



APERC Workshop at EWG47, Kunming, China
19 May 2014

***3. Peer Review on Low Carbon Energy Policies
(PRLCE) in Malaysia***

Aishah MOHD ISA
Researcher, APERC



Asia-Pacific
Economic Cooperation

Presentation Outline

Background of APEC PRLCE

- Objectives of PRLCE
- Mechanisms and Responsibilities of Stakeholders
- Previous PRLCEs

Overview of Malaysia

- Malaysia in brief
- Malaysia energy indicators
- Key LCE Policies and Strategies

PRLCE in Malaysia

- Issues Covered

PRLCE Background

Initiated by APEC Energy Ministers' 2010 Fukui Declaration

PRLCE Objectives

- **Share information** on low carbon energy performance as well as on policies and measures for improving and promoting low carbon energy in respective economies;
- Provide opportunities for **learning from the experiences** of other economies and for broadening the network among low carbon policy experts;
- Explore **how low carbon goals** on an overall and/or sectoral basis and action plans could be effectively formulated in each economy under review, taking into account the range of possible strategies that could be used, according to the circumstance of each economy;
- **Monitor progress** on attaining low carbon energy goals on an overall and/or sectoral basis and implementing action plans, if such goal and action plans have been already formulated at the time of the review; and
- **Provide recommendations for voluntary implementation** on how implementation of action plans could be improved with a view to achieving low carbon energy goals.

PRLCE Main Responsibilities and Stakeholders

Host Economy

- Plan review process
- Prepare Documents for Review
- Source and provided data
- Assess the preliminary and the draft final report

APERC

- Prepare the guidelines for PRLCE
- Liaise with Host Economy on logistics and technical preparations
- Lead the expert review team
- Review the final report with Host Economy

Review Team

- Conduct the review
- Present findings and recommendations in the preliminary report
- Prepare the draft final report

EWG

- Discuss and Endorse the draft final report
- Report to APEC Senior Officials

Previous PRLCE Exercises



Malaysia in brief



Economic Indicators (2012)

Area	329,847 km ²
Population	29.34 million
Income per capita	USD 9 974

*Ministry of Finance 2013

Fossil Fuel Energy Resources (2011)

Oil Reserves	5.858 bbl
Gas Reserves	89.98 Tscf
Coal Reserves	1.938 bil ton

*National Energy Balance 2011

Renewable Energy Resources

Large hydro Potential	20 GW
Biomass and biogas from Palm Oil Waste	1300 MW
Small-scale hydro	500 MW
Solar Power	6500 MW

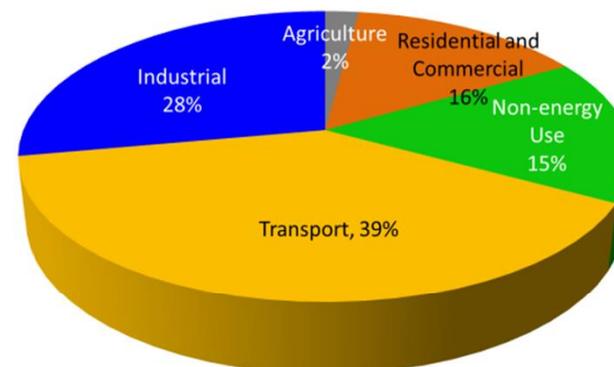
Energy Commission
 ([http://www.erc.or.th/ERCWeb/Upload/Document/11.00-12.30%201Ahmad%20Fauzi%20Hasan%20\(Malaysia\).pdf](http://www.erc.or.th/ERCWeb/Upload/Document/11.00-12.30%201Ahmad%20Fauzi%20Hasan%20(Malaysia).pdf))

Malaysia energy indicators

Energy Indicators in per capita (2011)	
TPES	24,560 toe/capita
Electricity demand	3,706 kWh per capita
CO ₂ emissions	7.7 metric tons CO ₂ /capita

