

## The Climate Is Changing, So Should Malaysia

Many feel that the effects of climate change are detached from their daily lives, perhaps only slightly realising them when walking out in the hot afternoon or counting the number of trips to the ice cream store. However, are the disruptions truly very far from us? 'Couple hangs on for dear life as waters rise in Baling', 'Dengue cases up 40 percent in Malaysia', 'Food prices at highest since November 2011'. These are all headlines of recent news articles that can be commonly spotted and issues that affect the average resident of Malaysia. They are all direct, or indirect results of climate change.

As the law of cause-and-effect states, for every effect, there is a definite cause and likewise, for every cause, there is an effect. This universal law would apply to climate change too. The multitude of issues we face due to climate change can be traced back to its cause, greenhouse gas emissions.

Greenhouse gas is the blanket term for all gases that act like a greenhouse, trapping the sun's heat within the Earth's atmosphere and stopping it from escaping back into space. The main type of greenhouse gas emitted is carbon dioxide. Although greenhouse gases exist naturally, the spike in human activities has increased the concentration of these gases, causing a rise in temperatures and changes in weather patterns.

Within Malaysia, the activities that contributes to the most carbon dioxide emission are energy and heat production and transportation. Referring to Figure 1 below, the major sources of carbon dioxide emission are energy and heat production (39%) and road transportation (21%), all of which are activities related to the energy sector. This pattern shows emphasis that the order of hierarchy for tackling climate change should have implementing changes on the energy sector set as its top priority.

