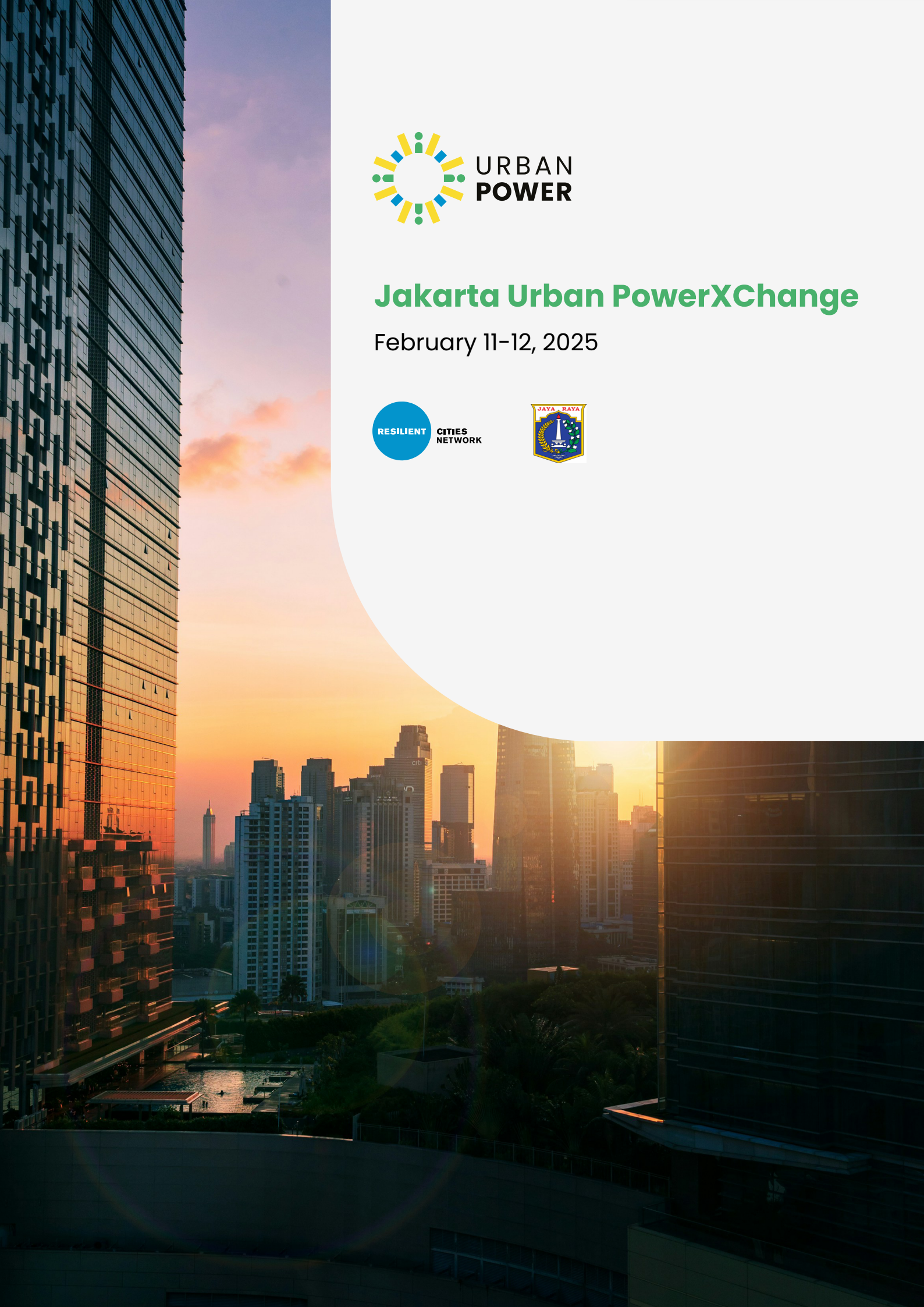
URBAN POWER

Jakarta Urban PowerXChange

February 11-12, 2025

RESILIENT CITIES NETWORK



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MAY 2025

FOREWORD

The urgency to build resilient urban energy systems has never been greater for cities across Southeast Asia. The accelerating impacts of climate change — including more frequent extreme weather events, rising sea levels and growing energy demands — are creating increasingly complex and compounding urban challenges. These challenges go beyond technical solutions; they are deeply linked to social and economic justice, equity and the fundamental right of all residents to live in healthy, safe and sustainable cities.

I extend my heartfelt thanks to the Jakarta Capital City Government for co-hosting the second Urban PowerXChange and for their steadfast commitment to advancing urban resilience. Like many other cities in the region, Jakarta is confronting the critical need to transition to clean, reliable and inclusive energy systems. Achieving this requires more than investment in renewables like solar and wind. It calls for a rethinking of urban planning, governance and partnerships to ensure that the energy transition is both just and equitable.

Energy disruptions hit hardest in low-income and marginalized communities, deepening existing inequalities. Although local governments often have limited control over national energy infrastructure and policy, they remain on the frontlines of addressing these impacts. By strengthening collaboration, local leadership and innovative solutions, cities can play a transformative role in building a more resilient energy future.

