IESR
Institute for Essential Services Reform

Annual Impact Report 2019 - 2020

Institute for Essential Services Reform (IESR)

Accelerating low-carbon energy transition in Indonesia

IESR encourage transformation into a flashed energy system by advocating a public policy that rests on data-driven and scientific studies, conducting capacity development assistance, and establishing strategic partnerships with non-governmental actors

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A Message from Executive Director

Fabby Tumiwa
Executive Director

Dear readers,

It is with great pleasure that the Institute for Essential Services Reform (IESR) welcomes you to the 2019 (first) edition of our Impact Report. 2019 has seen many highlights, some of which are portrayed in the following pages.

During 2019, IESR has launched several reports and projects/initiatives to accelerate low-carbon energy transition in Indonesia within four main programs of Energy Transformation, Sustainability Energy Access, Green Economy, and Sustainable Mobility. We know that many organizations out there commercial and charity organizations have ideas on promoting renewable energy on their streamlines, acts, and tools. Therefore we combine in-depth studies and analyses of policies, regulations, and techno-economic aspects in the energy and environment sector with the substantial public interest in advocacy activities to influence policy change at national, sub-national, and global levels.

We are also happy that the Vice President of Indonesia, Dr. Drs. H. Muhammad Jusuf Kalla (2014 - 2019) addressed the importance of energy sovereignty in IESR's organized event with the Indonesia Clean Energy Forum (ICEF): at the Geopolitics of Energy Transformation Seminar.

We combine in-depth studies and analyses of policies, regulations, and techno-economic aspects in the energy and environment sector.


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High Profile Testimonials:

Mini Seminar Geopolitik Transisi Energi

"Energy Transformation becomes important to be observed and done together, as policies, as a business, determine how consumers have to pay it."

"I hope in this mini-seminar that energy transformation will be our concern, and we should consider the transformation in what the world needs to be happening."

31 July 2019. Bimasena Lounge, Jakarta

Mini Seminar Geopolitik Transisi Energi

"We have a forum for discussing transformation to renewable energy that happens worldwide, that will change the geopolitical and geoeconomic of the world. We have to see this as an opportunity for a country like us towards CO_2 emission reduction that will happen if we convert into renewable energy."

31 July 2019. Bimasena Lounge, Jakarta

Brown to Green Report 2019

"A significant factor from Brown to Green is the energy policy. We have the Brown to Green Economy report. Consider this as a yellow light. Brown to Green report, explained if we are falling behind in matters relating to climate change. The main point of our policy is not agreed on CO_2 control. Then alternatives must be sought."

Pullman Hotel Jakarta

Indonesia Energy Transition Dialogue 2019

"The most important thing is how to transform our mindset and behavior from the past, tthat heavily rely on coal and gas policies, and shifted to clean energy."

Webinar Green Economic Recovery

"Saya harap dari seminar (yang diselenggarakan oleh IESR) ini bisa membuat rekomendasi arah kebijakan untuk energi baru terbarukan, khususnya untuk tenaga surya. Saya akan tawarkan, jika rekomendasi kebijakan ini executable, bisa dieksekusi dengan tidak terlalu banyak kesulitan, saya mau Jawa Tengah dijadikan laboratorium agar bisa kita dorong untuk melakukan percepatan ini"

"I sincerely hope IESR can make policy direction recommendations for renewable energy, especially for solar power. If the policy recommendation executable, I will open for Central Java to be a laboratory. So we can push to accelerate this (green economic recovery)"

Brown to Green Report 2019

"The Brown to Green Report is instrumental in understanding, where Indonesia stands in comparison to other G20 countries and contributes to stimulating the national debate about climate change and necessary action."

Accelerating Low-Carbon Energy Transition in Indonesia

> Energy transition is inevitable. The decision we make now will define our future and our record in history.

In the last three years, IESR has started to introduce, set, and frame the narrative of the energy transition towards a low carbon energy system in the nation. As an Institution, we are independent of any government and business interests. IESR puts public interests at the forefront of its works. It operates based on the principles of democracy, justice, good governance, and professionalism. We are envisioning building a world that is better, more sustainable, low-carbon oriented, and able to provide clean, sustainable energy for future generations, by encouraging the acceleration of Indonesia's energy transition towards a just, clean, and low-carbon energy system.

To accelerate the narrative and practice of Indonesia's power development moves away from fossil fuels, particularly coal and shifts toward renewable energy that leads to the decarbonization of the Indonesia power sector, our Institute must employ innovative strategies to get the idea into the public policymakers.

Working program

IESR's vehicles through four main strategic programs: Energy Transformation aiming to increase the number of renewables, Green Economy aiming to transform Indonesia's economy move towards the economy that emits fewer greenhouse gases while maintaining high economic growth, Sustainable Energy Access seeking to provide high-quality, sustainable energy provision capable of driving productive activities beyond essential services, and Sustainable Mobility aiming to build solutions for the movement of people, products and services through a low-carbon, efficient, reliable, and integrated transportation system.

Our core principle in delivering our product is by evidence-based research advocacy. We encourage transformation into a flashed energy system by advocating a public policy that rests on data-driven and scientific studies, conducting capacity development assistance, and establishing strategic partnerships with non-governmental actors.

