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Enabling Green Growth through the K-City Network:

The Bandung Smart Town Master Plan in Indonesia

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CONTENTS

KIND
Korea Overseas Infrastructure & Urban Development Corporation

DEVELOPER and INVESTOR for Infrastructure Projects

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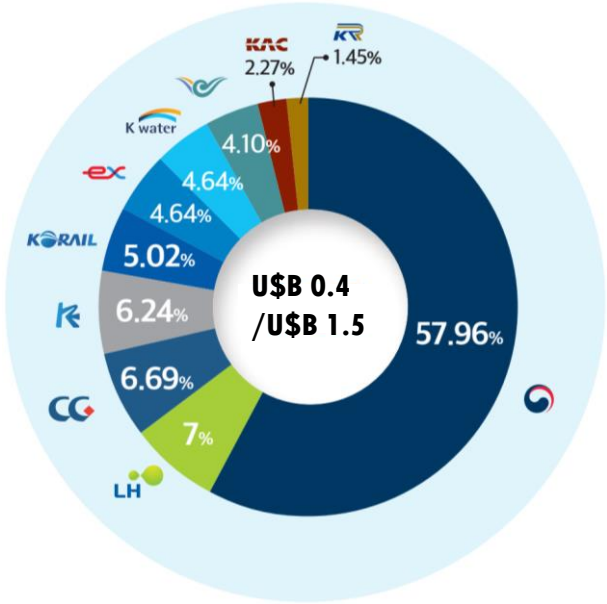
1. KIND Overview – Policy Instrument to [Develop + Finance] Infrastructures

KIND is a young governmental investor [equity provider] set up in 2018 under MOLIT*.

* Ministry of Land, Infrastructure & Transport, the Republic of Korea

[Shareholders] Korean **government**,
Korea **Exim Bank**, Korea Construction **Guarantee**,
Korea **Land & Housing** Corp.,
K-**Water**,
Korea + Incheon **Airport** Corps.,
KORAIL + National **Railway** Network,
Korea **Expressway** Corp.



"… represents the Entirety of infrastructure and finance in public sector of the Republic of Korea …"

KIND's **[Mandate]** to support **Korean companies' overseas investment**

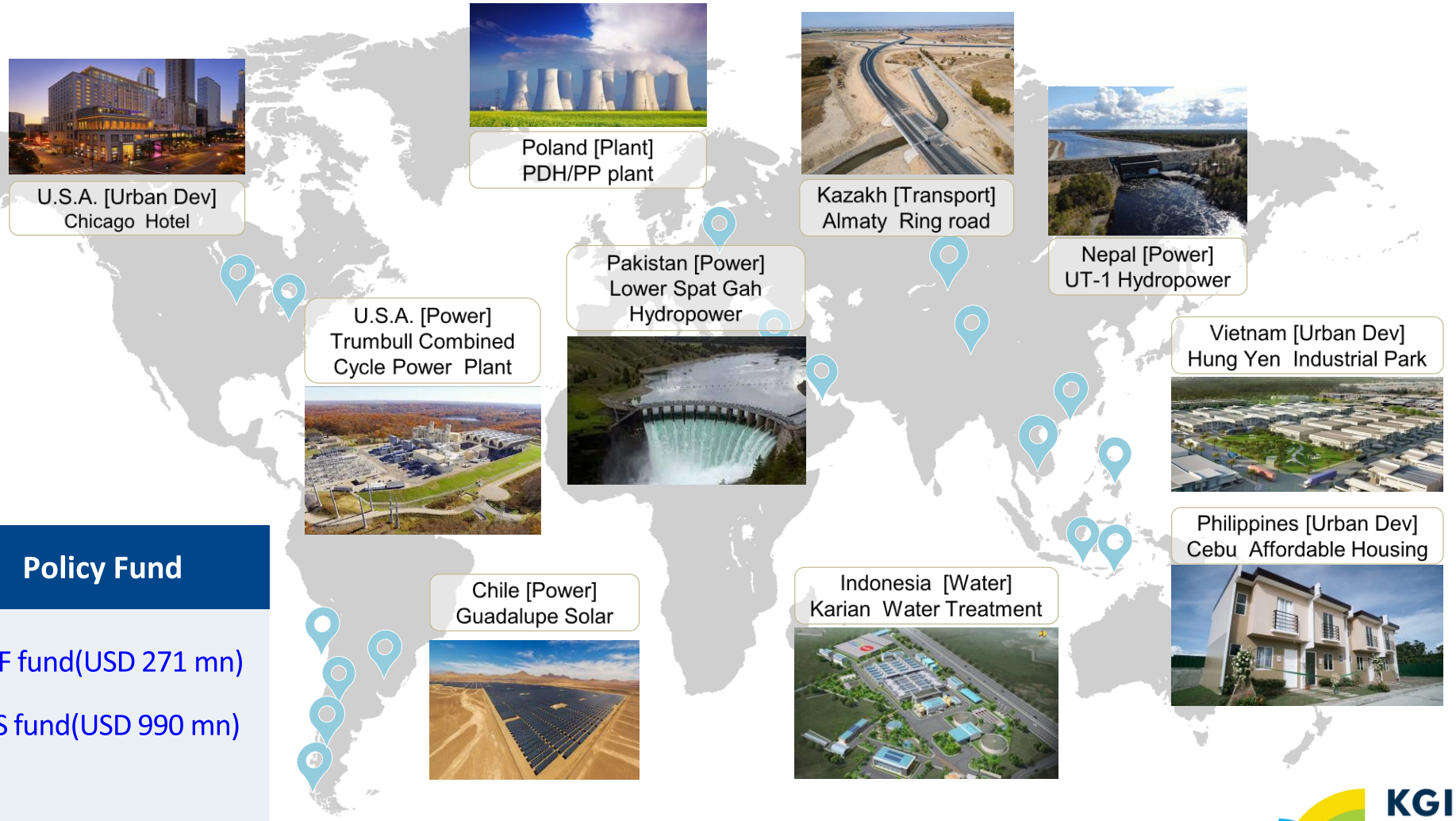
[Sector] in **infrastructure and urban development** projects

