



APEC Follow-Up Peer Review on Energy Efficiency THE PHILIPPINES

**EGEE&C 44 Beijing, China
20-21 October 2014**

**Naomi Wynn
Asia Pacific Energy Research Centre,
Tokyo, Japan
Naomi.Wynn@aperc.iecej.or.jp**

What is a Follow-Up PREE?

- **Original PREE:**
 - **Broad review of energy efficiency policies and measures.**
 - **Provide recommendations on how these policies and measures might be improved.**
 - **A Report on the experts' findings, which includes findings, achievements and recommendations.**
- **Follow-Up PREE:**
 - **Same as above, but focuses on one or two energy use sectors, not economy wide.**

Stakeholders; who does what?

Host Economy

- Plan review process with APERC.
- Prepare site visits and meetings for the review.
- Assess and provide feedback on the preliminary findings and draft report.

Expert Review Team

- Conduct the review.
- Present preliminary findings achievements and recommendations.
- Prepare chapters for draft report.

APERC

- Coordinate the review team formation with the host economy.
- Coordinate and compile the draft report.
- Report to the EWG.

APEC Energy Working Group

- Discuss and endorse the draft final report.
- Report to APEC Officials.
- Endorse the work program.

APEC PREEs and Follow-Up PREEs

- **Four phases of PREEs, ten PREEs and two Follow-Up PREEs.**
 - **P1: New Zealand (Feb 2009); Chile (Mar 2009); Viet Nam (Jun 2009); Thailand (Nov 2009);**
 - **P2: Chinese Taipei (Aug 2010); Peru (Nov 2010); Malaysia (Dec 2010);**
 - **P3: Indonesia (Oct 2011); Philippines (Feb 2012);**
 - **Follow-Up PREE in Vietnam (Feb 2012) – Workshop Style**
 - **P4: Brunei Darussalam (Jun 2013)**
 - **Follow-Up PREE in the Philippines (Sep 2014)**

The Follow-Up PREE in the Philippines

15-19 September 2014.

- **Day 1**
 - Presentations from The Philippines Department of Energy Officials and leading Filipino energy efficient companies.
- **Day 2**
 - Site visits at Asahi Glass Corporation glass manufacturing plant in Pasig city
 - The Ayala Centre Glorietta shopping mall's district cooling plant.
- **Day 3**
 - A sugar refinery in Nasugu, Batangas.
- **Day 4:**
 - Lafarge Republic Cement manufacturing plant in Norzagaray.
 - Experts prepare their preliminary findings, achievements and recommendations.
- **Day 5:**
 - Experts prepare and present their preliminary findings, achievements and recommendations.

