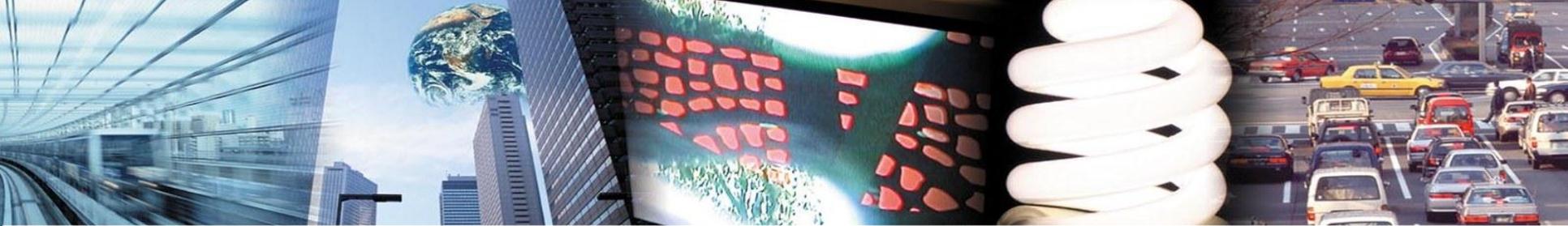




**APEREC Workshop at EWG 48**  
**Port Moresby, Papua New Guinea**  
**17 November 2014**

**4. APEC Follow-up Peer Review on Energy  
Efficiency (PREE) on  
The Philippines**

**Naomi Wynn**  
**Asia Pacific Energy Research Centre**

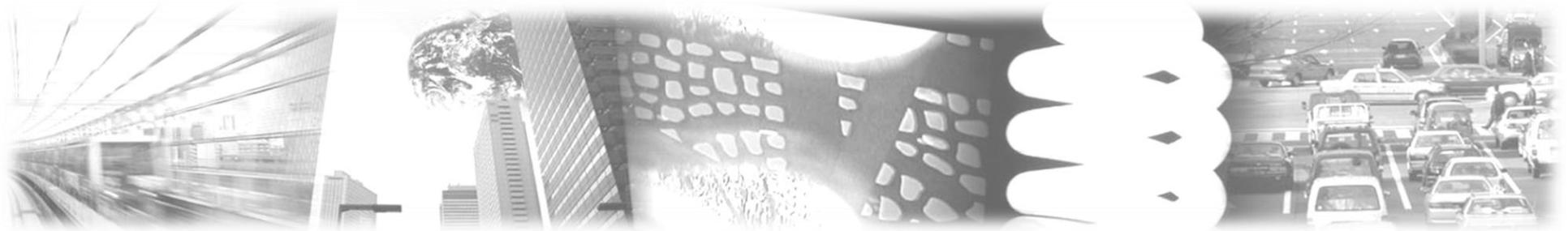


## Presentation Outline

**1. PREE and Follow-up PREE  
Background Information.**

**2. Overview of the Energy Efficiency in  
the Philippines and the 2012 PREE  
Report.**

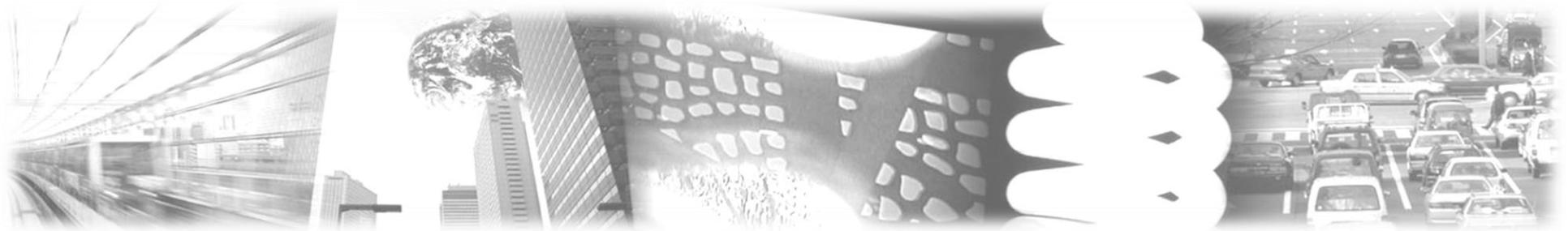
**3. The Follow-up PREE Report.**



# 1.1- PREE and Follow-up PREE

## Background information

- **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.