[Role] **Co-Developer and/or Co-Investor**

[Function] funding **Development Capital** and financing of **Equity and others**

1. KIND Overview

Project Status



(As of Jan 2026)

Direct Investment	Policy Fund
✔Cumulative Investment : 21 projects in 14 countries (USD 502 mn) ✔Investment Approved: 9projects in 8 countries (USD 447 mn)	✔GIF fund(USD 271 mn) ✔PIS fund(USD 990 mn)

1. KIND Overview – Linking of Upstream and Downstream

Not only direct investments, KIND boasts its various supporting means applicable to the entire lifecycle of a project, materializing a piece of idea into a solid project in the real world.

Project stages		Supporting Methods of KIND	
Up stream	Initial Planning	Intergovernmental Cooperation, Project Development	Developer Domain
		Operation of G2G Cooperation Platform (KCN, EIPP, F/S)	
	Feasibility Studies	Project preparation facility / Feasibility studies	
	Contractor selection, Financial structuring	Formation of a Project Sponsor Consortium Investor relationship, project promotion	Investor Domain
		Financial advisory, debt financing arrangement	
Down stream		Equity, SPC Bond, and GIF*, PIS** fund investment	
	Construction, Operation & Maintenance	Project implementation management	
		Refinancing, Recapitalization	

* Global Infrastructure Funds

** Plant, Infrastructure and Smart city funds

2. K-City Network – Sharing Korea's Smart City Expertise

2. K-City Network – Sharing Korea's Smart City Expertise

A global cooperation platform designed to share Korea's smart city expertise and technologies worldwide.
Since 2020, **58 projects** have been implemented in 27 countries, offering tailored solutions to meet local needs.

K-City Network Program Overviews

	Subject	Scope	Applicants
Smart City Planning	• Developing/regenerating into a smart city by adopting multiple smart solutions with land-use plan(green and brown field) • Adopting smart solution to address urban challenges	• Development condition & comprehensive analysis • Concept & Mast Plan • Roadmap & Business model • Pre-f/s	• Central Governments • Local Governments • International Organizations
Smart Solution Demonstration	• Smart Solutions refer to technologies to provide services and related platforms or systems in the areas of transportation, energy, environment, security, urban administration, etc.	• Pilot Operation & Validation (ex. Demand respond transport, smart parking, ITS, etc.)	• Korean companies (with overseas governments)

2. K-City Network – Sharing Korea's Smart City Expertise

Programs Structure

Procedure

Call for Projects By Secretariat Office	**Planning**	Work Scope Discussion with Applicants	**Project Selection**	Consultancy Selection	**Project Implementation**
Submission of Applications	**Demonstration**	Review of Submitted Project Proposals	**KCN Committee**	Project Initiation	**8~10 Months**

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2. K-City Network – Track Record

Since 2020, 58 K-City Network Projects in 27 Countries, Smart City Cooperation Centers in 5 Countries

Beginning in 2020, KCN has grown into a global cooperation program that has established **partnerships with 27 countries by 2025, and is driving sustainable growth in cities across these nations.**

Europe & Central Asia Total 14

Russia	Urban Planning(1)
Bulgaria	Solution Planning(1)
Spain	Demonstration(1)
Azerbaijan	Urban Planning(1), Solution Planning(2)
Uzbekistan	Urban Planning(2)
Ukraine	Urban Planning(1)
Italy	Demonstration(3)
Kyrgyzstan	Urban Planning(1)
United Kingdom	Demonstration(1)

Asia Total 30

Indonesia	Urban Planning(3), Solution Planning(2), Demonstration(3)
Vietnam	Urban Planning(2), Solution Planning(2), Demonstration(2)
Malaysia	Urban Planning(2), Demonstration(1)
Bangladesh	Urban Planning(1), Demonstration(1)
Philippines	Urban Planning(1), Solution Planning(1), Demonstration(1)
Mongolia	Urban Planning(1), Solution Planning(1)
Thailand	Solution Planning(1), Demonstration(2)
Myanmar	Urban Planning(1)
Cambodia	Demonstration(1)
Laos	Solution Planning(1)

Middle East & Africa Total 7

Egypt	Urban Planning(1)
Kenya	Urban Planning(1)
Kuwait	Solution Planning(1)
Turkiye	Solution Planning(2), Demonstration(2)

Latin America Total 5

Bolivia	Solution Planning(2)
Columbia	Solution Planning(1)
Peru	Urban Planning(1), Demonstration(1)

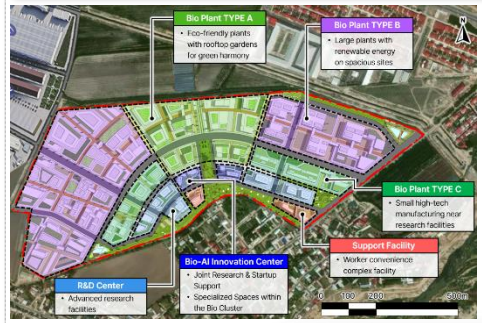
North America Total 2

USA	Demonstration(2)