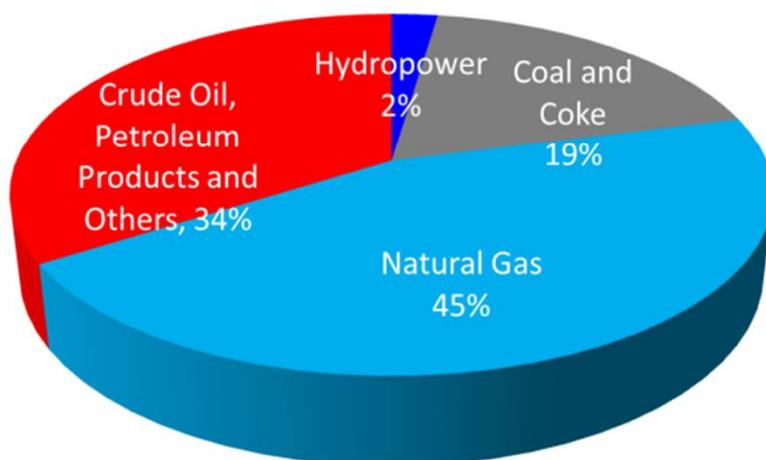
*National Energy Balance 2011 and Worldbank

Final Energy Consumption, ktoe (2011)



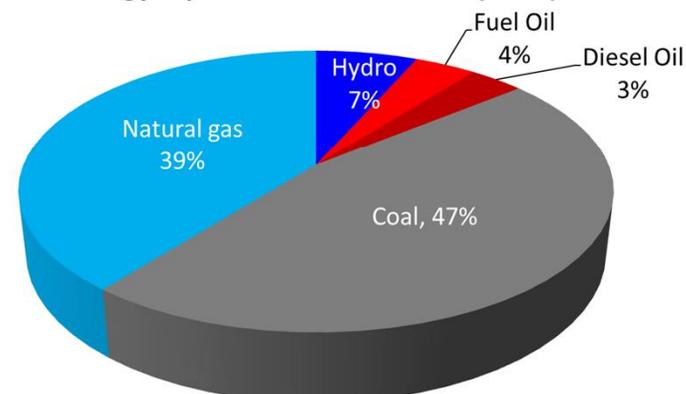
T FEC (2011) =79,289 ktoe

Primary Energy Supply, ktoe (2011)



TPES (2011) =79,289 ktoe

Energy Input in Power Stations (2011)



Energy Input (2011) =27,924 ktoe

Note that in 2011, NRE capacity is about 53 MW (<0.2% of total)

LCE Institutions in Malaysia



Economic Planning Unit under the
Prime Minister's Department

Low Carbon Power Sector

Ministry of Energy, Green Technology
and Water (KeTTHA)

Energy Commission (EC)

Sustainable Energy Development
Authority (SEDA)

Sustainable Energy Development
Authority (SEDA)

Ministry for Rural and Regional
Development (KKLW)

Malaysia Palm Oil Board (MPOB)

State Authorities

Green Technology and Climate Change

Ministry of Energy,
Green Technology and
Water (KeTTHA)

Malaysia Green
Technology
Corporation (MGTC)

Ministry of Natural
Resources and
Environment (NRE)

