

Executive Summary

The issue of climate change continues to be on the global agenda, despite the rising concerns about energy security and hikes in energy prices. Governments are strengthening policies to achieve their goal of reducing greenhouse and CO₂ emissions to net zero, which will contain global warming below 1.5 or 2 degrees. Southeast Asia is not an exception and its action needs to accelerate. Policymakers must carefully craft various policy instruments to full the climate policy goal, considering which instrument to use in what order and when. Decarbonisation entails a significant change in all aspects of society and the economy, and policies need to consider the reactions of various stakeholders. It would be helpful to examine the public perceptions of various policies and technological options and their willingness-to-pay (WTP) for new policies. If the cost of decarbonisation exceeds that of the WTP, the public may start to oppose such policy measures.

This report presents the results of a survey study on public perceptions and WTP for renewables and other climate-related technologies in Southeast Asia. The paper first presents the findings of this year's surveys in Indonesia and Malaysia. It then combines it with the findings of our previous works and synthesizes the perceptions and WTP values in various countries in the Association of Southeast Asian Nations (ASEAN). In the following, we summarise the combined results from all the countries.

In all the surveys, the public is consistently concerned about climate change but not always thinking of climate change directly. For example, when asked about the most pressing environmental concerns, the respondents chose issues such as global warming, air pollution, flooding, etc. Flooding could be increasing because of climate change. In addition, air pollution is related to fossil fuel combustion.

Amongst the renewable options, our series of surveys demonstrated that solar PV is considered the most environmentally friendly, except in Indonesia, where hydropower is viewed very positively. The perceived environmental friendliness is associated with the knowledge of technologies in all countries, where solar PV is the most well-known except in Indonesia. More importantly, the perceived environmental friendliness of other technologies, and in particular, bioenergy, was not on par with that of solar. This year's survey experiment

with different information about renewables shows that tailoring information could help improve the perceptions of renewables, including that of bioenergy.

The WTP values for increasing the share of renewable energy to 40% were positive except for a few cases. Although it varies by technology and country, there is a general pattern in the WTP values: the WTP for solar is generally the highest, as is the perception of environmental friendliness. The WTP for solar ranged from a minimum of -0.4% (for Indonesia in 2022) to a maximum of 25.1% (for Lao PDR in 2020). As with the perception of environmental friendliness, WTP for biomass was generally low, with the lowest in all countries except Mandalay, the Philippines, and Indonesia. The WTP for biomass ranged from a minimum of -2.7% (for Indonesia in 2022) to a maximum of 14.2% (for Lao PDR in 2020). Wind and mini hydro (also called mini-hydropower or small-scale hydropower) took intermediate values in most countries. The WTP for wind ranged from a minimum of -3.5% (for Indonesia in 2022) to a maximum of 16.5% (for Lao PDR in 2020). The WTP for mini hydro ranged from a minimum of 2.7% (for Thailand in 2021) to a maximum of 23.3% (for Lao PDR in 2020). Note that the negative values are found for all RE in Indonesia and biomass in Malaysia. The reason for the negative WTP may include special factors, such as the fact that the coronavirus pandemic is now in its third year, and electricity and fuel prices are rising due to trends in the international market.

The respondents are unaware of carbon dioxide removal (CDR, or carbon removal), which ranges from tree-planting to chemical engineering absorption to enhanced weathering through spraying crushed rocks. The respondents agreed with the possible benefits and risks of CDR, including its ability to 'buy time' for more climate change mitigation and negative side effects on the environment. The degree of agreement varied from one country to another, and a more fine-grained study is warranted in light of the necessity of CDR worldwide to get to net-zero targets.

Given the differing WTP for different renewable types, the sequence of introduction of different types of renewables and the ASEAN-wide grid connection should be carefully considered. For instance, the public might better accept grid connection if it is explained to increase solar PV, at least in the short run. Also, abundant solar resources might allow for a focus on it and possibly even for exports if there's a surplus electricity generation.

Nonetheless, the respondents in all the surveyed countries suffered from income losses due to the coronavirus disease 2019 pandemic. This year especially saw a double effect of the Ukrainian crisis and inflation. In particular, households are increasingly worried about inflation. The respondents this year reported negative WTP values, indicating a preference for the current condition. That implies policymakers should be cautious about renewable measures in the short run.