As temperatures rise, tropical forests absorb less CO₂

A just-released study led by NASA indicates that rising global temperatures are linked to a decrease in carbon dioxide (CO₂) absorption by tropical forests. Conducted with Australia’s Commonwealth Scientific and Industrial Research Organisation (CSIRO), the 60-year study builds on past research that showed that greenhouse gases, such as CO₂, contribute to global warming, and that the forests are one of the most significant terrestrial carbon sinks, absorbing vast quantities of CO₂ from the atmosphere.

The researchers analyzed data on global CO₂ concentration and climate variability between 1958 and 2011. This includes 80 years of data collected using high-resolution infrared instruments above canopy temperatures, high temperatures and lower carbon sinks. They found that while tropical forests are efficient carbon sinks, they perform less well when temperatures rise. A tropical land surface temperature rise of one degree Celsius resulted in an average additional 1.6 billion tonnes of CO₂ being released into the atmosphere per year.

The finding, together with similar ones in recent years focusing on trees, oceans and grasslands, points to the likelihood that continued global warming will lead to more of the CO₂ now sequestered in the world’s plants and oceans to remain in the atmosphere. This will exacerbate our own emissions of the gas, and therefore will make human-caused climate change a bit worse than it would otherwise have been.

The new energy future: A golden age for gas

In a future where the world population may reach 9 billion by 2050 and global energy demand is rising rapidly, a range of different types of resources will be needed to sustainably meet energy demand. Neil Gielen (VP Development for Shell’s Integrated Gas Business) will explain why Shell is so confident that gas will play a key role in the global energy mix, and why it plays such an important part in Shell’s strategy. He will cover how technology innovations and investments impact the gas industry and its competitiveness, giving examples of how innovation helps bring more energy to market and enhances the environmental footprint and impact of the natural gas supply chain.

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**Environmental Policies**

Mr Chen Sheng Renkew, Programme Director, National Environmental Agency, Singapore

Dr Yoshinori Kurokawa, Japan Environment Minister, Japan

Mr Masuda Ei Watanabe, Senior Corporate Advisor, Tokyo Electric Power Company, Japan

Sustainable Energy

Mr Chen Hong Tey, Director, Singapore, Shell Energy Solutions

Mr Ben Gunneberg, Secretary-General of the Programme for the Endowment of Forest Certification (PEFC), the world’s largest forest certification system. As an umbrella organization, PEFC works by endorsing national forest certification systems developed through multi-stakeholder processes and tailored to local priorities and conditions. How does forest certification help to mitigate the effects of climate change?

Sustainable forest management as an important climate change mitigation and adaptation strategy has the potential to contribute to tackling the challenges of climate change. Forest certification systems such as PEFC that are based on third-party verification, independent accreditation, good governance, and transparency provide the necessary qualitative and quantitative assurances that any measures are delivering sustainable forestry on the ground.

With more than 25% of the world’s roundwood production certified, sustainable forest management through forest certification can be best promoted by overcoming challenges on both the demand and supply sides. On the one hand, forest stakeholders need to collaborate to create and strengthen foundations on the ground that enable the development and expansion of national forest certification systems. On the other hand, actors along the timber supply chain need to work together to better communicate and market the advantages of wood and wood-based products and the particular benefits that certification as an assurance mechanism provides.

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