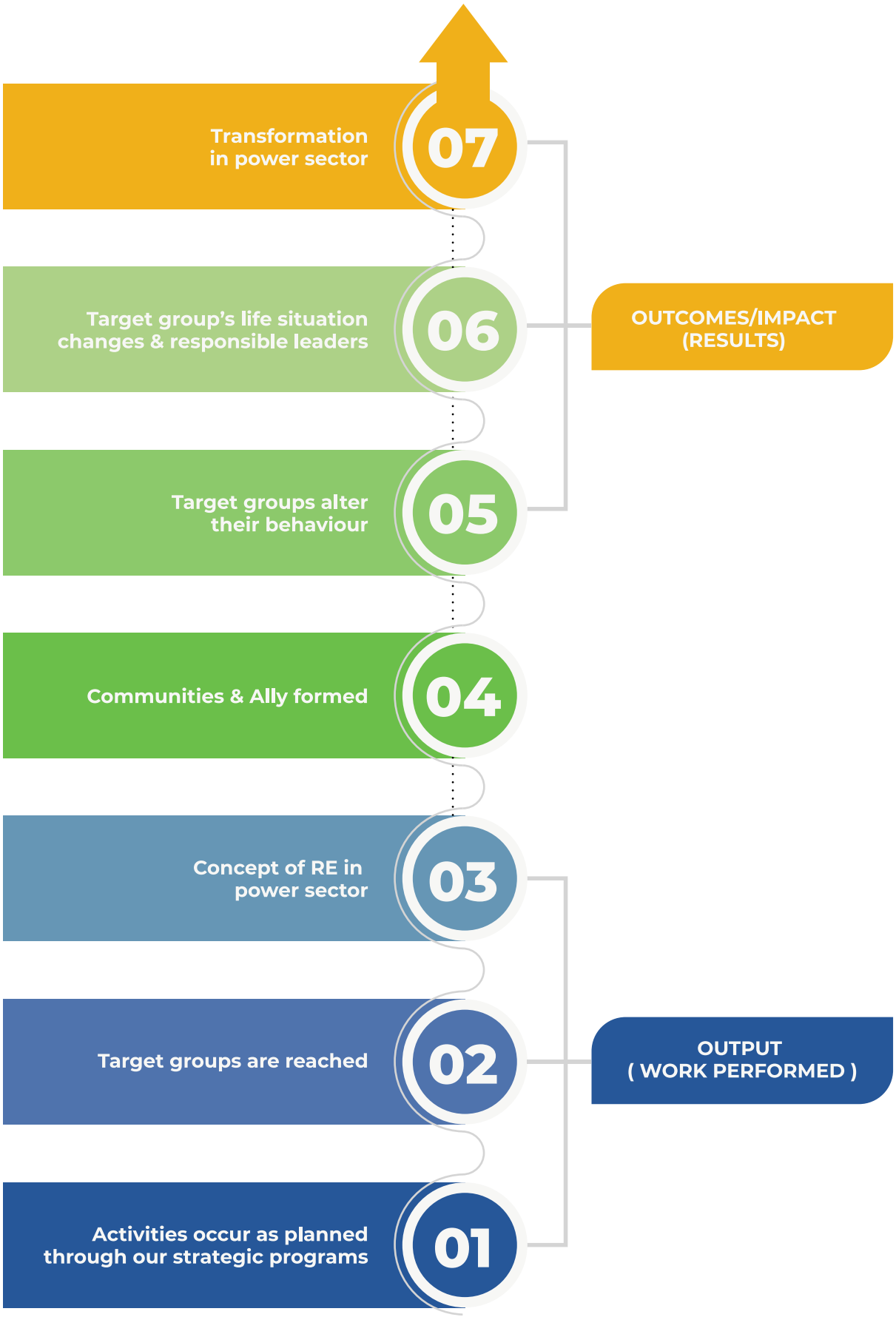
Key stakeholders influence for change

Regularly we conduct a Multi-stakeholder engagement, engaging Indonesia's energy sector critical players in a conversation regarding the power sector's transformation. This model unlocks efficiency and impacts through a well-managed discussion of a state-level and industrial policymakers of an intervention or solution drafted as a suggestion directly to the leader(s) of GoI.

Renewable energy advancement incubator

This is part of IESR strategies designed to assist provincial governments in developing a policy framework and enabling environment to advance renewable energy deployment. Some of the works cover attracting investment, bridging investor and renewable energy developers with local governments, and developing business models (case studies) on renewable energy transformation.

IESR's The Level of Impact



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Tapping opportunities into IESR's program activities and research pipeline

Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C (2018)[1] reported that limiting global warming to 1.5°C instead of 2°C is imperative to avoid the various catastrophic impacts. This circumstance means that significant reductions in greenhouse gas (GHG) emissions in all sectors (including the energy) and more aggressive and immediate transformation are needed. Moving towards ambitious mitigation goals to meet the 1.5-degree pathway now becomes a global agenda. To align with the agenda, Indonesia shall have more than 50% of its electricity generated by renewables by 2050 and have defined a pathway to close down coal power plants. This transition scenario is double than the current target of 31% stipulated in the 2014 National Energy Policy and 2017 National Energy Plan issued by the President. The recent development in the energy sector focuses on the expansion of thermal power plants, dominantly coal, which needs to be reserved before 2025 to give larger space for renewables to grow and ensure Indonesia meets Paris Agreement's goal.

The current 4D's trend of decarbonization, decentralization, digitalization, and democratization on today's energy system presents opportunities and threats for the country in building a cleaner, securer, and more resilient and cost-effective power system. In addition to the possibilities, this trend also avoids the risks of stranded assets of existing infrastructure shortly. These current trends could bring threats to the existing power system if it fails to be adequately addressed. IESR believes it is economically and technically feasible as the availability of resources in the country are there and the declining cost of renewables and storage technologies. All technologies that we need to transform our energy system today are available, however, to deploy these technologies, strong political will, credible, sound policy and regulatory framework, and investment are strongly needed. We believe that to effectuate energy transformation in Indonesia, bringing and cultivating innovative ideas and approaches are imperative. Among them are closing the policy gaps to open up the market, promoting investment, enhancing active public participation in the policy-making process, and amplifying good governance in the energy sector.

[1] https://www.ipcc.ch/sr15/

In bringing these changes, there are five critical milestones to happen:

1. **Awareness and transparency on the technical, economic, and environmental fundamentals of the cleaner energy & entire power sector need to increase** both among key stakeholders and decision-makers as well as civil societies and the broader public.Since 2017, IESR has been engaging these stakeholders, providing energy/power advisory based on our research studies and analysis, and enlarging the circle of energy transition discussion. We have seen that the support toward rapid renewable energy deployment is strengthened and the commitment of various stakeholders to support renewable energy.

2. **Shift the political and public agenda to focus on the urgency of the energy transition** through high-level diplomacy and broader civic engagement. Shifting the energy investment towards clean energy should be supported by transparent and clear policy, regulation, and market reform. In 2019, IESR continued the efforts to advance the dialogue with eminent persons, prominent experts, businesses, and high-level government officials under Indonesia Clean Energy Forum (ICEF) as well as increase the capacity for civil society groups/coalitions (e.g., Bersihkan Indonesia and Clean Energy).

3. **Drive fundamental and concrete energy policy and regulatory changes implemented by key policy and decision-makers (e.g., Ministry of Energy and Mineral Resources, Ministry of Finance, and Ministry of Environment).** In 2019, IESR continued to drive concrete energy policy and regulatory changes by providing assistance and advice to various ministries with sound analyses on the policy and regulatory options based on technical work, case studies, and modeling of different options.

4. **Reduce the coal-fired power plants in the medium and long-term and increase the renewables power investment portfolio,** and accordingly revise its Electricity Business Development Plan (RUPTL). IESR carried on the engagement with PLN to support and demonstrate the feasibility of integrating larger shares of variable renewables energy (VRE) by showing case studies from international experiences and through dedicated analysis of the Indonesian grid system.

5. **More Renewable Energy power producers (IPPs) and private power utilities (PPUs) are in place to support the low carbon energy transition in Indonesia.** IESR resumed the efforts to open up the energy market for private investments and increase the demand for RE by encouraging large consumers, both multinational and national, to request clean energy sources, driving the 1 GW solar rooftop program in demonstrating the economic and technical feasibility of solar PV in the nation.

The activities laid out in IESR's program activities and research pipeline are matched and are well interconnected. It targets to change perception and myth-busting around renewables that hamper policymakers to fully support higher renewable penetration into the power system by developing an appropriate regulatory framework. It will increase awareness of regulators and policymakers as well energy companies on the risks related to coal power (stranded assets), and future financial risk related to over-investment of coal plants and related transmission grid for PLN. The other element is to support civil society campaigns that could increase pressures on policymakers, political parties, energy companies, and utilities to prioritize renewable energy over coal investment. It will also generate a movement from the bottom through solar rooftop initiatives that could disrupt the power market and push PLN to become green off-takers .

