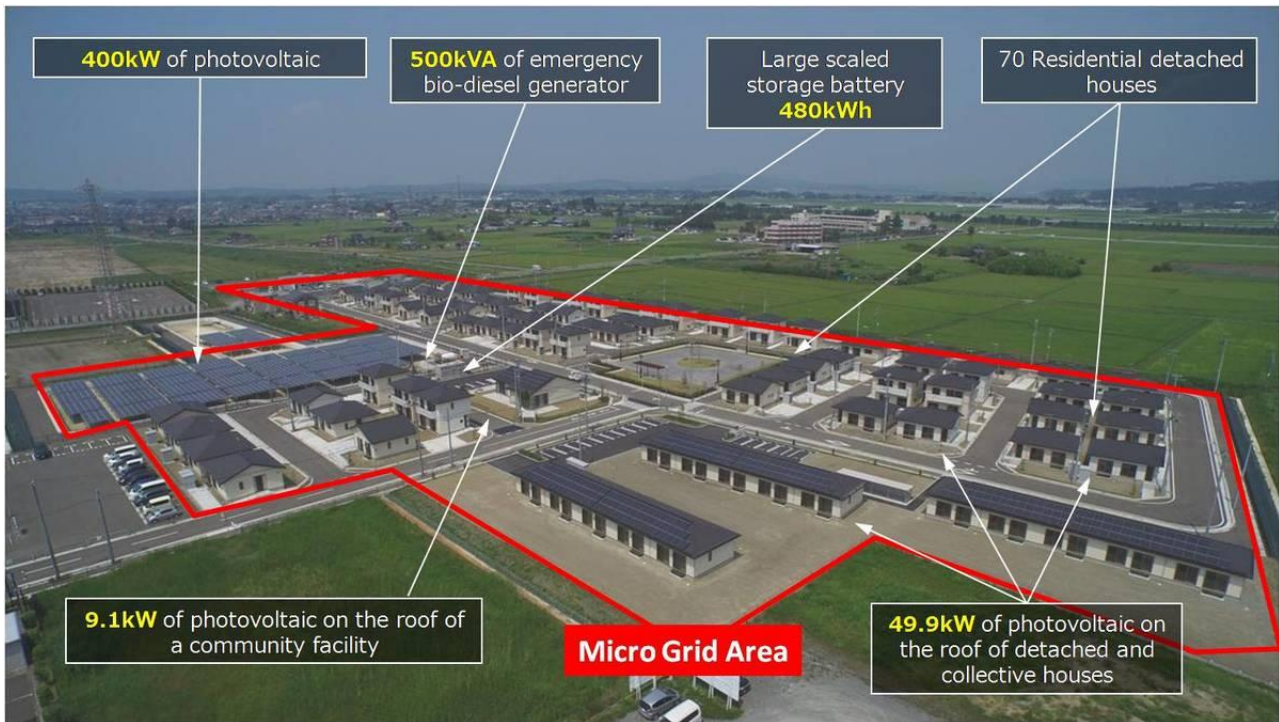


## Higashi-Matsushima City Disaster-Ready Smart Eco-Town

by kazuhiro teranishi / 2018-05-02 08:26:47 / International / 9769 / EN



**Year of commitment** : 2015

**CO2 Impact** : Reduced 307 tons of Carbon annually

**Green energies** : Energy storage, Photovoltaic solar, Cogeneration, Electricity

**Digital services** : Smart metering, Cloud data solutions, Smart grid, Resilience

**Circular economy and waste management** : Eco-Design



3 560 000 €

**Builder**

Sekisui House

**Manager / Dealer**

Support of Ministry of Environment

### GENERAL INFORMATION

The joint public-private project with Higashi-Matsushima city in Miyagi Prefecture constructed "Higashi Matsushima Disaster-Ready Smart Eco-Town". This included the creation of Japan's first micro grid, which facilitates the mutual exchange of energy across properties. Supplying electricity from photovoltaic systems in nearby facilities such as disaster-ready public housing and hospitals reduces CO2 emissions by 307 tons annually.