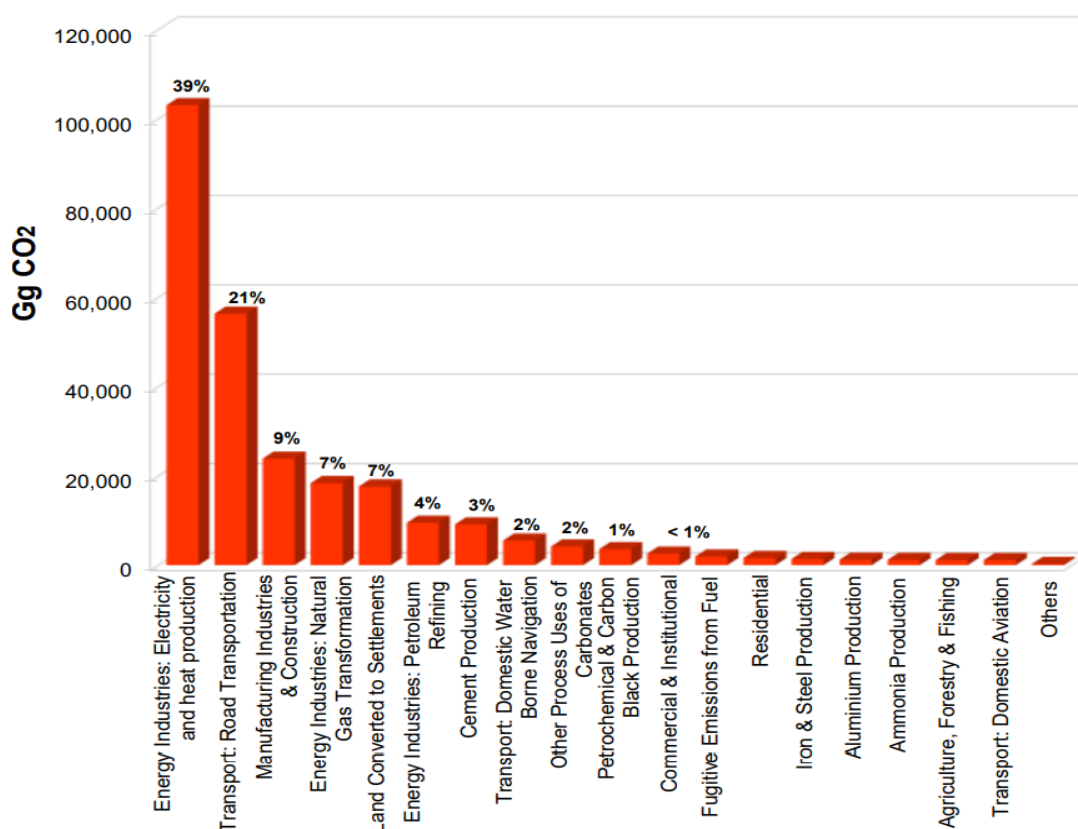


Figure 1: Major source of carbon dioxide in 2016 <sup>1</sup>

<sup>1</sup> Malaysia (2020). Third Biennial Update Report to the UNFCCC. URL: [Malaysia. Biennial update report \(BUR\). BUR 3. | UNFCCC](#)

Irresponsible deforestation is also a major issue that affects Malaysia. From 2001 to 2021, Malaysia lost 8.67 Mha, equivalent 29% decrease in tree cover since 2000<sup>2</sup>. Trees serve as a sink for carbon dioxide, converting carbon dioxide into oxygen during the process of photosynthesis, effectively decreasing the net emissions of carbon dioxide. Consequently, an extra 4.99Gt of carbon dioxide equivalent of greenhouse gases was kept within the atmosphere due to the loss in tree cover since the year 2000.

If the causations of climate change continue to fester and change is not quickly implemented, more dire consequences would heavily impact the Malaysian economy and the welfare of every Malaysian citizen. A prime example would be reduced food security. Food prices have been on a steady rise since the end of 2021, a strong indication being that food inflation has further increased from 4.1% in April 2022 to 5.2% in May 2022<sup>3</sup>. This can be linked to the irregular weather patterns causing a decrease in supply, namely unexpected droughts and floods. If this carries on, not only would domestic prices continue to soar due to low supply, but reliance on external countries for agricultural commodities and thereby, import costs would follow suit. It would also affect Malaysia's agricultural exports, which accounted for a total of \$118.6 billion in the year 2020<sup>4</sup>. If no measures are put in to ease the effects, it could have devastating long-term effects such as galloping inflation and consequently, potential mass hunger.

Flooding, a huge worry of Malaysians, can also be chalked up as the by-product of extreme weather caused by climate change. Although floods have always existed, occurring naturally due to cyclical monsoons, recent abnormally frequent floods have the additional accomplice of climate change behind them. In mid-December of 2021, heavy torrential downpour ravaged Peninsular Malaysia for 3 days, causing flash floods to spring up across the peninsular. The disaster affected around 125,000 people, leaving 54 dead and 2 missing. Many of the affected were trapped within their homes, with many houses having their first floor fully submerged as they await help. The disaster had an overall catastrophic effect and resulted in an overall loss of RM 6.1 billion<sup>5</sup>, equivalent to 0.40% of Malaysia's nominal gross domestic product. Faced with these numbers, we begin to question whether Malaysia can really continue to afford to sustain such losses and whether citizens can bear repeatedly going through such hardships and dangers.

The increasing temperatures could also threaten the economy of Malaysia. For example, as temperatures rise, crops that were once grown in regions suitable to them no longer can withstand the heat and have to 'migrate' into colder regions. This would restructure the land usage and would accelerate the effects if land would have to be deforested for the agriculture sector to relocate. This would further feed into the cycle, repeating and speeding up the process until temperatures once again are no longer suitable. It would also apply to the fishery sector, where higher temperatures would cause fish groups to change their migrating patterns, leaving fishermen with only two choices: to ramp up their costs and follow or be left unemployed. And even so, as water temperatures rise and the environment grows less suitable for fish, the population of fish would fall, leaving the fishermen with low yields and barely making any profits.

