

Carbon dioxide emissions causing global warming

Published in: New Straits Times, Wednesday 13 December 2017

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Source : <https://www.nst.com.my/opinion/columnists/2017/12/313842/carbon-dioxide-emissions-causing-global-warming>

The earth's atmosphere contains important greenhouse gases (GHGs), mainly in the form of water vapour containing small amounts of carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). GHGs function as a thermal blanket for the planet, absorbing heat from the sun and keeping its surface warm (on average 15°C) to support life.

Thus, one of the natural causes of global warming also enables life. However, the current expansion of global warming is a serious environmental issue that may affect humans and other living organisms. It occurs when the earth's atmosphere and surface are gradually heated up because of the presence of trapped thermal infrared radiation that fails to escape into outer space because of the increasing levels of GHGs forming a thick blanket over the earth. This keeps the planet's surface warm, far above what it would be without its atmosphere. This process is also known as the greenhouse effect.

The existence of past global warming does not necessarily suggest that current global warming is natural. Climate scientists have unanimously agreed that the main cause is human activity; this, rather than any natural phenomena, has expanded the greenhouse effects. In the natural environment, methane is the most potent GHG. However, CO₂ is the most significant since it exists in the largest concentration and has a longer lifetime than methane. Recently, human activities have continued to increase CO₂ concentrations and have contributed to the emission of chlorofluorocarbons (CFCs), which have heat-trapping potential a thousand times greater than CO₂.

CFCs have been banned in most parts of the world because they degrade the earth's ozone layer. However, since their concentrations are much lower than CO₂, they do not add as much warmth to the atmosphere.

It is clear that high concentrations of CO₂ emissions are the main cause of global warming leading to climate change. Where do CO₂ emissions originate from? They are mainly caused by the energy-driven consumption of fossil fuels. According to the United States Environmental Protection Agency, CO₂ emissions mainly originate from electricity production (25 per cent), industry (21 per cent), transportation (14 per cent), commercial and residential buildings (six per cent), sum of agricultural activities, land use and forestry (24 per cent), and other energy uses (10 per cent).

A large proportion of CO₂ emissions come from electricity generation, followed by the sum of agricultural activities, land use and forestry. Both sectors — energy production and agriculture — contribute up to half of all global GHG emissions that could lead to global warming and climate change. Moreover, most CO₂ emissions from burning fossil fuels stem from electricity production, industry, transportation,

and commercial and residential buildings, which together make up 66 per cent of global CO2 emissions.

The world, therefore, is in dire need of clean and efficient energy to curb the impact of climate change. The transition from fossil fuels to renewable energies, for example, could be the best measure to reduce the greenhouse effect and, at the same time, reduce the impact of climate change. With proper energy and waste management, these clean energies are safe from hazardous elements, economical, and have a stable market price potential and social benefits.

One example of clean energy is solar photovoltaic power, a system that converts sunlight directly into electricity. Solar energy radiates infinitely from the sun; it is clean, free, natural and has zero carbon emissions. It is considered by many as a future energy resource and alternative to fossil fuels. In terms of social benefits, solar energy industries have offered jobs to people in European Union countries, China, Japan, the United States and Malaysia.

Since the climate issue is a shared responsibility of the whole of humanity, Muslim scholars from around the world have made their position clear in the 2015 Islamic Declaration on Climate Change during the Islamic Climate Change Symposium in Istanbul.

The declaration began by calling on policymakers responsible for crafting the comprehensive climate agreement adopted in Paris to come to “an equitable and binding conclusion”. It then asked people and leaders from all countries to commit to 100 per cent renewable energy and net zero emissions as soon as possible and to recognise that unlimited economic growth is not a viable option.

Furthermore, the transition from conventional power resources to renewable energy was highlighted as fundamental to Islamic-based sustainable development, as the protection of life (*hifz al-nafs*) and the protection of the environment (*hifz al-bi'ah*) are predicated upon the assumption that they offer a balance between economic and social development and the environment.

This is also in line with the Quranic principle of building the earth (*i'mar al-ard*) and also the hadith that states: “The world is green and pleasant, and God has put it under your charge to see how you will manage.”

Since the world is facing a dire climate issue and humanity is experiencing a progressive shortage of energy, generating renewable and safe energy from natural resources such as the sun is highly recommended from the Islamic point of view.

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