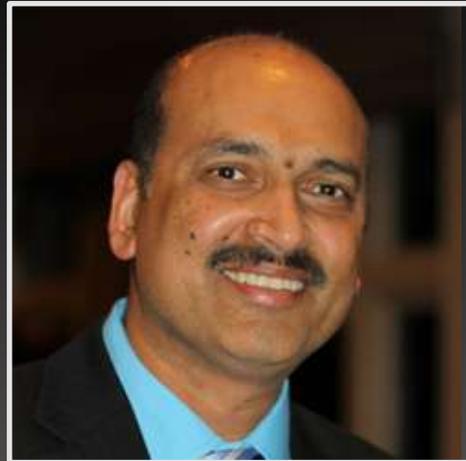
The APEC Economy Experts

**Sugar
Industry**



**Dr Wimolsiri
Pridasawas
Thailand**

**Glass
Industry**



**Mr Pramesh
Maharaj
New Zealand**

**Cement
Industry**



**Mr Shinichi
Aoyama
Japan**

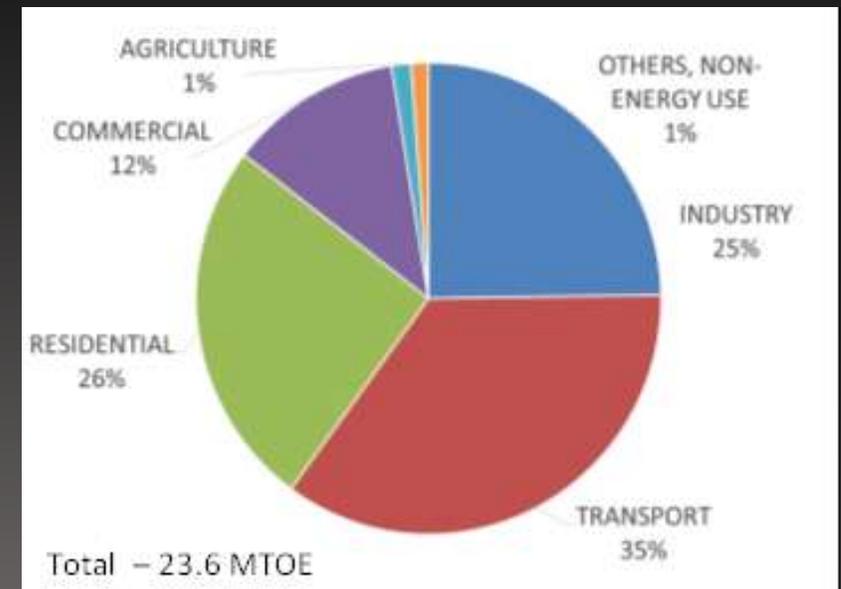
**Commercial
Buildings**



**Mr Brian
Castelli
US**

Overview: Findings & Achievements

- The sugar, glass and cement industries and commercial buildings are energy intensive industries.
- The Don Emilio Abello Energy Efficiency Awards.
- Individual corporations reviewed had strong internally implemented energy efficiency initiatives.
- Marked progress since the 2012 PREE in the Philippines.



Final Energy Consumption

Sugar Industry: Background

Crop Year	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Sep	9,845	21,086	35,671	33,684	37,204	47,627	10,102	5,462	73,528	83,353
Oct	150,605	134,511	159,033	107,369	120,767	135,047	75,628	146,002	208,478	185,821
Nov	237,766	198,103	240,209	167,665	266,497	293,786	161,286	279,765	304,009	239,909
Dec	299,717	303,295	416,359	383,714	282,211	328,058	313,964	328,134	439,759	420,589
Jan	397,931	396,110	336,169	328,351	317,045	469,058	416,603	392,033	358,146	334,607
Feb	369,699	359,078	390,904	387,224	347,410	358,913	396,608	364,213	394,651	401,960
Mar	309,321	338,127	360,742	412,453	424,006	210,339	350,813	344,790	389,071	467,884
Apr	268,751	282,935	235,834	313,692	190,346	90,917	308,292	252,634	209,704	201,754
May	93,176	77,204	52,169	185,506	95,044	23,858	245,817	98,457	64,050	82,124
Jun	10,927	25,301	5,709	119,470	8,482	1,715	78,659	27,934	15,602	23,862
Jul	-	1,957	290	15,396	1,231		36,437	4,170	343	5,564
Aug	3,008	368	364	503	4,786		4,907	537	7,775	14,381
						11,467			* adjustment per SRA	
Total	2,150,746	2,138,075	2,233,453	2,455,027	2,095,029	1,970,785	2,399,116	2,244,131	2,465,116	2,461,808

