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INDONESIA CLEAN ENERGY DEVELOPMENT II (ICED II)

Quarterly Progress Report

FY 2020, Quarter 1 – October 1 to December 31, 2019

REDACTED

Submission Date: January 19, 2020
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FY 2020

QUARTERLY PROGRESS REPORT 1

OCTOBER 1 TO DECEMBER 31, 2019

Indonesia Clean Energy Development II (ICED II) Program

Submission Date: January 19, 2020

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Prepared for:

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USAID/Indonesia

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ACRONYMS

AC	Air conditioning
ADB	Asian Development Bank
ADS	Automatic Dispatching System
AESI	Asosiasi Energi Surya Indonesia/Indonesian Solar Energy Association
AGC	Automatic Generator Control
ALLIN	Asosiasi Lingkungan Ketenagalistrikan Indonesia/Association of Indonesian Experts in Environment and Electricity
AKSARA	Aplikasi Perencanaan dan Pemantauan Aksi Pembangunan Rendah Karbon Indonesia Indonesian/Low Carbon Development Action Planning and Monitoring Application
ASEAN JMCC	ASEAN Utilities Joint Maintenance Cooperation Committee
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning
Bappeda	Badan Perencanaan Pembangunan Daerah/ Local Development Planning Agency (at provincial and district levels).
Bappenas	Badan Perencanaan Pembangunan Nasional/ National Development Planning Agency
BAST	Handover certificate
BAU	Business as usual
BCA	Bank Central Asia
BCSF	Bali Center for Sustainable Finance
Birocan	Planning Bureau (under MEMR)/Biro Perencanaan (di bawah Kementerian ESDM).
Biro KLIK	Communication, Public Information Services, and Cooperation Bureau (under MEMR)/ Biro Komunikasi, Layanan Informasi Publik, dan Kerja Sama (di bawah Kementerian ESDM)
BKPM	Badan Koordinasi Penanaman Modal/Indonesia Investment Coordinating Board
BPPT	Badan Pengkajian dan Penerapan Teknologi/Agency for the Assessment and Application of Technology
BPSDM	Human Resource Capacity Development Agency/ Badan Pengembangan Sumber Daya Manusia
B20	Diesel fuel
CAISO	California Independent System Operator
CDCS	Country Development Cooperation Strategy
CEA	Certified energy auditor
CETIF	Clean Energy Technical and Innovation Fund
CFPS II	Canadian Climate Fund for the Private Sector in Asia II
COD	Commercial Operations Date
COP	Conference of the Parties
CPO	Crude palm oil
CSPF	Cooling season performance standard
DAK	Dana Alokasi Khusus/Special Allocation Funds Program
DEN	Dewan Energi Nasional/National Energy Council
DEK	Direktorat Konservasi Energi/Directorate of Energy Conservation (under MEMR)
DFAT	Australian Department of Foreign Affairs Trade

DirTekLing	Direktorat Teknik dan Lingkungan / Directorate of Engineering and Environment (under MEMR DJK)
DJK	Direktorat Jenderal Kelistrikan (di bawah Kementerian ESDM)/Directorate General of Electricity
DLH	Bappenas' Directorate of Environment
DO	Development Objective
DOE	U.S. Department of Energy
DPRD	Dewan Perwakilan Rakyat Daerah/Regional Assembly
DSDEMP	Direktorat Sumber Daya Energi, Mineral dan Pertambangan (direktorat di bawah Deputy Bidang Kemaritiman dan Sumber Daya Alam dari Bappenas /Directorate for Energy, Mineral, and Mining Resources (a directorate under Deputy for Maritime Affairs and Natural Resources of National Development Planning Agency)
EBT	Energi Baru Terbarukan/New and Renewable Energy (a division within PLN)
EBTKE/NREEC	Energi Baru Terbarukan dan Konservasi Energi (direktorat jenderal di bawah Kementerian ESDM)/New and Renewable Energy and Energy Conservation (a directorate general under MEMR)
EER	Energy efficiency ratio
EMR	Energy and Mineral Resources (Office in provincial government)
ESCO	Energy services companies
ESDM	Energi dan Sumber Daya Mineral/Energy and Mineral Resources (also MEMR)
ESM	Energy savings measure
ESRA	Environmental and Social Risk Analysis
FGD	Focus group discussion
GGGI	Global Green Growth Institute
GHG	Greenhouse gas
GIS	Geographic information system
GIZ	Gesellschaft für Internationale Zusammenarbeit/German Corporation for International Cooperation)
GOI	Government of Indonesia
ICED II	USAID's Indonesia Clean Energy Development Project II
IDFC	International Development Finance Club
IGA	Investment-grade audit
IIF	Indonesia Infrastructure Finance
IMF	International Monetary Fund
IPP	Independent power project/producer/Penyedia Listrik Swasta (PLS)
IR	Intermediate result
IRP	Integrated Resource Planning
KEBTKE	Ketenagalistrikan, Energi Baru, Terbarukan dan Konservasi Energi/Electricity, New Renewable Energy and Energy Conservation (Center for Human Resource Capacity Development under BPSDM of MEMR)
KLHK	Kementerian Lingkungan Hidup dan Kehutanan/Ministry of Environment and Forestry
KLHS	Kajian Lingkungan Hidup Strategis/Strategic Environment Assessment
KMAJ	Komite Manajemen Aturan Jaringan/Grid Code Management Committee
LBNL	Lawrence Berkeley National Laboratory
LCD	Low-carbon development
LCOE	Levelized Cost of Energy

LEAP	Long-Range Energy Alternatives Planning System model
LKKP	Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah / Government Procurement of Goods and Services Agency
LOI	Letter of intent
LPEM FEB UI	Lembaga Penyelidikan Ekonomi dan Masyarakat Fakultas Ekonomi dan Bisnis Universitas Indonesia/Institute for Economic and Social Research Faculty of Economics and Business University of Indonesia
LTSHE	Lampu tenaga surya hemat energi/Low energy solar-powered lamps
MASKEII	Indonesia Energy Conservation and Efficiency Society
M&E	Monitoring and evaluation
M&V	Measurement and Verification
MEMR	Ministry of Energy and Mineral Resources/Kementerian Energi dan Sumber Daya Mineral (also ESDM)
MEPS	Minimum Energy Performance Standard
MER	Monitoring, evaluation and reporting
MHP	Mini-hydro power
MHPP	Mini-hydro power project
MoEF	Kementerian Lingkungan Hidup dan Kehutanan/ Ministry of Environment and Forestry
MoHA	Kementerial Dalam Negeri/Ministry of Home Affairs
MoU	Memorandum of Understanding
MoV	Ministry of Villages, Development of Disadvantaged Regions and Transmigration Areas/Kementerian Desa, Pembangunan Daerah Tertinggal, dan Transmigrasi
MRV MMI	Measuring, Reporting and Verification for Mitigation Measures in Indonesia, a GIZ project
MTRE3	Market Transformation towards Renewable Energy and Energy Efficiency (a UNDP project)
MW	Megawatt
MWp	Megawatt peak
NDA	Non-disclosure agreement
NREL	US National Renewable Energy Laboratory
NTB	Nusa Tenggara Barat/West Nusa Tenggara
NREEC	New Renewable Energy and Energy Conservation/Energi Baru Terbarukan dan Konservasi Energi (EBTKE)
NTT	Nusa Tenggara Timur/East Nusa Tenggara
OJK	Otoritas Jasa Keuangan /Indonesia's Financial Services Authority
PAGE	Partnership for Action on Green Economy, a partnership of five UN agencies
PINA	Pembiayaan Investasi Non-Anggaran Pemerintah/Non-government Budget Equity Financing (a Bappenas initiative)
PLN	Perusahaan Listrik Negara/State Electricity Company
PLTS	Pembangkit Listrik Tenaga Surya/Solar PV Power Plant
PODES	Potensi desa/Village potential statistics
PPA	Power purchase agreement/Perjanjian jual beli listrik (PJBL)
PPK	Direktorat Pembinaan Pengusahaan Ketenagalistrikan/Directorate of Electricity Business Development (under MEMR DG EBTKE)
PPLSA	Perkumpulan Pengguna Listrik Surya Atap/Solar Rooftop Users Association
PPRK	Perencanaan Pembangunan Rendah Karbon/Low Carbon Development Planning (A Bappenas approach)

PPRKD	Perencanaan Pembangunan Rendah Karbon Daerah/Provincial Low Carbon Development Planning (a Bappenas approach)
PPSDM	Pusat Pengembangan Sumber Daya Manusia/Center for Human Resource Capacity Development
PROPER	Penilaian Peringkat Kinerja Perusahaan dalam Pengelolaan Lingkungan dari Kementerian Lingkungan Hidup dan Kehutanan/Corporate environmental performance rating program of Indonesia's Ministry of Environment and Forestry
P2B	Java-Bali Distribution and Load Dispatch Center
P2RUED	Tim Pembinaan Penyusunan Rencana Umum Energi Daerah/Supervisory Team for Regional Energy Plan Development
PT SMI	PT Sarana Multi Infrastruktur, a state-owned infrastructure financing company.
PV	Photovoltaic
RAD GRK	Local Action Plan for Low Emissions Development/Rencana Aksi Daerah Gas Rumah Kaca
RAN GRK	National Action Plan for Low Emissions Development/Rencana Aksi Nasional Gas Rumah Kaca
RED CLUW	Reducing Carbon Intensity of Energy, Land Use and Waste, an input-output (I-O) based model
REGP	Renewable Energy Generation Plants
Re-Pro	List of Renewable Energy Projects
RFQ	Request for quotation
RPJMD	Rencana Pembangunan Jangka Menengah Daerah/Provincial Medium-Term Development Plans
RPJMN	Rencana Pembangunan Jangka Menengah Nasional/National Medium-Term Development Plan
RPRK	Rencana Pembangunan Rendah Karbon/Low Carbon Development Plan (the document guiding the PPRK)
RPRKD	Rencana Pembangunan Rendah Karbon Daerah/Provincial Low Carbon Development Plan (the document guiding the PPRKD at the provincial level)
RPS	Renewable energy portfolio standard
RSNI	Rancangan Standar Nasional Indonesia/ Indonesian National Standard Draft
RUED	Rencana Umum Energi Daerah/Regional Energy Plan
RUED-P	Provincial Energy Plans (P2RUED uses this term to refer to RUED. This term is used interchangeably throughout the document).
RUEN	Rencana Umum Energi Nasional /National Energy Plan
RUKD	Rencana Umum Kelistrikan Daerah/Regional Electricity Plan
RUPTL	Rencana Umum Penyediaan Tenaga Listrik /PLN's Power Supply Business Plan
SDGs	Sustainable Development Goals
SEA	USAID's Sustainable Ecosystem Advanced Project
SekRAN	Sekretariat Rencana Aksi Nasional Gas Rumah Kaca (di bawah Bappenas)/Secretariat of the National Action Plan for Low Emission Development (under Bappenas)
SKKNI	Standar Kompetensi Kerja Nasional Indonesia/Indonesia National Competency Standard
SNI	Standar Nasional Indonesia/Indonesian National Standard
Tim Teknis	USAID-GOI Clean Energy Working Group
TLFF	Tropical Landscape Finance Facility
ToT	Training of trainers

TNA	Training needs assessment
TPH	Dinas Tanaman Pangan dan Hortikultura/Crops and Horticulture Office of North Sumatra Province
TWG	Technical Working Group
UAV	Unmanned aerial vehicle (drone)
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USEA	United States Energy Association
USG	United States Government
VGP	Variable generation plant
VRE	Variable renewable energy

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EXECUTIVE SUMMARY

Project Development Results

A total of 128 MW of ICED II-assisted projects – including geothermal, hydro power and solar PV – entered commercial operations during the period. Their output increased the number of persons with access to clean energy by 1.3 million. Also during the period, an additional 302,820 tons of CO₂e was avoided. The additional renewable energy capacity is estimated to avoid 7,449,236 tons of CO₂e through the year 2030.

ICED II Achievements from May 2015 through December 2019

- 40 clean energy projects reached commercial operations
- 426.94 MW of installed capacity
- \$1.58 billion of mobilized financing
- 5.81 million tons of CO₂e avoided
- 47.1 million tons of CO₂e avoided until 2030
- 3.14 million persons with access to clean energy

A total of six projects reached Commercial Operating Date (COD) including three solar PV, two hydropower and one geothermal power plant. These included the 85 MW Muara Laboh geothermal plant in West Sumatra¹; solar PV projects Likupang (15 MW) in North Sulawesi, Isimu (10 MW) in Gorontalo, and Kuta Sambella (5 MW) in Lombok, West Nusa Tenggara; and hydropower projects Gumanti 3 (6.5 MW) in West Sumatra and Cicatih (6.4 MW) in West Java. In addition, the 1.7 MW Siamang hydropower project in West Sumatra reached financial closure.

Policy and Planning Achievements

In this quarter, the Ministry of Energy and Mineral Resources (MEMR) issued Regulation No. 22 of 2019 on Greenhouse Gas (GHG) Inventory and Mitigation in the Energy Sector. This regulation mandates that each Directorate General within MEMR develop the guidelines for inventory and mitigation activity within their respective scopes. This regulation justifies our support to the MEMR Directorate General of Electricity (DGE) on development of GHG Mitigation monitoring, evaluation and reporting (MER) in the power sector. ICED II had assisted the MEMR DGE in finalizing the methodologies for “Guidelines for Greenhouse-gases Mitigation Monitoring, Evaluation and Reporting in the Power Sector”.

At the provincial level, ICED II continued its support to Aceh, North Sumatra and South Sulawesi on data compilation, geospatial analysis, modeling tools and training to support energy planning, rural electrification and assessment of rooftop solar PV for government buildings. Through the Bali Center for Sustainable Finance and Udayana University, ICED II provided policy inputs to Bali Province on energy and electricity planning.

Technical Guidance and Training Achievements

At the request of electricity utility PLN, ICED II drafted standardized Distribution System Planning Guidelines. By the end of December 2019, PLN had accepted the draft Guidelines and began discussions with The World Bank to pilot the guidelines in one or more of PLN’s operating regions. The guidelines respond to the government target to increase renewable energy’s share of power supply to 23% by 2025. They also incorporate customer, behind-the-meter, roof-top photovoltaic (PV) energy systems and electric vehicle charging in demand forecasting. ICED II also developed and delivered training on guidelines for reviewing wind power and solar PV project feasibility studies.

¹ The Maura Laboh geothermal power plant technical assistance was conducted by the USAID Sector Reform and Utility Commercialization project and ICED II.

ICED II fielded three U.S. utility experts to review the August 4, 2019 blackout event in Western and Central Java. The Review Team’s report and presentation of major findings were designed to better understand the system event that occurred on August 4, 2019, and to share lessons learned from the August 10, 2003 blackout that took place in the northeastern United States and eastern Canada.

During the quarter, a total of 1,193 persons attended twenty-five ICED II sponsored training and Focus Group Discussions; 24% of the attendees were women. ICED II conducted gender self-efficacy surveys in 17 of the events with 96% of respondents claiming that the training will make them more effective in the workplace.

Summary of ICED II Achievements against Performance Indicators

ICED II Performance Indicator (Units)	Target	Achieved This Quarter	Achieved Project to Date
Greenhouse gas emissions avoided (tons CO2e)	4,500,000	302,820	5,809,771
Mobilized financing (\$ millions)	800	2	1,580
Access to improved energy services (persons)	5,000,000	1,289,863	3,144,823
Institutions with improved capacity (unit)	20	-	34
Laws, policies, strategies, plans, or regulations (unit)	20	6	53
Installed generating capacity (MW)	400	128	427
Females with increased self-efficacy after trainings (persons)	70%	96%	93%
Generating capacity of financed projects (MW)	400	1.7	561.3
Greenhouse gas emissions avoided to 2030 (tons CO2e)	27,000,000	7,449,235.6	47,148,993.5
Training in clean energy and climate change (persons)	5,000	1,193	7,695
Energy savings from energy efficiency (Gigajoules)	2,800,000	-	752,629

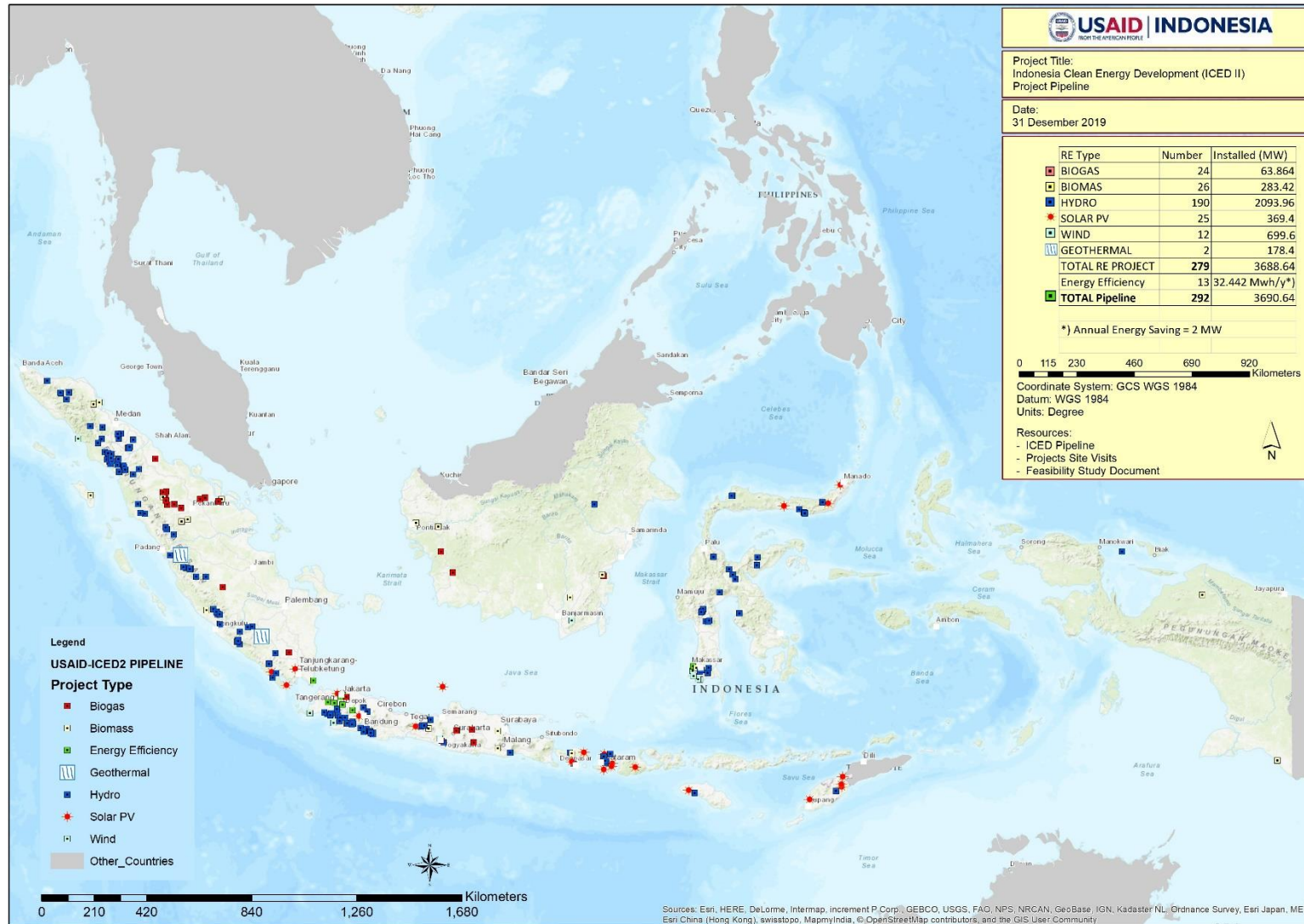
Plans for Next Quarter

During the next quarter, ICED II plans to publish the ICED II report on Economic and Technical Impact of Rooftop Solar PV, complete the PLN System Impact Analysis of VRE Projects Methodology Guidelines, publish the OJK Guidelines for Evaluating PPAs Handbook, transfer the PLN pilot demonstration of Automatic Dispatch System (ADS) development for Sumba Timur Grid and develop a plan for its replication, complete the USAID Journey to Self-Reliance video, and support USAID in hosting the U.S. – Indonesia Energy Policy Dialogue.

ICED II Clean Energy Pipeline and Database

As of December 31, 2019, ICED II’s clean energy pipeline and database has 292 assisted renewable energy and energy efficiency projects with a combined installed capacity of approximately 3,691 MW that have received technical assistance – directly or indirectly – from ICED II.

The ICED II Pipeline as of December 31, 2019



RINGKASAN EKSEKUTIF

Hasil Pengembangan Proyek

Dalam periode ini, sejumlah proyek yang menerima bantuan ICED II, yaitu proyek pembangkit tenaga panas bumi, tenaga air dan tenaga surya dengan total kapasitas terpasang sebesar 128 Megawatt (MW) mencapai tahap operasional (*commercial operations date - COD*). Proyek-proyek tersebut menambah jumlah orang yang memiliki akses energi bersih hingga 1,3 juta orang. Selama periode ini, proyek-proyek tersebut berhasil menghindari emisi sebesar 302.820 ton CO₂e. Kapasitas energi terbarukan tambahan dari proyek-proyek tersebut diperkirakan telah menghindarkan emisi sebesar 7.449.236 ton CO₂e hingga tahun 2030.

Capaian ICED II Mei 2015 hingga Desember 2019

- 40 proyek energi bersih mencapai tahap operasional (COD)
- 426,94 MW kapasitas terpasang
- \$1,58 milyar perolehan pembiayaan
- 5,81 juta ton CO₂e dihindari
- 47,1 juta ton CO₂e dihindari hingga 2030
- 3,14 juta orang memiliki akses energi bersih

Total terdapat enam proyek yang mencapai COD, yaitu tiga proyek pembangkit listrik tenaga surya, dua pembangkit listrik tenaga air dan satu pembangkit listrik tenaga panas bumi. Proyek-proyek ini adalah Pembangkit Listrik Tenaga Panas Bumi (PLTPB) Muara Laboh 85 MW di Sumatera Barat, Pembangkit Listrik Tenaga Surya (PLTS) Likupang 15 MW di Sulawesi Utara, PLTS Isimu 10 MW di Gorontalo dan PLTS Kuta Sambella 5 MW di Lombok, Nusa Tenggara Barat dan Pembangkit Listrik Tenaga Air (PLTA) Gumanti 3 6,5 MW di Sumatera Barat dan PLTA Cicitih 6,4 MW di Jawa Barat. Sebagai tambahan, PLTA Siamang 1,7 MW di Sumatera Barat mencapai *financial close*.

