

MINISTRY OF ENERGY AND MINERAL RESOU
THE REPUBLIC OF INDONESIA

# Energy Management in Buildings and Industries

**Directorate General of New, Renewable Energy and Energy Conservation**

**Jakarta, 14th November 2018**

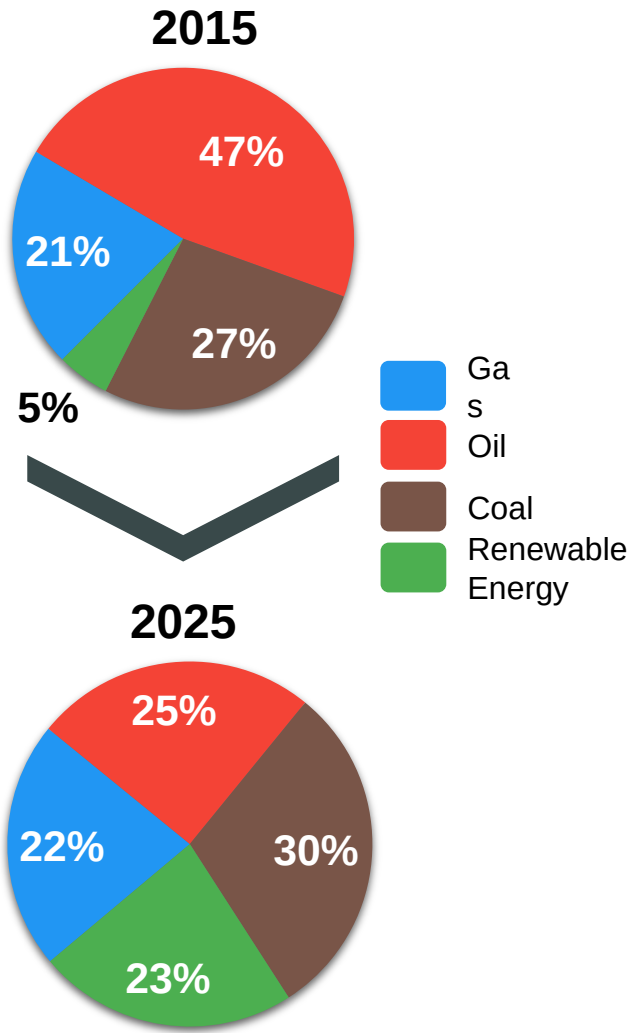
# Contents

# Background

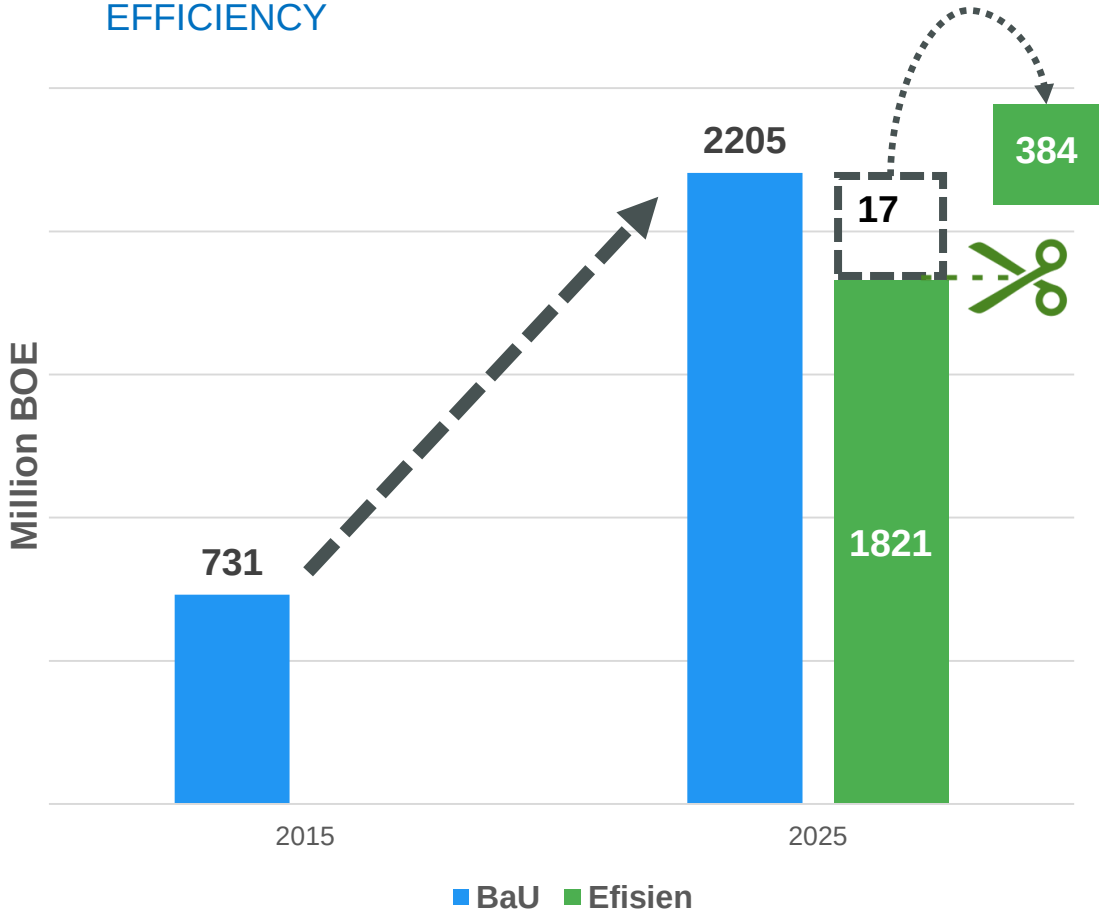
# National Energy Policy

Government Regulation No. 79/2014

## ENERGY DIVERSIFICATION




## ENERGY EFFICIENCY

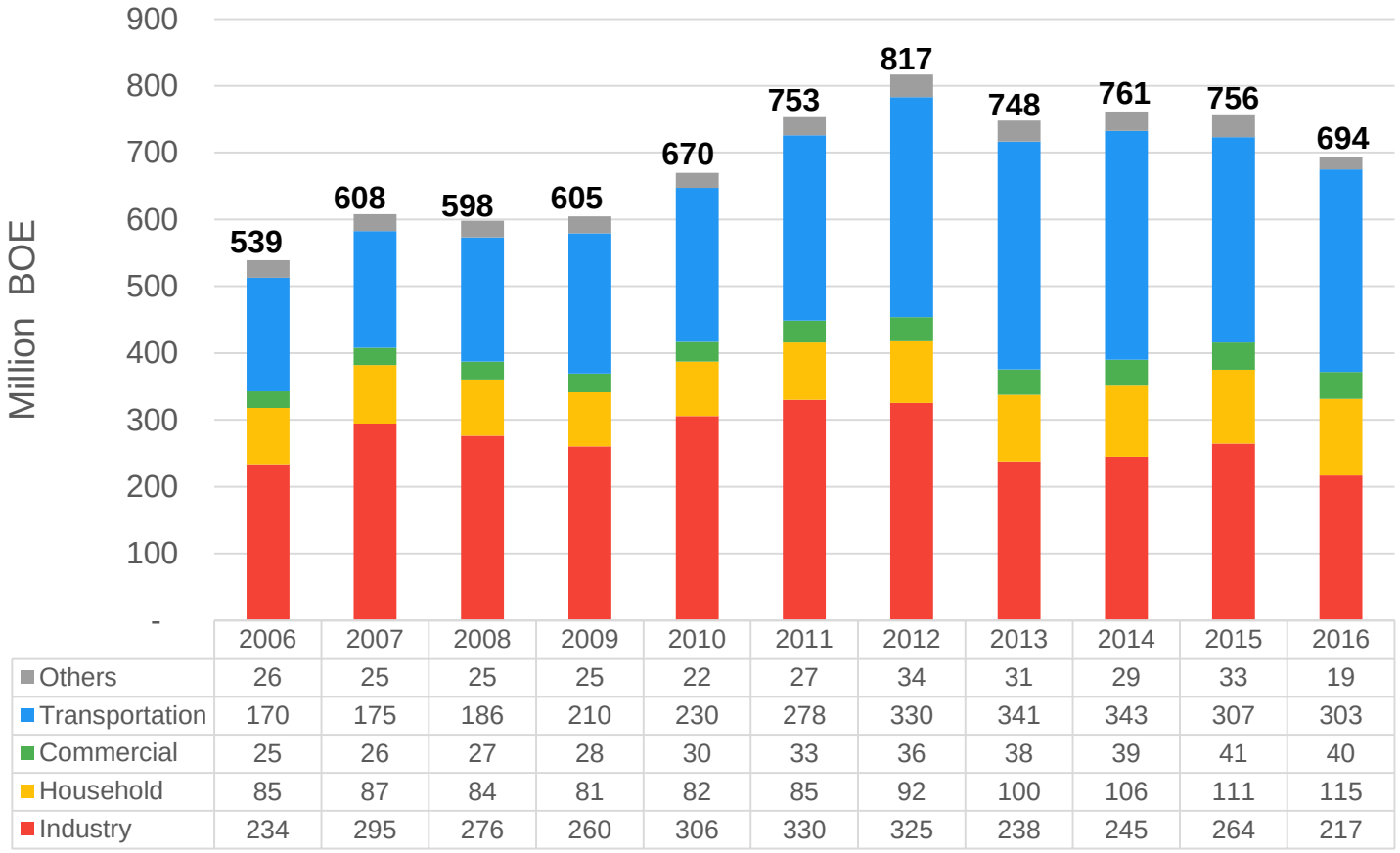



Target 2025

- Energy Intensity Decrease 1% per annum.
- Energy Elasticity <1
- Energy Consumption Decrease 17% of BAU

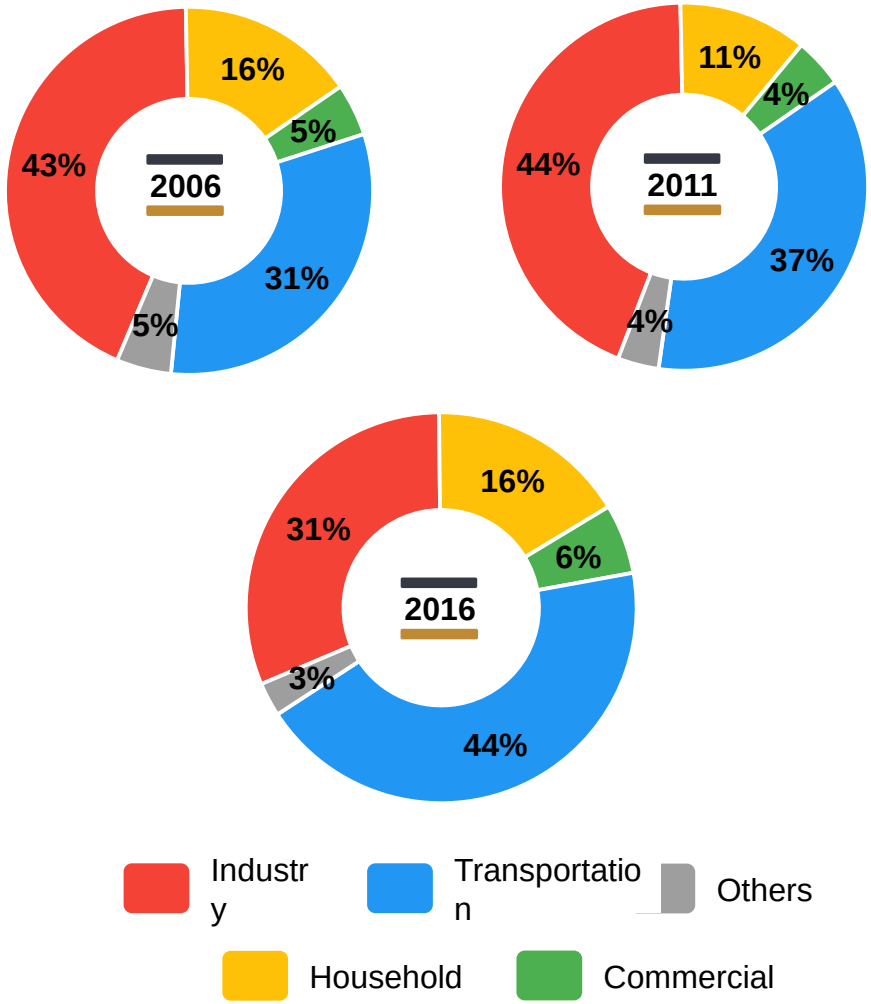
Explanation: excluding Biomass
Source: Handbook of Energy & Economic Statistics of Indonesia 2016 Final Edition, MEMR
Pres. Reg. 22/2017 on General Plan on National Energy