Through the Urban Power Program, the Resilient Cities Network has worked closely with Jakarta and Semarang to assess energy resilience priorities and provide technical support. The Urban PowerXChange in Jakarta offered a unique opportunity for these two cities—and others across Southeast Asia—to come together, share insights, confront shared challenges and explore practical solutions that can be scaled across the region.

We are proud to see six cities uniting in Jakarta around a common vision for energy resilience. The partnerships and knowledge exchange fostered during this event lay the groundwork for future collaboration that can drive meaningful, lasting change.

I look forward to continuing this journey together with our partners and cities, to build more resilient, inclusive and sustainable urban energy systems for all.

NINI PURWAJATI
Lead, Programs and Head of APAC Engagement
Resilient Cities Network

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INTRODUCTION

ENERGY RESILIENCE IN EMERGING ECONOMIES

Southeast Asia is at a critical crossroads. As the region experiences rapid economic growth and urbanization, it also faces intensifying climate threats that put its cities and their futures at risk. Urban areas bearing the brunt of these impacts, from more extreme weather events, rising sea levels, to shifting precipitation patterns and prolonged heatwaves. The Intergovernmental Panel on Climate Change (IPCC) has highlighted Southeast Asia as one of the most vulnerable regions globally, particularly in fast-growing urban centers where risk exposure intersects with socio-economic fragility.

Urbanization and population growth are driving up energy demand at a time when energy systems are already under stress. Many Southeast Asian countries remain heavily reliant on fossil fuels, particularly coal, which account for over 50% of the primary energy supply in countries such as Indonesia, Malaysia, the Philippines and Vietnam. This dependency not only contributes to global greenhouse gas emissions but also creates localized environmental and public health hazards, while locking cities into carbon-intensive infrastructure that is vulnerable to disruptions. Coastal cities like Jakarta, Semarang, Melaka and Penang are increasingly exposed to sea-level rise, flooding and storm surges. These events can severely damage energy infrastructure from transmission lines to substations and disrupt essential services such as water supply, public transportation and healthcare. In turn, these disruptions disproportionately affect low-income and vulnerable communities who have the fewest resources to recover.

Cities in emerging economies face a dual burden: they must scale infrastructure and services to keep up with the rapid pace of urbanization, while also mitigating and adapting to growing climate risks. In this context, traditional narratives of energy transition centered primarily on reducing carbon emissions are often not sufficient to motivate change. Instead, local governments need integrated approaches that link energy transition with core development priorities such as poverty reduction, economic inclusion and public health.

This is where urban resilience offers a powerful framework. Urban resilience is about a city's ability to survive, adapt and thrive amid both chronic stresses—such as aging infrastructure, inequality and rapid growth—and acute shocks, such as typhoons, heatwaves, or blackouts. It means identifying systemic risks and developing cross-cutting solutions that enhance not just infrastructure performance, but also social and institutional capacity.

Energy resilience lies at the heart of this. It is not only about reducing emissions or improving efficiency, but about ensuring that energy systems can anticipate, absorb, adapt to and recover from disruptions while continuing to meet the needs of urban populations. A resilient energy system supports the uninterrupted delivery of critical services, protects livelihoods and contributes to overall urban safety and wellbeing.

Resilient energy solutions are cleaner, more efficient, more decentralized and most importantly, more inclusive. They focus on diversifying energy sources, investing in renewable technologies like solar and wind, integrating energy storage and strengthening governance and planning. But they also prioritize equitable access—ensuring that all residents, especially the most vulnerable, benefit from energy transitions that improve daily life and long-term opportunity.

Southeast Asia is no stranger to resilience thinking. For more than a decade, cities across the region have engaged in peer learning, climate risk assessment and the co-creation of integrated resilience strategies. Building energy resilience is a natural next step and a critical one. It is essential not only for reducing emissions but for creating urban systems that can withstand disruption, recover quickly and offer a better quality of life to all.

URBAN
POWER

ABOUT URBAN POWER

Resilient Cities Network's Urban Power program, launched in 2022, is designed to assist cities in increasing the resilience of their energy systems in the face of major global challenges including climate change, urbanization and increasing inequality. The program takes a holistic view of the energy system, looking not only at the resilience of local energy infrastructure but also the critical value of energy governance, stakeholder engagement and the interdependence of urban systems for a resilient energy system.

Underpinned by its three pillars — equitable access to energy services, acceleration of renewable energy deployment and creating decent, green jobs — the program focuses on:

- Developing and delivering a technical framework for identifying gaps and priorities for addressing urban energy resilience challenges;
- Providing technical support to develop clean energy projects that unlock resilience co-benefits such as creating economic opportunities, reducing greenhouse gas emissions and enabling an equitable energy transition for all; and
- Creating intra and inter-regional, inter-city learning exposure opportunities for city governments.