The inevitability of Low Carbon Energy Transition

The failing cost of wind and solar power technologies and the declining cost of energy storage have made renewable energy more cost-competitive in generating electricity to conventional power plants. Their advancement presents severe threats to the traditional business model of the power industry. As these clean energy technologies become affordable and easy to deploy as distributed generation, it could disrupt centralize and monopolistic structure of existing power supply systems, and cause stranded assets that could lead to potential financial catastrophe and a threat to energy security. Decarbonization of Indonesia's energy and power sector is imperative to ensure Indonesia meets its climate pledge, reducing the risk of stranded assets, and ensuring energy security in the long run. It means that renewable energy power plants must increase significantly, while at some point in the near future, no new coal plant will be constructed. Given the context, IESR's five-year plan (2017-2023) mission is to encourage the acceleration of Indonesia's energy transition towards a fair, clean, and low-carbon energy system. In delivering the purpose, we crafted four seamless programs: energy and power system transformation, sustainable energy access, green economy, and sustainable mobility.

The Journey

Over the last three years, IESR has established the narrative of the energy transition to advance the dialogue and discourse on energy transition-related issues. The works are done by conveying the urgency of energy transition and bringing together eminent persons, prominent experts, businesses, and high-level government officials. In addition to the narrative establishment, we also enlarge the circle of energy transition discussion, send a message to stakeholders and concerned groups, and expose the solar rooftop potential and opportunity to meet renewable energy goals to target stakeholders.

Initiatives

We, IESR, believe that the opportunities and threats of the energy transition need to be anticipated and addressed systematically and adequately from the energy and power system perspective to the broader economic system. For this reason, IESR developed four interlinkages programs to accelerate the country's low carbon energy transition.

Program Highlights :

Energy and Power System Transformation

The Energy and Power System Transformation program is designed to support Indonesia's energy transition process towards low carbon and sustainable energy systems. Our transformation strategy includes (1) raising the awareness on the feasibility of shifting from coal to renewables among key policymakers and stakeholders in Indonesia's energy and power sector; (2) exploiting any opportunity to expand Indonesia renewable energy market; and (3) working collaboratively with other like-minded stakeholders, in particular also from civil society organizations.

"In the last two years, PLN has been increasing the share of renewables in its Electricity Business Development Plan (RUPTL). So did the fine-tuning of key policies and regulations to support renewables development. However, mediocre renewable energy growth still arguably marks the year of 2019 as it becomes a political year in the country. We sincerely hope that the newly elected cabinet members and its configuration can provide supportive political signals and specific action plans to regain clean energy investor confidence." Jannata Giwangkara, Program Manager - Energy and Power System Transformation.

Sustainable Energy Access

The Sustainable Energy Access Program focuses on public policy advocacy works, including research and public campaign, to promote the universal provision of just, inclusive, and sustainable energy access in Indonesia; the term access refers to high-quality energy provision, capable of driving productive activities beyond basic services.

"In 2019, rooftop solar has entered mainstream energy discourse, which is awesome. We have been working on it since 2016, and seeing how solar energy has progressed throughout the years - it is time to accelerate its deployment, also with our proposed #SolarArchipelago program as green economic recovery strategy post-Covid19" Marlistya Citraningrum, Program Manager - Sustainable Energy Access.

Green Economy

The Green Economy program aims to transform Indonesia's economy and move towards an economy that emits fewer greenhouse gases while maintaining high economic growth. There are three thematics in this program: fossil fuel transition, energy efficiency, and climate change mitigation. Therefore, our specific goal for each thematic is: (1) increasing the alertness of the urgency of moving away from fossil fuel in Indonesia's energy system; (2) optimizing energy efficiency implementation that leads to the decarbonization of Indonesia's energy system; (3) strengthening domestic climate change mitigation policies.

IESR started to step into coal transition issues in 2018 as we found out that coal contribution in Indonesia's primary energy mix is escalating, and also is significantly contributing to Indonesia's economy. At the mid of 2019, IESR began communicating the urgency of coal transition to Indonesia's President Special Envoy for Climate Change, Coordinating Ministry for Economic Affairs, Ministry of Energy and Mineral Resources, Ministry of Environment and Forestry. From a climate change perspective, coal transition has already become public discourse. Nevertheless, the government still prioritizes coal for powering economic development. As the coal transition is inevitable, we hope the government and other stakeholders could sit down together and establish a comprehensive plan of coal transition to accomplish a just transition." Erina Mursanti, Program Manager - Green Economy

Sustainable Mobility

The program is designed to build solutions for the mobility of people, products, and services through a low-carbon, efficient, reliable, and integrated transportation system in a low-carbon development system. Our solutions include identifying and capturing opportunities from potential industrial disruptions (e.g., vehicle electrification), evaluating the possible impacts of these trends, and tailoring the design to sustainable mobility strategies for key policy and decision-makers. This program is currently co-managed by Energy and Power System Transformation & Green Economy Program Manager.

"The issuance of Presidential Regulation No. 55/2019 has been paving the road to electrifying the heavily dependent sector in the nation towards a lower-carbon transportation system. Throughout 2019, IESR has successfully built an electric vehicle (EV) penetration model that serves as a basis in reviewing the current plant to deploy the EV. Fiscal incentives and aggressive electric charging infrastructure development are the two most crucial actions to be kicked in 2020 in starting the sustainable mobility movement." Jannata Giwangkara, Program Manager - Energy and Power System Transformation.

"Proper distribution and logistic systems influence the country; therefore, some transportation projects listed on Indonesia's strategic national program. On the other hand, the transport sector contributes to a third of GHG emissions from Indonesia's energy sector. To gain high economic growth and minimize GHG increases, the government must integrate a sustainable transport agenda into national development." Erina Mursanti, Program Manager - Green Economy

Our Portfolio

Indonesia Clean Energy Forum (ICEF)

Indonesia Clean Energy Forum (ICEF) is a platform for high-level policymakers and critical players in the energy sector to engage in a fact-based energy policy debate on the energy transition at the national level. The forum has been grand-launched on 15 November 2018 by Minister of Energy and Mineral Resources, Ignasius Jonan, in conjunction with the holding of the first Indonesia Energy Transition Dialogue (IETD) – an annual event of IESR and ICEF.

ICEF members comprise 24 prominent individuals from various backgrounds (i.e., governments, energy companies, businesses, financial institutions, think tanks, academics, and experts). They are chaired by Prof. Dr. Kuntoro Mangkusubroto, former Minister of Energy and Mineral Resources and head of Presidential Delivery Unit.

Indonesia Energy Transition Dialogue (IETD)

As part of the Indonesia Clean Energy Forum (ICEF)'s activities, Indonesia Energy Transition Dialogue (IETD) designed to be an annual event to share ideas and knowledge of energy transition and to build an understanding of energy transition to extended stakeholders. This event also aims to develop an epistemic community and champion that supports the agenda of the energy transition towards a low carbon power system in Indonesia. Until the end of 2019, IESR has successfully convened two IETD events and made IETD advocating on a frontrunner annual dialogue event of the nation's energy transition.

Solar Revolution Hub

The platform aims to revolutionize solar development in Indonesia, accelerating its deployment. With the growing trend of solar deployment globally, IESR predicts that solar energy can be the first mover to boost renewables development in Indonesia. Since 2016, the platform has focused on advocating solar energy issues specifically and at large, working closely with policymakers, associations, public, and other relevant stakeholders. IESR is one of 13 declarators for One Million Rooftop Solar Initiative launched in 2017 and continues to work on mainstreaming solar energy into Indonesia's energy landscape, both at national and sub-national levels. Solar Revolution Hub also produces high-quality publications on solar energy and hosts a solar marketplace called SolarHub.