# Final Energy Consumption




| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Others | 26 | 25 | 25 | 25 | 22 | 27 | 34 | 31 | 29 | 33 | 19 |
| Transportation | 170 | 175 | 186 | 210 | 230 | 278 | 330 | 341 | 343 | 307 | 303 |
| Commercial | 25 | 26 | 27 | 28 | 30 | 33 | 36 | 38 | 39 | 41 | 40 |
| Household | 85 | 87 | 84 | 81 | 82 | 85 | 92 | 100 | 106 | 111 | 115 |
| Industry | 234 | 295 | 276 | 260 | 306 | 330 | 325 | 238 | 245 | 264 | 217 |

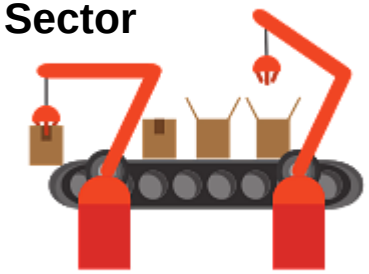
## Final Energy Consumption Mix Per Sector




Explanation: -. Excluding Biomass
-. Others consist of agricultural, construction, and mining sector
Source: Handbook of Energy & Economic Statistics of Indonesia 2017 Final Edition, MEMR

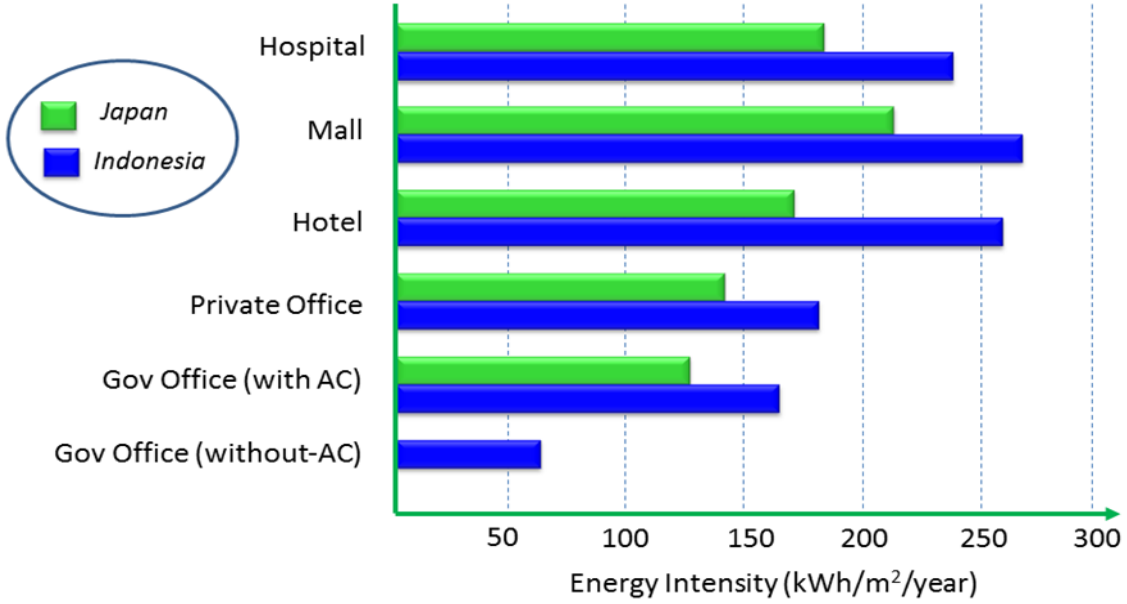
# Energy Intensity for Industry and Building in Indonesia Comparing to Other Countries