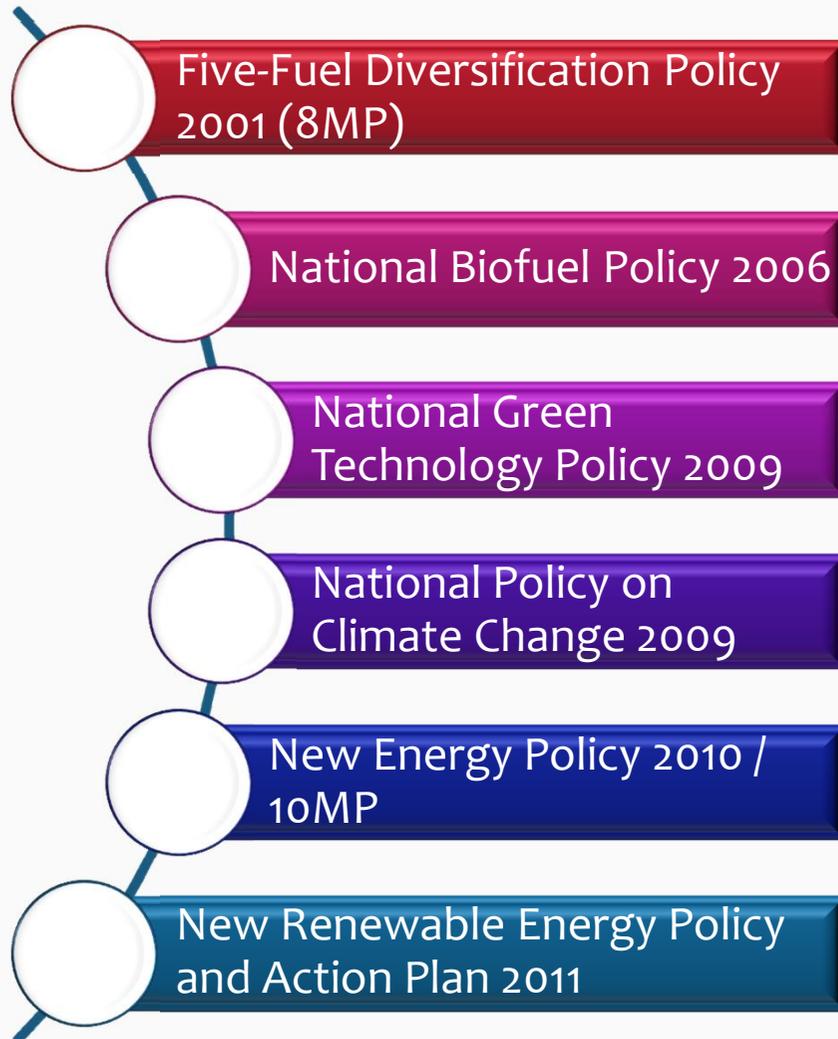
Low Carbon Transport Sector

Ministry of Transport
(MOT)

Land Public Transport
Commission (SPAD)

Malaysia Palm Oil
Board (MPOB)

