INDONESIA

ENERGY EFFICIENCY GOALS

1. GOVERNMENT POLICY ON ENERGY EFFICIENCY

Indonesia has several laws in place aimed at improving energy efficiency. Energy Law Number 30 Year 2007 provides an overarching umbrella of the national policies on the governance of renewable energy and energy efficiency. The Government regulation on Energy Conservation Number 70 Year 2009 contains policies to specifically improve energy efficiency in industry, building and commercial, and residential sectors. The Presidential Regulation Number 22 Year 2017 concerns a General Plan on National Energy and is a general guideline for government institutions from various sectors to setup policy and a roadmap of energy plan in their specific sectors, including greenhouse gas emission reduction policy, energy elasticity reduction policy, and energy efficiency programmes from 2015 to 2050.

2. ENERGY EFFICIENCY STRATEGY

Indonesia's central government introduced Presidential Regulation Number 22 Year 2017 entitled General Plan for National Energy that also includes overarching policies, targets, and strategies on energy efficiency for electricity, industry, transport, commercial buildings, and residential sectors.

The Ministry of Energy and Mineral Resources of Indonesia, through its agency Directorate General of New Renewable Energy and Energy Conservation (DGREEC), has three main strategies to promote energy efficiency:

- Reduce energy intensity in the utilisation of primary energy by an average of 1% per year.
- Increase the number of public buildings that are audited for energy efficiency practices and increase the number of energy efficiency auditors.
- Improve labelling for energy efficiency in electric home appliances and introduce an investment-grade audit programme.

FUNDING

The DGREEC provides funding for developing technical standards for energy efficiency labelling programmes, and establishing technical qualifications for energy efficiency auditors and building managers, financing public campaigns to encourage energy efficiency practices in the household and industry sectors.

LINKS

Directorate General of New, Renewable Energy, and Energy Conservation: http://www.ebtke.esdm.go.id/

3. ENERGY EFFICIENCY ACTION PLAN

The Government of Indonesia, through the Ministry of Energy and Mineral Resources, has developed a mid-term strategic plan between 2015 and 2019 that includes action plans on specific energy efficiency programmes:

- Energy audit on government buildings.
- Pilot project on electricity usage monitoring in buildings.
- Investment in energy efficiency and conservation.
- LEDs used for road lightings.
- Energy efficiency labelling.
- The enforcement of ISO 5000 of Energy Management System.
- Two pilot projects of cogeneration.
- Developing regulations on energy efficiency.
- Public campaign for energy conservation.

FUNDING

Energy efficiency programmes area co-financed between the public sector fund, bilateral/multilateral grants, and private sector financing.

LINKS

Strategic Plan of the Ministry of Energy and Mineral Resources of Indonesia (2015 – 2019): http://prokum.esdm.go.id/renstra%202015/DATA%20to%20MAIL%20NEW%20REV%20BUKU%20RENSTRA%202015.pdf

New Energy and Industrial Technology Development Organisation (NEDO) (2014), "Feasibility Study on Energy Conservation in Data Centres Adopting Energy Management System and Other Energy Efficient Facilities in Indonesia": http://www.nedo.go.jp/content/100766252.pdf

Indonesian and Germany Cooperation on the Development of Efficient Air-conditioning and Process Cooling Supply for the Indonesian Industry and Commerce (Green Chiller):

http://lintas.ebtke.esdm.go.id/konservasi-energi/id/swasta/view/1/6-kerjasama-indonesia-jerman-giz

https://www.giz.de/expertise/downloads/giz2015-en-indonesia-greenchillers-nama.pdf

Indonesia Cooperation – UNIDO, Promoting Industrial Energy Efficiency through System Optimisation and Energy Management Standard in Indonesia:

http://lintas.ebtke.esdm.go.id/konservasi-energi/en/swasta/view/1/3-indonesia-cooperation-unido

4. ENERGY EFFICIENCY, INTENSITY OR EMISSIONS REDUCTION TARGETS

Presidential Regulation Number 22 Year 2017 entitled General Plan for National Energy stipulates national targets for energy efficiency and emission reductions from 2015 until 2050. Total CO2 emissions were 554 Million tonnes (Mt) in 2015 and is forecast to rise to 893 Mt in 2025 and 1 950 Mt in 2050.

