



12 (1) Housing and building (housing and building industry, next-generation power management industry)

<Main future efforts>

- Considering the introduction of further regulatory measures to improve the compliance rate with energy-efficiency standards for housing.
 - Strengthening regulatory measures, such as mandatory compliance with energy-efficiency standards, including for housing.
 - Also, for existing stock, enhancing and strengthening measures such as promoting investment in real estate projects that contribute to the expansion of energy-saving renovation and improvement of energy-saving performance.
- Promoting the wooden construction of non-residential and mid- to high-rise buildings.
 - Streamlining building standards by the end of 2021, and taking necessary institutional measures from the following year.
 - Providing support for wooden buildings to which leading design and construction technologies using new materials such as CLT are introduced.

Benefits to people's lives in 2050

- Aiming to drastically reduce the utility costs borne by households and building owners by realizing zero-energy homes and buildings.
 - In the case of houses, a reduction of approx. 160,000 yen/year (equivalent to 80%) is possible with ZEH.
 - In addition, aiming to achieve zero or a significant reduction in utility costs by using solar power generation, peak shifting with storage batteries and EVs, and HEMS.
- Health risks can be reduced by preventing heat shock through improvements in the thermal insulation performance of homes.
 - Reducing health risks caused by sudden changes in temperature, for example, when taking a bath or moving from a warm room to a cold room.

Overview of the current energy-efficiency standards

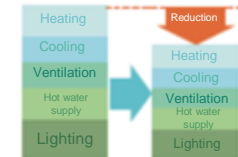
(1) Standard for heat insulation performance of roofs, exterior walls, windows, etc. (applicable only to houses)

(Standards to evaluate for envelope performance)



(2) Standard for energy consumption by heating/cooling, ventilation, hot water supply, lighting, etc.

(Primary energy consumption standard)





12 (2) Next-generation power management (housing and building industry/next-generation power management industry)

<Main future efforts>

- Promoting aggregation business using distributed energy through digital control and market trading.
 - Developing a FIP scheme and a market which enables trading of power conditioning and supplying capacities in order to optimize the use of distributed energy resources (DER).
 - Verifying the technology of EVs and storage batteries, and promoting new businesses that provide services to optimize the supply and demand of electricity by combining highly variable renewable energy sources such as solar and wind power with EVs and storage batteries.
 - Providing support so that the price of household storage batteries with solar power can reach an economically viable level (70,000 yen/kWh in FY2030).
- Building a next-generation grid that utilizes digital technology and markets to relieve congestion in the power grid caused by massive introduction of renewable energy.
 - Advancing grid operations utilizing next-generation smart meters and market functions in preparation for massive introduction of DER.
 - Promoting systematic and efficient installation of long-distance HVDC power transmission systems.
- Promoting local energy production for local consumption, enhancement of resilience, and regional revitalization through microgrids.
 - Establishing necessary technologies by sharing knowledge and experiences gained from model projects.

Benefits to people's lives in 2050

- Optimal power management will save on electricity rates and improve resilience.
 - Optimal power management using solar power, smart meters, EVs, and storage batteries will help average households save money on their electricity rates.
 - Increasingly advanced use of DER will reduce power outages caused by disasters and realize faster recovery.

Future image of power systems