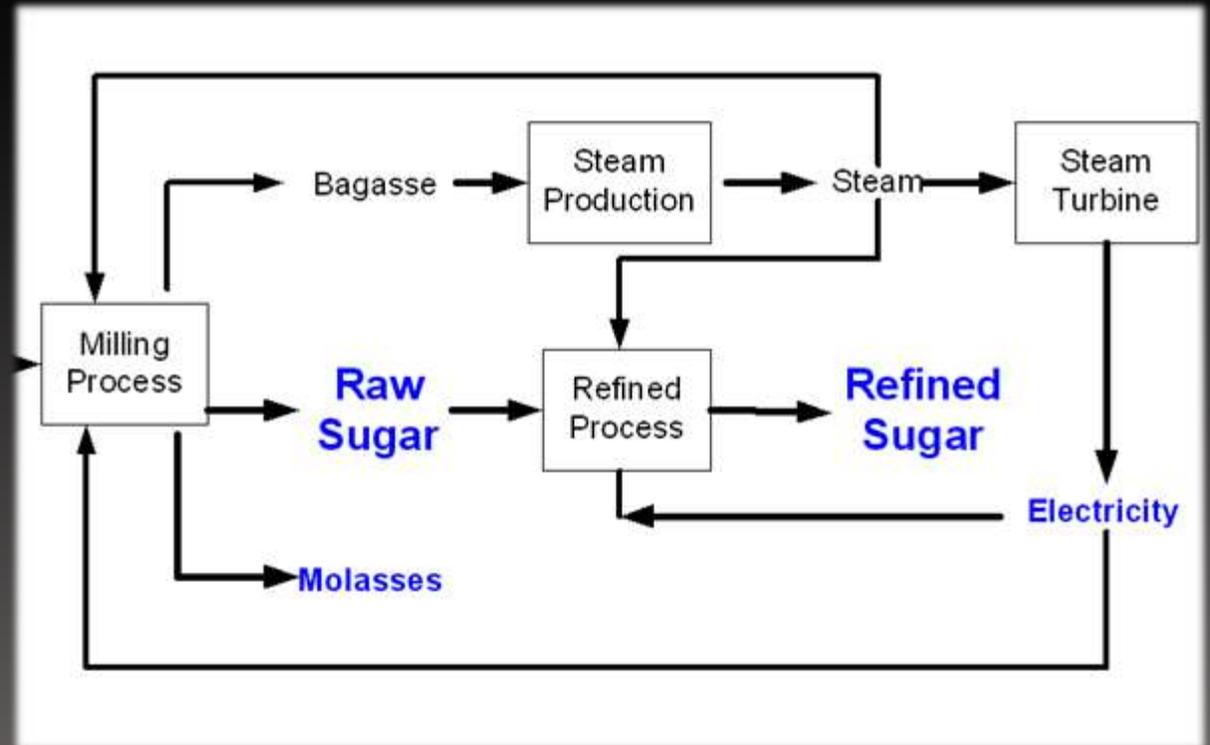
Raw Sugar Production in Metric Tonnes.

Source: Philippine Sugar Millers Assoc, Inc.

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Sugar Industry: Challenges

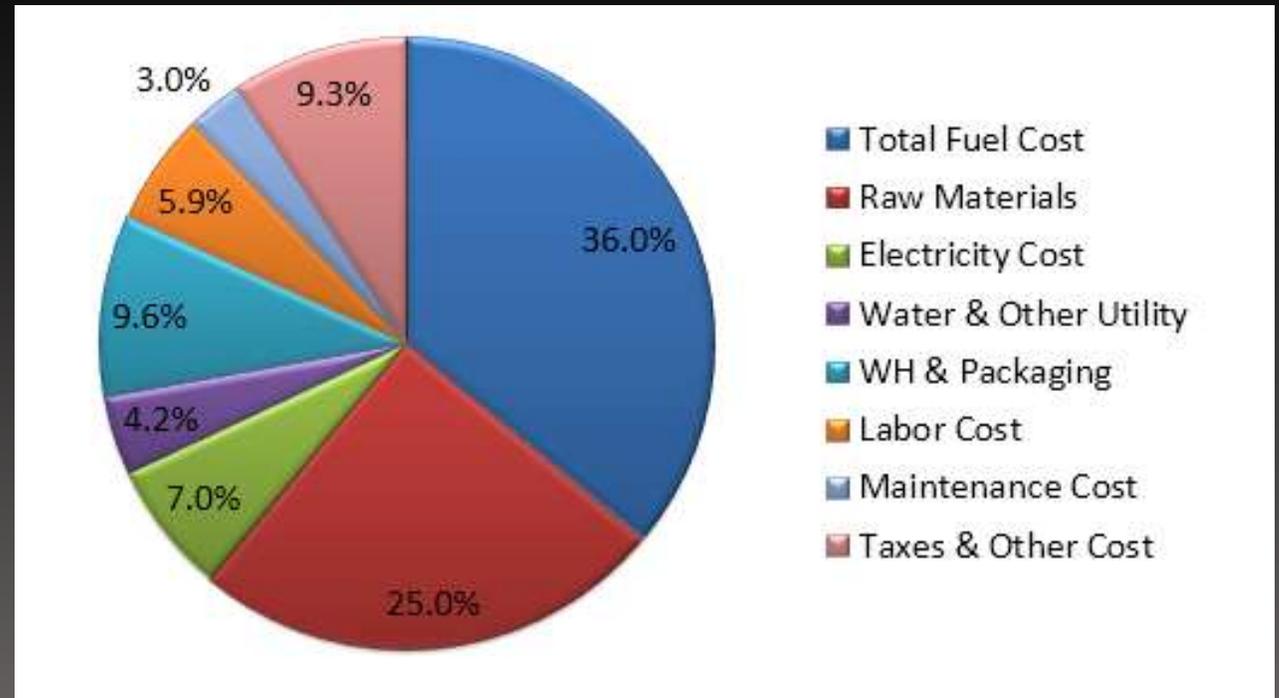
- **Raw materials**
- **Workers**
- **Fuel management during non-cane season**
- **Bagasse management**