The energy conservation programme resulted in energy savings of equivalent to 148 million tonnes of oil equivalent (Mtoe) in 2015. It is estimated to save 248.4 Mtoe in 2025 and 641.5 Mtoe in 2050 respectively.

Total primary energy consumption is targeted to decrease 1% annually from a baseline energy intensity of 1.54 in 2015. Energy intensity is projected to reach 0.84 in 2025 and 0.46 in 2050 respectively.

LINKS

Strategic Plan of the Ministry of Energy and Mineral Resources of Indonesia (2015 – 2019): http://prokum.esdm.go.id/renstra%202015/DATA%20to%20MAIL%20NEW%20REV%20BUKU%20RENSTRA%202015.pdf

Presidential Regulation of Republic Indonesia Number 22 Year 2017 about the General Energy Plan of Indonesia: http://ditjenpp.kemenkumham.go.id/arsip/ln/2017/ps22-2017.pdf

5. SECTORAL ENERGY EFFICIENCY TARGETS

Presidential Regulation Number 22 Year 2017 entitled General Plan for National Energy also incorporates long-term targets on energy efficiency for the transport, industry, and building sectors.

The transport sector is projected to consume 75 Mtoe in 2025 and 169 Mtoe in 2050. Energy efficiency goals and targets for the transport sector include:

- Improved availability of gas charging stations to 632 units with a total capacity of 282 million standard cubic feet per day (MMSCFD) in 15 cities by 2025 and further increase the number of the stations to 2 888 units with a total capacity of 1 291 MMSCFD by 2050.
- Develop hybrid/electric vehicles to reach 2 200 cars and 2.1 million motorcycles by 2025.
- Introduce a policy on flexi-fuel engine that encourages the utilisation of motor vehicles with dual fuels of petrol and ethanol.
- Prepare a roadmap for biofuel blending policies for the road, marine, air, and train sub-sectors.
- Improve the share of public transport to 30% by 2025 by improving connectivity between Mass-Rapid Transit, Light Rail Transit, Trams, and buses in 13 urban areas.
- Develop intelligent transport system for 24 cities and area-traffic control systems for 50 cities.

The industry sector is projected to consume 118 Mtoe in 2025 and 293 Mtoe in 2050 respectively. Of these totals, in 2025, 101 Mtoe will be used for fuels and 17 Mtoe for production components and in 2050, 258 Mtoe will be used for fuel consumption and 35 Mtoe will be used for production components.

Energy efficiency targets for buildings contain a target of energy consumption of equivalent to 12.2 Mtoe in 2025 and 73 Mtoe in 2050 respectively. To improve the efficiency, electricity is expected to increase its share from 77% in 2015 to 83% in 2025 and 87% in 2050 respectively.

LINKS

Strategic Plan of the Ministry of Energy and Mineral Resources of Indonesia (2015 – 2019): http://prokum.esdm.go.id/renstra%202015/DATA%20to%20MAIL%20NEW%20REV%20BUKU%20RENSTRA%202015.pdf

Presidential Regulation of Republic Indonesia Number 22 Year 2017 about the General Energy Plan of Indonesia: http://ditjenpp.kemenkumham.go.id/arsip/ln/2017/ps22-2017.pdf

The 2016 Performance Report of Directorate General of New, Renewable Energy and Energy Conservation: http://ebtke.esdm.go.id/category/4/buku.lakip

6. LEAD ENERGY EFFICIENCY INSTITUTIONS

Directorate General of New Renewable Energy and Energy Conservation (DGREEC) was established in 2010 to develop, implement, and monitor policies on energy efficiency and energy conservation particularly in the electricity sector. DGREEC is an agency within the Ministry of Energy and Mineral Resources (MEMR).

INSTITUTIONAL SETTINGS AND RESPONSIBILITIES

The DGREEC is within the Ministry of Energy and Mineral Resources and has responsibility for formulating and implementing policies on the governance, control, and supervision of geothermal, bioenergy, new and renewable energy, and energy conservation.

