

NEXTSTATION

MARRAKECH 2015



5TH INTERNATIONAL CONFERENCE ON RAILWAY STATIONS



Palmeraie Palace

Marrakech, 21-22 october 2015



The Development of “ecoste” Eco-friendly Stations

- Yuko Ando
- Assistant Manager, East-japan Railway Company, Japan
- Territories



Content

- ❑ Part 1 Summary of our company
- ❑ Part 2 Eco-friendly stations “ecoste”
- ❑ Part 3 Development of “ecoste”
- ❑ Part 4 The next “ecoste”



Summary of our company

East Japan Railway Company (JR East)

A representative Japanese railway company since 1987

We have **1700 stations in eastern Japan.**

The total area of our buildings is **770 million square meters.**

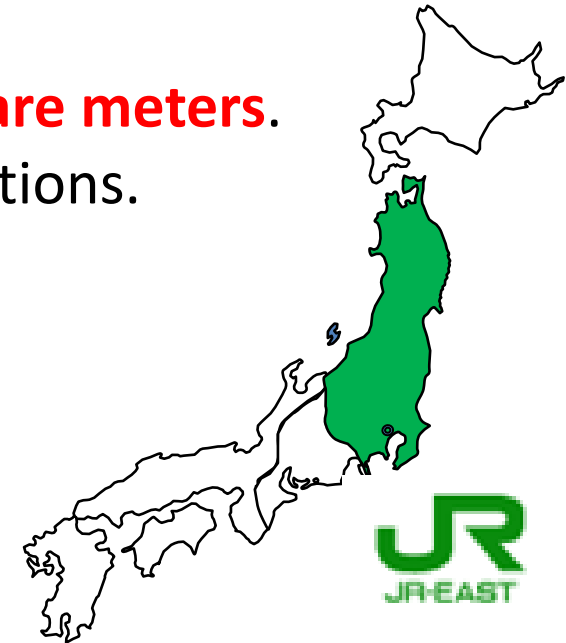
We have continued efforts in next-generation stations.



Large-scale terminal stations



Compact local stations



Let me introduce our efforts to **develop more eco-friendly stations.**

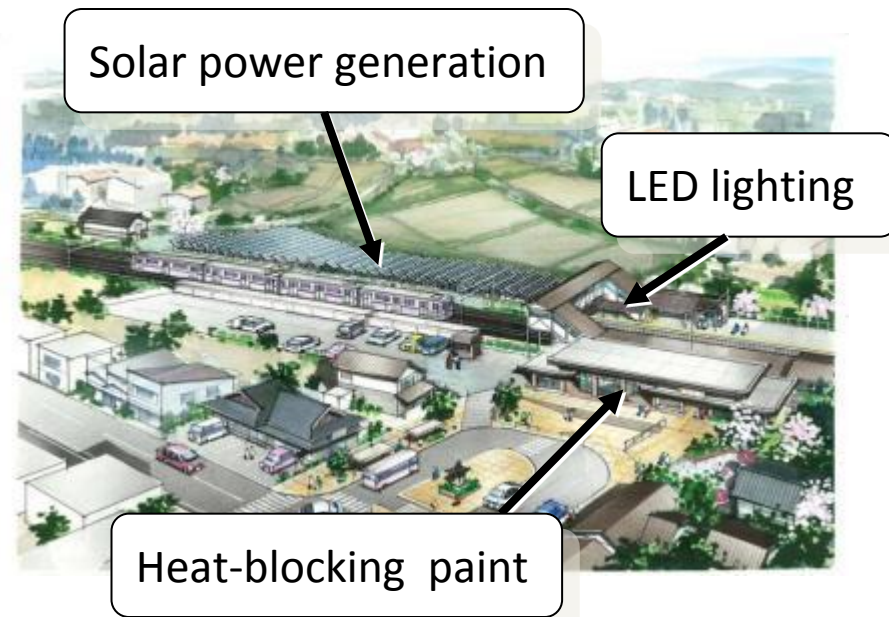


Eco-friendly stations “ecoste”

The concept of “ecoste”

$$\text{Station} \times \text{Environmental technologies} = \text{“ecoste”}$$

Aiming to appeal to our customers, “ecoste” model stations have been introducing various technologies for environmental preservation including **energy conservation** and **use of renewable energies**.





