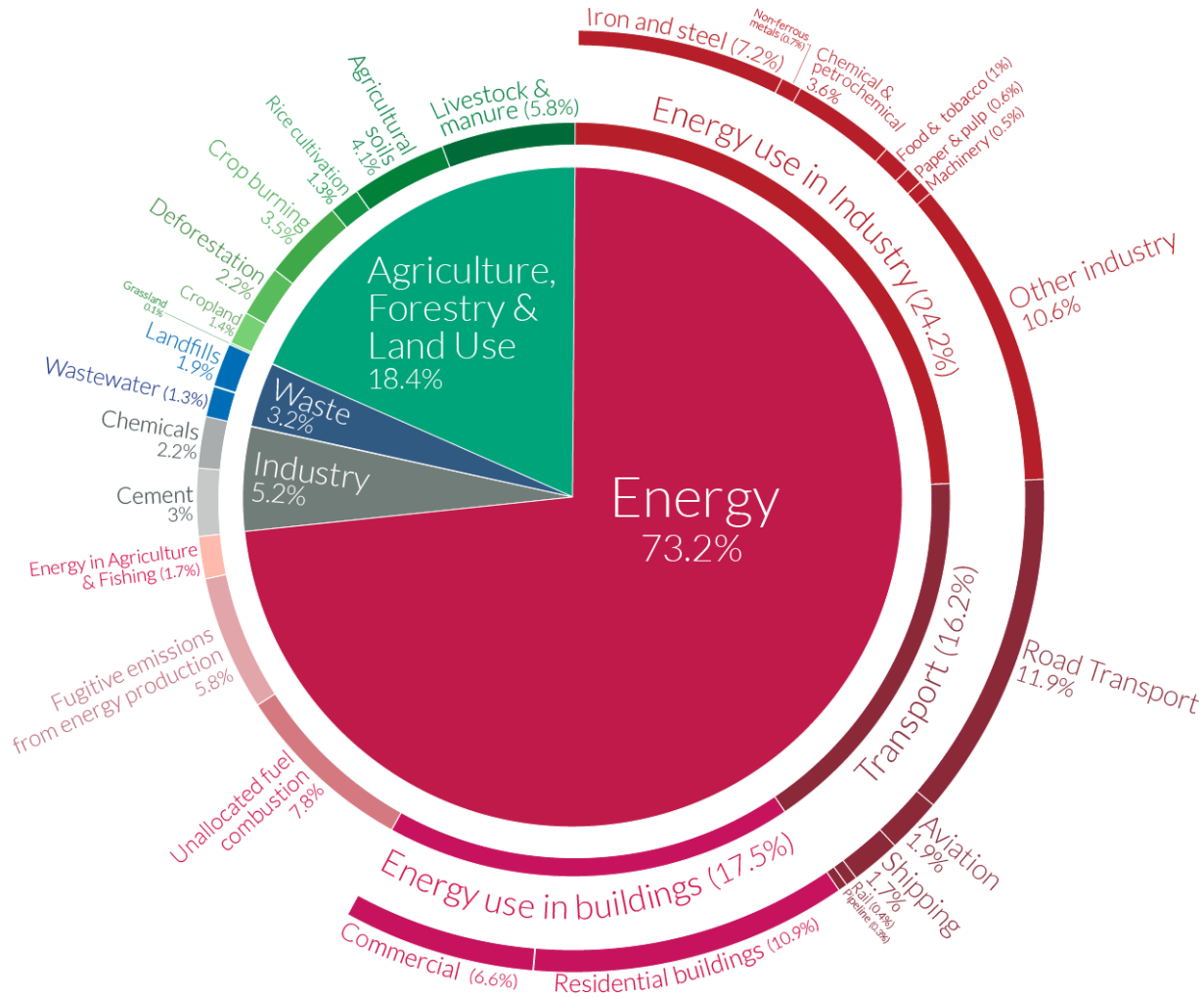
APPENDIX A

Emissions by Sector

Global greenhouse gas emissions by sector

Our World
in Data

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO₂eq.



OurWorldinData.org – Research and data to make progress against the world's largest problems.

Source: Climate Watch, the World Resources Institute (2020).

Licensed under CC-BY by the author Hannah Ritchie (2020).

"Emissions by sector - Our World in Data." <https://ourworldindata.org/emissions-by-sector>. Accessed 22 April 2021.