STAFF AND BUDGET

Directorate General of New Renewable Energy and Energy Conservation (DGREEC) manages 347 people with a total budget equal to US$118 million in 2016. The Directorate of Energy Conservation, a sub-organisation of DGREEC, has 57 employees and had a budget of US$17 million in 2016.

BUDGET USE

The energy efficiency budget is mainly used to monitor the implementation of energy efficiency programmes and fund pilot projects of energy efficiency campaign, and energy efficiency achievement awards.

LINKS

The 2016 Performance Report of Directorate General of New, Renewable Energy and Energy Conservation: http://ebtke.esdm.go.id/post/2017/03/09/1585/laporan.kinerja.ditjen.ebtke.tahun.2016

7. OTHER ENERGY EFFICIENCY AGENCIES

- The Ministry of Environment and Local governments share responsibilities for cross-sectoral policies on energy conservation that involves regional planning and utilisation and environmental sustainability targets such as achieving CO2 emission targets.
- The Ministry of Industry is responsible for developing and monitoring energy efficiency policies for the industry sector.

- The Ministry of Transport is responsible for developing, implementing and monitoring energy efficiency policies for the transport sector.
- The Ministry of Public Works is responsible for developing, implementing and monitoring energy efficiency policies in the building and residential sectors.

LINKS

The Ministry of Public Works of Indonesia: http://www.pu.go.id/

The Ministry of Industry of Indonesia: http://www.kemenperin.go.id/

The Ministry of Environment of Indonesia: http://www.menlh.go.id/

The Ministry of Transportation of Indonesia: http://www.dephub.go.id/

8. ENERGY EFFICIENCY INFORMATION DISSEMINATION

The Ministry of Energy and Mineral Resources through the DGREEC has specific publication channels to disseminate information including an internet portal, YouTube channel, national TV campaigns, newspapers, and monthly bulletins to disseminate energy efficiency campaign programmes.

LINKS

Directorate of New, Renewable Energy and Energy Conservation: http://www.ebtke.esdm.go.id/link

The national campaign on 10% cut on energy use: http://ebtke.esdm.go.id/video/watch/NGYblKDP--s

Internet Campaign through the Youtube Channel for campaign on 10% cut on energy use: https://www.youtube.com/watch?v=s58YjdKhlMw

Newspaper campaign for campaign on 10% cut on energy use: http://ekonomi.metrotvnews.com/read/2017/05/21/703418/kementerian-esdm-gelar-kampanye-hemat-energi

9. ENERGY EFFICIENCY AWARENESS RAISING

The Ministry of Energy and Mineral Resources of Indonesia has three main programmes to improve awareness and introduce the importance of energy efficiency, targeting different groups of audiences:

- Kampanye Potong 10% (10% Cut of Energy Use Campaign) - Targeting all stakeholders in energy sector including government organisations, industry, NGOs, and general public to reduce energy consumptions by 10% . The programme is funded by the Ministry of Energy and Mineral Resources of Indonesia and started in May 2016.
- Konservasi Energi Goes to Campus - (Energy Conservation Goes to Campuses) aims to introduce university students to the basic principles of energy efficiency, the ISO 500001 international standard: Energy Management, job opportunities for energy auditors and energy managers. The programme is managed and funded by the Ministry of Energy and Mineral Resources of Indonesia.

- The replacement of street lighting from conventional halogen lamps to LED as a public campaign for energy efficiency. The programme is funded by MEMR and it has been running since 2016 in 93 cities.

LINKS

Educational campaign to universities in Indonesia to encourage future generations of reducing energy use: http://ebtke.esdm.go.id/post/2017/04/22/1637/kenalkan.konservasi.energi.kepada.mahasiswa.pemerintah.laksanakan.konservasi.energi.goes.to.campus

Energy Efficiency Programme to use LED lights for street lightings: http://ebtke.esdm.go.id/post/2017/05/13/1658/pembangunan.pju.bentuk.kampanye.konservasi.energi

10.GOVERNMENT SUPPORTED ENERGY EFFICIENCY TRAINING

Ministry of Energy and Mineral Resources (MEMR) and Ministry of Manpower of Indonesia have worked together to established competency standards for Energy Managers and Energy Auditors. These two institutions have been working subsequently with institutions such as universities and training centres to deliver training programmes (short courses and sectoral specific programmes for energy managers and energy auditors in industry and buildings). MEMR aims to improve the number of certified Energy Managers and Energy Auditors by working with Himpunan Ahli Konservasi Energi (HAKE) or Professional Association of Experts in Energy Conservation. The total number of certified energy managers is 306 people in 2016 while energy auditors have reached 213 in 2016.