2. K-City Network – Case of the K-City Network Program

Smart City Planning

Tashkent Smart Bio Cluster MP (Deal Sourcing)



- Location: Zangiata, Uzbekistan (60ha)
- Partner org: Ministry of Health (Agency for Pharmaceutical Industry Development)
- Period: ’25.4. - ’25.12
- Consultancy Cost: USD 470,000
- Scope: Master Plan, Pre-F/S

Tashkent Smart Bio Cluster Project (Development)

- Project Period: 50years
- Project Cost: USD 65mn
- Developer: SPC(planned)
- Future Plan
  - Feasibility Study and Investor Recruitment
  - Financial Structuring
  - Project Commencement

※ Based on the Pre-FS, the conditions for Korean participation in the project have been outlined. The Uzbek government has submitted a LoI granting a two-year period of exclusive negotiation rights, under which KIND is currently conducting a FS to advance the project.

Smart Solution Planning → Demonstration

Gaziantep Smart City Integrated Platform MP

- Location: Gaziantep City, Southern Turkey
- Partnering org: Gaziantep Metropolitan Municipality
- Period: ’20.7. - ’20.12
- Consultancy Cost: USD 250,000
- Scope: Master Plan, F/S

Gaziantep Smart City Platform Demonstration

- Project Cost: USD 1mn (MOLIT 53%, SDS 12%, Turkey Gov 36%)
- Scope: Smart City Coordination Center
  - Traffic CCTV control
  - Heavy Vehicle Info Collecting
  - Security Center CCTV control &GIS Map Info
  - Police and Fire station Info connection

※ Based on the Smart Solution planning’s Output, it is possible to link with K-City Network Solution Demonstration programs to initiate pilot projects

2025 K-City Network (Smart City Planning)
Bandung Smart Town Master Plan, Indonesia

- Site Area: 107,600㎡
- Gross Floor Area: Approx. 269,000㎡
- Floor Area Ratio: 250%
- Building Area: 42,928㎡
- Building Coverage Ratio : 39.9%
- Max Height: 66m (19F)
- Total 3,788 Units
  - Affordable Housing(27 Type) 1,338 Units
  - Mid Range Housing(50/72 Type) 2,450 Units

3. Bandung Smart Town Master Plan, Indonesia – Low-Carbon Social Housing in Korea

Demonstrates practical application of zero-energy housing in Korea,
- **Contributes to carbon neutrality and energy efficiency**
- **Reduces household energy burden**

- **Seoul Nowon EZ House, Korea**
  - **Energy Self-Sufficiency: approx. 75–80%**
  - **Energy Cost Reduction: 100%(Net-Zero achieved)**
  - **Renewable Energy Integration(Solar+Geothermal)**

- **Gangdong Onbitchae, Korea**
  - **Energy Self-Sufficiency: approx. 60–70%**
  - **Energy Cost Reduction: approx. 30–35%**
  - **Heat Loss Reduction: approx. 35%**

3. Bandung Smart Town Master Plan, Indonesia – Project Background and Objectives

Surging Housing Demand from Rapid Urbanization
in West Java, Indonesia

Demand for Eco-Friendly Community Housing
Aligned with Emission Reduction Target

Application for K-City Network
to Apply Smart Town Model to Community-Based Public Housing

Development of a Successful Smart Net-Zero Public Housing Model via KCN

Responding to Community Housing Demand
in Bandung, West Java

Ensuring Project Feasibility through
Revenue-Generating Programs

Building a Net-Zero Smart Town Model with
Korean Technology and WB

3. Bandung Smart Town Master Plan, Indonesia – Public and Provision System

Indonesia aims to expand housing supply, with a target of up to 3 million units annually, as part of its broader national development agenda under the RPJMN.

National Plans about Public Housing in Indonesia

RPJMN Overview

Name	▪ The Indonesia National Medium-Term Development Plan (RPJMN; Rencana Pembangunan Jangka Menengah Nasional 20-24)
Scope	▪ 5-year mid-term plan, 2025-2029
Establishing Authority	▪ National Development Planning Agency (BAPPENAS; Badan Perencanaan Pembangunan Nasional)

Implementation of the 3 Million Houses Program
following President Prabowo Subianto's inauguration in 2024

IGAHP(Indonesia Green and Affordable Housing Program)
Target: 1 Million Green Affordable Housing Units by 2030

- **Indonesia Eco-Friendly Affordable Housing Supply Program**
- Minister of Public Works and Public Housing Regulation No. 21 of 2021 : Green Building Performance Evaluation Guidelines
- **Project Funding : WB(IFC) Green Loan approx. 4B USD, Bank Indonesia 1,300 trillion Rupiah plan**

RPJMD Plan Overview

Name	▪ The West Java Regional Medium-Term Development Plan (RPJMD;Rencana Pembangunan Jangka Menengah Daerah)
Scope	▪ 5-year mid-term regional plan, 2025-2029
Establishing Authority	▪ Regional Development Planning Agency of West Java Province (BAPPENAS Provinsi Jawa Barat)

About price, sustainability, and publicness in housing supply

Expected to reflect housing supply strategy of 2018-23 RDJMD

- Provision of affordable and livable housing
- Development of residential areas based on spatial planning and sustainability
- Regeneration of slums and dilapidated residential areas