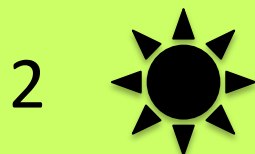
Eco-friendly stations “ecoste”

“ecoste” Four pillars



Energy conservation

Promoting more advanced energy conservation



Energy creation

Activity implementing renewable energy



Eco-Awareness

Preparing facilities that make users eco-aware



Environmental Harmonization

Creating vitality by harmonizing people with their environment



The Development of "ecoste"

In-service "ecoste" stations

5th "ecoste"
 Fukushima station in Fukushima prefecture (since 2015)

4th "ecoste"
 Yumoto station in Fukushima prefecture (since 2015)



2nd "ecoste"
 Hiraizumi station in Iwate prefecture (since 2012)

1ST "ecoste"
 Yotsuya station in Tokyo (since 2012)

3rd "ecoste"
 Kaihin-Makuhari station in Chiba prefecture (since 2013)

Pioneer model

Developed model



The timeline of "ecoste"



The Development of “ecoste”

Environmental Technologies of “ecoste”

Pioneer model

Energy conservation

- LED lighting & displays
- Water-saving lavatories
- Heat-blocking paint



Eco-Awareness

- Eco-information display board
- Natural ventilation system
- Sunlight collection & light duct



Energy creation

- Solar power generation
- Storage battery
- Wind power generation



Environmental Harmonization

- Greenery in surrounding area
- Pocket parks
- Rooftop & wall greenery



Pocket Park



Solar power generation



Wind power generation



Sunlight collection system and Light duct





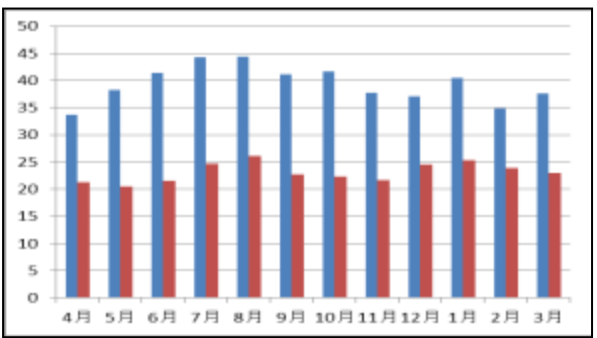
The Development of “ecoste”

Pioneer model

The effect of “ecoste”

1ST “ecoste”
Yotsuya station

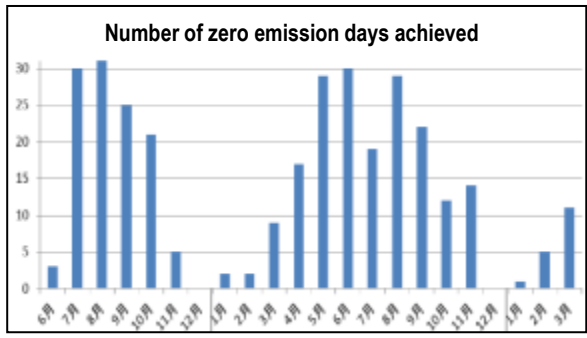
Reductions of CO₂ emissions compared to FY 2008



40% achieved

2nd “ecoste”
Hiraizumi station

Number of zero emission days achieved

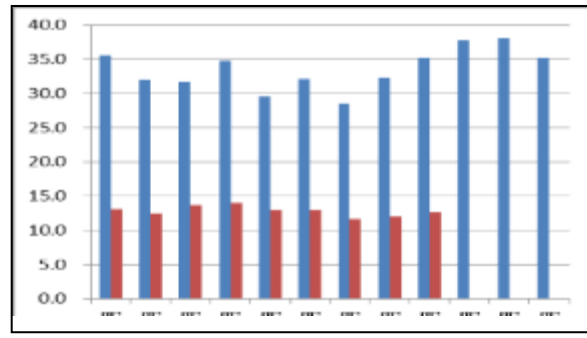


50% achieved

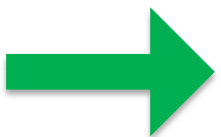
317days in 630 day from 2012 to 2014

3rd “ecoste”
Kaihinmakuhari station

Reductions of CO₂ emissions compared to FY 2010



60% achieved



The “ecoste” pioneer model has stable results in reduction of CO₂ emissions.