LINKS

Himpunan Ahli Konservasi Energi (HAKE) or Professional Association of Experts in Energy Conservation: http://lsphake.or.id/index.html

11.PRIVATELY OPERATED TRAINING

Private training and certification programmes on energy efficiency are conducted by institutions, such as:

- Lembaga Sertifikasi Profesi Himpunan Ahli Konservasi Energi Indonesia: Certification of energy auditor for building and industry, and certification of energy managers for building and industry sector.
- DGREEC delivers regular capacity building on energy auditors
- The University of Indonesia: Postgraduate Study of Master of Mechanical Engineering, specific on energy conservation and audit.

LINKS

Capacity Building Programme for Energy Auditors: http://aplikasi.ebtke.esdm.go.id/pome/home/detailberita/34

University Curriculum that incorporate subjects of energy conservation and audit: http://eng.ui.ac.id/wp-content/uploads/Struktur-kurikulum-S2-Teknik-Mesin1.pdf

12.GOVERNMENT SUPPORTED RESEARCH & DEVELOPMENT

The Ministry of Research and Higher Education has introduced a Roadmap of National Research Programmes from 2015 to 2045.

One of the key programmes includes research on advanced technologies on energy conservation, such as technologies for smart and energy self-sufficient buildings, integrating smart grid and energy management systems and energy components.

Key parties involved are the Ministry of Research and Higher Education, the Ministry of Energy and Mineral Resources, and the Agency for assessment and application of technology.

Research and development for energy efficiency is included as part of R&D for renewable energy research which is accounted for a total budget of US$748.97 million (based on currency exchange estimate of 1US$ = 13,351.69 IDR) from 2017 to 2019.

LINKS

Research and development for energy efficiency: http://risbang.ristekdikti.go.id/regulasi/RIRN.pdf

ENERGY EFFICIENCY MEASURES

13. COLLECTION AND MONITORING OF ENERGY EFFICIENCY OUTCOMES

The DGREEC at the Ministry of Energy and Mineral Resources is responsible for energy efficiency policy and evaluation. The agency undertakes ex post programme evaluation of energy efficiency policy and programmes annually.

LEGAL POWER

The authority for data collection and analysis is split between government institutions at the central, provincial, and city levels. The Ministry of Energy and Mineral Resources has the authority of collating energy efficiency data across different sectors while the Ministry of Environment focuses on carbon emission reduction data. The Ministry of Public Works and Housing is responsible for policy and data collection of green building programme, The Ministry of Industry oversees implementation of energy efficiency in the industry sector. The Ministry of Transportation manages data on energy efficiency for the transport sector while local governments at the provincial and city levels have the authority of energy policy on industrial parks or off-grid electrical consumers.

LINKS

Energy Conservation Policy and Programme Information: http://lintas.ebtke.esdm.go.id/konservasi-energi/id/swasta/view/4/31-deskripsi

The 2016 Performance Report of Directorate General of New, Renewable Energy and Energy Conservation: http://ebtke.esdm.go.id/category/4/buku.lakip

14.EVALUATION OF ENERGY EFFICIENCY PROGRESS OR POTENTIAL

The Ministry of Energy and Mineral Resources is mainly responsible for energy efficiency monitoring and reporting and publishes statistical data and analysis of energy sector annually including:

- Achievement of annual energy intensity reduction and CO2 emission reductions by sector.
- Realisation of targeted number of government buildings that are audited for energy efficiency.
- Realisation of targeted number of certified energy managers and energy auditors.
- Development of technical standards for minimum energy performance for home appliances.
- Progress on Investment Grade Audit (IGA) policy in building sector.