Capaian Kebijakan dan Perencanaan

Pada kuartal ini, Kementerian Energi dan Sumber Daya Mineral (ESDM) mengeluarkan Peraturan Menteri No. 22/2019 tentang Pedoman Penyelenggaraan Inventarisasi dan Mitigasi Gas Rumah Kaca Bidang Energi. Peraturan ini mengatur bahwa tiap direktorat jenderal di bawah Kementerian ESDM mengembangkan panduan untuk kegiatan inventarisasi dan mitigasi dalam cakupan kegiatan mereka. Peraturan ini menjustifikasi dukungan ICED II bagi Kementerian ESDM Direktorat Jenderal Ketenagalistrikan (DJK) tentang pengembangan pemantauan, evaluasi dan pelaporan (PEP) dari kegiatan mitigasi gas-gas rumah kaca. ICED II telah membantu Kementerian ESDM DJK dalam menyelesaikan metodologi yang diperlukan untuk "Panduan bagi Pemantauan, Evaluasi dan Pelaporan Mitigasi Gas-gas Rumah Kaca dalam Sektor Ketenagalistrikan".

Di tingkat provinsi, ICED II melanjutkan dukungannya bagi provinsi Aceh, Sumatera Utara dan Sulawesi Selatan untuk melakukan kompilasi data, analisis geospasial, alat-alat permodelan dan pelatihan untuk mendukung perencanaan energi, elektrifikasi desa dan penilaian listrik surya atap di bangunan pemerintah. Melalui *Bali Center for Sustainable Finance* dan Universitas Udayana, ICED II memberikan masukan kebijakan di bidang perencanaan energi dan ketenagalistrikan bagi provinsi Bali.

Capaian Bantuan Teknis dan Pelatihan

Berdasarkan permintaan Perusahaan Listrik Negara (PLN), ICED II menyusun *Distribution System Planning Guidelines*. Hingga akhir Desember 2019, PLN telah menerima rancangan panduan tersebut dan memulai diskusi dengan The World Bank untuk melaksanakan panduan tersebut di satu atau lebih kantor PLN wilayah. Panduan tersebut menjawab target pemerintah untuk meningkatkan porsi energi terbarukan di bidang *power supply* menjadi 23% hingga 2025. Mereka juga menyertakan pelanggan, *behind-the-meter*, sistem energi listrik surya atap dan stasiun pengisian listrik umum

untuk mobil listrik dalam *demand forecasting*. ICED II juga mengembangkan dan melaksanakan pelatihan tentang panduan untuk meninjau studi kelayakan proyek tenaga bayu dan tenaga surya.

ICED II menurunkan tiga ahli ketenagalistrikan untuk mengulas pemadaman tanggal 4 Agustus 2019 di Jawa Barat dan Jawa Tengah. Laporan tim pengulas kejadian tersebut dan presentasi tentang temuan-temuan utama mereka dirancang untuk memahami dengan lebih baik sistem dari kejadian pada tanggal 4 Agustus 2019 dan untuk membagi pelajaran dari kejadian serupa pada tanggal 10 Agustus 2003 di timur laut Amerika Serikat dan timur Kanada.

Pada kuartal ini, sebanyak 1.193 orang menghadiri 25 pelatihan dan diskusi kelompok terpusat yang ICED II dukung; 24% dari peserta pelatihan tersebut adalah perempuan. ICED II melaksanakan *gender self-efficacy survey* di 17 pelatihan dan diskusi dengan hasil 96% peserta menyatakan pelatihan tersebut membuat mereka bekerja lebih efektif di tempat kerja.

Ringkasan Capaian ICED II Dibandingkan dengan Indikator Kinerja Proyek

Indikator Kinerja ICED II (Unit)	Target	Dicapai Kuartal Ini	Dicapai Selama Proyek
Emisi Gas rumah kaca dihindari (CO ₂ e ton)	4.500.000	302.820	5.809.771
Perolehan pembiayaan (\$ juta)	800	2	1,580
Akses ke layanan energi yang lebih baik (orang)	5.000.000	1.289.863	3.144.823
Lembaga dengan peningkatan kapasitas (unit)	20	-	34
Hukum, kebijakan, strategi, rencana atau peraturan (unit)	20	6	53
<i>Installed generating capacity</i> (MW)	400	128	427
Perempuan dengan <i>self-efficacy</i> yang lebih baik setelah pelatihan (orang)	70%	96%	93%
<i>Generating capacity</i> dari proyek yang memperoleh pembiayaan (MW)	400	1,7	561,3
Emisi gas rumah kaca dihindari hingga 2030 (CO ₂ e ton)	27.000.000	7.449.235,6	47,148,993.5
Pelatihan tentang energi bersih dan perubahan iklim (orang)	5.000	1.193	7.695
Penghematan energi dari efisiensi energi (Gigajoules)	2.800.000	-	752.629

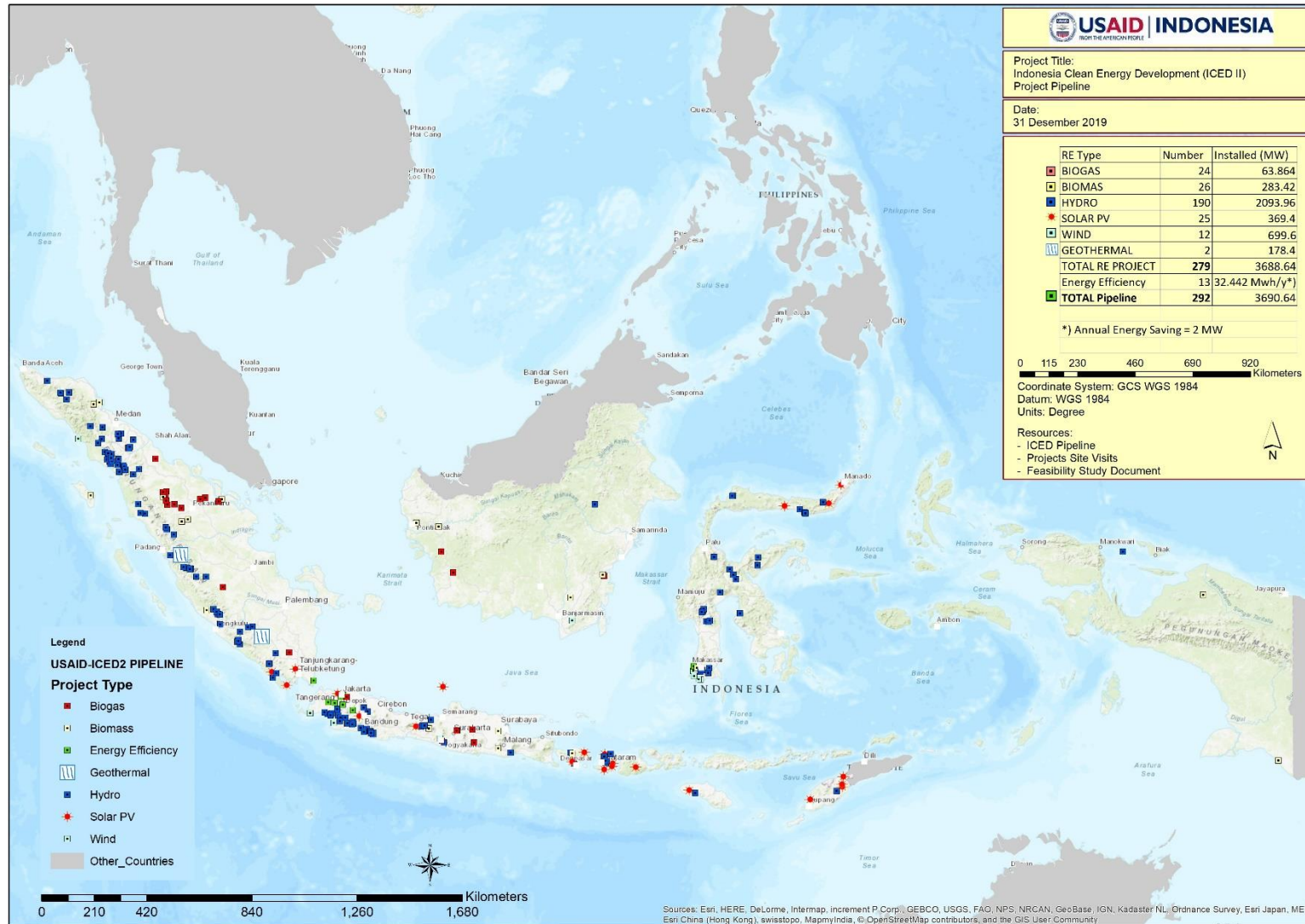
Rencana Kuartal Berikutnya

Pada kuartal berikutnya, ICED II berencana menerbitkan laporan bertajuk *Economic and Technical Impact of Rooftop Solar PV*, menyelesaikan *PLN System Impact Analysis of Variable Renewable Energy Projects Methodology Guidelines*, menerbitkan Buku Panduan Otoritas Jasa Keuangan untuk Evaluasi Perjanjian Jual Beli Listrik (PJBL), transfer proyek percontohan *automatic dispatch system* (ADS) untuk Jaringan PLN di Sumba Timur dan membuat rencana replikasi proyek tersebut, menyelesaikan vide *USAID Journey to Self-Reliance* dan mendukung USAID melaksanakan *U.S. – Indonesia Energy Policy Dialogue*.

Pipeline dan Basis Data Energi Bersih ICED II

Hingga 31 Desember 2019, terdapat 292 proyek energi bersih dan proyek efisiensi energi dalam *pipeline* dan basis data energi bersih ICED II dengan maksimal kapasitas terpasang sebesar 3.691 MW yang telah menerima bantuan teknis secara langsung maupun tidak langsung dari ICED II.

Pipeline ICED II hingga 31 Desember 2019



I. INTRODUCTION

About ICED II

The Indonesia Clean Energy Development II Project (ICED II) is a five-year (May 2015 – May 2020) program funded by the United States Agency for International Development (USAID). ICED II is designed to assist the Government of Indonesia (GOI) in establishing 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. In recognition of USAID's increased emphasis on science, technology, and innovation, ICED II is also expected to support technological and human-capacity advancements in the clean energy space.

ICED II is viewed as a "follow on" project to ICED, which ended on February 17, 2015. ICED II gives special attention to the status of ICED interventions at the project's end (as documented in the ICED final report), to the changes that have occurred both within GOI partners and the clean energy market, to re-engaging with ICED public- and private-sector partners, and to positioning ICED II to take advantage of ICED's momentum toward achieving ICED II's objectives and target results.

ICED II directly supports USAID/Indonesia's Development Objective (DO) 3 of the 2014-2018 Country Development Cooperation Strategy (CDCS): "Global Development Priorities of Mutual Interest Advanced." The ICED II Project's objective and associated tasks are linked to DO3's Intermediate Result (IR) 3.3: "Climate Change Mitigation and Resilience to Support a Green Economy Strengthened," and Sub-IR 3.3.1: "Foundation for Low Carbon Energy System Strengthened."

The purpose of USAID's ICED II project is to assist the GOI in establishing 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.

At its completion, ICED II must achieve the following high-level results:

1. At least 4.5 million tons of greenhouse gas (GHG) emissions – estimated in metric tons of CO₂e – reduced, sequestered, and/or avoided as a result of U.S. Government (USG) assistance
2. At least US \$800 million of investment mobilized from private and public sources for climate change mitigation, as supported by USG assistance
3. At least an additional 5 million people with access to clean energy
4. At least 20 institutions with improved capacity to address climate change issues as a result of USG assistance
5. At least 20 laws, policies, strategies, plans, or regulations addressing climate change mitigation officially proposed, adopted, or implemented as a result of USG assistance.

In addition, ICED II has a number of component- (or task-) level objectives and "targeted results." These are listed in Section 2 of the Annual Work Plan. Note that the "high level" and "targeted" results are described in more detail in the ICED II Monitoring and Evaluation Plan. Each year's expected contributions to the life-of-project results are contained in the Annual Work Plan.

ICED II is implemented through three parallel and complementary components:

- Component 1: Improve the enabling environment for rapid co-investment in clean energy
- Component 2: Accelerate the mobilization of private and public sector co-investment in clean energy
- Component 3: Outreach on USAID and USG inter-agency activities in Indonesia's energy sector.

ICED II also operates a Clean Energy Technology and Innovation Fund (CETIF) that is used to augment project interventions in the components. The purpose of CETIF is to serve as a flexible means, where necessary and/or useful to the project's objectives, to encourage the participation and/or collaboration of private sector and local entities as well as facilitate international knowledge transfer.

ICED provides a combination of short- and long-term technical assistance to the Ministry of Energy and Mineral Resources (MEMR), electricity utility PLN, and selected provincial and district (*kabupaten*) governments, the Financial Services Authority (OJK), other sectoral ministries and authorities, and the private sector.

About this Report

This report covers ICED II activities during the three-month period from October 1 to December 31, 2019 (Quarter 1 of the 2020 USG's fiscal year).

Section 2 describes ICED II's quarterly activities by component and major work stream based on the ICED II scope of work. It also describes the main accomplishments during the period. Section 3 shows the progress ICED II has made toward achieving its target results, which are measured by 11 performance indicators. The project's plans for next quarter are laid out in Section 4, while the main challenges the project has faced as well as proposed solutions are presented in Section 5.

The annexes provide quantitative data on ICED II's technical assistance for the quarter (Annex A), reference information for performance indicators and results (Annex B), a summary of training provided and detailed training activities (Annex C), and the ICED II pipeline of projects (Annex D).

2. SUMMARY OF KEY ACTIVITIES AND ACHIEVEMENTS

Component I: Improve the Enabling Environment for Rapid Co-Investment in Clean Energy

Main Accomplishments

Monitoring Evaluation Reporting (MER) of National Action Plan for Low-Emissions Development (RAN GRK)

Throughout Quarter 1 2020, USAID ICED II, in cooperation with UNDP Market Transformation towards Renewable Energy and Energy Efficiency (MTRE3), assisted the Directorate General of Electricity (DGE) of MEMR in finalizing the proposed 13 methodologies for “Guidelines for Greenhouse-gases Mitigation Monitoring, Evaluation and Reporting in the Power Sector”. ICED II supported a series of focused group discussions (FGDs), meetings, and a site visit to DGE and UNDP MTRE3 in finalizing the guidelines. ICED II submitted the draft guidelines to DGE, who has returned feedback to be incorporated into the guidelines.

In this quarter, MEMR issued Regulation No. 22 of 2019 on GHG Inventory and Mitigation in Energy sector. This regulation mandates that each Directorate General within MEMR develop guidelines for inventory and mitigation activity within their respective scopes. This regulation justifies ICED II’s support to DGE on development of GHG Mitigation monitoring, evaluation and reporting (MER) in the power sector.

Provincial Energy Planning

Aceh

The Energy Plan of Aceh Province (RUEA) has been stipulated under Qanun Aceh No.4/2019. ICED II has been supporting the development and finalization of RUEA, which includes database and model development, narrative drafting and review, and engagement in a series of discussion with Aceh Province’s energy stakeholders. Stakeholder engagement during the RUEA process includes facilitating consultation among the provincial energy and mineral resources (EMR) Office, the Provincial Development Agency (Bappeda) of Aceh Province, and practitioners. ICED II also provided technical support to the Aceh EMR Office in legislative sessions with provincial representative members (DPRD).

South Sulawesi

ICED II held a workshop on Electrification Planning for South Sulawesi Province in Makassar on November 26-27, 2019. A total of 35 participants from the EMR Office of South Sulawesi Province and PLN South Sulawesi Area took part in the workshop. Participants developed energy access geospatial maps for their respective working areas. Some groups even managed to overlay their energy access map with the 20-kV distribution map.

Inspired by the training, PLN West, Central, South and Southeast Sulawesi Area (Sulselrabar) requested that ICED II provide household electricity access data for Southeast Sulawesi Province based on the Village Statistics 2018 data. PLN Sulselrabar then conducted an internal workshop to use the data and approach to process Southeast Sulawesi area. The facilitators for this internal

workshop were selected from those who have attended previous ICED II trainings on electrification planning.

Monitoring-Evaluation-Reporting (MER) of Thermal Power Plants.

Throughout Quarter 1 2020, USAID ICED II, in cooperation with UNDP Market Transformation towards Renewable Energy and Energy Efficiency (MTRE3), assisted the Directorate General of Electricity (DGE) of MEMR in finalizing the proposed 13 methodologies for “Guidelines for Greenhouse-gases Mitigation Monitoring, Evaluation and Reporting in the Power Sector”. ICED II supported a series of focused group discussions (FGDs), meetings, and a site visit to DGE and UNDP MTRE3 in finalizing the guidelines. ICED II submitted the draft guidelines to DGE, who has returned feedback to be incorporated into the guidelines.

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Energy Security Index (ESI) – Energy Security Reliance Index (ESRI)

ICED II has completed the weighting and calculation of ESI and ESRI parameters and indicators that measure the security of Indonesia’s energy supply and energy self-sufficiency relative to imports, among other things, respectively. The finalization was based on the response and input from 62 energy stakeholders. The study results reveal gaps in data leading to low ESI score and increasing reliance on imported energy leading to a declining ESRI score. Completion of ESI – ESRI calculation and submission of ESI-ESRI guide handbook concluded ICED II assistance to MEMR Planning Bureau on this subject.

Sustainable Finance

- ICED II held Environmental and Social Risk Assessment (ESRA) Training (Training Analisis Lingkungan/ TAL) on 7-10 October 2019 in Bali. This training was the last of two batches in 2019 in collaboration with OJK Institute. The training focused on RE technology and solar PV projects, and visited the Kubu 1 MWp solar farm in Karangasem District, Bali, that is managed by the district government of Karangasem.
- ICED II has been providing technical assistance to the Indonesia Climate Change Trust Fund (ICCTF) Energy Working Group since January 2018. ICCTF conducts several studies of the nation’s clean energy project pipeline, one being a pre-feasibility study for rural electrification. ICED II assisted ICCTF in developing methodology, facilitated meetings with local stakeholders, and reviewed the pre-FS reports.
- ICED II conducted individual bank training for Bank BNI on mini-hydro project evaluations and Bank BCA on environment analyses.
- ICED II facilitated the Bali Center for Sustainable Finance (BCSF) in conducting series of FGDs on a Regional Energy Plan (RUED), Governor’s regulations, and a Regional Electricity Plan (RUKD) for Bali Province. FGDs were conducted in October and December 2019. Inputs obtained during both series were elaborated into a policy review submitted to the Bali province government.

Task I.I: Increase Capacity for Low Emissions Energy Sector Planning and Implementation

WS 1.1.1: Support Bappenas in streamlining RAD GRK guidelines and ensuring procedures are communicated effectively to subnational governments.

ICED and ICED II have been supporting Bappenas' RAN/RAD GRK Secretariat since 2011. The RAD GRK (the National Action Plan for Low Emissions Development) process has completed a full cycle of planning-implementing-monitoring-evaluating, which involves all 34 provinces in Indonesia. ICED II links its assistance to Bappenas in the RAD GRK process with other energy planning processes that the national government has assigned to the provincial governments. ICED II continues to support Bappenas Secretariat of RAN/RAD GRK Secretariat in facilitating provincial GRK teams, in particular in terms of GHG emission reductions in the energy sector, which include activities related to monitoring, evaluation and reporting (MER) of GHG emission reduction efforts.

ICED II supports the Government of Indonesia's policy shift towards Low Carbon Development Planning (PPRK), especially at the provincial level where actual transformation will take place. ICED II is participating in the national process to prepare for the implementation of Sustainable Development Goals (SDGs, stipulated in Presidential Decree 59/2017). ICED II focuses on SDG number 7: Affordable and Clean Energy and on related concerns to overcome climate change and its impacts via SDG number 13: Climate Action. This work will indirectly contribute towards the preparation of National Medium-Term Development Plan (RPJMN).

ICED II also links its support on GHG-emissions reduction in the energy sector with its assistance in other energy planning processes, such as the provincial Regional Energy Plan (RUED-P) and development process. ICED II aims to link GHG-emissions reduction and the share of renewable energy in the RUED-P with the national energy targets. ICED II support to Bappenas also involves aligning Regional Electricity Plan (RUKD) development and implementation with RUED and other provincial energy planning processes.

Shifting of RAN GRK to Low Carbon Development Indonesia

In the previous quarter, ICED II hosted the regional workshop on PPRKD for the western region in Medan, North Sumatra. The Bappenas' Director of Environment officiated the workshop and stated that Bappenas has aligned the Low Carbon Development Indonesia (LCDI), as a policy, with Indonesia's National Medium-Term Development Plan (RPJMN) and Sustainable Development Goals (SDGs).

In this quarter, ICED II engaged several preparatory meetings for other Regional Workshops on PPRKD (Central and Eastern Region) as a follow up to the evaluations from the Western Region Workshop last September. The ICED II team also engaged in PPRKD Internal Training with the Secretariat of the National Action Plan for Low Emission Development (SekRAN GRK), to finalize the training materials and tools, prior to the Central and Eastern Regional Workshop of PPRKD.

As a member of the Bappenas' PPRKD Energy Working Group, ICED II assists in improving the Input-Output (I-O) model in the energy sector, focusing on developing satellite data for certain provinces. Currently, there are two proposals for developing satellite energy data at the provincial level:

- Cascaded energy matrix generated from World Input Output Data (WIOD). This method enables each province to have its own energy satellite data for PPRKD purpose. However, since this data is cascaded from WIOD, the satellite data generated does not represent the actual economic sectors available at each region. This approach has been used in the PPRKD

regional workshop and ICED has facilitated the provinces in generating their energy satellite data.

- Province's Sectoral Energy Data as proposed by ICED II. The province's sectoral energy data is ideally derived from the Indonesia's Statistics Agency (BPS) survey. ICED II has processed the provincial data from the Survey of Industry for 2010, 2011 and 2012. Such provincial data has been shared with the Energy Liaison of RAN GRK Secretariat. The main issue to this approach is the absence of data for energy use in the agricultural sector.

