

Presentation to MIK — Achieving Sustainable Housing Finance Framework in Mongolia



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International Affairs Group
International Affairs and Research Department
Japan Housing Finance Agency



Part III Recommendations from JHF

1. Defining Green and Non-Green Boundaries Using the BESTGER Standard

- Establishing criteria for green housing quality and performance

2. Best Practices for Promoting Green Housing Quality

- Practical approaches to achieving sustainable housing standards

3. Ensuring Housing Quality Through Financial Instruments

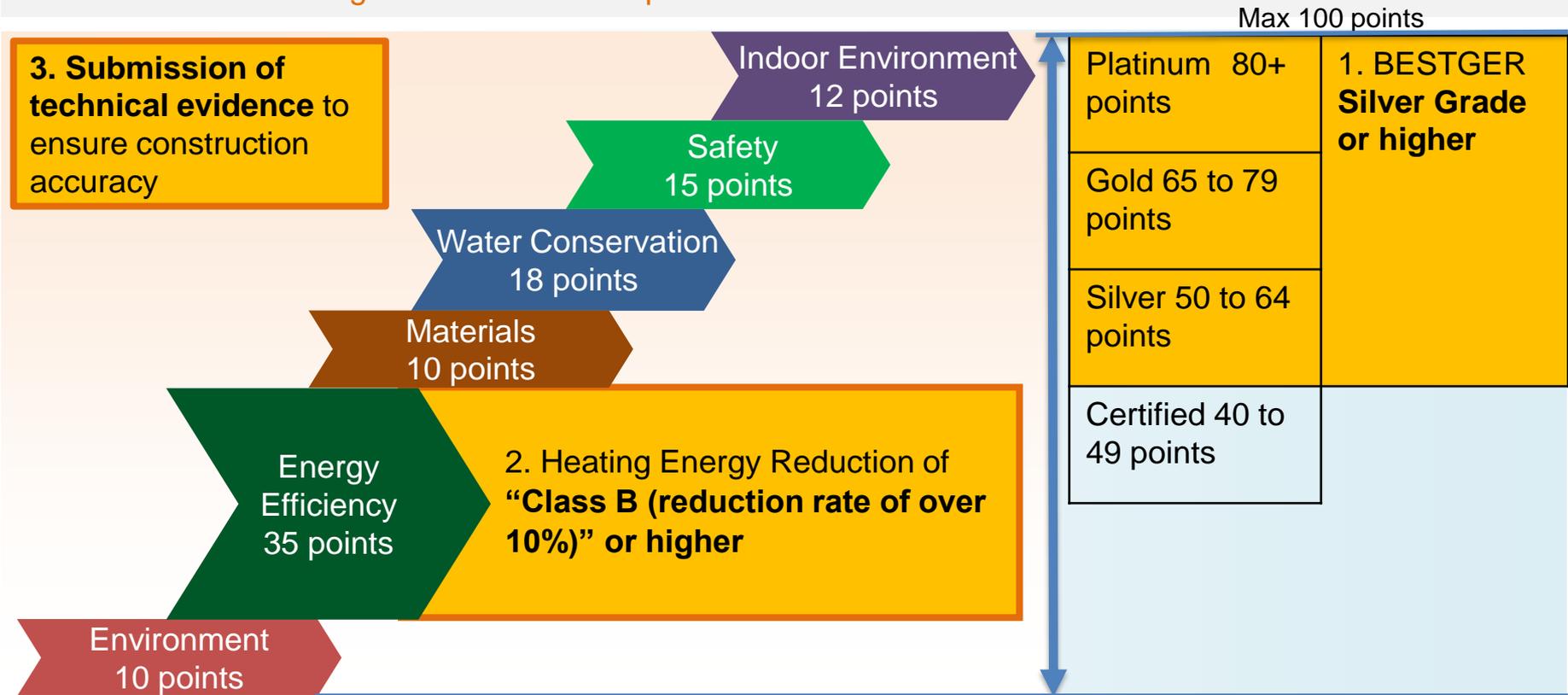
- Leveraging housing finance to maintain and improve housing quality.

