Malaysian carbon tax could pave way to renewable energy future

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The researchers found that, with no action, damages from rising carbon emissions could top US$9 trillion. Credit: Chee Siong Teh

If Malaysia doesn't take action to control its carbon emissions through a carbon tax, the damage caused by climate change over a 95-year period

could cost the country more than 40 trillion Malaysian ringgits (US$9.1 trillion).

Temperatures in Malaysia are projected to rise between 0.8°C and 3.1°C by 2100. This rapid temperature rise and the resulting climate changes could degrade natural resources, damage infrastructure and threaten human health.

Researchers at the University of Malaya and Universiti Teknologi Malaysia analysed the costs of climate damage in Malaysia from 2010 to 2105 under two scenarios. In the first forecast, Malaysia takes no significant steps to control carbon emissions. In the second, the government gradually implements a tax on carbon emissions to help the country transition to renewable energy.

The team used a combination of data sources and climate modelling to conduct the analysis. They found that, with no action, damages from rising carbon emissions could top US$9 trillion.

The team then analysed what would happen if the government gradually implemented a carbon tax, starting at 145 Malaysian ringgits (MYR)/ton (or about US$33/ton) of CO2 in 2015, increasing to MYR249/ton in 2040 and then to MYR855/ton in 2060.

Assuming that industries respond to the tax by moving away from fossil fuels, the team found that this would keep carbon levels in the atmosphere at 685 parts per million and limit temperature rises to 2.5°C by 2100. (In 2014, the average annual level of CO2 in the atmosphere was about 399 parts per million.) While the cost of climatic damages would still continue to rise and peak in 2095, they are projected to fall sharply afterwards.

According to the study, the cumulative cost of climatic damage over the

95-year period could reach MYR$40.1 trillion. This amount can be reduced to MYR5.3 trillion, which could be recovered from carbon tax revenues amounting to MYR9.5 trillion over the same time period. Also, the accumulated surplus of MYR$4.2 trillion could be used to finance the development of environment-friendly technologies to replace fossil fuels.

While the research team notes long-range forecasts must continually be updated to improve accuracy, they say they are confident that "the optimal climate change policy examined in this study will eventually provide savings and at the same time substantially reduce the impact of climate damage in the long run."

Provided by University of Malaya

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