Policy Brief

# Strengthening Economic Instruments for Climate Policymaking in Malaysia

Institute of Strategic and International Studies (ISIS) Malaysia

## Summary

**Economic instruments have the potential to act as powerful policy levers to influence behaviour and institute change towards the achievement of desired outcomes, most often by altering monetary incentives**. These instruments come in various forms, each achieving economic efficiencies to varying degrees.

As this brief shows, **many of Malaysia's existing instruments for climate change mitigation are 'second-best instruments'**, meaning they engender some degree of climate and environmental benefit, but do not fully address market failures such as the negative externality costs of greenhouse gas emissions, or the undervaluation of ecosystem services. For adaptation, the use of economic instruments has been found to be even more limited; much of the emphasis has been placed on post-disaster relief efforts.

**This situation is changing with the government recently announcing a focus on potentially 'first-best instruments' for climate change**, including Carbon Pricing Instruments (CPIs), Ecological Fiscal Transfer (EFT) and Payments for Ecosystem Services (PES).

**While prospective instruments offer promise, effectiveness will depend on design and implementation.** In general, this includes setting clear climate and environmental outcomes rather than focusing on economic bottom-lines as well as addressing the overall ecosystem holistically, including ending perverse incentives such as fossil fuel subsidies and enhancing governance by addressing rent-seeking and corruption practices that may otherwise distort markets.

**For carbon pricing to be effective, accurate, long-term price signals (through a tax) or quantity limits (absolute emission caps for trading schemes) must be set**. Additionally, any revenues should be earmarked to support further climate-related initiatives and reducing additional cost burdens imposed on lower-income subgroups, as opposed to being used for general government spending.

**The implementation of Ecological Fiscal Transfers and Payments for Ecosystem Services will need to consider state-level interests**. As natural resources are constitutionally a state matter, these instruments will be influenced by a bargaining process between state and federal levels of governance.

**Ultimately, to ensure instruments such as PES are viable, the benefits needs to be equal to or greater than alternatives.** This includes addressing any leakages and distortion of the market through rent-seeking and corruption practices**.**

*This policy brief is based on a detailed technical report prepared by the Institute of Strategic and International Studies and supported by the South Asia Research Hub, Foreign, Commonwealth, and Development Office, and the British High Commission, Kuala Lumpur, entitled 'Economic Instruments for Climate Policymaking in Malaysia'.*

## Introduction

The need to ensure sustainable development was firmly established in the late 1980s with the Brundtland Report (World Commission on Environment and Development, 1987) recommending the use of market-based mechanisms to support environmental sustainability. By the 2000s, this culminated in the wider use of economic instruments, most often taxes, designed to address climate and environmental issues while ensuring the active, associated development of synergies between environment and economy. This was in contrast to approaches of the past which relied heavily on the use of regulatory tools and laws to protect the environment, often at explicit economic cost.

**In Malaysia, the first economic instruments to support climate action were introduced in the late-2000s**. This was partly a response to the increasing manifestation of climate change through rising temperatures and regular patterns of extreme weather, but largely driven by the economic opportunities of venturing into green technology. **These instruments** have not taken the same form as the environmental taxes seen in the West; they were more often 'softer' tools that did not seek to internalise the externality costs of greenhouse gas emissions, but instead **have the objectives of boosting economic growth in low-carbon sectors such as renewable energy (RE) and energy efficiency (EE)**.

Today, addressing the issue of climate change is a global priority. It is increasingly important that steps are taken to design and implement policy instruments which address its root causes and enhance resilience to its consequences. Against this backdrop, **this policy brief[1] seeks to overview Malaysia's use of economic instruments, emphasising paths forward for the country as it seeks to enhance its use of such instruments to mutually benefit both environment and economy**.

## Economic Instruments and Their Use in Malaysia

Economic instruments are a subset of broad range of policy instruments, which have the **common objective of influencing behaviour and instituting change towards the achievement of desired outcomes**. Within the territory of economic instruments is a spectrum of tools, market- and non-market-based, all with the common effect of influencing monetary incentives in the pursuit of 'positive' behavioural change. Not all economic instruments are equal in terms of their ability to maximise economic efficiencies, and herein lies the difference between 'first-best' economic instruments, and others.