    - First Follow-up PREE (Viet Nam) focused on energy data.
    - This Follow-up PREE focused on the sugar, glass and cement industries, and the commercial buildings sectors.



## 1.2- Four phases of PREEs, ten PREEs and two Follow-up PREEs

P1

- New Zealand (Feb 2009).
- Viet Nam (Jun 2009).
- Chile (Mar 2009).
- Thailand (Nov 2009).

P2

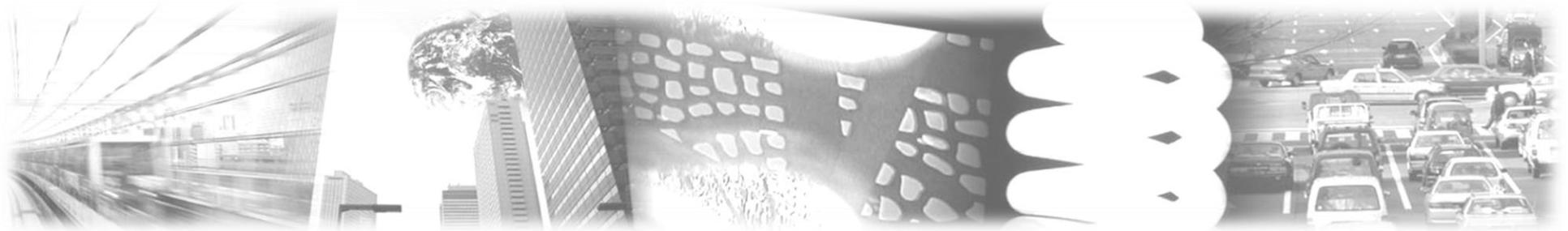
- Chinese Taipei (Aug 2010).
- Malaysia (Dec 2010).
- Peru (Nov 2010).

P3

- Indonesia (Oct 2011).
- Philippines (Feb 2012).
- Follow-up PREE in Vietnam (Feb 2012) Workshop Style.

P4

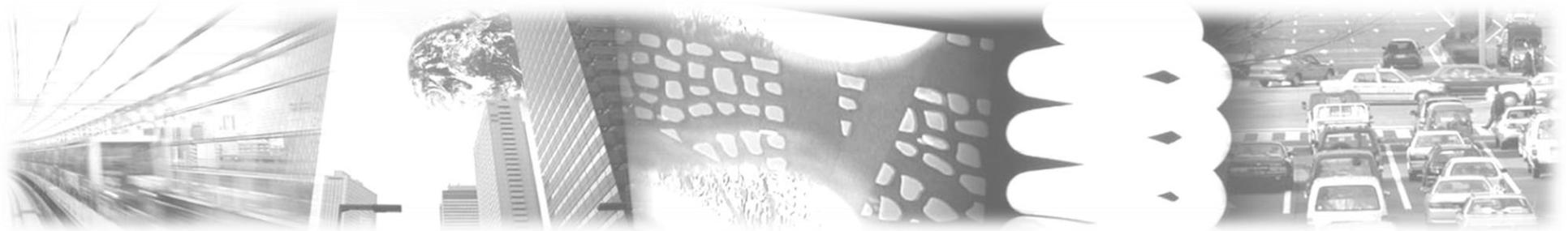
- Brunei Darussalam (Jun 2013).
- Follow-up PREE in the Philippines (Sep 2014).