1. Defining Green and Non-Green Boundaries Using the BESTGER Standard

Requirements

ALL THREE criteria must be fulfilled

1. Comprehensive Evaluation: BESTGER “Silver (50 points or more)”
2. Heating Energy Reduction: Achievement of “Class B (reduction rate of over 10%)” or higher
3. Guarantee of construction accuracy: Submission of technical evidence, including construction photo records obtained through Hidden Works Inspections



1. Defining Green and Non-Green Boundaries Using the BESTGER Standard

Model Case of achieving BESTGER “Silver”

Category	Evaluation Items	Points	Specific Details of Technical Countermeasures
1. Environment (10 point)	Environment	9.0	Public transportation access (2 points), On-site greening (20% or more) (3 points), Waste separation and management (2 points), Outdoor lighting reduction (1 point)
	Subtotal	9.0	
2. Energy Conservation (35 point)	Heating Energy Conservation	12.8	Installed total heat recovery ventilation fans (70%+ efficiency) to significantly recover ventilation heat loss, achieving a heating load reduction rate exceeding 19.5% (9.3 points). Score determined by linear interpolation between 15% and 20%.
	Automation & Sensors	3.0	Implemented low-temperature district heating supply with thermostat control (1.5 points) and metering via heating heat meters (calorimeters) (1.5 points).
	Electricity & Other	2.5	Full LED conversion and adoption of high-efficiency lighting fixtures in all residential units and common areas.
	Subtotal	20.8	
3. Materials (10 point)	Health-Safe Materials	2.5	Use of low-formaldehyde building materials and construction waste management.
	Subtotal	2.5	

1. Defining Green and Non-Green Boundaries Using the BESTGER Standard

Model Case of achieving BESTGER “Silver”

Category	Evaluation Items	Points	Specific Details of Technical Countermeasures
4. Water Conservation (18 point)	Smart Meters	5.0	Installation of smart water meters enabling remote meter reading.
	Water-Saving Fixtures	5.0	Standard adoption of water-saving labeled toilets and showerheads.
	Subtotal	10.0	
5. Safety (15 point)	Seismic & Durability Enhancement	5.0	Compliance with seismic standards (5 points)
	Subtotal	5.0	
6. Indoor Environment (12 point)	Ventilation & Air Quality	3.0	Implementation of stable CO2 concentration management and dust (PM2.5, etc.)
	Thermal Comfort	2.0	Maintenance of constant room temperature via thermostat control. Improved comfort through suppression of cold drafts.
	Other (Daylighting, Noise, etc.)	3.0	Enhanced sound insulation and appropriate natural light acquisition through adoption of triple glazing, etc.
	Subtotal	8.0	
Total		55.3	Silver Rank

2. Best Practices for Promoting Green Housing Quality

■ Multi-layered human resource development and establishment of a certification program

Goal

- Strengthen on-site quality assurance by capacity development

Model case

Hokkaido Building Technology Association

Building Insulation Specialist approval

- Professional certification and training framework designed to ensure high standards in building insulation work
- Certification is awarded to those completed training and passed exams on insulation theories

Certification of green architects and construction managers

- Certify engineers who understand BESTGER's evaluation logic
- Certify engineers who can perform appropriate insulation and airtightness design and on-site management

Checklist-based training for field technicians

- Introducing “construction standard manual” with photographs to ensure consistent quality without relying on individual skills

Further develop BESTGER practitioners

- Develop skills to evaluate and refine BESTGER
- Increase loan underwriters' capability to accurately assess the consistency between BESTGER scores and construction photographs

2. Best Practices for Promoting Green Housing Quality

■ Establishment of Building Material Testing Center and ensuring safeness and reliability

Goal

- Develop domestic capability to verify building material performance

Model
case

Foundation
Building
Materials Testing
Center in Japan

- Center focusing on testing, inspection, evaluation, and certification of building materials and construction products
- The center provides certification for building materials to ensure they meet Japanese Industrial Standards (JIS), Japanese Agricultural Standards (JAS), and other regulatory requirements, thereby ensuring safety, reliability, and compliance with national standards

Establishment of
Building Material
Testing Center in
Mongolia

- Introduce Thermal Conductivity Measurement Device (Guarded Hot Plate Method/GHP, etc.) and measure the precise λ value of insulation materials
- Introduce Building Component Thermal Performance (U-value) Testing Device and measure the actual heat transfer coefficient of windows and doors
- Establish Steady-state and Transient Combined Heat and Moisture Transfer Measurement to evaluate the risk of internal condensation
- Establishing an institution as an “independent third-party organization” separate from the government is essential

2. Best Practices for Promoting Green Housing Quality

■ Promotion of domestic materials and standardization

Goal

- Ensure air tightness and minimize thermal bridges

Air leakage in Mongolian block construction is severe

- Use of “continuous airtight layers with wet plaster” is standardized

Inside wall airtight sheet installment is difficult



- “Airtight plaster method” using thick interior mortar as the airtight layer and sealing floor and ceiling joints with specialized tape or sealant.

