

A lecture of energy issue using Δ (onigiri) as an energy unit.

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ABSTRACT

I introduce an energy unit of " Δ " (onigiri) which is equal to food calories of a simple rice ball of 200 kcal, in order for students to be able to consider energy issue. As the results of discussion about energy consumption at various level of human activities with the unit of Δ , the replacement of the energy to the number of a specific food (1) is effective when one familiar to the food wants to recognize the absolute value of the consumed energy ranging from a personal use to a nation's one, and (2) does not have much meaning when one compare the values of the energies among international regions or nations. Tables to convert the energy units including Δ are shown for convenience.

INTRODUCTION

When we talk to students about energy issue, we have a trouble because there are various units expressing the energies. For example, the energy of power companies is expressed by kWh, the one of gas companies is done by Joule, and that of oil companies is done by toe (tonnes of oil equivalent) or boe (barrels of oil equivalent). There are not so many students or general publics who can imagine how large the energies expressed by those units are.

By the way, food-calories display has long been established. It would be easier to recognize the energies by replacing those to the number of a specific food. Because the calories of an onigiri sold at the Japanese convenience stores is about 200 kcal, I define an energy unit as

$$1 \Delta \text{ (onigiri)} \equiv 200 \text{ kcal.}$$

And I have done a lecture for students to consider the energies consumed by various human activities.

In this presentation, I show contents of the lecture, discuss them and derive conclusions. The conclusions are trivial. But the students become able to recognize the absolute values of the consumed energies with the unit of Δ . And we also become to know that it is crucial for many people to recognize the values, for the energy issue to be solved in future.