## 2.1- The PREE Report in the Philippines (2012)

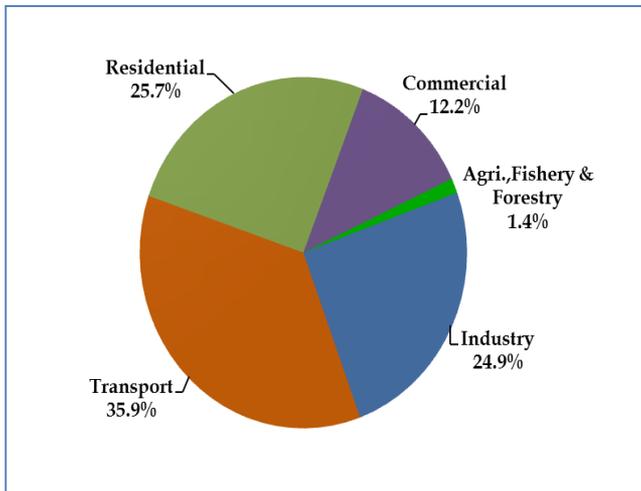
### 54 Recommendations on:

- **Institutional context.**
- **Energy efficiency goals, targets and strategy.**
- **Energy data collection and monitoring.**
- **Sectoral analysis:**
  - **Industrial sector;**
  - **Supply and demand side electricity and transmission and distribution;**
  - **Commercial and residential sector; and**
  - **Transport sector.**
- **Energy management and mechanism training.**
- **Appliances and equipment.**

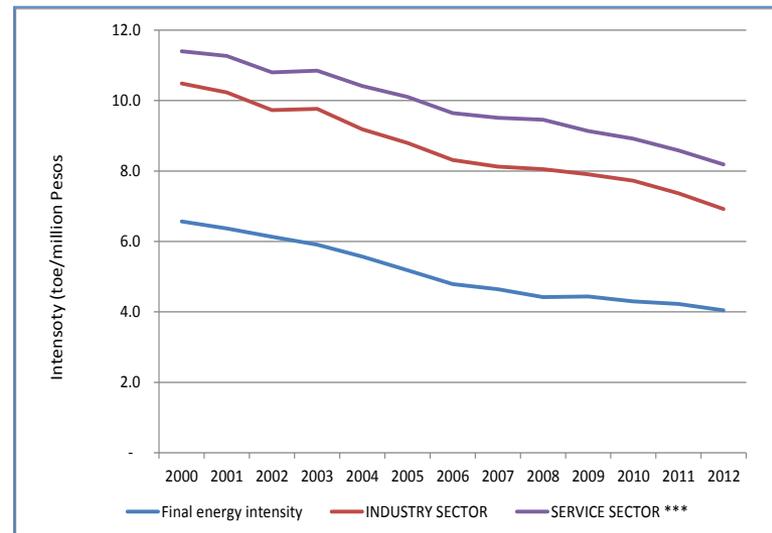


## 2.2 - The Philippines in Brief

- **Total primary energy supply (2012) = 42.09 MTOE**
  - 62% from fossil fuels.
- **Total primary energy consumption (2012) = 23.3 MTOE**
  - Industrial sector to grow 5.2% min on average per year to 2030, followed by the commercial sector at 4 per cent.
- **Energy intensity improving.**

