

Net Zero-Energy House—Economical and Contributes to the Environment

INOS Group Launches Conceptual Housing Product *ENETOMO Home*

Sumitomo Forestry Co., Ltd. (President and Representative Director: Akira Ichikawa; Head Office: Chiyoda-ku, Tokyo) announced that INOS Group today launched a conceptual housing product, *ENETOMO Home*, which aims to realize a net zero-energy house (ZEH). INOS Group comprises 240 of the best local construction companies in Japan (as of the end of September 2012). Sumitomo Forestry supplies materials and provides technical assistance to member companies.

ZEH refers to housing whose objective is to realize a net zero balance of annual household primary energy* consumption through improvements in energy efficiency, and by simultaneously generating energy with equipment such as a solar power system. The Japanese government is promoting the ZEH as one of the energy policies adopted in light of the balance of power supply and demand after the Great East Japan Earthquake. The government aims for all new house construction to be net zero energy homes by 2030.

Household energy consumption is on the rise. Air conditioning, heating, and water-heaters account for more than half of this consumption. Consequently, housing designs that reduces this energy consumption are being sought after. By achieving a net energy consumption of zero, utilities expenses and CO₂ emissions can be reduced. ZEH is gentle on both the household budget and the environment.

In addition to harnessing reusable energy, mainly via solar power generation, an important factor for ZEH is the promotion of energy efficiency through a high level of thermal insulation and airtightness, and also through creative design methods. *ENETOMO Home* enhances insulation performance and airtightness using a blend of technologies, equipment, and designs, while also pursuing comfort.

*Energy sources that exist “as is” in nature, such as petroleum, coal, natural gas, hydropower, and solar power.

Product Features

1. Energy-efficient housing owing to high levels of thermal insulation and airtightness

The change in room temperature due to conventional ventilation systems is minimized by using a total heat exchange system, which intakes and distributes fresh outdoor air that has been adjusted to room temperature. The use of plastic window sashes achieves a high level of insulation and airtightness, which prevents heat from escaping via windows. Also, spraying low-density urethane foam into the spaces in the walls and ceiling prevents the temperature inside the house from being affected by the outside air.

2. Extensive facilities enable creation and conservation of energy

Using the total heat exchange ventilation system and the high level of insulation and airtightness reduces the amount of electricity consumed, mainly by air conditioning units. Home energy management system (HEMS), which is a standard feature, enables visualization of the amount of power consumption, contributing to energy-saving awareness. This facilitates the greater sale of electrical power that is generated by solar systems. Other standard features include underfloor heating and energy-efficient hot water supply units. In this fashion, comfort is maintained while reducing energy consumption.

3. Improving comfort through creative design

A myriad of innovations and ideas were incorporated to ensure efficient energy usage. For example, in anticipation of more energy generation by solar power, our design proposals include a more gradually sloped roof, with the basic design being a single-pitch roof. Also, for windows, where heat easily escapes, it is recommended to use windows that offer a high level of insulation and airtightness, while factoring in lighting, and also taking into account window size.

Product Overview

1. Name: INOS Group conceptual housing product, *ENETOMO Home*
2. Launch date: October 29, 2012
3. Sales area: Areas III, IV & V, under Japan's next-generation energy conservation standards
4. Construction: Wooden post-and-beam construction
5. Plan: Unrestricted custom design (sample plans for various concepts available)
6. Sales target for first fiscal year: 400 buildings
7. Price: From ¥580,000/3.3 m²
(Consumption tax included, standard features include solar power generation system and underfloor heating in the living room, dining and kitchen areas)

INOS Group Profile

INOS Group was established in 1994 and is a homebuilders' network composed of the best local construction companies in Japan. As of the end of September 2012, there are 240 member construction companies. In the previous fiscal year (year ended March 2012), 577 houses were constructed by the group overall.

INOS is an acronym of:

<u>I</u> NNOVATION	(always novel)
<u>N</u> EIGHBORSHIP	(placing importance on contact with the community)
<u>O</u> RIGINALITY	(ideas packed with originality)
<u>S</u> ATISFACTION	(aiming for fully satisfying homebuilding)

Within INOS Group, Sumitomo Forestry supplies high quality materials to member construction companies and also provides CAD and technical support. In turn, member construction companies utilize these materials and expertise to provide customers in respective areas with high quality and comfortable INOS brand housing.

