



Advancing Indonesia's Lighting Market to High Efficient Technologies (ADLIGHT)

Part I: Project Information

Name of Parent Program

Leapfrogging Markets to High Efficiency Products (Appliances, including Lighting, and Electrical Equipment) (PROGRAM)

GEF ID

9493

Project Type

FSP

Type of Trust Fund

GET

Project Title

Advancing Indonesia's Lighting Market to High Efficient Technologies (ADLIGHT)

Countries

Indonesia

Agency(ies)

UNDP, UNEP, UNEP

Other Executing Partner(s):

Ministry of Energy and Mineral Resources (MEMR)

Executing Partner Type

Government

GEF Focal Area

Climate Change

Taxonomy

Focal Areas, Climate Change, Climate Change Mitigation, Influencing models, Stakeholders, Private Sector, Type of Engagement, Communications, Gender Equality, Gender Mainstreaming, Capacity, Knowledge and Research, Learning, Energy Efficiency, Technology Transfer, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Information Dissemination, Partnership, Public Campaigns, Strategic Communications, Education, Awareness Raising, Behavior change, Financial intermediaries and market facilitators, SMEs, Gender-sensitive indicators, Capacity Development, Adaptive management, Indicators to measure change, Theory of change

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 2

Climate Change Adaptation

Climate Change Adaptation 0

Duration

60In Months

Agency Fee(\$)

350,628

A. Focal Area Strategy Framework and Program

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCM-1_P1	Outcome A. Accelerated adoption of innovative technologies and management practices for GHG emission reduction and carbon sequestration	GET	3,895,872	37,094,337
Total Project Cost(\$)			3,895,872	37,094,337

B. Project description summary

Project Objective

Reduce the growth rate of annual GHG emissions from lighting energy use by means of reducing electricity consumption in the energy end-use sectors through standards and labelling mechanism and a gender-responsive approach.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
1. Support to local lighting industry to improve the efficiency of lamps and ballasts	Technical Assistance	1: Improved quality, energy efficient and affordable locally-produced EEL products and systems	1.1: Establishment of knowledge center and systems that help manufacturers in their production planning and policy makers in reviewing enabling environment. 1.2: Adopted and implemented business transformation plans of selected local lighting manufacturers to produce high quality energy efficient lighting which meet future MEPS 1.3: Completed capacity development program for banking/financing institutions on the evaluation and financing of lighting industry modernization projects	GET	1,055,355	5,540,134

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
2: Regulatory mechanisms and market monitoring, verification, and enforcement (MV&E)	Technical Assistance	2: Improved conditions for fair market competition of EE lighting products, informed by robust policy and institutional framework	<p>2.1. Minimum Energy Performance Standards (MEPS) and energy labels in place for high energy efficient lighting products in line with the ASEAN regional approach</p> <p>2.2: Policy and guideline for public procurement of LED lighting products (residential, commercial and outdoor) developed and process for adaptation initiated including environmental safe waste disposal and recycling practices</p> <p>2.3: Regulatory mechanisms for efficient lighting monitoring, verification and enforcement (MVE) including testing standard defined and implemented by relevant agencies at the national and local levels</p> <p>2.4: Completed capacity development for policy makers, enforcement & custom officials and other relevant government agencies on market control procedures</p> <p>2.5: Completed capacity development program for lamp testing laboratory personnel on LED testing</p>	GET	1,262,500	7,863,501

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
3: High efficiency lighting technology penetration	Technical Assistance	3: Increased penetration of high quality and efficient lighting	<p>3.1: Development of an innovative financial model enabling accelerated penetration of advanced lighting systems, focusing on the development of ESCO business models</p> <p>3.2: Pilot demonstrations for accelerated LED lamp deployment in buildings and for street lighting in the context of sustainable cities as well as in residential sector</p> <p>3.3: Implemented awareness and promotion program and information system explaining the benefits of high energy efficient lighting technologies, taking into account gender specific aspects in developing and implementing the programmes</p>	GET	759,000	16,873,935

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
3: High efficiency lighting technology penetration	Investment	3: Increased penetration of high quality and efficient lighting	<p>3.1: Development of an innovative financial model enabling accelerated penetration of advanced lighting systems, focusing on the development of ESCO business models</p> <p>3.2: Pilot demonstrations for accelerated LED lamp deployment in buildings and for street lighting in the context of sustainable cities as well as in residential sector</p> <p>3.3: Implemented awareness and promotion program and information system explaining the benefits of high energy efficient lighting technologies, taking into account gender specific aspects in developing and implementing the programmes</p>	GET	633,500	5,600,000
Sub Total (\$)					3,710,355	35,877,570
Project Management Cost (PMC)						
GET					185,517	1,216,767
Sub Total(\$)					185,517	1,216,767
Total Project Cost(\$)					3,895,872	37,094,337

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount(\$)
Government	Ministry of Energy and Mineral Resources (DG-NREEC)	Grant	13,277,000
Government	Ministry of Energy and Mineral Resources (DG-NREEC)	In-kind	268,000
Government	Ministry of Energy and Mineral Resource (P3TEK – R&D Dept)	In-kind	4,167,300
Government	City of Solo/Surakarta Government	In-kind	10,015,037
Government	National Standardization Agency (Badan Standardisasi Nasional, BSN)	Grant	50,000
Government	National Standardization Agency (Badan Standardisasi Nasional, BSN)	In-kind	112,000
Private Sector	Indonesian Lighting Manufacturers Association – GAMATRINDO	Equity	750,000
Private Sector	Indonesian Lighting Manufactures Association - APERLINDO	Equity	5,000,000
Private Sector	Solarens (local LED manufacture)	Equity	1,115,000
Private Sector	Adyawinsa (local LED manufacture)	Equity	2,000,000
Private Sector	Global Efficient Lighting Centre	In-kind	200,000
GEF Agency	UNDP	In-kind	80,000
GEF Agency	United Nations Environment Programme	In-kind	60,000
Total Co-Financing(\$)			37,094,337

Agency	Trust Fund	Country	Focal Area	Programming of Funds	NGI	Amount(\$)	Fee(\$)
UNDP	GET	Indonesia	Climate Change		No	2,633,372	237,003
UNEP	GET	Indonesia	Climate Change		No	1,262,500	113,625
Total Grant Resources(\$)						3,895,872	350,628

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

Agency	Trust Fund	Country	Focal Area	Programming of Funds	NGI	Amount(\$)	Fee(\$)
UNDP	GET	Indonesia	Climate Change		No	150,000	13,500
Total Project Costs(\$)						150,000	13,500

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	0	548776	0	0
Expected metric tons of CO ₂ e (indirect)	0	1097533	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)		548776		
Expected metric tons of CO ₂ e (indirect)		1097533		
Anticipated start year of accounting		2020		
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)	278,820.00			

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female		60		
Male		140		
Total	0	200	0	0

PART II: Project JUSTIFICATION

1. Project Description

A.0. Describe any changes in alignment of the project design with the original PIF

Instead of the Project Information Form (PIF) being used by UNDP, the original project design approved by GEF for the ADLIGHT Project was described in the form of a Project Concept Note (PCN) with the title: “U4E PA_Indonesia High Efficient Lighting Child Project” dated March 3, 2016. The ADLIGHT project is a Child Project under the Parent Program with the title “Global: LF Leapfrogging Markets to High Efficiency Products (Appliances, including Lighting, and Electrical Equipment)”. There are no significant changes in the ProDoc from the original design in PCN though it is proposed to have a focused Outcome Statement for each Component instead of several “Project Outcomes” as stated in the PCN. There are minor changes in terms of rewording to clarify the project Outputs as explained below:

GEF-approved PIF (No PIF but guided by the ADLIGHT Child Project Concept Note (PCN) from U4E)	ProDoc	Rational for Change in PIF (PCN) Outcomes & Outputs in the ProDoc
Component1: Support to local lighting industry to improve the efficiency of lamps and ballasts		
Outcome 1: (No single Outcome statement but items below 1.1 – 1.3 were labeled as “Project Outcomes”) in PCN	<i>Outcome 1: Improved quality, energy efficient and affordable locally-produced EEL products and systems</i>	- ProDoc Outcome 1 wording was derived from PCN 1.1 which is more of an Outcome statement
Outcomes: 1.1. Upgraded manufacturing capacity of the local lighting industry to design and produce high efficiency lighting systems 1.2. Adapted business transformation plans for existing local lighting manufacturers to shift from compact fluorescent lamps (CFLs) to light emitting diode (LED) lamps production 1.3. Capacity built for national financing institutions (banks) to evaluate and support lighting industry modernization projects	Outputs: [1.1: Establishment of knowledge center and systems that helps manufacturers in their production planning and policy makers in reviewing enabling environment.] 1.2: Adopted and implemented business transformation plans of selected local lighting manufacturers to produce high quality energy efficient lighting which meet future MEPS 1.3: Completed capacity development program for banking/financing institutions on the evaluation and financing of lighting industry modernization projects	- Added ProDoc Output 1.1 as deemed necessary in data gathering, analysis, storage and dissemination to aid in policy, planning and administration - No change; minor rewording to clarify Output statement - No change; minor rewording to clarify Output statement

Component 2. Regulatory mechanisms; and market monitoring, verification, and enforcement		
Outcome 2: (No single Outcome statement but items 2.1 – 2.5 below were labeled as “Project Outcomes”) in PCN	<i>Outcome 2: Improved conditions for fair market competition of EE lighting products, informed by robust policy and institutional framework</i>	- Outcome 2 statement was provided to describe the expected Outcome resulting from the ProDoc Outputs 2.1 – 2.5
<p>Outcomes:</p> <p>2.1. Minimum Energy Performance Standards (MEPS) and energy labels in place for LED lamps in line with the ASEAN regional approach</p> <p>2.2. Guidelines for public procurement of efficient lighting products (residential, commercial and outdoor)</p> <p>2.3. Defined Regulatory mechanisms for efficient lighting monitoring, verification and enforcement (MVE) including testing standards</p> <p>2.4. Capacity built for policy makers, enforcement & custom officials on market control procedures</p> <p>2.5. Capacity built for lamp testing laboratory personnel on LED testing</p>	<p>Outputs</p> <p>2.1. Minimum Energy Performance Standards (MEPS) and energy labels in place for high energy efficient lighting products in line with the ASEAN regional approach</p> <p>2.2: Policy and guideline for public procurement of LED lighting products (residential, commercial and outdoor) developed and process for adaptation initiated, including environmentally safe waste disposal and recycling practices</p> <p>2.3: Regulatory mechanisms for efficient lighting monitoring, verification and enforcement (MVE) including testing standard defined and process for notifying the implementation initiated by relevant agencies at the national and local levels</p> <p>2.4: Completed capacity development for policy makers, enforcement & custom officials and other relevant government agencies on market control procedures</p> <p>2.5: Completed capacity development program for lamp testing laboratory personnel on LED testing</p>	- No change; minor rewording to clarify all Output statements 2.1 – 2.5 for Outcome 2
Component 3. High efficiency lighting technology penetration		
Outcome 3: (No single Outcome statement but items below 3.1 – 3.3 were labeled as “Project Outcomes”) in PCN	<i>Outcome 3: Increased penetration of high quality and efficient lighting</i>	- Outcome 3 statement was provided to describe the expected outcome resulting from the ProDoc Outputs 3.1 – 3.3

<p>Outcomes:</p> <p>3.1. Increased awareness of the benefits of innovative lighting technologies by consumers and key stakeholders</p> <p>3.2. Pilot projects with municipalities to accelerate LED lamp deployment in street lighting in context of sustainable cities</p> <p>3.3. Innovative financial mechanisms to accelerate penetration of advanced lighting systems, including ESCO model</p>	<p>Outputs:</p> <p>3.3: Implemented awareness and promotion program and information system explaining the benefits of high energy efficient lighting technologies, taking into account gender specific aspects in developing and implementing the programmes</p> <p>3.2: Pilot demonstrations for accelerated LED lamp deployment in buildings and for street lighting in the context of sustainable cities as well as in residential sector</p> <p>3.1: Development and implementation of an innovative financial model enabling accelerated penetration of advanced lighting systems, focusing on the development of ESCO business models</p>	<p>- No change; Rewording to clarify all Output statements for Outcome 3, e.g. specifying gender-related aspects; reordering of sequence</p>
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A.1. Project Description

1) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed. Indonesia is facing several interconnected problems, with a large population of over 261.1 million and a growth rate of over 1.14% in 2016. The country, being the world's most populous country is witnessing a high growth in its energy demand. For electricity demand increasing at 8.4% per year estimated in 2017 onwards from the 234 TWh level in 2017. The improvement of national power generation and electricity access, however, continues to be a big part of the Government's wider plan for infrastructure support to keep pace with economic growth and sustainability objectives. It aims to electrify the remaining 16% of its population, representing some 40 million people in the coming years. In addition to this base of households without electricity, there is natural growth of some 900,000 new households per year which could further aggravate access to electricity. This has a negative impact on entrepreneurship, education, health and safety. In addition, Indonesia's over-reliance on fossil fuels, which accounts for 71% of the country's energy mix, results in rising greenhouse gas emissions.