**First-best instruments correct for market failures**. In the context of mitigation, climate change is theoretically and fundamentally an issue of an oversupply of a negative externality (GHG emissions) and subsequent overexploitation of a public good (the atmosphere). For this reason, **only instruments involving the appropriate pricing of carbon, which internalises the externality cost of emissions and drives total emissions down to an 'optimal' level, are considered 'first-best' mitigation instruments**.

Other policy instruments are 'second-best'; they may, to a degree, address the market failures, but do not do so at sufficiently large a scale. Examples include support for low-carbon technology, whether direct or indirect, which can serve to mitigate emissions, though not force the internalisation of the emissions externality nor drive down absolute emissions to an economically-optimum level[2].

**The Twelfth Malaysia Plan (12MP)**, in establishing national development priorities for the five-year period through 2025, **has indicated an explicit focus on enhancing the use of economic instruments for environmental policy**. It cites options such as carbon pricing instruments (CPIs) – including emissions trading and carbon taxation – alongside payments for ecosystem services (PES), ecological fiscal transfers, and others (EPU, 2021).

**If appropriately designed, such tools can address the market failures of climate change mitigation[3] and address issues constraining further adaptation action**. This would mark a shift in Malaysia's approach towards

[1] This policy note is based on a longer-form Technical Report assessing Malaysia's use of economic instruments to support climate policymaking.
[2] An economically-optimal level of GHG emissions, in this context, would entail fossil fuel consumption at a level that allows for a balance between its benefits, for instance in terms of impacts on employment, economic output and growth, and other such variables, against its climate and environmental costs.
[3] This refers to the unpriced externality costs of GHG emissions and the 'public good' nature of the atmosphere.

the use of economic instruments, which have historically leaned heavily on the use of 'second-best' instruments which indirectly benefit mitigation action. On the side of adaptation, traditional economic instruments have been entirely absent; most instruments are aid-based, used to support post-disaster recovery efforts. These instruments, listed chronologically and in accordance to their type, are presented in the Appendix.

## Findings: Malaysia's Use of Climate Economic Instruments

**Malaysia has either implemented or is in the process of implementing 17 sets of policy instruments designed to support climate change mitigation and adaptation**; of this, only 12 can be classified as economic instruments because of their price- and market-related effects. Each of these economic instruments have had varied effects on indicators of low-carbon development, including installed RE capacity, the energy and GHG intensity of GDP, green investment and job creation, and others. **Much of the past emphasis has been on RE and EE, through technological support instruments such as the feed-in tariff, large-scale solar, and net energy metering, and financial instruments such as the Green Technology Financing Scheme (GTFS), Green Investment Tax Allowance (GITA), and Green Investment Tax Exemption (GITE)**.

These instruments have overseen the deployment of over 3.7GW of installed RE capacity, accounting for 47% of Malaysia's 2025 RE target of just over 7.8GW. Some instruments have been more successful than others on this basis; the LSS has seen the award of contracts amounting to 2,625MW of installed capacity, while the FiT and NEM contribute 574MW and 514MW respectively. Common constraints and challenges have been identified across these instruments, the most prominent being insufficient funding and access to financing. Another challenge has been a lack of project diversity beyond RE and EE. For instance, the GITA saw the approval of 523 projects between 2016 and 2020; 445 of these were RE-related, and 426 specifically on solar. This has culminated in a very narrow focus across Malaysia's climate economic instruments, partly driven by the hesitancy or lack of capacity among financial institutions to assess more nascent, untested technologies.

**A broader shortcoming is that none of the implemented instruments can be considered 'first-best' economic instruments**. None seek to internalise the externality costs of GHG emissions, nor do they seek to value the conservation of biodiversity, ecosystems, and natural resources. **In focusing specifically on the provision of monetary incentives, these tools have prioritised the development of low-carbon industries by stimulating their production and deployment**, at times ahead of engendering positive behavioural changes and climate impacts. The upshot is that these second-best instruments address climate change in a more indirect, piecemeal manner than would be the case in the presence of instruments which address the market failures more directly and holistically.