The Eastern Regional Workshop was held in Makassar on October 14-17, 2019 and Central Regional Workshop was held in Surabaya on October 28-31, 2019. In these workshops, ICED II assisted the energy sector session and worked with provincial governments to deliver PPRKD material such as satellite energy data and explore activity linkages of GHG mitigation with its sectoral impacts. ICED II observed that more time should be allocated for discussion among the provincial working groups to enable them to translate actions into impacts beyond emissions, as well as to interlink the sectors.

In this quarter, ICED II participated in Indonesian Low Carbon Development Action Planning and Monitoring Application (AKSARA) Launching in Jakarta on November 27-28, 2019. This event introduced AKSARA as the updated version of RAD GRK MER. AKSARA is not too different from the previous Monitoring, Evaluation and Reporting (MER) on-line in terms of technicality, appearance or method of data entry requirements. There are a few additional features, i.e.:

1. AKSARA-Design is the foremost part of AKSARA, and aims to assist national and regional governments in designing and planning low-carbon development through various interventions
2. AKSARA-Trumpet is a module that is able to provide a balanced evaluation of the achievement of low-carbon development targets at the national and regional levels.
3. AKSARA-Kumawas presents various facilities for the national and regional governments in monitoring the implementation of low-carbon development activities
4. AKSARA-Biwara provides complete, regular and reliable information for various stakeholders about the overall process of implementing low-carbon development in Indonesia.

Monitoring Evaluation Reporting (MER) of RAN GRK

ICED II facilitated the development of two guidelines on the methodology for calculating and reporting MER on GHG emissions reductions: (1) MER Guidelines on GHG Mitigation and (2) MER Guidelines for Energy Conservation Activities in Thermal Power Plants.

Guidelines and Methodologies for Monitoring and Evaluating Energy Conservation Activities at Thermal Power Plants. ICED II is developing these new guidelines following a request from the Directorate of Environmental Engineering of MEMR DGE. This is part of the national coordination that ICED II has been facilitating to develop documents related to GHG emission reduction, such as MER guidelines and MER updates. Results of MER on GHG emission reduction in thermal power plants will become a reference to update the MER of RAN GRK. See Work Stream 2.2.4 for additional information on this activity.

In this quarter, MEMR Regulation No. 22 of 2019 on GHG Inventory and Mitigation in the Energy Sector was issued. This regulation mandates that each Directorate General within MEMR develop the guidelines for inventory and mitigation activity within their respective scopes. This regulation justifies ICED II support to DGE on development of GHG Mitigation MER in power sector.

WS 1.1.2: Support local institutions tasked with operationalizing RAD-GRK mitigation action plans and leading other energy planning processes

Energy planning at a sub-national level appears in several work streams, namely Local Action Plan for Low Emissions Development (RAD GRK), Regional Energy Plan (RUED), Regional Electricity Plan (RUKD), Local Action Plan for Sustainable Development Goals (RAD SDGs), and the Regional Medium-term Development Plan (RPJMN). Work stream 1.1.2 targets the Bappeda and Dinas EMR (the provincial-level energy offices) responsible for RAD-GRK, RUED-P, and RUKD.

ICED II supports database development, electrification data processing and development of models such as Long-range Energy Alternatives Planning (LEAP) and geospatial processing software, and facilitates multi-stakeholder forums for planning and decision-making. ICED II also updated its rural electrification database and maps based on 2018 Village Potential Statistics (Podes 2018) that Statistics Indonesia (BPS) published in December 2018. These activities contribute to detailed rural electrification planning for pilots that ICED II plans to conduct in coordination with PLN and other key stakeholders.

Energy Sector Planning and Implementation

This activity covers the RUED for ICED II's focus provinces of Aceh, North Sumatra, East Java, South Sulawesi, and West Nusa Tenggara, as well as the Monitoring, Evaluation, and Reporting of the RUED in these ICED II priority provinces².

Aceh. The Provincial Energy Plan (RUEA) has been stipulated under Qanun (Aceh Provincial Regulation) No.4/2019. ICED II has been assisting Aceh Province in developing its RUEA. ICED II assistance covers energy database development, energy modelling, experts, FGD support and continuous engagement during the RUEA process since 2017.

In this quarter, ICED II held a seminar and workshop about rooftop solar photovoltaics (PV) in order to disseminate MEMR Regulation 49/2018 dated November 15, 2018 and its revision in MEMR Regulation 13/2019 dated September 2, 2019 concerning the application of Solar PV Rooftop by State Electricity Company (PLN) customers. After the seminar, the EMR Office of Aceh asked ICED II to conduct a similar rooftop solar PV seminar at the district level.

North Sumatra. In the past quarter, ICED II provided technical support to North Sumatra Provincial Government in identifying potential contributions of renewable energy in the agriculture sector, especially for improving paddy harvests. The provincial government plans to increase paddy productivity to eight tons per hectare through the installation of solar-powered water pumps, and increased production from fish farming through the use of smart floating farms. This plan is part of North Sumatra's Strategic Planning 2020-2023.

In this quarter, ICED II conducted an FGD on October 26, 2019 to identify the solar-powered water pump system most-suitable to be implemented in Sitolu Huta Village, Samosir District. There were three options: stand-alone Solar PV Pump, Solar PV Pump with 20kW diesel generator, and Solar PV Pump with PLN's electricity. At the end of the FGD, ICED II recommended the hybrid Solar PV Pump and diesel generator and suggested adding a rooftop solar array.

² Note that not all activities are carried out in all priority provinces, as ICED II technical support is demand driven and responds to opportunities to contribute to provincial planning initiatives.

ICED II also held a seminar and workshop on rooftop solar PV in order to disseminate the MEMR Regulation 49/2018 dated November 15, 2018 and its revision, MEMR Regulation 13/2019 dated September 2, 2019 concerning the application of Solar PV Rooftop by State Electricity Company (PLN) customers. Six buildings have been identified as candidates for MEMR funding for solar PV rooftop implementation. ICED II will provide technical assistance to a feasibility study for one of the buildings which then can be replicated for the remaining buildings.

ICED II contributed to the energy database development for North Sumatera Province. ICED II has shared the 20 kV geospatial data as well as an energy access geospatial map with the EMR Office of North Sumatera Province. This data will be used as an additional layer to EMR Office's energy database website. The website is still under development.

South Sulawesi. In the previous quarter, The Head of EMR Office of South Sulawesi signed a ToR which with ICED II for assistance with energy/electrification planning, energy data management, and geospatial mapping. ICED II will start its activities with the EMR Office of South Sulawesi in the next quarter by revisiting the draft of South Sulawesi's RUED and the province's electrification plan.

On October 29, 2019, ICED II conducted an FGD on RUED Finalization of South Sulawesi Province. The FGD focused on aligning RUED's draft with other energy plans. The participants were from the National Energy Council (DEN), EMR Office of South Sulawesi Province, Bappeda South Sulawesi, PLN South and Southeast Sulawesi Wilayah, MEMR, Chamber of Commerce and Industry (Kadin), community representatives, and academics.

During the RUED FGD, a representative from PLN highlighted that the electricity supply for South and Southeast Sulawesi area has more than a 400 MW surplus, caused by delays in some industrial area development and new industrial customers. Meanwhile, the EMR Office of South Sulawesi highlighted the need to provide energy access to the remote and island areas.

A follow on FGD was held on November 11, 2019. This second FGD focused on the RUED LEAP model and program matrix. Representatives from the Governor's Acceleration Team (TGUPP) requested different development path scenarios for modelling the future energy demand in South Sulawesi Province. Meanwhile, a PLN South and Southeast Sulawesi Area representative pointed out the need to synchronize some programs in RUED with PLN's programs.

An FGD to finalize South Sulawesi's RUED document will be held during the next quarter. Once completed, the RUED draft will be proposed to be included in the 2020 Provincial Legislative Process of South Sulawesi Province.



Photo courtesy of: ICED II

A total of 21 local energy stakeholders from South Sulawesi participated in a focused-group discussion on local energy planning. The USAID-supported event took place on October 29, 2019 in Makassar, South Sulawesi.

Electricity Planning and Implementation

This activity covers electricity access in ICED II's priority provinces as well as the Regional Electricity Plan (RUKD) in those priority provinces.³

Aceh

Electrification Planning. ICED II participated in Aceh's initial Electricity Plan (RUKA) meeting, held in Banda Aceh, December 2-3, 2019. In this meeting, ICED II provided insights on data requirements as well as modeling options required to develop an electricity plan. More intensive meetings on RUKA with EMR Office of Aceh Province are expected in 2020.

South Sulawesi

Electrification planning. In the previous quarter, ICED II proposed the use of geospatial mapping to PLN Regional Office of South, Southeast, Central and West Sulawesi (PLN Wilayah Sulselrabar). PLN's Senior Planning Manager welcomed the ICED II initiative and understood the need to mainstream the use of geospatial mapping for planning purposes. PLN Wilayah Sulselrabar has documented coordinates of electric poles in some areas, however the data is still in tabular form. PLN Wilayah Sulserabar suggested to have an internal discussion with ICED II regarding the methodology prior to conducting training for PLN staff.



Photo courtesy of: ICED II

A total of 46 participants from South Sulawesi EMR office staff and PLN Regional office of Sulserabar attended a regional electrification-planning workshop. The USAID-supported event took place on November 26-27, 2019 in Makassar, South Sulawesi.

On November 26-27, ICED II conducted a workshop on electrification planning in Makassar. ICED II has been providing technical assistance on energy access planning in the forms of data alignment, processing and capacity building. The assistance covers supporting the EMR Office of South Sulawesi Province and its six branches as well as the System Planning Unit of PLN with analysis and planning for rural electrification. During the workshop, the participants were able to generate energy access maps for their respective area, and some participants were able to overlay those maps with the 20-kV grid network. The discussion between PLN and the EMR Office of South Sulawesi also highlighted the challenges each institution encountered in their energy access programs. For example, there is a regulation that stipulates that provincial or local government rural

electrification programs should focus on areas that are not currently or planned to be serviced by

³ Note that not all activities are carried out in all priority provinces, as ICED II technical support is demand driven and responds to opportunities to contribute to provincial planning initiatives.

PLN. PLN identified the need for local governments to open roads for PLN to gain access for extending service (e.g., poles and wires). If the road and electricity infrastructure is not coordinated, PLN must pay for land clearing for the road (e.g., tree cutting) which is not in their budget. PLN must also pay for permits and the associated costs/fees.

ICED II has emphasized that coordination between the provincial government and PLN needs to be strengthened to create a more integrated energy access program. Further, the province has asked PLN to analyze household energy access beyond just a binary electrified or non-electrified status. PLN demands more-detailed information on types of energy access, which includes: a) electrified with PLN metering, b) electrified with PLN leveraging,⁴ c) electrified with non-PLN diesel generators, d) electrified with PLN renewable energy sources, and e) non-electrified. More intense discussions with a wider stakeholder group are required to accommodate PLN's data demands. In the next quarter, ICED II plans to conduct an advanced electrification workshop with PLN South and Southeast Sulawesi Area and the EMR Office of South Sulawesi Province.



Photo courtesy of: ICED II

A total of 19 participants from local energy stakeholders in South Sulawesi participated in a focused-group discussion on local energy planning. The USAID-supported event took place on November 28, 2019 in Makassar, South Sulawesi.

PLN South and Southeast Sulawesi Area invited ICED II to share village potential statistics (PODES) data and present the geospatial mapping approach to energy access planning on November 29, 2019. As noted earlier, PLN is tasked to provide more detailed information on areas without electricity access. Thus, ICED II assistance on geospatial mapping is highly relevant to PLN's needs. Since the Basic Electrification Workshop was only conducted for PLN in South Sulawesi area, PLN planned to conduct a similar workshop for PLN Southeast area.

PLN requested additional PODES 2018 data for Southeast Sulawesi Province. The facilitators in the PLN workshop for PLN Southeast Sulawesi Area were the PLN South Sulawesi participants that have been trained by ICED II. In the future, PLN requested that ICED II training on electrification planning to not only engage the participants from South Sulawesi Area, but also those from Southeast Sulawesi Area.

Sustainable Development Planning and Implementation.

This activity covers RAD SDG for Goal #7 in ICED II's priority provinces; monitoring, evaluation, and reporting of RAD SDG Goal #7 in those priority provinces; and alignment of provincial energy plans into the RPJMN and the strategic plan of MEMR.

North Sumatra

To support North Sumatra's integrated development programs 2019 - 2023, particularly on increasing rice productivity to 8 tons per hectare (ton/ha), ICED II has conducted an assessment in

⁴ PLN extends service to one customer who in terms allows other users to access the PLN service. PLN records this as a single customer (i.e., on meter) while other statistics record each end user as additional customers.

the Samosir district. The trip report and pre-feasibility study for solar-powered pumps for agriculture in the Samosir district were completed and delivered to Bappeda on December 24, 2019. An FGD on ICED II findings on this study has also been conducted, engaging Bappeda, the EMR Office and PLN of North Sumatra Province.

WS 1.1.3: Assist Bappenas, MEMR, and PLN in electricity generation and demand-side management planning in developing RUEN, RUKN, and RUPTL.

In order to ensure clear linkages between provincial RUED drafts and the national policy as stated in the RUEN, ICED II supports MEMR in analyzing the aggregate information from RUED drafts and compares it to RUEN figures. As part of ensuring coordinated energy planning, ICED II also identifies opportunities to develop common baseline datasets, geospatial maps and other supporting tools for the national institutions and provincial energy planning processes. For the supply side, ICED II works with PLN at the national and regional offices to support activities related to dissemination of data and information to, and capacity building for, provincial/local governments in developing and aligning energy-related provincial plans.

Energy Planning and Implementation

This activity covers national coordination to facilitate the development of RUED at the provincial level (RUED-P) and the alignment of energy plans as well as the monitoring, evaluation and reporting of the RUEN and RUED-P. The project activities that support the strategic plans of MEMR are also covered under this activity.

Alignment of Energy Plans. In this quarter, ICED conducted a brief analysis of provincial energy related plans in two provinces, namely North Sumatra and South Sulawesi Province.

ICED II conducted a growth projection, demand analysis and supply analysis across various national and provincial documents related to North Sumatra Province, including: Provincial Mid-term development plan (RPJMD), National Energy Plan (RUKN) 2019-2038, Electricity Supply Business Plan (RUPTL) 2019-2028 and the draft of Provincial GHG Mitigation Plan (RAD-GRK) Energy Sector. The analysis shows differences in growth assumptions that significantly affect the gaps in energy projection across various documents.

A similar exercise has also been conducted for South Sulawesi Province. Differences in growth assumptions have resulted in gaps in energy demand projections across various planning documents. This finding was shared during the second round of RUED FGD for South Sulawesi Province.

MER Provincial Energy Plan (RUED-P). In this quarter, ICED II signed a TOR with the General Secretariat of National Energy Council (DEN) for MER of Provincial Energy Plan. The TOR covers energy modeling alignment, development of MER for the RUED-P, and the establishment of an energy planning network.

RUED-P Energy Modeling. ICED II has developed the multi-region LEAP RUED models, which comprised of various development scenarios, with reference to RUEN, RPJMD and RPJMN 2020-2024. During the development of LEAP RUED-P multi-region, there were some lessons learned:

- The case study of North Sumatra RUED document shows that there is a gap between renewable energy projections stated in the RUED-P LEAP model and in the RUED-P Program matrix. This gap could be due to the National Energy Council (DEN) requirement for the province to put more renewable energy share in its LEAP model than in its actual pipeline. This North Sumatra story might repeat in other provinces' RUED documents. Thus, analyses on RUED-P documents for other provinces are recommended.
- Having a multi-region LEAP model enables the national government to perform regional analyses. For instance, the decision-makers at the national level could provide an electricity balance by PLN electricity system, based on the demand and supply projection in different provinces or regions.
- The Multi-region LEAP Model allows for a sensitivity analysis among scenarios. For instance, a significant gap between electricity demand scenarios could result in lost power investment due to inappropriate scheduling and power plant sizing.

MER Provincial Energy Plan. In this quarter, ICED II completed the first round of MER Provincial Energy Plans. ICED II has developed a web-based platform for MER RUED-P which allows users to obtain information on provincial energy profiles, provincial energy-related documents, and the progress and achievement of RUED-P implementation in the province. As a pilot study, the web-based MER Provincial Energy Plans have incorporated the energy data and RUED data of North Sumatra Province. The website helps users to understand various energy-related plans and the gaps between them. The website can be one of the decision-making tools for future energy-related policy. A second round of MER Provincial Energy Plans will be conducted to incorporate more provincial data into the website and database.

Energy Security Index (ESI) and Energy Self-Reliance Index (ESRI). In the previous quarter, ICED II performed the calculation of ESI-ESRI Index for some indicators for the period of 2014-2017 using available historical data. ICED II submitted the draft "Technical Guidebook on ESI and ESRI" – containing definitions of each dimension, indicator, maximum and minimum value of parameters, as well as questionnaires – to the MEMR Planning Bureau.

In this quarter, ICED II weighed each dimension and indicator within ESI and ESRI based on responses from 62 energy stakeholders. The weight of each dimension and indicator was then calculated to generate ESI and ESRI scores, as follows:

- The ESI score in 2019 is 63.4 (out of 100) and is projected to increase to 66 by 2024 using the scenarios in MEMR Strategic Plan 2020-2024. This score is close to the ESI study conducted by DEN in 2017; DEN's study shows the ESI scores were 61.6 (2015), 63.8 (2016) and 64.0 (2017) based on 46 respondents. The main reason for the low scores is the lack of data needed to make the calculation.
- The ESRI score shows a declining trend from 23.8 (out of 100) in 2014 to 22.5 in 2017. The main reason for the low ESRI score is due to increased levels of imported fuel either by volume, unit price (in rupiah terms) or both.

With the completion of ESI and ESRI calculation as well as submission of ESI and ESRI technical guidance book to Birocan MEMR, ICED II assistance to Birocan MEMR for ESI ESRI activity concluded.

Distribution System Planning Guidelines

At the request of PLN, ICED II began working with a PLN-appointed internal technical team to develop standardized Distribution System Planning Guidelines (see workstream 2.1.3). PLN issuance of the Guidelines is a milestone under The World Bank's Sumatra Program for Results loan. By the

end of December 2019, PLN had accepted the draft Guidelines that ICED II helped to prepare. PLN's objective is to issue the new guidance to all regional PLN offices (Wilayah) when preparing their proposed spending at the distribution level. According to PLN, the Guidelines need to focus on improving distribution system reliability, safety, efficiency, power quality, and economics; to facilitate advanced distribution network automation, monitoring, and communication technologies to improve reliability, efficiency, and safety; to respond to the government target to increase renewable energy share of power supply to 23% by 2025 and 29% by 2030; and to incorporate customer, behind-the-meter, roof-top photovoltaic (PV) energy systems and electric vehicle charging into demand forecasting.

Task 1.2: Policy and Regulatory Reform Support for Clean Energy Project Development

WS 1.2.1: Support the development of specific incentives to stimulate financing streams for clean energy and emission reduction initiatives at the national and local levels.

There are two key challenges in financing renewable energy: the supply side of renewable energy businesses need for funding for projects, while on the demand side banks are seeking to build a pipeline of feasible renewable energy projects. Lenders perceive the supply side of this business as having highly risky clean energy projects, low utilization of project (limited or non-recourse) financing, and limited options for structuring financing. ICED II has been addressing two challenges from the supply side: first, improving the perception of high risk by providing capacity-building to lenders, and second, exploring alternative options in structuring financing by introducing credit guarantees through USAID's Development Credit Authority (DCA) as well as by supporting the mutual fund for solar PV managed by Nikko Securities. In the past year, Bappenas and Ministry of Finance have consolidated their initiatives and efforts in climate financing towards Sustainable Development Goals (SDGs). Focusing its support on developing blended finance as an alternative mechanism in stimulating clean energy financing, ICED II is supporting the Ministry of Finance through technical assistance to infrastructure financing company PT Sarana Multi Infrastruktur (PT SMI), while also carrying out support to Bappenas through financing the 2030 Agenda for Sustainable Development.

Sustainable Development Goals (SDGs) Indonesia One. In the previous quarter, ICED II provided a draft technical review of Bengkulu city lighting. In this quarter, ICED II finalized the review report and submitted it to PT SMI along with an owner's own estimate price for streetlighting project. In addition, ICED II provided a technical review of a solar PV project for the University of Indonesia (UI). The project involves lease agreements between UI and technology provider PT Supraco Indonesia, in which UI will make monthly payments for electricity generated from a solar PV plant managed by PT. Supraco. ICED II met with PT SMI and delivered a presentation and memo on the project.

ICED II and PT SMI signed an MOU to cooperate on renewable energy projects. PT SMI asked ICED II to facilitate the participation of experts and resource persons under an evaluation of "value for money", comparing public-private partnership schemes with more conventional municipal facility financing.

List of Renewable Energy Projects (Re-Pro). ICED II assisted Bappenas in preparing an updated version of the Re-Pro document. Initially, the new version was to be completed as an investment teaser and launched at COP 25 in Madrid, Spain. However, Bappenas decided to delay the launch of

the new Re-Pro in Indonesia until 2020 and requested that ICED II assist in finalizing the Re-Pro document and preparing a launching event in the first quarter of 2020.

Financing Sustainable Development 2030 Agenda. There were no updates during this quarter.

WS 1.2.2: Support new/improved regulatory framework for renewable energy generating facilities.

ICED II focuses on exploring possible business models for rural electrification as well as collaboration with potential donors in developing relevant business models. ICED II plans to engage a PLN unit for hybrid rural electrification activities and to identify key stakeholders related to rural electrification business models. A pilot study and design of a hybrid system for rural electrification will follow.

Business model(s) concept. ICED II drafted a business model reference for rural electrification, i.e., off-grid renewable energy generation and distribution systems. The reference is based on desk studies and surveys of existing business models for rural electrification in Indonesia. It documents project structure, institutional arrangement and underlying regulation (enabling environment). The reference also discusses decision-making tools in subjects such as how to plan and develop a rural electrification project and how to select a project site.