Key LCE Policies and Strategies in Malaysia



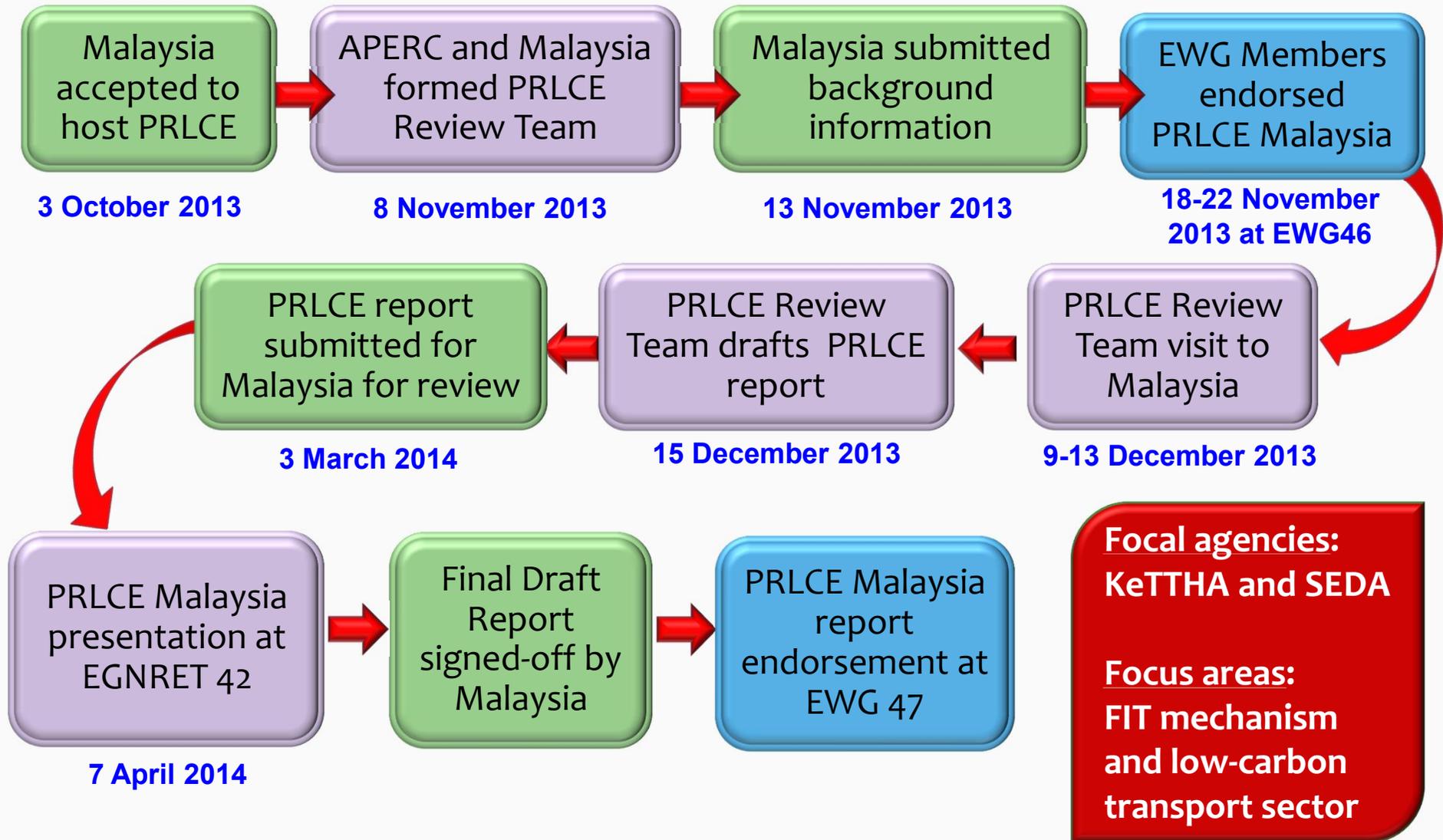
Low Carbon Power Sector

- Renewable Energy Act 2011 – FIT Mechanism
- Sustainable Energy Development Authority Act 2011 - SEDA
- TNB Smart Grid Initiative

Low Carbon Transport Sector

- Palm Biodiesel Initiative
 - B5 Mandate (Biodiesel) by July 2014
- National Automotive Policy 2014 with incentives for hybrid and electric cars
- National Land Transport Masterplan
 - Target to achieve 40% public transport modal share in urban areas by 2030