To avoid leading down the path described in the above paragraphs, the government should step in and enact policies and measures to prevent them. To tackle 21% of emissions by road transport, a reliable, convenient, interconnect and affordable public transport system needs to be set up. In Malaysia, a country where the 'population' of cars is larger than the population of humans, this is ever so urgent. Although Malaysia has already made steps towards greener transportation, developing a rail system that mostly ticks the conditions above, the public transport system is slightly more lackluster. Specifically, the connectivity between one's home and the closest MRT or LRT station via bus. The bus transportation system, a stark contrast to the MRT system, has a low frequency of departure, and a large gap in between each, some going up to an hour! This discourages many from choosing to use the rail system and even if they did choose to drive and park at their nearest major station to use the rail system, it would have already negated the cause of decreasing the use of vehicles. Every coin must have its flip side and this

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<sup>2</sup> Global Forest watch. Malaysian Deforestation Rate & Statistics. URL: [Malaysia Deforestation Rates & Statistics | GFW \(globalforestwatch.org\)](https://www.globalforestwatch.org/)

<sup>3</sup> Department of Statistics Malaysia (2022). Consumer Price Index Malaysia May 2022. URL: [Department of Statistics Malaysia Official Portal \(dosm.gov.my\)](https://dosm.gov.my/)

<sup>4</sup> Department of Statistics Malaysia (2022). Selected Agricultural Indicators, Malaysia, 2021. URL: [Department of Statistics Malaysia Official Portal \(dosm.gov.my\)](https://dosm.gov.my/)

<sup>5</sup> Department of Statistics Malaysia (2022). Special Report on Impact of Floods in Malaysia 2021. URL: [Department of Statistics Malaysia Official Portal \(dosm.gov.my\)](https://dosm.gov.my/)

solution is no different. High fixed costs must be incurred in the creation and improvement of the bus system as well as emissions during such activities during the short-run, and only in the long-run would the benefits and effectiveness of such a project show.

Another solution to tackle the major emissions from road transportation would be to introduce more environmentally friendly cars than a traditional conventional vehicle, such as hybrid or electrical vehicles. These cars have a significantly lower carbon emission since when they run on electricity, there is zero tailpipe emission. The emissions caused by the car is associated with those produced during the generation of electricity for it, therefore carbon emissions could fluctuate based on the method of electricity generation. This method also has an obvious flaw, being that high sunk costs would be incurred when building the basic infrastructure, the charging ports, around the nation for these cars. This is slightly risky since if few consumers choose to make the swap from conventional to electrical, the infrastructure would be useless. Therefore, it is more ideal to pair up this plan with the supplementary condition of slowly reducing the subsidy leveraged on petroleum prices to encourage the switch.

To manage the 39% of total carbon emission arising from heat and electricity generation, a crucial and unavoidable step would be the restructuring of the energy industry. As can be seen in Figure 2 below, the structure of the energy supply within Malaysia consists of mainly fossil fuels, with renewable energy only making up 7.2% of total energy supply. Renewable energy, such as wind and solar do not produce and carbon dioxide emissions during the generation of electricity and therefore the only carbon emissions that can be associated to them are those incurred when producing the basic infrastructure required. Nevertheless, this change in industry would cause structural unemployment and can only be solved in the long run by retraining workers in the traditional energy sector to shift to green energy. Despite that, this shift in industry would also create more jobs as the sub-sector expands, allowing for an overall expansion of the economy.

