
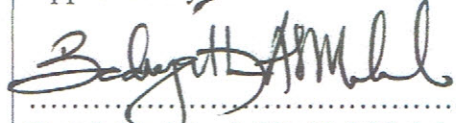


MINUTES OF MEETING: NATIONAL PROJECT STEERING COMMITTEE			No: Part 1_No.1/2017
PROJECT GEF5 : GHG EMISSIONS REDUCTIONS IN TARGETED INDUSTRIAL SUB-SECTORS THROUGH ENERGY EFFICIENCY (EE) AND APPLICATION OF SOLAR THERMAL SYSTEMS IN MALAYSIA			
Minuted By: Hasimah Hasan	Date: 3 rd August 2017	Time: 3.15pm – 5.00pm	Venue: Hotel Bangi-Putrajaya
Agenda			
<ol style="list-style-type: none"> 1. Welcoming remarks by Chairman 2. Confirmation of previous minutes of NPSC meeting No.1/2016 3. Matters arising 4. Review Project Activities 5. Project progress update 6. Proposed company for demo project implementation 7. Issues and challenges 8. Other matters 9. Adjourn 			
Attendee			Absent with Apology
<ol style="list-style-type: none"> 1. Datin Badriyah Hj. Abd Malek – KeTTHA Chairperson 2. Hajah Rogayah Kadari KeTTHA 3. Mrs.Navarani a/p Vejaratnam KeTTHA 4. Mr. Hazrey Tomyang KeTTHA 5. Mr. Paul Wong Kok Kiang KeTTHA 6. Mrs. Siti Zulaikha Mohamad EPU Zobir 7. Mr. Shahzul Jayawirawan MIDA Mohd Yunos 9. Mrs. Sabariah Ghazali MITI 10. Mr. Haniff Ngadi SEDA 11. Mrs. Masilah Bandi MGTC 12. Datin Noor Aizah Hj. Abdul Karim ST 13. Mr. Mohamed Nadhir Zainal Abidin ST 14. Mr. Zulkiflee Umar ST 15. Tn. Hj. Mohd Fauzi Ismail SIRIM 			Representative from SERI Representative from MOSTI

16.	Dr. Ir. Philip Tan	FMM	
17.	Mr. Mohd Faiz Mohamad Yunus	SME Corp	
18.	Mr. Shrestha Sanjaya	UNIDO	
19.	Prof Ir. Dr. KS Kannan	UNIDO	
20.	Dr. Azmi Hj. Idris	PMU	
21.	Mrs. Hasimah Hasan	PMU - Secretary	

NO.	ITEM									
1.0	<p>WELCOMING REMARKS BY CHAIRMAN</p> <p>The Chairperson greeted Mr. Shrestha Sanjaya, the UNIDO Project Manager and welcomed all the NPSC members to the first NPSC meetings of the year 2017. The Chairperson also welcomed Dr. Azmi Haji Idris the new National Project Manager of the project.</p> <p>The Chairperson described that the national objective of the project is to promote and demonstrate energy efficiency (EE) improvements and solar thermal systems (technology) application in heating and cooling process in selected sub-sectors in the Malaysian industry.</p>									
2.0	<p>CONFIRMATION OF PREVIOUS MINUTES MEETING</p> <p>The minutes were adopted without any amendment.</p>									
3.0	<p>MATTERS ARISING</p> <p>3.1 Appointment of National Project Steering Committee (NPSC) members</p> <p>3.1.1 The Chairman suggested removing MNRE and MOF from the NPSC member list if the ministry does not confirm to send their representative to the meeting.</p> <p>3.1.2 The changes of the NPSC member from the related agencies are as follows :</p> <table><tr><th>Agency</th><th>Previous member</th><th>New member</th></tr><tr><td>MIDA</td><td>Mr. Hazli Jemaat (main)</td><td>Cik Wan Hashimah Wan Salleh (main)</td></tr><tr><td>MIDA</td><td>Mr Gogilen Nantha Kumar (alternate)</td><td>i. Cik Zabidah Daud (alternate) ii. Shahzul Jayawirawan Mohd Yunus (alternate)</td></tr></table>	Agency	Previous member	New member	MIDA	Mr. Hazli Jemaat (main)	Cik Wan Hashimah Wan Salleh (main)	MIDA	Mr Gogilen Nantha Kumar (alternate)	i. Cik Zabidah Daud (alternate) ii. Shahzul Jayawirawan Mohd Yunus (alternate)
Agency	Previous member	New member								
MIDA	Mr. Hazli Jemaat (main)	Cik Wan Hashimah Wan Salleh (main)								
MIDA	Mr Gogilen Nantha Kumar (alternate)	i. Cik Zabidah Daud (alternate) ii. Shahzul Jayawirawan Mohd Yunus (alternate)								