JAKARTA URBAN POWERXCHANGE: EXPLORING SOUTHEAST ASIA'S ENERGY RESILIENCE FUTURE

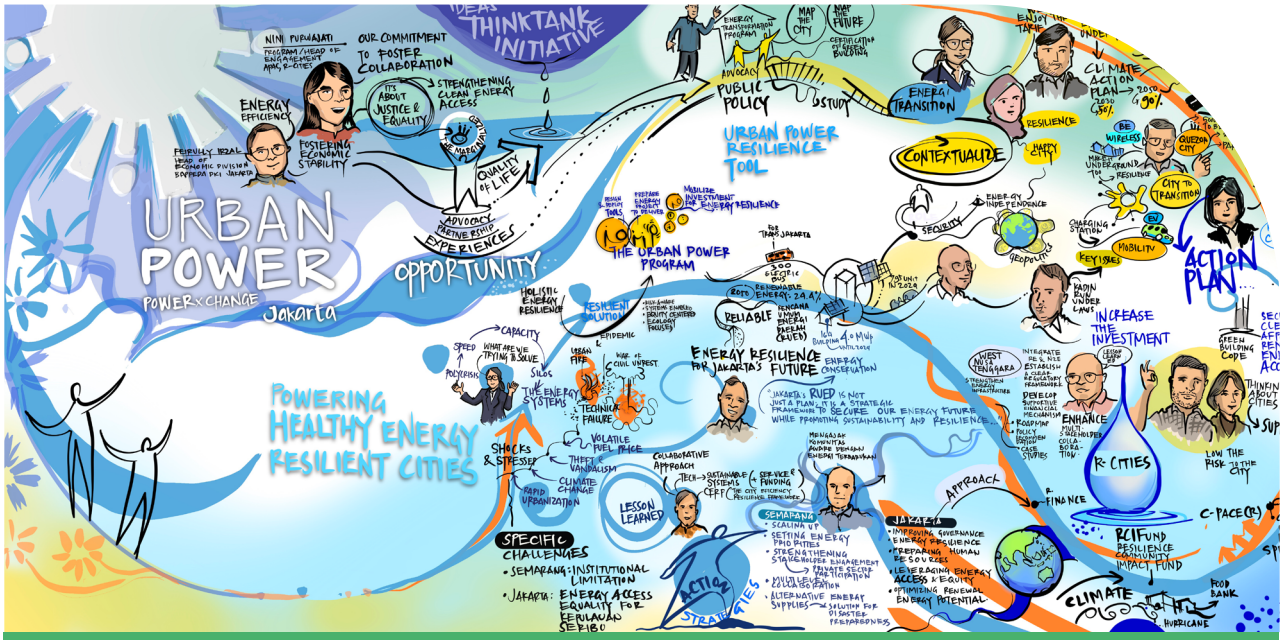
The **Jakarta Urban PowerXChange** convened representatives from 6 Southeast Asia cities, including 24 city representatives and 22 private sector and partner representatives, for a dynamic exchange of ideas, experiences and solutions to strengthen urban energy resilience. The event promoted peer-to-peer learning and aimed to break down silos both within city governments and between cities facing shared challenges.

Jakarta and Semarang are the first two cities in the region to complete energy resilience assessments through the Urban Power program. At the PowerXChange, both cities presented findings from their Urban Power Profiles[1], comprehensive assessments of their energy systems, highlighting critical vulnerabilities as well as opportunities for more resilient and inclusive energy futures.

Four other cities — Seberang Perai, Penang Island, Melaka and Quezon City — joined the program as learning cities, participating in energy resilience webinars and trainings in the lead-up to the event. During the PowerXChange, they shared local initiatives and reflected on how lessons from the Urban Power program could inform their own resilience journeys.

The knowledge exchange focused on three core themes:

- **Beyond emission reduction:** What is the role of energy transition in cities' resilience journey? How can cities reduce their reliance on fossil fuels while enhancing energy security and building healthier, more inclusive communities?
- **Activating cities' energy ecosystem:** What governance models and partnerships can unlock innovation and strengthen local energy ecosystems?
- **From local to regional:** What common energy resilience challenges do Southeast Asian cities face and how can they work together to tackle them?



This graphic recording captured at the Jakarta Urban PowerXChange highlights key themes discussed on Day 1 of the event.

1 Access Jakarta's and Semarang's Urban Power profiles here: https://resilientcitiesnetwork.org/urban-power-semarang-and-jakarta/

HIGHLIGHTS FROM THE JAKARTA URBAN POWERXCHANGE

JAKARTA'S RESILIENCE JOURNEY

Alongside showcasing practical projects and discussing synergies across local, national and private-sector efforts, city representatives also drew inspiration from each other's work. The PowerXChange culminated in a shared commitment to elevate energy resilience as a policy priority and to continue working collaboratively across the region.Jakarta, Indonesia's economic and political powerhouse, is navigating a dual challenge: rapidly growing energy demand and intensifying climate risks that threaten both its energy security and urban resilience. Transportation accounts for 41% of the city's total energy consumption, and worsening traffic congestion, coupled with air quality concerns, underscores the urgency for cleaner, more efficient solutions.

Through the Urban Power Program, Jakarta convened a broad coalition of city stakeholders to assess its energy landscape and develop actionable strategies to build resilience. Following its participation in the Urban PowerXChange in Cape Town[2], Jakarta took the initiative to host the next PowerXChange in Southeast Asia demonstrating its commitment to regional collaboration and leadership.