The proliferation of energy efficient and affordable lighting is important to human development because of the significance of lighting in the life of women and men, whether indoor or outdoor in all sectors of the economy. Access to energy efficient lighting (EEL) products and systems is very relevant to national development priorities, global environment and adaptation issues. The proposed project responds to sustainable development goals (SDGs): #7- affordable and clean energy; #9- Industry, innovation and infrastructure; #11- sustainable cities and communities and #12- Responsible consumption and production.

The emissions reduction will contribute to the voluntary national target to reduce 26% of GHG emissions by 2020 which was originally committed in 2009 in Nationally Appropriate Mitigation Actions (NAMA) pursuant to Cancun Agreement on its own efforts. This was converted in Indonesia's INDC and later NDC as registered in UNFCCC's NDC registry on

6 November 2016^[1]. As stated therein, the potential emission reduction could reach up to 41% by 2020 with international support. The Indonesia baseline uses the business-as-usual scenario of emission projections starting 2010, based on a historical trajectory (2000 – 2010), projected increases in the energy sector and the absence of mitigation actions at the outset.

o **Barriers:** The archipelagic nature of Indonesia, consisting of 18,307 islands is prone to porous borders and allows the local market to be confronted by imported low quality EEL products. This situation hampers consumer's access to good quality of LED products due to relatively easy access to substandard EELs (oftentimes unknowingly) entering the market in Indonesia. Without Minimum Energy Performance Standard (MEPS) being enforced, people are buying substandard EEL products and miss the benefits of EEL products. Without MEPS, the penetration of good quality of EEL products in the market will face difficulty to compete with the low-priced substandard lighting products. The process to issue MEPS requires national standardization procedures set by the National Standardization Agency (*BSN*). According to the Government Regulation (*PP*) number 102/2000 regarding National Standardization, standard development can be approached through 2 different methods; 1) consensus, and 2) scientific evidence. For standards with a development dimension value, such as the MEPS, consensus is likely to be the method used in the process. In creating consensus, approval from all relevant stakeholders is crucial and local manufactures will have a bigger percentage in the overall portion in consensus. Currently, the comparison percentage between local and international EEL brands in 3 associations (GAMATRINDO, APERLINDO and ALINDO) is 76% (local manufacturers) and 24% (imported assemblers). Support to local manufacturers on the principles of MEPS and capacity building for local manufacturers will be crucial in order to realize a comprehensive draft of MEPS.

o A variety of specific barriers to advancing Indonesia's lighting market to high efficient technologies were identified during the numerous focus group discussions and bilateral meetings:

- *Limited capacity of lighting manufacturers:* Although Indonesia is home to an important number of lighting manufacturers; most local manufacturers have limited capacity to meet standards for energy efficiency and quality, and do not have the technical and financial capacity to innovate, thus reducing their capability to produce affordable, high quality LEDs and meet future MEPS standards. Local businessmen do not seem to be capable of developing business transformation plans for shifting from conventional lighting manufacture to high efficiency lighting systems such as LEDs. Without such plans in place, financial institutions develop a risk-averse attitude and therefore, are not able to fund local lighting manufacturers for upgrading production lines.
- *Absence of MEPS for LEDs:* at the moment, Indonesia does not have any Minimum Energy Performance Standards (MEPS) in place for lighting products other than CFLs. Indonesian consumers will buy any lamp available in the market which usually leads to purchasing low cost, albeit inefficient lamps. At the same time, there is still limited capacity with Customs officers and Ministry of Trade staff to curtail the import of inefficient lamps into the country even as the adoption and implementation of the MEPS

for CFLs has already started. As long as low priced - although of low quality - conventional lighting products continue to be distributed, Indonesian consumers still prefer them over LED lighting products. This discourages the manufacturers to produce high energy efficient lighting products.

- *Absence of guidelines for public procurement:* because no guidelines exist for public procurement, street lighting is often quite inefficient in Indonesia. By having a standard minimum quality requirement available in the guidelines for public procurement, consumers, manufacturers and importers of LED lights in Indonesia will have reference in complying with standards requirement, and therefore, the quality of LED lighting to be made available in Indonesia can be rightly monitored, verified and enforced (in an MVE system). With the standard minimum quality that is aligned with international standards, local LED manufacturers have the chance for their products to be included for public procurement as listed in the e-Catalogue. According to statistics data of the state-owned electricity company or *Perusahaan Listrik Negara (PLN)*, the street lighting in Indonesia consumed 3.2 TWh in 2013, which is equal to the emission of 2.6 m tCO₂ eq. In 2014, MEMR piloted smart street lighting in two cities and developed a Nationally Appropriate Mitigation Actions (NAMAs) proposal (“Smart Street Lighting Initiative (SSLI)”) that aimed at reducing GHG emissions by increasing the energy efficiency of street lighting systems in Indonesian cities. Application of high efficient street lighting has been one of the priority programs of the Ministry and is in line with another program on Green City Development^[2] in cooperation with the Ministry of Public Works.

- *Absence of regulatory mechanisms for MVE and lack of capacity of testing laboratories:* there are currently no regulatory mechanisms for efficient lighting monitoring, verification and enforcement (MVE) in Indonesia including for mitigation measurement. To date, the Secretariat of *RAN-GRK* (or the National Action Plan to Reduce Greenhouse Gases Emission) with support from GIZ (or the German International Development Agency) and Japan International Cooperation Agency (JICA) has issued the *Guideline for Monitoring, Evaluation and Reporting* under the National and Local Action Plans to Reduce Greenhouse Gases Emission (*RAN-GRK* and *RAD-GRK*) at a broader MEMR ministerial level. This is certainly an initial step towards a measurement, reporting and verification system, but there is currently no institutional capacity for its implementation, let alone the enforcement. On the other hand, the capacity of existing testing laboratories needs to be improved with updated testing standards on MEPS for CFL to check non-compliant products as well as prepare to cater to the desired demand growth of high efficiency lighting systems including the LEDs.

2) Baseline scenario and associated baseline projects. In 2016, Indonesia’s on grid electricity consumption was 217.83 TWh. Lighting is estimated to account for 18.8% (ca. 41 TWh) of this electricity consumption in 2016. Based on data collected from three associations of local EE lighting manufacturers, in the last 8 years from 2007 to 2015, the production of in-door lamps increased by 4% per year for production without LED and by 7% per year for production with LED. By 2015, total in-door lamp production without LED lamps from domestic lighting companies reached 360 million lamps which was still dominated by CFL with a share of 63.6% followed by LED (18.2%), fluorescent lamps (17.1%) and incandescent bulbs (1.1%). The production of CFL lamps, however, increased more than 3 times from 100 million lamps in 2007 up to 340 million lamps in 2014 although in the following year (2015) there was a decrease of 50 million lamps. The ADLIGHT Project will build upon relevant ongoing baseline EE lighting projects/programs in the country and draw lessons including from those already completed and ongoing. Consequently, ADLIGHT will contribute additional outputs in line with the country’s goals in energy efficiency in lighting.

Project Name - Sponsor	Areas of Interest/Status	ADLIGHT Additional Outputs
Market Transformation through Design and Implementation of Appropriate Mitigation Actions in the Energy Sector (MTRE3)-UNDP	Enabling environment and removing barriers to sustainable market of renewable energy and energy efficiency. The project consists of 3 main components: (1) Climate change mitigation options for the RE-based energy generation and energy efficiency; (2) Market transformation through implementation of appropriate mitigation actions; (3) Measurement, Reporting and Verification (MRV) system and national registry for mitigation actions - Ongoing 2017-2021	<input type="checkbox"/> Market transformation to energy efficient lighting with enhancements on local EEL production capability <input type="checkbox"/> Robust policy and guidelines on EEL production and utilization in buildings and street lighting application <input type="checkbox"/> Strengthening in MRV and MVE systems with adoption of SNI/MEPS and testing laboratories to support them
ASEAN SHINE	Standards harmonization across ASEAN for air conditioners and lighting products in support of the ASEAN Plan of Action for Energy Cooperation – Ongoing (2016-2025)	<input type="checkbox"/> MEPS and energy labels in place for high efficient energy lighting products
UN Environment en.lighten Initiative	Status of the efficient lighting MVE activities, programs in the selected six ASEAN countries, including Indonesia, the classification and quality status of the numerous EEL products and application, benchmarking and tapping of the energy saving potential in the lighting sector	<input type="checkbox"/> Regulatory mechanisms for efficient lighting monitoring, verification and enforcement (MVE)
Super-Efficient Equipment and Appliance Deployment (SEAD) Initiative - Clean Energy Ministerial and the International Partnership for Energy Efficiency Cooperation	Aiming to make it easier for governments and the private sector to capitalize on opportunities regarding appliance and equipment (including lighting) efficiency to reduce energy demand and carbon emissions while lowering energy costs for consumers, businesses, and institutions - Ongoing	<input type="checkbox"/> Policy and guidelines for public procurement of LED lighting products (residential, commercial and outdoor) developed and adopted
Indonesia Clean Energy Development (ICED) Phase II - USAID	Establish an effective policy, regulatory and incentive environment for low-emission growth in the energy sector, while simultaneously attracting public and private sector investment in clean energy development. – Ongoing 2015 -2020	<input type="checkbox"/> Capacity development for policy makers, enforcement & custom officials and other relevant government agencies on market control procedures
AFD EE street Lighting - Agence Française de Développement (AFD)	Contribute to Indonesia's efforts in the fight against climate change (appropriate infrastructure development, establishment of dedicated financial instruments).– Ongoing at a preliminary stage	<input type="checkbox"/> Regulatory mechanisms for efficient lighting monitoring, verification and enforcement (MVE) including testing standards defined and implemented
LED Street Lighting Project in Indonesia – Asian Development Bank	Implement LED Retrofit Project in Batang and Semarang (Pilot Cities) and several power stations of State Owned Utility (PLN) - Completed 2016.	<input type="checkbox"/> Pilot demonstrations for accelerated LED lamp deployment in buildings and for street lighting in the context of sustainable cities