	<div> <div>SEDA</div> <div>Mr. Steve Anthony Lojuntin (alternate)</div> <div>Mr. Haniff Ngadi (alternate)</div> </div> <p style="text-align: right;">Action: Information</p> <p>3.2 National Solar Thermal Technologies Roadmap</p> <p>3.2.1 Madam Chairperson requested PwC to make the presentation on the First Progress Report to the NPSC members for the report approval.</p> <p>3.2.2 The Meeting agreed for the presentation of the First Progress Report by PwC to be made in the next NPSC meeting scheduled at 2.30 pm on 7th August 2017. The Meeting will be held in KeTTHA.</p> <p>3.2.3 Representative from MITI suggested the Secretariat to provide the summary of comments made by the Task Force members during the Task Force Meeting and the Vision Workshop conducted by PwC so that it is easier to keep track on the roadmap development.</p> <p style="text-align: right;">Action : PMU, PwC</p>
4.0	<p>REVIEW OF PROJECT ACTIVITIES</p> <p>4.1 PMU presented the revised version of the project activities that was reviewed during the 2nd Technical Committee meeting held on 20th July 2017.</p> <p>4.2 Representative from EPU sought clarification on the “Statistics and data publication for thermal energy in industry” (Component 1, Output 1; Assessment of Regulation and Framework).</p> <p>4.2.1 FMM responded that the data will be available once the solar thermal technology is ready to be installed, to be reported and the Department of Statistics can do the collection of data. FMM suggested to ask the manufacturer of solar hot water system for data on the usage for household.</p> <p>4.2.2 KeTTHA responded that the ministry is in the process of drafting the Energy Efficiency and Conservation Act which will include thermal energy.</p> <p style="text-align: right;">Action: Information</p> <p>4.3 The Meeting agreed to all the revised project activities suggested by the Technical Committee as per attach in Appendix 1.</p> <p style="text-align: right;">Action: Information</p> <p>4.4 Representative for MITI suggested to assign the agency that will lead the revised activities.</p>

	Action: PMU, Technical Committee	
5.0	Next Meeting Part 2_No.1/2017 The next NPSC Meeting is scheduled to be held on 7 th August 2017. The meeting will discuss on the approval of the First Progress Report on Solar Thermal Roadmap prepared by PwC and will proceed with agenda 5. onwards as listed below :- <ol style="list-style-type: none"> 5. Project progressed update 6. Proposed company for demo project implementation 7. Issues and challenges 8. Other matters <div style="text-align: right;">Action: PMU</div>	
6.0	Adjourn of Meeting Meeting was adjourned at 17.00 pm	
Prepared By:  Hasimah Hasan Secretary Date: 19 th September 2017		Approved By:  Datuk Badriyah Hj Abd Malek Chairperson Date: 19/9/2017

Appendix 1 – Reviewed Project Activities by the Technical Committee

Component 1: Development of regulatory framework, support programme and financial incentive mechanism to facilitate solar thermal energy utilization