## Way Forward: First-Best Economic Instruments for Climate Change

On the side of mitigation, carbon pricing can make a marked difference to the economic instrument landscape in Malaysia. The 12MP announced the conduct of a feasibility study aimed at assessing the various options for CPI implementation, likely to culminate in a national policy on carbon pricing which informing either an emissions trading scheme, carbon tax, or hybrid system featuring the adoption of both instruments. As a result, the design of CPIs is of significant importance; a well-designed instrument (or set of instruments) would allow Malaysia to take steps towards internalising the externality costs of emissions across a broad range of sectors and low-carbon applications beyond just the deployment of RE and EE.

On the side of adaptation, the 12MP cites that EFTs and PES 'will be implemented to ensure the sustainability of ecosystem services'. At present, however, EFTs do not have specific targets, meaning performance-based indicators must be developed for monitoring and evaluation, and used as criteria for fund disbursement. To ensure their financial viability, EFTs need to be at least as financially attractive as alternative practices of nonconservation, including logging, land-clearing, and others. With regard to PES, enabling institutions and legal frameworks need to be established, alongside the recognition of property rights and formalised contracts. Conflicts also need to be addressed prior to their implementation; many ecosystem services are presently not valued in GDP and other national accounting measures. For instance, water tariffs are subsidised, which serves to disincentivise water conservation and distorts its true market price. Ultimately, the integration of these tools into adaptation and

disaster-risk reduction efforts can play a role unlocking the requisite financing and set the appropriate incentives to support adaptation and conservation objectives moving forward.

**CPIs, EFTs, and PES, therefore, have the potential to meet the definition of 'first-best' economic instruments, and more detailed requirements to ensure their effectiveness and efficacy are presented in Tables 2 and 3 of the Policy Recommendations.**

## Policy Recommendations

This study culminated in the development of policy recommendations at the instrument-level, applicable to both existing and prospective instruments announced in the 12MP to be under consideration. In addition, ten broad-based recommendations have also been developed which seek to address the common issues found across Malaysia's use of economic instruments to support its climate-related initiatives. The majority of these relate to instrument design and implementation, and are listed in Table 2. A more detailed discussion of these recommendations can be found in the Technical Report.

Table 1: Improving Climate Economic Instruments in Malaysia

| # | Recommendations | Proposed Actors |
|---|---|---|
| 1 | **Shift to an ecology- and science-based rationale in policymaking**<br>- Utilising a stronger scientific basis for the formulation of climate economic instruments would allow for better, concurrent achievement of climate and economic efficiencies | Government<br>Whole-of-Society |
| 2 | **Catalyse a top-down approach through strong policies and political will**<br>- As a cross-cutting issue, there are benefits to the centralised championing and coordination of climate instruments | Government |
| 3 | **Develop instruments for climate change adaptation**<br>- At present, few instruments address climate change adaptation – yet given projections of climate impacts and losses and damages already accrued, greater emphasis is needed on enhancing Malaysia's adaptive capacity | Government<br>Financial Sector<br>Industry<br>NGOs |
| 4 | **Develop databases on value of ecosystem services and social cost of carbon**<br>- Assigning science-based monetary values to the value of ecosystem services and the costs of emissions would allow for the fuller internalisation of the externality costs. | Government<br>Academia<br>International Support |
| 5 | **Formulate first-best instruments with large, direct market effects**<br>- The effectiveness of economic instruments is dependent on the extent of their price and/or market effects in the pursuit of positive behavioural changes and climate outcomes. Adopting a science-based approach to climate policymaking would set the basis for the adoption of more impactful first-best economic instruments. | Government<br>Academia |
| 6 | **Formulate 'hard' instruments to complement incentive-based tools**<br>- The effectiveness of incentive-based instruments can be enhanced by complementary policies, including carbon pricing, but also 'hard' instruments such as laws and regulations. | |
| 7 | **Adopt a holistic approach to climate policymaking**<br>- The effectiveness of instruments can be constrained by conflicting instruments, policies, or practices, as well as a limited focus. | Government |
| 8 | **Obtain stakeholder buy-in through extensive engagement**<br>- Largely due to the fact that natural resources fall under the jurisdiction of state authorities, extensive engagement between state and federal actors are required in the development of conservation and carbon pricing instruments. | Federal and State Government<br>Industry |
| 9 | **Gradually adjust the scope of instruments to meet environmental and economic efficiencies and objectives**<br>- While the scope of climate instruments might be limited for economic, political, and other reasons, it is important that these instruments are clearly aligned to specific climate or environmental targets. | Government |
| 10 | **Set prices and/or quantities (objectives) at appropriate scales to internalise externalities**<br>- Economic instruments have the potential to provide strong business cases for climate action and environmental conservation through competitive and accurate price signals. Ultimately, the objective should be | |

