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LOWERING THE HEAT

LOW CARBON SUSTAINABLE
DEVELOPMENT OPTIONS
FOR MALAYSIA



SUDI
A CETDEM Think Tank
CETDEM
Centre for Environment, Technology and Development, Malaysia

LOWERING THE HEAT

LOW CARBON SUSTAINABLE DEVELOPMENT OPTIONS FOR MALAYSIA

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OVERVIEW OF THE STUDY

The objective of the study is to advocate sustainable and low carbon development in Malaysia. The output of the study will be presented in four (4) chapters that aim to establish the baseline situation in Malaysia, assess barriers and options for pursuing a low carbon development pathway and recommendations for a low carbon strategy as well as the way forward. The chapters aim to contribute ideas for helping Malaysia to shape its path towards a low carbon society. SUDI, an initiative of CETDEM, believes that all countries need to take urgent action on this matter in order to avert a climate disaster in the future.

Why is decarbonisation an important topic in Malaysia today? First, it is not yet in the mainstream of environmental discussion although the matter is urgent. The IPCC and all major international organisations urge all countries to take immediate action to reduce their GHG emissions if climate disasters are to be averted in the future. The latest assessment shows that the window of opportunity is closing fast: actions to cut emissions are much much slower than what is needed. Hence, all countries need to take independent and aggressive action.

Malaysia has made a voluntary commitment to reduce its emissions intensity of GDP by 40% (based on 2005 levels) by 2020. SUDI understands that the government has commissioned studies to achieve this goal. Although this is the first step (having an internal strategy), it is not enough. The studies are not in the public domain, which means that the public, who are the main agents of change, who would be impacted and could help achieve the target, are not informed and consulted. This is clearly a matter of national importance and priority which needs a national treatment, rather than just a government burden. In the past, the government has indicated that environmental improvement requires the participation of all stakeholders. Then surely the government needs to lay out their options and strategies and discuss their implications: how much pain now and how much gain later. It is SUDI's belief that this aspect of the development process needs a more public discussion than just government actions and preparedness to "deal" with the international community.

It is important to bear in mind that Malaysia has been taking a rather energy intensive development pathway. Malaysians have enjoyed the benefits of such a development and to change to another mode, some sacrifices will be required. There are several ways to achieve what is required and each of these will mean differential impacts on various sections of society.

There is a generational dimension to climate change and the intention to reduce its ravages. Sacrifices need to be made today while benefits would only be enjoyed in the future. The Stern Review made this point succinctly: 1% investment in climate change actions would yield 6% and up to 20% of benefits (avoided cost) in the future. Achieving a zero-carbon economy might not be impossible, but it is beyond our immediate objective. Nonetheless, this study will bring forward options for a low carbon sustainable development in Malaysia, to lower contributions of Greenhouse Gas (GHG) emissions from various sectors. It is done in order to meet the *needs* of the current generation without depriving the rights of future generations to meet theirs. This is our definition of sustainability in this Study.

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EXECUTIVE SUMMARY

While Malaysia made a commitment in 2009 to reduce its carbon emissions per unit of GDP intensity from 2005 levels by 40% in the year 2020, it did not spell out how this would be achieved and whether the process of decarbonising would be sustained. This is challenging as all the past assessments show that carbon emissions from both the energy and transport sectors have been accelerating. There also has been little movement to implement the policies recommended in Agenda 21 as agreed to at the Rio Summit of 1992. With the approach of 2020 and the country's commitment to become a developed state by then, CETDEM, through its think tank SUDI, believes that the Low Carbon Sustainable Development path must be adopted soon.

This Study set out to examine the national situation as well as the emission profile in 2007 [for which official figures are available in NC2]. It notes that while the economy has become more service oriented, subsidized fuel prices have prevented reductions in energy wastages in almost all sectors as well as the rapid increase of renewable alternatives. The poor state of public transport has been partly due to overfocus on the National Car Project and Policy. While there is now a Climate Change Policy, it is not supported by a comprehensive Sustainable Energy Policy nor that on Transport. There is also a paucity in critical data but the Study has made use of whatever data is in the public domain as well as the outcome of various other studies, including that by Khazanah.

The study felt that the 40% intensity target was too low and has decided that the country should aim to lower its emissions 20% below 2007 levels by 2020, 30% by 2030 and 50% by 2050. These work out to be 120.08Mt, 214.47Mt and 400.25Mt below the business-as-usual [BAU] emissions for the respective target years. The summary table of chapter 2 shows that the range of low carbon sustainable development options identified can achieve more than the required cuts – 135.3 [2020], 261.2 [2030] and 511.5 [2050].