Output	Action Plan	Deliverables	Resources
1.1: Assessment of regulations and policy	Incorporate thermal energy in Green technology policy, RE policy, NEEAP	One Policy recommendation	KeTTHA, ST, SEDA, MGTC
	Solar thermal industry gap analysis and develop solar thermal roadmap	Solar thermal deployment roadmap	MIGHT, SEDA, ST, KeTTHA, MOSTI & SIRIM, SERI
	Implement stakeholder Engagement Program: i. Government (Industrial Dev. Authority & Local Authority Industry Financial Institution	Workshop, seminar, industrial visit, report papers, focus group discussion (FGD), expert bank	DOSH, MOE, various ministries, FMM, industries, financial institution, local authorities
	Establish national data for thermal energy through associations (FMM, MPMA, MPIA, MAESCO)-and etc.	Statistics and data publication for thermal energy in industry	Registration of boilers by DOSH, Dept. of Statistic
1.2: Assessment of institutional capacity strengthened, including international experiences shared with government stakeholders	Assessment of policy and programs by other countries (ASEAN, European & China)	Report	IEA publications, European (ESTIF), ASEAN (ACE)
	Hosting a national seminar on SHC annually	Seminar	MOSTI, KeTTHA, SIRIM
	International collaboration	MOU, transfer technology,	MOSTI, MITI, MIGHT, MIDA

			agreement (market access)	
		Review of existing fiscal/financial incentives – GTFS, GITE, GITA, 1-InnoCERT, Pioneer Status	Performance evaluation and recommendation	MIDA, SME-CORP, MGTC
1.3: Assessment of financial support program (incentive)		Matching industry and financial institution	Workshop with industry, financial institution and financial instruments	MDV, MGTC, MIGHT
		Determine HS code for each components of solar thermal system for import duty exemption	Import duty exempted for solar thermal system and components	MIDA, MITI, CUSTOMS, Industries, FMM
		Develop mechanism for solar thermal contribution in national energy policy	Long term projection of solar thermal in energy mix	ST, KeTTHA, JPPPET
1.4 Assessment of non-financial support program		Develop national standard on solar thermal system	National standard developed	SIRIM, Standards Malaysia

Component 2: Awareness raising and capacity building program relating to process heating and cooling optimization, and solar thermal energy utilization

Output	Action Plan	Deliverables	Resources
2.1 Skills and competency strengthened for service providers, consultants and industry in the implementation of energy savings based on process heating and cooling, in selected sub-sectors;	Develop national competency and skill training for thermal energy efficiency	National competency standard module for thermal EE	AEE INTEC, SIRIM, SERI, FMM, SME Corp
	<ul style="list-style-type: none"> - User trainings at regional - Expert training 	Training modules Trained personnel	
2.2 Skills and competency of equipment or component suppliers, service providers, consultants and industry in solar thermal technology improved;	Competency and skills training for designer and installer	Competency standard on solar thermal installation. Competency standard on solar thermal design	AEE INTEC, SIRIM, SERI, FMM, SME Corp, KeTTHA, MOHR
	<ul style="list-style-type: none"> - User trainings at regional - Expert training 	Training modules Trained personnel	

2.3 Enhanced awareness among industry management and financial institutions in order to take decisions on investments in energy saving and solar thermal application (including using cases study results of component 3).	Widespread awareness program, outreach program, road shows on solar thermal cover six regions to industries	Database of participants Report	FMM, SME Corp,
Awareness coverage through media	Website, Newsletter and publication	SIRIM, University, Media,	

Component 3: Demonstration and scaling up of sector-specific EE and solar thermal energy utilization in targeted industrial subsectors

Output	Action Plan	Deliverables	Resource
Output 3.1: Energy Saving measures and investment projects implemented in 40 companies	Identify the companies for the energy audit at SME and GLC/MNC	40 companies identified	FMM SME Corp SIRIM MAESCO SERI
	Conduct energy audit	Energy audit report submitted	
	Identify energy EE measures and investment	Identify EE measures	
	Technical feasibility assessment (TFA)	Report submitted with TFA Implementation Process Flow format developed	

<p>Output 3.2: Of these 40 factories, 10 will implement solar thermal demonstration projects</p>	Identify 10 pilot plant projects with detail engineering design and system optimization and Technical Feasibility Analysis (TFA)	Data compilation and project viability. At least 10 companies committed and confirm for the implementation of the main project. Acquire financial support to implement the project.	<p>FMM SME Corp SIRIM MAESCO SERI</p>
	Identify local technology providers and system integrator	Develop database of local technology providers and system integrator Project commissioning report	
	Findings of 40 industrial assessment in EE and solar thermal	Report and document	
	Seminar for case studies to the industry takers and stakeholders	Organize seminar, business case study	
<p>Output 3.3: Case studies prepared and presented under Output 2.3 to raise investment in EE and solar thermal integration using the trained capacity and various financing mechanisms created.</p>	Study tour of international best practices solar thermal case study	One international study tour	<p>FMM SME Corp SIRIM MAESCO SERI</p>