LINKS

The 2016 Performance Report of Directorate General of New, Renewable Energy and Energy Conservation: http://ebtke.esdm.go.id/category/4/buku.lakip

The 2016 Statistic on New, Renewable Energy and Energy Conservation: http://ebtke.esdm.go.id/category/11/buku.statistik.ebtke

Energy Conservation Programme for Industry: http://www.kemenperin.go.id/artikel/1421/Kementerian-ESDM-Wajibkan-Industri-Hemat-Energi

Government Policy on Green Building: http://www.pu.go.id/berita/10176/Kementerian-PUPR-Sosialisasikan-Permen-Bangunan-Gedung-Hijau

15.SELF-EVALUATION OF ENERGY EFFICIENCY PROGRAMMES

All government institutions who are delivering energy efficiency programmes must publish annual progress report and a final project report must be disclosed to the public when a project has been completed.

16.CROSS-SECTOR ENERGY EFFICIENCY INITIATIVES

Investment Grade Audit (IGA)

OBJECTIVE

Investment Grade Audit (IGA) is a platform for technical and economic assessment of Energy Saving Performance (ESP) in an energy saving project proposal. IGA provides a guideline on evaluating potential savings and costs implementing energy efficiency projects across different sectors, including building and commercial, industry and transportation. It adopts a life-cycle assessment methodology for calculating costs associated with design/construction, operating and maintenance costs per year. It also provides indicative returns on investment and project risk profile of an energy efficiency project.

OUTLINE

Investment Grade Audit (IGA) programme is a part of Energy Saving Performance Contract – ESPC framework where it is managed by DGREEC. The IGA was first implemented for two volunteer companies in the commercial sector and five government buildings in 2016.

LINKS

Investment Grade Audit Programme: http://lintas.ebtke.esdm.go.id/konservasi-energi/en/swasta/view/1/24-activity-investment-grade-audit-iga

17.INDUSTRY ENERGY EFFICIENCY INITIATIVES

Energy Management and Energy Audit for Food and Beverage Industry

OBJECTIVE

Implementation of energy management and energy audit, based on ISO 50001, to the foods and beverage industry. Companies that agree to an audit on energy management will receive technical assistance from the MEMR for preparing a financial proposal for an energy efficiency project to submit to financial institutions for financing.

OUTLINE

The project provides an example of inter-department cooperation on national energy efficiency programme. It involves the Ministry of Energy and Mineral Resources (MEMR), Ministry of Industry, and Financial Services Authority. The project introduces Energy Services Company (ESCO) to conduct energy audit for the food and beverage industry and then assists the owners or operators in preparing an energy efficiency project proposal. The Financial Services Authority provides guidelines of various finance options and a document checklist for submission of energy efficiency proposal to financial institutions.

LINKS

Investment Grade Audits: http://lintas.ebtke.esdm.go.id/konservasi-energi/id/swasta/view/1/24-kegiatan-investment-grade-audit-iga

Green Lending Policy to support energy efficiency programme: http://www.ojk.go.id/sustainable-finance/id/publikasi/panduan/Documents/Green%20Lending%20Model%20Final.pdf

Energy Efficiency Programme for Industry Sector: http://iesr.or.id/wp-content/uploads/Kemenperin-Compatibility-Mode.pdf

18.TRANSPORT ENERGY EFFICIENCY INITIATIVES

Jakarta Smart City integrated public transport modes

OBJECTIVE

The Jakarta Smart City integrated public transport modes is a government initiative aimed at improving connectivity of the transport system and enhancing its efficiency by integrating various modes of public transport systems in the Capital city of Jakarta and its surrounding areas.

OUTLINE

An agency for managing Jakarta's integrated transportation system was established based on the Presidential Regulation Number 103 Year 2015. The agency is responsible for developing policy and delivering programmes

associated with the integration of public transport systems between the capital city of Jakarta and its satellite cities such as Bekasi City, Depok City, Bogor City, and Tangerang province. A programme of integrated public transport was introduced in 2016 to integrate the Transjakarta busway system and metro train system. The integrated mode of public transport will also include Mass-Rapid Transport (MRT) train system and Light-Rapid Transport -monorail system that will commence its operation in 2019 respectively.