As highlighted in the previous section, the success and failure of economic instruments depend upon their design and implementation. For this reason, it is important that the prospective instruments are carefully designed, taking into account best international practices as well as the domestic context. This section presents guidelines for prospective tools to support climate change mitigation (CPIs and carbon trading and offset mechanisms) and adaptation (EFT, PES, and climate adaptation financing) in Malaysia, with the objective of ensuring these economic instruments live up to their theoretical potential to be 'first-best' responses to the issue of climate change.

CPIs are commonly-used internationally as a means to mitigating climate change and forcing the internalisation of the emissions externality. As of 2021, 65 carbon pricing instruments had been implemented globally, covering 45 national and 34 subnational jurisdictions (World Bank, 2021). **Its efficacy and efficiency are dependent to a large degree on design and implementation**. In terms of their design, several factors are of importance. These include the price of carbon (typically for tax systems); the establishment of emissions caps (for emissions trading systems); the scope of CPIS; and transparency and equity in the recycling of revenues.

While the price of carbon is likely to be influenced by economic and political considerations, it must be informed by the social cost of carbon (SCC). This is a measure of the economic costs of each incremental ton of $CO_2$-equivalent emitted, and only pricing carbon at the SCC would allow for the full internalisation of the externality costs of emissions. Given the economic and political challenges with the implementation of a high carbon price, a proposed workaround is to implement a carbon price which increases gradually over time. Defining this schedule ahead of time is beneficial as it allows for better long-term planning across both public and private sectors, and gives firms time to become familiar with operating in the presence of a carbon price. Meanwhile, if the intention is to employ an emissions trading scheme, consideration must also be given to establishing absolute emissions caps. This can be a challenge in the absence of absolute emissions targets; in Malaysia, targets are set for reductions in the emissions intensity of GDP. Emissions caps for an ETS would have to be extrapolated from these targets, preferably at sectoral levels, and a schedule for absolute reductions would need to be applied to each sector under the coverage of an ETS.

With regard to instrument scope, fully addressing the climate change market failure further requires that CPIs be applied to all sectors across the economy evenly, but, as with the optimal pricing of carbon, economic and political considerations may make this impractical in the short-term. A workaround in this regard is to apply CPIs first to sectors which contribute significantly to national emissions and for which low-carbon technologies exist to replace high-carbon incumbents, before expanding these instruments economy-wide. Finally, consideration must be put into ensuring transparency and equity in the recycling of carbon pricing revenues[4]. In part, this can alleviate some of the political challenges associated with the implementation of, essentially, a tax on emissions, which will likely have knock-on effects on costs of living. Mandating that a specific proportion of revenues be catered towards carbon dividends or rebates would alleviate some of the additional cost burdens faced by lower-income subgroups, while it is common internationally for revenues to also be used to support further climate-related initiatives. In Malaysia, this can come in the form of enhancing financial support for its other economic instruments aimed at driving the growth of low-carbon industries.

With these considerations in mind, Table 3 presents policy recommendations for Malaysia's use of CPIs, in accordance to three themes: knowledge and capacity; a legal and policy framework; and instrument design.

[4] This can be done, for instance, by ensuring carbon pricing revenues are collected in a specified revenue pool, with stipulations that a portion of these revenues be used to compensate lower-income households for any cost of living increases resulting from the imposition of a CPI.