Chapter 2 identifies the low carbon options as falling into the following categories [i] renewable energy for power generation – biogas, biomass, mini hydro, solar pv, methane [from solid waste]. Ocean Thermal Energy Conversion [from the Sabah Through] and Tidal power [from three sites in East Malaysia] will become major options from 2030; [ii] energy efficiency covering Light Emitting Diodes and High Efficiency Motors [iii] transportation – public transport, CNG, hybrid, and fuel cell vehicles, usage of biodiesel as well higher grade Euro engines [iv] green buildings – only insulation and refrigerators could be quantified; [v] new forest plantation; and [vi] solid waste – source separation and composting. Many other sectors especially dealing with the built environment could not be assessed because of the absence of baseline data and correspondingly the impossibility of making any projections of emissions.

Chapter 3 prioritises the various options in order of magnitude of emission reduction without factoring in the marginal abatement costs, which could not be worked out reliably for all the options and all the years. For 2020, biogas from both agriculture and solid waste top the list, followed by public transport but in 2030 new forest plantation displace biogas [solid waste] and OTEC displaces public transport as the third highest. In 2050 OTEC tops the list while biogas [agriculture] moves down to third place.

Some of the barriers that need to be overcome are:

- i. Policy planning at both the federal and state levels that is always supply-side driven rather than seeking to meet ground demands or needs;
- ii. Excessive subsidies that make energy and much resource conservation difficult;
- iii. Fragmented energy and transport policies;
- iv. A climate change policy that has still not been adequately adopted by key stakeholders, especially in the private sector;
- v. Limited political understanding and willingness to act on climate change issues at all levels, despite the existence of a cabinet level Green Technology & Climate Change Council;
- vi. Emissions locked-up through current and future CDM projects, which may reduce the size of emissions that can be claimed by the country;
- vii. Over-reliance by the industrial and commercial sector on subsidised energy as well as a general apathy towards climate change despite gimmicky "green" claims;
- viii. Official eagerness for nuclear reactors rather than an ambitious & innovative combination of EE & RE measures;
- ix. Prevailing obsession with costly mega-projects

Chapter 4 emphasizes that there is a need for a change in mindset and commitment – from the government, and businesses down to the ordinary Malaysian. There will be some initial pain as subsidies are removed and renewables are implemented but these sacrifices are necessary for a sustainable and competitive future. A low carbon society is envisioned and some successful examples in this direction are noted.

The government could do more... in the following areas.

- Provide clear leadership to transform into a low carbon society, and formulate policy, regulations;
- Integrated planning of energy-transport-urban planning (not silo-type plans), to achieve optimal carbon cuts, e.g. transit-oriented development but also to review urban cities to make them more energy-efficient (schooling in neighbourhoods);
- Review sectoral plans to remove contradictions (coal-fired power plans, etc.);
- Review of the incentive scheme: definitely remove subsidies, shift them to stimulate new areas where carbon removal is imminent e.g. via an Energy Reserve Fund, i.e. assist in achieving the low hanging fruit that would make a difference, but with clear communications on why this is needed;
- Collect usage data to enable better planning, e.g. mileage reading when renewing road tax (usage of vehicles), better usage of available data (e.g. GIS);
- Create greater public awareness campaigns to sensitize need to be energy efficient and practise conservation and a schools programme to raise the level of commitment among the young;

- Devise strategies to minimise negative impacts of low carbon strategy on the poor and marginalised; and
- Draw up and implement comprehensive Energy [eg CETDEM's submission of 2005] & Transport Policies which are climate and sustainable development friendly.

Private Sector:

- Invest in energy efficiency and low carbon strategy as future scenario will see higher energy prices;
- Devise solutions for industry to enable them to be competitive [using international best practices & benchmarks];
- Provide commercial solutions to reduce energy use for households and communities (help people save energy costs in the long-term);
- Planners and architects to better design communities/cities that conserve energy; and
- Avoid more greenwashing but do genuine CSRs.

Communities:

- Lobby for developments that save energy, e.g. car pooling, better public transport services, greater use of public walkways;
- Promote public use of roads and walkways (need to engage with police to improve security at community level);
- Plant more trees to cool down the areas; and
- Urge Schools to teach more about climate change, energy conservation, etc.

Households

- Use more energy efficient (appliances) and practise conservation;
- Plant more trees where possible in your garden;
- Be more sensitive to energy usage all round; and
- Walk and cycle regularly.