During the Jakarta PowerXChange, the city shared its ambitious energy transition goals and highlighted innovative local initiatives, including:

- Rooftop solar energy installations on public buildings;
- A successful electric bus pilot, supporting low-emissions urban transport;
- And a growing ecosystem of startups and entrepreneurs advancing renewable energy and clean mobility solutions.

Jakarta's journey reflects a broader vision: to build a resilient, inclusive and climate-smart energy future both for its own residents and as a model for cities across Southeast Asia.

Andono Warih, Head of Jakarta Energy Division, presents Jakarta's energy roadmap.

2 Learn more about the Urban Power program's first in-person PowerXChange held in Cape Town in August 2024 here: https://resilientcitiesnetwork.org/urban-energy-resilience-reflections-from-the-urban-powerxchange/

JAKARTA'S ENERGY STRATEGY AND INITIATIVES

Home to over 11 million residents and a metropolitan population exceeding 30 million, Jakarta is one of the most densely populated and rapidly growing urban centers in the world. The city accounts for an estimated 40% of Indonesia's total energy consumption, driven by accelerated urbanization, expanding economic activity and intensive transportation needs. This growing demand places significant pressure on already stretched energy infrastructure.

Despite its modern infrastructure and economic status, Jakarta remains highly dependent on fossil fuels, with coal, gas and diesel comprising 96% of the city's energy mix. While Indonesia's national government has set a target to reach 31% renewable energy by 2050, current renewable adoption in Jakarta remains below 4%, underscoring the urgent need for accelerated action at the city level.

The city's transition from Indonesia's national capital to a special province has introduced new governance frameworks that are reshaping Jakarta's approach to energy policy and investment. These evolving structures offer both opportunities and challenges for strengthening energy resilience and accelerating the shift toward a cleaner, more inclusive energy future.

JAKARTA URBAN POWER PROFILE: ENERGY RESILIENCE CHALLENGES AND OPPORTUNITIES

Jakarta's Urban Power Profile, developed through the Urban Power program by R-Cities in collaboration with the Center for Urban and Regional Resilience Research (CURE) at University of Diponegoro, provides a comprehensive analysis of the city's energy vulnerabilities, infrastructure gaps and policy challenges. The profile maps out critical areas of risk and identifies actionable opportunities to strengthen Jakarta's energy resilience.

Using the City Energy Resilience Framework (CERF), the assessment uncovered a set of strategic challenges and opportunities essential to guiding Jakarta's transition toward a more sustainable and low-carbon and inclusive energy future.

The evaluation identified five priority areas for improvement and targeted interventions offering a roadmap to accelerate the city's energy and enhance the resilience of its systems in the face of climate and urbanization pressures.

PARTNERING FOR MOBILITY TRANSFORMATION AND VEHICLE ELECTRIFICATION

Jakarta is committed to partnering with other cities to drive the transition toward sustainable urban mobility and vehicle electrification. The city's flagship public transport operator, Transjakarta, is leading this shift demonstrating how cities can take bold, strategic steps to reduce emissions and improve air quality through cleaner mobility solutions. Jakarta's electrification journey offers valuable insights for other urban centers seeking to modernize their transport systems while advancing broader climate and resilience goals.

STRENGTHENING LOCAL ENERGY GOVERNANCE AND PLANNING

Jakarta is actively shaping its energy future by fostering collaboration across city departments to define the role of subnational governments in energy management. Closer coordination between planning, economic development, mobility and energy departments is essential to integrating energy transition goals into Jakarta's broader urban development strategies.

SCALING GREEN JOBS AND INVESTMENT IN ENERGY TRANSITIONS

Jakarta is committed to increasing employment and investment in sustainable energy initiatives. As the city invests in electrifying public transport, advancing solar energy deployment and improving energy efficiency across sectors, the city aims to expand its workforce development efforts to prepare workers for jobs in the green economy.

ENERGY POLICY ADVOCACY

One of Jakarta's key challenges in advancing renewable energy adoption is the regulatory framework surrounding solar energy. Collaboration between PLN, local governments and the private sector toward a more flexible energy market will empower businesses and households to contribute to Jakarta's energy resilience and economic growth.

PURSUING ENERGY RESILIENCE IN KEPULAUAN SERIBU

The Kepulauan Seribu islands, part of the Jakarta regional administration, include over 100 small islands that deal with inconsistent power supply, aging infrastructure and high energy costs. Jakarta's Urban Power Profile recognizes the islands' potential for investment that creates green jobs, sustainable energy and promotes eco-friendly tourism.

TRANSJAKARTA: A MODEL FOR JAKARTA'S ENERGY TRANSITION AND URBAN RESILIENCE

Transjakarta has been at the forefront of Jakarta's sustainable urban mobility transformation, operating an extensive Bus Rapid Transit (BRT) system with 237 routes and 4,900 buses, serving over 1.3 million passengers daily. As part of Jakarta's broader energy transition efforts, Transjakarta pioneered adoption of electric buses (EVs) in 2022. Although it initially faced skepticism over cost, reliability and operational feasibility, Transjakarta was able to pursue this effort through data-driven optimization, government incentives and strategic partnerships. Only two years after the initiative was launched, EV buses proved to be more cost-effective than traditional diesel buses, with operational costs decreasing by 20% per kilometer and generating annual savings of US$50 million. This transition has also contributed to significant reductions in emissions, with annual CO2 emissions projected to drop by 32.2 million kilograms in 2025.

