

Humanities and Social Sciences

Studies on “Energy Sustainable Zone

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Background of Research

The “energy sustainable zone” index that shows comparisons between the supply of reusable energy and energy demand of the same area for each of the local municipalities continues to play a significant role in disclosing areas which have large possibilities of supplying reusable energy and thus clarifying the policy direction for gradually expanding such energy sustainable areas.

Specifically, the “energy sustainable zone” is defined as an area where the amount of reusable energy supply is on a calculation basis exceeding the energy demand of civil life (household and business activity) and food production of the area.

Achievements of Research

Beginning a joint research with Institute for Sustainable Energy Policies, a non-profit organization, in 2005, we announced trial calculation results on electric power in July 2007, and then estimates including heat factors in September 2008. In September 2009, we have published an updated version of the calculations (the figures as of March 2008).

According to the updated version, the power generation by reusable energy in the 2007 report increased by 5.6% compared to the previous year’s report, but the increase in the 2008 report declined to 3.2% compared to the previous year’s report. The entire supply of reusable energy had an increase of 2.6% from the previous year’s report.

The transition of reusable energy by types shows that solar power, wind power and biomass power generation marked an increase rate of over 10% annually. At the same time, small-scale hydroelectric power generation (10,000 kW or less) and solar heat utilization continued to be generally flat, while geothermal power generation and utilization showed signs of decline.

The supply ratio of reusable energy in the 2008 report indicates of all reusable energy supply small-scale hydroelectric power generation accounts for 48%, geothermal related (generation and utilization) components 18% and solar heat utilization 13%, suggesting that such reusable energy types that are not showing an increasing trend comprise about 80% of all reusable energy supply.

The calculation data by municipalities show that, in 50 local

governments, the energy demand for private and agricultural sectors is met only by reusable energy supplied from the area, while 82 local municipalities mathematically satisfies the power demand for private and agricultural purposes only with reusable energy power generation in the area.

The detailed data are available at Website <http://www.sustainable-zone.org>

Prospect of Research

We will continue to update the statistics every year with a view to keeping track of the changes taking place and are also planning to incorporate the standpoint of food self-sufficiency to the data. In such a process, we wish to promote the visualization of the “sustainable zone” defined as an “area wherein reusable energy and food produced in it can meet all the demand for energy and food therein.”

In this research, it is made clear that, rather than densely populated urban areas, places where nature is rich with less inhabitants have prospects of being counted among the “sustainable zone.” We are intending to promote this index on a worldwide scale. By so doing, we expect that the recognition of advancement can be changed whereby the areas conventionally viewed as “developing” will rather be considered “advanced” from the standpoint of sustainability.



20% Energy Sustainable Zone (2008 Version)