Carbon Trust and ClassNK enter into partnership to deliver expert climate change support for Japanese businesses

- This partnership will offer climate change and sustainability services to businesses in Japan
- Japanese corporates will be able to access world-leading technical advice related to:
  - Setting ambitious climate change targets,
  - Accurately reporting on environmental impacts,
  - Developing strategies for achieving reductions.
- Japanese companies will also be able to access independent environmental assurance and certification services, in line with international standards.

- The Carbon Trust will be represented at the forthcoming events in Tokyo :
  - 12th December 2018: corporate seminar on sustainability hosted by ClassNK
  - 11th – 15th February 2019: corporate event covering TCFD hosted by the British Embassy
  - 4th March 2019: CDP Supply Chain report launch
  - 6th - 7th March 2019: Sustainable Brands Tokyo

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CARBON TRUST

GIEEA Indonesia Diagnostic Study

Our mission is to accelerate the move to a sustainable, low carbon economy

gef

SUSTAINABLE ENERGY FOR ALL ACCELERATOR

UNIDO

Institute for Essential Services Reform

Agenda

1. An Introduction to the GIEEA
2. Context: The Indonesian Industrial Sector
3. Barriers & Drivers for Industrial Energy Efficiency
4. Prioritised Interventions
5. Annex

IEEA will target 5 high impact countries for in-depth program design; and 10 more for preparation

Objective: target the high emission industrial sector with an energy efficiency program across 15 countries to realise a step-change in its performance

Timeline

5 high impact countries

Nov '17 – Mar '18

Diagnostic: individual in-country analysis to identify which sub-sector/s and pillar/s are priorities to address

Jan '18 – Dec '18

Pillars: focused activities around industrial EE priorities in each country

1. Develop country-specific industrial EE policy measures
2. In-country capacity building to develop local EE experts and management approaches
3. Develop a pipeline of investable industrial EE projects
4. Generate financing solutions to unlock EE development

Jan '19 – Jun '19

Outcome: unlock 5 market transformation programs for industrial EE programs in high impact countries

10 additional countries

Scale-up: begin preparing and engaging with 10 additional countries

Outcome: 10 countries ready for programs

The Global Industrial Energy Efficiency Accelerator (GIEEA) coordinates efforts, catalyzes programmes and shares best practice

GIEEA is an **umbrella platform** to accelerate initiatives on industrial energy efficiency

Objective: Catalyse a **transformational**, high-impact programme that will rapidly accelerate action on energy efficiency across Indonesia's industries

Timeline

- Global launch & set up, country selection (Jul '17 – Jun '18)
- Diagnostic Study (Jul-Sept '18)
- Technical advice, design, fund-raising for Phase 2 **(Oct. '18 - Jun '19)**
- Phase 2: Implementation (Jul '19 onwards)

Collaborate with local stakeholders

- Government
- International institutions
- Industry
- Financiers
- EE service providers

Build on existing, or kick-start new initiatives focusing on

Demonstration Projects & **On The Ground** Action

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Based on current projections Indonesia will struggle to meet its 2025 Industrial Energy Conservation Target

Sector	Energy consumption per sector year 2012 (M BOE)	Potential of Energy Conservation	Energy Conservation Target (2025)
Industrial	305 (39.7 %)	10 – 30 %	17 %
Transportation	311 (40.4 %)	15 – 35 %	20 %
Household	92 (12 %)	15 – 30 %	15 %
Commercial	34 (4.4 %)	10 – 30 %	15 %
Agric., Constr. & Mining	26 (3.4 %)	25 %	-