Preliminary analysis of existing business models reveals challenges of sustainability and cost recovery. Specific issues from a commercial perspective include:

- Lack of clarity and certainty regarding rural electrification concession areas. For example, many donor-funded off-grid projects are to be managed or developed by the community and or developer for a certain period (ex. 5 years); PLN, however, has decided to provide service to other customers (not currently served by the non-PLN provider) during that concession period;
- Weak institutional foundations. Many business arrangements are based on cooperation between a company and a community, which can pose a challenge because the host community seldom has a legal or formal institutional establishment;
- Absence of an institution that can provide assurance. Despite MEMR regulation No.38/2016, none of the existing models formally engage (as parties in a project's agreement) with subnational governments and/or PLN to secure future revenue required to cover the cost of operating the project;
- Lack of social enterprises in the energy sector. Rural electrification should be handled as a non-profit, at least until there are sufficient customers with the ability to pay for electricity. Therefore, rural electrification needs to encompass the participation of social enterprises that can generate business and household income while accessing a public or philanthropic fund.

Technical Assessment of Pilot Areas in South Sulawesi. ICED II met with the Manager of PLN South and Southeast Sulawesi Area to share ICED II's view on electrification and economic growth in Makassar on November 27, 2019. During the discussion, ICED II presented the lessons learned from Korean Electric Power Company (KEPCO), an electric utility from South Korea that succeeded in creating on-grid and off-grid business models in isolated island settings.⁵ KEPCO faced similar

⁵ Korean Electric Power Company (KEPCO), an electric utility from South Korea, surfaced to ICED II attention when ICED II was looking for a successful party in creating on-grid and off-grid business models in isolated island settings. Following an internal consultation with ICED II technical expert, ICED II shared the lessons from KEPCO to PLN in South Sulawesi. For more information, please visit: <http://home.kepco.co.kr/kepco/EN/B/htmlView/ENBEHP002.do?menuCd=EN020502>

challenges as PLN in the obligation to provide quality electricity services in small islands with a small population, while they are also mandated to eliminate all diesel power plants within a few years. KEPCO developed mini and micro size hybrid systems using renewable energy in both stand-alone and grid-connected approach and managed to overcome the technological and business challenges in this endeavor. Among technological advances they acquired are improvements in power quality, systems operation and system reliability. In terms of the economic aspect, they have proved that operation of their hybrid systems led to a high rate of fuel cost reduction (81% drop in fuel costs), and also lower operating costs. Further, as this is the most interesting feature of this example, KEPCO managed to turn these advances into a new portfolio of products and services that generates profitable new businesses for the company in domestic as well as overseas markets. This example highlights the facts that (i) electricity markets in small islands are challenging and may not be profitable, in particular during the early stages of development of the area, however, in contrast, (ii) the new skills, knowledge and services obtained from developing and operating mini and micro grids created sizeable new businesses, which KEPCO has proven to make it worth the efforts. PLN South Sulawesi appreciated the information and conveyed that a perspective of another utility company and the resulting numbers from KEPCO's exercises are very important inputs for them.

During the electrification planning workshop in South Sulawesi Province, ICED II received information identifying possible opportunities for renewable energy and/or hybrid programs, such as:

- a. The Governor of South Sulawesi Province plans to cooperate with Mitsubishi to establish a pilot case of hybrid diesel and renewable energy in three high-density populated islands, namely Barrang Lompo, Barrang Caddi and Kodingareng islands. The EMR Office of South Sulawesi Province will be the technical counterpart for this project. They have requested that ICED II provide technical insights on renewable energy and hybrid programs in this project.
- b. The Head of Electricity Project Implementing Unit (UP2K) of PLN shared data on 11 villages in Selayar District of South Sulawesi Province that have a 20-kV line erected, yet unpowered. The UP2K Head of PLN South and Southeast Sulawesi Area also invited ICED II to cooperate in facilitating renewable energy generation in these areas.
- c. PLN South and Southeast Sulawesi Area have four islands where solar PV and diesel generators are available. However, they have not yet been hybridized. PLN expressed concern for the high cost of installing a battery when the diesel and solar PV power plants are hybridized. ICED II gave the example of the Sumba ADS pilot where a controller was installed to manage inputs from the solar PV and avoid the need for battery storage. The four islands are Karanrang, Sabutung, Salemo and Balo-Baloang, four of which are located in Pangkajene Kepulauan District.

ICED II conducted an initial study and mapping of these three case studies. The presentation to the stakeholders of South Sulawesi is planned for the next quarter.

WS 1.2.3: Assist PLN in implementing GOI policies to increase the contribution of renewable energy.

This work stream supports PLN headquarters and its regional offices in implementing MEMR policies and regulations. ICED II facilitates PLN’s acquisition of renewable energy generating capacity by acting as an independent advisor. This work stream operates at the programmatic level and is closely linked to MEMR’s issuance of new policies and regulations. Support to individual project sponsors and financiers is covered in Work Stream 2.1.2. ICED II continues providing PLN with input to its standardized power purchase agreements (PPA) and plans to develop guidance and provide capacity-building to PLN regional offices on technical reviews, system impact analyses, PPA negotiations, and communications to improve facility operations. This work stream parallels work stream 2.1.3.

ICED II is documenting key inputs from all of its project activities and plans to communicate these inputs to targeted units of PLN and MEMR as evidence-based policy inputs next quarter. This activity is in line with all activities supporting PLN in WS 2.1.3. The below table lists the inputs that ICED II in support of PLN in this quarter. Many of the inputs are part of an ongoing process, while others are tangible results that ICED II already submitted to PLN.

Table 2. ICED II Assistance to the Implementation of GOI and PLN Policies
Quarter 1, October-December 2019

Regulation	Relevant Business Process	Relevant SOP/Guideline/Board Director Decree	Relevant Collaboration Activity (ICED II technical assistance)
Technical assistance to MEMR			
Law 30/2007 on Energy, Article 19 (1)		Ministry of Energy and Mineral Resources (MEMR) Regulation 38/2016, Article 3 (1). Government of Indonesia accelerates the provision of sufficient amount, good quality and proper priced electricity for people in underdeveloped villages, remote villages, villages at state borders, and inhabited islands without electricity access.	Advanced Electrification Planning Training and Workshop for State Electricity Company (PLN) Regional and Energy and Mineral Resources (EMR) Office of South Sulawesi (SS) Province, October 28-31, 2019.
Government Regulation 79/2014 on National Energy Policy (KEN), article 9-d			
Presidential Decree 2/2015 on National Medium-Term Development Plan (RPJMN) 2015-2019, Book I, Section 5.3			

Regulation	Relevant Business Process	Relevant SOP/Guideline/Board Director Decree	Relevant Collaboration Activity (ICED II technical assistance)
Law 30/2009 on Electricity, Article 2 paragraph 2		Ministry of Energy and Mineral Resources (MEMR) Regulation 16/2019	Workshop on Solar PV Rooftop Planning for MEMR Office North Sumatra Province (October 22-23, 2019) and Aceh Province (October 29-30, 2019)
Kepmen ESDM RI no. 143 K/20/MEM/2019	RUKN 2019-2038	Aceh Regional Electricity Plan (RUKA)	ICED II assists local government of Aceh to develop Aceh Regional Electricity Plan (RUKA). The kickoff meeting for this activity took place on October 4, 2019
Technical assistance to Bappenas			
Technocratic Document of RPJMN 2020-2024 Section 7	Policy shift from RAN GRK to LCDI		Eastern Regional Workshop on PPRKD, 28-31 November 2019
Technical assistance to PLN			
PP Number 35, 2018 on Public Company (PERUM) Indonesia Credit Guarantee MEMR Regulation 53, 2018 on Amendment to MEMR Regulation 50, 2017 on the Utilization of Renewable Energy Sources for Electricity Supply MEMR Regulation 10, 2018 on Second Amendment to MEMR Regulation 10, 2017 on the Fundamentals of Power Purchase Agreements	Procurement and Contracting of Electricity from RE Power Plants	<ul style="list-style-type: none"> Board Director Decree Number 022.P/DIR/2017 On Procurement of Electricity from Renewable Energy Generating Plant and its revision Board Director Decree Number 0075.P/DIR/2017 On Mini Hydro Power Plant Feasibility Study Evaluation Mechanism 	Renewable Energy Procurement
MEMR Regulation 3, 2007 on Network Regulation of Java-Madura-Bali System MEMR Regulation 2, 2015 on Network Regulation of	<ul style="list-style-type: none"> RE System Planning Operation of PLN's Transmission Grid 		Java-Madura-Bali, Sulawesi and Kalimantan Grid Code Revision

Regulation	Relevant Business Process	Relevant SOP/Guideline/Board Director Decree	Relevant Collaboration Activity (ICED II technical assistance)
Sulawesi System MEMR Regulation 17, 2016 Network Regulation of Kalimantan System			
MEMR Regulation 4, 2009 on Electricity Distribution Regulation MEMR Regulation 1, 2017 Power Plant Parallel Operation with PT PLN Electricity Network	Operation of PLN's Distribution Grid	Board Director Regulation Number 0064.P/DIR/2019 on Renewable Energy Generation Plant (REGP) Interconnection Guideline to Distribution Network as a revision of Board Director Decree Number 0357.K/DIR/2014 on the same topic.	REGP Interconnection Guidelines and Review Guidelines for REGP's Interconnection Study Distribution System Planning Guidelines
MEMR Regulation 49, 2018 on Utilization of Rooftop Solar Photovoltaics (PV) by PT PLN Customers	Procurement of Electricity from RE Power Plant Operation on PLN's Distribution Grid	Board Director Decree Number 0773.K/DIR/2013 on Utilization of Electricity from Rooftop Solar PV by PLN Customers Circular Letter of Board Director Number 0009.E/DIR/2014 on Requirement of Integration of Rooftop Solar PV for PLN Customer to PLN Grid	Rooftop Solar PV Economic Impact Study

WS 1.2.4: Support OJK's Sustainable Finance Program in formulating guidelines for the financial industry to promote and increase investments in clean energy

As a milestone of OJK's Sustainable Finance Road Map 2013-2019, in August 2017 OJK issued a regulation on sustainable finance. The regulation (locally referred as POJK) formalized the road map as a platform in implementing sustainable finance and seeks to improve financial service institutions' asset quality by incorporating sustainable approaches in their portfolios. Despite challenges in the renewable energy sector, OJK's activity plan for 2018-2019 is consistent with the road map. In 2018, OJK aligned its objective with the larger Sustainable Development Goals (SDGs) and developed a sustainable finance platform to reach the SDGs target. This platform provides appropriate flexibility and guidance for stakeholders to be able to work on their own initiatives. ICED II continues supporting OJK under the guidelines of the sustainable finance platform. ICED II will continue its existing programs, such as the green lending baseline survey, ESRA trainings, and Bali Center for Sustainable Finance. In addition, OJK aims to advocate for project-based financing to increase financing flows to the renewable energy sector. Regarding OJK's objective, ICED II identified a knowledge gap within Indonesia's financial sector institutions in terms of project bankability and the basic principles and features of power purchase agreements (PPA). In order to close the knowledge gap, ICED II is developing guidelines based on its reviews of related regulations, analysis of the key features of PPAs, and comparisons of PPAs from various sources around the world.

Meeting with OJK and OJK Institute. OJK invited ICED II to a donors' coordination meeting. The meeting objective was for OJK to map out technical assistance from donors and NGOs such as USAID, UNDP, GIZ, and WWF. During the meeting, OJK requested that ICED II develop a revision of a Solar PV financing handbook and conduct capacity building for internal OJK, especially for banking sector supervisors.

OJK provided a new guideline in developing handbooks for financial institutions. The guideline advises that handbooks need to explore and discuss alternative financing mechanisms to fund projects. This exploration is to address the non-conventional financial sector, such as capital markets and non-bank (e.g., leasing) options to participate in clean energy. OJK also expressed its interest to explore financing mechanisms that involve small and medium enterprises.⁶ ICED II plans to elaborate financing mechanisms in the Solar PV handbook with business model developments that are discussed in Work Stream 1.2.2.

Green Lending Survey. The green lending survey activity had been delayed for several quarters due to OJK direction. In this quarter, OJK said that it would conduct the survey, but requested that ICED II prepare a solar PV financing guidebook by way of a survey or interviews with financial services institutions (FSIs).

Bali Center for Sustainable Finance (BCSF). ICED II facilitated BCSF to conduct a series of FGDs on October 14-15 and December 12-13, 2019. The first FGD discussed a RUKD (Regional Electricity Plan) and a draft of the governor's regulation on Bali clean energy. The Governor of Bali, Mr. Wayan Koster, opened the discussions by underlining the importance of energy security for Bali. The second FGD discussed a RUED (Regional Energy Plan). ICED II-funded FGDs included resource persons from DEN (National Energy Council), MEMR DGE, Ministry of Home Affairs, and PLN. The FGDs were attended by Bali government agencies, district governments, NGO, and renewable energy project developers, among others. Inputs from both FGD series were elaborated into an academic paper and policy review, and submitted to Bali government.

Power Purchase Agreement (PPA) Handbook. ICED II is currently reviewing the draft version of the PPA handbook prepared by its subcontractor. ICED II will consult with OJK and FSIs through an FGD in the next quarter. The Handbook will be finalized after the consultation.

⁶ ICED II identified several start-up companies involved in renewable energy during its Green Jobs seminars.

Environmental and Social Risk Analysis (ESRA) Training. ICED II and OJK conducted the last set of Environmental and Social Risk Analysis (ESRA) trainings on October 7-10, 2019, related to financing of solar PV power projects. 43 people from OJK, MEMR, Ministry of Environment and Forestry (MoEF), universities, as well as bank and non-bank financial institutions participated in the training. At the end of the training, the participants visited the 1-Megawatt peak (MWp) Kubu Solar PV Power Plant in Karangasem, Bali to have first-hand understanding of how a PV power plant works.

The ESRA training series is part of USAID ICED II support to OJK in implementing Indonesia's Sustainable Finance Road Map 2019-2023 by improving the capacity of financial institutions. The most important feature of the training is helping banks assess and manage risks associated with environmental protection and technical aspects.



Photo courtesy of: ICED II

Participants of the Environmental and Social Risk Analysis (ESRA) Training during a visit to Karangasem solar PV power plant. USAID ICED II and Indonesia's Financial Services Authority (OJK) organized the training on October 7-10, 2019.

WS 1.2.5: Within selected provinces, provide assistance in establishing two-way communication channels between subnational entities and national policy makers

One of the key challenges for MEMR and Bappenas in implementing energy policies and national GHG mitigation is obtaining feedback from provinces. ICED II supports both these national agencies in communicating their policies and programs through the development of planning guidelines, implementation and monitoring-evaluation-reporting of energy programs, sponsorship of regional forums and provision of feedback on implementation challenges. ICED II also supports the provincial government in aligning their energy plans in RAD GRK and RUED-P with their RPJMN and RAD SDG #7 (Affordable and Clean Energy). In ICED II's priority provinces, this support will be extended to outreach, communications and data gathering from city and districts, especially to update electricity access data.

Workshop to gather inputs for electrification planning. ICED II followed up with an update based on 2018 Podes data during a training and workshop on Advanced Electrification Planning Training in Makassar on November 26-27, 2019. During the discussion session, participants from PLN South Sulawesi Area and EMR Office of South Sulawesi Province were divided into groups based on their respective duty stations. Participants provided feedback on individual villages' electrification status according to their field observation. Each group also updated ICED II about villages that they targeted to provide electrification in 2019. Some groups also presented their actual 20-kV line maps based on the field coordinates they collected. ICED II will use the participants' inputs to update the 2018 Podes data as well as the geospatial map for South Sulawesi's energy access status.

Lesson Learned from the RUED-P Development Process

ICED II conducted a meeting with DEN regarding lessons learned from the RUED-P development process, which included:

- Multi-Region LEAP RUED-P
ICED II presented the results of multi-region LEAP RUED-P to DEN General Secretariat on December 26, 2019. ICED II showed the benefits of a multi-region LEAP model to the national stakeholders, including the possibility to conduct regional analyses as well as sensitivity analyses. DEN General Secretariat is also conducting a similar exercise with a tool that uses MS Excel. Differences in the LEAP RUED-P structure developed by some provinces hinder DEN General Secretariat from benefitting from the Multi-region LEAP RUED-P model. DEN General Secretariat requests that ICED II align the Multi-region LEAP model with the one developed by the DEN General Secretariat.
- MER Provincial Energy Plan
In the meeting with DEN General Secretariat, ICED II also presented the web-based MER provincial energy plan, which included some findings on discrepancies between model and program matrix within the RUED-P document, as well as the gap between RUED-P and other provincial energy-related documents. Since the ICED II exercise only covers one province, DEN General Secretariat is interested to replicate the same analysis for other provinces, particularly for the provinces that have stipulated their RUED-P under the local government regulation.

Component 2: Accelerate the Mobilization of Private and Public Sector Co-Investment in Clean Energy

Main Accomplishments

Projects Beginning Commercial Operations

A total of six project with a combined 127.9 MW reached Commercial Operating Date (COD). These included the 85 MW Maura Laboh geothermal plant in West Sumatra; solar PV projects Likupang (15 MW) in North Sulawesi, Isimu (10 MW) in Gorontalo, and Kuta Sambella (5 MW) in Lombok, West Nusa Tenggara; and hydropower projects Gumanti 3 (6.5 MW) in West Sumatra and Cicitih (6.4 MW) in West Java.

Projects Achieving Financial Close

The 1.7 MW Siamang Bunyi Hydropower project located in Kubang Village, Limapuluh Koto District, West Sumatra Province reached financial close during the quarter. The total project cost is [REDACTED]. ICED II's technical assistance for this project includes review of the feasibility study and engineering design, and delivery of a project memorandum on hydrology, energy production, turbine selection, strengths and challenges of the project.

Individual Bank Training

ICED II completed two individual bank trainings for BCA Bank on environmental analysis and solar PV technology. The first training on environmental analysis took place in two batches on November 4-7, 2019. A total of 58 BCA Bank staff participated in the first training. The second training was on rooftop solar PV. A total of 20 participants from corporate commercial and training center divisions of BCA attended the training on December 10-11, 2019.

Measurement and Verification (M&V) for Energy Efficiency in Thermal Power Plants

ICED II and MEMR DG EBTKE Directorate of Energy Conservation (MEMR DEK) developed a final draft of national competency standards for M&V. On October 2-3, 2019, ICED II held a pre-convention workshop to validate the draft, engage related stakeholders, and capture inputs to improve the national competency standards. Following the workshop, MEMR propose the final draft of the national competency standards for M&V of energy performance to the Ministry of Manpower for verifying the competency standards. A total of 50 participants from various government units, professional associations, and universities participated in the workshop.

Renewable Energy Generation Plant (REGP) Interconnection Guidelines and Review Guidelines for REGP Interconnection Studies

ICED II, in collaboration with PLN and MEMR DG EBTKE, introduced the new guidelines for interconnection of renewable energy generation plants to PLN's distribution network on November 8, 2019 in Jakarta. The workshop was part of the annual conference and exhibition on new, renewable energy, and energy conservation, EBTKE ConEx 2019. A total of 153 participants from project developers, financial institutions, energy associations, MEMR, PLN, universities, and consultants participated in the full-day workshop. Through the workshop, the participants gained a better understanding of interconnection-related issues and requirements of small scale (less than 10 MW), grid-connected renewable energy power plants.

Wind Power Project Feasibility Study Review Guidelines

ICED II in collaboration with PLN held a Workshop on Wind Power Project Feasibility Study Review on November 20-21, 2019 in Jakarta. Thirty-four participants from PLN regional offices and representatives from MEMR DGE attended the training.

Solar Photovoltaic Power Project Feasibility Study Review Guidelines and Renewable Energy Financial Model Analysis

ICED II in collaboration with PLN held a Workshop on Solar Photovoltaic Power Project Feasibility Study Review and Renewable Energy Financial Model Analysis on December 2-4, 2019 in Jakarta. Ninety-seven participants from PLN regional offices and from MEMR DGE attended the training.

Distribution System Planning Guidelines

PLN with ICED II conducted an FGD for the final draft distribution system planning guidelines on October 9, 2019 in PLN Dispatch Center in Gandul, Depok. Inputs from the FGD were incorporated in the final draft of the guidelines that were presented to PLN Corporate Planning Director, Syovfi Felienty Roekman, on October 18, 2019 in PLN headquarters, Jakarta. The guidelines have been accepted by the PLN Directors and are currently being prepared for issuance as a Director's Decree.

2019 Java Blackout Review

ICED II fielded three U.S. utility experts to review the August 4, 2019 blackout event in Western and Central Java. The review team's report and presentation of major findings were designed to better understand the system event that occurred on August 4, 2019, and to share lessons learned from the August 10, 2003 blackout that took place in the northeastern United States and eastern Canada.

Task 2.1: Advanced Project Development and Investment Promotion

WS 2.1.1: Improve and maintain a database of viable clean energy projects (pipeline) with respective emission reduction contributions

The first and second phase of ICED have kept an internal database on all the clean energy projects that receive technical assistance. ICED II has added more projects to the database, used standard references for project status in modifying the database, and maintained the database. ICED II will add projects that MEMR and PLN fund and/or approve into the database to create a rich information management system on grid-connected renewable energy, and will transfer the database content/and or structure to MEMR.

Clean Energy Project Database. ICED II added two new projects in this quarter: the 1.7 MW Biak 1 and the 4 MW Biak 2 hydropower plants located in Banggai, Central Sulawesi.

WS 2.1.2: Provide advisory services, technical assistance and capacity-building to project developers/sponsors, banks and financial institutions, equipment suppliers and service providers.

ICED II provides project-level technical support to the clean energy projects that are listed in the ICED II Clean Energy Project Database (please see WS 2.1.1) and to new and mature clean energy projects. The support covers all renewable energy technologies and resources: hydropower, biogas, biomass, wind, solar photovoltaic (PV), geothermal, waste-to-energy, and hybrid power. ICED II will prioritize its technical assistance to projects in mature stages, which means the projects need to have a power purchase agreement (PPA), be seeking financing, have obtained financing, began construction and/or started construction phase but not yet reached commercial operation date (COD). ICED II assists its partner financial services institutions in the acquisition of projects that are already in operation. ICED II also builds the capacity of its partner financial services institutions in reviewing project funding applications and investment opportunities.