LINKS

The Authority Body of Greater Jakarta Transportation: http://bptj.dephub.go.id/

The Ministry of Public Transportation Programme of Integrated Public Transportation Modes of Jakarta: http://www.dephub.go.id/welcome/readPost/kemenhub-dorong-percepatan-integrasi-antarmoda-transportasi-umum-di-jakarta

Transjakarta busway system and metro train system: http://jakartamrt.co.id/2017/03/12/pt-mrt-jakarta-inisiasi-pengembangan-kawasan-transit-dukuh-atas/

Jakarta Mass Rapid Transport Project: http://jakartamrt.co.id/mengenai-proyek/

Jakarta Smart City Initiative: http://interactive.smartcity.jakarta.go.id/

19.BUILDING ENERGY EFFICIENCY INITIATIVES

Green Building Initiative

OBJECTIVE

Green Building Initiative is a collaboration between government institutions, property developers, home appliance manufacturers, and an independent green building association to encourage energy efficient practices in the development and operation of commercial and residential buildings in Indonesia.

OUTLINE

The regulation of green building was introduced in 2015 through a Ministry of Public Works and Buildings regulation number 02/PRT/M/2015 about Green Building. The regulation provides a guideline, technical specifications and minimum requirements for property development to be classified as a green building project process, which include:

- Green building certification for commercial and residential buildings that meet specification and conditions such as efficient use of energy, water and other resources, secure, and environmentally sustainable criteria.
- Incentive from local governments for buildings that are classified and receive certificate as a green building.

LINKS

Ministry of Public Works and Buildings regulation number 02/PRT/M/2015 about Green Building: http://birohukum.pu.go.id/uploads/DPU/2015/Lamp-PermenPUPR02-2015.pdf

Green Building Council of Indonesia: http://gbcindonesia.org/

Penghargaan Energi Efisiensi Nasional (PEEN)

OBJECTIVE

Penghargaan Energi Efisiensi Nasional (PEEN) or National Energy Efficiency Awards aims to:

- Improve stakeholder participation in building and industry sectors to support energy efficiency programmes.
- Improve stakeholder awareness on the importance and the benefits of implementing energy efficiency and energy conservation.
- Introduce industry models and building models as best practices for energy management systems.
- Provide incentive to the central and local governments that have implemented energy efficiency.

OUTLINE

The PEEN is a government initiative managed by DGREEC to improve energy efficiency in building and industry sectors. The PEEN is aligned with ASEAN Energy Award that is organised by the ASEAN Centre for Energy (ACE) to promote energy efficiency practices in ASEAN countries.

LINKS

Penghargaan Energi Efficiency National (The National Award on Energy Efficiency): http://aplikasi.ebtke.esdm.go.id/peen/

Mandatory Energy Efficiency Label for Compact Fluorescent Lamp (CFL)

OBJECTIVE

The purpose of Mandatory Energy Efficiency Label for CFL is to reduce energy consumption for lighting, primarily in the building and residential sectors. This is the first measure of labelling policy for energy efficiency that will be expanded for other appliances such as refrigerators, air conditioners, televisions, washing machines, water pumps and rice cookers.

OUTLINE

The Ministry of Energy and Mineral Resources (MEMR) introduced Regulation number 18 year 2014 regarding mandatory label for Energy Efficiency Label for CFL that has been widely used for lighting in residential and commercial buildings. This regulation applies to all CFL products that are sold in Indonesia.

LINKS

The Government Regulation on Mandatory efficiency label for compact fluorescent lamps: http://ebtke.esdm.go.id/post/2014/11/13/712/index.html

20.ENERGY EFFICIENCY COOPERATION

COOPERATION AGREEMENTS WITH OTHER ECONOMIES OR ORGANISATIONS

Directorate General of New Renewable Energy and Energy Conservation (DGREEC) has established energy efficiency cooperation with various organisations, including:

- Asosiasi Perusahaan Penunjang Konservasi Energi Indonesia (Indonesia Energy Conservation Support Companies Association) to develop a commercially viable business model for implementing Energy Saving Performance Contract (ESPC) for energy efficiency practices in Energy Services Company (ESCO) in Indonesia.