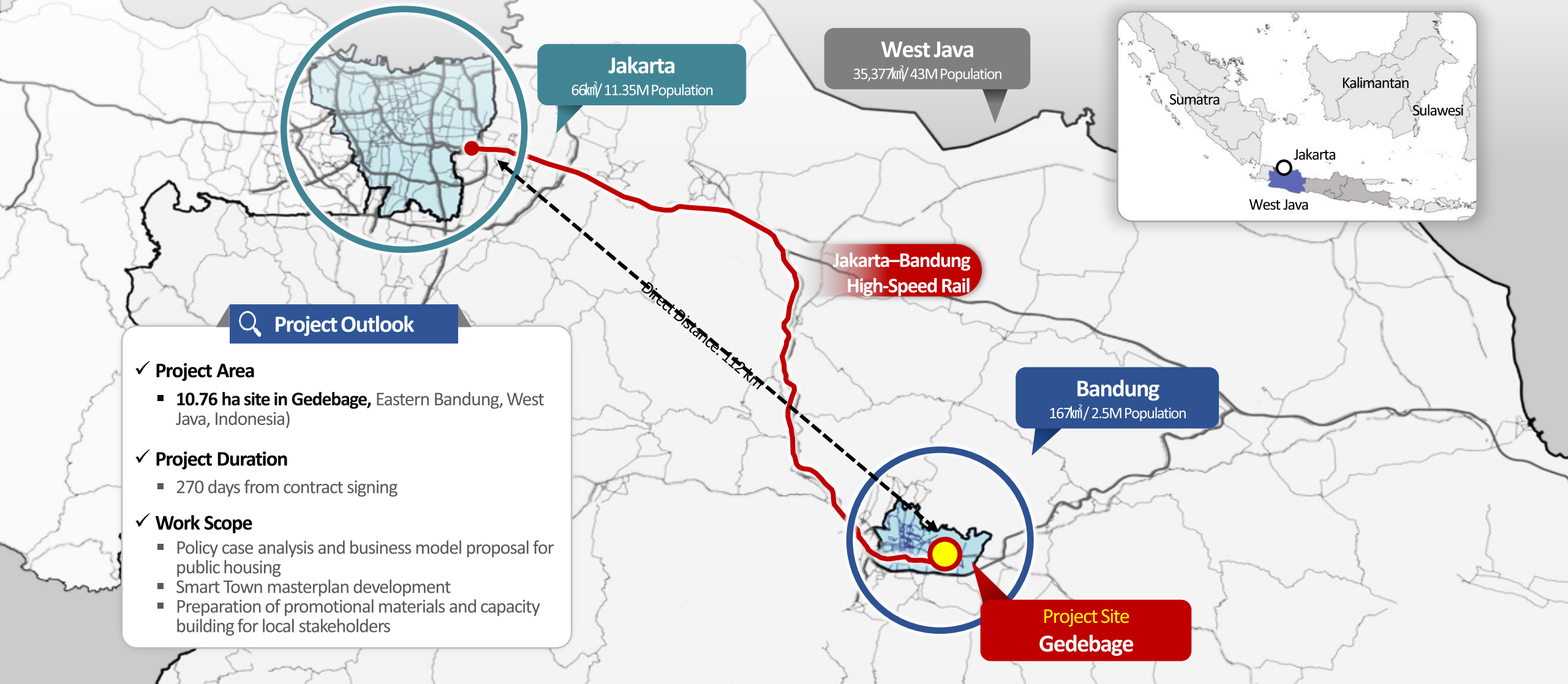
Key review points for Indonesia's public housing plan

Gedebage in Bandung metropolitan area is **connected to West Java's strategic urban development and eco-friendly public housing policies**

3. Bandung Smart Town Master Plan, Indonesia – Location and Scope

Through Korean Case Studies and Local Context Analysis

Proposing a Net Zero Smart Town Model and Establishing a Masterplan



Project Outlook

✓ **Project Area**

- **10.76 ha site in Gedebage,** Eastern Bandung, West Java, Indonesia)

✓ **Project Duration**

- 270 days from contract signing

✓ **Work Scope**

- Policy case analysis and business model proposal for public housing
- Smart Town masterplan development
- Preparation of promotional materials and capacity building for local stakeholders

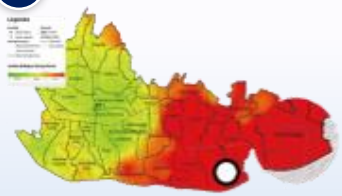
3. Bandung Smart Town Master Plan, Indonesia – Analysis of Bandung and The Project Site

The Gedebage area, part of the city's secondary CBD, is home to
Large-scale metropolitan facilities alongside new development zones (Summarecon)

CBD: Gedebage

Key Considerations

1. Expected inflow via arterial roads and Tegalluar Station
2. Anticipated access via Gedebage rail stat.
3. Consider pedestrian linkage with southern commercial zone
4. Secure minimum public space using drainage corridors
5. Proximity to ITB Technopark
6. Nearby schools



3. Bandung Smart Town Master Plan, Indonesia – Defining Development Trajectory and Key Targets

Deriving an Optimization Model Strategy to plan the optimal model, technology, and qualification implementation measures for K-APT's carbon reduction

Smart Town Differentiation Strategy: Establishment of Indonesia-Type Carbon Reduction Optimization Model

Optimization Model Strategy

- **62% Carbon reduction** Optimization Model
- **INNI BGH Certified (Madya)**
- **Plan for optimized natural ventilation**
- **100% self-sufficiency in shared energy**
- **50% improvement in indoor air quality**

Action 1 — Net-Zero Energy Optimization Technologies

PASSIVE (Energy-saving technologies)

South-facing Placement
- South-facing layout within 15° east-west
- Minimizes solar exposure to units