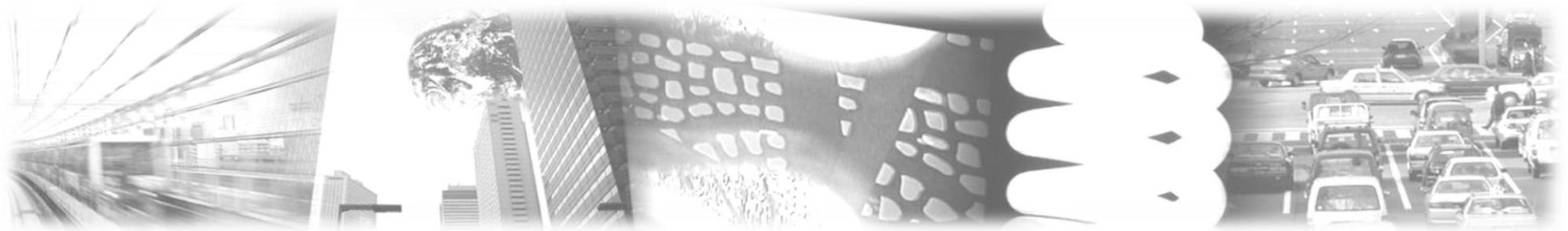


**2012 Final Energy Demand.**  
Source: Philippine DOE



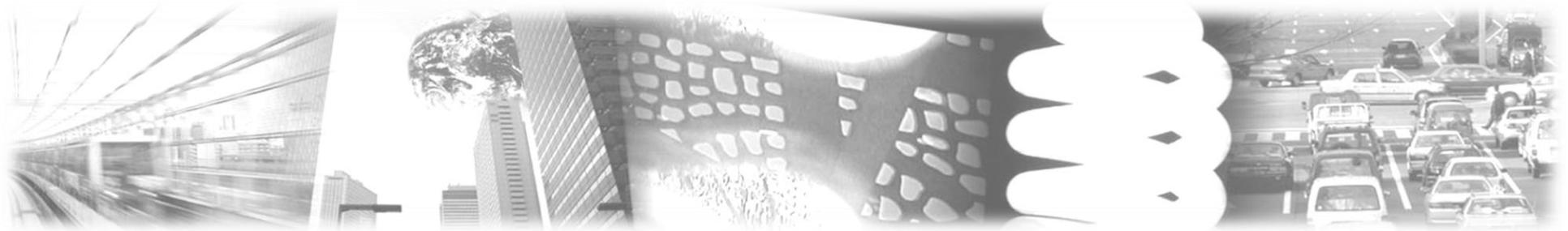
**Energy Intensity from 2000-2012.**  
Source: Philippine DOE





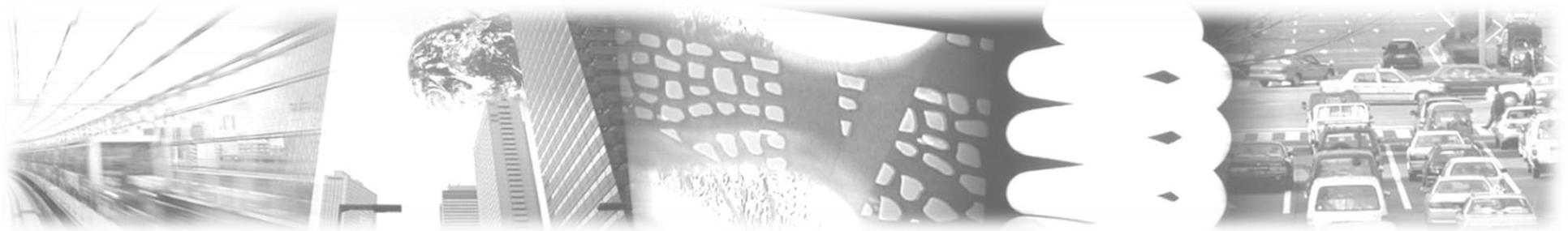
## 3.2. Draft Report Process

- **Follow-up Peer Review Team visit the Philippines:**
  - Meetings with Government officials, relevant energy efficiency industries and corporation.
  - Site visits at sugar, glass and cement factories and a district cooling facilities in the Philippines.
  - Preliminary feedback to the Philippine Government.
- **The private sector and the Philippine Government are committed to improving energy efficiency and conservation.**
- **Progress since the 2012 PREE Report on the Philippines, highlighted in the achievements below.**
- **34 recommendations including overarching recommendations and recommendations on the sugar, glass and cement industries and the commercial buildings sector.**



