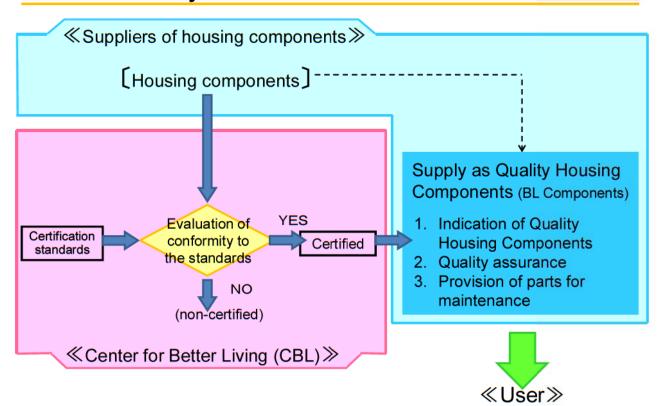
Certification of Environmentally Friendly Housing Components in Japan

Jun-ichi Murakami Executive Director Center for Better Living

Outline of Quality Housing Components Certification System





Fundamental requirements

- Excellent functionality, offering a comfortable residential environment
- ② High degree of safety
- 3 Superior durability and maintenance
- Proper installation guaranteed
- (5) Reliable supplies, quality assurance, and maintenance services



- Certification standards for each item (Required performance etc.)
- Evaluation standards for each item (Evaluation standards for conformity to certification standards)

Indication of Quality Housing Components

B



Name of item

Telephone number of the Customer Service Division

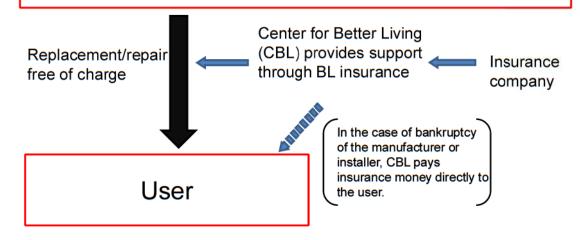
Shown that covered by BL insurance

Manufacturer: Defects in design/manufacture of

housing components

Installer: Defects in installation of

housing components



State of Certification and Supply of Quality Housing Components (FY 2010)

Certification items: 53 items

Bathroom units, Interior systems, Kitchen systems, Gas water heaters, Heating and cooling systems, Front doors, Door closers, Windows, Storage units, Ventilation units, etc.

- Certified manufacturers: 281 companies
- BL labels issued: approx. 8.8 million

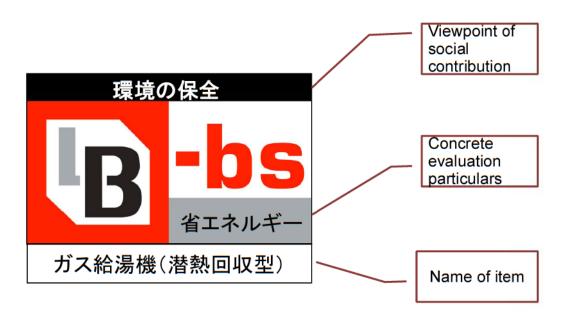
BL-bs Components

BL-bs (Better Living for better society) Components that are certified as having the following specific features to contribute to a better society.

- 1 Environmental conservation
- 2 Production and use of housing stock as social assets
- ③Creation of a society in which everyone, including the elderly and disabled, can live in safety and comfort
- 4 Improvement in crime prevention

Indication of BL-bs Components contributing to environmental conservation



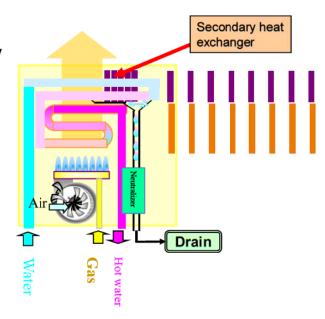


1. Gas water heaters (latent heat recovery type)

Thermal efficiency at least 95%

Gas consumption was reduced by at least 13% annually and CO2 emissions decreased at least 13% compared with conventional gas water heaters.





BL-bs Components with Environmental Conservation | 10 **Features**

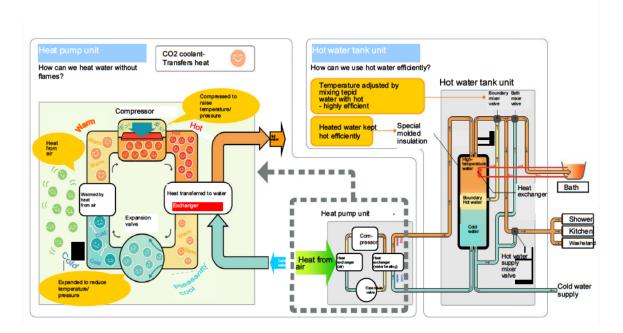
- 2. Electric water heaters (heat pump type)(1)
- COP (indicator of heat pump performance) of at least 3.5
- Total system energy efficiency (average for summer and winter) of at least 245%

Annual power consumption estimated to be around 1/3 of that of conventional electric water heaters (heater type)



CHP-HX371DA8

2. Electric water heaters (heat pump type)(2)



BL-bs Components with Environmental Conservation 12 **Features**

3. Household gas co-generation system (1)

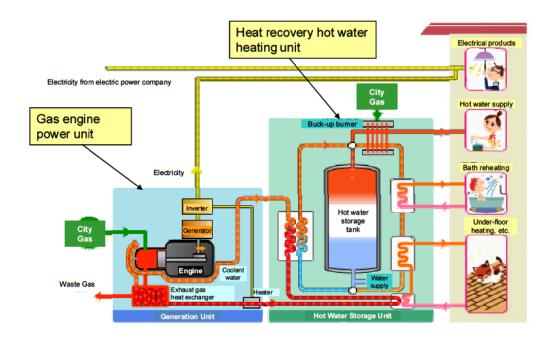
The system is comprised of a heating & hot water supply that generates electricity with a gas engine and utilizes the exhaust heat to supply hot water. Achieving total energy efficiency of at least 80% at the setting of thermal output of 2.8 kW and electrical output of 1 kW.