Energy Delivery Model (EDM)

EDM is a collaboration between CAFOD, IIED, and IESR; aiming to build an understanding of the enabling factors and barriers to delivering energy services for disadvantaged groups, learning from practitioner experience and research. The approach is currently piloted in Boafeo, Ende, Flores Island, in cooperation with the Indigenous Peoples Alliance of the Archipelago (AMAN) and local communities. 'Energy Delivery Model Toolkit' was developed to implement the pilot program. This consists of a six-step participatory design process supported by two innovative tools (the Delivery Model Map and Canvas). Project/service developers can use the toolkit and end-users not only to design new energy services but also to review existing projects/services and to inform the more effective design of future energy services.

Strategic Partnership Green and Inclusive Energy

The Partnership is a civil society partnership aiming to meet clean and inclusive energy needs for the community, which creates economic opportunities, promotes gender justice, and supports climate change mitigation. Within this Partnership, Institute for Essential Services Reform (IESR) works with Hivos Southeast Asia, Indonesian Consumers Foundation (YLKI), and Indonesian Women's Coalition (KPI). Together we work to i ncrease the role of civil society groups in the development of policies and funding for clean, gender, and socially inclusive energy system in Indonesia; build capacity and knowledge of civil society groups and communities on clean and inclusive energy issues, and promote decentralized clean energy policies.

Fossil Fuel Transition

This initiative is started from the coal transition as coal dominates the energy mix of Indonesia. Some studies related to coal transition and also both public discussion and bilateral discussion with government officials were conducted. Social, economic, and environmental perspectives are laid on the ground as we are talking about coal transition in Indonesia. We increase awareness of the urgency of coal transition to the stakeholders to, ultimately, prepare the coal transition planning in Indonesia to minimize its risks.

Energy Efficiency

Having completed energy efficiency in industry study in 2018, we pay attention to electronic appliances in 2019 since electricity contributes the most to the energy consumption in building. Cooling system, among electronic appliances, has a significant share of electricity consumption, so air conditioners represent by far the most significant potential for energy efficiency. In 2019, IESR was supporting Berkeley Lab as Indonesia partner in Indonesian Clean Energy Pathways Program. Here, IESR provides data and analysis to accelerate market transformation on air conditioners.

Climate Change Mitigation

Pushing Indonesia's government to have more ambitious climate actions is one of the IESR's missions in accelerating low carbon energy transition. Working collaboratively with other organizations and think tanks from other G20 countries in an international partnership - Climate Transparency - we manage and organize several studies and stakeholder engagement. We would like to enhance understanding/knowledge on Indonesia's performance so that it increase Indonesia's efforts to contribute to the Paris Agreement achievement.

Communications: Productions

Publications:

- Report study
- Briefing paper
- Bulletin
- 10P Series (An Energy-related booklet formed in Q&A formats)
- Discussion Paper
- Technical Paper
- Executive Summary

Inbound and outbound reach

- Talkshows (Radio and TV)
- Interview request
- Keynote Speaker Invites
- Press release
- Media advisory
- Academics support; research, thesis, and final paper inquiry

Infographics and Video graphics

Branding

- Merchandises

Documentations:

- Events Documentation
- Video Documentation

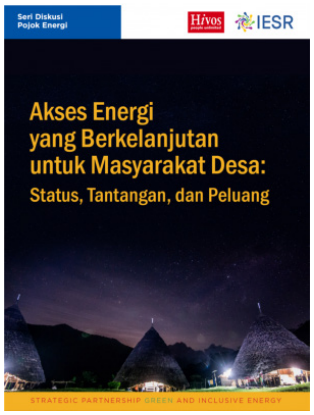
Facts and science-based

Throughout 2019, IESR produced analyses and studies that have been used as our basis to advocate the energy transition agenda in Indonesia. The following list is to name a few from our studies published in 2019.

Study	What the study is about
A Roadmap for Indonesia's Power Sector: How Renewable Energy Can Power Java-Bali and Sumatra	The study investigates the Java-Bali and Sumatra systems readiness in absorbing more renewable energy into power grids. The study found that the Java-Bali Sumatra systems can incorporate as high as 43% of renewable energy into the grids without compromising the grid reliability and system costs
Kebutuhan Investasi Energi di Indonesia. Studi Kasus: Rencana Umum Energi Nasional (RUEN) [Energy Investment Needs in Indonesia. Case Study: National Energy Plan (RUEN)]	The study aims to calculate the investment needs to achieve the oil, gas, and coal production as well as power infrastructure development targets set in RUEN. It is highlighted that the fossil fuel sector requires USD 410-580 billion until 2050, while the power sector needs USD 540 billion of investments up to 2050.
Under the Same Sun: A Cross-Country Comparison of Condition and Policy Supports for Utility-Scale Solar Photovoltaic Projects	The study examines the policy instruments used in India, Mexico, UAE, and Brazil to support the utility-scale solar PV projects and how the instruments help lower down the solar PV costs in those countries. The use of reverse auction, attractive financing schemes, and low-interest rates, and large scale projects to enable bulk procurement are some of the lessons learned highlighted in this study.
Indonesia Clean Energy Outlook 2020	The report highlights the status of clean energy development in Indonesia in 2019 and projects the market trend in 2020. The report calls attention to the slow development of renewable energy in Indonesia, with only 385 MW of renewable capacity added in 2019. The overall investment climate was not improved from the previous year, with only USD 1.17 billion worth of investment recorded for renewables

Study	What the study is about
Beyond Connections, Meningkatkan Kualitas Akses Energi di Indonesia untuk Pembangunan Manusia yang Berkelanjutan [Beyond Connections, Improving the Quality of Energy Access in Indonesia for Sustainable Human Development]	This study analyzes policies and the provision of energy access in Indonesia which includes access to electricity and access to clean cooking fuels. The study reports the low-quality energy access in Indonesia, particularly in eastern Indonesia, where some of the most indigent populations live and the absence of a Multi-Tier Framework in determining the access quality in the country.
Industrial Energy Accelerator: Indonesia Diagnostic	Given that coal plays a significant role in energy and in the economy (especially in coal-producer provinces that are highly dependent on coal sector contribution). In contrast, global pressures to coal utilization persist, there is a possibility that coal production in Indonesia will be declining. The study gives insights on the potential impacts of global coal transition in Indonesia's coal sector and recommends a comprehensive regulatory framework across industries, ministries, and local government.
Implikasi Paris Agreement terhadap Masa Depan Pembangkit Listrik Tenaga Uap (PLTU) Batubara di Indonesia [Paris Agreement Implications to the Future of Coal in Indonesia]	Coal power plant numbers globally must be reduced to meet the Paris Agreement target. As this will affect Indonesia, a fast and measurable response that is reflected in the policy and regulation is required for anticipating economic risks and ensuring energy supply security. The study indicates a potential decline in GHG emissions in the power sector can be reached to meet the Paris Agreement target and proposes a package of policy and programs that can be conducted.
Brown to Green Report 2019	The Brown to Green Report is the world's most comprehensive annual review of G20 countries' climate action and their transition to a net-zero emissions economy. The report features a novel analysis of climate impacts in G20 countries, their adaptation plans, and their policies for greening the financial system. Under Climate Transparency Partnership, IESR provides the analyses for Indonesia.