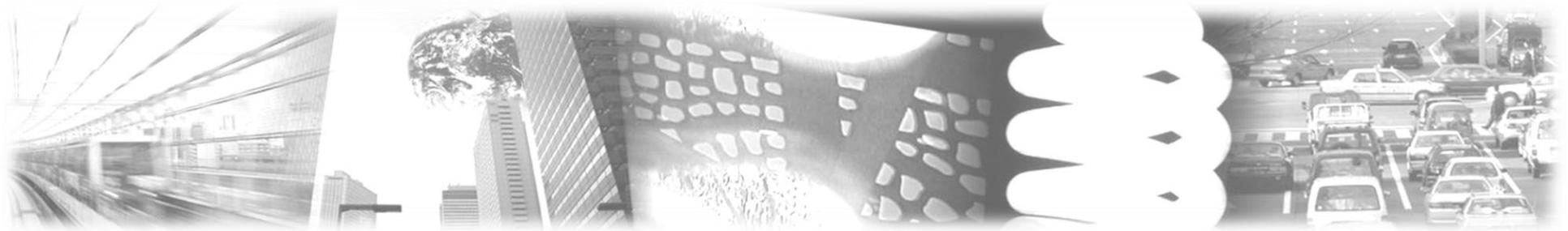
## 3.3a Overarching Achievements

- **A1.** Progress with the Energy Efficiency and Conservation Bill 2012.
- **A3.** Continued savings through the National Energy Efficiency and Conservation Program ('NEECP').
- **A5.** Continuation of the Don Emilio Abello Energy Efficiency Award.



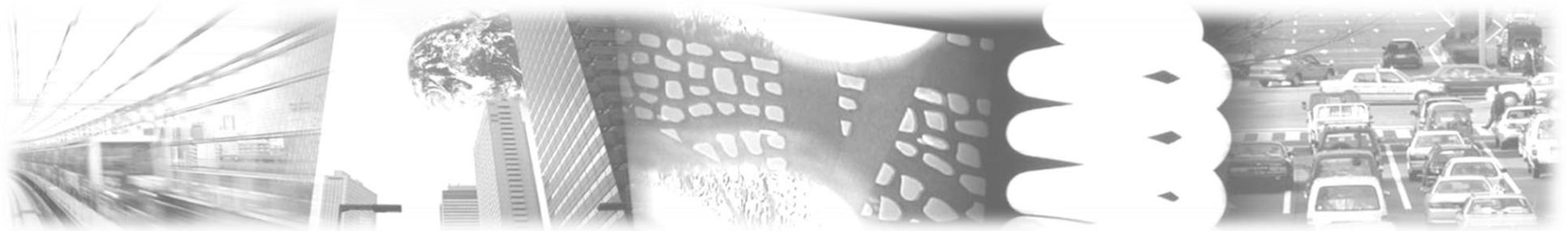
## 3.3b Overarching Recommendations

- **R4:** Encourage faster adoption of the ISO 50001 Energy Management Framework, look into certification and implementation programs, and adopt a voluntary certification program.
- **R6:** The Government should start programs for energy efficiency financing, low interest loans, tax incentives and fast track permitting to minimise the upfront cost of implementing energy efficiency projects in the industrial and commercial buildings sectors.
- **R7:** The Government should continue to work to improve and stabilise energy supply both through expanding and strengthening power generation capacity and the power grid system, and through introducing alternative energy sources.