PRLCE Process for Malaysia



PRLCE Malaysia Review Team

APERC



Mr Takato Ojimi

AUSTRALIA



Mr Andrew Hirscher

CHINA



Mr Guo Xiqiang

JAPAN



Ms Yoko Ito

NEW ZEALAND



Ms Elizabeth Yeaman

CHINESE TAIPEI



Dr Keng-Tung Wu

THAILAND



AP Sumate Chaiprapat

APERC



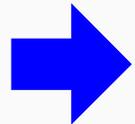
Dr Kazutomo Irie

APERC

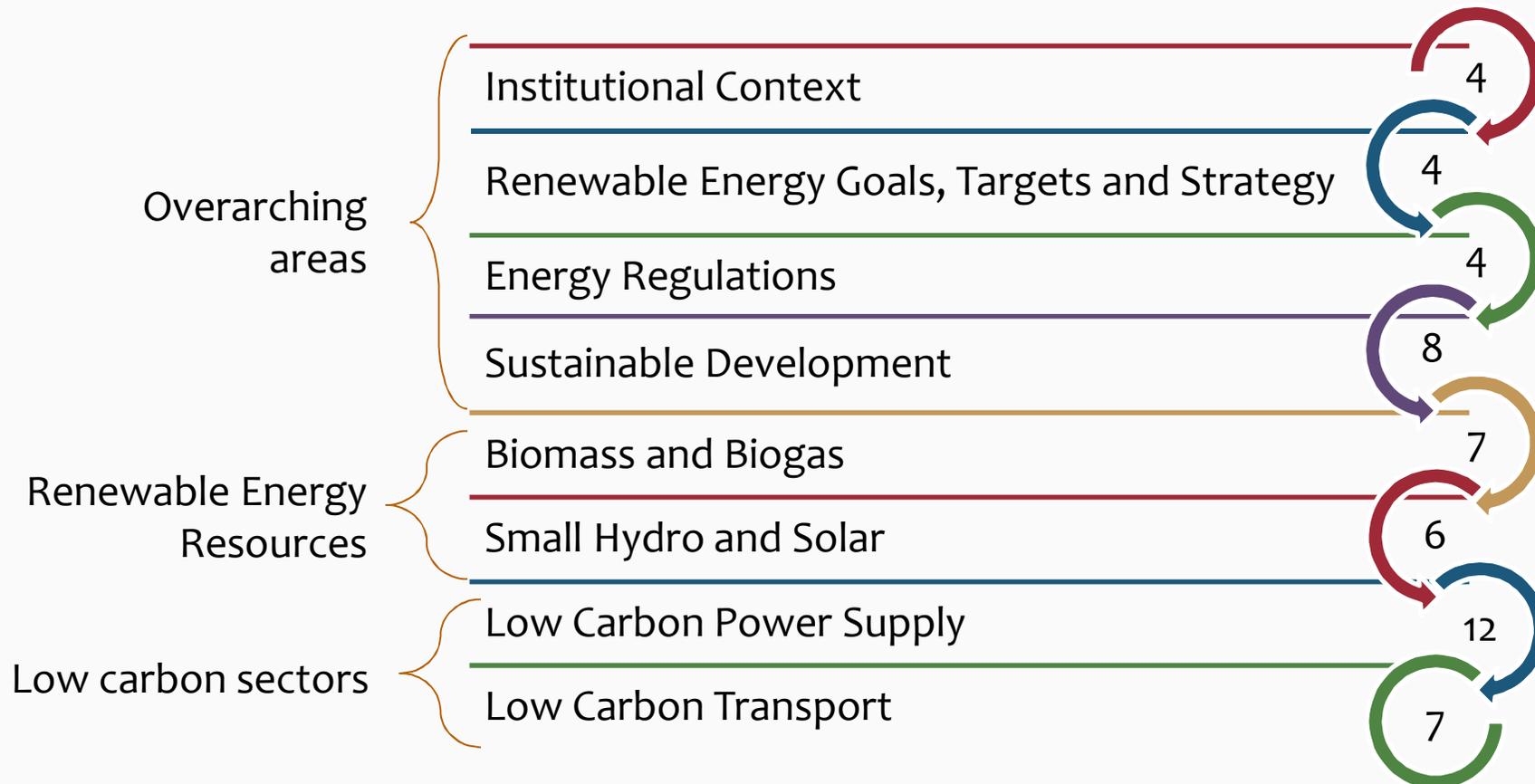


Dr Aishah Mohd Isa

PRLCE Malaysia Recommendations



- “ The PRLCE Review Team made **52 recommendations**
- “ PRLCE Malaysia recommendations are tailored towards:
 - “ Enhancing existing policies and strategies to accelerate LCE utilization
 - “ Addressing the gaps and issues identified during the visit



PRLCE Malaysia Recommendations

- Enhancing existing policies and strategies-

- “ **Recommendation 5:** As the current National Renewable Energy Policy and Action Plan (NREPAP) was endorsed by the Malaysian Cabinet in 2010, it is highly recommended that Malaysia updates the NREPAP targets and action plans to adapt to the changes in global and local circumstances and to take into account the two renewable energy laws and funding available for RE development.
- “ **Recommendation 36:** Continue to gradually rationalize electricity subsidies on schedule and consider transferring a portion of the savings benefit from the fossil-fuel subsidies rationalisation to promoting low-carbon technologies.
- “ **Recommendation 47:** Continue implementing the B5 biodiesel blending mandate and investigating potential for B7 or B10.