IESR 2019 List of Publications

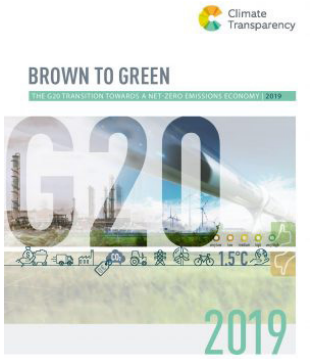


Proceeding journal:
Akses energi yang berkelanjutan

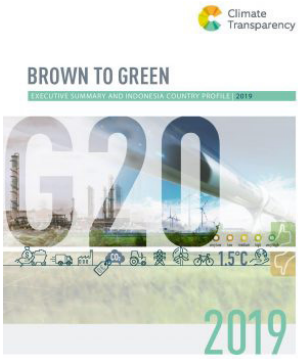
The Ambition Call

Study report:
Indonesia Clean Energy Outlook

Briefing Paper:
Apa yang Membuat Biaya Pembangkitan PLTS Skala Utilitas Bertambah Murah?

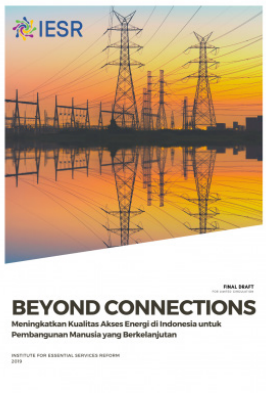


Study report:
Brown to Green 2019

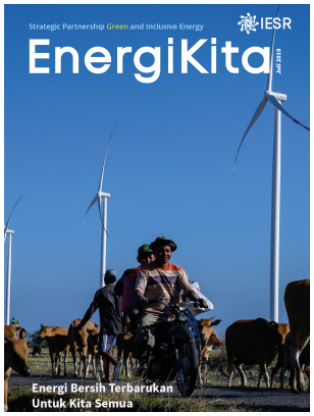


Executive summary for policymakers:
Brown to Green 2019

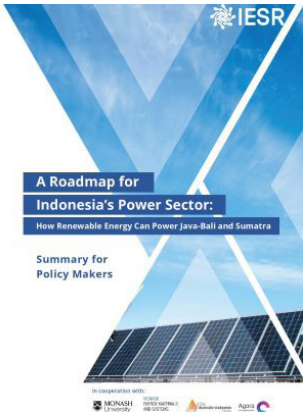
Brown to Green Report Indonesia Country Profile



Executive summary report
Meningkatkan Kualitas Akses Energi di Indonesia untuk Pembangunan Manusia yang Berkelanjutan.



Bulletin: Energi Bersih Terbarukan Untuk Kita Semua



Study report :
A Roadmap for Indonesia's Power Sector

Briefing paper :
Energi Surya untuk Kota

Dinamika Batu Bara Indonesia

IESR 2019 List of Publications

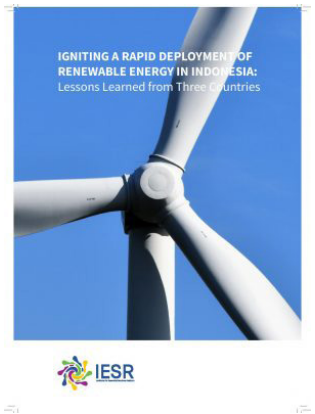
Technical Notes: Powering the Cities - Technical Potential of Rooftop Solar for Public and Commercial Buildings in Two Metropolitan Cities in Indonesia

Energi Kita

Report:
Energi Surya Untuk Kita

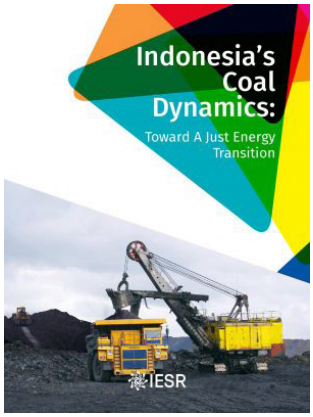
Energy Delivery Model

Indonesia Clean Energy Outlook

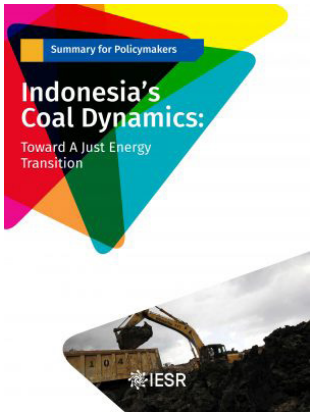


Igniting a Rapid Deployment of Renewable Energy in Indonesia

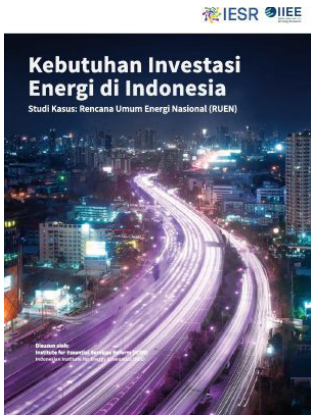
Discussion Paper
Implikasi Paris Agreement terhadap Masa Depan PLTU Batubara di Indonesia



Indonesia Coal Dynamic Full Report



Indonesia Coal Dynamic - Summary for Policymakers

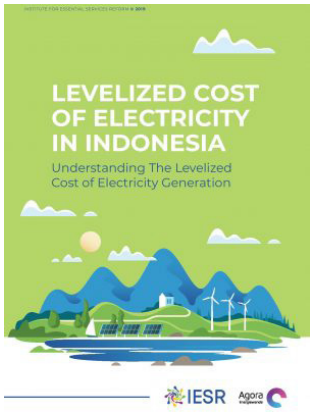


Kebutuhan Investasi Energi di Indonesia

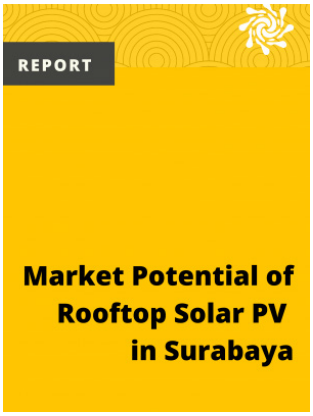
Levelized Cost of Electricity di Indonesia saat ini – Ringkasan Eksekutif

Levelized Cost of Electricity di Indonesia saat ini – xecutive summary

IESR 2019 List of Publications

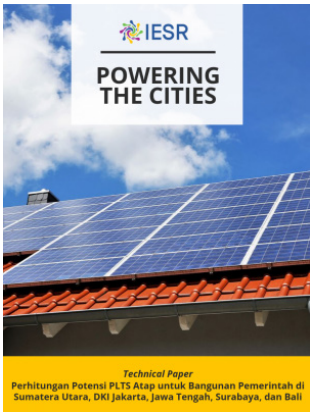


Levelized Cost of Electricity di Indonesia saat ini – Understanding the Levelized Coast of electicity Generation



Market Potential of Rooftop Solar PV in Surabaya

Memanen Energi Surya



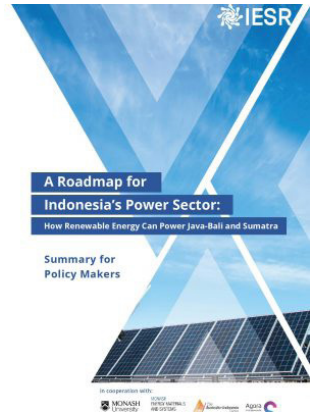
Powering the Cities Technical Paper

Market Potential of Rooftop Solar PV in Greater Jakarta

Mekanisme Lelang Terbalik

Under the Same Sun

Technical Note: Residential Rooftop Solar



A Roadmap for Indonesia's Power Sector

Communication/Campaign

Listen-Research-Advise-Engage

Bring renewable energy feasible to policymakers --- accessible, available, and affordable for all.