Project Name - Sponsor	Areas of Interest/Status	ADLIGHT Additional Outputs
Smart Street Lighting Initiative (SSLI) NAMA Indonesia - Die Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Program to increase energy efficiency of SL through implementing efficient technology (lamp, armature, control system, etc) focusing on study in 22 cities and pilot in several cities – piloting completed in 2014; development phase (2015-2017); transformation phase (2017-2019)	<input type="checkbox"/> Pilot demonstrations for accelerated LED lamp deployment in buildings and for street lighting in the context of sustainable cities
Environmental Support Program Phase 3 (ESP3) - Danish International Development Agency (DANIDA)	Developing inclusive and sustainable growth through improved environmental management and climate change mitigation and adaptation. Supports in implementation and monitoring energy efficiency, energy conservation and renewable energy including pilot projects - Ongoing	<input type="checkbox"/> Innovative financial mechanisms enabling the accelerated penetration of advanced lighting systems, including ESCO models
Green Banking - <i>PT Sarana Multi Infrastruktur</i> - Persero (PT SMI) in partnership with MTRE3 Project	Green infrastructure bank transforming into an infrastructure bank to help fund roads, railways and seaports with private backing and interested in street lighting financing - Ongoing	<input type="checkbox"/> Business transformation plans of selected local lighting manufacturers to convert their production lines to the production of more energy efficient LED lamps
<i>Synergy Efficiency Solutions</i> (SES) – Private Company	Assists companies in the implementation of savings solutions by minimizing investment costs through its ESCO financing options focusing on energy efficiency, including EE Lighting – On going	<input type="checkbox"/> Technical assistance program for selected local EEL product manufacturers to upgrade manufacturing facilities
Promoting Industrial Energy Efficiency through System Optimization and Energy Management Standards in Indonesia – UNIDO/GEF	Promoting industrial energy efficiency through system optimization approach and introduction of ISO energy management standards – For completion in December 2017	<input type="checkbox"/> Business transformation plans of selected local lighting manufacturers to convert their production lines to the production of more energy efficient LED lamps
Private Financing Advisory Network (PFAN) – USAID Climate Technology Initiative (CTI) and UNFCCC Expert Group on Technology Transfer	Bridge the gap between investments and clean energy businesses. Identify promising clean energy projects at an early stage and provide mentoring for developing a business plan, investment pitch, and growth strategy, significantly enhancing the possibility of financial closure for the projects – Completed 2012-2014	<input type="checkbox"/> Implemented awareness and promotion program and information system explaining the benefits of high energy efficient lighting technologies

3) Proposed alternative scenario. The ADLIGHT project aims to promote the increased deployment of high efficiency lighting technologies in Indonesia through the transformation of the national market, thereby reducing electricity demand and the related greenhouse gas (GHG) emissions. The project is expected to lead to increased market penetration of high quality, high efficiency lighting market supplied by locally produced and imported products that meet the minimum energy performance standards and quality standards adopted by the country. Component 1 focuses on enabling the country's lighting industry, to locally-produce highly quality lighting systems that meets the MEPS and thus supply cost competitive

quality LEDs in the market. Component 2 will ensure that lighting products available in the market, either *imported or locally produced*, will meet the MEPS standards established by the country. Component 2 through changes in government procurement policies to incorporate energy efficiency requirements and Component 3 through introduction of new business models and awareness raising will support creation and scale up of the market for quality energy efficiency LED products. The project proposes to have an innovative approach that covers assistance to the upstream portion of the LED value chain, across the midstream of delivery and marketing in to the downstream application of the LED products.

The overall goal of the ADLIGHT project is to reduce the growth rate of annual GHG emissions from lighting energy use by means of reducing electricity consumption in the energy end-use sectors. This is done with a gender-responsive approach, responding to the needs and capacity of women and men.

The project objective of ADLIGHT is to increase the penetration of high quality energy-efficient lighting technologies in Indonesia through the transformation of the national market, thereby reducing electricity demand and the related greenhouse gas (GHG) emissions. Although LED penetration is gradually increasing in Indonesia, these are often low quality products thereby harming the consumer confidence in LED.

The ADLIGHT approach comprises the following strategies also referred to as project components, each addressing the above-mentioned key barriers to this transition in attaining the objective. These strategies will result to the corresponding three project Outcomes with the respective Outputs and Activities as listed below.

- **Support to local lighting industry to improve the quality and efficiency of lamps and ballasts:** The project will collaborate with the Indonesian lamp manufacturing associations to provide support to Indonesian lighting manufacturers to increase their capacity to produce high quality energy efficient lighting that can meet future MEPS and quality standards adopted by the Government. The strategy focuses mainly on increasing the capability of local manufacturers to expand their production lines e.g. by making them capable of developing good business transformation plans and submitting good bankable proposals to local commercial banks. Since the local manufacturers need financial resources to upgrade their production lines, the proposed project will help them to develop high quality business transformation plans. The project will further establish partnerships with the local banks to foster investment in high efficiency lighting production in Indonesia. The local manufacturing is also anticipated to enhance the cost competitiveness of the high quality LED to reduce the incentives for buying low quality LEDs that may get supplied to the market. To ensure local manufacturers are able to meet MEPS and other quality standards, they will be integrally involved in component 2 training components.

- **Regulatory mechanisms and market monitoring, verification, and enforcement (MV&E):** The project will capitalize on the initiatives in place and implement minimum energy performance standards (MEPS) in coordination with the Ministry of Industry and the national standards organization regulatory mechanisms. The ambition is to have these standards harmonized with a regional approach. The project will also support Indonesia in developing a well-functioning system of monitoring, surveillance, control, and testing facilities for effective and improved customs and public procurement procedures as a means to higher uptake of LED lighting. Activities under this component will closely coordinate with the ongoing national efforts under the National Action Plan to Reduce Greenhouse Gases Emission (or locally referred to as *RAN-GRK*) and the Local Action Plan for Greenhouse Gas Emission Reduction (referred to as *RAD-GRK*) ³ as far as monitoring and verification are concerned. When it comes to the enforcement of testing standards for high efficiency lighting systems, the project will work closely with the lamp manufacturing associations and respective local industries to educate them on the applicable national and regional standards to be followed in terms of quality and efficiency and enforced by the relevant government agencies and customs authorities in the numerous ports that is characteristic of the unique porous archipelagic situation of the country. This will ensure products comply with MEPS and reduce the number of non-compliant products entering the

market to an absolute minimum in collaboration with Ministry of Industry and Ministry of Trade. This will also ensure that imported products meet the MEPS and quality standards set by the Government.

- High efficiency lighting technology penetration:** The proposed project will study available financial mechanisms and explore for their suitability in the project. The pilot projects will concentrate on the ESCO business models (both guaranteed and shared savings model) as well as develop guidelines for public and private procurement procedures as a gateway to higher uptake of efficient lighting products (residential, commercial and outdoor) in support of the most beneficial business approaches. Since there is a large scope for reducing the energy demand for public lighting, the project will closely work with selected cities and municipalities to scale up the smart street lighting initiative. The technical and financial assistance that the project will provide to building owners and city governments in the demos will aid in their conversion to efficient street lighting. These will involve such upfront costs in formulating and initiating the EE program that usually become barriers affecting possible EE investment initiatives in view of the potential benefits that have been identified. The project will remove these barriers and pave the way to follow this developmental route for more efficient and sustainable operations. Once these developmental concerns are addressed, the EE lighting program will be put in place for MEMR to follow through and sustain through the effective implementation of the replication plan that will be initiated within the project period. The project will take a gender-responsive approach to consultations with relevant stakeholders and the public in order to consider the needs, particularly of women, related to safety and street lighting. Sex-disaggregated data will be gathered whenever possible. Further, the project will develop communication campaigns, distribution campaigns, and demonstration projects to raise awareness on the benefits of high efficiency lighting. The project will further implement pilot projects with the Green Cities project and the Local Government Association to introduce high efficient street lighting. Innovative financial mechanisms will be built around approaches such as the ESCO model to stimulate the deployment of efficient street lighting in wider Indonesian cities. While the project will focus on commercial buildings and street lighting in most of the demonstration and replication activities, it also recognizes the big potential of the high efficiency lighting systems in the residential applications which will need different approaches for the necessary promotion and market penetration. Whereas the ESCO model can be relevant in commercial buildings and street lighting, the residential market will be included in the project's communication and marketing campaigns to bolster overall EEL market penetration.

OUTCOMES/OUTPUTS	ACTIVITIES
OUTCOME 1: Improved quality, energy efficient and affordable locally-produced EEL products and systems	
Output 1.1: Establishment of knowledge center and systems that help manufacturers in their production planning and policy makers in reviewing enabling environment.	1.1.1: Identification, design and establishment of an Institute to support energy efficient lighting transformation in Indonesia 1.1.2: Periodic (inception, mid-term and terminal) gender sensitive market surveys of EEL production and application in Indonesia 1.1.3: Development of LED lighting development roadmap for Indonesia, with gender equality goals included 1.1.4: Review and development of recommendations for government policies to provide level playing field to manufacturing of high quality LEDs
Output 1.2: Adopted and implemented business transformation plans of selected local lighting manufacturers to produce high quality energy efficient lighting which meet future MEPS	1.2.1: Gender-responsive assessment of needs and development of capacity building to prepare local EEL manufacturers to upgrade production facilities to produce high quality, efficient lighting that can meet future MEPS 1.2.2: Development of gender-responsive business transformation plans of local EEL manufacturers to produce high quality LED lamps that can meet future MEPS requirements. 1.2.3: Organization and conduct of workshops and business forums for local manufacturers for the adoption and implementation of the business transformation plans, with gender-sensitive capacity building components.

OUTCOMES/OUTPUTS	ACTIVITIES
Output 1.3: Completed capacity development program for banking/financing institutions on the evaluation and financing of lighting industry modernization projects	1.3.1 Design, planning and conduct of training for financing institution officials on assessment of financial proposals on energy efficiency, focusing on production upgrades of lighting manufacturers, while specifically addressing gender-gaps in the market.
OUTCOME 2: Improved conditions for fair market competition of EE lighting products, informed by robust policy and institutional framework	
Output 2.1. Minimum Energy Performance Standards (MEPS) and energy labels in place for high energy efficient lighting products in line with the ASEAN regional approach	2.1.1. Development and implementation of <i>SNI</i> for standard minimum quality for indoor and outdoor LED lamps with <i>BSN</i>
	2.1.2. Development of MEPS for indoor and outdoor LED lighting with MEMR by aligning and adopting the available standards in Indonesia and international standards.
	2.1.3. Development and endorsement of LED energy labeling procedure in line with the ASEAN approach by MEMR
Output 2.2: Policy and guideline for public procurement of LED lighting products (residential, commercial and outdoor) developed and process for adaptation initiated, including environmentally safe waste disposal and recycling practices	2.2.1. Development and initiation of process of endorsement of a government policy, implementing rules and action plan to include adoption of the weight benefit (<i>BMP</i>) mechanism for the LED lighting products in support to government promotion of local EEL products in the market
	2.2.2. Development and initiation of process of endorsement of a procurement guideline by adopting MEPS and/or standard minimum quality for locally manufactured indoor and outdoor LED lamps and systems including environmentally safe disposal/recycling of lighting products
	2.2.3 Development and initiation of process for endorsement of a strategy and guidelines for the environmental safe collection, recycling and/or disposal of lighting products and systems
Output 2.3: Regulatory mechanisms for efficient lighting monitoring, verification and enforcement (MVE) including testing standard defined and process for notifying the implementation initiated by relevant agencies at the national and local levels	2.3.1 Reviewing, assisting and deployment of a software application with <i>BSN</i> to trace <i>SNI</i> , MEPS, and Labels certified LED Lamps including the upgrading of existing hardware and software to support LED lighting MVE
	2.3.2. Reviewing and upgrading public procurement monitoring report of LED light procurement from the e-catalogue procurement and non e-catalogue procurement.