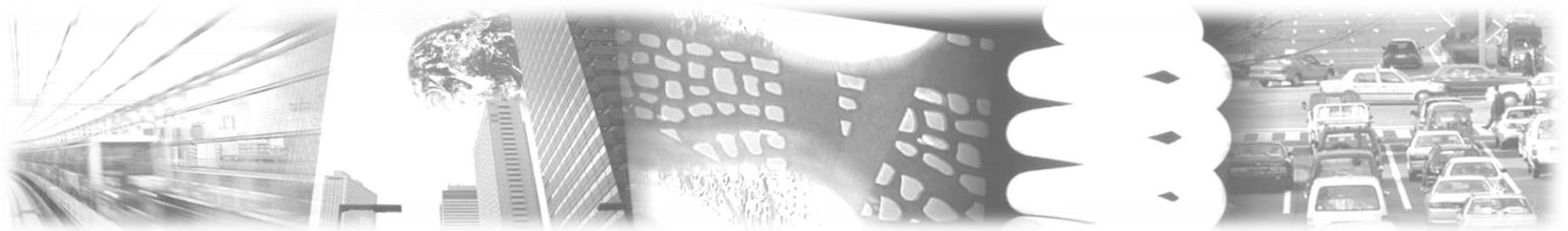
## 3.4a Sugar Industry Achievements

- **A6:** One of the most economical agricultural products in the Philippines as it produces many products and utilises almost all waste from the process.
- **A7:** The use of biomass in sugar production.
- **A8:** More energy efficient sugar refining plants (i.e. award winning) generally, continue to improve the sugar refining process to reduce energy consumption and operate efficiently compared with other countries.



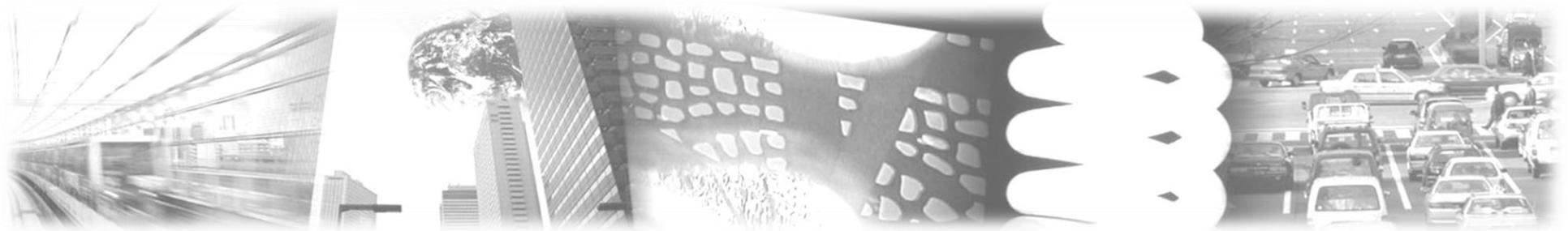
## 3.4b Sugar Industry Recommendations

- **R10:** Improve sugar cane crop quality to increase sugar production yield.
- **R16:** Reduce sugar cane burning by using sugar cane harvesting machinery to not only improve the quality of the sugar cane, leading to higher sugar production yields, but also allowing for leaves to be used as a biomass fuel source.\*
- **R17:** Increase research and development in the sugar industry.



## 3.5a Glass Industry Achievements

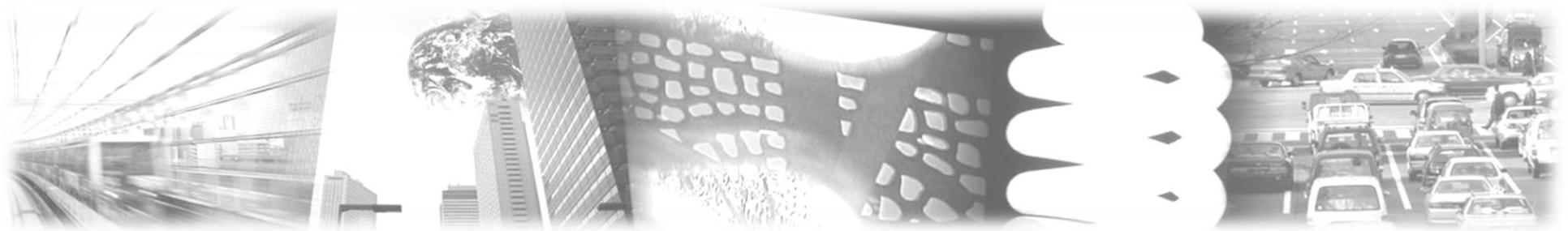
- **A11:** The visited site had demonstrated energy savings, for example upgrading lights from metal halides to LEDs.
- **A12:** Good data tracking and reporting.
- **A13:** Plans for improving and maintaining energy efficiency.