## Industrial Sector



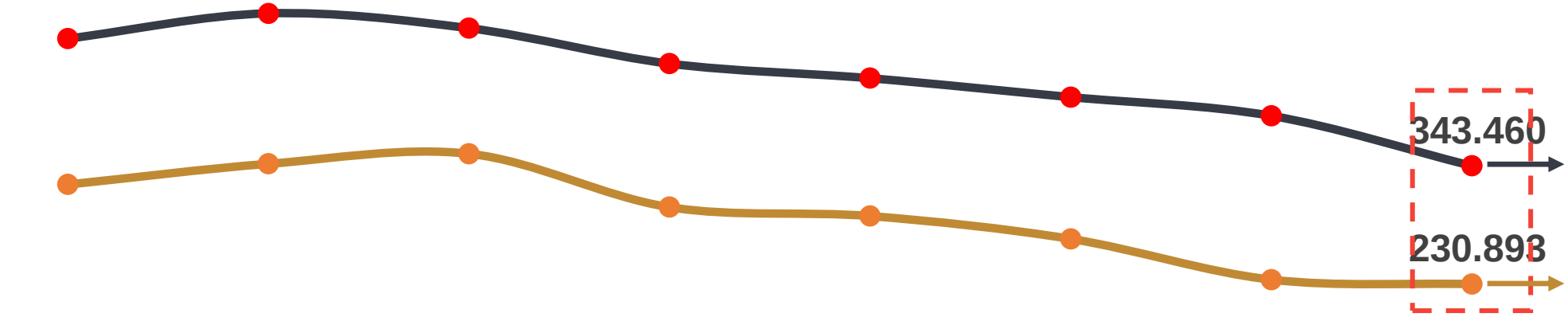
| Types of Industry | Country | Energy Intensity |
|---|---|---|
| Iron and Steel | Indonesia | 650 kWh/Ton |
| | India | 600 kWh/Ton |
| | Japan | 350 kWh/Ton |
| Cement | Indonesia | 800 Kcal/kg clinker |
| | Japan | 773 Kcal/kg clinker |
| Ceramics | Indonesia | 16,6 GJ/Ton |
| | Vietnam | 12,9 GJ/Ton |
| Glass | Indonesia | 12 MJ/ton |
| | Korea | 10 MJ/ton |
| Textile | Indonesia | Spinning : 9,59 GJ/Ton |
| | | Weaving : 33 GJ/Ton |
| | India | Spinning : 3,2 GJ/Ton |
| | | Weaving : 31 GJ/Ton |

## Building/Commercial Sector




*Source : Energy Conservation Partnership Program and JICA Study, 2010*

# Energy Intensity




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Primary Energy Intensity | 465 | 489 | 475 | 441 | 427 | 409 | 391 | 343 |
| Final Energy Intensity | 326 | 345 | 355 | 304 | 296 | 274 | 235 | 231 |

Energy Intensity :

A. Energy Consumption
   1. Electrification Ratio
   2. Energy Efficiency
   3. Consumption Behavior
B. PDB
   1. Inflation
   2. Rupiah Exchange Rate

Explanation: Excluding Biomass
Source: Handbook of Energy & Economic Statistics of Indonesia 2017 Final Edition, MEMR

# Achievement of Emission Gas Mitigation on Energy Sector up to 2017

| NO | AKSI MITIGASI | PROGRAM/ KEGIATAN (DIPA/DIPDA) | Tahun 2014 | | | Tahun 2015 | | | Tahun 2016 | | | Tahun 2017 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Capaian Kegiatan (Jumlah & Unit) | | Realisasi Penurunan Emisi (ton CO2e) | Capaian Kegiatan (Jumlah & Unit) | | Realisasi Penurunan Emisi (ton CO2e) | Capaian Kegiatan (Jumlah & Unit) | | Realisasi Penurunan Emisi (ton CO2e) | Capaian Kegiatan (Jumlah & Unit) | | Realisasi Penurunan Emisi (ton CO2e) |
| 1 | 2 | 3 | 8A | | 8B | 9A | | 9B | 10A | | 10B | 10A | | 10B |
| 1 | Penerapan mandatori manajemen energi untuk pengguna padat energi | DIPA | 62 | Perusahaan | 1.710.218,51 | 109 | Perusahaan | 5.849.410,51 | 120 | Perusahaan | 4.371.848,00 | 120 | Perusahaan | 4.371.848,00 |
| 2 | Penerapan program kemitraan konservasi energi | DIPA | 300 | Obyek | 30.000,00 | 10 | Obyek | 0,05 | 10 | Obyek | 0,05 | 10 | Obyek | 0,05 |
| 3 | Peningkatan efisiensi peralatan rumah tangga | DIPA | 109,00 | GWh | 2.819.359,41 | 1.076,62 | GWh | 3.791.547,27 | 2.752,54 | GWh | 6.277.094,50 | 2.752,54 | GWh | 6.277.094,50 |
| 4 | Penyediaan dan Pengelolaan Energi Baru Terbarukan dan Konservasi Energi | | | | | | | | | | | | | |
| | - PLTP | Swasta | 120 | MW | 121.839,00 | 128 | MW | 612.865,00 | 128 | MW | 621.718,72 | 725 | MW | 4.360.600 |
| | - PLTMH | DIPA | 2,18 | MW | 10.239,24 | 3,23 | MW | 15.040,09 | 6,33 | MW | 34.706,49 | 3,67 | MW | 16.832 |
| | - PLTM | Swasta | 12,5 | MW | 59.369,80 | 12,5 | MW | 67.079,51 | 20 | MW | 88.529,44 | 97 | MW | 1.563.283 |
| | - PLTS | DIPA | 12,595 | MW | 3.609,96 | 18,115 | MW | 5.078,00 | 24,745 | MW | 7.374,27 | 12.369 | MW | 27.293 |
| | - PLTBayu | DIPA | 0 | MW | 0 | 0 | MW | 0 | 0 | MW | 0 | 0 | MW | 0 |
| | - PLT Hybrid | DIPA | 0,173 | MW | 48,79 | 3,673 | MW | 1.008,65 | 3,673 | MW | 1.804 | 3.519 | MW | 941 |
| | - PLT Biomassa | Swasta | 91,6 | MW | 408.199 | 123,6 | MW | 574.690 | 138,6 | MW | 654.319 | 168 | MW | 1.195.409 |
| 5 | Pemanfaatan Biogas | DIPA | 3.747.082 | m3 | 5.394 | 5.749.272 | m3 | 8.277 | 8.206.488 | m3 | 11.814 | 8.206.488 | m3 | 11.814 |
| 6 | Penggunaan gas alam sebagai bahan bakar angkutan umum perkotaan | DIPA | 4,22 | MMSCFD | 86.756 | 3,83 | MMSCFD | 109.826 | 3,38 | MMSCFD | 132.896 | 33,70 | MMSCFD | 204.169 |
| 7 | Peningkatan sambungan rumah yang teraliri gas bumi melalui pipa | DIPA | 16.949 | SR | 33.108 | 7.636 | SR | 38.249 | 88.915 | SR | 42.135 | 235.925 | SR | 80.000 |
| 8 | Reklamasi lahan pasca tambang | Swasta | 6.596,58 | Ha | 1.447.901,6 | 6.732,69 | Ha | 1.701.050,7 | 6.876,72 | Ha | 1.959.615 | 6.876,72 | Ha | 1.959.615 |
| **Total Mitigasi Sesuai Perpres No. 61 tahun 2011** | | | | | **6.736.043** | | | **12.774.122** | | | **14.203.854** | | | **20.068.898** |
| 9 | Pemanfaatan Biodiesel | Swasta | 1.844.663 | Kilo Liter | 2.747.810 | 915.640 | Kilo Liter | 1.363.937 | 3.007.522 | Kilo Liter | 4.480.005 | 2.571.569 | Kilo Liter | 3.830.609 |
| 10 | Penerapan Inpres No. 13 Tahun 2011 tentang Penghematan Energi dan Air | DIPA | 4.169 | MWh | 3.565 | 270.107,500 | MWh | 226.890 | 21.693 | MWh | 20.174 | 21.693 | MWh | 20.174 |
| 11 | Aksi Mitigasi Sektor Ketenagalistrikan | | | | | | | | | | | | | |
| | - Pembangunan PLTA | Swasta | 12 | MW | 62.935,68 | 12 | MW | 69.076,23 | 16,9 | MW | 74.975,89 | 298,0 | MW | 620.076,13 |
| | - Penggunaan *Clean Coal Technology* pada Pembangkit listrik | Swasta | 1.475 | MW | 1.059.130,340 | 1.475 | MW | 1.937.348,260 | 1.475 | MW | 1.989.834,000 | 1.475 | MW | 1.020.007 |
| | - Penggunaan *Cogeneration* pada Pembangkit Listrik | Swasta | 619,14 | MW | 1.672.654,81 | 619,14 | MW | 1.402.872,65 | 619,14 | MW | 1.127.695,26 | 628,00 | MW | 2.022.800 |
| 12 | Program Konversi Minyak Tanah ke LPG | DIPA | 6.093.138.000 | Ton LPG | 10.964.052,02 | 6.376.989.660 | Ton LPG | 11.474.817,47 | 6.677.333.000 | Ton LPG | 12.015.258,21 | 6.305.422.000 | Ton LPG | 12.428.000 |
| 13 | Pembangunan Penerangan Jalan Umum Cerdas | | | | | | | | | | | | | |
| | - Tenaga Surya | DIPA | 0 | Jumlah Titik | 0 | 600 | Jumlah Titik | 1.784 | 4.915 | Jumlah Titik | 2.326 | 4.915 | Jumlah Titik | 2.326 |
| | - *Retrofitting* Lampu LED | DIPA | 0 | Jumlah Titik | 0 | 516 | Jumlah Titik | 3.467 | 7.322 | Jumlah Titik | 7.662 | 7.322 | Jumlah Titik | 7.662 |
| **Kegiatan Baru** | | | | | | | | | | | | | | |
| 14 | *Fuel Switching* BBM Transportasi (RON 88 ke RON 90 dan 92) | DIPA | | | | | | | | | | 10.009.097 | Kilo Liter | 53.501 |
| **TOTAL** | | | | | **23.246.191** | | | **29.254.314** | | | **33.921.785** | | | **40.074.055** |

