

## Brief Report on Iskandar Malaysia Eco-Life Challenge 2016

### Introduction

Iskandar Malaysia Ecolife Challenge (IMELC) is jointly organized by Iskandar Regional Development Authority (IRDA), Universiti Teknologi Malaysia (UTM) and Jabatan Pendidikan Negeri Johor (JPNJ), supported by Medini Iskandar Malaysia Sdn. Bhd. has successfully run from 20 September 2016 to 13 November 2016. This is 4<sup>th</sup> year running for IMELC and it has reached 231 primary schools involving 27,125 Year 6 students in the region of Iskandar Malaysia. IMELC started with teacher briefing, school monitoring and closed with a final presentation.

#### 1. IMELC 2016 -Briefing Session – 20 September 2016

The briefing as conducted in three sessions for teachers based on the 4 Pejabat Pendidikan Daerah (PPD) involved (PPD Johor Bahru, PPD Pasir Gudang, PPD Kulai and PPD Pontian). Primary schools teachers were informed on the briefing via JPN website. Representative from each primary schools in the PPD region were required to attend the briefing. The briefings were hosted at SK Taman Perling 3 (Johor Bahru), SK Taman Megah Ria (Pasir Gudang) SK Senai Utama (Kulai and Pontian) on 20<sup>th</sup> September 2016. It starts by opening speech by Mdm. Daisy Harry from IRDA, followed with 'Low Carbon Society Blueprint' by Mdm. Choo Hui Hong from IRDA and talks about 'Global warming & Low Carbon Society' by Assoc. Prof. Dr Fatin Aliah Phang from UTM.



Briefing in SK Taman Perling 3, SK Taman Megah Ria and SK Senai Utama schools, where teachers listening attentively to talk given



Teachers collecting workbooks for Standard 6 students, once they fill up the questionnaire.

After the briefing, IMELC 2016 workbooks were distributed to teachers. The representatives who were absence were asked to collect the workbook from their PPD. In

total, 70.13% teachers attended the briefing but 100% of the students were given the workbooks which total up to 27,125 workbooks.

Table 1: Percentage of schools represented for the briefings.

Region	Schools	Percentage (%)
Johor Bahru	63/98	64.30
Pasir Gudang	46/71	64.79
Pontian	20/20	100
Kulai	33/42	78.57
Total	162/231	70.13

## 2. School Visit & Monitoring – 25 September 2016 – 30 October 2016

A number of schools were randomly selected for visits and observation on how IMELC were conducted. Several schools were selected from each PPD (Johor Bahru, Pasir Gudang, Pontian and Kulai). A total of 14 schools were visited during IMELC by UTM team. Some visits were joined by PPD, JPNJ, IRDA and Medini officers. The schools are

1. SK TEBRAU BAKAR BATU
2. SK KEMPAS
3. SJK(C) PEI HWA
4. SK BANDAR UDA 2
5. SK TAMAN PERLING
6. SK CAHAYA BARU
7. SK TAMAN DAYA 2
8. SJK(C) MASAI
9. SJK(T) PASIR GUDANG
10. SK KANGKAR PULAI 2
11. SK MURNI JAYA
12. SJK(C) KULAI 2
13. SK SUNGAI DURIAN
14. SJK(C) KEN BOON



Teachers guiding students to learn low carbon using the workbooks



BULAN	BIL ELEKTRIK (RM)	BIL AIR (RM)	BAHAN KITAR SEMULA (kg)
JANUARI	1100	1400	100
FEBRUARI	1150	1450	120
MAR	1200	1500	140
APRIL	1250	1550	160
MAY	1300	1600	180
JUN	1350	1650	200
JULAI	1400	1700	220
AGUST	1450	1750	240
SEPTEMBER	1500	1800	260
OKTOBER	1550	1850	280
NOVEMBER	1600	1900	300
DISEMBER	1650	1950	320
Jumlah	1700	2000	340

School projects

### 3. Workbook Submission

The date of workbooks and bills submission was on 30 October 2016. All of the workbooks were returned to the PPD by teachers. UTM collected the workbooks from PPD. A total of 12,246 workbooks from 123 schools were returned to PPD and collected by UTM. The rate of the returns book is 45.15%. The workbooks were checked by UTM. The bills were vetted and calculated to determine the 15 finalists for IMELC. It was announced on 7 November 2016. The schools that were qualified to the final presentation of IMELC were:



1. SK Kempas
2. SJKC Foon Yew 4
3. SK Taman Suria
4. SJKC Pei Hwa 2
5. SK Taman Bukit Tiram
6. SJKC Kuo Kuang
7. SJKC Kempas Baru
8. SK Kg. Maju Jaya
9. SJKT Gelang Patah
10. SJKC Pu Sze
11. SK Taman Kota Kulai 2
12. SJKC Masai
13. SJKC Chi Mang
14. SK Sungai Tiram
15. SJKC Pei Hwa

### 4. IMELC 2016 Final Presentation

ELC 2016 Final Presentation was successfully held at Dewan Seminar, JPNJ. Students and teachers were enthusiastically presenting their product and projects. The judges were Dr. Gerard Kho (Chief Judge from Medini Iskandar Malaysia Sdn Bhd), Mdm Daisy Harry (IRDA), Mr Raymond Liao (EM Resources), Tn Hj. Amiruddin bin Abdul Manaf (JPNJ) and Dr. Dayana

Farzeeha Binti Ali (UTM). Prize Giving Ceremony was officiated by Guest of Honour, Datin Rohana binti Ismail (IRDA).