Projects Beginning Commercial Operations. The Muara Laboh geothermal in South Solok District, West Sumatra achieved Commercial Operating Date (COD) in November 2019. The original PPA between [REDACTED] and PLN was signed in March 2012 with a planned capacity of 220 MW. ICED II and the USAID Sector Reform and Utility Commercialization (SRUC) served as PLN advisors in jointly reviewing the Supreme Energy proposal for PPA price adjustment. Following successful re-negotiation of the PPA, [REDACTED] signed a new PPA with a revised purchase price. The first phase (Unit 1) has an installed capacity of 85 MW and is sufficient to provide electricity to 1,067,028 persons.

The 10 MW Tomasa Hydropower project in Central Sulawesi and 7 MW Lawe Sikap Hydropower project in Aceh are in the final steps of construction but both were unable to reach COD (Commercial Operation Date) this year. The 5 MWp Kuta Solar PV in Lombok, developed by [REDACTED], has completed construction and COD, but is re-negotiating the PPA.

Projects Achieving Financial Closure. ICED II received information from [REDACTED] on December 13, 2019 regarding financial close for 1.7 MW Siamang Bunyi Hydropower project located in Kubang Village, Limapuluh Koto District, West Sumatra Province. ICED II's technical assistance to [REDACTED] as lender for this project includes review of the feasibility study and engineering design, and delivery of a project memorandum on hydrology, energy production, turbine selection, strengths and challenges of the project.

Advisory Services and Technical Assistance for Hydro Projects. This quarter, ICED II provided technical assistance to 12 hydropower projects and delivered seven project memos. Most of the projects are follow-up technical assistance, except for the 1.7 MW Biak 1 and the 4 MW Biak 2 mini hydropower projects developed by [REDACTED]. Both projects are in still developing feasibility study documents.

ICED II met with PLN Generation and Distribution Unit of South, Southeast and West Sulawesi (PLN Kitlur Sulselrabar) to discuss solving the grid stability problem through hydropower projects in Central and Southern Sulawesi. ICED II provided a project memorandum to PLN regarding the discussion.

ICED II also provided Bappenas with information on nine projects to be included in RE-PRO (Renewable Energy Project) 2019 investment booklet. The nine projects cover Kerpap (2.3 MW in Aceh), Besai Kemu (8 MW in Lampung), Sikarbau (2.4 MW in West Sumatra), Pareang (2.8 MW in West Java), Bayangnyalo (6 MW in West Sumatra), Simbelin 1 (6 MW in North Sumatra), Sapaya (5 MW in South Sulawesi), Mobuya 2 (2.1 MW in North Sulawesi), Sisira (9.8 MW in North Sumatra).

Advisory Services and Technical Assistance for Solar PV Projects. This quarter, ICED II received request from [REDACTED] to review feasibility study documents on 2MW of rooftop solar PV projects at the University of Indonesia in Jakarta and Depok, West Java. ICED II presented a review of the documents and submitted project notes to PT SMI in December 2019.

ICED II also received request from [REDACTED] to review a feasibility study and detailed engineering design of a 400-MW floating Solar PV project in Waduk Sigura-gura-Toba Lake, North Sumatra province. The first batch of the project is a 20 MW Solar PV power plant. The ICED II team presented a brief review of the project and submitted project notes to [REDACTED] in mid-December 2019.

Individual Bank Training. Following up coordination with MoEF and BCA on environment training module, ICED II attended a meeting with both parties. The meeting discussed the training program agenda, expected outcome, and topics to be highlighted by trainers from MoEF. ICED II completed the individual bank trainings for BCA Bank in which requested trainings on environment analysis and solar PV technology. The first training on environment analysis took place in two batches on November 4-7, 2019. A total of 58 participants from corporate and commercial divisions of BCA participated in the training. Each batch was organized over a 2-day period; consisting of training materials delivery by trainers from MoEF and BCA on day one, and case study on the second day. The training materials included environment permits and impact assessment, environment rating, and environment law enforcement. Pre-test and post-test were conducted to evaluate participant's comprehension.



Photo courtesy of: ICED II

ICED II facilitated trainings for BCA, an Indonesian commercial bank, on analysis of environment-related documents. These documents are requirements of credit evaluation process. The trainings took place in two batches on November 4-7, 2019. A total of 58 participants participated in the training.

The second training was on rooftop solar PV. A total of 20 participants from corporate commercial and training center divisions of BCA attended the training on December 10-11, 2019. The training covered various subjects, including PPA terms and conditions, rooftop solar PV technology, utility scale grid-connected solar PV, project planning processes, grid interconnection, technical due diligence, and risk management. The training also discussed solar PV project financing. On the second day, the participants toured a 1 MWp Cirata Solar PV Power Plant, where they spoke with the training academy of PT Pembangkitan Jawa Bali (PJB), a subsidiary of PLN under PLN's Corporate University. The training helped BCA staff analyzing PV project documents that are required in the credit evaluation process.



Photo courtesy of: ICED II

USAID through Indonesia Clean Energy Development II (ICED II) facilitated a training for BCA, an Indonesian commercial bank, on rooftop solar PV. The training took place on December 10-11, 2019. A total of 20 participants from corporate commercial and training center divisions of BCA attended the training.

WS 2.1.3: Provide technical assistance to PLN in establishing improved and standardized business practices for engagement with renewable IPPs

ICED II provides technical support to PLN in implementing programs for renewable energy IPPs. ICED II works with PLN's Renewable Energy, Planning and IPP Divisions as well as other units at the national and regional level to identify specific areas where ICED II can provide support in improving and standardizing practices for both small/medium and larger projects. Our assistance includes developing tools for evaluating project feasibility, preparing solicitation/procurement documents, supporting PPA negotiations, and reviewing interconnection studies. ICED II also supports PLN to increase penetration of variable renewable energy (solar PV and wind) into the PLN transmission and distribution grid system by revising PLN's grid code, conducting trainings on interconnection guidelines, and developing a distribution grid control pilot project and guidelines for replication in other locations. Other technical assistance to PLN and MEMR includes assessing the economic and technical impact of rooftop solar PV on residential, commercial and industrial buildings from both the PLN and customer perspectives.

REGP Interconnection Guidelines and Review Guidelines for REGP's Interconnection Study. In this quarter, ICED II in collaboration with PLN and MEMR DG EBTKE introduced the new guidelines for interconnection of renewable energy generation plant to PLN's distribution network on November 8, 2019 in Jakarta. The workshop was part of the annual conference and exhibition on new, renewable energy, and energy conservation, EBTKE ConEx 2019. Co-sponsored by the MEMR and the Indonesia Renewable Energy Society (METI), the workshop provided information on PLN's updated directive on connecting renewable energy generating plants to the electricity distribution system (Board of Directors Decree No. 64.P/DIR/2019) and overview of interconnection study process and procedures. A total of 153 participants from project developers, financial institution, energy associations, MEMR, PLN, universities, and consultants participated in the full-day workshop.

The forum discussed challenges in interconnection for renewable energy generation plants, procedures for project developers applying for renewable energy interconnection to PLN distribution network. It covered technical, non-technical and financial requirements for renewable energy projects. Through the workshop, the participants gained a better understanding of interconnection-related issues and requirements of small scale (less than 10 megawatts or MW) seeking to connect to PLN's 20 kV network.



Photo courtesy of: ICED II

Automatic Dispatch System (ADS) and Grid Monitoring System for PLN's Small / Isolated Power Grid.

As part of the handover certificate process, ICED II shared the scope and results of the pilot demonstration ADS and grid monitoring system installed on PLN's grid in East Sumba, NTT. ICED II conducted discussions with MEMR DJK, Ministry of Finance, as well as PLN to participate in an inspection visit to East Sumba. The visit, planned for January 2020, will enable Government of Indonesia staff to see firsthand how the ADS helps PLN Sumba Timur to monitor and stabilize its power grid and improve power quality while facilitating maximum solar PV generation on the grid.

Shalauddin Hasan of PT Galenium Aksata Energi (standing) asked about grid study as a requirement for project developers taking part in PLN's procurement process for renewable energy generation plants. A total of 153 participants from various institutions working on renewable energy participated in a workshop on PLN's new guidelines for interconnection of renewable energy generation plants to the distribution network. The event took place on November 8, 2019 in Jakarta.

Key Template Documents for PLN's Renewable Energy Procurement Process. As follow-up to advisory services and technical assistance on renewable energy projects for PLN, ICED II developed templates for renewable energy project bidding and procurement documents. These documents cover solar PV project procurements, wind project procurements, and bioenergy project procurements (biomass, biogas and municipal solid waste).

This quarter, ICED II has submitted deliverables to PLN Renewable Energy Division (PLN EBT) related to (i) detailed breakdown of capital expenditure/cost (CAPEX) estimates and operating expenditure/cost (OPEX) estimates for the development of new Bioenergy and Wind Power Plant projects in Indonesia. These estimates will be used by PLN EBT as a reference for evaluation and negotiation in the PLN's procurement of electricity from Bioenergy and Wind Power Plant projects. The CAPEX and OPEX estimation were prepared for different installed capacity range from the smallest capacity 1.5 MW up to 200 MW of wind power plant. The estimation is based on the latest/best available technology worldwide. The information of additional cost on offshore wind power development was also included.

ICED II prepared a project memorandum based on the review the existing PLN draft (Request for Proposal (RFP) and standard RFP Bidding Documents for Wind Power Plants. The RFP includes the technical requirements for the power plants, international best practice model of procurement and mechanism, including the requirements of wind data measurement and specified period of time. The RFP also includes the standard template of feasibility study document for Bidders. This task refers to the material 01 (Draft RFP Wind South Kalimantan 70 MW).

ICED II prepared a project memorandum based on review of the draft PLN standard PPA and existing PLN PPA for Wind Power Plants. The new PLN standard PPA reflects international best practice requirements of applicable PPA for Wind Power Plant IPPs. Finally, ICED II delivered draft guidelines and tools package for PLN to use when reviewing and evaluating Wind Power Plant feasibility studies proposed to PLN.

Wind Power Project Feasibility Study Review Guideline Training

In this quarter, ICED II in collaboration with PLN held a Workshop on Wind Power Project Feasibility Study Review on November 20-21, 2019 in Jakarta. The workshop was attended by 34 participants from PLN Wilayah all over Indonesia and representative from MEMR DJK.

On the first day of training, the resource persons presented the process of feasibility study review process based on the guideline. Review criteria was divided into land and interconnection, wind resource measurement, energy assessment and sizing of PLTB, technical design of PLTB, financial analysis of PLTB, construction and operation plan and legal, licensing, permitting and environmental impact. On the second day of the training, the participants were asked to do a review simulation on an actual PLTB Project using the guideline and tools provided for review.

Solar PV Power Project Feasibility Study Review Guideline and Financial Model Training. ICED II, in collaboration with PLN, held a Workshop on Solar PV Power Project Feasibility Study Review and Financial Model on December 2-4, 2019 in Jakarta. The workshop was attended by 91 participants from PLN Wilayah all over Indonesia and representative from MEMR DJK. The resource person for Solar PV project review is Markus Straslicka, ICED II solar PV expert and Dhiah Karsiwulan, ICED II Sustainable Finance Program Manager for financial modelling.

On the first day of training, ICED II presented the process of feasibility study review process based on the guideline. Review criteria was divided into evaluation of location and interconnection, solar resource measurement, sizing of solar PV power plant (PLTS) and energy production assessment, technical design, financial analysis, construction and operation plan and legal, licensing, permitting and environmental impact. On the second day of the training, the participants were asked to do a review simulation on an actual PLTS Project using the guideline and tools provided for review.

The third day of the training focus on financial analysis of solar PV power. The first half day was spent on discussing about financial analysis methods on solar PV or other intermittent energy power projects. The second half of the day was spent with case studies. Participants were asked to perform a case study of financial analysis modeling with tools provided.

Distribution System Planning Guidelines. In the previous quarter, ICED II developed the first draft of Distribution System Planning based on best practices in other utilities. PLN's working group on distribution planning guideline and ICED II conducted an FGD on October 9, 2019 in PLN Dispatch Center in Gandul. to gather input for the draft in order for the guideline to be applicable for Indonesia condition. These input are incorporated in the final draft of the distribution planning guideline that was presented to PLN Corporate Planning Director on October 18, 2019 in PLN headquarter, Jakarta. The Director gave positive feedback on the guideline. The guidelines are now with PLN's Legal Division for finalization as a Director's decree.

PLN is currently planning on the pilot project for distribution planning guideline implementation in one of the Wilayah. PLN also in process of guideline socialization in order to legalize it as PLN Board of Director's Regulation on Distribution System Planning.

2019 Java Blackout Review

On September 24, 2019, PLN requested assistance from USAID in reviewing the August 4, 2019 blackout event in Western and Central Java. ICED II recruited a team of senior U.S. utility experts with direct experience in investigating major blackout events, restoring the utility power system after a black out, and establishing standards and protocols for mitigating future blackout events. Members of the review team were Francis Esselman - Vice President and Managing Partner, Proven Compliance Solutions Inc.; David Hilt – President, Grid Reliability Consulting, LLC and Dede Subakti - Director of Operations Engineering Services, California Independent System Operator (CAISO).

The review team prepared a report that provided a summary, findings and preliminary recommendations following a review of documents provided by PLN and on-site visit to in Jakarta, Indonesia October 7-11, 2019. The report and presentation of major findings were designed to better understand the system event that occurred on August 4, 2019, and to share lessons learned from the August 10, 2003 Northeast Blackout that took place in the United States and Eastern Canada. Dede Subakti returned to Indonesia in December 2019 to discuss, in more detail, the findings with PLN.

Task 2.2. Increased Local Capacity in Science, Technology, Innovation and Human Resources for Clean Energy Growth

WS 2.2.1: Capacity building needs to promote science and technology advancements in energy planning, modeling, integration, etc.

ICED II collaborates with PLN to identify the needs for technical assistance as well as capacity-building for PLN staff. This fiscal year, ICED II adopts the approach, methodology and tools to develop a Renewable Energy Portfolio Standard (RPS) and an Integrated Resource Plan (IRP) to improve the renewable energy planning of MEMR and PLN as well as the transmission planning of PLN. ICED II will also contribute to energy conservation through the revision of Minimum Energy Performance Standards (MEPS) for residential split air conditioners, and development of measurement and verification (M&V) for energy efficiency projects.

Capacity Building on Minimum Energy Performance Standards, and Development of Measurement and Verification (M&V) for Energy Efficiency Projects.

Measurement and Verification (M&V) for Energy Efficiency. Indonesia has formally adopted the ISO 50015: 2014 on Measurement and Verification (M&V) of Energy Performance into Indonesian National Standards (SNI) last year. Thus, developing a national competency standards (SKKNI) on the M&V of energy performance will reinforce better energy efficiency project implementation in Indonesia. ICED II has been working together with the Directorate of Energy Conservation of Indonesia's Ministry of Energy and Mineral Resources (MEMR DEK) to develop the national competency standards.

In the previous quarter, ICED II in collaboration with MEMR DEK conducted three FGDs on the M&V of the SKKNI. The dialogue resulted in key progress on the SKKNI draft, including its main objective, key and main functions, competency elements and performance assessments, and performance criteria for energy M&V work. The discussion also produced an agreed structure of competence units – comprised of skills, attitudes, and knowledge – that a professional must possess to be able to execute energy performance M&V.

After a series of focused group discussions, this quarter ICED II and MEMR DEK developed a final draft of national competency standards for energy efficiency M&V. On October 2-3, 2019, ICED II held a pre-convention workshop to validate the draft and engaged related stakeholders and captured inputs to improve the national competency standards.



Photo courtesy of ICED II

On October 2-3, 2019, ICED II held a pre-convention workshop to validate the draft and engaged related stakeholders and captured inputs to improve the national competency standards. A total of 45 participants from various government units, professional associations, and universities participated in the discussion.

Once the draft is validated and inputs are incorporated, MEMR will propose the final draft of the national competency standards of the M&V for Energy Efficiency of energy performance to Ministry of Manpower for verification process. A total of 50 participants from various government units, professional associations, and universities participated in the discussion.

As a consequence of the pre-convention workshop then on November 14, 2019, ICED II held SKKNI M&V for Energy Efficiency convention workshop in Bogor. The convention was attended by 78 participants from various stakeholders from government officials, industry associations, professional certification body, labor users, training centers and energy efficiency experts. The convention discussed the SKKNI final draft. The final draft arranged eight competence units as requirements for M&V certification and all were fundamentally understood by the stakeholders, in terms of both its urgency and significance for better Energy Efficiency implementation in Indonesia. The majority all the participants agree with all the proposed competency units within the final draft of SKKNI. As a result of the convention, MEMR DG EBTKE submitted the SKKNI final draft with its submission cover letter for issuance of Work Force Minister Regulation.

Minimum Energy Performance Standards (MEPS) for AC Splits. In this quarter ICED II together with DKE EBTKE (Directorate of Energy Conservation) and ASHRAE Indonesia Chapter has conducted two Forum Group Discussions (FGDs) on MEPS of AC Splits. The 1st and the 2nd FGD were conducted at DKE EBTKE Office on December 5 and December 19, 2020 and resulted on some key decisions which included adoption of new labelling for the performance of the AC Splits in the Indonesia market. The new labelling will use two (2) to five (5) stars labelling instead of only two (2) to four (4) stars for the current performance labelling.

Benchmarking Performance and GHG for Thermal Power Generation. In the previous quarter, ICED II and Global Green Growth Institute (GGGI) conducted site level assessment to PLTU Paiton. As a result of this meeting, some coal power plants in Paiton have obtained certification of ISO 9001, ISO 50001, ISO 14001, and ISO 45001 and some others have adopted only the framework.

On October 15, 2019, ICED II in collaboration with MEMR DJK and GGGI conducted a stakeholder consultation meeting on benchmarking performance and GHG emission in Bogor. The meeting was attended by 80 participants including representatives of ministries, PLN and Independent Power Producers (IPPs). The meeting aimed to present preliminary analysis and gather feedback from related stakeholders. Based on the result analysis, there are only 74 coal-fired power plant data that are available for benchmarking analysis. The meeting also aimed to increase capacity of Gol in developing a common understanding of benchmarking performance and GHG emission tools. The representatives from PLN and IPPs submitted their performance data, such as installed capacity, thermal efficiency, capacity factor, load factor, electricity production, and calorific value through benchmarking tools that has been developed.

In the next quarter, ICED II planned to conduct the second stakeholder consultation meeting on benchmarking performance and GHG emission in Jakarta. The meeting aims to present a draft final report of benchmarking performance and GHG emission to the related stakeholder.

WS 2.2.2: Identify renewable energy technology innovations and promote widespread utilization.

ICED II introduces and/or advances the use of innovative tools and technologies that have the potential for greatly increasing the adoption of renewable energy in Indonesia. Over the course of the project, ICED II has identified various innovations that have become part of the ICED II work program.

No activity this quarter.

WS 2.2.3: Conduct an inventory of educational/training programs in specific clean energy technology production and maintenance.

ICED II compiles information about relevant educational and training programs, and institutional capacity-building programs that offer applied learning related to renewable energy and/or energy efficiency. The targeted institutions include government bodies, university/research centers, industry associations, and the private sector. ICED II uses this information to develop training modules, determine partners that need trainings, and identify potential partners to institutionalize the trainings that ICED II develops.

ICED II continued its work with PLN Corporate University in terms of planning for the transfer of ICED II guidelines, tools and training courses. Both parties agreed that training during 2020 should include “training-of-trainers” (TOT) from PLN.

WS 2.2.4: Provide technical assistance to stakeholders in data verification/analysis by developing their capabilities in GHG mitigation/clean energy data collection and modeling tools in order to increase their capacity for evidence-based decision-making.

ICED II supports improvements in science, technology and innovation in clean energy project (and program) surveying, planning, design, feasibility assessment, integration, communications, operations and dispatch, and monitoring and verification. This activity focuses more on data collection and tools for evidence-based decision making.

Guidelines on Calculation & Reporting of GHG Emissions for the Power Sector. This is a crosscutting initiative between ICED II's Component 1 and Component 2 and is also reported in Work Streams 1.1.1. In the previous quarter, ICED II and UNDP MTRE3 proposed four additional methodologies and discussed them with the task force from the two Directorates within MEMR. The task force identified a total of 12 methodologies to be included in the Guidelines on GHG Mitigation MER in the Power Sector. MEMR DJK stated that they are working on 12 GHG mitigation methodologies in the power sector with technical assistance from ICED II and UNDP MTRE3. Bappenas expects MEMR DJK to finalize and submit the GHG mitigation methodologies to MoEF and Bappenas by the end of December 2019. However, MEMR DJK could not promise, at that time, that all methodologies would be final and approved internally by December 2019. MEMR will only submit final and approved methodologies by December 2019.

On November 19, 2019, ICED II with MEMR DJK and UNDP MTRE3 visited Hydro Power Plant Koto Panjang 3 x 38 MW in Riau Province, as a part of data collection for one of the methodologies, namely GHG Emission Reduction from On-Grid Hydro Power Plant with Reservoir. The team found out that there is a gap between the international references for measuring GHG emission reduction in hydro power plant with reservoir, with the actual condition in Indonesia. The international reference requires a power density above 4 Watt/m², to be eligible for emission reduction calculation, meanwhile most hydro power in Indonesia has power density below that. Thereby, ICED II suggests referring to the International Hydropower Association's publication to obtain the figures related to GHG emissions generated from power density factor.

ICED II, MEMR DJK and UNDP MTRE3 also had a meeting with PLN Load and Distribution Center of Sumatera (P3BS) to consult on data requirement to calculate GHG emissions reduction from the efficiency improvement program in transmission and distribution system. The meeting revealed that the data required to measure GHG from this program has discrepancies with the available data owned by PLN P3BS. PLN P3BS does not have data at that level of detail. Based on data availability, ICED II adjusted the methodology and the worksheet.

ICED II engaged in a series of internal consolidation meetings with MEMR DJK and UNDP MTRE3 to discuss and review the proposed methodologies and guidelines. ICED II presented the revised methodologies in three consecutive meetings, which took place in MEMR DJK office on December 2, December 9, and December 16 consecutively. The meetings were held based on the request from MEMR DJK to discuss the methodologies as well as internal capacity building for DGE staff.