Daylighting & natural ventilation
- Daylight for lighting energy
  Cross-ventilation layout for airflow

Solar control devices
- Interior blinds reduce solar gain and lower cooling energy demand

Cool roof
- Cool roof with solar canopy and green roof to reduce rooftop temperature

ACTIVE (High-efficiency & renewable energy technologies)

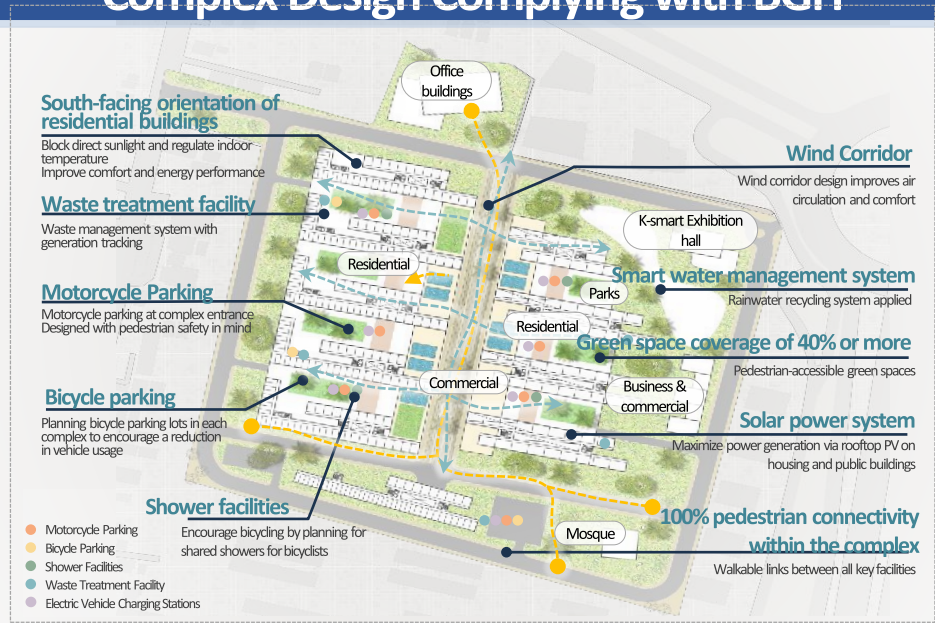
Heat recovery ventilation
- Heat-recovery ventilation
  Improves IAQ and humidity control

High-Efficiency LED Lighting
- High-efficiency LED lighting
  reduces power consumption

Air conditioning systems
- Energy-saving cooling system
  uses high-efficiency equipment

Solar power systems
- Solar power system for electricity
- Adjustable height also provides shading

Action 2 — Complex Design Complying with BGH



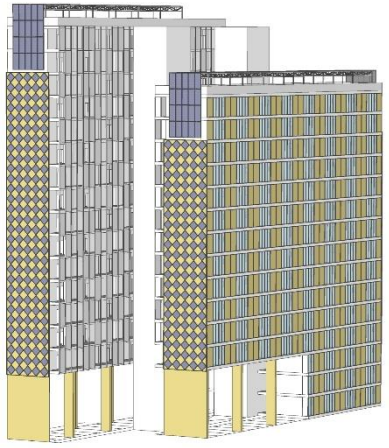
3. Bandung Smart Town Master Plan, Indonesia – Defining Development Trajectory and Key Targets

Through Building-Integrated PV design,
Achieve both resident acceptability and eco-friendly power generation

Smart Town Differentiation Strategy: Proposal for Renewable Energy Utilization Design

Preferred

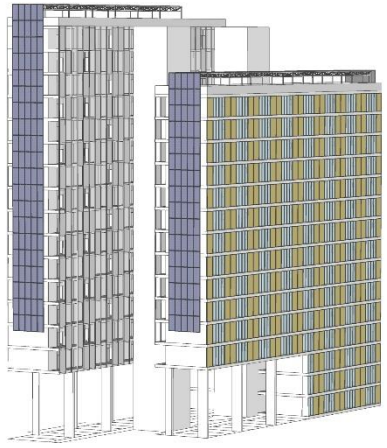
Alt1. Cultural–Functional Harmony

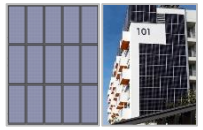


Harmonizing culture & function
Traditional textile patterns bring cultural symbolism and vibrancy to the facade, harmonizing tradition with energy design.

Installed Capacity	2,854.5kW
Annual Electricity Gen.	3,131.1MWh
Electricity Use	Public ELEV, Common Area Lighting, 30% A/C

Alt 2. Efficient–Functional Balance

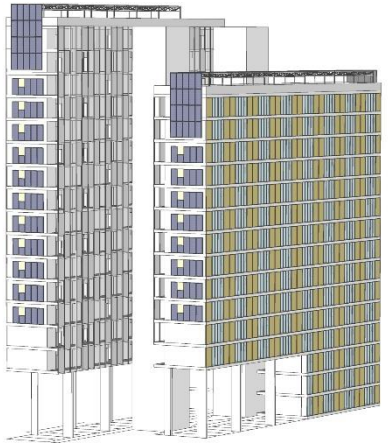




Harmonizing Efficiency & Function
A simplified massing that maximizes function, with technical aesthetics emphasized through restrained facade design.

Installed Capacity	3,324.0kW
Annual Electricity Gen.	3,433.6MWh
Electricity Use	Public ELEV, Common Area Lighting, 40% A/C

Alt 3. Structural–Functional Integration



Harmonizing structure & function
Panels align with slab lines, blending structural systems with function to maintain architectural flow.