(Tokyo Gus Co., Ltd.)

3. Household gas co-generation system (2)



BL-bs Components with Environmental Conservation B 14 **Features**

4. Household fuel cell co-generation system (1)

A hot water supply system that uses gas or kerosene as raw fuel. The system generates power by making use of the chemical reaction between hydrogen and oxygen and produces hot water using the heat released during the reaction.

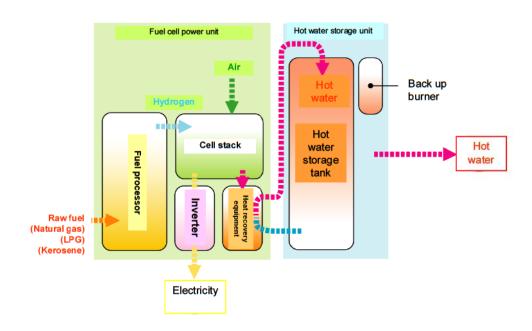
Combined efficiency (power generation efficiency + exhaust heat recovery efficiency) is at least 80%.







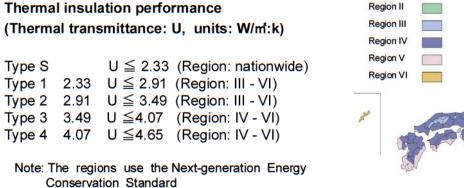
4. Household fuel cell co-generation system (2)



BL-bs Components with Environmental Conservation 16 **Features**

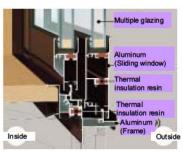
Region I

5. Heat insulating windows (Multiple glazing)









6. Inner windows (Heat insulation)

Thermal insulation performance (Thermal transmittance: U, units: W/m²:k)

•For double glazing with inner window (Multiple glazing)

 $U \leq 2.33$ (Region: nationwide)

For double glazing with inner window (single pane)

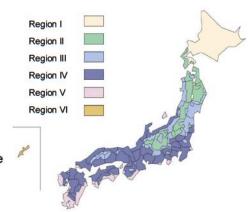
 $2.33 < U \le 2.91$ (Region: III - VI)

Note 1: If specification for outer window is single-pane

aluminum sash

Note 2: The regions use the Next -

generation Energy Conservation Standard









BL-bs Components with Environmental Conservation Features

7. Front doors (Heat Insulation)

Thermal insulation performance

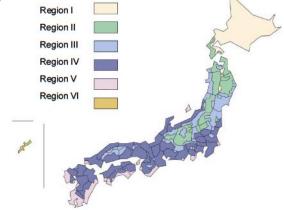
(Thermal transmittance: U, units: W/m2:k)

Type S $U \leq 2.33$ (Region: nationwide) Type 1 2.33 $U \le 2.91$ (Region: III - VI)

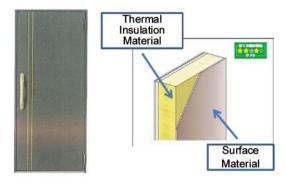
Type 2 2.91 $U \leq 3.49$ (Region: III - VI)

 $U \le 4.07$ (Region: IV - VI) Type 3 3.49 Type 4 4.07 $U \le 4.65$ (Region: IV - VI)

Note: The regions use the Next -generation Energy Conservation Standard











-Creating Forests out of Gas-Blue & Green Project



Center for Better Living and the gas industry are working together to promote the spread of BL-bs high-efficiency gas appliances* and tree planting (one tree for each BL-bs high-efficiency gas appliance sold).

The blue in the logo represents gas flames and the green represents the leaves of a tree.

*Gas water heaters (latent heat recovery type), Heating and cooling system/Gas heat source appliances (latent heat recovery type), Household gas co-generation system, Household fuel cell co-generation system

http://www.gasdemori.jp/





Project Targets and Results

★ First period (From June 2006)

Target 1 million units sold

Results Dec. 2009: 1 million units reached

★ Second period (From January 2010)

Target 2 million units in total

Results (predicted) Oct. 2011 Predicted that a total sale of 2 million units will be reached

(As of end July 2011)

(AS OF ENG Sury 2011		
Gas water heaters (latent heat recovery type) Gas heat source appliance (latent heat recovery type)	1,855,087 units	97.4 %
■ Household gas co-generation system ■ ECÔ ѾÎLL	33,654 units	1.8 %
■ Household fuel cell co-generation system	14,878 units	0.8 %
Total	1,903,619units	9

CO₂ reduction effect of the project



CO₂ reduction through installation of two million BL-bs gas water heaters/heating appliances

→ Approx. 463,000 tons/year

CO₂ absorption through planting of two million trees → Approx. 31,400 tons/year



Total CO2 reduction approx. 500,000 tons/year



*CO₂ emissions per household/year = Approx. 5 t

Equivalent to the amount of CO2 emitted by 100 thousands households in one year

(Chofu-city, Tokyo = Approx. 100 thousand households/population 220 thousand)



Center for Better Living strives to continue to promote the certification of environmentally friendly housing components.

Thank you for your understanding and support.

Thank you for your attention.