Beyond economic and environmental benefits, Transjakarta's initiative enhances Jakarta's urban resilience by reducing dependency on fossil fuels and improving air quality in a city that has been struggling with air pollution as a result of its fossil-based power plans and transportation. By operating with greater efficiency and reducing dependence on fossil fuels, EV buses offer significant advantages. Furthermore, Transjakarta's investment in workforce training and expanded maintenance facilities strengthens the long-term sustainability of these efforts.

As Jakarta accelerates its energy transition, Transjakarta stands as a leading example of integrating clean energy with urban transport resilience. By leveraging smart-grid technology, expanding electrification policies and optimizing financing models, Jakarta is laying the foundation for a climate-adaptive and low-carbon public transport system. With projections that 97% of Transjakarta's fleet will be fully electric by 2030, this initiative not only supports Jakarta's net-zero goals but also sets a precedent for other cities looking to achieve sustainable mobility solutions.

Participants visited TransJakarta headquarters to learn about the city's clean mobility program.

SEMARANG'S ENERGY RESILIENCE JOURNEY

As a major port city and capital of Central Java, Semarang has growing energy needs, but its lack of independent energy policymaking authority presents a significant hurdle for building energy resilience. Population growth and industrial expansion continue to drive the city's energy demand. Furthermore, Semarang's dependence on fossil fuels, nascent renewable energy infrastructure and vulnerability to natural disasters such as flooding and land subsidence underscore the importance of emphasizing energy resilience in the city's urban and development planning.

Although it produces an energy surplus at present, energy resilience is critical for Semarang to continue its current growth trajectory while improving system reliability, residents' well-being and economic inclusion.

Rukuh Setiadi Associate Professor, at Center for Urban and Regional Resilience Research (CURE), University of Diponegoro during opening presentation at the PowerXChange.

SEMARANG'S ENERGY STRATEGY AND INITIATIVES

As part of the Urban Power Program, Semarang applied the City Energy Resilience Framework (CERF) to evaluate the resilience of its energy system. This framework helps the city identify challenges and opportunities in its energy system and develop strategies for a greener and more resilient energy future.

Semarang is currently developing various renewable energy initiatives, including solar power, waste-to-energy, biogas and wind energy. One of its flagship projects is the Tambak Lorok Floating Solar Power Plant. The city has also launched biogas production from livestock waste and organic waste management to support clean energy transition efforts. Though the city does not have direct authority over energy policy, which is held at the provincial level of government, that has not stopped the city from pursuing energy generation projects or integrating energy resilience into urban planning.

SEMARANG'S ENERGY RESILIENCE COMMITMENTS

COMMITMENT TO ACTION DESPITE LIMITED AUTHORITY

Semarang recognizes that limited authority should not mean inaction when addressing energy challenges. Through cross-sectoral collaboration, Semarang is taking proactive steps to align its development plans with national targets and sustainability goals.

URBAN POWER PROFILE AS A FOUNDATION FOR MEDIUM-TERM PLANNING

Insights from Semarang's Urban Power Profile are actively shaping the city's Regional Medium-Term Development Plan (RPJMD). The city is emphasizing practical, scalable solutions, including the installation of solar panels in schools and government offices, optimizing public transportation with cleaner energy and improving flood management systems to ensure a more resilient energy future.

COLLABORATION FOR A SUSTAINABLE ENERGY FUTURE

Semarang is committed to strengthening cross-sector collaboration, both domestically and internationally, to accelerate the transition toward a cleaner, more reliable energy system. Through partnerships, the city aims to scale up renewable energy adoption, enhance disaster preparedness and create opportunities for sustainable economic growth.

PRIVATE SECTOR SPOTLIGHT

INDONESIA'S ENERGY STARTUP ECOSYSTEM

New Energy Nexus, a global network of funds and accelerators, organized a panel featuring three Indonesia-based energy startups - Leastric, Swap Energy and SolarKita. The companies presented innovative clean energy solutions being tried and tested in Jakarta, showcasing opportunities and challenges for the private sector to contribute to cities' energy resilience.

- **Low energy prices** present an obstacle to the potential growth of energy efficiency, clean mobility and renewable energy companies like Leastric, Swap Energy and SolarKita. While Indonesia is phasing out energy subsidies, the relatively low price of energy means a smaller reward for pursuing energy savings through switching to electric vehicles, improving energy efficiency and adopting renewable energy.
- **Indonesia has a huge potential market for two-wheel EVs** like bikes and motorcycles, which contribute to urban air pollution and noise. Fuel subsidies, limited charging or battery swapping infrastructure and the discontinuation of subsidies for EV buyers act as barriers for more Indonesians to adopt small EVs.
- **Jakarta's clean energy startup ecosystem is growing** and promises to create jobs, support innovation and contribute its expertise to the policy and practical questions of building energy resilience.