Table 2: Policy Recommendations for Prospective Mitigation Instruments

| Theme | Recommendations | Proposed Actors |
|---|---|---|
| **Knowledge and Capacity Building** | Develop public awareness of carbon pricing and its merits from the perspective of economic efficiency and impacts towards climate change | Academia<br>NGOs<br>International Support |
| | Conduct studies assessing the potential impacts of CPIs on socioeconomic variables, and develop strategies to manage adverse impacts through transitional support mechanisms | |
| | Facilitate development of MRV capacities, emphasising the need for comprehensive emissions reporting, applicable for carbon pricing and credit-and-trading mechanisms<br>• Extend capacity-building support for monitoring and reporting of emissions across SMEs and MSMEs;<br>• Expand capabilities of listed (and other large) corporations to report Scope 1, 2, and 3 emissions;<br>• Develop a robust emissions verification ecosystem | Government<br>Academia<br>Industry<br>NGOs<br>International Support |
| | Establish a domestic social cost of carbon, based on projections of emissions, climate damages, economic growth, and other relevant variables | Government<br>Academia<br>International Support |
| | Pilot an internal shadow carbon pricing programme to enhance familiarity with CPIs | Government<br>Industry |
| **Legal and Policy Framework** | Develop laws governing emissions reporting, to complement the development of a national carbon pricing policy | Government<br>Regulatory Bodies |
| | Develop a national policy on carbon trading/credits | |
| | Establish a policy on the status of voluntary carbon markets after the establishment of a domestic emissions trading scheme | |
| **Instrument Design and Implementation** | Establish a domestic carbon price schedule, taking into account the SCC; NDCs and other climate commitments; economic and political feasibility; need for a gradually-increasing carbon price | Government<br>*(with support)* |
| | Establish a schedule for sectoral-level absolute emissions caps to support the development of the DETS, based on Malaysia's NDC and long-term net-zero aspirations | |
| | Establish the intended scope of CPIs, whether CT or DETS, including developing an understanding of how various CPI options best suit certain sectors | |
| | Develop a framework for the transparent redistribution of carbon pricing revenues, including:<br>• Earmarking revenue for reinvestment into climate-related initiatives including funding for economic instruments;<br>• Provision of compensatory rebates or dividends to low-income households and vulnerable industries to support low-carbon transition efforts | |
| | Develop a plan for the rationalisation of fossil fuel subsidies to minimise conflicts between CPIs and fossil fuel subsidy programmes, while ensuring protection of the interests of vulnerable/low-income households | |
| | Develop a fair-share contribution for each state based on terrestrial or marine area/carbon pool capacity, to support carbon trading and offset mechanisms | Federal and<br>State Governments<br>*(with support)* |

Recommendations are also developed focusing on economic instruments to support natural resource management, such as EFTs and PES, which can provide co-benefits across mitigation, adaptation, and biodiversity. EFTs transfer public revenues between and across federal and state governments based on ecological indicators. In Malaysia, the aim is to develop EFTs which incentivise state governments to conserve Protected Areas. While EFTs have the potential to address funding gaps for conservation, these have yet to be institutionalised. PES, meanwhile, encapsulates a variety of arrangements through which environmental service providers are paid for services rendered through use of land and the resources within. The 12MP aims for the establishment of pricing mechanisms commensurate with the benefits and costs incurred from these services.

Finally, there remains a need for greater adaptation and disaster-risk financing in Malaysia, catered towards managing post-disaster liabilities through transfer mechanisms. Challenges here remain steep, with Malaysia yet to conduct comprehensive climate risk assessments which can better inform the appropriate development of a wide range of climate economic instruments catered towards both mitigation and adaptation efforts. Recommendations for these instruments are provided in Table 3.

Table 3: Policy Recommendations for Prospective Instruments for Co-Benefits and Adaptation