Our Communication Strategy developed to demonstrate how the proposed program, to identify any gaps (awareness) and meets the information needs, with interest in Renewable Energy sectors, as well as to facilitate the dissemination of messages in accelerating the low-carbon energy transition, with a narrative approach of:

Bring renewable energy feasible to policymakers, accessible, available, and affordable.

The IESR Engage Roadmap is our approach to meaningfully participating in a connected world, this is how we apply Public Engagement with Stakeholders, and highlight the steps in which we will define outcomes for our Organization, and leverage the seven behaviors of Public Engagement by:

Participate in the Conversation
Listen with Intelligence
Build Active Partnership
Champion Open Advocacy
Create and Co-create Content
Embrace and Navigate the Complexity
IESR Engage Roadmap: define, explore, strategize, ideate, activate, evaluate.
Plus: Promotion & Outreach

Our social media presence (digital diplomacy)

2019 has been the year of our public engagement, with almost 300% of the increase in socials followers and engagement through IESR owned-media channels (Newsletter subscribers, Social platform, Website visitors and numbers of Downloaded Publications)

IESR in Numbers

News Coverages

1,257 news

from 235 online media

550 news

from 55 newspaper both nationally and internationally

Events & Activity

3 International Events (IETD, Climate Transparency Workshops ICEO), 27 National/Local Events

Publication Distribution

Throughout 2019, our report studies, briefing papers, and other publication productions have been downloaded 2,768 times. (In Digital copy)

Research

Research studies is a weapon to change perception and myth-busting around renewables energy.

Event IETD

Event Geopolitik Transformasi Energi

Evet B2G

IESR had no research group until 2019; our research was conducted by researchers with the supervision of the program managers instead. Due to the increasing number of research, we established a research group at the beginning of 2019. While program managers supervise the content, a research coordinator was assigned to coordinate resources within this group to ensure the research delivered as its timeline. The group consists of several researchers (including research coordinator) with varied backgrounds, experience, and expertise in energy and environmental issues.

Our research product that mostly accessible to the public is developed through a detailed-plan process from the recent motion (proposition) to be established as a publication or paper; from outlining, interviews, modeling, and expert reviews from both internal and external reviewers, to produces in-depth studies and analyses of policies, regulations, and techno-economic aspects in the energy and environment sector with strong public interest advocacy activities to influence policy change at national, sub-national, and global level.

Influencing Changes in Policy Framework

1. The provincial government of Bali adopted IESR's recommendation on incentives for renewable energy use in their Governor Regulation on Bali Clean Energy Island

2. Introducing Energy Transition Concept to the stakeholders (adopted ideas and discourse in Indonesia's higher officials)

3. The importance of energy sovereignty in Indonesia was endorsed by the H.E. Jusuf Kalla, Vice President of the Republic of Indonesia 2014 - 2019 at IESR's organized event

4. *Gerakan Nasional Sejuta Surya Atap* - #1BY20 A Campaign to encourage the National program of One Gigawatt Installment Solar rooftop in Residential Area throughout Indonesia.

Change in Policy and Regulation

"In terms of policy and regulations, there were some improvements in 2019 that need to be appreciated. However, some challenges remained, questioning the commitment of the government to accelerating renewable energy development in Indonesia." Pamela Simamora, IESR Research Coordinator.

Presidential Regulation No. 55/2019

A new start for Electric Vehicles, a wait for implementing regulations. The regulation was issued in August 2019. The document delineates several critical points in accelerating battery electric vehicle development in Indonesia. It gives the notion of support to all related stakeholders via several methods (mainly fiscal and non-fiscal incentives), it shows concerns to protect local industry in entering the era of EV with steep local content requirement (increasing gradually until 2026 onward).

MEMR Regulation No. 13 and 16/2019: Better terms for rooftop solar PV

this regulation shows support for small scale (< 500 kWp) rooftop PV users as they will no longer need to obtain Operating License (Izin Operasi/IO) and Operational Feasibility Certificate (Sertifikat Laik Operasi/SLO). This will ease the administration process and extra costs. Reg. No. 16/2019 will allow industrial consumers to generate and use their solar energy with significantly less cost because the capacity charge is reduced from 40 hours to only 5 hours per month, and the emergency charge is no longer applied.

Event ICEO

Change in Public Perception

IESR assigned a Strategic Intelligence Company that provided us with intelligence insights on how our works, resources and/or studies perceived in the newsroom from the top ten Indonesia's media producers (media company). By 2019, there's been an increase of two times news coverage, mostly in online mainstream media distributed with IESR as the newsmaker compared to the previous year.

The term energy transition is becoming more popular and adopted by policymakers. This topic was consistently covered in the media with a variety of discussions in energy access, Indonesia's renewable energy potential, solar rooftop development, coal transitioning, and electricity policy (tariffs and pricing). However, the practical issue of its implementation remains a challenge.

IESR often builds narratives about Indonesia's readiness to develop renewable energy and in comparison to other countries. The discourse opens the conversation and shapes the public's perception, as mostly covered that dominates news coverage in Indonesia throughout 2019.

How are our programs impacted throughout the year

Q1

Energy Transformation

Through ICEF, IESR has compiled key stakeholders' feedback in improving the electricity tariff policy and will be further advocated with MEMR

IESR in collaboration with Monash University and Agora Energiewende has proven that renewables could potentially and reliably power the growing electricity demand in Java-Bali and Sumatra in the next ten years by doubling the share of renewables

Green Economy

IESR published the first time of its known, a study that analyses the future of coal towards the just energy transition.

Q2

Energy Transformation

Empowered 24 ICEF members in amplifying and facilitating the national energy transition discourses throughout ICEF regular meetings and discussions

Changed in electricity demand forecast and increased renewables share in RUPTL 2019-2028 throughout a series of discussions, a launching event, and advocacy works on the roadmap for renewables in Java-Bali & Sumatra power system study with Monash University and Agora Energiewende.

Anti-coal coalition group (#BersihkanIndonesia) used IESR's information packages on renewables potentials, installed capacity, and development plan for every province in the country

Green Economy

Coal transition issue is recognized as one of the climate change mitigation efforts. The coal stakeholder, together with IESR and the Unit of President's Special Envoy for Climate Change, discussed this issue for the first time.