## 3.5b Glass Industry Recommendations

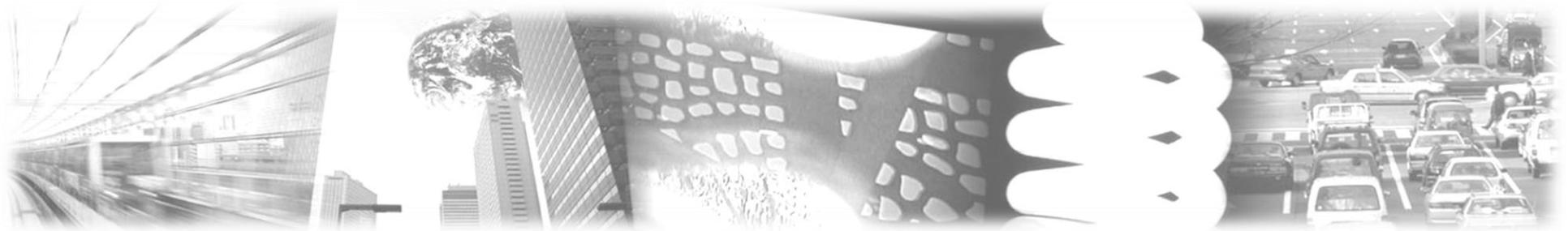
- **R18:** Increase the percentage of cullet used in the manufacturing process, where possible.\*
- **R21:** Consider using electricity as a booster in glass melting, which can be more efficient than fuel fired furnaces.\*
- **R22:** Work with the Government to try to establish a natural gas or LNG pipeline supply to the site to improve efficiency and lower carbon emissions.

*\*NB: Based on this recommendation, the DOE will include it in the DOE's future energy audit material measures for the glass industry sector.*



## 3.6a Cement Industry Achievements

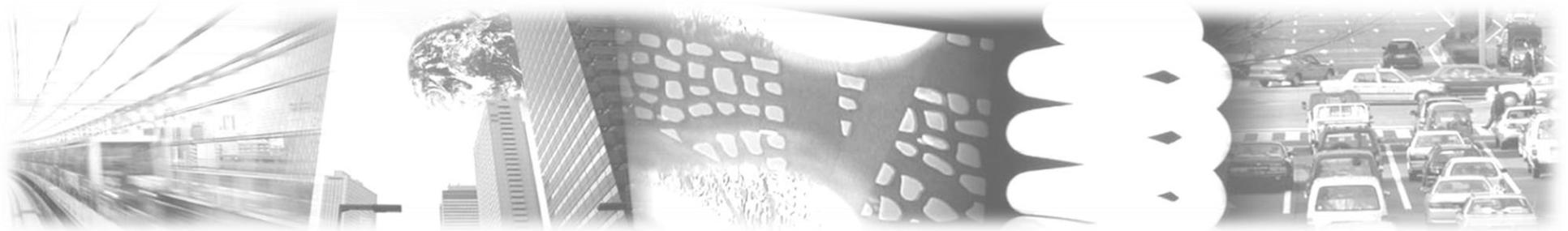
- **A15:** High level of cooperation among the plant's teams.
- **A16:** Visible signage promoting and encouraging energy efficiency and making energy efficiency data available to all staff
- **A18:** Demonstrated use of alternative fuel sources and admixtures.