OUTCOMES/OUTPUTS	ACTIVITIES
	2.3.3. Re-evaluation of existing certified LED lamp testing laboratory for indoor and outdoor by <i>KAN/BSN</i> on performing the existing <i>SNI</i> -IEC standard.
Output 2.4: Completed capacity development for policy makers, enforcement & custom officials and other relevant government agencies on market control procedures	2.4.1. Development and initiation of process for endorsement of the institutional framework necessary to define roles and responsibilities among relevant agencies to strengthen program implementation and market transformation to EEL products and systems
	2.4.2. Design, planning and conduct of training for stakeholders involved in importing LED components and lamps (especially local manufacturers and supply chain importers) on custom and excise procedures
	2.4.3. Design, planning and conduct of training for LED lighting manufacturers in Indonesia on local content calculation by Ministry of Industry and its authorized certifier
	2.4.4. Design, planning and conduct of training on market control procedures, development and implementation on certified LED lamps and systems for manufacturers and government stakeholders.
	2.4.5. Design, planning and conduct of training on waste management and environmentally safe waste disposal / recycling of lighting products
Output 2.5: Completed capacity development program for lamp testing laboratory personnel on LED testing	2.5.1. Design, planning and conduct of training on the implementation of the upgraded EEL laboratory and testing procedures.
	2.5.2. Benchmarking and round-robin testing for LED products and systems with local and international LED laboratories
	2.5.3. Design, planning and conduct of training for manufacturers to understand and implement the LED standard requirement for research, production, and quality assurance on the LED products.
OUTCOME 3: Increased penetration of high quality and efficient lighting	
Output 3.1: Development of an innovative financial model enabling accelerated penetration of advanced lighting systems, focusing on the development of ESCO business models	3.1.1: Comparative evaluation of international best practices of financial support schemes for EEL financing
	3.1.2: Development of ESCO business models to be demonstrated in the pilot projects
	3.1.3: Mainstreaming of the existing national policies and regulations for the banking sector to accelerate penetration of EEL
Output 3.2: Pilot demonstrations for accelerated LED lamp	3.2.1: Design, approval, capacity development and implementation of pilot demonstrations using ESCO business model

OUTCOMES/OUTPUTS	ACTIVITIES
deployment in buildings and for street lighting in context of sustainable cities as well as in residential sector	3.2.2: Design, planning and conduct of training for local government municipalities and cities and pilot demonstration hosts
Output 3.3: Implemented awareness and promotion program and information system explaining the benefits of high energy efficient lighting technologies taking into account gender specific aspects in developing and implementing the programmes	3.3.1: Development of a gender-responsive EEL awareness and promotional program on the benefits of good quality LED lighting
	3.3.2: Development and implementation of information support network system, database and website on EEL product distribution, sales and performance in the market for various consumer groups

4) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF and co-financing. The barrier removal activities of the ADLIGHT project comprise the incremental activities of the proposed project that will either be fully or partly funded by GEF resources. All these GEF-funded incremental activities will supplement the baseline activities under the EEL program of the country particularly focusing on the relevant LED manufacturing and application projects by the partners that will be subsumed under ADLIGHT. Altogether, the combined incremental and baseline activities are expected to result in the realization of the expected project outcomes.

5) Global environmental benefits. The three-year ADLIGHT project is expected to reduce annual electricity through its direct pilot and immediate replications by 60.17 MWh/yr or cumulatively 77.45 MWh by the end of the project (EOP) in Year 3 (2021). It targets to contribute 378.31 MWh cumulatively in 2026 or 5 years after the EOP and 679.17 MWh in 2031 or 10 years after EOP. The equivalent reduction of CO₂ emissions is estimated at 48.62 kton CO₂ per year by 2021. Cumulatively, reduction of CO₂ emissions amounts to 62.58 kton CO₂ by 2021, 305.67 kton CO₂ by 2026 and 548.77 kton CO₂ by 2031.

The transition to efficient lighting in the residential, commercial/industrial and outdoor sectors in Indonesia will result in expected environmental benefits of 8 million tonnes annual CO₂ reduction per year by 2030 or year 10 after end of the project as influenced by the ADLIGHT project in all sectors considered. Annual energy savings in terms of reduced electricity consumption would be up to 10 TWh, which is 7% of the total national electricity consumption and 45% of electricity consumption used for lighting. The annual costs savings in terms of avoided electricity bills and lamp costs would be about 756 million USD.

6) Innovativeness, sustainability and potential for scaling up. The project proposes to have an innovative approach that covers assistance to the upstream portion of the LED value chain, across the midstream of delivery and marketing in to the downstream application of the LED products. Thus, the theory of change will include consideration of internal factors (relating to project design and implementation) and external factors (relating to other partners, stakeholders and the entire value chain participants) that will be critical for achieving the expected change in increasing the national market penetration of affordable, high quality LEDs. The project's multi-pronged barrier removal approach, covering policy and planning, commercial and technical viability, financing, and information and awareness, is designed to stimulate ongoing replication of the project demos and, thus, scale-up of project results.

The ADLIGHT project is designed to build upon existing policies and remove policy-related risks by working closely with government and establishing the quality and performance standards for investors to invest in quality product without fear of competition from low quality products. Indonesia has long drawn policies and program on energy efficiency and conservation (EE&C) as mandated in the country's Government Regulation of the Republic of Indonesia No. 70/2009 on Energy Conservation. To strengthen institutional support, the Directorate General of New-Renewable Energy and Energy Conservation (DGNREEC) was established in August 2010 to implement the EE&C program and continued to be reinforced by succeeding regulations and pronouncements placing EE&C an important component in the Presidential Regulation No. 61/2011 on National Action Plan to Reduce Green House Gases (RAN-GRK) as well as in the international commitment in the Intended Nationally Determined Contribution (INDC) and regional agreements such as in the ASEAN. These are among the major policies that are supportive to energy efficient lighting program agenda. Lighting is a major energy end-use that accounts for 18.8% of the total electricity used for all sectors which gives a big reason to pursue sustainable development in this area. The response of the private sector has been very encouraging and constitutes a major driver in achieving the ADLIGHT goal of transforming the market for efficient energy lighting towards its high potential and long lasting impact on energy saving and GHG reduction. The pilot EEL demonstrations in buildings and street lighting will lead to sustained growth and impact.

The strategy focuses on mitigating investment risks on production and increasing market penetration of high quality EELs not only in Indonesia but also in the region. The project is designed to make a long-lasting impact through green economy. The project will engage the relevant agencies and stakeholders and the local industry to ensure its buy-in by demonstrating the benefits of quality production and creating conditions for them to benefit. The project will provide support to develop technology, policy, institutional and human capacities for the realization of ADLIGHT-supported development pathway. The project will develop and implement the application of appropriate business and financing models to implement large scale appliance upgrade projects. With an increasing market and improved standards of EELs, the financial risks will then be addressed in a sustainable manner.

The ADLIGHT project activities are designed in a way that encourages replication. The project will support the Government of Indonesia in harmonization of its policies and legislative framework, particularly Minimum Energy Performance Standards (MEPS) for LED lighting products with international conventions and ASEAN standards. These activities will require updates and applications in similar related fields. This will increase the sustainability of the regulatory system.

The EE lighting pilot demos are expected to encourage replication in ESCO business models. Once financial institutions can see EE lighting investment as a bankable investment, replication will be easier to conduct. The state-owned bank building as one of main targets of pilot demonstration in the ADLIGHT project was selected to encourage banks to have first-hand experience and benefit (energy and cost saving per year) from EE lighting investment and projects. By including banks as project stakeholders and target recipient of pilot demos, the project will work towards improving the bankability perception of EE lighting investment in Indonesia and developing viable ESCO business models for sustainable approach in future.

The project has included the establishment of an Efficient Lighting Knowledge Center for collecting market information on lighting products, quality standards of products, quality product listing (QPL) and database in cooperation with a network of qualified laboratories, consumer perception, including gender-disaggregated consumer data to be made available, and other related information regarding efficient lighting technology and technology providers. It will ensure that the knowledge management support is fully developed in line the active transition to EELs as a sustainable program.

[1] <http://www4.unfccc.int/ndcregistry/pages/Party.aspx?party=IDN>

[2] The Green City Development program promotes implementation of green open space, efficient energy/green energy, water management, waste management, green building, green transport and green community. In its implementation, the Green City Development project has mainly achieved promoting green open space in cities, while the green energy components are lagging behind due to low technical and financing capacity of cities in planning and implementing green actions.

[3] Document is referred as *Rencana Aksi Nasional Penurunan Emisi Gas Rumah Kaca (RAN-GRK)* which is supplemented by the *Rencana Aksi Daerah Penurunan Emisi Gas Rumah Kaca (RAD-GRK)*

A.2. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

The ADLIGHT Project is among ten (10) national child projects that will receive support for the development program using an integrated policy approach through the multi-country arrangement under the “Leapfrogging Markets to High Efficiency Products Program (for appliances, including lighting, and electrical equipment)”, also a GEF-supported program. This global program contributes to the UN Secretary General’s Sustainable Energy for All (SE4ALL) initiative’s Lighting and Appliance & Equipment Accelerators. The SE4ALL Global Project has formed a global partnership, named United for Efficiency (U4E), which is a global effort supporting developing countries and emerging economies to move their markets to energy-efficient appliances and equipment. Further, by the end of the SE4ALL project, it will have the commitment from at least thirty developing countries and emerging economies, including Indonesia, to transform their markets to energy efficient lighting, appliances, and equipment. This Program will utilize the tools already developed under SE4ALL Global Project, such as country assessments and best practice policy guides in order to increase the number of countries committing to advance energy efficient products considering their respective national context and needs.

A.3. Stakeholders

Please provide the Stakeholder Engagement Plan or equivalent assessment.

The manufacture and use of lighting product and systems cut across many sectors: energy, transportation, industry, trade, financial, public works and housing, research and technology development, policy and regulation. The Project will be organized through a coordination mechanism that will involve representatives from the above-mentioned sectors.

At the national level, the project management team will build on the stakeholder consultation process that includes the inception workshop and other bi-lateral meetings. A broader consultation with a range of stakeholders will be held under the leadership of the Ministry of Energy and Mineral Resources.

At the local level, stakeholders will be engaged through the UNDP's standard stakeholder engagement processes. The project management team and MEMR/DGNREEC will continue to work closely with key project stakeholders such as project sponsors, co-financing institutions, community-based organizations and relevant NGOs. The following private sector associations will be closely involved in project implementation:

- Lighting Industry Associations (*GAMATRINDO, ALINDO and APERLINDO*)
- *Tingkat Kandungan Dalam Negeri (TKDN)* or Local Content certifiers
- Masyarakat Konservasi dan Efisiensi Energi Indonesia MASKEEI or IECES (Indonesia Energy Conservation and Efficiency Society)

Special consideration for the disenfranchised groups from the local communities, indigenous peoples (if any), women, children, elderly, the poor, vulnerable and minorities are also being included as they will benefit greatly from greater access to and use of efficient and cost-effective energy efficient lighting products in terms of day-to-day need, safety and security. To coordinate various interests and needs, the project will have a Project Board in which all major stakeholders will be represented to ensure that their needs are addressed through a broader range of national actors so that stakeholder involvement will widely be an inclusive and participative process, including the invitation of representatives from civil society organizations such as consumer protection groups, etc. when pertinent critical issues are to be discussed in the Project Board agenda.

Select what role civil society will play in the project

x Consulted only;

Member of Advisory Body; contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body;

Executor or co-executor;

x Other (invitation of representatives from civil society organizations such as consumer protection groups, etc. when pertinent critical issues are to be discussed in the Project Board agenda.)

Documents

Title

Submitted

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body;

Executor or co-executor;

Other (Please explain)

A.4. Gender Equality and Women's Empowerment

Please briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women's empowerment? (yes x / no) If yes, please upload gender action plan or equivalent here.

If possible, indicate in which results area(s) the project is expected to contribute to gender equality:

closing gender gaps in access to and control over natural resources;

X improving women's participation and decision making; and or

X generating socio-economic benefits or services for women.

Does the project's results framework or logical framework include gender-sensitive indicators? (yes X / no)

Gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men.

Gender analysis and action planning were conducted during the project preparation focusing on several areas for consideration in the ADLIGHT project. The main outcomes of the gender analysis are summarized below:

- The traditional energy sector is still one of the least gender-inclusive sectors to date globally. According to one estimate, women represent only 6 percent, 4 percent and less than 1 percent of the technical, decision-making and top management positions, respectively, in the energy sector.
- In Indonesia, women have a limited access to information related to energy, given the male-dominated industry, which in turn limits women's participation and contribution to shaping policy
- Gender gaps related to access to energy, finances, training, employment and entrepreneurship need to be addressed in Indonesia
- Women and men have different perceptions on what constitutes adequate illumination, as well as the sense of safety it provides on a particular street, with men having the tendency to perceive that the illumination had been adequate while the women tended to claim that it was not bright enough.

