



(Press Release)

Title:

International standardization of ZEB* in the public and private sectors of Japan toward worldwide decarbonization. The ISO**'s TS*** has been officially issued.

本文 :

The Japanese Business Alliance for Smart Energy Worldwide is conducting promotional and awareness building activities of energy saving and renewable energy technology focusing on emerging countries for the purpose of reducing greenhouse gas emissions by promoting energy conservation overseas and using new energy by utilizing the excellent technology of its member companies.

At the conference, the ZEB Promotion Working Group (hereinafter the ZEB Promotion WG) was established in 2017 to spread and expand the concept of ZEB which ultimately aims to reduce the energy balance of buildings to zero in regions centered on the hot and humid countries in Asia, and we started working on the establishment of international standards on which to formulate related measures in each country in addition to striving to disseminate and enlighten technology and knowhow to promote the ZEB of commercial buildings focusing on ASEAN countries.

One of the major issues for ZEB promotion is that even if building owners and business operators first set a goal of ZEB, they may eventually hesitate to get on board from the perspective of the initial investment. Therefore, the Agency for Natural Resources and Energy, which is a part of the Ministry of Economy, Trade and Industry (METI) took the initiative and launched the ZEB Roadmap Review Committee and formulated a roadmap to promote ZEB. Meanwhile, the definition of ZEB Ready, a means to achieve 50% or more energy saving than the energy saving standard, was established, and an environment that makes it easy for businesses to gradually proceed with ZEB was created. This method was thought to work effectively in emerging countries overseas as well, and this approach is incorporated in the technical specifications issued by the ISO by the suggestion of Japan.

The ZEB Promotion WG consists of members including Japanese companies with cutting-edge technology in the fields of design, air conditioning, elevators and engineering, as well as observers from the Ministry of Economy, Trade and Industry and with AGC Inc. as the chief examiner, and by promoting ZEB around the world by taking advantage of the characteristics of each company, we aim to expand our businesses. The current WG members are,

As corporate members,

Kawasaki Heavy Industries Ltd.

Nikken Sekkei Ltd.

Mitsubishi Electric Corporation

Sanken Setsubi Kogyo Co. Ltd.

As organization members,

Heat Pump & Thermal Storage Technology Center of Japan

The Energy Conservation Center, Japan

(Above in alphabetical order)

In this WG, repeated discussions were held with the support of the Ministry of Economy, Trade



and Industry, and we began working with the International Organization for Standardization (ISO) in 2018 to promote this idea as an international standard, and in May 2020, we proposed the technical specifications with the title, "Methodology for achieving non-residential Zero Energy Buildings (ZEB)" to ISO. Later, after deliberation by experts from each country at ISO, supported by ASEAN countries such as Singapore, Malaysia and Philippines, it was officially approved as ISO technical specification TS23764****, and it was enacted on September 24, 2021.

At the conference and WG, policy/measure planning will be promoted to spread ZEB in various countries in the future based on this technical specification, and we hope that that greenhouse gas reduction and carbon neutrality will progress on a global scale by accelerating the introduction of equipment and materials with higher energy-saving performance throughout the world and with the global spread of equipment and building materials with excellent performance and functions.

*ZEB (Zero Energy Buildings)

**ISO (International Organization for Standardization)

***TS (Technical Specification)

****TS23764 See attachment

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TS23764 : Technical Specification for ZEB

(Brief Explanation)



Japanese Business Alliance for Smart Energy World wide

Sept.30th,2021

Background

Since the Paris Agreement was adopted in the 21st Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, all countries (including emerging countries) have been required to set a target for reducing their greenhouse gas emissions by 2020 and later. In all countries, reducing energy consumption is the most effective means of mitigating greenhouse gas emissions.

The building sector takes a 30% share of the world's energy consumption, and this contribution appears to be increasing[8]. Therefore, reducing the greenhouse gas emissions from this sector is an important global issue. Ultimately, the energy consumption of the building must be reduced and balanced by renewable energy to create a (net) ZEB. Such advanced cases have already been constructed.

Although the ultimate goal of achieving ZEBs is clearly understood, its realization has been limited by practical barriers such as high initial investment. However, as the life cycle of buildings is long, the design and construction of more energy-efficient buildings is considered as a present attempt rather than a future one for greenhouse gas reduction. Hence, accelerating the movement toward ZEBs is an immediate urgency.

From this perspective, this document advocates a step-by-step realization approach for (net) ZEBs. Its aim is to accelerate the ZEB movement and describe the practical realization of ZEBs. Namely, this document proposes a practical ZEB approach and outlines the basic considerations during the total process of ZEB realization, from design to the operation and maintenance stages.

6 step process for ZEBs in TS23764

1. At planning stage, to have clear policy to achieve ZEB by the three steps, ZEB Ready → Nearly ZEB → (net)ZEB, but not to achieve it by only one step to (Net) Zero Energy Building.
2. At the design stage, To identify appropriate passive and active design strategies and select proper materials and equipment, which are certified by the domestic standard or international standard, as much as possible.
3. During construction, to install the selected materials and equipment correctly according to the drawings and specifications.
4. After completion of building, to realize the energy consumption targeted at the design stage.
5. After operation start, to inspect actual energy consumption continuously (suitable times per year) whether there is any difference of energy consumption between the targeted at design stage and the measured at actual operation.
6. After the start-up of the operation, to calculate the primary energy consumption periodically by using simulation software, if possible.

Definition of ZEB