Installed Capacity	2,803.7kW
Annual Electricity Gen.	3,099.4MWh
Electricity Use	Public ELEV, Common Area Lighting, 30% A/C

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3. Bandung Smart Town Master Plan, Indonesia – Smart Town Specialization Strategy

Development and establishment of an optimized model for Indonesia-type carbon-reducing apartment complexes, and a standard model for carbon-reducing affordable housing for the public

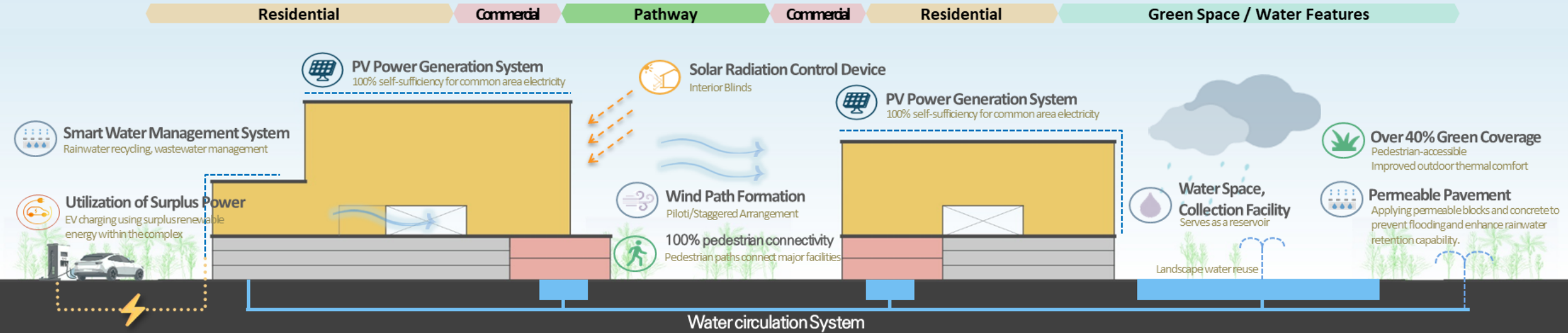
Proposal for Carbon-Reducing Public Housing Model

Direct Emissions Zero Complex — Convert fossil energy to electricity to eliminate direct emissions within the complex

Energy Cost Minimization Complex — Minimizing common area electricity use with power generated from solar energy, and securing additional revenue by utilizing surplus power for household cooling or electric vehicle charging, etc.

	Energy-Saving Design	High Efficiency Equipment	Renewable Energy	Monitoring Technology	Smart Technology
Smart Technology	• High-efficiency insulation material. • Low-E double glazing + System windows. • Interior blinds	• High-efficiency cooling system • High-efficiency LED lighting • High-efficiency pump equipment	• Roof-mounted PV System • Building-Attached Photovoltaics (BAPV) • Energy Storage System (ESS)	• Remote metering system (Energy Usage and Production) • Smart distribution panel	• Stormwater recycling system • Smart waste sorting and collection system • EV & motorcycle charging station

Reflecting the Criteria of Green Building Certification (BGH)



3. Bandung Smart Town Master Plan, Indonesia – Smart Town Specialization Strategy

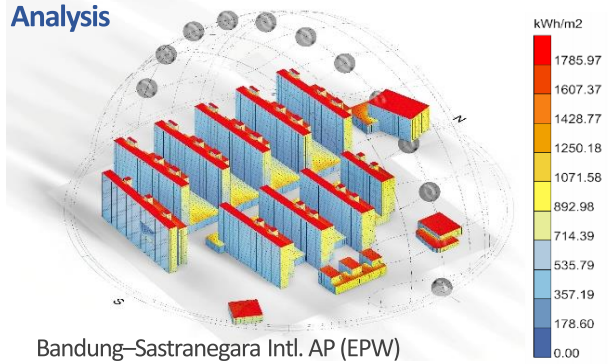
Implementing a complex-optimized, energy-saving layout plan and external space design strategy through the analysis of solar radiation, airflow, and surface temperature based on climate and environmental data.

Proposal for a Standard Model of Carbon-Reducing Affordable Public Housing

Passive Design Optimization Strategies Based on Climate Simulation

Sunlight Analysis

Finding Energy Efficiency Through Sunlight Analysis

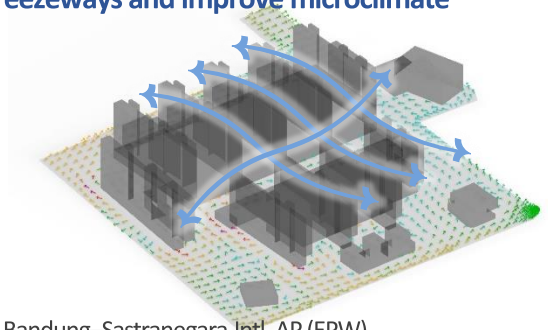


Bandung–Sastranegara Intl. AP (EPW)
March 21st, 06:00–22:00

Solar analysis for optimized PV installation
and inter-unit daylighting

Airflow Analysis

Arranging complexes to secure breezeways and improve microclimate

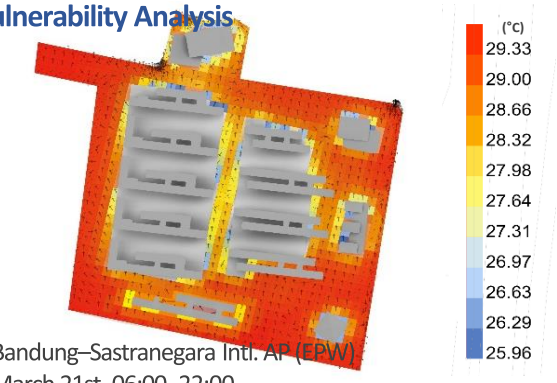


Bandung–Sastranegara Intl. AP (EPW)
March 21st, 06:00–22:00

Forming wind corridors within the complex and **improving the microclimate** through airflow analysis.