Large storage battery ensure three days of electric power in the event system power is cut due to a natural disaster or other accident. In August 2015, regional residents from temporary housing began moving in to the 85 disaster-ready public housing units (Yanagi no Me municipal housing). Since May 2016, the town-wide system has been in full operation.

### Progress Status

Delivered

## Data Reliability

3rd part certified

## Funding Type

Public/Private Partnership

## Infrastructure Video



## Website Enterprise / Infrastructure

[https://www.sekisuihouse.co.jp/sustainable/netzero/objective1\\_14/index.html](https://www.sekisuihouse.co.jp/sustainable/netzero/objective1_14/index.html)

<https://www.channelnewsasia.com/news/video-on-demand/smart-cities/higashimatsushima--japan-8797294>

## Sustainable Development

**Attractiveness** : Many people in the city of Higashi-Matsushima lost their homes in the tsunami that happened in 2011. Resilient housings and hospitals are required so the residents can rebuild their lives. And the accident of the nuclear power plant in Fukushima prefecture made people prefer renewable and independent electricity. That is why people and city of Higashi-Matsushima welcomed the solution of this project.

**Well Being** : In Japan where many natural disasters happen, it is benefit for the hospitals and public facilities as well as homes to be connected with storage battery and various generators. When the tsunami happened in 2011, the electricity of this area was shut down in 3 days and the hospitals could not fully operated.

**Social Cohesion** : In this project, the micro grid connects disaster-ready public housing, public facility and hospitals.

**Preservation / Environmental Improvement** : By this micro grid, the residents and hospitals can use electricity that locally generated by renewable. That made possible to reduce 307 tons of CO2 annually.

**Resilience** : Large storage battery and bio-diesel power generator ensure three days of electric power in the event that system power is cut due to a natural disaster or other event. Even after bio-diesel is gone, hospitals can be operated with electricity supply by electric storage batteries and photovoltaic solar panels.

**Responsible use of resources** : In this project, there is included the creation of Japan's first micro grid, which facilitates the mutual exchange of energy across properties. Supplying electricity from photovoltaic systems in nearby facilities such as disaster-ready public housing and hospitals reduces CO2 emissions by 307 tons annually.

## Testimony / Feedback

*"The net zero area and distributed self-sufficient energy system is beneficial not only in terms of energy, but also for disaster prevention and resilience. And I think it is very meaningful that such a new project could be started in a tsunami-affected area" By Ms. Tamayo Marukawa, former Minister of the Environment. "The resilience town that protects residents' life is a one of the theme of reconstruction from The Great Tohoku Earthquake and Tsunami 2011." By Mr. Hideo Abe, former Mayor of Higashi-Matsushima city.*

*This project is awarded "the Grand Prize for the Global Environment Award" by the Sankei Shinbun Co., Ltd, and also "the Minister of the Environment Award for global warming prevention" by the Minister of the Environment in Japan.*

## Governance

Higashi-Matsushima City

**Holder Type** : Regional Authority

Sekisui House

**Builder Type** : Construction Industry

Support of Ministry of Environment

**Manager / Dealer Type** : Public

**Business Model** : HOPE, Higashi-Matsushima Organization for Progress and Economy, Education, Energy, was started through this project. HOPE connects government, community, local industry and private companies, and contacts with universities, laboratories and NPOs. It aims to support the rebuilding of the city of Higashi-Matsushima that was severely damaged by the tsunami in 2011.

One activity of HOPE is as a manager and distributor of locally generated electricity. HOPE sells and buys electricity within the local area and earns money through managing generators, the smart grid, etc. HOPE creates new employment in local area and helps re-construction of city and businesses by earning money.