| Theme | Recommendations | Proposed Actors |
|---|---|---|
| **Knowledge and Capacity Building** | Conduct evaluations of the value of ecosystem services nationally and develop the scientific and economic bases for implementation | Government<br>Academia<br>Financial Institutions<br>International Support |
| | Undertake feasibility studies for the implementation of new taxes and surcharges to guide development in vulnerable and high-risk areas | |
| | Develop a database to analyse, collect, and manage disaster and climate risk-related data as a basis for evidence-based risk financing strategies | Government<br>Academia<br>Industry |
| | Conduct long-term climate-risk assessments for vulnerable sectors, such as energy and healthcare, in Malaysia to better understand climate change costs | Government<br>Academia<br>International Support |
| | Undertake feasibility studies evaluating the potential of water pricing schemes across water-stressed river basins | |
| | Establish a model PES project to showcase multi-stakeholder partnerships and demonstrate business cases, including opportunity costs of land-clearing/natural resource extraction against PES scheme | State and Federal Governments<br>Academia<br>Industry<br>NGOs |
| **Legal and Policy Framework** | Develop a legal structure and regulatory framework for EFTs including grants disbursement methods, performance evaluations, and monitoring and reporting to ensure accountability, transparency, and delivery of desired/optimal outcomes | Government<br>Regulatory Bodies |
| | Develop guidelines for PES, including establishing a legal framework and property rights, enabling institutions, and governance structure | |
| | Formulate a disaster risk financing strategy, including market-based instruments, as part of broader adaptation and disaster risk management strategies | |
| | Formulate a domestic regulatory framework on loss-and-damage related to natural hazards and extreme weather events | |
| **Instrument Design and** | Develop ecological indicators and criteria for EFTs to determine EFT transfer sizes | Government<br>*(with support)* |
| | Expand the scope of EFTs beyond existing Protected Areas, and include ecological restoration projects in degraded and threatened ecosystems | |

| | |
|---|---|
| Review and/or introduce appropriate pricing mechanisms (e.g. tariffs and charges) for ecosystem services (e.g. water abstraction charges, conservation fees) | |
| Prioritise key biodiversity areas and water-stressed regions based on latest climate projections for implementation of PES projects | |
| Establish mechanisms to scale-up financing of EFTs by tapping into capital and carbon markets | Government<br>Financial Institutions |

## References

EPU. 2021. *Twelfth Malaysia Plan 2021–2025: A Prosperous, Inclusive, Sustainable Malaysia*. Economic Planning Unit: Putrajaya.

World Bank. 2021. *State and Trends of Carbon Pricing 2021*. World Bank: Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO

World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press: Oxford.

## Appendix

Table A1: Policy Instruments for Climate Change Mitigation and Adaptation in Malaysia

| # | Instrument | Lead Agencies | Type | Year |
|---|---|---|---|---|
| **1** | Transport Fuel Subsidies (petrol, diesel) | MOF, MDTCA | Fiscal | 1983, 2009, 2013/4 |
| **2** | National Disaster Relief Trust Fund | NADMA | Aid | 2006 |
| **3** | Green Technology Financing Scheme (GTFS) 1, 2, 3 | KASA, MGTC, MOF | Second-best, Financial | 2010 |
| **4** | Feed-in Tariff (FiT) | KeTSA, EC, SEDA | Second-best, Financial and Technological Support | 2011 |
| **5** | Green Income Tax Exemption (GITE) | MOF, MGTC, MIDA | Second-best, Financial | 2014 |
| **6** | Green Investment Tax Allowance (GITA) | MOF, MGTC, MIDA | | |
| **7** | Energy Efficient Vehicle (EEV) Policy | MITI, MOT | | |
| **8** | Time-of-Use Tariffs (TOUT, ETOUT) | EC, KeTSA, TNB | Second-best, Charges | 2016 |
| **9** | Net Energy Metering (NEM) 1, 2, 3 | KeTSA, EC, SEDA | Second-best, Financial and Technological Support | 2016 |
| **10** | LSS 1, 2, 3, 4 | EC, KeTSA | | |
| **11** | Paddy Crop Disaster Fund | MAFI | Aid | 2018 |
| **12** | Green Electricity Tariff (GET) | TNB, KeTSA, EC | Second-best, Charges | 2021 |
| **13** | Agro-Food Project Redevelopment Programme | MAFI | Aid | |
| **14** | Bantuan Banjir Keluarga Malaysia | BNM, MOF | Aid | |
| **15** | Emergency Waqf Fund | Kenanga, Yayasan Wakaf Malaysia, MATCH Foundation | | |
| **16** | Carbon Pricing Instruments (VCM, DETS, CT) | EPU, KASA, MOF, Bursa Malaysia | First-best, Market Creation (DETS) or Fiscal (CT) | 202x |
| **17** | Natural Resource and Conservation Financing Instruments (EFTs, PES, others) | EPU, KeTSA, MOF, State Governments | First-best, Fiscal | |