- Increasing the energy efficiency of street lighting is not only cost effective, it provides gender-sensitive results by improving night-time safety in cities
- Households where women are the predominant decision maker tend to have lower energy consumption

Deeper gendered assessments need to be conducted in order to better illustrate how women and men interact with the local economy differently with regard to LED lighting. Energy sectors are primarily male-dominated in Indonesia and globally, however women are an untapped resource, as key beneficiaries of lighting technologies, and consultants on how to most effectively raise awareness about new lighting technologies. Finally, addressing gender gaps at leadership, policy and industrial levels in the electricity sector is an opportunity to advance gender equality, and the economy of Indonesia at large.

The ADLIGHT project is committed to ensure that women's and men's different roles, perceptions, and opportunities in contributing to and benefiting from application of energy efficient LED lighting technologies in Indonesia will be considered. Gender mainstreaming will be included, as appropriate, to be gender transformative in project's implementation strategies and activities in advancing the application of EELs in the country.

In addition, the project design incorporated gender-responsive project results framework, including sex-disaggregated indicators such as "Ratio of women and men participating in capacity building trainings throughout the project", which is targeting a 30/70 ratio by end of the project in all the project activities.

Documents

Title

Submitted

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

If yes, please upload document or equivalent here

If possible, indicate in which results area(s) the project is expected to contribute to gender equality:

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making

Generating socio-economic benefits or services for women

Will the project's results framework or logical framework include gender-sensitive indicators?

A.5. Risks

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being, achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.

Based on the risk analysis of the various risks indicated that could prevent the ADLIGHT project objectives to be achieved, the risk rating is Medium (3) on the probability scale and also Medium (3) on the impact scale, thus the overall risk rating is Medium. Mitigation measures were also determined for each risk identified.

Project Risks					
Description	Type	Impact & Probability*	Mitigation Measures	Owner	Status
1. Prolonged delays in the implementation of MEPS due to Government procedures and processes	Political Regulatory	P = 2 I = 3	BSN to come up with <i>SMI</i> standards that can be used as reference in the government procurements and other EEL applications while MEPS is being developed	MEMR/DGNREEC BSN Industry associations Min of Trade and Industry	Reducing
2. Local lighting manufacturers may not be interested to upgrade the lighting production facilities due to increased investments, disruption to operation and business priorities	Financial Operational Strategic	P = 3 I = 3	Coordinate closely with manufacturers associations and local banks to facilitate investments; facilitate through ESCOs and TWG	MEMR/DGNREEC Industry associations Min of Trade and Industry	Reducing

Project Risks					
Description	Type	Impact & Probability*	Mitigation Measures	Owner	Status
3. Petroleum products and electricity prices will be at levels that make energy efficiency projects, particularly in EEL, uncompetitive and not cost effective	Strategic Environmental Political	P = 3 I = 3	Government to be encouraged to adopt appropriate energy pricing policies and incentives to encourage EE project investments	MEMR/DGNREEC Min of finance Min of Planning Industry associations Min of Trade and Industry	Increasing
4. Manufacturers are not committed to improving the energy-efficiency and quality of products.	Organizational Operational	P = 2 I = 3	Coordinate closely with manufacturers associations; facilitate through ESCOs and TWG	MEMR/DGNREEC Industry associations Min of Trade and Industry	Reducing
5. Manufacturers are not willing to share data on their operations and marketing for MVE	Financial Operational	P = 3 I = 3	Coordinate closely with manufacturers associations; facilitate through ESCOs and TWG	MEMR/DGNREEC Industry associations Min of Trade and Industry	Reducing
6. Banks and financial institutions are not convinced about the business potential of manufacturing and market for LED systems	Financial Operational Organizational	P = 3 I = 3	Coordinate closely with manufacturers associations and local banks to facilitate investments; facilitate through ESCOs and TWG	MEMR/DGNREEC Industry associations Min of Trade and Industry <i>OJK</i> Financial institutions/Banks	Reducing
7. Commitment to abide with regional and international EEL standards and harmonization is lacking	Political Regulatory	P = 2 I = 3	Implement Component 2 on policy and institutional support effectively	MEMR/DGNREEC Industry associations Min of Trade and Industry	Reducing
8. Policy framework may not attractive for manufacturers and users to invest in EEL projects.	Political Regulatory	P = 3 I = 3	Implement Component 2 on policy and institutional support effectively	MEMR/DGNREEC Industry associations Min of Trade and Industry	Reducing
9. Local EEL producers could not meet all technical standard specifications	Financial Operational Organizational	P = 3 I = 3	Coordinate closely with manufacturers associations; facilitate through ESCOs and TWG	MEMR/DGNREEC Industry associations Min of Trade and Industry	Reducing

Project Risks					
Description	Type	Impact & Probability*	Mitigation Measures	Owner	Status
Overall		P = 3 I = 3			

* Probability on a scale from 1 (low) to 5 (high) and Impact on a scale from 1 (low) to 5 (high)

There is a risk that local lighting manufacturers may not be interested to upgrade the lighting production facilities due to increased investments, disruption to operation and business priorities. The proposed project will closely work with lamp manufacturers associations and respective local banks to facilitate investments. Working relationships with industry and commercial sector associations will be further enhanced to ensure cooperation, commitment and active participation of local lighting manufacturers, and distributors. The project will support awareness raising activities for wider dissemination of efficient lighting products.

The strategy focuses on mitigating investment risks on production and increasing market penetration of high quality EELs not only in Indonesia but also in the region. The project is designed to make a long-lasting impact through green economy. The project will support the relevant agencies and stakeholders to ensure technology, policy, institutional and human capacities are established for the realization of ADLIGHT-supported development pathway. With an increasing market and improved standards of EELs, the financial risk will be addressed in a sustainable manner.

A.6. Institutional Arrangement and Coordination

Describe the Institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

The Project will be implemented at the designated space for the Project Management Unit under the auspices of the MEMR. The project will be attended by those with assigned roles in the project organization structure, the UNDP Indonesia Country Office, the UNDP GEF Regional Technical Advisor, the designated UN Environment representative from the UN Environment GEF Global Leapfrogging Program, the GEF Operational Focal Point (OFP) as well as other relevant stakeholders and co-financing partners. The PMU will take care of day-to-day management and implementation of project activities leading to the Project Outputs and Outcomes, prepare annual work plans and build ownership for the project results.

The proposed project will closely coordinate with other government initiatives that are also supported by UNDP and/or GEF, particularly build on the experiences and lessons learnt from the BRESL Project and other related Projects. The ADLIGHT project will also coordinate with secretariat RAN-GRK and RAD-GRK at the national level and other regional and bilateral projects in a strategic, integrated and synergistic approach.

Additional Information not well elaborated at PIF Stage:

A.7. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptaion benefits (LDCF/SCCF)?

Based on 2016 estimates, the projected 2031 (after 10 years from EOP) cumulative energy savings range from 48.7 GWh to 60.8 GWh in the conservative and optimistic EEL market penetration scenarios. This translates to estimated 4,187 to 5,227 tons of oil equivalent or in terms of foreign exchange equivalent of USD 1.79 million to 2.23 million.

A.8. Knowledge Management

Elaborate on the Knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user- friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

The overall objective of this Knowledge Management Strategy is to ensure the effective use of the knowledge acquired and availed to the ADLIGHT Project. The specific objectives will be:

1. To collate and retain knowledge in order to enhance the project's institutional memory;
2. To ensure timely and open access to knowledge so as to foster high staff performance and effective work flow processes; and
3. To nurture knowledge sharing for more effective project implementation as well as to inform decision-making processes.

In order to ensure the successful implementation of this Knowledge Management Strategy, a number of guiding principles will have to be adhered to:

1. **Collective Responsibility.** While the overall responsibility of knowledge management is that of the Project Manager, it is, however, everyone's obligation to contribute to the knowledge management process. This is important because different project staff, stakeholders and experts will be involved at different stages of the project. Therefore, having an effective system for collating and sharing information will be crucial.
2. **Range of Knowledge.** It is anticipated that a wide range of knowledge will be acquired and shared during the project lifetime. This includes explicit knowledge acquired from stakeholders during surveys, standard procedures, progress reports as well as implicit knowledge such as the one held by individuals such as experts which is unwritten. It should be noted that some of the progress report formats to be adopted in the project will attempt to elicit the knowledge acquired and, therefore, will require particular attention.

3. **Simplicity.** Due to limitation of financial resources and to ensure ease of utilization, the knowledge management process should be simple yet effective. For instance, there will be no need to acquire complex knowledge management software. Rather, the project could adopt the use of existing tools such as the information sharing systems used by UNDP such as Yammer, OneDrive, Outlook calendar, Web server, etc. It is worth noting that knowledge management is NOT technology-focussed but people-focussed.
4. **Use of Various Modalities.** It is incumbent on the Project Team to use a wide range of knowledge acquisition, storage and sharing modalities based on ease of doing so. For example, a bilateral meeting can provide a forum for the generation and exchange of a lot of knowledge and information. Therefore, in order to capture this knowledge for the benefit of all relevant stakeholders, brief “Meeting Notes” can be drafted and shared after every meeting. This is also important in the case of Workshops and Seminars. Alternatively, voice recording can be utilized to quickly and easily capture the entire meeting proceedings, albeit in a non-distilled format.
5. **Multifunctional Approach.** There is need to recognize that the knowledge acquired can have diverse uses. For example, Workshop Proceedings Report can be evidence that a particular milestone has been attained. In addition, the report can be a source of information for a particular group of stakeholders. Therefore, in the process of knowledge management, care should be taken to ensure that the “packaging” of the knowledge is done in a way to ensure that the products are suitable for the foreseeable different uses.
6. **Constant Review.** For any system to be effective, its performance has to be constantly reviewed and, where need be, adjusted. Therefore, the Project Manager could delegate monitoring and maintenance of knowledge management to the individual allocated the Monitoring and Evaluation responsibility. This will ensure that the opportunities of knowledge acquisition and sharing are not lost.
7. **Publicity and Public Engagement.** By its nature, the ADLIGHT Project has an inherent interest among various stakeholders, the public included. Therefore, an effective knowledge management process should include means of publicizing the knowledge garnered as well as using a simple and effective way of engaging with the public e.g. using mass media (TV, radio, newspapers, website, etc) and social media, such as Twitter and Facebook.
8. **Alignment to Overall Project Plan.** In a number of instances, outputs of the project will contribute as inputs to the ADLIGHT’s Project knowledge management. In other cases, products of knowledge management will contribute to achieving certain outcomes of the project. Therefore, it will be important that the process of knowledge management is aligned to the overall Project Plan. Specifically, the project roll-out plan should include an activity for the development of a Knowledge Management Action Plan.

The project in its Component 1, Activity 1.1.1, will support the establishment of an Efficient Lighting Knowledge Center for collecting market information on lighting products, quality of products, consumer perception, including sex-disaggregated consumer data where available and other related information regarding efficient lighting technology and technology providers. Existing agency with relevant mandate and organization, such as BSN, will be assisted in preparing a strategy and design to meet the requirements and purpose of the Knowledge Center and in establishing it in the selected agency that will continue to be responsible in carrying out a sustainable program ushered by the project in providing not only knowledge but also a categorized quality product listing (QPL) and database in cooperation with a network of qualified laboratories.