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Glass Industry: Background

- **Process involves:**
 - Raw materials selection.
 - Batch preparation.
 - Melting and refining.
 - Conditioning.
 - Forming.
 - Post-processing *annealing, tempering, polishing, or coating
- **50 per cent of the cost of producing glass is energy:**
 - The fuel required for the furnace is 75% of that cost.



Composition of float glass production costs from an energy audit report in the Philippines.

Glass Industry: Achievement

- **Energy Management System – high level of staff involvement.**
- **EXCOM commitment to energy efficiency.**
- **Well-maintained plant.**
- **Optimising furnace efficiency**
- **Consistent award winner for the Don Emilio Abello Energy Efficiency Award.**



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Cement Industry: Background

Year	Total Kiln Capacity	Total Grinding Capacity	Total Production	Total Sales (Local Sales + Exports)	Demand Consumption (Local sales + Imports)
2003	18,847	26,369	13,067	13,090	12,120
2004	18,847	26,369	13,057	12,991	12,184
2005	18,847	26,369	12,368	12,523	11,585
2006	18,847	26,369	12,033	12,195	11,714
2007	18,847	26,369	13,048	13,066	13,011
2008	18,847	26,369	13,369	14,674	13,217
2009	19,547	26,369	14,865	14,666	14,470
2010	19,547	25,886	15,900	15,449	15,450
2011	21,047	26,911	16,063	15,595	15,625
2012	21,047	26,911	18,907	18,356	18,395
2013	21,047	28,100	20,150	19,445	19,604

Capacity, production, sales and consumption of cement in the Philippines in thousand Metric Tonnes ('000 MT).

Source: CeMAT Annual Report.

Cement Industry: Achievements

- Award winning industry for sustainability and energy efficient practices with consistent improvement
- Top down plant management team with strong energy management system.
- Using alternative fuel sources and admixtures.



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Commercial Buildings: Background

- **Accelerated commercial building development in the Greater Manila Metro Area (GMMA).**
- **Responsible for 11 per cent of energy consumption in the Philippines.**
- **Energy efficient buildings for new buildings and retrofiting is a Government priority.**



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Commercial Buildings: Achievements

- **Energy consumption growing in the commercial buildings sector (4 per cent) is less than GDP growth.**
- **Achieved several targets from the 2012 PREE report:**
 - **10 million CFLs.**
 - **Utilise Energy Service Companies (ESCOs) more fully in the government building retrofit and expanding the Accreditation of Registry of CFOs.**
 - **Establish a green buildings ratings system.**
 - **Progressed with integrating the voluntary 'Energy Conserving Design Guidelines for Buildings' as an integral part of the National Building Code by 2015.**

For copies of PREE reports go to:
<http://aperc.ieej.or.jp>



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