**MINUTES OF MEETING: NATIONAL PROJECT
STEERING COMMITTEE (NPSC)**

No: Part 2_No.1/2017

PROJECT GEF5 : GHG EMISSIONS REDUCTIONS IN
TARGETED INDUSTRIAL SUB-SECTORS THROUGH
ENERGY EFFICIENCY (EE) AND APPLICATION OF
SOLAR THERMAL SYSTEMS IN MALAYSIA

Minuted By:
Hasimah Hasan

Date:
7th August 2017

Time:
3.00pm – 5.05pm

Venue:
Meeting Room 1, Level
3, KeTTHA

Agenda

1. Welcoming remarks by Chairman
2. Presentation on the National Solar Thermal Roadmap Progress Report_1
3. Update of project progress
4. Proposed company for the implementation of demo project
5. Issues and challenges
6. Other matters
7. Adjourn

Attendee

Absent with Apology

1. Datin Badriyah Hj. Abd Malek – KeTTHA
Chairman
2. Mdm Hajah Rogayah Kadari KeTTHA
3. Mr. Hazrey Tomyang KeTTHA
4. Mrs. Navarani A/P Vejaratnam KeTTHA
5. Mr. Abang Othman Abang MOSTI
Yusof
6. Mrs. Siti Zulaikha Mohamad EPU
Zobir
7. Ms. Zabidah Daud MIDA
8. Mr. Haniff Ngadi SEDA
9. Ms. Nor Aslaili Mahmood MGTC
10. Mr. Mohamed Nadhir Zainal ST
Abidin
11. Mr. Zulkiflee Umar ST
12. Tn. Hj. Mohd Fauzi Ismail SIRIM
13. Dr. Ir. Philip Tan FMM
14. Mr. Rosman Zamri SME Corp
15. Mr. Shreshta Sanjaya UNIDO
16. Prof Ir. Dr. KS Kannan UNIDO
17. Dr. Azmi Hj. Idris PMU

Representative from MITI

18.	Mr. Mohamad Iskandar Majidi	PMU	
19.	Mrs.Hasimah Hasan	PMU- Secretary	
20.	Mrs. Noor Hasimah A. Manaf	PMU- Asst. Secretary	
	<u>By Invitation</u>		
21.	Mr. Vibhash Garg	PwC	
22.	Mr. Vaibhav Singh	PwC	
23.	Ms. Prajya Sharma	PwC	
24.	Ms. Tracy Yip	PwC	

NO.	ITEM
1.0	<p>WELCOMING REMARKS BY CHAIRMAN</p> <p>The Chairperson welcomed the NPSC members to the 2nd part of the 1st NPSC of 2017.</p>
2.0	<p>PRESENTATION ON THE NATIONAL SOLAR THERMAL ROADMAP FOR MALAYSIAN INDUSTRY; PROGRESS REPORT 1</p> <p>2.1 PricewaterhouseCoopers (PwC), India who is the consultant for the development of National Solar Thermal Roadmap for Malaysian Industry updated the meeting on the activities conducted for the month of June i.e. (i) stakeholder engagements held from the 15th to 20th June 2017 and (ii) presentation of the 1st progress report of the roadmap at the Vision Workshop on 21st June 2017.</p> <p>2.2 PwC mentioned on the difficulties to get the data on the demand side for solar thermal. The data on supply side is sufficient. SERI mentioned that, therefore, PwC had to make various assumptions on the analysis due to lack of data for the roadmap.</p> <p style="text-align: right;">Action: Information</p> <p>2.3 Prof. Sohif from SERI suggested for cooling technology i.e. absorption chiller technology to be included in the roadmap.</p> <p>2.4 Prof. Ir Kannan from UNIDO commented that the roadmap should include recommendations or a proposal on strategies for the country to implement the solar thermal technology.</p> <p>2.5 PwC mentioned that the 2nd Progress Report will be ready in August and the 3rd in September. The final draft of the roadmap is expected to be completed by early October.</p> <p style="text-align: right;">Action: PwC, PMU, Task Force</p>