B. Description of the consistency of the project with:

B.1. Consistency with National Priorities

Describe the consistency of the project with nation strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

o **B.1 Consistency with National Priorities.** The GHG emissions reduction will contribute to the voluntary national target to reduce 26% of GHG emissions by 2020 which was originally committed in 2009 in Indonesia's Intended Nationally Determined Contribution (INDC) on its own efforts. As stated therein, the potential emission reduction could reach up to 41% with international support. The adoption of the Paris Agreement marks a critical turning point for global climate action in the country. Submitted in advance of the agreement, Indonesia's INDC outlined its transition to a low-carbon future, committing to an unconditional emissions reduction of 29 percent by 2030 compared to the business-as-usual (BAU) scenario. The INDC reiterated Indonesia's voluntary target of reducing its emissions by 26 percent against the baseline scenario in 2020. As mandated by Indonesian Presidential Regulation No.61/2011 on RAN-GRK, every province in the country needs to develop a Local Action Plan for Greenhouse Gas Emission Reduction or *Rencana Aksi Daerah penurunan emisi Gas Rumah Kaca (RAD-GRK)* as a supplement to *RAN-GRK*. The implementation of these mitigation action plans at the provincial level is thus critical to achieving national climate goals and to laying the foundation for more ambitious climate action beyond 2020. The interventions proposed under RAN-GRK are potentially considered as NAMAs. RAN-GRK targets reduction of 22 million tonnes CO₂eq by 2020, which shall result from the implementation of energy efficiency actions and 4.53 million tonnes CO₂eq is from implementation of various renewable energy technologies, such as micro and mini hydro, photovoltaic, wind power and biomass.

o

In the energy sector, the Indonesian Energy Law 30/2007 and Presidential Regulation 5/2006 on National Energy Policy renewable energy is targeted to contribute 17% of the primary energy mix in 2025 and energy efficiency in industries, buildings and households is expected to save 15.6% of the total primary energy needed in 2025. In addition, the Government of Indonesia is targeting 100% electrification by 2020, with special annual budget allocation for Rural Electrification Programme. In 2011, electrification ratio in Indonesia is reported 73%. Efficient lighting will play a key role in meeting these targets.

o

O It also builds upon the proven integrated approach that has been successfully developed and introduced during the implementation of the GEF-financed UN Environment implemented En.lighten project and together with results of other earlier initiatives will guide the country to successfully transition to a greatly expanded EE lighting market. The project is part of national commitment which was earlier agreed on by the MEMR as the Implementing Partner and UN Environment, brought about by the SE4ALL Global Project and the Global Leapfrogging Program.

C. Describe The Budgeted M & E Plan:

To track the successful completion of the project activities and delivery of the intended outputs, the continuous monitoring of project components and activities towards achieving the expected outcome and outputs will be done. This will be carried out in line with the UNDP-GEF monitoring and evaluation (M&E) system. A formal M&E Plan will be adopted during the project inception corresponding to a full-scale project to track the activities and contributions of the activities by all the project partners, in terms of both in-cash and in-kind co-financing contributions to augment the GEF funds. These M&E findings will be reported on in the project's two in-depth independent reviews during the mid-term and towards the end of the project.

The table below shows the project's M&E Plan. The M&E will be conducted at multiple levels. At the most basic level, the PMO will be responsible for tracking project indicators and preparing quarterly reports and initial drafts of annual project reports. The PMO will also carry out site visits to the project demos to monitor their progress. The PSC will meet at least once every six months to monitor and evaluate project progress, taking actions as necessary. In addition, a mid-term review will be conducted after about two years of

implementation and a terminal evaluation as the project is nearing its close. These evaluations will be carried out by parties who have not previously been involved with the project. The project's M&E plan and indicators will be finalized at the time of inception.

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ^[1] (US\$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office Project Manager (PM)	USD 11,000		Within two months of project document signature
Inception Report	Project Manager	(included in routine project staff activity)	None	Within two weeks of inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office	(included in routine project staff activity)	None	Quarterly, annually
Risk management	Project Manager Country Office			Quarterly, annually
Monitoring of indicators in project results framework	Project Manager	USD 12,000 (Per year: USD 4,000)		Annually
GEF Project Implementation Report (PIR)	Project Manager and UNDP Country Office and UNDP-GEF team	(included in routine project staff activity)	None	Annually
NIM Audit as per UNDP audit policies	UNDP Country Office External auditors	Per year: USD 6,000		Annually or other frequency as per UNDP Audit policies
Lessons learned and knowledge generation	Project Manager	USD 9,000		Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Manager UNDP CO	(included in routine project staff activity)		On-going
Stakeholder Engagement Plan	Project Manager UNDP Country Office			On-going
Gender Action Plan	Project Manager UNDP Country Office UNDP GEF team			On-going
Addressing environmental and social grievances	Project Manager UNDP Country Office BPPS as needed	None for time of project manager, and UNDP CO		
Project Board meetings	Project Board UNDP Country Office Project Manager	USD 6,000		At minimum annually
Supervision missions	UNDP Country Office	None ^[2]		Annually

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ^[1] (US\$)		Time frame
		GEF grant	Co-financing	
Oversight missions	UNDP-GEF team	None ²¹		Troubleshooting as needed
GEF Secretariat learning missions/site visits	UNDP Country Office and Project Manager and UNDP-GEF team	USD 6,000		To be determined.
Mid-term GEF Tracking Tool to be updated by (add name of national/regional institute if relevant)	Project Manager	(included in routine project staff activity)		Before mid-term review mission takes place.
Independent Mid-term Review (MTR) and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 20,000		Between 2 nd and 3 rd PIR.
Terminal GEF Tracking Tool to be updated by (add name of national/regional institute if relevant)	Project Manager	(included in routine project staff activity)		Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 50,000		At least three months before operational closure
Translation of MTR and TE reports into English	UNDP Country Office	None		
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		USD 132,000		

^[1] Excluding project team staff time and UNDP staff time and travel expenses.

^[2] The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.

PART III: Certification by GEF partner agency(ies)

A. GEF Agency(ies) certification

GEF Agency Coordinator	Date	Project Contact Person	Telephone	Email
Pradeep Kurukulasuriya	1/29/2019	Milou Beerepoot	6623049100	milou.beerepoot@undp.org
Kelly West	1/29/2019	Geordie Colville	2542076232	geordie.colville@un.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

This project will contribute to the following Sustainable Development Goal (s): UNPDF/CPD Outcome 3 -- By 2020, Indonesia is sustainably managing its natural resources, on land and at sea, with an increased resilience to the effects of climate change, disaster and other shocks

This project will contribute to the following country outcome included in the UNDAF/Country Program Document: CPD Indicative Outputs -- 2.2.1. National energy policies and guideline developed and integrated into sub- national development plan.2.2.2. Sub-national authorities and key partners are able to implement programmes, mobilize resources and develop public-private partnership for RE/EE, which will contribute to the reduction of national greenhouse gases emission.

This project will be linked to the following output of the UNDP Strategic Plan:

Output 1.4: Scaled up action on climate change adaptation and mitigation cross sectors which is funded and implemented.

Output 1.5: Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy)

	Objective and Outcome Indicators	Baseline	Mid-term Target (2020)	End of Project (EOP) Target (2021)	Assumptions
Project Objective To increase the penetration of high quality energy efficient lighting technologies in Indonesia through the transformation of the national market, thereby reducing electricity demand and the related greenhouse gas (GHG) emissions.	<input type="checkbox"/> Cumulative electricity savings by EOP, GWh	<input type="checkbox"/> 0	<input type="checkbox"/> 17.27 GWh	<input type="checkbox"/> 77.45 GWh	<input type="checkbox"/> Petroleum products and electricity prices will be at levels that make energy efficiency projects, particularly energy efficient lighting (EEL), basically LED manufacturing and application, competitive and cost effective <input type="checkbox"/> Acceptance of the benefits and business opportunities resulting from the local manufacture and application of LED <input type="checkbox"/> Women's active participation in trainings is requested and encouraged
	<input type="checkbox"/> Direct project GHG emissions mitigated by EOP, kt CO2 (GEF Core Indicator 6.2)	<input type="checkbox"/> 0	<input type="checkbox"/> 13.96 kt CO2 (direct by EOP) · 121.76 kt CO2 (Lifetime direct by EOP)	<input type="checkbox"/> 62.58 kt CO2 (direct by EOP) · 548.77 kt CO2 (Lifetime direct by EOP)	
	<input type="checkbox"/> Number of women and men participating in capacity building trainings throughout the project (GEF Core Indicator 11)	<input type="checkbox"/> N.A.	<input type="checkbox"/> 30/70	<input type="checkbox"/> 60/140	

	Objective and Outcome Indicators	Baseline	Mid-term Target (2020)	End of Project (EOP) Target (2021)	Assumptions
Component/Outcome 1: Improved quality, energy efficient and affordable locally-produced EEL products and systems	<input type="checkbox"/> Efficiency of locally produced lighting systems increased, (lm/W) and Production cost decreased from baseline level (%)				<input type="checkbox"/> Local lighting manufacturers will take up the transformation of their facilities as viable investment in production techniques for affordable and highly efficient lighting products <input type="checkbox"/> Manufacturers remain committed to improving the energy-efficiency and quality of products. <input type="checkbox"/> Manufacturers remain willing to share data.
	o Indoor Type				
		<input type="checkbox"/> Eff: 70 lm/W;	<input type="checkbox"/> Eff: 120 lm/W;	<input type="checkbox"/> Eff: 150 lm/W;	
	o Outdoor Type	<input type="checkbox"/> Supply chain cost: 100 % (Baseline supply chain cost to be determined at project inception)	<input type="checkbox"/> Supply chain cost: 80 % of Baseline	<input type="checkbox"/> Supply chain cost: 70 % of Baseline	
		<input type="checkbox"/> Eff: 100 lm/W;	<input type="checkbox"/> Eff: 130 lm/W;	<input type="checkbox"/> 170 lm/W;	
		<input type="checkbox"/> Supply chain cost: 100% (at project inception)	<input type="checkbox"/> Supply chain cost: 80% of Baseline	<input type="checkbox"/> Supply chain cost: 70% of Baseline	

	Objective and Outcome Indicators	Baseline	Mid-term Target (2020)	End of Project (EOP) Target (2021)	Assumptions
	<input type="checkbox"/> Cumulative number of lighting manufacturers who received technical assistance to upgrade production facilities	<input type="checkbox"/> 0	<input type="checkbox"/> 3 manufacturers (1 for each association)	<input type="checkbox"/> 6	<input type="checkbox"/> Commitment and active participation of manufacturers and associations with adequate financial resources to participate in the program.
	<input type="checkbox"/> Investment grade proposal for business transformation plans o Submitted by manufacturers o Approved by banks	<input type="checkbox"/> 0 <input type="checkbox"/> 0	<input type="checkbox"/> 3 <input type="checkbox"/> 3	<input type="checkbox"/> 6 <input type="checkbox"/> 6	<input type="checkbox"/> Banks and financial institutions ^[1] are convinced about the business potential of manufacturing and market for LED systems.
	<input type="checkbox"/> Ratio of women and men who believe they have the capacity to o Submit (local manufacturers) o Approve (banks) <input type="checkbox"/> investment grade proposal for business transformation plans	<input type="checkbox"/> 0 <input type="checkbox"/> 0	<input type="checkbox"/> 30/70 <input type="checkbox"/> 30/70	<input type="checkbox"/> 30/70 <input type="checkbox"/> 30/70	<input type="checkbox"/> Women's active participation in trainings has been requested and encouraged and women and men employees from relevant government institutions have actively participated in the capacity building activities on business transformation plans

	Objective and Outcome Indicators	Baseline	Mid-term Target (2020)	End of Project (EOP) Target (2021)	Assumptions
Component/ Outcome 2: Improved conditions for fair market competition of EE lighting products informed by robust policy and institutional framework	<input type="checkbox"/> No. of policy documents at the national level, including Standard Minimum Quality and MEPS on LED and other relevant guidelines, developed and approved	<input type="checkbox"/> 0	<input type="checkbox"/> 2 (1 <i>SNI</i> ^[2] and 1 Draft MEPS and labeling)	<input type="checkbox"/> 3 (<i>SNI</i> updated and Implemented MEPS and labeling endorsed)	<input type="checkbox"/> Overall policy to cover MEPS, <i>SNI</i> guideline, market control MVE mechanisms and laboratory testing procedures can be developed and facilitated by the project for approval by the BSN and other authorized agencies within the timeframe of the project.
	<input type="checkbox"/> No. of policy and guideline on LED procurement developed and implemented in E-catalogue and regular public procurement system	<input type="checkbox"/> 0	<input type="checkbox"/> 1 (policy adapting <i>SNI</i>)	<input type="checkbox"/> 2 (policy adapting <i>SNI</i> and MEPS)	<input type="checkbox"/> <i>SNI</i> and MEPS for LED lights both indoor and outdoor is a priority for the MEMR .
	<input type="checkbox"/> No. of comprehensive MVE Guideline and required implementing rules and regulations for including resolving custom dispute and legality of products developed and implemented ^[3]	<input type="checkbox"/> 0	<input type="checkbox"/> 1 (software by BSN)	<input type="checkbox"/> 1	<input type="checkbox"/> Indonesia is committed to abide to the ASEAN Plan of Action Energy Cooperation 2016-2025 (APAEC) which highlights regional harmonization of LED lighting standard (Activity 4.1 of the APAEC) <input type="checkbox"/> Assuming the MEPS is approved before the EOP.