Emission reduction on energy sector in 2017 for **40 Million Ton CO2e**

# NATIONAL ENERGY MANAGEMENT

## **Definition of Energy Conservation** (Law No. 30 of 2007 and GR No. 70 of 2009)

***Task***

**Energy Conservation is systematic, well-planned, and integrated efforts to :**

**① conserve domestic energy resources;**

**② increase the efficiency of its energy resources utilization;**

***Scope of Work***

**Energy Conservation is implemented in all phases of energy management: ❶ Energy Provision**

**❷ Energy Business**

**❸ Energy Utilization**

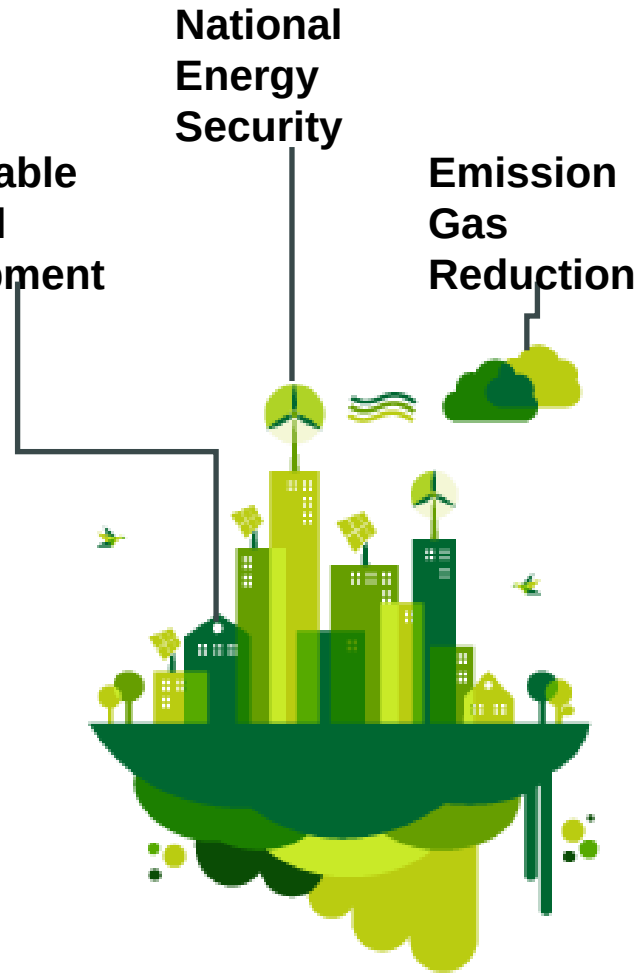
**❹ Energy Resource Conservation**

***Global Perspective***

**The development of *advanced energy technology* to respond to global challenge on clean energy, climate change, and sustainable development.**

**(IEA*'s Energy Technology Perspectives* 2010)**

***GOALS***



# The Driver of Energy Conservation Policy

| DRIVER | GENERAL OBJECTIVES |
|---|---|
| **Economic Development & Competitiveness**  | 1. Decreasing energy intensity;<br>2. Increasing industrial competitiveness;<br>3. Cutting down production cost;<br>3. Providing more affordable energy cost. |
| **Energy Security**  | 1. Reducing energy import;<br>2. Maximizing NRE for domestic needs and reducing export;<br>3. Improving reliability;<br>4. Controlling the growth of energy demand;<br>5. Encouraging energy diversification by maximizing NRE utilization. |
| **Climate Change**  | 1. As mitigation effort and global adaptation;<br>2. Fulfilling international obligation based on United Nations Framework Convention on Climate Change (UNFCCC) |

# Energy Saving Potential

## INDUSTRY

**Consumption 2016: 217 MBOE**

**Energy Saving Potential 10-30 %**

Implementation:
- Energy Audit / IGA/ ESCO
- Energy Management / ISO 50001
- Online Reporting System
- Energy manager & auditor certificate
- Public awareness

## COMMERCIAL

**Consumption 2016: 40 MBOE**

**Energy Saving Potential 10-30 %**

Implementation :
- Energy Audit / IGA/ ESCO
- Pilot Project
- Energy Efficiency Standard
- Online Reporting System (Governmental Building)

## TRANSPORTATION

**Consumption 2016: 303 MBOE**

**Energy Saving Potential 15-35 %**


Implementation :
- Mass Transportation (BRT/ MRT/ LRT)
- *Fuel Switching* (BBM to Gas & Biodiesel)
- Transportation Management System

## HOUSEHOLD

**Consumption 2016: 115 MBOE**

**Energy Saving Potential 15-30 %**

Implementation :
- EE Standard (Label/ MEPS)
- Public awareness improvement

Explanation: -. Excluding Biomass
-. Others consist of agricultural, construction, and mining sector
Source: Handbook of Energy & Economic Statistics of Indonesia 2017 Final Edition, MEMR

# Standard & Energy Conservation Regulation

# Standard & Energy Conservation Regulation

**2007**
- Law No. 30/2007 on Energy.

**2009**
- Govt. Reg. No.70/2009 on Energy Conservation.

**2011**
- Ins. Pres. No. 13/2011 on Energy and Water Saving;
- Pres. Reg. No. 61/2011 on National Action Plan on Green House Gas Emission Reduction;
- SNI : 6196:2011 on Energy Audit Procedure on Building Envelope;
- SNI : 6197:2011 on Energy Conservation for Lightning System;
- SNI : 6389-2011 on Building Envelope Energy Conservation for Building;
- SNI : 6390-2011 on Air Conditioner Energy Conservation for Building.

**2012**
- MEMR Reg. No. 14/2012 on Energy Management ;
- MEMR Reg. No. 15/2012 on Ground Water Utilization Saving ;
- Gov. of Jakarta Reg. No. 38/2012 on Green Building

**2013**
- MEMR Reg. No. 01/2013 on Oil Fuels Consumption Control;

**2015**
- Pres. Reg. No. 38/2015 on Government Cooperation with Entities in Infrastructure Procurement (including infrastructure on energy conservation);
- Minister of Manpower Decree No. 80/2015 on Establishment of Indonesian National Working Competence Standard for Energy Manager Position in Industry and Buildings;
- Minister of Public House and Housing Reg. No. 02/PRT/M/2015 on Green Building.