Sustainable Energy Access

IESR has become a top-of-mind institution for solar energy issues; as evident in increasing inquiries from government, NGOs, and public

Q3

Energy Transformation

Introduced the understanding of the geopolitics of the energy transformation including examined its potential impacts, challenges, and opportunities for Indonesia in carrying out energy transformation and low carbon economic development to Indonesia's Vice President and other key stakeholders in the nations

Improved the CSOs' technical capacity on potential renewable energy and its implementation in the Java-Bali & Sumatra system. It also includes the potential cost savings over the ten years through high renewables scenario coupled with realistic energy savings

Enlightened the key policy and decision-makers on the dynamics of the coal sector in the nation (and sub-national) as well as how to transition the sector through possible supportive policy and regulatory framework options

Green Economy

Term of the energy transition is acknowledged as one of Indonesia's climate change mitigation actions and formally stated by the Ministry of Environment and Forestry

People from Jakarta, Java, Sumatra, and Kalimantan participated in a blog competition regarding Indonesia's ambitious climate action.

Sustainable Energy Access

MEMR adopted IESR's recommendation from several studies on utility scale solar energy as they are currently following up strategy for solving land problems (communicating and coordinating with National Agency for Plantation Area/PTPN and National Agency for Assets Management/LMAN) and financing issues (coordinating with National Agency for Environmental Endowment Fund)

MEMR adopted IESR's recommendation from several studies on promoting better policy and regulatory framework for renewable energy development as they are drafting presidential regulation on renewable energy tariffs, revised ministerial regulations on rooftop solar, and pushing Renewable Energy Act

How are our programs impacted throughout the year

Q4

Energy Transformation

Deepened understanding of the energy transition on global energy transition scenarios, technology trends, potential disruptions in the energy sector and policies in facilitating a just energy transition through Indonesia Energy Transition Dialogue (IETD) 2019

We discussed, developed, and delivered high-level policy and technical recommendations in accelerating the country's renewable energy development to the President.

Key energy stakeholders in the country (and some of our key partners abroad) were exposed to IESR's annual flagship report on Indonesia's clean energy development progress and review: Indonesia Clean Energy Outlook 2020

Green Economy

One of Indonesia's senior economist and Coordinating Minister for Maritime and Investment Affairs accepted a term of green economy, especially net-zero economy, and became keynote speakers at the launching of the Brown to Green Report 2019

The government accepted IESR's recommendation (together with Berkeley Lab) on increasing the minimum energy performance standard on AC and now they are revising the energy minister on AC label

Sustainable Energy Access

The provincial government of Bali adopted IESR's recommendation on incentives for renewable energy use in their Governor Regulation on Bali Clean Energy Island

Central Java's Governor signed an MoU with IESR to develop the province as the first solar province in Indonesia

Several local governments express their interest to foster collaboration with IESR for solar energy development (Jakarta, West Java, East Java, Jambi, North Sumatera) IESR has been offered to sit on an expert board for Central Java's regional energy policy evaluation for 2020

MEMR revised MEMR Reg. 49/2018

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Essential Services
Reform

Our 2020 and Beyond

2020 is a critical point to achieve 23% of the renewable energy mix in Indonesia. IESR widens its work scope within the energy system, decarbonization, and reduction of emissions and power advisory.

As the energy transition discourse is now becoming more popular in Indonesia, we are determined to extend our work in the level of practice, by widening the scope of our work within the energy system, decarbonization, and reduction of emissions and power advisory including but not limited to finance schemes and local government engagement. We are aligning our objective with the relevant laws that incorporate health and environment (to avoid hazardous impacts of fossil energy).

Momentum 2020

The year 2020 is becoming critical towards achieving 23% or the renewable energy mix in Indonesia

Inducing our program activities within the strategic planning of both central & local government

Roadmap - in general, is imperative.

Level up the role of ICEF as a high trust group to directly influence policy agenda and agenda-setting.

Enhance the energy/power advisory services to both improve policy & regulatory framework for clean energy investment by providing direct technical assistance to government institutions (e.g., MEMR, Min of National Development/Bappenas) and to PLN. Our works focus on reforming the PPA regime and support the establishment of de-risking instruments for renewables. Part of IESR's work also provides an analysis of the content of upcoming renewable energy law from techno-economic analysis, among others but not limited to RPS/RPO, carbon price instrument and REC and de-risking mechanism for renewable energy projects.

Empower and foster the solar revolution and clean energy hubs to both achieve substantial solar PV rooftop installations and RE initiatives, pledges, and investments. In this third-year project, the solar revolution hub specifically aims to strengthen the implementation of the 'One Million Solar Rooftop Initiative' (OMSRI) in public and commercial buildings, households, and industries, including developing a feasibility study of utility-scale solar projects in the nation. Through the clean energy hub, IESR will resume empowering civic campaigns on energy by building and strengthening the knowledge and understanding of clean energy and energy transition for civil society organizations (CSOs), millennials, public leaders, and journalists at the national and local levels.

Clean Energy Resources Hub Providing seamless information and technical support for stakeholders

Solarlab.id A service provider and user-oriented platform - Indonesia's Solar energy development Information and data center.

Transisienergi.id Indonesia's energy transition hub connecting the media, CSOs, and general public accessing curated and reliable information of publications, data, and energy transition-related in a collaborative way.

Enhancing the role of local governments to start "energy transition from the local" by providing technical assistance to support the implementation of provincial clean energy plans and develop regional renewable investment frameworks. In 2020/2021, IESR will assist the Provincial Government of Central Java on implementation, and scale-up #JatengSolarRevolution, a joint initiative by IESR and the Government of Central Java launched last year. IESR also will assist the Provincial Government of Bali in the implementation of Governor Regulation of Bali Clean Energy, with a focus on the acceleration of solar PV deployment in the tourism sector and public buildings. We are also seeking to assist the Province of Jambi in building up renewable project pipelines and provincial regulations to support renewable energy deployment in the province.

Program highlights

Deploying CASE Project

A large alliance of partners is forming to support Southeast Asia in its transitional move to a clean, affordable, and secure energy supply system. IESR is a proud alliance of this Clean, Affordable, and Secure Energy for Southeast Asia, as the National Implementation Partner Indonesia, Research, Action, and Communications.

Potential risk in 2020

We identified some significant risks which may hinder the plan to become successful, as well as ways of mitigating these:

Economic slowdown. The growth of energy demands in emerging economies like Indonesia depends on economic growth. The global economic downturn could influence domestic financial performance that leads to lower demand for electricity. This situation could make lower demand for a new generation and might lower
capacity of power from renewables as PLN's have been building 29 GW of coal power plants up to 2028. This situation could affect a lower appetite for investment in renewable energy.

The current account deficit impacts the energy policy-making process. As the energy sector is still perceived as a commodity to balance the current account deficit, the government pushes the industry to optimize the coal resources utilization and uptake (e.g., domestic coal capping price, coal gasification, coal liquefaction). A combination of proposing alternative solutions from clean energy and strong push back from the anti-coal movement is among the mitigation actions to mitigate this risk

A mismatch between new/revised policies and regulations with its needs and objectives. To date, both the government and legislature are working towards new policy/regulation (e.g., omnibus bill, new and renewable energy bill), which will be released to regulate further it's superior and/or subordinate. On the other hand, the government is also revising the previous regulations (e.g., renewable electricity tariffs and arrangements), which aim to improve the enabling environment for clean energy development in the country. The new/revised policy and regulation might also become the status quo (and even worse) if not addressing the needs and objectives, leading to losing the opportunity in tapping the clean energy investment and opportunity. To mitigate this risk, IESR will continue to work closely with the policymakers and deliver the technical and advisory services which favor the acceleration of the low carbon energy transition.