PRIVATE SECTOR SPOTLIGHT

XURYA DAYA INDONESIA

Xurya is a solar energy company pioneering a zero-investment business model, allowing businesses to adopt solar energy without upfront costs, making renewable energy more accessible. With operations across Indonesia's many islands, Xurya has helped create over 2,000 jobs, supporting local employment and economic growth and generating over 160 MWh of clean energy.

During the PowerXChange, Xurya led an extensive site visit to one of its rooftop solar installations located in Lindeteves Trade Center (LTC) in the Glodok area in Jakarta. During the tour, Xurya's team highlighted how grid policies are capping the growth of solar energy in Indonesia. Notably, Indonesia currently maintains quotas on installing solar panels based on the capacity of the grid. Applications are accepted only twice a year and generate intense competition. For Xurya, this means potential customers are often put on a waiting list until the next quota opens, and even then, there are no guarantees they will get a permit. Indonesia's private energy producers are supportive of investing in grid resilience to increase the grid's capacity for new generation.

Participants visited LTC Glodok, a commercial building in Jakarta to see Xurya's rooftop solar installation with over 500,000 kWh annual generation capacity.

INSIGHTS FROM LEARNING CITIES AND PARTNERS

The PowerXChange brought together 62 participants from 6 cities and 18 different partner organizations. Learning cities and partners had the opportunity to learn from Semarang and Jakarta's energy resilience assessments and shared lessons and insights of their own. The learning cities, for their part, presented their energy and resilience initiatives.

INSIGHTS FROM LEARNING CITIES

CITY SPOTLIGHT: PENANG ISLAND

Representatives of Penang's planning department shared lessons from their city's resilience journey. Sixty-one percent of Penang Island is under conservation, protected from development by the city's sustainability plan. As an island community and closed ecosystem, Penang has focused its resilience and sustainability efforts on reducing waste and cutting down on energy use from buildings and transportation. Local laws and regulations mandate that developers adopt energy and water efficiency plans and green building certification, as well as installing rooftop solar. Incentives allow developers to build taller buildings if they are close to transit stations, encouraging people to walk and use public transportation.

For Penang Island, the threat of sea level rise and the limited space available for development are key factors behind the city's embrace of resilience.

Mohd Bashir Bin Sulaiman Head of Planning Department, Penang Island during a panel discussion at the PowerXChange.

CITY SPOTLIGHT:
SEBERANG PERAI

Seberang Perai, the mainland portion of Penang State, is partly urbanized, and about half of its territory is dedicated to agriculture. Representatives of the town planning and engineering departments shared their reflections on the city's journey. Seberang Perai has emphasized reducing waste and creating circular food and production systems to reduce its resource intensity and excess energy use.

As part of the city's community farm program, Seberang Perai launched a competition encouraging neighborhoods to grow vegetables on areas of 30 square meters or less, with the goal of utilizing vacant lands, addressing living costs, engaging youth in advanced agricultural careers and leveraging technology to enhance agricultural productivity.

The city sees investing in urban agriculture as a means of stimulate green jobs and workforce training, creating a platform for community farmers to sell and exchange crops and exploring opportunities like "plant factories" and other advanced indoor farming techniques.

Nursaffrina binti Ropiee, Assistant Director of the Town Planning Department, presents on Seberang Perai's resilience initiatives.

CITY SPOTLIGHT:
QUEZON CITY

Members of the Quezon City's climate change and environmental department shared their insights as the newest member city of the Resilient Cities Network. Quezon City is the largest city in the Metro Manila area and faces threats from earthquakes, tsunamis and monsoon storms. The city's capacity to recover and respond from shocks such as these provides a strong incentive to build energy resilience. The Philippines' total electricity capacity is 28,000 megawatts, about one-fourth of Indonesia's energy capacity, and renewable energy in the Philippines accounts for only 8,000 megawatts. As the Philippines moves toward full electrification, renewable and distributed energy solutions are an attractive way to expand electricity access and increase the energy system's resilience to weather shocks and storms.

Quezon City aims to solarize its 3,000 government buildings by 2030, starting with 25 schools. The city has also purchased 8 electric buses. Transjakarta's success in electrifying buses and bringing down the costs of operating electric bus routes impressed the Quezon City team, encouraging them that it is possible to find cost savings to quickly scale pilot programs.

"PARTICIPATION IN THE RESILIENCE CITIES NETWORK CAN HELP US GAIN INTERDEPENDENCE WHEN IT COMES TO KNOWLEDGE SHARING, WHILE MAINTAINING INDEPENDENCE IN TERMS OF OUR POWER GRID. TO DO THIS, WE NEED TO INTENSIFY OUR MAPPING EFFORTS, BECAUSE YOU CAN'T MANAGE WHAT YOU CAN'T MEASURE."

Vincent Ferdinand Paul G. Vinarao,
Quezon City Climate Change and Environmental Sustainability Department

CITY SPOTLIGHT:
MELAKA

Melaka, home to a UNESCO World Heritage site in its city center, is engaging tourists by implementing a car-free zone where tourists are encouraged to walk instead of driving, reducing energy use and promoting sustainable behavior. Approximately 120,000 visitors per day visit the heritage site, many of whom take a ride on 30,000 cars entering the city daily. Members of the town planning department shared how the car-free zone is transforming Melaka's heritage zone among other efforts in Melaka's low carbon city initiative.