**2014**
- MEMR Reg. No. 18/2014 on Energy Saving Labelling on Swa-ballast Lamp
- Govt. Reg. No. 79/2014 on National Energy Policy.

**2017**
- Pres. Reg. No. 22/2017 on General Plan for National Energy (RUEN)
- MEMR Reg. No. 41/2017 on The Second Amendment of Minister of EMR Regulation No. 28/2016 on Electricity Tariff Supplied by PLN (Persero);
- MEMR Reg. No. 57/2017 SKEM Implementation and Energy Saving Labelling on AC;

**2018**
- Minister of Manpower Decree No. 53/2018 on Establishment of Indonesian National Working Competence Standard for Energy Audit

# Energy Management

# Energy Conservation on Utilization Side (GR No. 70 of 2009 Article 12)

Obligates to **energy users ≥ 6,000 TOE*** per annum to apply energy management by:

1. appointing energy manager;
2. formulating energy conservation program;
3. applying energy audit regularly;
4. implementing energy audit recommendation;
5. reporting the implementation of energy conservation to the Government.

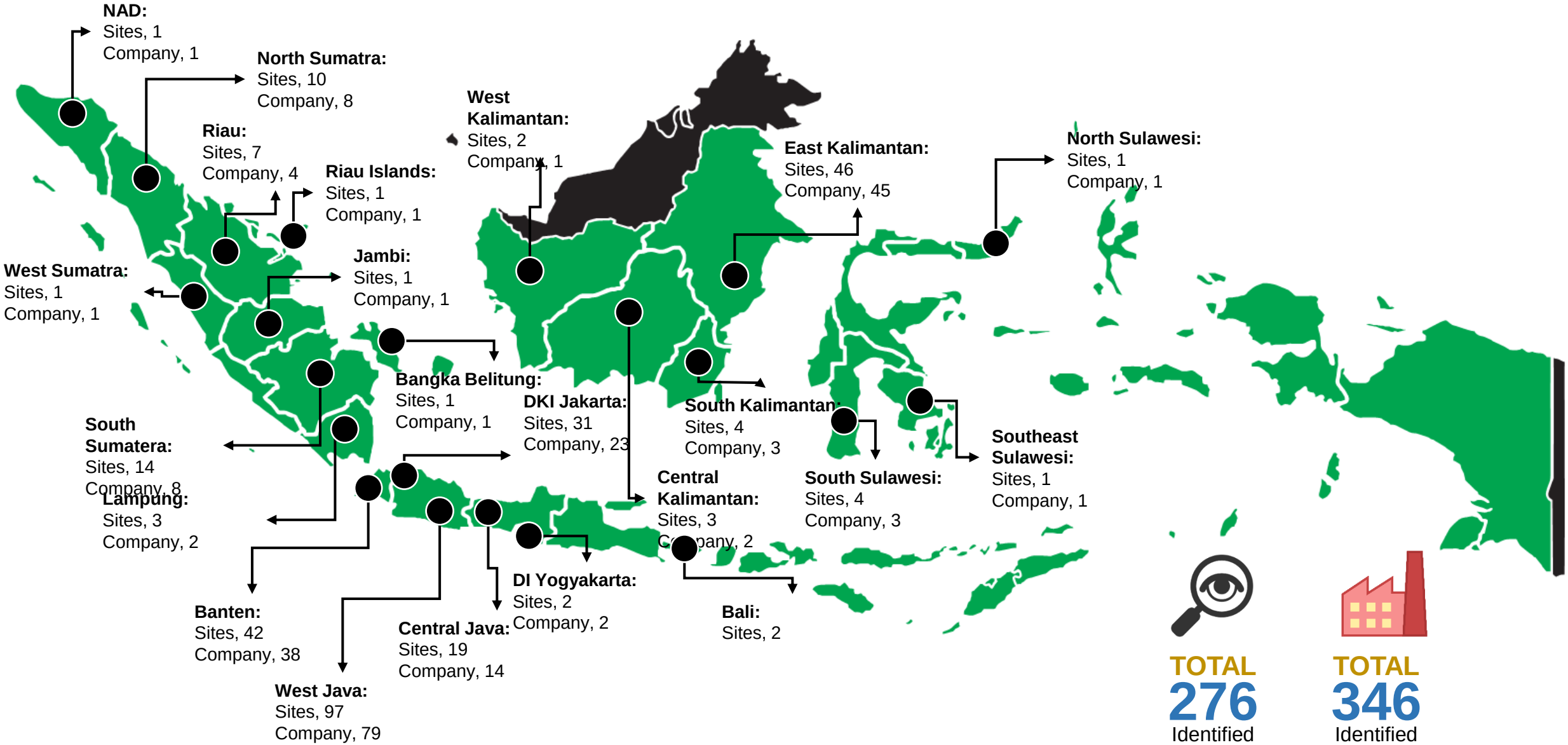
*) 6000 TOE equivalent to 251,400 giga joule (GJ) or 69,780 mega watt hour (MWh).

# Energy Conservation Policy Significantly Influencing Energy Saving and Efficiency up to 2025

| No | Policy | Saving Effect(%) | Ranking |
|---|---|---|---|
| **1** | **Energy Management in Industry** | **2,30** | **1** |
| 2. | Energy Efficiency on Stove | 1,72 | 2 |
| 3. | MEPS for AC | 1,12 | 3 |
| 4. | Cooking fuel shifting | 0,96 | 4 |
| 5. | Fuel standard improvement | 0,70 | 5 |
| 6. | EC mandatory for buildings | 0,60 | 6 |
| 7. | MEPS for Refrigerator | 0,56 | 7 |
| 8. | moda Shifting to bus | 0,43 | 8 |
| 9. | EE for Boiler Industry | 0,38 | 9 |
| 10. | Transportation Management | 0,32 | 10 |
| 11. | MEPS TV | 0,27 | 11 |
| 12 | MEPS Lampu | 0,26 | 12 |