IESR encourages transformation into a flashed energy system by advocating a public policy that rely on data-driven and scientific studies.

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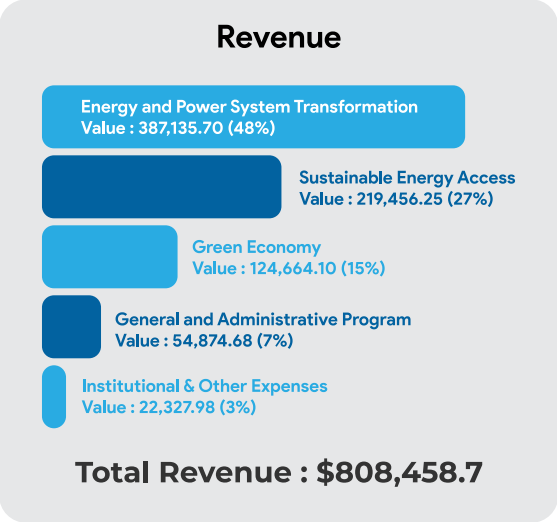
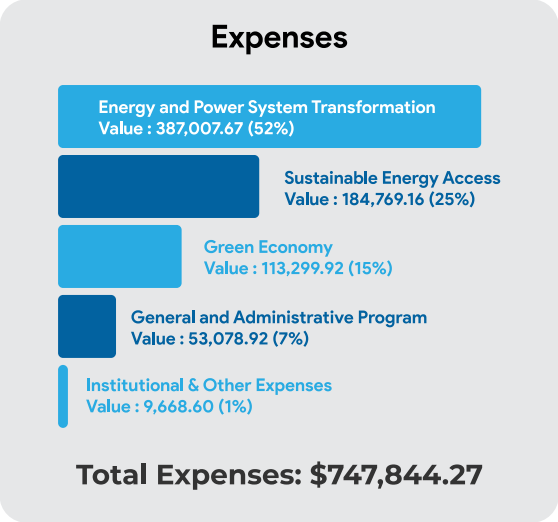
Financial Report

The trust of our partners is vital for IESR. As a non-profit organization, IESR receives grants through various philanthropic institutions and project submissions. We channeled all the funds to achieve IESR's mission in accelerating the low carbon energy transition in Indonesia. Every year IESR is independently examined by professional auditors to maintain our credibility and accountability in managing the funds.

In 2019, we managed a total revenue of US$ 808,458.72 More than 50% of IESR revenues were received from our main three programs, namely **Energy and Power System Transformation** (with total revenue of US$ 387,137.70), **Sustainable Energy Access** (with total revenue of US$ 219,456.25), and **Green Economy** (with total revenue of US$ 124,664.10). These three programs expended the same amount of each revenue, except for the **General and Administrative Program**, which had a margin of US$ 54,874.68 (or about 6.8%) from the revenues.





Data represesent IESR Fiscal Year 2019: January 2019 - December 2019
Exchange rate based on Bank Central Indonesia middle rates at the end of the year 2019

Growth in human resources, diversity, and inclusive policy. People culture at IESR

As for human resources, by mid-2019, we have a total of 18 employees on board. IESR continues to advance the gender equality policy, which leads us to have a share of female workers of 44%. We rely on our work from research and analysis; therefore, we have one doctorate holder and as many as eight master's degree holders on board, all graduated from distinguished universities around the globe to enhance our credibility. Almost all our employees are in very productive age, with 42% of

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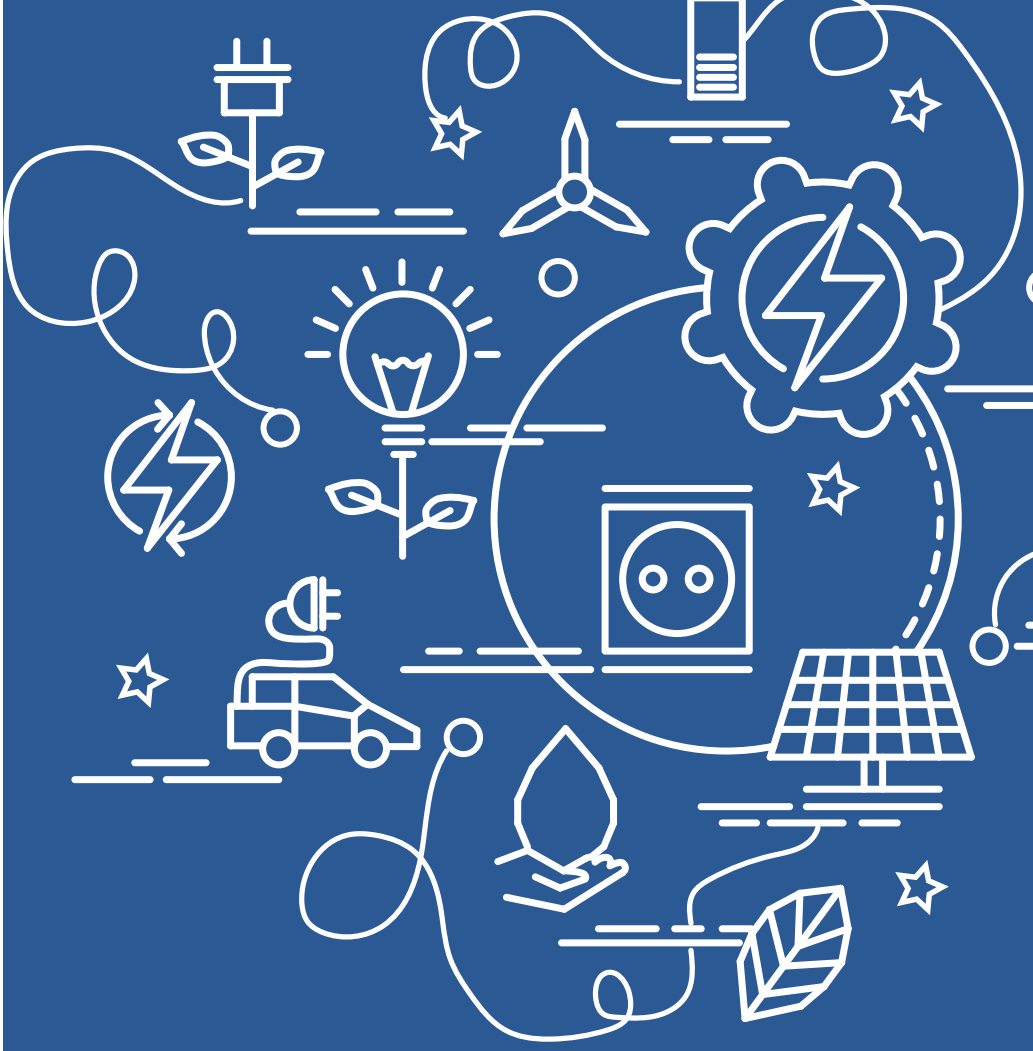

IESR Annual Impact Report 2019

Institute for Essential Services Reform (IESR)

Fostering Energy System Transformation (energy transition) in Indonesia, and economic transformation based on low (net-zero) carbon emissions

www.iesr.or.id