## 3.6b Cement Industry Recommendations

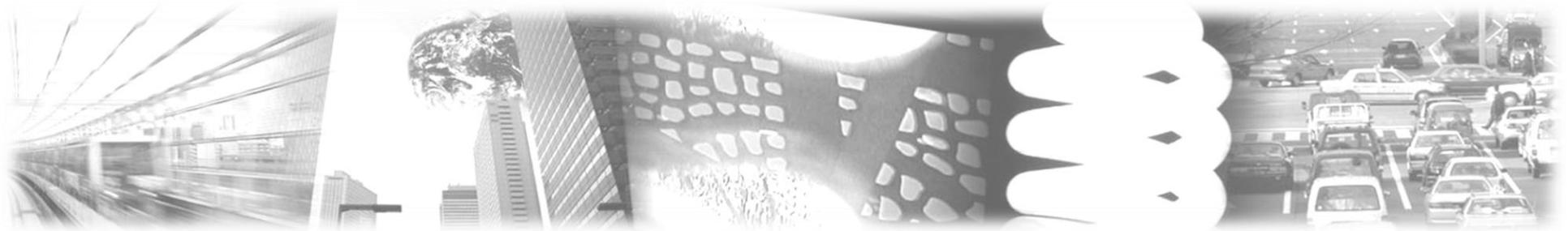
- **R23:** Prioritise energy efficiency despite the competing priorities to increase cement production.\*
- **R24:** Encourage sector wide cooperation on energy efficiency initiatives.
- **R25:** Consider onsite electricity generation options through waste heat recovery where applicable.\*

*\*NB: Based on this recommendation, the DOE will include it in the DOE's future energy audit material measures for the cement industry sector.*



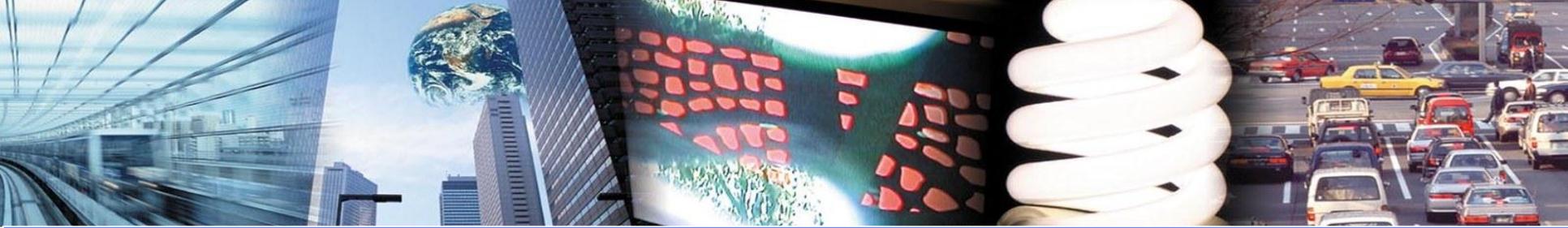
## 3.7a Commercial Buildings Achievements

- **A22:** Utilising Energy Service Companies (ESCOs) more fully in the Government building retrofit program and establishing and expanding the Accreditation Registry of ESCOS.
- **A23:** Establishing a green buildings ratings system involving 10 pilot buildings.
- **A24:** Progress with the integrating the currently voluntary 'Energy Conserving Design Guidelines for Buildings' in to the National Building Code by 2015.



## 3.7b Commercial Buildings Recommendations

- **R28:** Increase the use of ESCOs in the commercial building market by utilizing strong policy and private sector financing mechanisms where appropriate
- **R31:** The Philippines DOE should prepare a roadmap of all necessary steps to quickly implement building energy codes once the Energy and Conservation Bill becomes law.
- **R33:** Research and pilot other less common, but energy saving, cooling technologies for hot, tropical climates.



## Photos from the team visit.





**Thank you for  
your kind  
attention**

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