ICED II supported an FGD on December 18-19, 2019 to finalize the guidelines and methodologies, engaging MEMR DGE and MEMR DG EBTKE, as well as UNDP MTRE3. The FGD covered the GHG methodologies in the power sector and defined mitigation actions that both MEMR DGE and MEMR DG EBTKE will develop. Based on the discussion, there is a total of 17 methodologies that are

developed by MEMR DGE. Some inputs regarding the structure of guidelines and methodologies were received during the FGD and are currently being revised.

In the next quarter, an FGD is planned to present the latest draft of MER GHG mitigation in the Power Sector to MEMR DGE and MEMR DG EBTKE. Once adopted, the guidelines and methodologies will be stipulated under MEMR DGE Regulation. ICED II also plans to support the launching as well as dissemination of the guidelines and methodologies in early February 2020. The launching event will invite representatives from ministries, PT PLN, Independent Power Producers (IPPs).

Component 3: Outreach on USAID and USG Interagency Activities in Indonesia's Energy Sector

Main Accomplishments

Support USAID and GoI Clean Energy Working Group

- To ensure that the ICED II work plan is aligned with the GoI's activities, ICED II held a two-day meeting with members of USAID-GOI Clean Energy Technical Team. A total of 45 representatives from various units within MEMR, PLN, OJK, Bappenas and Ministry of Finance participated in the meeting from November 28-29, 2019 in Bandung. The meeting announced the amended Technical Arrangement, presented the mechanism of hand over certificate (BAST) and presented activities progress of ICED II. During the meeting, ICED II also updated the technical team members on progress of BAST completion that ICED II has been working on.

Outreach activities

- ICED II hosted the visit of Jayne Somers, Senior Energy Advisor from Asia Bureau, USAID Washington to Indonesia from October 28-November 1, 2019. During her visit, Jayne Somers traveled to South Sulawesi and learned about USAID support to strengthen the foundations for a low-carbon energy system and in contributing to Indonesia's targets for increasing access to clean energy.
- ICED II Chief of Party served as a panelist at the Indonesian Electricity Society (MKI) Indonesia Power Sector Business Transformation in Industry 4.0 Era event held at PLN headquarters. Other panelists included senior representatives of MEMR DJK and PLN, as well as MKI.

Task 3.1: Assist an Annual Coordination Forum of USG Agencies Engaged in Indonesia's Climate Change Mitigation and Clean Energy Activities

No activity during this quarter. Next quarter, ICED II expects to support USAID in its participation in the U.S. – Indonesia Energy Policy Dialogue scheduled for March 2020.

Task 3.2: Develop a System to Document, Track and Monitor the Progress of Projects Assisted Under Previous USAID Clean Energy Programs and the ICED II Pipeline

Please see WS 2.1.1: Improve and maintain a database of viable clean energy projects (pipeline) with geographic information system tools, and WS 2.2.4: Provide technical assistance to stakeholders in data verification/analysis by developing their capabilities in GHG mitigation/clean energy data collection and modelling tools in order to increase their capacity for evidence-based decision-making.

Task 3.3: Manage, Improve and Expand the Clean Energy Website Developed by the ICED II Project

During this quarter, ICED II's website received 6,824 page views from 2,735 unique users. The most accessed web pages were "Resources" and two posts in "ICED II Updates" page. The "ICED II Updates" page covers the project's activity updates, while the "Resources" page provides helpful links and resources related with renewable energy.

On the "ICED II Updates" page, the most-viewed posts reported on a training on interconnection guidelines for project developers to understand the importance of distribution grid studies <<http://www.iced.or.id/indonesia-peraturan-baru-penyambungan-pembangkit-listrik-energi-terbarukan/>> and another post reported on ICED II technical assistance to Bali government in synchronizing their local energy planning documents with national policies <<http://www.iced.or.id/indonesia-diskusi-rukd-untuk-mewujudkan-bali-energi-bersih-dan-hijau>>. In the "Resources" page, the most downloaded file was <<http://www.iced.or.id/en/resource/panduan-studi-kelayakan-pembangkit-listrik-tenaga-surya-plts-terpusat/>>

Facebook. This quarter ICED II's Facebook page had 932 followers. The most-viewed post was a photo album about a training and workshop for Aceh Province on rooftop solar photovoltaic (PV) systems installation in Aceh. It generated 125 views, 20 engagements, 15 post clicks, and 5 likes/comments/shares. The link to the post: https://www.facebook.com/USAIDICED/photos/?tab=album&album_id=2670870616267361

In addition, the most-viewed post was a workshop on national competency standard that took place on October 2-3, 2019. It generated 108 views, 6 engagements, 4 post clicks and 2 likes/comments/shares. The link to the post: https://www.facebook.com/USAIDICED/photos/?tab=album&album_id=2593822833972140

Instagram. The Instagram account gained 13 new followers since the last quarter, totaling to 221 followers as of December 2019. A post on "Focus Group Discussion (FGD) on Guidelines Measurement and Reporting on GHG Reduction Emission from Power Generation Sector." on November 18, 2019 received 19 likes. https://www.instagram.com/p/B4_4ybth5jY/

Twitter. During this quarter, ICED II Twitter has two new followers and the account earned 9,400 impressions over a period of 87 days. The top tweet was on November 18, 2019 about ICED's event for ESDM "Workshop on New Guidelines for Interconnection of Renewable Energy Generation Plant to PLN Distribution Network". The impressions for this tweet are 703 with total engagement is 18. The link to the tweet: <https://twitter.com/USAIDICED/status/1196346997990555648>

Task 3.4: Identify Areas of Collaboration with Other USAID and USG Programs and Develop Joint Initiatives

During this quarter, ICED II supported the USAID Scaling Up Renewable Energy (SURE) project in launching its Variable Renewable Energy (VRE) Forecasting (Fx) Pilot Activity in Indonesia. ICED II consulted with PLN and secured its interest and willingness to host the pilot program. ICED II had recommended Sulawesi as the location for the forecasting as it has the only two operating wind power plants, as well as multiple solar PV projects connected to PLN's grid. PLN sees the value of

improving the forecasted electricity production from VRE power plants in managing the dispatch operations of other power plants in its generation mix. ICED II attended several meetings with SURE representatives and PLN, and helped to recruit a part time consultant to support the pilot program. ICED II and SURE drafted a joint Terms of Reference (TOR) outlining the respective roles and responsibilities of each USAID project.

Task 3.5: Identify Areas of Collaboration with Other Donors/International Finance Institutions and Develop Joint Activities

Two activities reported in Components 1 and 2 above describe ICED II collaboration with UNDP, GGGI and The World Bank. ICED II is collaborating with GGGI on assessing the GHG emissions from existing power plants and UNDEP MTRE3 on developing methodologies for calculating GHG emissions in power plants (see Work Streams 1.1.1, 2.2.1 and 2.2.4). ICED II is collaborating with The World Bank in developing Distribution System Planning Guidelines for PLN (see Work Streams 1.1.3 and 2.1.3). PLN issuance of new Distribution System Planning Guidelines are a milestone in The World Bank Program for Results based loan to PLN.

Task 3.6: Support the USAID and GOI Clean Energy Working Group Established under the CDCS

Clean energy technical team meeting. To ensure that the ICED II work plan is aligned with the GoI's activities, ICED II held a two-day meeting with members of USAID Clean Energy Technical Team. A total of 45 staff of various units within MEMR, PLN, OJK, Bappenas and MOF participated in the meeting from November 28-29, 2019 in Bandung. The meeting announced the amended Technical Arrangement, presented the mechanism of hand over certificate (BAST) and presented activities progress of ICED II.

During the meeting, ICED II also updated the technical team members on progress of BAST completion that ICED II has been working on. The meeting was chaired by USAID Environment Director and MEMR Bureau of Communication, Public Information Services and Cooperation (KLIK).

With regards to BAST progress, the meeting participants agreed on several points, such as a schedule for follow-up meetings in March and May/June 2020, submission letter of acknowledgement for technical assistance received from 2015-2018 from grant beneficiaries (the government units that received ICED II's technical assistance) to appointed/delegated person in charge as the authorized signee(s) within the Technical Team Chair of Technical Team member institutions, and acknowledgement of a disclaimer that will protect BAST signatories from risks of procurement of goods and services that the donor has carried out.



Photo courtesy of: ICED II

Matthew Burton, Director of Environment Office – USAID Indonesia gave the opening remarks at the Clean Energy Technical Meeting with Staff of The Ministry of Energy and Mineral Resources (MEMR), State Electricity Company (PLN), The Financial Services Authority (OJK) and Bappenas November 28, 2019 in Bandung.

Hand over certificate (BAST). In support to the MEMR as the Technical Counterpart Agency (TCA) for the USAID Clean Energy Program (the program is part of USAID Assistance Agreement No. 497-AA-030), ICED II continued gathering supporting documents to complete the BAST reporting requirement. ICED II has gathered necessary documents for activities with the counterparts below that took place in 2015-2018:

- MEMR Planning Bureau
- Bappenas Directorate for Energy, Mineral, and Mining Resources
- Bappenas Directorate for Environment
- National Energy Council (DEN)
- Financial Services Authority (OJK)
- Local governments in ICED II focus provinces i.e. North Sumatra, Aceh, East Java, West Nusa Tenggara

ICED II continued gathering data and supporting documents for activities with various directorates in MEMR DJK, MEMR DG EBTKE and PLN for 2015-2018.

ICED II also looks forward to finalization of the amendment to the Technical Arrangement (TA) that contains detailed activities of ICED II with MEMR and other technical agencies. Once the TA is amended, ICED II could begin the process of development hand over documents of activities and results.



Photo courtesy of: ICED II

Jayne Somers, Senior Energy Advisor from Asia Bureau, USAID Washington spent a week in Indonesia to learn more about renewable energy development. From October 28-November 1, 2019, Somers met with energy regulator, PLN and Makassar municipal government staff.

Task 3.7: Annual Renewable Energy Power Update (additional activity)

No activity during this quarter.

Task 3.8: Other ICED II Outreach Activities

USAID Senior Energy Advisor visits energy project in Indonesia. ICED II hosted the visit of Jayne Somers, Senior Energy Advisor from Asia Bureau, USAID Washington to Indonesia from October 28-November 1, 2019. During her visit, Jayne Somers learned about USAID support to strengthen the foundation for a low-carbon energy system and in contributing to Indonesia's targets for increasing access to clean energy. Ms.

Somers met with the Ministry of Energy and Mineral Resources, Directorate General of Electricity, State Electricity Company (PLN) Regional Office and transmission operator for Sulawesi and provincial and municipal government officials.

Spending a couple of days in Makassar, South Sulawesi, Ms. Somers visited the 72 Megawatt (MW) Tolo Wind Power Plant in Jeneponto, South Sulawesi. USAID ICED II assisted the impact study of the 72 MW Tolo Wind Power Plant prior to signing the power purchase agreement. She also met with officials from Makassar municipality streetlight department to learn how they have capitalized on the USAID ICED I energy-efficient streetlight demonstration project and how have replaced the lamps in over 75% of the city's total streetlights. Finally, she attended the Sulawesi Province's workshop that presented the USAID ICED II-assisted regional energy plan, including electricity access.

Support for EBTKE Conference and Exhibition 2019. ICED II provided communications support to a workshop on new guidelines for interconnection of renewable energy generation plant to distribution network of State Electricity Company (PLN) on November 8, 2019 in Jakarta. The workshop was part of an annual conference and exhibition on new, renewable energy, and energy conservation, EBTKE ConEx 2019. Cosponsored by the Ministry of Energy and Mineral Resources (MEMR) and the Indonesia Renewable Energy Society (METI), the workshop provided information on PLN's updated directive on connecting renewable energy generating plants to the electricity distribution system (Decision of the Board of Directors No. 64.P/DIR/2019). A total of 153 participants from project developers, financial institution, energy associations, MEMR, PLN, universities, and consultants participated in the full-day workshop.

Promotion of ICED II activities under Asia EDGE. ICED II continued facilitating the story development for USAID Indonesia Development, Outreach and Communication (DOC). A contractor to the USAID Regional Development Mission for Asia (RDMA) finalized feature stories on an internship of PLN staff with California Independent System Operator (CAISO) and a solar PV power plant in Sumba Timur,

NTT. This quarter, ICED II also facilitated the development of a video on journey to self-reliance for USAID DOC, with a focus on training and renewable energy development in Indonesia.

Indonesia Power Sector Business Transformation in Industry 4.0 Era. At the invitation of MKI, ICED II became a panelist at its meeting to explore the future of Indonesia’s power sector in responding to challenges and opportunities of modernization and expanded services to customers. ICED II presented “Overview of Recent Electric Utility Business Structure”. PLN presented its “Strategy Anticipating the Electricity Business Model going forward”, MEMR DJK presented “Government Policy Anticipating Electricity Business Transition”, and MKI presented “Industry: Lesson Learned on Recent Electricity Business in The Region - Private Electric Developers”.

Table 3. ICED II Participation in Local and International Events
Quarter 1, October-December 2019

No.	Event	Date	Location	ICED II Participation	Organizer
1	FGD TKDN Electricity Infrastructure: Strategy to Increase Bioenergy Power Plants	October 1	Jakarta	Attendee	
2	Pre-Convention SKKNI on M&V Energy Efficiency	October 2	Bogor	Organizer	PLN, MEMR
3	Environmental and Social Risk Assessment (ESRA) Training/ Training Analisis Lingkungan (TAL) Solar PV Technology	October 7-10	Bali	Organizer	OJK
4	Blackout remedial Action - USAID support to PLN	October 7	Jakarta	Facilitator	PLN
5	Internal Capacity Building PPRKD	October 7	Jakarta	Attendee	SekRan GRK
6	Workshop PPRK with Ministries Agencies	October 8	Jakarta	Attendee	SekRan GRK
7	PLN workshop: Lessons learn from US-Canada 2003 blackout by David Hilt, Dede Subakti, Francis Esselman	October 8	Jakarta	Facilitator	PLN
8	USAID and Blackout experts meeting with DJK	October 8	Jakarta	Facilitator	PLN
9	Launching of Badan Pengelola Dana Ketahanan Lingkungan Hidup at the Ministry of Finance	October 9	Jakarta	Attendee	Ministry of Finance
10	Eastern Regional Workshop of PPRKD	October 14-17	Makassar	Attendee	Bappenas
11	BCSF Discussion Series - Ranpergub & RUKD Bali	October 14-15	Bali	Organizer	OJK, Udayana University

Table 3. ICED II Participation in Local and International Events
 Quarter 1, October-December 2019

No.	Event	Date	Location	ICED II Participation	Organizer
12	PLN meeting for SURE pilot project of USAID Washington and TetraTech	October 14	Jakarta	Facilitator	PLN
13	Focus Group Discussion (FGD) on Benchmarking Performance and Greenhouse Gas Emission	October 15-16	Bogor	Organizer	MEMR
14	Seminar Workshop on Solar PV Rooftop	October 22-23	Medan	Organizer	EMR Medan
15	FGD on PLTS Utilization to Supports Agricultural Activities in Samosir Regency and North Sumatera	October 24	Medan	Attendee	EMR North Sumatera
16	Central Regional Workshop of PPRKD	October 28-31	Surabaya	Attendee	Bappenas
17	USAID Team Visit to Makassar with Jayne Somers USAID	October 28-31	Makassar	Organizer	USAID
18	Seminar Workshop on Solar PV Rooftop	October 29-30	Aceh	Organizer	EMR Aceh
19	FGD on RUED South Sulawesi	October 29	Makassar	Attendee	EMR South Sulawesi
20	Workshop Sustainable Finance	October 29	Jakarta	Attendee	ICC KLHK
21	Environment Training for BCA	November 4-7	Sentul	Facilitator	BCA
22	EBTKE Conex and USAID ICED II workshop at EBTKE Conex	November 8	Jakarta	Organizer	MEMR
23	Monitoring the implementation of RAN GRK in energy sector 2018 and 2019	November 7-8	Jogjakarta	Attendee	MEMR-DEK EBTKE
24	Training to ITH-Indonesia Power on Bioenergy Project Development	November 12-13	Jakarta	Facilitator	Indonesia Power
25	FGD Publicly available environment data (PAED) for Lembaga Jasa Keuangan	November 13	Jakarta	Attendee	OJK
26	Convention SKKNI for M&V Energy Efficiency	November 14-15	Bogor	Organizer	MEMR, PLN
27	Training to ITH-Indonesia Power on Wind Project Development	November 14-15	Jakarta	Facilitator	Indonesia Power

Table 3. ICED II Participation in Local and International Events
Quarter 1, October-December 2019

No.	Event	Date	Location	ICED II Participation	Organizer
28	USAID ASIA EDGE - VRE Auction Dialogue workshop	November 18-20	Bangkok	Attendee	USAID ASIA EDGE
29	PLN EBT Training on Evaluation Guideline of Wind Power Projects	November 20-21	Jakarta	Facilitator	PLN Corporate University
30	Electric Vehicles Indonesia Forum & Conference	November 26-27	Jakarta	Attendee	ANGVA 2019 and Biogas Asia Pacific Forum 2019
31	Electrification Training with South Sulawesi	November 26-27	Makassar	Organizer	PLN, EMR South Sulawesi
32	Launching and Introduction of AKSARA (Indonesian Low Carbon Development Action Planning and Monitoring Application) as a new transformation from MER Online	November 28-29	Jakarta	Attendee	Bappenas
33	Clean Energy Technical Team Meeting	November 28-29	Bandung	Organizer	GOI
34	RUED South Sulawesi Review	November 28	Makassar	Organizer	EMR South Sulawesi
35	PLN EBT Training on Evaluation Guideline of Solar PV Project & Financial Analysis	December 2-4	Jakarta	Facilitator	PLN Corporate University
36	Workshop Study of Forest Energy	December 9	Bogor	Attendee	ICCTF
37	Solar PV Rooftop Power Plant Training for BCA	December 10-11	Jakarta & Cirata	Facilitator	BCA
38	BCSF Discussion Series – RUED Bali Province	December 10-11	Bali	Organizer	OJK, Udayana University
39	FGD on Finalization Mitigation Action Guideline	December 18-19	Bogor	Organizer	MEMR

Clean Energy Technology and Innovation Fund

Activities initiated during the quarter are shown below.

[REDACTED]

Gender Action Program

Gender Self Efficacy Survey.

ICED II conducted 25 trainings and workshops this quarter and distributed the Gender Self-Efficacy Survey in 17 of the events. ICED II did not distribute the survey to the 8 other training events because they were only half-day meetings. The 17 trainings were as follows:

1. Training for Pre-Convention SKKNI Development of National Competence Standard (SKKNI) for Measurement and Verification (M&V) of Energy Performance in Bogor: 33.33% of the female participants responded “very agree”, while 66.67% of the female participants responded “agree” to the question on whether after completing the event, they felt more prepared and expect to be more effective in their position.
2. Environment and Social Risks Aspects (ESRA) training batch 21 with OJK: Case Studies on Mini Hydro and Solar PV Project (in collaboration with OJK Institute) in Bali: 62.50% of the female participants responded “very agree”, while 37.50% female participants responded “agree” to the question of feeling more prepared and expect to be more effective in their position after completing the training.
3. Discussion Workshop on Synchronization of Draft Governor Regulation on Clean Energy (Ranpergub Energi Bersih), Regional Energy Plan (RUED), and Regional Electricity Plan (RUKD) to establish Bali Province as a Clean and Green Province - Batch 1 in Bali: 16.67% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 83.33% of the female participants responded “agree”.
4. Focus Group Discussion (FGD) batch 1 on Benchmarking Performance and Greenhouse Gas Emission - Stakeholders consultation Meeting in Bogor: 28.57% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 71.43% of the female participants responded “agree”.
5. Workshop on North Sumatra Solar PV Rooftop Installation at Public Buildings and Facilities in Medan: 66.67% of the female participants responded “very agree” and 33.33% responded “agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position.
6. Workshop on Aceh Solar PV Rooftop Installation at Public Buildings and Facilities in Aceh: 12.50% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position while 87.50% responded “agree”.
7. Environment and Social Risks Aspects (ESRA) training batch 1 for BCA in Sentul: 57.14% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 42.86% of them responded “agree”.
8. Environment and Social Risks Aspects (ESRA) training batch 2 for BCA in Sentul: 40% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 60% of them responded “agree”.

9. EBTKE ConEx: Workshop on New Guidelines for Interconnection of Renewable Energy Generation Plant to PLN Distribution Network in Jakarta: 30% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 70% of them responded “agree”.
10. Convention SKKNI Development of National Competence Standard (SKKNI) for Measurement and Verification (M&V) of Energy Performance in Bogor: 55.56% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 44.44% of them responded “agree”.
11. Training for Perusahaan Listrik Negara (PLN) on Guideline to Review Wind Power Project Feasibility Study and Financial Model of Renewable Energy Power Plant Project Investment in Jakarta: the female participants are evenly divided with their responses. Half or 50% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 50% of them responded “agree”.
12. Basic Electrification Planning Training and Workshop for South Sulawesi in Makassar: female participants are evenly divided with their responses. Half or 50% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 50% of them responded “agree”.
13. Clean Energy Technical Team Meeting in Bandung: 33.33% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 66.67% of them responded “agree”.
14. Training for Perusahaan Listrik Negara (PLN) on Guideline to Review Solar Photovoltaic (PV) Power Project Feasibility Study and Financial Model of Renewable Energy Power Plant Project Investment in Jakarta: the female participants are evenly divided with their responses. Half or 50% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 50% of them responded “agree”.
15. Individual bank Training for BCA in Jakarta with site visit to Cirata solar PV: 62.50% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 37.50% of them responded “agree”.
16. Discussion Workshop on Synchronization of Draft Governor Regulation on Clean Energy (Ranpergub Energi Bersih), Regional Energy Plan (RUED), and Regional Electricity Plan (RUKD) to establish Bali Province as a Clean and Green Province - Batch 2 in Bali: 14,29% of the female participants responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position, while 85.71% of them responded “agree”.
17. Focus Group Discussion (FGD) batch 5 on Guideline Measurement and Reporting on GHG Reduction Emission from Power Generation Sector in Bogor: 100% of the female participants

responded “very agree” to the question on whether, after completing the event, they felt more prepared and expect to be more effective in their position.

