

## MBIPV Project: Enhancing Renewable Energy Opportunities

**Malaysia**

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### Background Information

Renewable energy (RE) initiatives pave the way towards achieving sustainable development goals, particularly in realizing a low carbon economy. In Malaysia, RE was first introduced in the Eighth Malaysia Plan (2001-2005) and further emphasized in the Ninth and Tenth Malaysia Plans through policy development, incentive measures, R&D, awareness and capacity building programs. The overall goals of the initiatives were to reduce fossil fuel dependency and to contribute towards mitigating the effects of climate change. Increasingly, governments recognize the potential of RE as an enabler of economic growth by providing new investment opportunities, creating employment and enhancing competitiveness. However, there are major challenges in the initial advancement of RE initiatives such as high costs, as well as lack of awareness, technologies and institutions.

The Malaysia Building Integrated Photovoltaic Technology Application (MBIPV) programme was launched in 2005 and completed in 2011, with a total budget of US\$24.96 million. The project was implemented by UNDP. The Ministry of Energy, Water and Communications (MEWC),

#### Quick facts

Zone	Malaysia
Topic	Sustainable development, renewable energy initiatives, BIPV technology
Implementing Agency	Pusat Tenaga Malaysia (PTM), now Malaysia Green Tech Corporation (MGTC)
Website	<a href="#">UNDP MBIPV project website</a>

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now Ministry of Energy, Green Technology and Water (MEGTW) was the project's executing agency, whereas Pusat Tenaga Malaysia (PTM), now Malaysia Green Tech Corporation (MGTC), was the designated implementing agency. Nevertheless important key partners from various institutions were also involved in the study. These included Government agencies (Economic Planning Unit, Ministry of Finance, Ministry of Natural Resources and Environment, Malaysian Industrial Development Authority (MIDA), Energy Commission of Malaysia); academia and research institutions (University Teknologi Malaysia, University Malaya, Mara University of Technology, Tunku Abdul Rahman College and IKRAM) and the private sector (REHDA - Real estate and housing developers association of Malaysia and Malaysian Photovoltaic Industry Association - MPIA) ([UNDP MBIPV project website](#)). Table 1 shows the total cost and share of each agency in funding MBIPV.

**Table 1 : Cost and financing of MBIPV Project**

Agency	Fund (USD\$)	%
Global Environment Facility	4,699,420	19%
Ministry of Energy, Communications and Multimedia	1,014,871	4%
Energy Commission (Suruhanjaya Tenaga)	4,250,000	17%
Malaysia Electricity Supply Industry Trust Account	918,947	4%
Agencies of Gov. of Malaysia)	2,652,632	11%
Private and international sectors	3,863,160	15%
Gov. of Malaysia	3,707,236	15%
Private and international	3,852,894	15%
<b>Total Full Project Cost</b>	<b>24,959,160</b>	<b>100%</b>

### Policy Details

The overall objective of the project was to reduce greenhouse gas (GHG) emissions from the electricity sector by reducing the long-term cost of BIPV technology. BIPVs are solar energy systems that are integrated into the design of a structure that serve to replace conventional building materials.

This is promoted through the development of a sustainable BIPV market in Malaysia and the enhancement of the widespread application of BIPV.

The MBIPV project will specifically focus on the market development for BIPV technology, and building national capacities in three major areas:

- (a) policy and education;
- (b) technical skills and market implementation;
- (c) and technology development support.

The project aims to catalyse BIPV technology acceptance among the public, policy makers, financiers and building industry, which will lead to a sustainable BIPV market beyond the completion of the project. The project objectives will be achieved via a multi-pronged approach:

- 1) BIPV information services, awareness and capacity building programme;
- 2) BIPV market enhancement and infrastructure development programme;
- 3) BIPV policies and financing mechanisms programme;
- 4) and BIPV industry development and technology localization programme.