PRLCE Malaysia Recommendations

- Meeting existing challenges -

- “ **Challenge 1: Lengthy Approval Processes for RE Projects**
- “ **Recommendation 2:** Encourage state authorities to streamline and standardize renewable energy approval processes and procedures across different departments.
- “ **Recommendation 42:** Consider applying degression on solar PV tariffs more frequently and based on a pre-determined mechanism or formula.
- “ **Recommendation 43:** Consider staggering the time and amount of quota released throughout the year as this would help ease the burden of administrative processing and provide accessibility for the developers.

- “ **Challenge 2: Harnessing Resources in Remote Locations**
- “ **Recommendation 21:** Identify mechanisms to incentivize isolated plants such as easing transmission costs for long-distance connections or exploring other sustainable applications for biogas like biofuel for on-site transport utilization.
- “ **Recommendation 29:** Micro-grids powered by small-scale hydro should be investigated and incentivized to supply rural communities.

PRLCE Malaysia Recommendations

- Exploring LCE options beyond solar and palm-based biomass -

- “ **Recommendation 6:** Consider expanding definition of national renewable energy targets to include sub-targets for Sarawak state and renewable energy applications in different sectors like power generation (off-grid and on-grid), heat generation (process and water heating), transportation and others.
- “ **Recommendation 37:** Accelerate resource mapping for new renewable energy potentials (wind, geothermal, biomass, small-hydro) to diversify resources for renewable energy power generation.
- “ **Recommendation 32:** Analyse instruments for promoting and incentivizing solar applications beyond solar rooftop PV to include solar thermal applications in commercial (solar water heating) and agricultural sectors (solar-assisted drying systems, solar-assisted dehumidification systems) as well solar PV applications integration with agricultural activities.
- “ **Recommendation 48:** Investigate other biofuel options including bioethanol and biogas for transportation.
- “ **Recommendation 27:** Explore potentials of other forms of organics.

PRLCE Malaysia Recommendations

- Encouraging participation -

“ Encouraging Participation from Local Authorities

“ **Recommendation 39:** Local authorities should be encouraged to play a wider role in promoting RE development in their respective jurisdictions.

“ **Recommendation 16:** Investigate the possibility of fiscal incentives in the form of tax payments for local communities to encourage social acceptance and build support for local renewable energy projects.

“ Encouraging Stakeholder Participation

“ **Recommendation 3:** Create an official forum for regular dialogue sessions between RE stakeholders and the authorities.

“ **Recommendation 4:** Encourage RE stakeholders to establish associations that fosters RE development in the economy.

PRLCE Malaysia Recommendations

- Boosting local capacity -

- “ **Recommendation 10:** It is recommended that the authorities continue to develop human capital, improve information sharing and increase public awareness raising activities.
- “ **Recommendation 24:** Promote local content to improve technological self-dependency.
- “ **Recommendation 25:** Provide research funding and incentivize commercial pioneering for second generation technologies.
- “ **Recommendation 33:** Improve local capacity and capability to build-up a sustainable and competitive solar PV industry value chain.
- “ **Recommendation 40:** Encourage wider public participation by providing easily accessible information on where electricity supply is needed, what renewable energy resources and technologies are available and what benefits can be achieved.
- “ **Recommendation 44:** Continued efforts for capacity building in various stages of renewable energy from planning, construction, operation and decommissioning stages would benefit the increase and expansion of feasible renewable energy projects.

**Thank you for your
kind attention!**
<http://aperc.ieej.or.jp/>