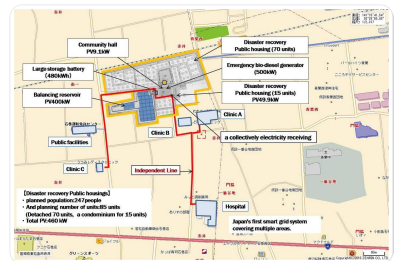
See also; <http://hm-hope.org/ecotown/> and <http://hm-hope.org/denki/>

## Sustainable Solutions

Higashi-Matsushima City Smart Disaster-Ready Eco-Town

### Description :

The "Smart Disaster-Ready Eco-Town Project" was built in 2015 in the tsunami-affected area, consisting of 85 housing units, a community facility, four hospitals and public facility. This is the first example in Japan of a connected micro grid project that connects buildings to 460 kW of Photovoltaic solar panels, a 500 kVA of bio-diesel power generator, and 480 kWh of Storage cells. With this micro grid, residents and hospitals can consume renewable energy that is locally generated without using the Feed-in tariff. Also, large storage cells ensure three days of electric power in the event of a system power is cut due to a natural disaster or other event.



In addition, energy management is operated by the newly established organization HOPE (Higashi-Matsushima Organization for Progress and Economy). The aim of this organization is to earn money from locally generated electricity and create jobs and stable income for the residents around the tsunami-affected area.

This project, subsidized by the Ministry of the Environment, is an "independent and distributed low carbon energy society creation" initiative conducted by the Low Carbon Society Promotion Association.

CO2 Impact : 307 000,00

- o Smart city :
- o Resources :
- o Energy/climate :
- o Citizen participation
- o Security
- o Business development
- o Infrastructure
- o Citizen-awareness
- o Renewable energies

[http://www.sekisuihouse.co.jp/company/topics/datail/\\_\\_\\_icsFiles/afiedfile/2018/02/28/20180228-1.pdf](http://www.sekisuihouse.co.jp/company/topics/datail/___icsFiles/afiedfile/2018/02/28/20180228-1.pdf)

Company (es) Website :

Company (es) Website :

## Contest

### Reasons for participating in the competition(s)

A case study of new infrastructure in a tsunami-affected area damaged by the Great East Japan Earthquake that happened in 2011. When this area was affected by the 2011 tsunami, people lost their homes, and hospitals could not fully operate due to an electricity shutdown. But now this district has been rebuilt with a new-concept infrastructure called the "Smart Disaster-Ready Eco-Town Project". By use of a smart grid within this project, it is possible to satisfy energy needs through the local production of renewable energy without using the Feed-in tariff.

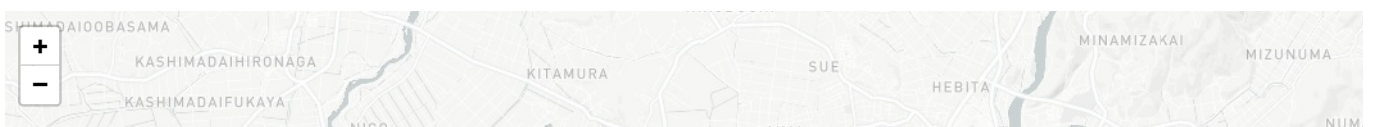
### Building candidate in the category

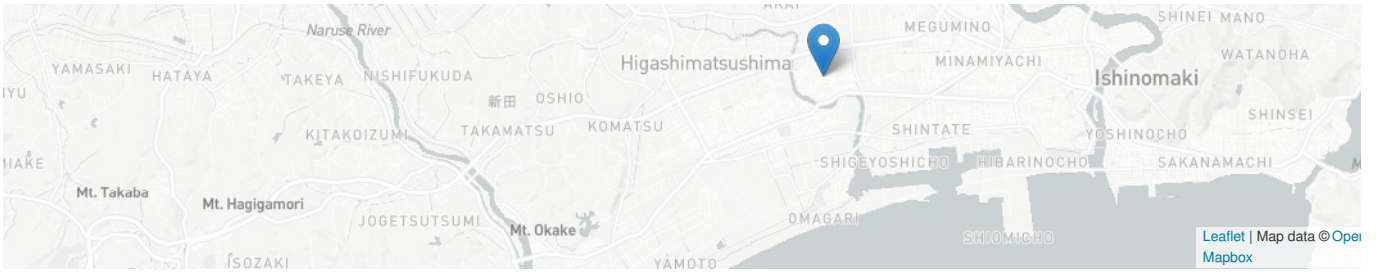


Users' Choice



Sustainable Infrastructure Grand Prize





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