The Development of “ecoste”

Environmental Technologies of “ecoste”

Developed model

Energy conservation

- LED lighting & displays
- Low-emission (Low E) glass
- Ceiling fans



Eco-Awareness

- Eco-information display board
- Foot bath using hot spring
- Floor heater using hot spring heat
- Radiation type heater using hot spring



Energy creation

- Solar power generation
- Storage battery
- Heat pump using underground heat
- Organic thin-film solar generation



Environmental Harmonization

- Bench using local wood
- Charging facility for electric vehicles



Now we are considering **more possibilities** of **making more effectively** of regional characteristics.



The Development of "ecoste"

4th "ecoste" model station (Yumoto)

Developed model



Bird'seye view

High utilization of community resources

(hot springs, wood, solar power etc..)

Not only reducing CO₂ emissions but also

making regional developments and improvement in customer service



Station sign using local wood



Radiation-type heater using hot spring heat



Floor heater using hot spring heat



Foot bath on platform using hot spring



The Development of “ecoste”

5th “ecoste” model station (Fukushima)

Developed model



Bird'seye view

By installing renewable energy systems such as solar power generation and ground source heat pump , the **capacity of the station to accommodate those** who cannot return home in emergency situations has been enhanced **with cooperation from the Fukushima prefectural government.**



Solar power generation on the rooftop



Heat pump using underground heat



Organic thin-film solar generation



Storage batteries



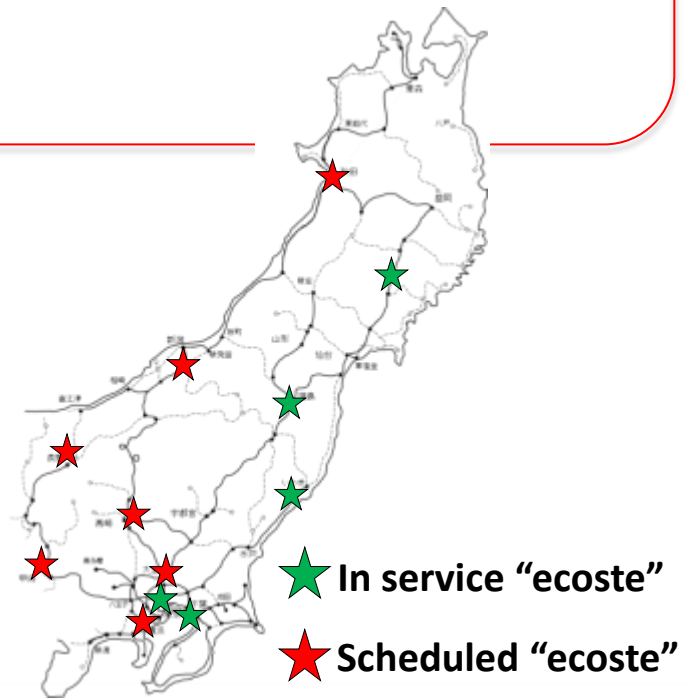
The Next “ecoste”

Concept of The next-generation “ecoste”

$$\text{Station} \times \text{Environmental technologies} \times \text{Regional characteristics} = \text{The Next “ecoste”}$$

In the future, we will create more “ecoste” in different areas, leveraging **regional characteristics in more various ways**.

We are aiming for the development of an **“ecoste” that is closer to the heart of the local community**, as well as installation of environmental technologies.



MERCI

- Yuko Ando / East Japan Railway company
 - yu-andou@jreast.co.jp
 - <http://www.jreast.co.jp/>