Surface Temperature Analysis

Exterior Space Planning through Thermal Vulnerability Analysis



Bandung–Sastranegara Intl. AP (EPW)
March 21st, 06:00–22:00

Designing external spaces focused on **thermal comfort** through surface temperature analysis.

3. Bandung Smart Town Master Plan, Indonesia - Plans by sector

Create a sustainable K-Smart Town solution residential complex by applying eco-friendly and smart technologies optimized for the hot and humid climate of Bandung, Indonesia.

Implement Smart HEMS

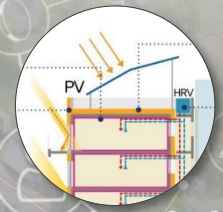
Energy monitoring via smartphone app linked to remote energy metering

Smart Safety Management

Crime and disaster prevention through CCTV and disaster warning systems

Smart Renewable Energy (Solar)

100% power self-sufficiency for common areas



Smart Design Technology

(Passive·Active)

Minimize cooling energy load by applying design technology suitable for the local climate

Smart Healthcare

Provide customized healthcare and smartphone-based monitoring services by analyzing resident health data

Smart Waste Management

Waste reduction through smart sorting/collection and food waste recycling facilities

Smart Robot Delivery

Logistics automation and carbon emission reduction within the complex by introducing an autonomous driving-based robot delivery system

Smart EV Charging Station

Operation of charging stations utilizing solar power surplus

Smart Water Management

Installing reservoirs, water collection facilities, etc., for rainwater storage and recycling

Smart Energy Storage System (ESS)

Storing surplus generated electricity for efficient utilization and preparation for emergency power supply

3. Bandung Smart Town Master Plan, Indonesia – Smart Town Layout and Perspective Drawing

A sustainable complex layout concept where residential·convenience·public functions are harmonized reflecting the complex's characteristics and climate conditions.

KIND
Korea Overseas Infrastructure & Urban Development Corporation

3. Bandung Smart Town Master Plan, Indonesia - Smart Town Layout and Perspective Drawing

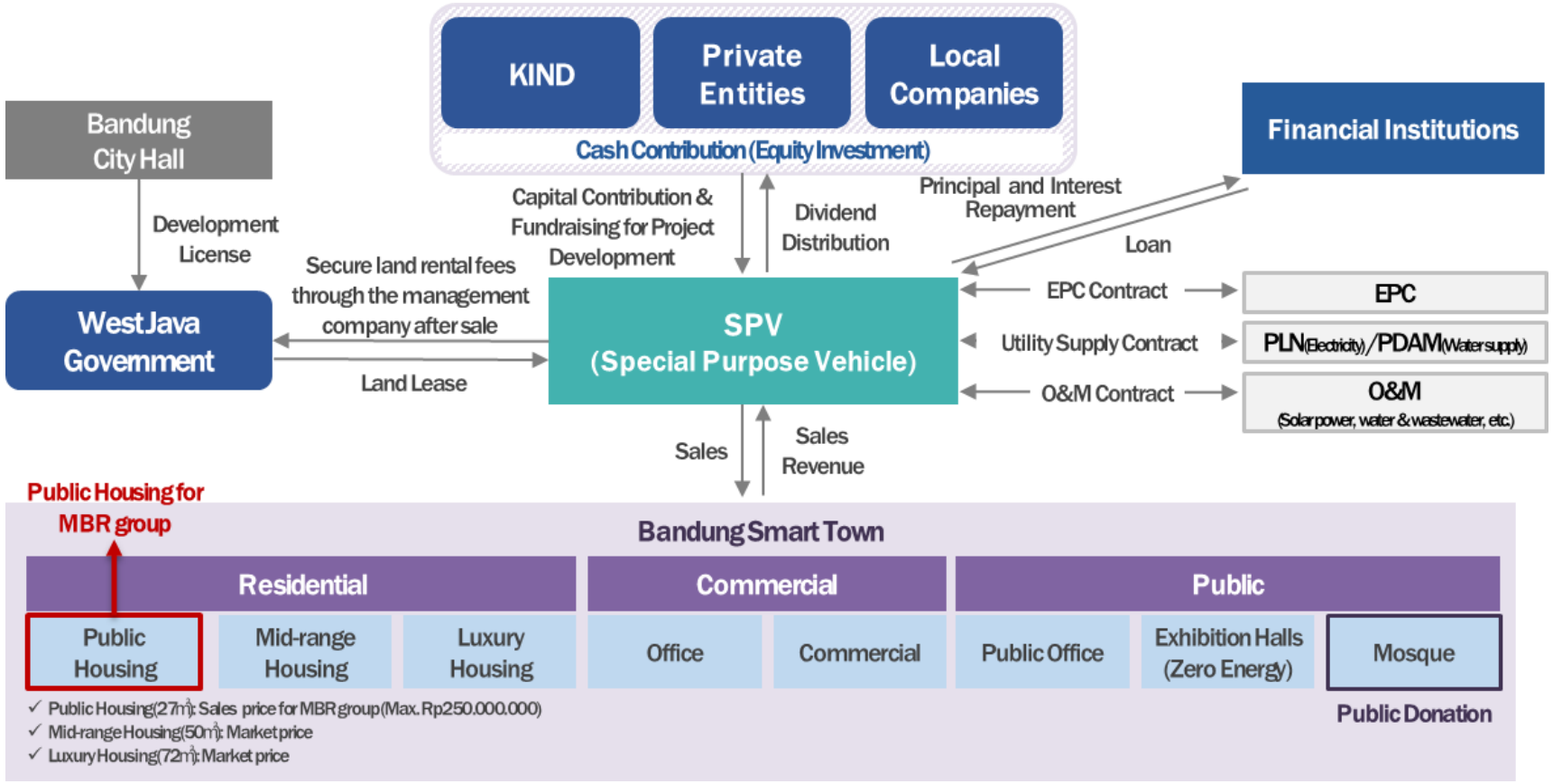
3. Bandung Smart Town Master Plan, Indonesia - Smart Town Layout and Perspective Drawing