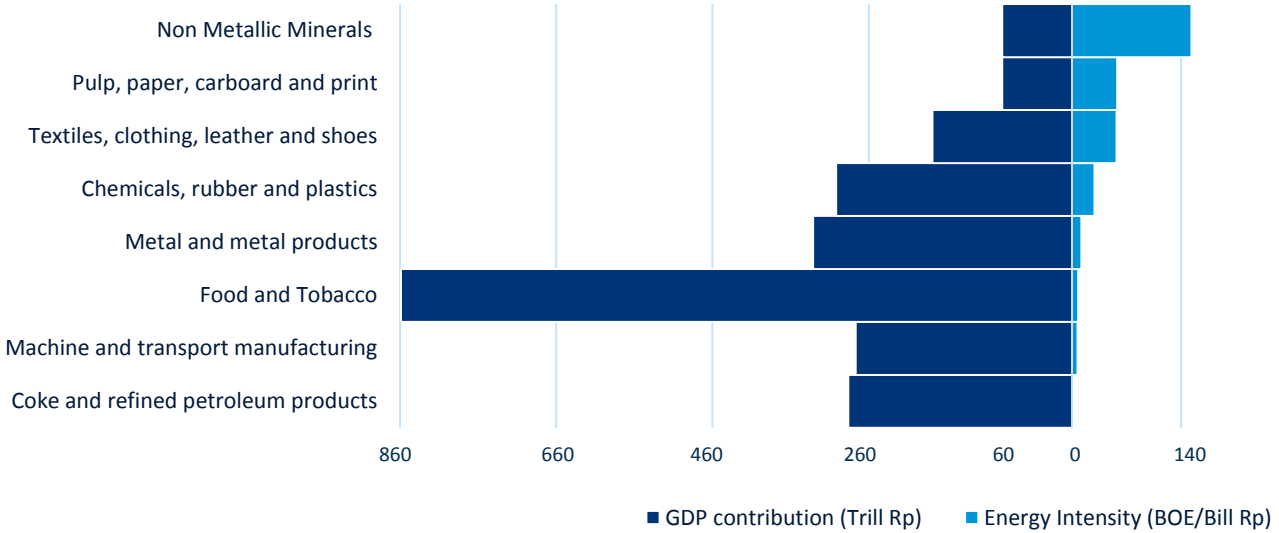
Industry contributes…

- **40% of GHG Emissions 2016**
- **48% Total Energy Use by 2025**
- **41% to total GDP in 2016**

ESP3 report: Current EE savings in a Policy Intervention scenario will amount to 10% by 2025 for the whole economy. Industry sector savings are estimated to be less than 5%.

Source: (i) Malik, Cecilya Laksmiwati,. 2015. Chapter 7: Indonesia Country Report. Kimura, S. and H. Phoumin (eds.), Energy Outlook and Energy Saving Potential in East Asia. ERIA Research Project Report, (ii) Trading Economics. 2018. Indonesia GDP, (iii) Ministry of Energy and Mineral Resources. 2017. National Energy Master Plan. Source (iii) ESP3- Support to Monitoring and Estimation of Energy Conservation Policies Impact. 2017.

There is potential for EE gains in both high and low energy intensity industrial sub-sectors



Across industry, energy intensity in Indonesia **tends to be less than 60 BOE/Billion Rp**, with the exception of the non-metallic minerals sub-sector. Within this sub-sector, energy intensity can exceed 150 BOE/Billion Rp, and as such, represents another sub-sector where there may be significant potential for energy efficiency gains.

Source: *(i) Statistics Indonesia. 2018. Manufacturing Industrial Statistics Indonesia 2015, (ii) Statistics Indonesia. 2018. Statistical Yearbook of Indonesia 2018*

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Policy and regulation can act as drivers for EE in Indonesia but additional reform is needed

Gov. Regulation No. 70/2009

While the government has established a legal basis for national energy management, there exists no simple means of verifying energy savings reports and benchmarking what constitutes effective EE implementation.

More focus needed on tax exemption, financial incentives for EE, public-private partnership models.

Energy Law No. 30/2007

Artificially low electricity prices, as a result of subsidies, hinder investments in EE improvements.

Although subsidies have been decreasing since 2012, electricity prices are particularly low compared with other countries in the region.

The main barriers for industrial EE projects in Indonesia can be split into 3 categories

INDUSTRY AWARENESS & COMMITMENT

- Limited **knowledge and understanding** of the benefits of and opportunities for EE gains across industry
- EE retrofits are a **low priority** for businesses and industry
- **High upfront costs** relative to the perceived lack of benefits
- Challenges in **energy consumption data collection**
- There are **no penalties** for not reporting, and no enforcement of requirements for reporting

TECHNICAL EXPERTISE

- **Lack of basic knowledge about EE** among regulatory bodies, and limited specific technical skills for professionals
- Lack of **technical capacity** to evaluate/ design bankable projects
- Lack of **access to reliable information** to enable appropriate risk assessments by financial institutions

FINANCIAL TOOLS

- Limited **capital and incentives** to support projects in light of the credit and equity capacity of industry
- Lack of **bank expertise** for small-scale EE financing
- **Lending regulations** do not accommodate EE project finance
- Excessively high **transaction costs** due to limited project pipelines and EE projects that are too small