"THE PUBLIC TRANSPORTATION INITIATIVES IN JAKARTA WERE PARTICULARLY IMPRESSIVE, ESPECIALLY IN COMPARISON TO MELAKA, WITH HOPES OF REPLICATING THEM IN MELAKA IN THE FUTURE. THE INSTALLATION OF SOLAR PANELS IN BUILDINGS WAS ALSO ANOTHER NOTEWORTHY INITIATIVE."

Mohamad Zulikhram Bin Zulibrahim,
Melaka Town Planning

PRIVATE SECTOR SPOTLIGHT

INDONESIAN CHAMBER OF COMMERCE AND INDUSTRY (KADIN)

The Indonesia Chamber of Commerce and Industry (KADIN) participated in the Jakarta Urban PowerXChange panel, Beyond emissions: the resilience case for energy transition. During the discussion, KADIN's Head of Permanent Committee of New Energy, Renewable Energy and Energy Conservation acknowledged the intricate nature of the energy system and the numerous stakeholders involved, applauding the City of Jakarta and the PowerXChange's efforts to foster collaboration.

Similar to other private sector and solar industry representatives, KADIN emphasized that complicated solar energy permitting processes and quotas hinder renewable energy growth in Indonesia, stressing the crucial role of partnership between businesses and city governments. KADIN also highlighted the private sector's potential to invest in essential infrastructure to improve grid reliability and expand EV charging stations.

Presentations from energy startups showcased the value of private sector innovation in building energy resilience.

INSIGHTS FROM PARTNERS

Partners, including local and international NGOs, consultants and researchers contribute technical guidance and support to cities. Cities often have many opportunities for projects but need help determining which ones are feasible and worth prioritizing. These organizations work with the private sector to attract investment and shared their insights about energy resilience barriers and opportunities in Southeast Asia cities. During the exchange, partner organizations participated in specific discussions and sessions, lending their industry expertise and local knowledge. Diverse partnerships can unlock new opportunities for cities, making them an invaluable addition to the exchange participants.

Center for Urban and Regional Resilience Research (CURE), Universitas Diponegoro

The Center for Urban and Regional Resilience Research (CURE), Universitas Diponegoro assisted R-Cities, Jakarta and Semarang in developing these cities' Urban Power Profiles prior to the PowerXChange. During the event, representatives from CURE emphasized the importance of partnership and collaborations to overcome energy resilience challenges and to identify quick wins in cities. Additionally, they shared how their research and previous work has shown underlined the importance of improving technology and baseline data availability are essential to supporting long-term solutions.

Institute for Essential Services Reform (IESR)

During the PowerXChange, representatives from the Institute for Essential Services Reform (IESR) reflected on economic incentives that can be utilized for accelerating the uptake of renewables in urban contexts. In Indonesia specifically, representatives pointed to the government's call for the private sector to supply 60% of the investment in renewables. According to IESR experts, electricity tariff should be increased to incentivize private sector investment and achieve the country's ambitious goals for green investment.

City Climate Finance Gap Fund

The City Climate Finance Gap Fund supports cities to mature project ideas into detailed plans. During the exchange, Gap Fund representatives shared how designing projects with resilience in mind can help cities and partners make a strong case for the projects to both the public and specific funders.

This is essential for alleviating the threat of any potential project risks, identifying a wider range of potential returns that can be instrumental in securing project support.