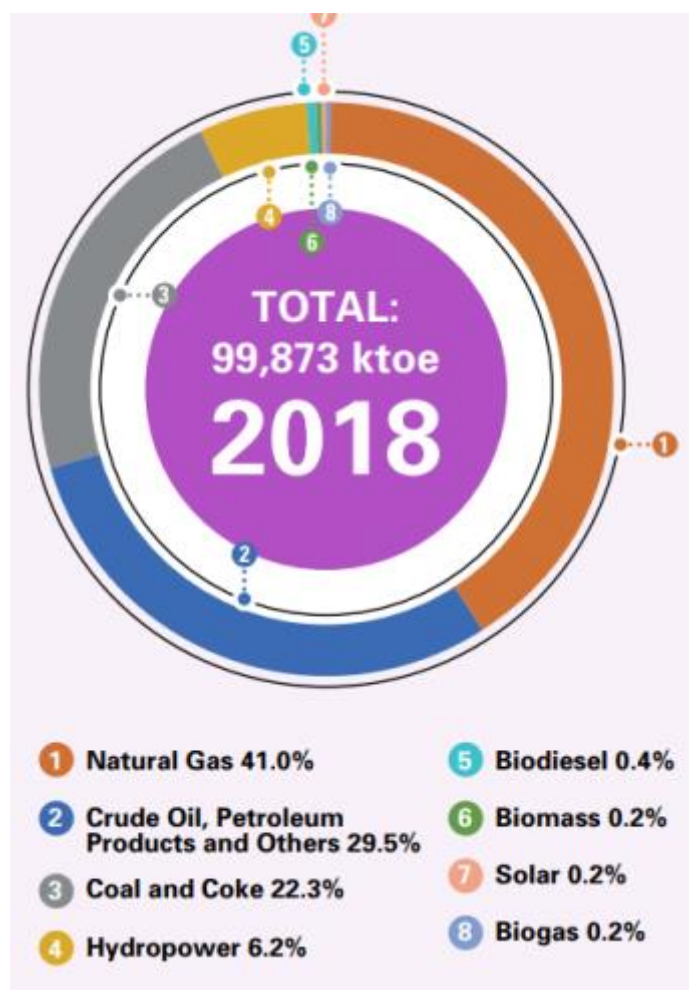


Figure 2: Total Primary Energy Supply by Fuel Type In 2018<sup>6</sup>

<sup>6</sup> Suruhanjaya Tenggaga (Energy Commission) (2021). Malaysia Energy Statistics Handbook 2020. URL: [https://www.st.gov.my/en/contents/files/download/116/Malaysia\\_Energy\\_Statistics\\_Handbook\\_20201.pdf](https://www.st.gov.my/en/contents/files/download/116/Malaysia_Energy_Statistics_Handbook_20201.pdf)

Companies should also be held responsible for the negative impact they cause on society. All projects should be thoroughly checked, and the environmental impact assessed and justified. In addition, to prevent any projects with negative social impact from slipping through the cracks, a 'green audit' should be done by an external party, and the report should return, estimating the impacts and the financial and non-financial benefits that it can reap. Ideally it should be implemented with a complementary policy, green tax alongside for it to have bigger effects. If the project emits or pollutes too much but is highly beneficial and crucial to the economy, some less harmful projects with a higher rate of return should be allowed, but taxation in relation to it, should also be implemented. This would hopefully discourage other projects to try to be greener and more sustainable, to avoid taxation and maintain profits. Although it may slightly impact the economic development in the short run, it would create a more sustainable and greener environment for Malaysia and its future generations.

Sustainable financing should also be ingrained into the financial sector of Malaysia. Sustainable financing refers to the process of taking environment, social and governance considerations when making investment decisions<sup>7</sup>. For example, when choosing to finance a project such as the clearing land for industrial use, it should be factored into account whether clearing the land is the only and most ideal decision, the impact in habitats and emissions after the clearing and whether more greener methods of electricity generation can be used. Such talent should be trained within the country and placed into financial institutions, in congruence with policies that the financial sector should have environmental considerations integrated into their funding, bound by a minimum level of sustainability for each project they fund. However, to motivate firms, tax allowances should be given to such projects that meet a certain standard of sustainability and hopefully firms will be further incentivized to finance and create such projects.

On the whole human activities serve to expand and grow the economy, allowing citizens to have a higher standard of living and welfare. However, it is important to remember that a growth at all cost mindset is dangerous and only seeking to reap fast, short-term benefits could have destructive and irreversible effects. Think; what is the point of a robust and booming economy, if it is always plagued by flood, landslides and high inflation? Such an economy would not be able to remain robust for long, slowly collapsing within with every disaster strike and all the talent fleeing to a safer country. No citizen of Malaysia wishes to be faced with such a depressing future and no government wishes to go down such a path and garner such a result. Therefore, it is crucial to put a stop and make a change, before it is too late to do so. (1910 words, excluding references)

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<sup>7</sup> European Commission. Overview of Sustainable Finance. URL: [Overview of sustainable finance | European Commission \(europa.eu\)](https://ec.europa.eu/europa.eu)