Source: ESP3 Study, Denmark, April 2017

# Distribution of Energy User Industry ≥ 6.000 TOE per Annum

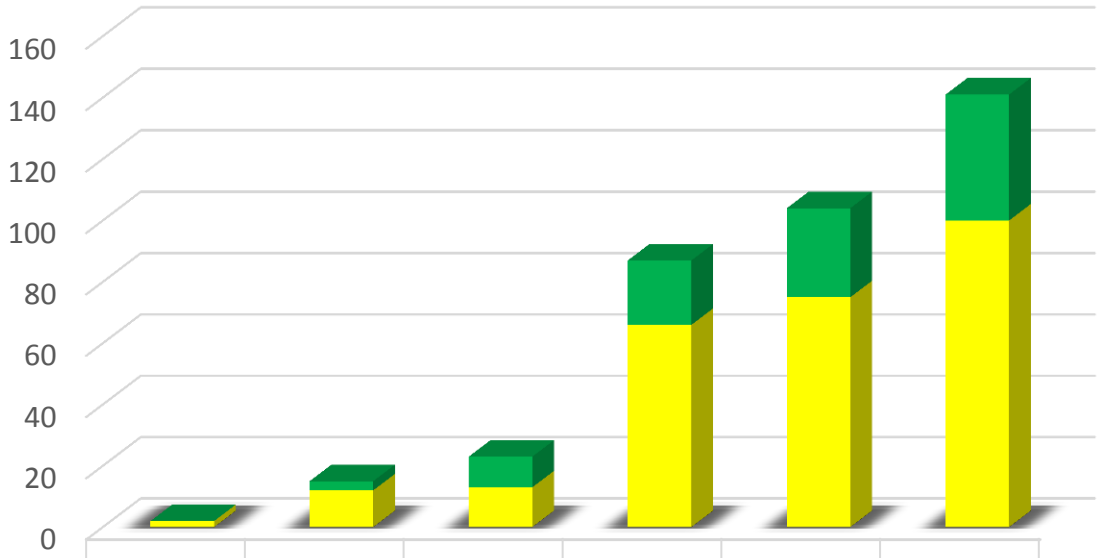



**TOTAL 276** Identified Companies

**TOTAL 346** Identified Sites

Source: DG NREEC, 2018

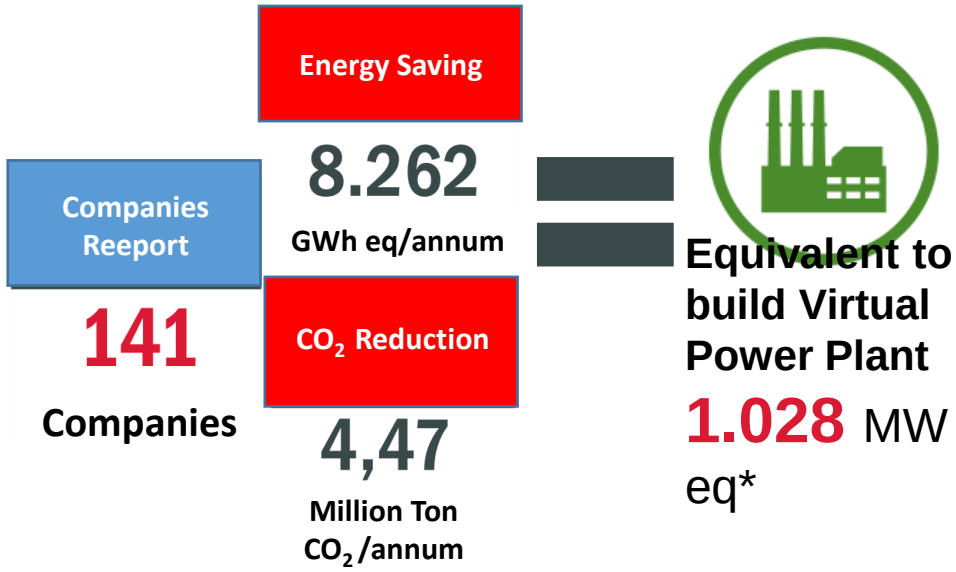
# Energy Management Reporting




| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|
| Green Category | 0 | 3 | 10 | 21 | 29 | 41 |
| Yellow Category | 2 | 12 | 13 | 66 | 75 | 100 |

i. Green category : The company has implemented all the point contained in Article 12 PP 70/2009

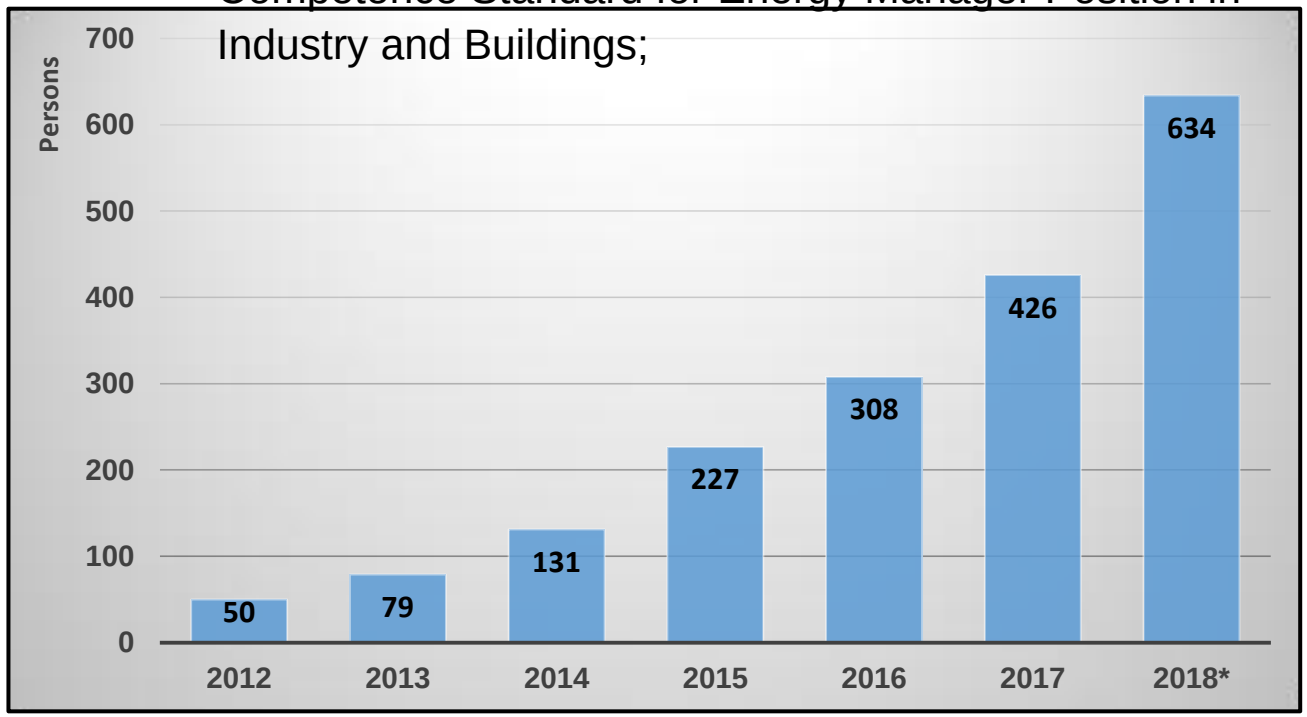
ii. Yellow category : The company has implemented some of the points contained in Article 12 PP 70/2009



# Certified Energy Manager (CEM)

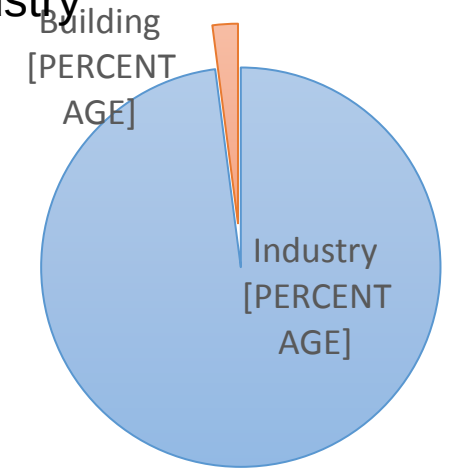
Definition:
Person in charge to ensure the Energy Management System is established, implemented, maintained, and continually improved

Competences Standard:
Minister of Manpower Decree No. 80/2015 on Establishment of Indonesian National Working Competence Standard for Energy Manager Position in Industry and Buildings;