During the project's 5-years duration, three main programmes targeted at creating financial incentive mechanisms were implemented to encourage investment in BIPV projects, as well as to accelerate the development of the local PV market (UTM). The programmes included the SURIA 1000 showcase and demonstration categories and the SURIA for developers programme. Extensive media coverage facilitated a high number of applications for the financial incentive programs. In addition, the partially subsidized and competitive bidding model introduced in the project, instead of the conventional grant model, resulted in effective outcomes leading to increased market demand and good value for money. Other successful initiatives during the MBIPV project that have been recognized include:

- 1) Setting up of a PV monitoring centre at Universiti Teknologi MARA;
- 2) Launching of PV business development program;
- 3) Implementation of an approved service provider scheme;

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- 4) Development of a quality assurance scheme;
- 5) Organized national PV conferences;
- 6) Creation of PV awareness, such as essay and drawing competitions among school children under the Ministry of Education.

A significant achievement is defined as the crucial role that the project played in facilitating and mainstreaming RE and PV on the political agenda in Malaysia through the development of a national regulatory and institutional framework that would sustain the growth of BIPV in the country post-project. Under the project, the National Renewable Energy Policy and Action Plan was prepared and approved by the Government of Malaysia in April 2010, followed by the development of the Renewable Energy Act which supports the feed-in tariff (FiT) scheme. Subsequently, a statutory body called the Sustainable Energy Development Authority (SEDA) that administers; manages; and monitors the FiT scheme and all matters regarding RE was established under the National Renewable Energy Policy and Action Plan. The FiT and SEDA was announced and reflected within the 10th Malaysia Plan. Financial commitments were made through the 2011 national budget speech for implementation on 1 January 2011.

Apart from the above, strategic partnerships such as with the Malaysian Industrial Development Authority (MIDA) have encouraged foreign direct investment, particularly in PV manufacturing. In addition, partnerships with academic and research institutions such as IKRAM and University Teknologi Malaysia (UiTM) strengthened domestic research and development in order to improve the reliability and quality of domestically produced technologies. Through this project, UNDP has been able to assist the Malaysian government in formulating standards for the installation of grid-connected PV systems which saw the launching of the Malaysian Standard (MS) 1837.

The three targets established at the onset of the project and the results achieved thus far in 2010 are as follows: the most important achievement is associated with the BIPV policies and financing mechanisms initiatives component, as the project was instrumental in developing an institutional framework to sustain the growth of BIPV in the

country. This project has been highly successful both at a national and international level. According to final evaluation reports of this project, important and real contributions have been made to removing barriers for BIPV, in particular through awareness creation and capacity building in important areas such as benchmarking, best practices, and monitoring. This was achieved through the demonstration of BIPV technology and of its cost reduction benefits. MBIPV affects not only renewable energy's decision makers at the governmental and parliament level, but also academia and industry as well.

**Table 2 : Main achievement of MBIPV project**

Project Target	Achievement (2010)
330% increase in BIPV capacity against baseline	project overachieved main target 539% increase in BIPV capacity against baseline
20% reduction of BIPV unit cost from baseline	project overachieved main target 50% reduction of BIPV unit cost from baseline
Mention of UNDP's BIPV project in 10th Malaysia Plan (2011-2015)	very successful feed-in tariff mechanism under the National Renewable Energy Policy and Action Plan was incorporated into the 10th Malaysia Plan (2011-2015)
Capacity building (policy, planning, institutional, industrial, technical and financial)	Overachievement - carried out in the public and private sectors beyond numerical final targets
Industry & Localization effort	well beyond final targets since 2004 foreign direct investments (FDI) in the PV sector at +4 billion USD (~5,000 jobs)

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The following documents informed the development of this paper.

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### Video material

Malaysian Building Integrated Photovoltaic Project, Video: Bernama TV, Berita National, News@2, The Edge, Semasa@1. Available at: <http://www.mbipv.net.my/content.asp?zoneid=9&categoryid=78> (accessed 11 February 2013).