3. PERFORMANCE INDICATOR RESULTS AGAINST TARGETS

ICED Indicator 1: (GCC Indicator EG. 12-6)										
Greenhouse gas (GHG) emissions, estimates in metric tons of CO2 equivalent, reduced, sequestered, or avoided through clean energy as supported by USG assistance.										
Units: Metric tons of CO2e reduced or avoided										
Performance Indicator Values										
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime	
						Q1	Total			
Target (Annual basis as of PMP)	40,000	250,000	264,000	630,000	610,000	-	726,000	2,520,000	4,500,000	
Actual										
Project related results										
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		
Subtotal	37,245.21	135,249.76	438,342.4	595,355.1	884,248.5	302,819.5	302,819.5	2,393,260		
Programmatic related results										
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		
Subtotal	-	3,416,510.4	-	-	-	-	-	3,416,510.40		
Total Actual	37,245.2	3,551,760.2	438,342.4	595,355.1	884,248.5	302,819.5	302,819.5	5,809,770.9		

ICED Indicator 2: (GCC Indicator EG. 12-4)									
Amount of investment mobilized (in USD) for clean energy as supported by USG assistance									
Unit: USD									
Performance Indicator Values									
Result Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Target	-	175,800,000	261,900,000	200,000,000	150,000,000	-	84,500,000	872,200,000	800,000,000
Actual									
Public domestic									
Subtotal	-	921,087	75,000,000	-	-	-	-	75,921,087	
Public International									
Subtotal	-	120,000,000	6,860,000	400,876,339	-	-	-	527,736,339	
Private domestic									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Subtotal	-	246,977,981	30,500,000	103,524,376	40,968,572	1,942,857	1,942,857	423,913,786	
Private international									
Subtotal	-	30,000,000	220,000,000	302,000,000	-	-	-	552,000,000	

ICED Indicator 2: (GCC Indicator EG. 12-4)									
Amount of investment mobilized (in USD) for clean energy as supported by USG assistance									
Unit: USD									
Performance Indicator Values									
Result Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Total Actual	-	397,899,068	332,360,000	806,400,715	40,968,572	1,942,857	1,942,857	1,579,571,212	

* Using USD to IDR currency 1 USD = 14.000

**Narrative report in QPR4 2017

ICED Indicator 3: (GCC Indicator EG. 7.1-1)									
Number of beneficiaries with improved energy services due to USG assistance									
Unit: Number of people									
Performance Indicator Values									
Result Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Target	100,000	300,000	710,000	1,500,000	2,930,000	-	804,630	6,344,630	
Actual									
Clean energy female									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total	9,548	102,739	249,262	332,736	236,349	648,144	648,144	1,578,778	
Clean energy male									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total	9,300	102,766	252,157	330,890	229,213	641,719	641,719	1,566,045	
Non-Clean energy female									
NA	-	-	-	-	-	-	-	-	
Non-Clean energy male									
									5,000,000

ICED Indicator 3: (GCC Indicator EG. 7.1-1)									
Number of beneficiaries with improved energy services due to USG assistance									
Unit: Number of people									
Performance Indicator Values									
Result Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
NA	-	-	-	-	-	-	-	-	
Total Actual	18,848	205,505	501,419	663,626	465,562	1,289,863	1,289,863	3,144,823	

ICED Indicator 4: (GCC Indicator EG. 12-2)										
Number of institutions with improved capacity to address clean energy issues as supported by USG assistance										
Unit: Number of Institution										
Performance Indicator Values										
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime	
						Q1	Total			
Target	-	5	5	5	5	-	5	25		
Actual										
National governmental										
Total	-	-	3	2	1	-	-	6		
Sub-national governmental										
Total	-	-	27	-	-	-	-	27		
Other										
Total	-	-	1	-	-	-	-	1		
Total Actual	-	-	31	2	1	-	-	34		20

ICED Indicator 5: (GCC Indicator EG. 12-3)									
Number of laws, policies, regulations, or standards addressing clean energy formally proposed, adopted, or implemented as supported by USG assistance									
Unit: Number of laws, policies, strategies, plan, or regulations									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Target	-	4	6	5	5	-	5	25	
Actual									
National proposed									
Subtotal	-	-	10	6	4	-	-	20	
National adopted									
Subtotal	-	-	7	-	4	-	-	11	
National implemented									
Subtotal	-	4	4	1	1	-	-	10	
Sub-National proposed									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Subtotal	-	-	-	-	3	2	2	5	
Sub-National adopted									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Subtotal	-	-	-	-	3	2	2	5	20

ICED Indicator 5: (GCC Indicator EG. 12-3)									
Number of laws, policies, regulations, or standards addressing clean energy formally proposed, adopted, or implemented as supported by USG assistance									
Unit: Number of laws, policies, strategies, plan, or regulations									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Sub-National implemented									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Subtotal	-	-	-	-	-	2	2	2	
Regional or international proposed									
Subtotal	-	-	-	-	-	-	-	-	
Regional or international adopted									
Subtotal	-	-	-	-	-	-	-	-	
Regional or international implemented									
Subtotal	-	-	-	-	-	-	-	-	
Total Actual	-	4	21	7	15	6	6	53	

ICED Indicator 6: Clean energy generation capacity installed or rehabilitated as a result of USG assistance Unit: Megawatt (MW)									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Target	3	98	206	133	173	-	65.00	678	400
Actual									
Project related result									
Solar									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total	-	-	1.0	4.5	15.0	30.0	30.0	50.5	
Wind									
Total	-	-	-	75.0	72.0	-	-	147.0	
Hydro									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total	-	20.40	60.49	8.80	20.00	12.90	12.90	122.6	
Geothermal									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total	-	-	-	-	-	85.0	85.0	85.0	
Biomass and Biofuels									

ICED Indicator 6: Clean energy generation capacity installed or rehabilitated as a result of USG assistance Unit: Megawatt (MW)									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Subtotal	2.05	-	4.80	15.00	-	-	-	21.9	
Others									
NA	-	-	-	-	-	-	-	0.0	
Subtotal	2.05	20.40	66.29	103.30	107.00	127.90	127.90	426.94	
Programmatic related result									
Solar									
NA	-	-	-	-	-	-	-	-	
Wind									
NA	-	-	-	-	-	-	-	-	
Hydro									
NA	-	-	-	-	-	-	-	-	
Geothermal									
NA	-	-	-	-	-	-	-	-	
Biomass and Biofuels									
NA	-	-	-	-	-	-	-	-	
Others									

ICED Indicator 6: Clean energy generation capacity installed or rehabilitated as a result of USG assistance Unit: Megawatt (MW)									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
NA	-	-	-	-	-	-	-	-	
Subtotal	-	-	-	-	-	-	-	-	
Grand Total	2.05	20.40	66.29	103.30	107.00	127.90	127.90	426.94	

ICED Indicator 7:										
Proportion of females who report increased self-efficacy at the conclusion of USG supported training/programming										
Unit: Percentage of female (%)										
Performance Indicator Values										
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime	
						Q1	Total			
Target	70%	70%	70%	70%	70%	70%	70%	70%	70%	
Actual										
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		
Total Actual	-	50.0%	97.0%	96.0%	96.3%	95.7%	95.7%	93.2%	70%	

ICED Indicator 8: (GCC Indicator EG. 12-5)										
Clean energy generation capacity supported by USG assistance that has achieved financial closure										
Unit: Megawatts (MW)										
Performance Indicator Values										
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime	
						Q1	Total			
Target	8	131	103	90	90	-	35.0	456.5		
Actual										
Project related result										
Solar										
Subtotal	-	1.0	-	45.0	-	-	-	46.0		
Wind										
Subtotal	-	75.0	-	60.0	-	-	-	135.0		
Hydro										
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		
Subtotal	-	100.0	29.3	53.9	23.0	1.7	1.7	207.90		
Geothermal										
Subtotal	-	-	40.0	98.4	-	-	-	138.4		
Biomass and Biofuels										
Total	-	-	34.0	-	-	-	-	34.0		400

ICED Indicator 8: (GCC Indicator EG. 12-5)									
Clean energy generation capacity supported by USG assistance that has achieved financial closure									
Unit: Megawatts (MW)									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Others									
NA	-	-	-	-	-	-	-	-	
Subtotal	-	176.0	103.3	257.3	23.0	1.7	1.7	561.3	
Programmatic related result									
Solar									
NA	-	-	-	-	-	-	-	-	
Wind									
NA	-	-	-	-	-	-	-	-	
Hydro									
NA	-	-	-	-	-	-	-	-	
Geothermal									
NA	-	-	-	-	-	-	-	-	
Biomass and Biofuels									

ICED Indicator 8: (GCC Indicator EG. 12-5)									
Clean energy generation capacity supported by USG assistance that has achieved financial closure									
Unit: Megawatts (MW)									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
NA	-	-	-	-	-	-	-	-	
Others									
NA	-	-	-	-	-	-	-	-	
Subtotal	-	-	-	-	-	-	-	-	
Grand Total Actual	-	176.00	103.30	257.30	23.00	1.70	1.70	561.3	

ICED Indicator 9: (GCC Indicator EG. 12-7)									
Projected greenhouse gas (GHG) emissions reduced or avoided through 2030 from adopted laws, policies, regulations, or technologies related to clean energy as supported by USG assistance									
Units: Millions of metric tons of CO2e reduced or avoided									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Target	80,000	900,000	3,540,000	7,630,000	3,270,000	-	2,660,000	18,080,000	27,000,000
Actual									
Project related result									
Year of adoption through 2020									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total current - 2020	446,933.7	392,315.3	1,165,959.1	642,571.3	354,030.2	739,393	739,393	3,741,202.5	
2021 through 2025									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total 2021 - 2025	446,947.0	418,867.6	1,490,569.3	1,281,281.6	1,045,267.3	3,354,921.3	3,354,921.3	8,037,853.9	
2026 through 2030									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

ICED Indicator 9: (GCC Indicator EG. 12-7)									
Projected greenhouse gas (GHG) emissions reduced or avoided through 2030 from adopted laws, policies, regulations, or technologies related to clean energy as supported by USG assistance									
Units: Millions of metric tons of CO2e reduced or avoided									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Total 2026 - 2030	446,947.0	418,867.6	1,490,569.3	1,281,281.6	1,045,267.3	3,354,921.3	3,354,921.3	8,037,853.9	
Subtotal project result	1,340,827.7	1,230,050.4	4,147,097.6	3,205,134.4	2,444,564.7	7,449,235.6	7,449,235.6	19,816,910.3	
Programmatic related result									
Year of adoption through 2020									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total current – 2020	-	10,249,531.2	-	-	-	-	-	10,249,531.2	
2021 through 2025									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total 2021 - 2025	-	8,541,276.0	-	-	-	-	-	8,541,276.0	
2026 through 2030									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

ICED Indicator 9: (GCC Indicator EG. 12-7)									
Projected greenhouse gas (GHG) emissions reduced or avoided through 2030 from adopted laws, policies, regulations, or technologies related to clean energy as supported by USG assistance									
Units: Millions of metric tons of CO2e reduced or avoided									
Performance Indicator Values									
Results Data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		Project-to-Date (Cumulative)	Project Lifetime
						Q1	Total		
Total 2026 - 2030	-	8,541,276.0	-	-	-	-	-	8,541,276.0	
Subtotal programmatic result	-	27,332,083.2	-	-	-	-	-	27,332,083.2	
Grand Total Actual	1,340,827.7	28,562,133.6	4,147,097.6	3,205,134.4	2,444,564.7	7,449,235.6	7,449,235.6	47,148,993.5	

Note: * – From ICED I. ICED II is contractually required to monitor the results of ICED I supported projects. To be included in this table, a project must have installed capacity that is operating, and thus is reducing emissions. For programmatic related results are taken once a policy/program is adopted or implemented.

ICED Indicator 10: (GCC Indicator EG. 12-1)																	
Number of people trained in clean energy supported by USG assistance																	
Unit: Number of people																	
Performance Indicator Values																	
Results Data	FY 2015		FY 2016		FY 2017		FY 2018		FY 2019		FY 2020				Project-to-Date (Cumulative)		Project Lifetime
											Q1		Total		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Target	300		1,500		1,500		900		900		-		250		5,350		5,000
Actual	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total Actual	230	66	941	325	890	331	1,181	547	1,462	529	908	285	908	285	5,612	2,083	

ICED Indicator 11:										
Expected lifetime energy savings from energy efficiency or energy conservation, as a result of USG assistance										
Unit: Gigajoules (GJ)										
Performance Indicator Values										
Result data	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2019		Project-To-Date (Cumulative)	Project Lifetime	
						Q1	Total			
Target	56,000	168,000	440,000	440,000	1,640,000	-	1,640,000	2,744,000	2,800,000	
Actual										
Project related result										
Subtotal	702,019	50,611	-	-	-	-	-	752,629		
Programmatic related result										
Subtotal	-	-	-	-	-	-	-	-		
Total Actual	702,019	50,611	-	-	-	-	-	752,629		

Note: * – From ICED I. ICED II is contractually required to monitor the results of ICED I supported projects
To be included in this table, a project must have installed capacity that is operating, and thus is reducing emissions

4. PLANS FOR NEXT QUARTER

Component I: Improve the Enabling Environment for Rapid Co-Investment in Clean Energy

Task I.I: Increase Capacity for Low Emissions Energy Sector Planning and Implementation

Work Stream 1.1.1: Support Bappenas in RAN/RAD GRK implementation

- Work Stream 1.1.1-A GHG Mitigation Planning and Implementation
 - Support Bappenas SekRAN/RAD GRK on their activities to facilitate RAD GRK Revision and MER RAD GRK.
 - Support Government of Indonesia's policy shift from GHG emission reduction to low carbon development.
- Works Stream 1.1.1-B Sustainable Development Planning and Implementation
 - No activity this quarter

Work Stream 1.1.2: Support sub-national governments in RAD-GRK and RUED/RUKD

- *Work Stream 1.1.2-A Sub-National GHG Mitigation Planning and Implementation*
 - Alignment of energy sector RAD-GRK Revision with other provincial plans in the energy sector (two-way communication; linked with WS 1.1.2.B)
 - Support Government of Indonesia's policy shift from GHG emission reduction to low carbon development in selected provinces - South Sulawesi
 - SDGs implementation (linked with WS 1.1.2C)
- *Work Stream 1.1.2-B Sub-National Energy Sector Planning and Implementation*
 - Assist the RUED-P teams in focus provinces on the preparation of RUED-P and alignment with other energy-related planning documents.
 - Provincial Workshops (event series in 3 provinces).
- *Work Stream 1.1.2-C Sub-National Electricity Planning and Implementation*
 - Geospatial-based assessment on electricity access in selected areas or priority of local government.
 - Updating of 20 kV geospatial network maps in South Sulawesi (related to the activities on Distribution Networks).
 - Capacity building for PLN in developing and utilizing geospatial map of 20 kV network – South Sulawesi.
 - Capacity building for PLN and provincial government offices on geospatial-based electrification planning – South Sulawesi.
- *Work Stream 1.1.2-D Sustainable Development Planning and Implementation*
 - Support the process to align provincial energy plans in the provincial RPJMD and Renstra.

Work Stream 1.1.3: Assist Bappenas, MEMR and PLN in electricity generation and demand-side management planning in developing RUEN, RUKN and RUPTL.

- *Work Stream 1.1.3-A National - Energy Planning and Implementation*
 - Support to national institutions on the coordination of RUED-P process (related to WS 1.1.2-B)

- Provide detailed data and other inputs to encourage the alignment of national energy plans, mainly for the General Secretariat of National Energy Council
- Support to national institutions on MER RUEN/RUED-P, mainly the General Secretariat of National Energy Council
- Continue support to MEMR in the development of Energy Security Index (ESI) and Energy Self-reliance Index (ESRI), as part of Renstra KESDM 2020-2024.
- *Work Stream 1.1.3-B National – Electricity Planning and Implementation*
 - Utilization of GIS maps on Electricity Data update based on Podes 2018 (related to WS 1.1.2-B and WS 1.1.2-C and WS 1.1.2-D).
 - Coordination with MEMR (DJK, DG EBTKE) and/or PLN (link with WS 2.2.2)

Task 1.2: Policy and Regulatory Reform Support for Clean Energy Project Development

Work Stream 1.2.1: Support to new financing sources and products

- Continue to support PT SMI SDGs Indonesia One with key features clean energy/ energy efficiency, rural electrification, subnational government financing.
- Continue to advisory to Bappenas & OJK, on potential blended finance structure between donors and domestic financial institutions.
- Continue to development of green portfolio with focus on subnational projects, under Repro and ICCTF;

Work Stream 1.2.2: Support new/improved regulatory framework for renewable energy power regulations generating facilities

- Compiled references of business plan for rural electrification using Solar PV
- Develop legal analysis on business plan and linked result to Solar PV handbook for financial institutions
- Develop engagement with stakeholders related to business plan such as MEMR DGE, Subnational Government, PLN Wilayah
- Develop linkages of activities in business plan development to RUKD activities

Work Stream 1.2.4 - Support OJK's Sustainable Finance Program

- Developed second edition (revision) of Solar PV Handbook for Financial Institutions
- Modified work on Green Lending survey to serve development of Solar PV Handbook and business model;
- Modified work on the Guidelines for Evaluating PPAs Handbook, to address the new OJK guideline in development handbook;
- Continue to support OJK in implementing sustainable finance regulation focus in capacity building;

Work Stream 1.2.5 – Assist subnational governments to implement and communicate energy policies/regulations

- Develop documentation on energy planning processes to implement national policies.
- Support Aceh Provincial Government to disseminate the implementation of solar rooftop policy.
- Support North Sumatera Provincial Government in preparing supporting data and knowledge to incorporate renewable energy in the provincial integration program.
- Support South Sulawesi Provincial Government in preparing supporting data and knowledge to incorporate renewable energy in an integrated program for small islands.

WS 2.1.2: Provide advisory services, technical assistance and capacity building to project developers/sponsors, banks and financial institutions, and equipment suppliers and service providers

- Capacity building for 2 Lenders/Investors on Clean Energy Project Due Diligence & Risk Analysis
- Continue development Environmental Training Modul for BCA

Component 2: Accelerate the Mobilization of Private and Public Sector Co-Investment in Clean Energy

Task 2.1: Advanced Project Development and Investment Promotion

WS 2.1.1: Improve and maintain a database of viable clean energy projects (pipeline) with respective emission reduction contributions

- Update ICED II Clean Energy Project Database
- Update APPLE GATRIK, an online platform for measuring, reporting and verifying GHG emission in MEMR DJK that utilizes ICED II's Clean Energy Project Database & Map

WS 2.1.2: Provide advisory services, technical assistance and capacity building to project developers/sponsors, banks and financial institutions, and equipment suppliers and service providers

- Advisory Service and Technical Assistance to Hydro Power Project Development
- Advisory Service and Technical Assistance to Biomass, Biogas, Waste-to-Energy Power Project Developments
- Advisory Service and Technical Assistance to Variable Renewable Energy (Solar PV and Wind) Power Project Development
- Advisory Service and Technical Assistance to Hybrid Power Project Development
- Capacity building for 2 Lenders/Investors on Clean Energy Project Due Diligence & Risk Analysis
- Continue development Environmental Training Module for BCA

WS 2.1.3: Provide technical assistance to PLN in establishing improved and standardized business practices for engagement with renewable IPPs.

- Conduct an inspection visit for government counterparts (MEMR DJK, Ministry of Finance, PLN) to ADS location in PLN's Sumba Timur Grid.
- Continue to provide technical assistance/consultancy in reviewing Renewable Energy (RE) Project Feasibility Study and Grid Impact Study
- Finalize report on Rooftop Solar PV Power Economic Impact Study
- Discuss with The World Bank to pilot the Distribution System Planning Guidelines in one or more of PLN's operating regions
- Finalize support to PLN EBT on the bidding documents preparation of procurement process of Solar PV projects, wind power projects and bioenergy projects, include:
 - Provide project cost reference (Capex and Opex) on Wind project and Bioenergy project.
 - Finalize reviewing RFP draft on Wind project and propose RFP on Bioenergy project

- Finalize develop guideline and evaluation tool for Feasibility study of Solar PV and Wind project
- Finalize reviewing PPA draft on Wind project and Bioenergy project
- Finalize developing financial analysis template and guideline book for renewable energy projects (VRE and Bioenergy).
- Continue to provide advisory service and technical assistance to improve PLN's RE procurement process
- Continue to provide advisory service and technical assistance in revision of PLN Directors' Regulations related to Procurement of Renewable Energy Power Plants (Revised SK Dir 022P / 2017) and preparation of supporting document Packages
- Continue to provide technical assistance in the revision of Distribution Codes for PLN and DJK
- Provide technical advisory services to PLN related to the August 2019 Java blackout

Task 2.2: Increased Local Capacity of Science, Technology, Innovation and Human Resources for Clean Energy Growth

WS 2.2.1: Conduct initial landscape assessments of GOI agencies, industry associations, and academia to identify capacity building needs to promote S&T advancements in energy planning, modeling, integration, etc.