2.6 The Meeting approved the 1st Progress Report presented today.

Action: PMU

3.0 PROJECT PROGRESS UPDATE

The National Project Manager presented the progress updates as follows:

3.1 Component 1: Development of regulatory framework, support programme and financial incentive mechanism to facilitate solar thermal energy utilization

3.1.1 The contract for the development of National Solar Thermal Roadmap for Malaysian Industry has been awarded to PricewaterhouseCoopers (PwC), India. The Roadmap is expected to be completed by Feb 2018.

3.1.2 The Task Force for the Roadmap was formed in May 2017. The 1st and 2nd Task Force meetings were held on 16th May and 15th June 2017 respectively.

3.1.3 During the period of 15th to 21st June, PwC, India held multiple stakeholder engagements and conducted the Vision Workshop on 21st of June.

3.1.4 The consultants will be undertaking more consultations with the industry players and associations from 7-11 Aug 2017.

3.1.5 The Meeting was informed that the final draft of the roadmap will be ready by early Oct 2017

3.2 Component 2: Awareness raising and capacity building program relating to process heating and cooling optimization, and solar thermal energy utilization

3.2.1 From January to July 2017, awareness seminars and trainings have been conducted as follows:

Seminar	Date	Place	No. of Participants
Awareness Seminar 6	28/3/2017	Kota Kinabalu, Sabah	44
Awareness Seminar 7	29/3/2017	Kuching, Sarawak	29
Awareness Seminar 8	8/5/2017	FMM, Sri Damansara	37
TOTAL			110

Training	Date	Location	No. of Participants
Batch 1 Expert Course 2	15-18/5/2017	Shah Alam	33
Batch 2 Expert Course 1	22-25/5/2017	Melaka	42
Vendor_1	19/5/2017	Shah Alam	15

	TOTAL	90
	<p>3.2.2 Till date, the number of participants who attended the awareness seminar and trainings were i) 371 for awareness seminar ii) 141 for user training iii) 85 for Expert Training Course 1 and iv) 33 for Expert Training Course 2</p> <p>3.3 <i>Component 3: Demonstration and scaling up of sector specific EE and solar thermal energy utilization in targeted industrial sub-sector</i></p> <p>3.3.1 No demonstration plant utilizing the solar thermal system has been realized under the project yet.</p> <p>3.3.2 In year 2016, Wipro UNZA and Felda Johore Bulkers had been identified under the fast track process. However, both companies decided to put on hold the implementation of the project due to long pay-back period.</p> <p>3.3.3 In year 2017, 6 companies have been identified under the fast track process. The identified companies are MIWA Manufacturing Sdn Bhd, Secret Recipe Manufacturing Sdn Bhd, Advanced Chicken Processing Sdn Bhd, NB Poultry Chicken Processing Sdn Bhd, Perusahaan Perkayuan Wan Feng Sdn Bhd and Ban Seng Hin Co Sdn Bhd.</p> <p>3.3.4 Potential demo project from expert training is yet to be identified. Potential demo from Batch 1 (10 companies) is expected to be identified when the final report is ready by August 2017 and for Batch 2 (10 companies) by Feb 2018.</p> <p>3.4 Project Expenditure From January to June 2017, USD 281,252.78 was spent for this project. The total expenditure of the project (from July 2014 until June 2017) is USD 909,825.10. Currently, the balance of the fund is USD 3,090,174.84.</p> <p>3.5 The updates of the project progress were accepted without any amendments from the NPSC members.</p> <p style="text-align: right;">Action: Information</p>	
4.0	<p>PROPOSED COMPANY FOR DEMONSTRATION PROJECT IMPLEMENTATION</p> <p>4.1 PMU proposed three companies to be considered for approval for UNIDO funding for the demonstration project. The three companies are 1) Perusahaan Perkayuan Wan Feng Sdn Bhd, 2) MIWA Manufacturing Sdn Bhd and 3) Advanced Chicken Processing Sdn Bhd.</p> <p>4.2 PMU also proposed three potential companies for the demonstration project to be approved for the feasibility study. The companies are 1) Secret Recipe Manufacturing Sdn Bhd, 2) NB Poultry Chicken Processing Sdn Bhd and 3) Ban Seng Hin Co. Sdn Bhd (Rice mill)</p>	