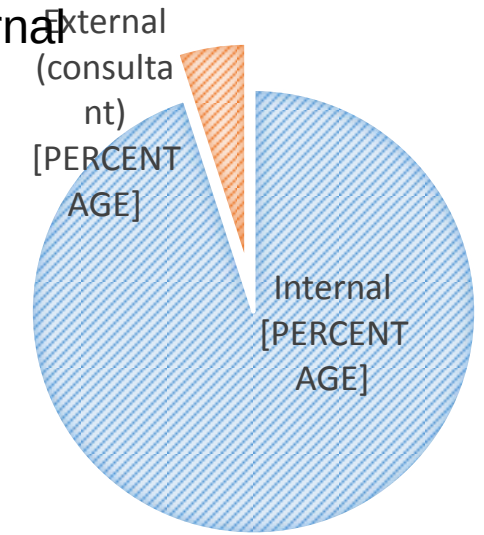



*Temporary Data for Year 2018

CEM Share : Building vs Industry




CEM Share : External vs Internal



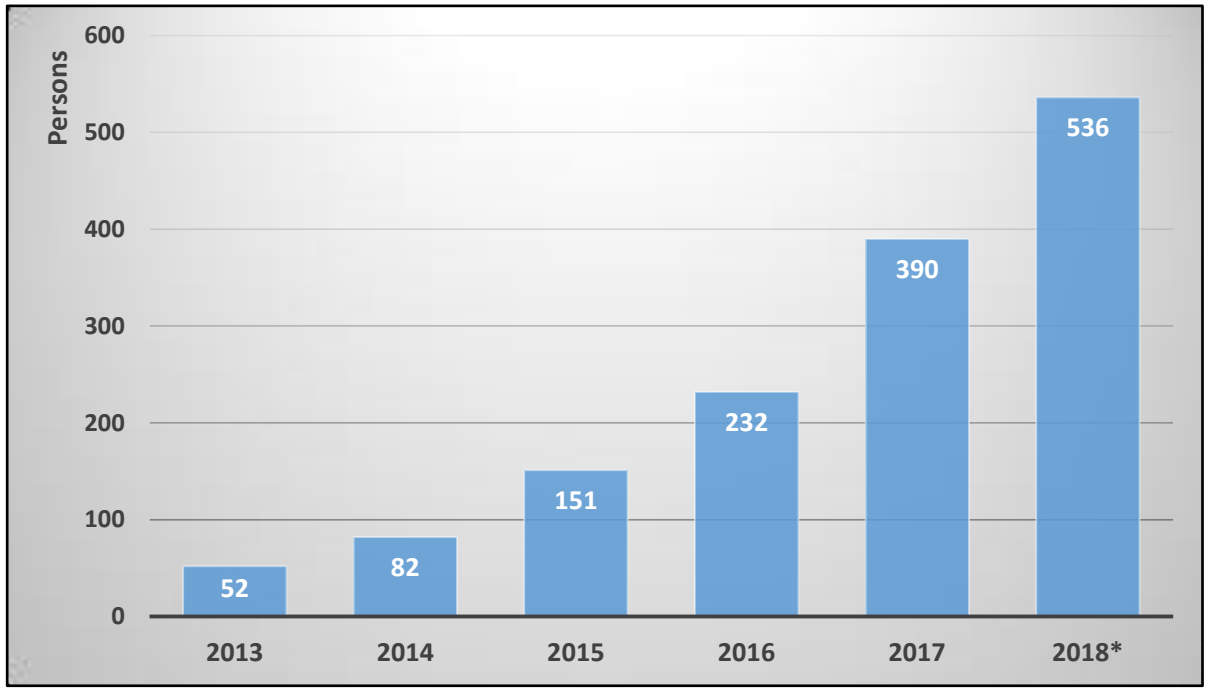
# Certified Energy Auditor (CEA)

## Definition:

individual, or team of people, conducting an energy audit

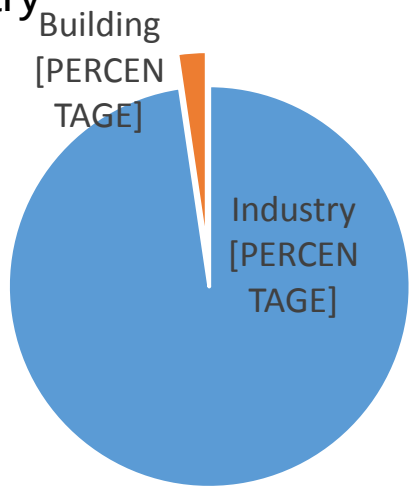
## Competences Standard:

Minister of Manpower Decree No. 53/2018 on Establishment of Indonesian National Working Competence Standard for Energy Audit

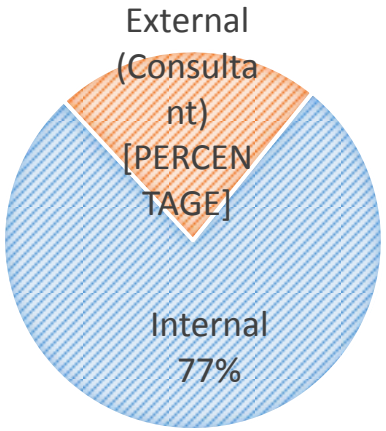



*Temporary Data for Year 2018

## CEA Share : Building vs Industry




## CEM Share : External vs Internal



# Certification Bodies for Professional Competence
## (Auditor & Manager)

LSP HAKE
(Himpunan Ahli Konservasi Energi)
Jl. Wibawa Mukti No 1 Jatiasih – Bekasi
021-220161114

LSP ENERGI
Komplek Grand Galaxy Park
Blok RSK 6 No. 10 Bekasi
021-22103604


LSP- BPSDM KESDM
(Badan Pengembangan Sumber Daya Manusia KESDM)
Gd. Badan Pengembangan Sumber Daya Manusia Energi dan Sumber Daya Mineral
Jl. Gatot Subroto Kav. 49 Jakarta Selatan
021-5254508

# Investment Grade Audit (IGA)

- IGA is an identification of energy saving potential through the implementation of *Energy Efficiency Measures* and energy saving technology.

| | 2014 | 2015 | 2016 | 2017 | TOTAL |
|---|---|---|---|---|---|
| **Participant** | | | | | |
| Industry | 1 | 9 | 2 | 3 | **15** |
| Building | - | - | 3 | 4 | **7** |
| **Saving Potential** | | | | | |
| GWh | 32,58 | 90,39 | 62,4 | 20,73 | **206,08** |
| Billion Rp | 39,09 | 106,97 | 31,1 | 22,71 | **199,86** |
| Kilo ton $CO_2$ | 28,21 | 90,27 | 50,6 | 41,06 | **210,18** |
| **Investment Potential** | | | | | |
| Billion Rp | 142,1 | 143,95 | 55,3 | 52,38 | **393,74** |

Implementation

| | 2016 | 2017 | TOTAL |
|---|---|---|---|
| **Energy Saving (GWh/annum)** | 2,99 | 51,7 | **54,7** |
| **Cost (Billion Rp)** | 3,36 | 12,78 | **16,14** |
| **Investment Value (Billion Rp)** | 7,64 | 10,24 | **17,88** |

Source: DG NREEC, 2018

# ISO 50001 Energy Management System

## Experts

The result of Internasional training *Expert*

38 people

## Pilot Project

**8** Companies in 2016

| No | Company | Sector | Savings per year | | | Emission Reduction |
|---|---|---|---|---|---|---|
| | | | Energy Saving | Percentag | Cost Savings | |
| | | | (MWh) | (%) | (Billion IDR) | (Ton CO2 eq) |
| 1 | PT. Nippon Shokubai Indonesia | Chemical | 43.860 | 15 | 51,32 | 5.162 |
| 2 | PT. Pupuk Kujang | Fertilizer | 52.753 | 12 | 61,72 | 46.950 |
| 3 | PT. Daya Manunggal Tekstil | Textile | 15.900 | 10 | 18,6 | 14.151 |
| 4 | PT. Kwarsa Indah Murni | Glass | 9.266 | 7 | 10,84 | 8.246 |
| 5 | PT. Unitex | Textile | 4.233 | 7 | 4,95 | 4.073 |
| 6 | PT. PQ Silicas Indonesia | Chemical | 5.800 | 6 | 6,79 | 5.162 |
| 7 | PT. Inter Aneka Lestari Kimia | Chemical | 243 | 4 | 0,28 | 216 |
| 8 | PT. Ungaran Sari Garment | Garment | 124 | 1,8 | 0,15 | 110 |
| | | **TOTAL** | **132.179** | | **155** | **84.070** |

Cooperating with UNIDO through Promoting Industrial Energy Efficiency through System Optimization and Energy Management Standards in Indonesia to encourage the implementation of ISO 50001 Energy Management System

Source: DG NREEC, 2018

# ISO 50001 : EnMS Certified Companies

## 29 Power Plant Sector

PT. Indonesia Power - UP Suralaya
PT. Indonesia Power - UP Saguling
PT. Indonesia Power - UP Semarang
PT. Indonesia Power - UP Perak Grati
PT. Indonesia Power - UP Mrica
PT. Indonesia Power - UPJP Priok
PT. Indonesia Power - UPJP Kamojang
PT. Indonesia Power - UPJP Bali
PT. IP - UJP PLTU Banten 1 Suralaya
PT. IP - UJP PLTU Banten 2 Labuan
PT. IP - UJP PLTU Banten 3 Lontar
PT. IP - UJP PLTU Jabar 2 Palabuhan Ratu
PT. IP - UJP PLTU Jateng 2 Adipala
PT. IP - UJP PLTU Pangkalan Susu
PT. Indonesia Power - UJP PLTGU Cilegon
PT. Indonesia Power - UJP PLTU Jeranjang
PT. Indonesia Power - UJP PLTU Barru
PT. YTL Jawa Timur
PT. Dian Swastika Sentosa
PT. Pembangkitan Jawa Bali - UP Gresik
PT. Pembangkitan Jawa Bali – UP Muara Tawar
PT. Pembangkitan Jawa Bali – UP Muara Karang
PT. Pembangkitan Jawa Bali - UP Paiton 9
PT. Pembangkitan Jawa Bali – UP Brantas
PT. Pembangkitan Jawa Bali - PLTU Rembang
PT. Pembangkitan Jawa Bali – UP Brantas
PT. Pembangkitan Jawa Bali – PLTU Indramayu
PT. Pembangkitan Jawa Bali – PLTU Tanjung Awar-Awa
PT. Pembangkitan Jawa Bali – UP Brantas