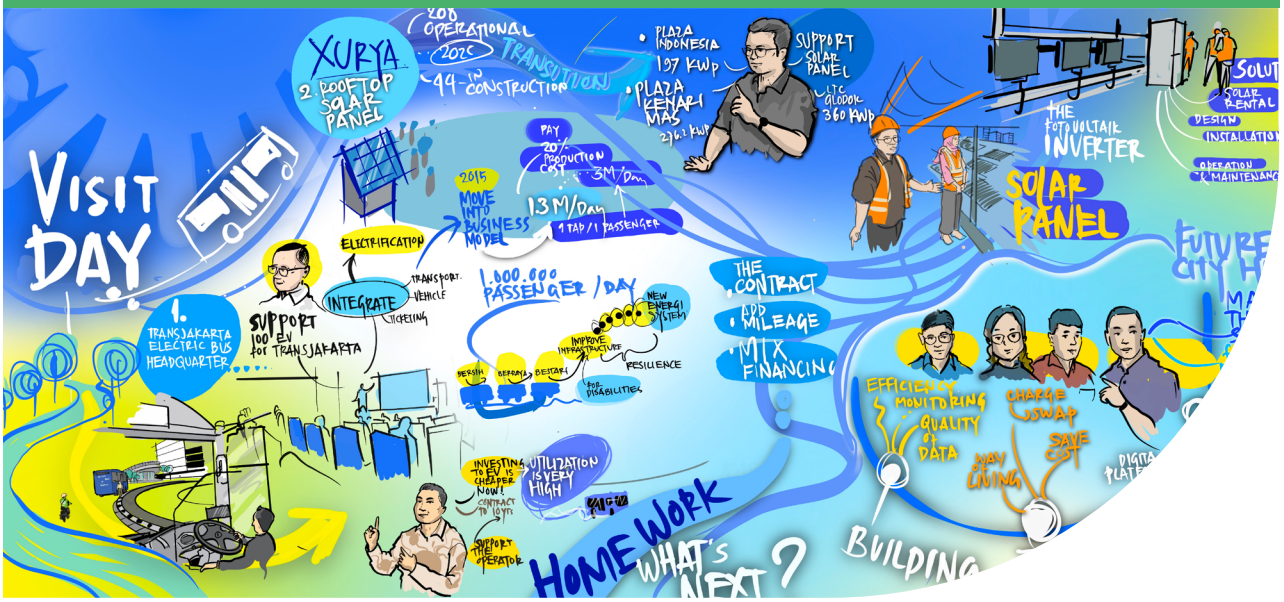
ICLEI Indonesia

ICLEI Indonesia plays a role in facilitating the energy transition at the provincial level. During the exchange, representatives reflected on work the organization has supported across Indonesia and learnings into the unique governance structures and specific municipal sectors that can be leveraged, including sustainable transportation and waste management, to increase the uptake of policies oriented towards increased energy resilience. Like IESR, ICLEI is examining how it can support deepening private investment in renewables at the local level, particularly through the creation of more favorable energy policies.

Arup

Arup has worked on several projects across Indonesia, including consulting on strategic planning for the nation's new capital city and supporting the development of urban infrastructure from financial support to asset management. At the exchange, Arup representatives were able to leverage this local knowledge to provide additional examples of regional best practices in developing energy resilience solutions as well as drawing from their vast international experience to identify relevant global best practices.

This graphic recording captured at the Jakarta Urban PowerXChange highlights key themes discussed on Day 2 of the event.



GOING FORWARD

The Jakarta Urban PowerXChange set out to build city capacity to address energy resilience challenges. The exchange showcased best practices in energy resilience, and enabled collaboration and knowledge exchange between 6 Southeast Asian cities and partners. The events focus not only on emission reduction but on energy resilience more broadly provided city representatives with a strong basis for raising their ambitions to protect health, well-being and economic opportunity for their residents.

Following the exchange, city representatives highlighted the value of hearing about peer cities' successful initiatives, as well as private sector and non-governmental organizations insights into advancing renewable energy development and improved energy resilience. Exploring policy frameworks in different cities and national policies and incentives gave practitioners opportunities to consider which policy options are best suited to their particular challenges and context.

Bringing cities, technical and financial partners together helps create new relationships and strengthen ties across energy resilience actors on a regional scale. These relationships are essential to moving the energy resilience agenda across multiple levels of government and across countries and serve as an example for other cities seeking to enhance local energy resilience and disseminate the learnings from the Jakarta PowerXChange.

ANNEX

FIGURE 1: JAKARTA URBAN POWERXCHANGE AGENDA

TUESDAY, FEBRUARY 11TH

	Plenary 1: Energy and Urban Resilience Challenges
COFFEE BREAK	
	Breakouts - Facilitated Discussions Breakout A: Beyond emissions: The resilience case for energy transition
	Breakout B: Powering change: Community engagement and awareness building for energy resilience
LUNCH - 1 hour	
	Plenary 2: Activating Cities' Energy Ecosystem: Role of City Governments in Supporting Local Energy Institutions
COFFEE BREAK	
	Plenary 3: Regional and International Collaboration for Energy Transition and Resilience
	Day 1 Closing and Reflections

WEDNESDAY, FEBRUARY 12TH

	Bus Electrification — Transjakarta Headquarters Welcome and Site Visit Orientation + Presentation from Transjakarta and Xurya
	Site visit of **Electric bus charging station**
	Site visit of **Rooftop solar panels by Xurya at LTC Glodok**
LUNCH at Jakarta City Future Hub **Future City Hub Tour**	
	Presentation: New Energy Nexus Indonesia — Clean Energy Accelerator Program
	Knowledge Exchange Closing and Reflections
	CLOSING RECEPTION

FIGURE 2: LIST OF ORGANIZATIONS ATTENDING THE JAKARTA URBAN POWERXCHANGE

Cities represented:

Jakarta

Melaka

Penang Island

Quezon City

Seberang Perai

Semarang

Technical and Funding Partners:

Arup

Center for Urban and Regional Resilience Research (CURE), Universitas Diponegoro

The City Climate Gap Fund of GCoM

(GCoM-Gap Fund Partnership)

Global Green Growth Institute (GGGI)

ICLEI Indonesia

Indonesian Chamber of Commerce and Industry (KADIN)

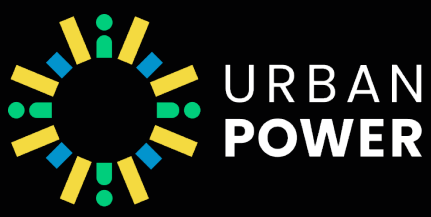
Institute for Essential Services Reform (IESR)

New Energy Nexus Indonesia

Tara Climate Foundation

ViriyaENB

Partners:


URBAN
POWER