- ASEAN Centre for Energy (ACE) for ASEAN Energy Award, which aims to promote renewable energy utilisation and energy conservation and efficiency in the ASEAN region. The cooperation between DGREEC and ACE is to introduce a national competition for Penghargaan Efisiensi Energi Nasional (PEEN) or a National Award for Energy Efficiency, which aims to encourage improvement of energy efficiency and conservations among stakeholders from government building management, commercial buildings, and industry. The PEEN Award commenced in 2012.

- Masyarakat Konservasi dan Efisiensi Energi Indonesia (MASKEEI) or Indonesia Energy Conservation and Efficiency Society for managing an international event of Energy Efficiency and Conservation Conference & Exhibition (IEECCE) from 19 to 21 April 2017 in the Jakarta Convention Centre, Jakarta with a theme of 'Optimising Energy Productivity for Sustainable Development'. More than 300 participants and 70 presenters attended the event from national and international companies and organisations including the IEA, MEMR, The National Energy Council, and Schneider Electric.

BILATERAL, REGIONAL OR MULTILATERAL COOPERATION AGREEMENTS

The Ministry of Energy and Mineral Resources (MEMR) of Indonesia through its agency of DGREEC has established cooperation with various international organisations, including:

- The United Nations Industrial Development Organisation (UNIDO) for an energy efficiency project from 2012 to December 2017 named 'Energy Efficiency Promotion Through System Optimisation and Application of Energy Standard Management in Indonesia' which is aimed at developing industry capacity in energy efficiency into an integrated company management system through energy optimisation and energy management with ISO 50001 standard.

- New Energy and Industrial Technology Development Organisation (NEDO) of Japan for 'A Demonstration Project for Smart Communities in Industrial Parks'. The Memorandum of Understanding (MoU) between MEMR and NEDO was signed in 2013 to conduct a joint study on the possibility of introducing smart community technologies and a sustainable business model for dissemination in industrial parks where one of the objectives is to conserve energy use. The project has commenced its operations following the completion of installations in May 2017.

- GIZ, Germany for a cooperation project of Nationally Appropriate Mitigation Action (NAMA) Development of an Efficient Air-conditioning and Process Cooling Supply for the Indonesian Industry and Commerce (Green Chiller). The project commenced from June 2014 to May 2018. The project aims to establish a Nationally Appropriate Mitigation Action (NAMA) for industrial and commercial

refrigeration and air-conditioning systems, thereby making a significant contribution to meeting Indonesia's GHG emissions reduction targets.

LINKS

Penghargaan Energi Efficiency National (The National Award on Energy Efficiency): http://peen.ebtke.esdm.go.id/view/4/2-tentang-peen

The ASEAN Energy Awards: http://www.aseanenergy.org/aea/

Energy Services Company of Indonesia: http://lintas.ebtke.esdm.go.id/konservasi-energi/id/swasta/view/1/23-penerapan-model-bisnis-energy-saving-performance-contract-espc-oleh-energy-services-company-esco-untuk-mendukung-implementasi-efisiensi-energi-di-sektor-publik

NEDO and DG NREEC Joint Study on Energy Saving from Manufacturing Process: http://www.nedo.go.jp/english/other_20151130.html

Indonesia – Germany (GIZ) Cooperation on the Development of an Efficient Air-conditioning and Process Cooling Supply for the Indonesian Industry and Commerce (Green Chiller): http://lintas.ebtke.esdm.go.id/konservasi-energi/id/swasta/view/1/6-kerjasama-indonesia-jerman-giz

https://www.giz.de/expertise/downloads/giz2015-en-indonesia-greenchillers-nama.pdf

Indonesia – UNIDO Cooperation on Promoting Industrial Energy Efficiency through System Optimisation and Energy Management Standard in Indonesia: http://lintas.ebtke.esdm.go.id/konservasi-energi/en/swasta/view/1/3-indonesia-cooperation-unido

Indonesia Energy Efficiency and Conservation Conference and Exhibition: http://ieecce.com/

21.OTHER ENERGY EFFICIENCY EFFORTS

Not applicable.