3. Bandung Smart Town Master Plan, Indonesia - Smart Town Layout and Perspective Drawing

3. Bandung Smart Town Master Plan, Indonesia – Business Model

Promote active private sector participation and alleviate government fiscal burden through an SPV-based, private-led land lease development structure.

Business Structure(planned)

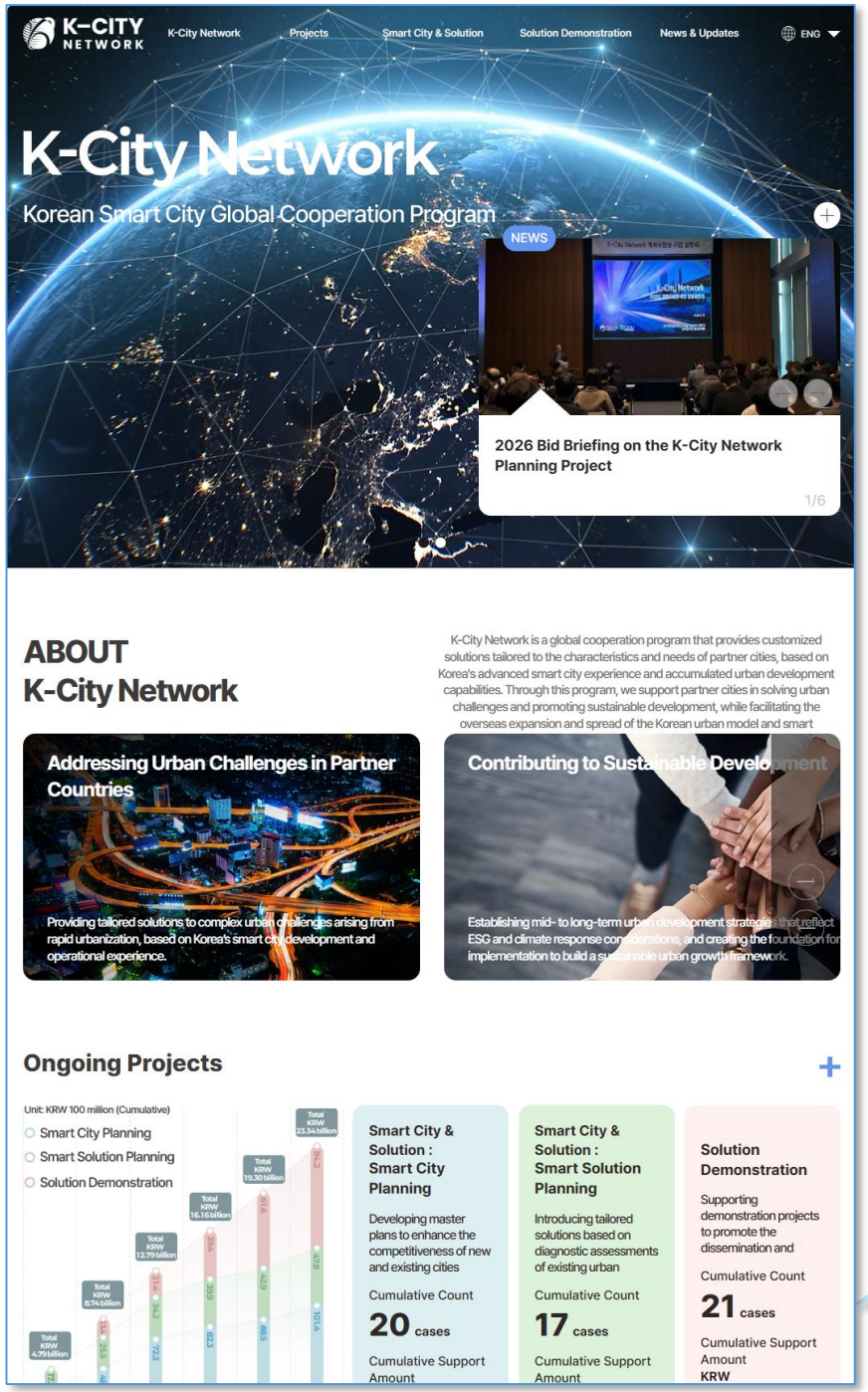


KIND's business model:

[Deal sourcing] Identify potential projects though G2G, G2B discussions

[Development] Provide Master Plan / Feasibility Study / Structuring / Advisory

[Investment] Invest in Equity, Funds, and Bonds



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Thank You

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For more information, please visit the official website:
www.kcitynetwork.go.kr

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