## 2 Coal Mining Sector

PT. Kideco Jaya Agung
PT. SIMS Jaya Kaltim

## 7 Oil and Gas Sector

PT. Pertamina (Persero) – TBBM Rewulu Yogyakarta
PT. Pertamina (Persero) – DPPU Ngurah Rai
PT. Pertamina Hulu Energi ONWJ – Muara Karang ORF
PT. Pertamina Hulu Energi ONWJ – Tanjung Priok ORF
PT. Pertamina Hulu Energi ONWJ – Arco Adiuna ESO

- Sumber: Ditjen EBTKE KESDM, 2018

# ISO 50001 : EnMS Certified Companies

## 1 Building Sector

Badan Pengkajian dan Penerapan Teknologi (BPPT)

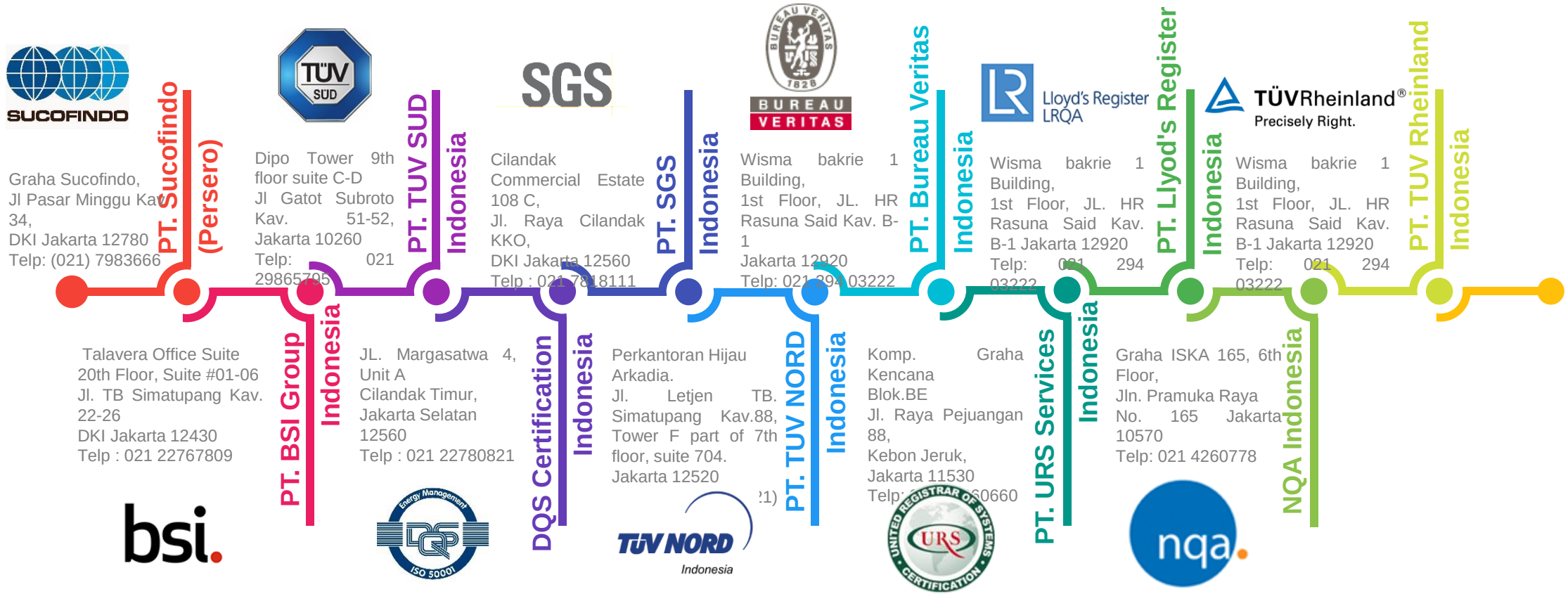
## 41 Industry Sector

| | |
|---|---|
| Agro | PT. Mulia Nabati Asahan |
| Agro | PT. Smart. Tbk |
| Iron and Steel | PT. Ispat Indo |
| Chemical | PT. DIC Graphics |
| Chemical | PT. Cheil Jedang |
| F & B | PT. ISM, Tbk - Divisi Noodle Surabaya |
| F & B | PT. ISM, Tbk - Divisi Noodle Bandung |
| F & B | PT. Kievit Indonesia |
| F & B | PT. Great Giant Pineapple |
| F & B | PT. Indolakto Plant Raya Bogor |
| F & B | PT. Indolakto Plant Pandaan |
| F & B | PT. Indolakto Plant Purwosari |
| F & B | PT. Indolakto Plant Cicurug 1 |
| F & B | PT. Indolakto Plant Cicurug 1 |
| F & B | PT. Amerta Indah Otsuka – Pasuruan |
| F & B | PT. Amerta Indah Otsuka - Sukabumi |

| | |
|---|---|
| Petrochemical | PT. Chandra Asri Petrochemical |
| Petrochemical | PT. Nippon Shokubai Indonesia |
| Petrochemical | PT. Styrindo Mono Indonesia |
| foodware | PT. Ching Luh Indonesia |
| foodware | PT. KMK Global Sport |
| Manufactur | PT. Duta Fuji |
| Manufactur | PT. ALP Petro Industry |
| Manufactur | PT. Siemen Indonesia |
| Manufactur | PT. Pura Mayungan |
| Manufactur | Grafitecindo Ciptaprima |
| Manufactur | PT. Samsung Electronik Indonesia |
| Manufactur | PT. Sharp Electronics Indonesia |
| Fertilizer | PT. Pupuk Kaltim |

| | |
|---|---|
| Pulp and Paper | PT. Lontar Papyrus Pulp |
| Pulp and Paper | PT. IKPP – Tangerang |
| Pulp and Paper | PT. IKPP – Perawang |
| Pulp and Paper | PT. IKPP – Serang |
| Pulp and Paper | PT. Pabrik Kertas Tjiwi Kimia T |
| Pulp and Paper | PT. Pindo Deli Pulp and Paper |
| Textile | PT. Elegant Textile Industry |
| Textile | PT. Sunrise Bumi Textile |
| Textile | PT. Indo Liberty Textile |
| Textile | PT. Gastex |
| Textile | PT. APAC Inti Corpora |
| Textile | PT. Indo-Rama Synthetics, Tbl |

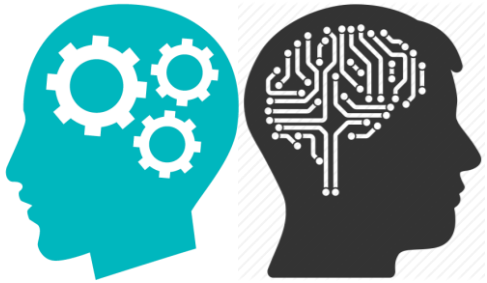
# Certification Bodies for Energy Management System




- Sumber: Ditjen EBTKE KESDM, 2018

# Role of Industry

# The Role of Industry in Supporting Energy Conservation Program



## Innovation:

- Improving Human Resource capacity in facing the increasingly rapid dynamics
- Adopting clean energy technology
- Optimizing industrial system
- Process efficiency in Industry


## Applying Energy Management:

- The Highest Management Commitment for energy efficiency
- Developing reliable energy management system
- Sustainable improvement through a good management cycle (Plan – DO – Check - Act)

## Dissemination and Collaboration:

- The reporting of online energy management to the Government for developing benchmarking industry system
- Sharing success stories to inspire others
- *Seeing is believing*, conducting comparative study Collaboration in developing each competence

## Be the Best

Participating in:

- Competition among Companies/Associates Group
- National Energy Efficiency Award/Subroto Award (National Level)
- Asean Energy Award (among ASEAN countries )
- Energy Management Leadership Awards (among Clean Energy Ministerial/CEM countries member)

# THANK YOU

"ENERGY CONSERVATION IS THE FOUNDATION OF ENERGY INDEPENDENCE"