Heat loss from thermal bridge is not properly managed

- Adhesive and plastic anchors are used to fix the insulation

Anchors can become the thermal bridge



- “Recessed anchor method” requiring deep anchoring and covering of the anchor heads with caps

Proper thermal insulation of pipe sleeves, window sash and balconies

- Not only fill around penetrating pipes with site-applied spray foam urethane, but also install an “airtight flange” on the interior side to integrate it with the airtight layer
- Float window sash from the structure and install insulation, introduce “thermal connectors” to structurally separate the balcony edges

2. Best Practices for Promoting Green Housing Quality

■ Advancement of DX in construction

Goal

- Implement Building Information Modeling in building designs
- Utilization of cloud-based quality control apps to strengthen check-up procedures

Building Information Modeling (BIM)

- BIM allows for clash detection (identifying conflicts between building systems before construction), reducing errors and rework
- BIM will increase the accuracy of energy consumption simulations

Cloud-based Quality Control Apps

- Conduct “hidden part inspections” on site using smartphone apps
- Photo taken at the site with GPS information and timestamps in real time can be shared for quality assurance purpose among the stakeholders: regulators and financial institutions

3. Ensuring Housing Quality Through Financial Instruments

■ Offering preferential interest rate on green housing loan will promote building of quality housings

Expected outcomes of preferential interest rate applied green housing loan

Policy alignment
Access to funding

- Enable financial institutions access green finance

Environmental
benefit

- Reduces carbon emission, improves indoor air quality. Avoid cellular stress response

Long-term
cost savings

- Lower utility bills, longer life span of the house

Market
transformation

- Raise the overall quality of the housing stock

Higher standard
adaptation

- Higher energy efficiency or environmental standards will increase the housing quality

Financial
incentive

- Preferential interest rate lowers cost of funding

3. Ensuring Housing Quality Through Financial Instruments

■ Governance and Promotion of Green Housing Loans

Model case

Governance Structure and Target Setting Framework

1. Overall Housing Policy

The “**Basic Act for Housing Life**” establishes the fundamental direction of government housing policy.

The “**Basic Plan for Housing Life**”, a medium- to long-term strategy for housing policy, is formulated and approved by the Cabinet.

2. Target Setting Process for JHF

Under the “**Act on General Rules for Incorporated Administrative Agencies**”, the government sets the medium-term and annual targets for the Japan Housing Finance Agency (JHF).

Based on the “**JHF Act**”, JHF formulates its own medium-term and annual plans to achieve these targets.

Progress and implementation are monitored and reported in accordance with the JHF Act and the **internal JHF Target Management Regulations**.

3. Ensuring Housing Quality Through Financial Instruments

■ Governance and Promotion of Green Housing Loans

Model case

JHF's Initiatives for Promoting Green Housing

1. Provision of Flat 35S and Preferential Interest Rate

To promote the reduction of greenhouse gas emissions in the housing sector, JHF offers Flat 35S with preferential interest rate for homes that meet energy efficiency and other green standards, which was approved by the Board of Directors and product regulations.

2. Issuance of Green Bonds

JHF issues green bonds as a means of funding green housing loans, which was approved by the Board of Directors.

3. Disclosure Based on TCFD and SDGs

JHF discloses information in line with the Task Force on Climate-related Financial Disclosures (TCFD) and JHF also discloses activities and outcomes related to the Sustainable Development Goals (SDGs).

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Model case

JHF's Initiatives for Promoting Green Housing

4. Budget Determination Process

The budget for implementing housing policy is requested by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) to the Ministry of Finance, which makes the final decision. JHF's budget is included in this process.

	FY2022	FY2023	FY2024	FY2025	FY2026
billion JPY	27.0	23.6	22.6	24.8	26.0
billion MNT	621	543	520	870	598

F2026 budget of 26.0 billion JPY (598 billion MNT) will be allocated to compensate JHF's preferential interest rate applicable to JHF's Flat 35 housing loans available to build/purchase Zero Energy House and other houses.



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