	Objective and Outcome Indicators	Baseline	Mid-term Target (2020)	End of Project (EOP) Target (2021)	Assumptions
	<input type="checkbox"/> Ratio of women and men employees in relevant government institutions who believe they have the capacity to monitor verify and enforce high quality efficiency lighting systems	<input type="checkbox"/> N.A.	<input type="checkbox"/> 30/70	<input type="checkbox"/> 30/70	<input type="checkbox"/> Women's and men's active participation in trainings has been requested and encouraged and women and men employees from relevant government institutions have actively participated in the capacity building activities on monitoring verifying and enforcing high quality efficiency lighting systems
Component/ Outcome 3: Increased market penetration of high quality and efficient lighting	<input type="checkbox"/> Cumulative no. of innovative financial support schemes developed to accelerate penetration of EE lighting systems	<input type="checkbox"/> 0	<input type="checkbox"/> 2	<input type="checkbox"/> 4 ^[4]	<input type="checkbox"/> Targeted users and key stakeholders of EEL (basically LED) products and systems are well informed about the long term benefits and costs and are convinced to invest in such efficient technology application projects
	<input type="checkbox"/> Cumulative no. of pilot demonstrations ^[5] completed and replication plans developed and approved for implementation ^[6]	<input type="checkbox"/> 0	<input type="checkbox"/> 3 (1 cities and 2 buildings)	<input type="checkbox"/> 5 (2 cities, 2 buildings and a residential area) With possible replication in 2 cities and 7 buildings.	<input type="checkbox"/> Policy framework would allow private investments to invest in energy efficiency street lighting projects. <input type="checkbox"/> Local EEL producers can meet all technical standard specifications and ESCOs can develop investment-grade proposals that will convince banks to finance the EEL projects within acceptable insurance and guarantee provisions required by banks for sustainability.

	Objective and Outcome Indicators	Baseline	Mid-term Target (2020)	End of Project (EOP) Target (2021)	Assumptions
	<input type="checkbox"/> Number of stakeholders engaged <input type="checkbox"/> Municipalities <input type="checkbox"/> clients (project developers/ building owners) <input type="checkbox"/> technology providers <input type="checkbox"/> financial institutions	<input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> 0	<input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 1	<input type="checkbox"/> 4 <input type="checkbox"/> 6 <input type="checkbox"/> 5 <input type="checkbox"/> 2	<input type="checkbox"/> Pilot demonstrations will use production from local manufacturers
	<input type="checkbox"/> Women's and men's level of satisfaction with EEL systems provided (reliability, affordability, convenience, efficiency)	<input type="checkbox"/> 0	<input type="checkbox"/> At least 60 % of women and men beneficiaries are highly satisfied with the EEL systems provided (minimum score 7/10)	<input type="checkbox"/> At least 70 % of women and men beneficiaries are highly satisfied with the EEL systems provided (minimum score 7/10)	<input type="checkbox"/> The design and installation of the EEL systems is well informed on women's and men's needs, preferences and habits in requirement, consumption and disposal of EEL technologies

[1] Various banks and financing institutions in Indonesia, including Bank Mandiri, BRI, BNI, BCA, Bank Muamalat, BRI Syariah, BJB and Bank Artha Graha are mobilized and introduced by OJK on financing EEL business opportunities

[2] SNI refers to *Standard Nasional Indonesia* (or National Indonesian Standard) issued by BSN as a recommended standard (standard minimum quality for LED) that is in line with the ASEAN Regional approach that can be used by local authorities while the MEPS with the required energy labeling is being developed. The MEPS and labeling development and approval at the national and regional levels could take 2 – 3 years or more and therefore need to be facilitated by the Project by removing barriers.

[3] Ideas on developing SNI Software is already initiated by BSN. The software will be one of the MVE tools to trace products when Standard Minimum Quality/MEPS is established to ensure the LED product in the market are legal. HS code dispute on imported LED component is already well addressed by the Custom authorities (PKSI)– Service for import to get clarification on Harmonization System (HS) classification and Indonesian National Single Window (INSW). HS code dispute is one of core barriers for imported

EE lighting components for local LED manufacturers. The system can also include the use a database and searching system for LED products and codes. We will also make a pocket guide for manufactures on how to import their raw materials in order to manufacture their LED products.

[4] Proposed innovative financial support schemes to accelerate penetration of advanced lighting systems, may include: (a) PPP mechanism for smart city(ies) LED street lighting projects; (b) ESCO model Feasibility Study (FS) Template and Financial Modeling Software; (c) Credit Guarantee Facility for Energy Efficiency LED lighting investment; and (d) Bundling LED lighting projects as accepted collateral for banking sector

[5] Initially identified pilot demonstrations during the PPG stage include the following: (a) Guaranteed Savings ESCO model for LKPP (Public Procurement Agency) for government LED implementation, (b) Shared Savings ESCO model for state-owned bank building, (c), and Guaranteed Savings ESCO model with possible Revolving Fund for Street Lighting LED projects.

[6] Assistance in completing the pending existing ESCO model in Smart Cities in Solo and Bandung as the 2 cities which have on-going project development, being assisted by Bappenas and LKPP, but it requires next stage of mobilization towards final financial arrangement

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Responses to GEFSec Comments

Comment & Response	Reference
<p><u>Comment:</u> <i>Note: There were no specific comments on the Indonesia Child Project, though there were a number of comments on the overall programmatic framework. Those have already been addressed by UNEP at the time of submission for endorsement for the umbrella project.</i></p> <p><u>Response:</u></p>	

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS.

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: US\$ 150,000			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Conduct of Studies and Surveys	2,500	2,621	
Conduct of Logical Framework Analysis (LFA) workshop	15,500	15,216	
Identification and assessment of demonstrations that will be implemented in the project	29,650	23,510	
Detailed design of the project components and activities	29,650	23,514	
Conduct of stakeholder and project partner coordination meetings	13,400	21,860	
Preparation of the UNDP-GEF Project Document (ProDoc) and GEF CEO Endorsement Request (CER) Document	29,650	23,512	
Finalization of the ProDoc and CER Document	29,650	23,512	16,255
Total	150,000	133,745	16,255

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)

N/A

ANNEX E: GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, Table G to the extent applicable to your proposed project. Progress in programming against these targets for the program will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Core Indicator 6: Greenhouse gas emissions mitigated (metric tons of carbon dioxide equivalent)

GHG emission type	Metric tons CO ₂ -eq (expected at PIF)	Metric tons CO ₂ -eq (expected at CEO ER)	Metric tons CO ₂ -eq (expected at MTR)	Metric tons CO ₂ -eq (expected at TE)
Lifetime direct project GHG emissions mitigated	n/a	548,766		
Lifetime direct post-project emissions mitigated		N/A (no financial mechanisms)		
Lifetime indirect GHG emissions mitigated		1,097,533		

Figure at a given stage must be the sum of all figures reported under the first two sub-indicators (6.1 and 6.2) for that stage.

6.1 Carbon sequestered or emissions avoided in the sector of Agriculture, Forestry and Other Land Use

GHG emission type	Ha (expected at PIF)	Metric tons CO ₂ -eq (baseline at PIF)	Ha (expected at CEO ER)	Metric tons CO ₂ -eq (baseline at CEO ER)	Ha (expected at MTR)	Metric tons CO ₂ -eq (above baseline at MTR)	Ha (expected at TE)	Metric tons CO ₂ -eq (above baseline at TE)
Lifetime direct project GHG emissions mitigated	n/a							
Lifetime direct post-project emissions mitigated								
Lifetime indirect GHG emissions mitigated								
Anticipated year	---		---		---		---	

6.2 Emissions avoided

GHG emission type	Metric tons CO2-eq (baseline at PIF)	Metric tons CO2-eq (baseline at CEO ER)	Metric tons CO2-eq (above baseline at MTR)	Metric tons CO2-eq (above baseline at TE)
Lifetime direct project GHG emissions mitigated	n/a	548,766		
Lifetime direct post-project emissions mitigated		N/A (no financial mechanisms)		
Lifetime indirect GHG emissions mitigated		1,097,533		
Anticipated year		2020		

6.3 Energy saved (megajoules)

Type of Intervention	MJ (expected at PIF)	MJ (expected at CEO Endorsement)	MJ (achieved at MTR)	MJ (achieved at TE)
Cumulative electricity savings by EOP	n/a	278,820,000 (77.45 GWh)		

Add rows as needed.

6.4 Increase in installed renewable energy capacity per technology (megawatts).

Type of Renewable Energy	MW (entered at PIF)	MW (entered at CEO Endorsement)	MW (entered at MTR)	MW (entered at TE)
--------------------------	---------------------	---------------------------------	---------------------	--------------------

[biomass, geothermal, ocean, small hydro, solar photovoltaic, solar thermal, wind power, and storage]	n/a				
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Add rows as needed.

Core Indicator 11: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Total number (expected at PIF)	Total number (expected at CEO Endorsement)	Total number (achieved at MTR)	Total number (achieved at TE)
Women	n/a	60		
Men		140		
Total		200		

ANNEX: Project Taxonomy Worksheet

Use this Worksheet to list down the taxonomic information required under Part1 by ticking the most relevant keywords/topics//themes that best describes the project

Level 1	Level 2	Level 3	Level 4
<input checked="" type="checkbox"/> Influencing models			
	<input checked="" type="checkbox"/> Transform policy and regulatory environments		
	<input checked="" type="checkbox"/> Strengthen institutional capacity and decision-making		
	<input type="checkbox"/> Convene multi-stakeholder alliances		
	<input type="checkbox"/> Demonstrate innovative approaches		
	<input type="checkbox"/> Deploy innovative financial instruments		
<input checked="" type="checkbox"/> Stakeholders			
	<input type="checkbox"/> Indigenous Peoples		
	<input checked="" type="checkbox"/> Private Sector		
		<input type="checkbox"/> Capital providers	
		<input checked="" type="checkbox"/> Financial intermediaries and market facilitators	
		<input type="checkbox"/> Large corporations	
		<input checked="" type="checkbox"/> SMEs	
		<input type="checkbox"/> Individuals/Entrepreneurs	
		<input type="checkbox"/> Non-Grant Pilot	
		<input type="checkbox"/> Project Reflow	
	<input type="checkbox"/> Beneficiaries		
	<input type="checkbox"/> Local Communities		
	<input type="checkbox"/> Civil Society		
		<input type="checkbox"/> Community Based Organization	
		<input type="checkbox"/> Non-Governmental Organization	
		<input type="checkbox"/> Academia	
		<input type="checkbox"/> Trade Unions and Workers Unions	
	<input checked="" type="checkbox"/> Type of Engagement		
		<input checked="" type="checkbox"/> Information Dissemination	
		<input checked="" type="checkbox"/> Partnership	
		<input type="checkbox"/> Consultation	
		<input type="checkbox"/> Participation	
	<input checked="" type="checkbox"/> Communications		
		<input checked="" type="checkbox"/> Awareness Raising	
		<input checked="" type="checkbox"/> Education	
		<input checked="" type="checkbox"/> Public Campaigns	
		<input checked="" type="checkbox"/> Behavior Change	
<input checked="" type="checkbox"/> Capacity, Knowledge and Research			
	<input type="checkbox"/> Enabling Activities		
	<input checked="" type="checkbox"/> Capacity Development		
	<input checked="" type="checkbox"/> Knowledge Generation and Exchange		
	<input type="checkbox"/> Targeted Research		
	<input checked="" type="checkbox"/> Learning		
		<input type="checkbox"/> Theory of Change	
		<input type="checkbox"/> Adaptive Management	
		<input type="checkbox"/> Indicators to Measure Change	