## List of Winners

### Final Presentation

1<sup>st</sup> place – SK Taman Suria

2<sup>nd</sup> place - SJKC Masai

3<sup>rd</sup> place - SJKC Pu Sze

Special award - SK Chi Mang (School not under Iskandar Malaysia, but interested to join the competition) – only 4 students in Year 6

### Recycling

1<sup>st</sup> place –SJKC Kuo Kuang - 12,618kg

2<sup>nd</sup> place – SK Taman Kota Kulai – 6,900kg

3<sup>rd</sup> place - SK Kampong Sawah – 6,286kg

### Electricity & Water Saving

1<sup>st</sup> place –SK Taman Bukit Tiram - 60% (water), 45% (electricity)

2<sup>nd</sup> place – SJK(T) Gelang Patah – 48% (water), 53% (electricity)

3<sup>rd</sup> place - SJKC Johor Jaya – 50% (water), 31% (electricity)

## 5. School carbon report

83 schools submitted their electricity bills, 94 schools submitted their water bills and 77 schools submitted the recycling receipts for the school project competition. The total carbon reduction by participating schools in IMELC 2016 is 290,219.3kgCO<sub>2</sub> (see Table 2 and Table 3 for details). If the pattern is replicated to all 231 schools, in 1 year **5,132,693.49kgCO<sub>2</sub>** can be reduced.

Based on Table 2 and Table 3, RM4,641.60 electricity bills and RM10,463.38 water bills were saved and RM27,281.33 was collected from recycling. Therefore, a total of RM42,386.31 is saved & earned by participating schools in IMELC 2016. If the pattern is replicated to all 231 schools, in a year **RM1,006,362.90** can be saved and earned. Therefore, on average, a school can save and earn RM4,356.55 in a year through IMELC.



Table 2: Details of data collected from school project for electricity and water saving

	<b>Electricity (1 kWh = 0.694kgCO<sub>2</sub>)*</b>	<b>Water (1m<sup>3</sup> = 0.419kgCO<sub>2</sub>)*</b>
<b>School submitted</b>	83	94
<b>Total reduction by participating schools in 1 month</b>	9,283.19kWh	3,170.72m <sup>3</sup>
<b>Total CO<sub>2</sub> reduction by participating schools in 1 month</b>	6,442.53 kgCO <sub>2</sub>	1,328.53kgCO <sub>2</sub>
<b>Total money saved by participating schools</b>	RM4,641.60	RM10,463.38
<b>Projection to all 231 schools (reduction in usage)</b>	25,836.35kWh	7,791.88m <sup>3</sup>
<b>Projection to all 231 schools (carbon reduction)</b>	17,930kgCO <sub>2</sub>	3,264.79kgCO <sub>2</sub>
<b>Projection to all 231 schools (money saved per month)</b>	RM12,918.18	RM25,713.20
<b>Projection to all 231 schools (money saved per year)</b>	RM155,018.20	RM308,558.40
<b>Rate</b>	1kWh = RM0.50	1m <sup>3</sup> = RM3.30

\* Based on KeTTHA (2011) Low carbon cities framework and assessment system. KeTTHA, Putrajaya.

Table 3: Details of data collected from school project for recycling

	<b>Recycling</b>	<b>Carbon reduction (1kg = 2.87kgCO<sub>2</sub>)*</b>
<b>School submitted</b>	77	
<b>Total weight sold by participating schools</b>	98,414kg	282,448.2kgCO <sub>2</sub>
<b>Total income reported</b>	RM27,281.33	
<b>Average weight per school per month</b>	642.5kg	1,843.98kgCO <sub>2</sub>
<b>Average income per school per month</b>	RM195.81	
<b>Projection to all 231 schools (weight per month)</b>	148,417.5kg	425,958.2kgCO <sub>2</sub>
<b>Projection to all 231 schools (income per month)</b>	RM45,232.11	
<b>Projection to all 231 schools (weight per year)</b>	1,781,010kg	5,111,498.7kgCO <sub>2</sub>
<b>Projection to all 231 schools (income per year)</b>	RM542,785.30	

\* Based on Waste Reduction Model (WARM), U.S. Environmental Protection Agency.

## Conclusion

IMELC 2016 is a success for many schools in Iskandar Malaysia to provide awareness on Low Carbon, reduced carbon emission and provide economical benefits for the schools. IMELC should be continued in the future to achieve the target of carbon reduction as outlined in the Low Carbon Society for Iskandar Malaysia Blueprint 2025.

Prepared by

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