- Conduct grid code revision and socialization facilitation
- Conduct distribution code revision and socialization facilitation
- Conduct a workshop on planning implementation of National Energy Policy on 23% energy mix for 2025
- Maintain APPLE GATRIK webpage database platform and adding GhG mitigation features in the APPLE GATRIK platform
- Continue to support MEMR DG EBTKE Directorate of Energy Conservation (DKE) and The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Indonesia Chapter in the revision of Minimum Energy Performance Standards for Residential Split Air Conditioners (AC)
- Continue to provide technical support for MEMR DKE and MEMR DJK Directorate of Engineering and Environment on (i) Measurement and Verification (M&V) workforce competence standard development (SKKNI) for Energy Efficiency; and (ii) Development Benchmarking Performance and GHG for Thermal Power Generation

Work Stream 2.2.2: Identify renewable energy and energy efficiency technology innovations and promote widespread utilization

- Conduct digital topography mapping using UAVs/drones for mini-hydro power project development
- Development tools for mini hydro power project feasibility study review

WS 2.2.3: Conduct an inventory of education/training programs to provide training in specific clean energy technology production and maintenance

- Continue supporting PLN Training Center in the development of training modules and training of trainers
- Follow up activity related to Bali Center Sustainable Finance (BCSF)

WS 2.2.4: Support data verification/analysis in GHG mitigation/clean energy modeling

- Continue implementing digital topography mapping using UAV/drones for mini hydro power project development (related to WS 2.2.2)
- Continue developing Guidelines on Calculation & Reporting of GHG Emission
- Develop study on alternatives of electric vehicle business scheme for road transportation
- Continue conducting workshops on electricity access planning (related to WS 1.1.2.c)

Component 3: Outreach on USAID and USG Inter-Agency Activities in Indonesia's Energy Sector

Work Stream 3.1: Annual coordination forum for USG agencies working in climate change and clean energy

- Facilitate the visit of USAID Administrator in March 2020
- Support the U.S. – Indonesia Energy Policy Dialogue in March 2020

Work Stream 3.3: Manage, improve and expand the USAID clean energy website and other outreach activities

- Develop and distribute ICED II's e-newsletter (development includes story/article curation and writing)
- Develop and distribute "Pioneer Profiles in Renewable Energy Development"
- Regular updates of ICED II website and social media channels

Work Stream 3.4: Coordinate with other USG and USAID environment programs and develop joint activities

- Sponsor/facilitate ICED II partner participation in USAID-organized regional events (battery storage/competitive procurement workshop or another workshop as identified)

Work Stream 3.5: Coordinate with other donors and international finance institutions and develop joint activities

- Coordination with The World Bank on adoption and implementation of PLN's Distribution System Planning Guidelines (to be determined)

Work Stream 3.6: Support USAID-GOI Clean Energy Working Group (Tim Teknis)

- Continue supporting the Government of Indonesia (GoI) through the Clean Energy Technical Team Liaison
- Meet with and give presentations to Tim Teknis on ICED II's work plan and progress reports (as needed)
- Assist USAID in the amendment of the technical counterpart arrangement for ICED II
- Continue work to finalize the BAST handover for ICED II activities in 2015-2017, and 2018

Work Stream 3.8: Other ICED II Outreach Activities

- Hold media workshop and media visit
- Produce stories for USAID
- Finalize production of a video on journey to self-reliance for USAID

Table 4. Planned ICED II Events for January 1 – March 31, 2020

No.	Proposed Dates	Title	Partner	Comp.
1	1/20/20	RUKD Development - North Sumatera, event series #1	EMR	1
2	1/23/20	PEP RUED - SetJen DEN, event series #1	SetJen DEN	1
3	1/27/20	Electrification Planning - South Sulawesi, event series #2 (Advanced)	PLN & EMR	1
4	1/30/20	RUED Review - South Sulawesi, event series #3 (Finalization)	EMR	1
5	1/31/20	GRK Pembangkit - DJK, FGD batch #6 (place holder for additional request)	MEMR DJK	1
6	2/4/20	ESI ESRI - FGD Konsinyering	MEMR BiroCan	1
7	2/6/20	Electricity Access Data and Geospatial Mapping with National Government - Bappenas, KESDM (DJK, EBTKE, Setjen DEN) *	Bappenas, MEMR	1
8	2/10/20	Electrification Planning - South Sulawesi, event series #3 (Advanced, Pilot)	EMR, PLN	1
9	2/11/20	RUKD Development - North Sumatera, event series #2	EMR	1
10	2/12/20	RUKD Development - Aceh, event series #1	EMR	1
11	2/13/20	RPRKD for Energy Sector - South Sulawesi, event series	EMR	1
12	2/18/20	PEP RUED - SetJen DEN, event series #2	SetJen DEN	1
13	2/24/20	GRK Pembangkit - DJK, Launching Pedoman	MEMR DJK	1
14	3/2/20	RPRKD for Energy Sector - South Sulawesi, event series	EMR	1
15	3/3/20	RUED Implementation Plan - South Sulawesi	EMR	1
16	3/4/20	Electrification Planning - South Sulawesi, event series #4 (Detailed Pilot)	EMR, PLN	1
17	3/17/20	RUKD Development - Aceh, event series #2	EMR	1
18	3/18/20	PEP RUED - SetJen DEN, event series #3	SetJen DEN	1
19	3/23/20	RUKD Development - South Sulawesi, event series #1	EMR	1
20	3/23/20	BCSF Discussion workshop batch 3	OJK	1
21	3/24/20	RPRKD for Energy Sector - South Sulawesi, event series	EMR	1
22	1/7/2020	ADS Sumba site inspection	DJK	2
23	1/13/2020	FGD 1 Ministerial Regulation on Grid Code Revision	DJK	2
24	1/13/2020	1st MEPS (2020)	DJEBTKE	2
25	1/16/2020	FGD batch 2 Benchmarking (2020)	DJK	2
26	1/20/2020	FGD 1 Study on electric vehicle regulation scheme	DJK	2
27	1/20/2020	1st Distribution Code	DJK	2
28	1/27/2020	SKKNI	DJEBTKE	2
29	2/10/2020	FGD 2 Study on electric vehicle regulation scheme	DJK	2
30	2/11/2020	ESRA Training batch 22	OJK	2

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No.	Proposed Dates	Title	Partner	Comp.
31	2/12/2020	FGD batch 3 Benchmarking (2020)	DJK	2
32	2/17/2020	Training on Wind power proposal review guidelines	PLN	2
33	2/24/2020	2nd Distribution Code	DJK	2
34	2/27/2020	Launching Benchmarking (2020)	PLN	2
35	3/9/2020	TOT Hydro & Bioenergy (Biogas, Biomass & Waste to Energy)	PLN	2
36	3/10/2020	Workshop of Grid System Impact Study of VGPP for PLN Wilayah	PLN	2
37	3/16/2020	TOT Impact Study & VRE (Wind and Solar PV)	PLN	2
38	3/17/2020	Socialization on Ministerial Regulation on Grid Code Revision	DJK	2
39	3/18/2020	Workshop on ADS Implementation and Dissemination	PLN	2
40	2/17/20	USAID site visit #2 to project sites (*)	USAID	3
41	3/9/20	Media workshop #1	n.a.	3
42	3/26/20	Technical team meeting	GOI	3

5. PROBLEM RESOLUTION

Status of Resolving Problems Described in the Previous Report

1. **Possible reduced scope of work for the Green Lending Survey** OJK has determined that ICED II support on the green lending survey of Indonesian financial institutions would be done in-house.
2. **VAT Exemption for Four Subcontracts with [REDACTED]**. ICED II revoked the previous request letter and resent a new request letter on VAT exemption for [REDACTED] invoices. In September 2019, a recommendation letter from MEMR has been issued and forwarded to MoF for final documentation.
3. **Preparation of Hand-over Certificate (BAST)**. ICED II reached agreement on these issues:
 - a) Bappenas Directorate for Energy, Mineral, and Mining Resources (DSDEMP) agreed to sign BAST for ICED II activities under OJK, provincial governments and DEN. Bappenas will send request letters to OJK, local governments and DEN to sign letters of acknowledgment in support of BAST.
 - b) In January 2020, Bappenas agreed to process BAST for 2015-2018 under Bappenas DSDEMP. The BAST for the period of 2015-2018 covered activities
 - c) The BAST covering support to MEMR DJK, MEMR DG EBTKE, and MEMR Planning Bureau is still being prepared by ICED II in consultation with its GOI partners.
4. **Significant Changes in the 2019-2020 Work Plan**. ICED II prepared Terms of Reference (TOR) for each of its Indonesian counterparts reflecting the latest agreement in support activities. It should be noted that ICED II counterparts continue to request additional support from ICED II and that the TORs need to be updated if the requests are accepted.
5. **Possible need for Unfunded Extension of Time**. Tetra Tech has been tracking its monthly spending and has determined that it is possible to request an unfunded extension of time in the ICED II task order contract mostly likely to September 30, 2019. The Assistance Agreement between USAID and the Government of Indonesia was extended to September 30, 2019 making this possible. However, USAID has questioned whether ICED II can be extended beyond its current 5-year period of performance due to a restriction in the USAID Clean Energy IDIQ contract. ICED II is a Task Order contract under the Clean Energy IDIQ.
6. **Terms of Reference (ToR) with MEMR Birocan**. Following MEMR Birocan's decision not to serve as ICED II's counterpart for the work on RUED, ICED II approached DEN who expressed interest related to the ICED II activities in 2019-2020. ICED II prepared a TOR to support DEN on monitoring subnational energy planning, specifically the development and implementation of RUED-P. As of the end of

December 2019, the General Secretariat has been signed the TOR. ICED II will support the DEN General Secretariat in the following areas: (i) Multi-region alignment of LEAP RUED-P; (ii) Development of MER Provincial Energy Plans; as well as (iii) Energy Planners Network. ICED II has presented the results of its earlier works on these subjects, and DEN General Secretariat agrees to use them as reference for the next development.

New Issues Encountered since the Previous Report

No new issues encountered since the previous report.

Proposed Solutions to Outstanding and New Problems

The following are the proposed solutions to problems encountered this quarter:

1. **Green Lending Survey.** ICED II is proposing to shift the work on green lending survey to development of Second Edition Solar PV Handbook, as requested by OJK. This will result in a modification to the existing [REDACTED] subcontract.
2. **Unfunded Extension of Time.** Tetra Tech is working with USAID to research the Clean Energy IDIQ basic award contract and will consult with the USAID Washington Contracting Officer to see if ICED II can be extended.
3. **Significant Changes in the 2019-2020 Work Plan.** Tetra Tech has informed ICED II staff to resist new requests for assistance as the ICED II project is focused on completing existing commitments and on-going activities.

ANNEX A: ICED II TECHNICAL ASSISTANCE

This appendix lists the private, bank/financial, and government organizations ICED II assisted from October to December 2019.

[REDACTED]

ANNEX B: REFERENCE INFORMATION FOR PERFORMANCE INDICATORS AND RESULTS

This annex provides details on projects that contributed to ICED II results (Section B.1) and training delivered by ICED II (Section B.2).

Even though a project may have been commissioned or begun operating during the first ICED Project, certain results, such as projected GHG emissions reduced or avoided through 2030, can also be attributed to ICED II because their impacts extend into the ICED II project period. Others, such as installed capacity, persons with access to clean energy, and leveraged funding, are attributed to either ICED or ICED II, but not to both projects.

Table B-1 provides an overview of the renewable energy projects detailed in Section B.1, while Table B-2 provides an overview of the energy efficiency projects that are also detailed in Section B.1. The results tracked vary somewhat by type. The projects are listed in chronological order by their commissioning or commercial operating date.

Table B-1. Summary of Projects Contributing to Performance Indicators

[REDACTED]

Table B-2 Summary of Energy Efficiency Projects Contributing to Performance Indicators

[REDACTED]

B.I Projects Assisted this Quarter
[REDACTED]

B.2 Programmatic Support

All activities are ongoing. No results this quarter.

B.3 Institutions with Improved Capacity

All activities are ongoing. No result this quarter.

B.4. Laws, Policies, Plans, Strategies, or Standards

[REDACTED]

B.5 Training

[REDACTED]

ANNEX C: LIST OF TRAININGS

Table C-I. Detailed Training Activities

No	Date	Title of Training	Component/W orkstream	Training Type	Location	Participants				ICED II Support
						Male	Female	Total	Group	
1	October 2-3, 2019	Pre-Convention SKKNI Development of National Competence Standard (SKKNI) for Measurement and Verification (M&V) of Energy Performance	Component 2	FGD	Swissbel Hotel Bogor	37	7	44	Directorate of Energy Conservation, Directorate General of New and Renewable Energy and Energy Conservation (DG EBTKE) of Ministry of Energy and Mineral Resources (MEMR)	Organizer, Facilitator, Resource Person
2	October 7-10, 2019	Environment and Social Risks Aspects (ESRA) training batch 21 with OJK: Case Studies on Mini Hydro and Solar PV Project (in collaboration with OJK Institute)	Component 1	Training	Padma Hotel Denpasar, Bali	20	16	36	OJK, MEMR, MoEF, LPEM UI, Trisakti University, UMBRA Law Consulting, Banks.	Organizer, Facilitator, Resource Person
3	October 14, 2019	Discussion Workshop on Synchronization of Draft Governor Regulation on Clean Energy (Ranpergub Energi Bersih), Regional Energy Plan (RUED), and Regional Electricity Plan (RUKD) to establish Bali Province as a Clean and Green Province - Batch 1	Component 1	FGD	Prime Plaza Hotel, Sanur - Denpasar	56	14	70	Disnaker ESDM, Udayana University, DEN, Ministry of Home Affairs, PLN, MEMR DJK, BCSF, Technical team of RUKD	Organizer, Facilitator, Resource Person

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4	October 15-16, 2019	Focus Group Discussion (FGD) batch 1 on Benchmarking Performance and Greenhouse Gas Emission - Stakeholders consultation Meeting	Component 2	FGD	Swissbel Hotel Bogor	61	17	78	MEMR, CMEA, Bappenas, MoEF, MoF, UNDP-MTR3, GGGI, APLSI, ALLIN, IPPS	Organizer, Facilitator, Resource Person
5	October 22, 2019	Seminar on North Sumatra Solar PV Rooftop Installation at Public Buildings and Facilities	Component 1, 2	Workshop, Seminar	JW Marriot Hotel Medan, North Sumatera	50	11	61	Directorate Various Energy, Ministry of Energy and Mineral Resources (MEMR), PLN – Disjaya Unit, Provincial ESDM Office, Regional PLN, Local experts or universities representatives, Provincial Bappeda, Local universities students	Organizer, Facilitator, Resource Person
6	October 23, 2019	Workshop on North Sumatra Solar PV Rooftop Installation at Public Buildings and Facilities	Component 1, 2	Training	Dinas ESDM Medan, North Sumatera	31	6	37	Directorate Various Energy, Ministry of Energy and Mineral Resources (MEMR), PLN – Disjaya Unit, Provincial ESDM Office, Regional PLN, Local experts or universities representatives, Provincial Bappeda, Local universities students	Organizer, Facilitator, Resource Person
7	October 24, 2019	FGD on Utilization of Solar PV to Support Agricultural Activities in Samosir Regency and North Sumatra in Samosir	Component 2	FGD	Samosir, North Sumatera	18	5	23		Organizer, Facilitator, Resource Person

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8	October 25, 2019	BAST Coordination Meeting with DJK	Component 1, 2	Meeting	Arismunandar Room - DJK Office, Jakarta	37	6	43	MEMR - DJK	Organizer
9	October 29, 2019	Seminar on Aceh Solar PV Rooftop Installation at Public Buildings and Facilities	Component 1, 2	Workshop, Seminar	Hotel Kyriad, Aceh	31	17	48	Directorate Various Energy, Ministry of Energy and Mineral Resources (MEMR), PLN – Disjaya Unit, Provincial ESDM Office, Regional PLN, Local experts or universities representatives, Provincial Bappeda, Local universities students	Organizer, Facilitator, Resource Person
10	October 30, 2019	Workshop on Aceh Solar PV Rooftop Installation at Public Buildings and Facilities	Component 1, 2	Training	Dinas ESDM Aceh Office	22	8	30	Directorate Various Energy, Ministry of Energy and Mineral Resources (MEMR), PLN – Disjaya Unit, Provincial ESDM Office, Regional PLN, Local experts or universities representatives, Provincial Bappeda, Local universities students	Organizer, Facilitator, Resource Person
11	October 29, 2019	Focus Group Discussion (FGD) 1 – Review and gap analysis of South Sulawesi RUED Draft,	Component 2	FGD	Mercure Hotel, Makassar, South Sulawesi	23	10	33	Office of Energy and Mineral Resources (EMR), South Sulawesi Province, Makassar, Bappeda of South Sulawesi ,	Organizer, Facilitator, Resource Person

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									DEN, Planning Bureau	
12	October 4-5, 2019	Environment and Social Risks Aspects (ESRA) training batch 1 for BCA	Component 3	Training	BCA Corporate University, Sentul	14	14	41	BCA Commercial and Corporate division	Facilitator, Resource Person
13	October 6-7, 2019	Environment and Social Risks Aspects (ESRA) training batch 2 for BCA	Component 4	Training	BCA Corporate University, Sentul	17	15	45	BCA Commercial and Corporate division	Facilitator, Resource Person
14	November 8, 2019	EBTKE ConEx: Workshop on New Guidelines for Interconnection of Renewable Energy Generation Plant to PLN Distribution Network	Component 1, 2	Seminar	JIEXPO Kemayoran, Jakarta	120	32	152	MEMR Directorate General of Electricity, MEMR Directorate General of New, Renewable Energy & Energy Conservations, IPPs (Hydro, Biomass, Biogas, Waste, Wind, Solar, Geothermal and Ocean energy, University Faculty of Engineering lecturers, master/doctoral degree students , Other MEMR institutions (R&D, Training center, etc.), Associations (MKI, METI), PLN related units, Financial /banking institutions with renewable energy project portfolios	Organizer, Facilitator, Resource Person

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15	November 14-15, 2019	Convention SKKNI Development of National Competence Standard (SKKNI) for Measurement and Verification (M&V) of Energy Performance	Component 2	FGD, Workshop	Santika Hotel, Bogor	36	9	45	Directorate of Energy Conservation, Directorate General of New and Renewable Energy and Energy Conservation (DG EBTKE) of Ministry of Energy and Mineral Resources (MEMR)	Organizer, Facilitator, Resource Person
16	November 20-21, 2019	Training for Perusahaan Listrik Negara (PLN) on Guideline to Review Wind Power Project Feasibility Study and Financial Model of Renewable Energy Power Plant Project Investment	Component 2	Training	PLN Corporate University, Ragunan, Jakarta Selatan	24	10	34	ICED, PLN Upal Makassar, MEMR DGE, PLN UID West Java, East Java, Banten, JBTKN, Kalimantan, NTT, Sumatera, NTBPLN RE, MEMR GATRIK	Organizer, Facilitator, Resource Person
17	November 26-27, 2019	Basic Electrification Planning Training and Workshop for South Sulawesi	Component 1	Workshop, Seminar	Four Points Hotel, Makassar - South Sulawesi	26	9	35	South Sulawesi EMR Office staff, South Sulawesi Bappeda, PLN Regional Office of South Sulawesi: Planning & Distribution Staff, PLN Regional Office of South Sulawesi: UPPK Staff, PLN Branch of South Sulawesi Province: UP3 office staff (Palopo, Watampone, Bulukumba, Pinrang, Pare – Pare, Makassar Utara, dan	Organizer, Facilitator, Resource Person

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									Makassar Selatan), University Hassanuddin.	
18	November 28, 2019	FGD 2 – RUED model revisit – Review and gap analysis of South Sulawesi RUED Draft,	Component 1	FGD	Four Points Hotel , Makassar - South Sulawesi	12	7	19	Office of Energy and Mineral Resources (EMR), South Sulawesi Province, Makassar, Bappeda of South Sulawesi , DEN, Planning Bureau	Organizer, Facilitator, Resource Person
19	November 28- 29, 2019	Clean Energy Technical Team Meeting	Component 3	Meeting	Royal Crowne Plaza, Bandung - West Java	26	19	45	MEMR – Communication, Public Information Service and Cooperation Bureau (Biro KLIK)*, DJK, DG- EBTKE, Head of Data and Technology Information Center, Head of Training and Education center for Electricity, New Energy, Renewable Energy and Energy Conservation, Head of Research	Organizer

									and Development for Electricity, New Energy, Renewable Energy and Energy Conservation, Ministry of Finance, Ministry of State Secretariat (SetNeg), Bappenas, PT PLN (Persero), Bappeda of Aceh province, EMR office of Aceh province, Bappeda of North Sumatra province, EMR office of North Sumatra province, Bappeda of South Sulawesi province, EMR office of South Sulawesi province	
20	December 2-4, 2019	Training for Perusahaan Listrik Negara (PLN) on Guideline to Review Solar Photovoltaic (PV) Power Project Feasibility Study and Financial Model of Renewable Energy Power Plant Project Investment	Component 2	Training	PLN Corporate University, Ragunan, Jakarta Selatan	78	13	91	ICED, PLN Upal Makassar, MEMR DGE, PLN UID West Java, East Java, Banten, JBB, JBTVN, Kalimantan, NTT, Sumatera, Bali, West Kalimantan, UIW M2U, Lampung, Bangka Belitung, Pussenlis, Corporate University, UI P2B, South-Centre	Organizer, Facilitator, Resource Person

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									Kalimantan, NTBPLN RE, MEMR GATRIK	
21	December 9-10, 2019	CAISO Sharing experience discussion meeting for South Sulawesi Region	Component 2	Sharing Session	PLN UP2B Office South Sulawesi	40	5	45	PLN UIW Sulawesi, Puslitbang, UIP2B, PLTG Tello Jeneponto, UIKL Sulawesi, NTT, Gatrik, MEMR DGE, PLN Head office, CAISO	Organizer, Facilitator, Resource Person
22	December 11, 2019	CAISO Sharing experience discussion meeting for Sumatera Region	Component 2	Sharing Session	PLN UIP3B Office Pekanbaru, Sumatera	50	14	64	PLN UP2B, SBT, SBS, SBU, PLN Office, CAISO, PLN Rensis, UIP3BS, OPSIS, MEMR DGE	Organizer, Facilitator, Resource Person
23	December 10-11, 2019	Individual bank training for BCA in Jakarta with site visit to Cirata solar PV	Component 1, 2	Training	BCA Training Centre	10	10	20	BCA staff	Resource Person
24	December 12, 2019	Discussion Workshop on Synchronization of Draft Governor Regulation on Clean Energy (Ranpergub Energi Bersih), Regional Energy Plan (RUED), and Regional Electricity Plan (RUKD) to establish Bali Province as a Clean and Green Province - Batch 2	Component 1	FGD	Prime Plaza Hotel, Sanur - Denpasar	56	8	64	Disnaker ESDM, Udayana University, DEN, Ministry of Home Affairs, PLN, MEMR DJK, BCSF, Technical team of RUKD	Organizer, Facilitator, Resource Person
25	December 18-19, 2019	Focus Group Discussion (FGD) batch 5 on Guideline Measurement and Reporting on GHG Reduction Emission from Power Generation Sector	Component 2	FGD	Aston Hotel, Bogor - West Java	13	3	16	MEMR, CMEA, Bappenas, MoEF, MoF, UNDP-MTR3, GGGI, APLSI, ALLIN, IPPS, DGE	Organizer, Facilitator, Resource Person
Sub Total Participants						908	285	1,193		

ANNEX D: ICED II CLEAN ENERGY PROJECT PIPELINE

[REDACTED]