		<input type="checkbox"/> Knowledge Management	
		<input type="checkbox"/> Innovation	
		<input type="checkbox"/> Capacity Development	
		<input type="checkbox"/> Learning	
	<input type="checkbox"/> Stakeholder Engagement Plan		
<input checked="" type="checkbox"/> Gender Equality	<input checked="" type="checkbox"/> Gender Mainstreaming		
		<input type="checkbox"/> Beneficiaries	
		<input type="checkbox"/> Women groups	
		<input type="checkbox"/> Sex-disaggregated indicators	
		<input checked="" type="checkbox"/> Gender-sensitive indicators	
	<input type="checkbox"/> Gender results areas		
		<input type="checkbox"/> Access and control over natural resources	
		<input type="checkbox"/> Participation and leadership	
		<input type="checkbox"/> Access to benefits and services	
		<input type="checkbox"/> Capacity development	
		<input type="checkbox"/> Awareness raising	
		<input type="checkbox"/> Knowledge generation	
<input checked="" type="checkbox"/> Focal Areas/Theme			
	<input type="checkbox"/> Integrated Programs		
		<input type="checkbox"/> Commodity Supply Chains ('Good Growth Partnership)	
			<input type="checkbox"/> Sustainable Commodities Production
			<input type="checkbox"/> Deforestation-free Sourcing
			<input type="checkbox"/> Financial Screening Tools
			<input type="checkbox"/> High Conservation Value Forests
			<input type="checkbox"/> High Carbon Stocks Forests
			<input type="checkbox"/> Soybean Supply Chain
			<input type="checkbox"/> Oil Palm Supply Chain
			<input type="checkbox"/> Beef Supply Chain
			<input type="checkbox"/> Smallholder Farmers
			<input type="checkbox"/> Adaptive Management
		<input type="checkbox"/> Food Security in Sub-Sahara Africa	
			<input type="checkbox"/> Resilience (climate and shocks)
			<input type="checkbox"/> Sustainable Production Systems
			<input type="checkbox"/> Agroecosystems
			<input type="checkbox"/> Land and Soil Health
			<input type="checkbox"/> Diversified Farming
			<input type="checkbox"/> Integrated Land and Water Management
			<input type="checkbox"/> Smallholder Farming
			<input type="checkbox"/> Small and Medium Enterprises
			<input type="checkbox"/> Crop Genetic Diversity
			<input type="checkbox"/> Food Value Chains
			<input type="checkbox"/> Gender Dimensions
			<input type="checkbox"/> Multi-stakeholder Platforms
		<input type="checkbox"/> Food Systems, Land Use and Restoration	
			<input type="checkbox"/> Sustainable Food Systems
			<input type="checkbox"/> Landscape Restoration

		<input type="checkbox"/> Sustainable Cities	<input type="checkbox"/> Smallholder Farmers
			<input type="checkbox"/> Integrated urban planning
			<input type="checkbox"/> Urban sustainability framework
			<input type="checkbox"/> Transport and Mobility
			<input type="checkbox"/> Buildings
			<input type="checkbox"/> Municipal waste management
			<input type="checkbox"/> Green space
			<input type="checkbox"/> Urban Biodiversity
			<input type="checkbox"/> Urban Food Systems
			<input type="checkbox"/> Energy efficiency
			<input type="checkbox"/> Municipal Financing
			<input type="checkbox"/> Global Platform for Sustainable Cities
			<input type="checkbox"/> Urban Resilience
	<input type="checkbox"/> Biodiversity		
		<input type="checkbox"/> Protected Areas and Landscapes	
			<input type="checkbox"/> Terrestrial Protected Areas
			<input type="checkbox"/> Coastal and Marine Protected Areas
			<input type="checkbox"/> Productive Landscapes
			<input type="checkbox"/> Productive Seascapes
			<input type="checkbox"/> Community Based Natural Resource Management
		<input type="checkbox"/> Mainstreaming	
			<input type="checkbox"/> Extractive Industries (oil, gas, mining)
			<input type="checkbox"/> Forestry (Including HCVF and REDD+)
			<input type="checkbox"/> Tourism
			<input type="checkbox"/> Agriculture & agrobiodiversity
			<input type="checkbox"/> Fisheries
			<input type="checkbox"/> Infrastructure
			<input type="checkbox"/> Certification (National Standards)
			<input type="checkbox"/> Certification (International Standards)
		<input type="checkbox"/> Species	
			<input type="checkbox"/> Illegal Wildlife Trade
			<input type="checkbox"/> Threatened Species
			<input type="checkbox"/> Wildlife for Sustainable Development
			<input type="checkbox"/> Crop Wild Relatives
			<input type="checkbox"/> Plant Genetic Resources
			<input type="checkbox"/> Animal Genetic Resources
			<input type="checkbox"/> Livestock Wild Relatives
			<input type="checkbox"/> Invasive Alien Species (IAS)
		<input type="checkbox"/> Biomes	
			<input type="checkbox"/> Mangroves
			<input type="checkbox"/> Coral Reefs
			<input type="checkbox"/> Sea Grasses
			<input type="checkbox"/> Wetlands
			<input type="checkbox"/> Rivers
			<input type="checkbox"/> Lakes

			<input type="checkbox"/> Natural Capital Assessment and Accounting
			<input type="checkbox"/> Conservation Trust Funds
			<input type="checkbox"/> Conservation Finance
		<input type="checkbox"/> Supplementary Protocol to the CBD	
			<input type="checkbox"/> Biosafety
			<input type="checkbox"/> Access to Genetic Resources Benefit Sharing
	<input type="checkbox"/> Forests		
		<input type="checkbox"/> Forest and Landscape Restoration	
			<input type="checkbox"/> REDD/REDD+
		<input type="checkbox"/> Forest	
			<input type="checkbox"/> Amazon
			<input type="checkbox"/> Congo
			<input type="checkbox"/> Drylands
	<input type="checkbox"/> Land Degradation		
		<input type="checkbox"/> Sustainable Land Management	
			<input type="checkbox"/> Restoration and Rehabilitation of Degraded Lands
			<input type="checkbox"/> Ecosystem Approach
			<input type="checkbox"/> Integrated and Cross-sectoral approach
			<input type="checkbox"/> Community-Based NRM
			<input type="checkbox"/> Sustainable Livelihoods
			<input type="checkbox"/> Income Generating Activities
			<input type="checkbox"/> Sustainable Agriculture
			<input type="checkbox"/> Sustainable Pasture Management
			<input type="checkbox"/> Sustainable Forest/Woodland Management
			<input type="checkbox"/> Improved Soil and Water Management Techniques
			<input type="checkbox"/> Sustainable Fire Management
			<input type="checkbox"/> Drought Mitigation/Early Warning
		<input type="checkbox"/> Land Degradation Neutrality	
			<input type="checkbox"/> Land Productivity
			<input type="checkbox"/> Land Cover and Land cover change
			<input type="checkbox"/> Carbon stocks above or below ground
		<input type="checkbox"/> Food Security	
	<input type="checkbox"/> International Waters		
		<input type="checkbox"/> Ship	
		<input type="checkbox"/> Coastal	
		<input type="checkbox"/> Freshwater	
			<input type="checkbox"/> Aquifer
			<input type="checkbox"/> River Basin
			<input type="checkbox"/> Lake Basin
		<input type="checkbox"/> Learning	
		<input type="checkbox"/> Fisheries	
		<input type="checkbox"/> Persistent toxic substances	

		<input type="checkbox"/> Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		<input type="checkbox"/> Strategic Action Plan Implementation	
		<input type="checkbox"/> Areas Beyond National Jurisdiction	
		<input type="checkbox"/> Large Marine Ecosystems	
		<input type="checkbox"/> Private Sector	
		<input type="checkbox"/> Aquaculture	
		<input type="checkbox"/> Marine Protected Area	
		<input type="checkbox"/> Biomes	
			<input type="checkbox"/> Mangrove
			<input type="checkbox"/> Coral Reefs
			<input type="checkbox"/> Seagrasses
			<input type="checkbox"/> Polar Ecosystems
			<input type="checkbox"/> Constructed Wetlands
	<input type="checkbox"/> Chemicals and Waste		
		<input type="checkbox"/> Mercury	
		<input type="checkbox"/> Artisanal and Scale Gold Mining	
		<input type="checkbox"/> Coal Fired Power Plants	
		<input type="checkbox"/> Coal Fired Industrial Boilers	
		<input type="checkbox"/> Cement	
		<input type="checkbox"/> Non-Ferrous Metals Production	
		<input type="checkbox"/> Ozone	
		<input type="checkbox"/> Persistent Organic Pollutants	
		<input type="checkbox"/> Unintentional Persistent Organic Pollutants	
		<input type="checkbox"/> Sound Management of chemicals and Waste	
		<input type="checkbox"/> Waste Management	
			<input type="checkbox"/> Hazardous Waste Management
			<input type="checkbox"/> Industrial Waste
			<input type="checkbox"/> e-Waste
		<input type="checkbox"/> Emissions	
		<input type="checkbox"/> Disposal	
		<input type="checkbox"/> New Persistent Organic Pollutants	
		<input type="checkbox"/> Polychlorinated Biphenyls	
		<input type="checkbox"/> Plastics	
		<input type="checkbox"/> Eco-Efficiency	
		<input type="checkbox"/> Pesticides	
		<input type="checkbox"/> DDT - Vector Management	
		<input type="checkbox"/> DDT - Other	
		<input type="checkbox"/> Industrial Emissions	
		<input type="checkbox"/> Open Burning	
		<input type="checkbox"/> Best Available Technology / Best Environmental Practices	
		<input type="checkbox"/> Green Chemistry	
	<input checked="" type="checkbox"/> Climate Change		
		<input type="checkbox"/> Climate Change Adaptation	
			<input type="checkbox"/> Climate Finance
			<input type="checkbox"/> Least Developed Countries
			<input type="checkbox"/> Small Island Developing States

			<input type="checkbox"/> Mainstreaming Adaptation
			<input type="checkbox"/> Private Sector
			<input type="checkbox"/> Innovation
			<input type="checkbox"/> Complementarity
			<input type="checkbox"/> Community-based Adaptation
			<input type="checkbox"/> Livelihoods
		<input checked="" type="checkbox"/> Climate Change Mitigation	
			<input type="checkbox"/> Agriculture, Forestry, and other Land Use
			<input checked="" type="checkbox"/> Energy Efficiency
			<input type="checkbox"/> Sustainable Urban Systems and Transport
			<input checked="" type="checkbox"/> Technology Transfer
			<input type="checkbox"/> Renewable Energy
			<input type="checkbox"/> Financing
			<input type="checkbox"/> Enabling Activities
		<input type="checkbox"/> Technology Transfer	
			<input type="checkbox"/> Poznan Strategic Programme on Technology Transfer
			<input type="checkbox"/> Climate Technology Centre & Network (CTCN)
			<input type="checkbox"/> Endogenous technology
			<input type="checkbox"/> Technology Needs Assessment
			<input type="checkbox"/> Adaptation Tech Transfer
		<input type="checkbox"/> United Nations Framework on Climate Change	
			<input type="checkbox"/> Nationally Determined Contribution
			<input type="checkbox"/> Paris Agreement
			<input type="checkbox"/> Sustainable Development Goals
		<input checked="" type="checkbox"/> Climate Finance (Rio Markers)	
			<input type="checkbox"/> Climate Change Mitigation 1
			<input checked="" type="checkbox"/> Climate Change Mitigation 2
			<input type="checkbox"/> Climate Change Adaptation 1
			<input type="checkbox"/> Climate Change Adaptation 2



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