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The Carbon Trust and IESR have identified a number of interventions to address Indonesia's industrial EE barriers

	Awareness & Commitment	Technical Solutions	Financial Resources
Pillar 1: **Policy**	• Strengthening cross-ministerial communication • Prepare case studies to understand different ESCO business models based on international experience	• Providing policy advice on Government Regulation No.70/2009 on Energy Conservation to spur ESCO market • Develop regulation to provide financial incentives to implementers and funders of EE	• Remove electricity subsidy and use the capital to support EE investments • Create de-risking instruments to crowd and incentivize financial institutions participation • Develop standardised underwriting and investment frameworks
Pillar 2: **Capacity Building**	• Train government officials on EE opportunities in industry • Raise awareness in industry to adopt EMS and disseminate training schemes	• Capacity building in industry on IGAs and bankable EE projects • Create an accreditation mechanism for ESCOs, technologies and suppliers	• Build banks' capacity around EE loan assessments and risk, including case studies • Simplify the financial procedures for EE loan approval
Pillar 3: **Pipeline Development**	• Review the performance of existing ESCOs in Indonesia • Investigate aggregator models to bundle EE projects	• Develop ESCO pilot projects within key industrial sectors • Build a pipeline of financially viable EE projects or ESCO companies • Identify third party verification processes for IGAs	• Develop an aggregating entity using standard contracting solutions between ESCOs, industries and banks
Pillar 4: **Finance**	• Disseminating a list of financially viable energy efficiency projects	• Capacity building with financial institutions to appraise projects • Design de-risking instruments to crowd in ESCOs and private sector finance	• Finance ESCO demonstration projects • Create a risk sharing facility and guarantee fund for energy efficiency projects

There is significant donor activity that addresses Indonesia's EE policy and capacity building needs

	Pillar 1 Policy Development	Pillar 2 Capacity Building	Pillar 3 Pipeline Development	Pillar 4 Finance
ADB/ EXIM Bank: Discontinued concessional credit lines (lack of scale)			✓	✓
ADB: Energy Efficiency Programmes	✓			
AFD/ MEMR: Unsuccesful oncessional credit line with bank Mandiri				✓
AFD: ESCO TA and IGAs		✓	✓	
AGEP: Asean Plan for Energy Conservation	✓			
CPI: Training of engineers (2013/2016)		✓		
DANIDA/ MEMR: Information and communication centre (LINTAS)	✓	✓		
DANIDA: Environmental Support Programme 3	✓		✓	
ESP CC: Support on ESCO Regulation	✓			
GGGI: Identification of obstacles to IGAs			✓	
GIZ: Green chillers	✓			
IFC/ DKI: EDGE software implementation for buildings		✓	✓	
JCM: 50% technology subsidy for GHG mitigation projects			✓	✓
MASKEEI: EE Training and Certification (EETC) Program		✓		
RENAC: Green Banking Training		✓		

Based on our review of donor activity, the GIEEA Indonesia work should focus on financing in order to accelerate pipeline development

Barriers / Solutions	Awareness & commitment	Technical solutions	Financial resources
Pillar 1: Policy Development			
Pillar 2: Capacity Building			
Pillar 3: Pipeline Development			
Pillar 4: Finance			

Donor Activity Key
Limited
Fair
Strong
Very strong

- Our literature research and stakeholder interviews indicate that there is no need for additional support on policy development or capacity building interventions
- While there are a number of existing pipeline development activities, our research and engagement suggests that additional efforts to scale financing for industrial EE will most effectively generate additional pipeline by developing incentives that pull EE projects to market
- **Therefore, we propose that the GIEEA Indonesia project focuses exclusively on Pillar 4: Finance**

Our ambition is to develop financing solutions that unlock demonstration projects and crowd in capital

We propose to examine different financing solutions for industrial EE including:

1. A seed-fund to provide concessional debt for industrial EE projects and ESCOs to allow for large-scale demonstrations in key sectors
2. Project-based industrial EE financing products in collaboration with appropriate banks and insurance companies to provide:
   - Energy savings insurance that guarantees savings sufficient to repay bank debt service payments
   - Extended-term coverage that extends bank repayment terms sufficiently to provide attractive cash returns to ESCOs, investors and facility owners

Objective: To support the establishment of financing mechanisms for industrial EE in Indonesia that provide appropriate incentives to catalyse financially-viable demonstration projects that can deliver on-the-ground results.