4.3 PMU raised the issues of high capital investment and long payback periods of more than 5 years that delayed the implementation of the demonstration plant project. These issues arose from the 2 previous companies that participated under the Fast Track process such as Wipro UNZA and Felda Johore Bulkurs. Both companies are looking for a payback period of not more than 3 years. In response to this the Chairperson requested the project to come out with a workable business model for the implementation of the demonstration project.

4.4 Prof Sohif suggested the project should include solar thermal application for cooling, and not just heating.

Action: PMU, Technical Committee

4.5 The Chairperson also requested PMU to provide the timeline for the demo project development and implementation, including audit, procurement, installation, monitoring and evaluation.

4.6 The Chairperson suggested that the proposed solar thermal system to be a hybrid system with other EE technologies as solar thermal alone is not economical.

Action: PMU, Technical Committee

4.7 SERI informed the meeting that they are currently preparing the proposal of the hybrid system of the solar photovoltaic and solar thermal system for the demonstration project at the Hospital Serdang. SERI will further discuss and submit the proposal of the demonstration project to PMU.

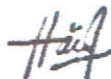
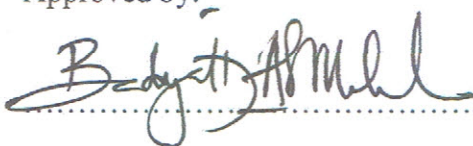
Action: PMU, SERI

4.8 The meeting approved 20% of equipment costs to be granted from the project fund for the purpose of the demonstration project with the cost estimation as follows:

Company	System Cost (MYR)
1. Perusahaan Perkayuan Wan Feng Sdn Bhd	300,000
2. MIWA Manufacturing Sdn Bhd	200,000
3. Advanced Chicken Processing Sdn Bhd	276,000

4.9 The meeting also approved to proceed with the feasibility study through the project's fast track process for the proposed demonstration projects.

Action: PMU, Technical Committee

5.0	<p>ISSUES AND CHALLENGES</p> <p>The issues and challenges had been discussed under AGENDA 4.0 and reported under para 4.3.</p>
6.0	<p>OTHER MATTERS</p> <p>6.1 Project Governance Structure</p> <p>6.1.1 The Chairperson requested for the project governance structure to be amended to reflect KeTTHA's role as the highest decision making body of the project. The Chairperson suggested KeTTHA to be appointed as the National Project Director in order to directly oversee the execution of the project. Currently, the project is managed and coordinated by the PMU and SIRIM is the National Executing Agency of the project with very limited role assigned to KeTTHA.</p> <p>6.1.2 The UNIDO staff member agreed on the proposed changes, provided that all Members of the NPSC also agree to the proposed changes in the best interest of Malaysia and the Malaysia Government.</p> <p>6.1.3 PMU is requested to discuss with SIRIM and propose the new governance structure in the next meeting.</p> <p style="text-align: right;">Action: PMU</p> <p>6.2 KeTTHA together with the Energy Commission is in the process of preparing the Energy Efficiency and Conservation (EE&C) Act. Outcome of this project can be discussed further to be included in the EE&C Act.</p> <p>6.3 Financial model for the demonstration project</p> <p>6.3.1 The Chairperson has raised the issue that the project should look into a suitable financial model for the project demonstration.</p> <p style="text-align: right;">Action: PMU, Technical Committee</p>
7.0	<p>ADJOURNMENT OF THE MEETING</p> <p>The meeting was adjourned at 5.05 pm</p>
<p>Prepared by:</p> <p></p> <p>.....</p> <p>Hasimah Hasan Secretary Date: 31st October 2017</p>	
<p>Approved by:</p> <p></p> <p>.....</p> <p>Datuk Badriyah Hj Abd Malek Chairman Date: 31 / 10 / 2017</p>	