

What should we do for our future?

W202007-2 Hiroshima Prefectural Fukuyama Seishikan High School

Introduction

Local production for local consumption of energy, aiming for zero greenhouse gas emissions by 2050

Renewable Energy

Geothermal

- Stable power generation can be expected
- Surface heat sources are available in volcanic belts
- The degree of power generation can be adjusted
- Boring costs and construction costs are high
- The process may affect groundwater veins
- There are transportation costs when building a power plant in a mountainous area

Solar power

- No moving parts
- No noise problems
- Can be installed on the roof of ordinary households
- High initial cost
- Cannot generate electricity at night
- Affected by the weather
- Affected by seasonal changes

Wind power

- The transmission loss can be lowered
- If it is constructed offshore near the power demand area.
- Stable power generation is difficult due to changes in wind speed
- Noise problems
- Landscape problems and environmental problems caused by windmills
- Impact on local ecosystems, particularly on birds and animals

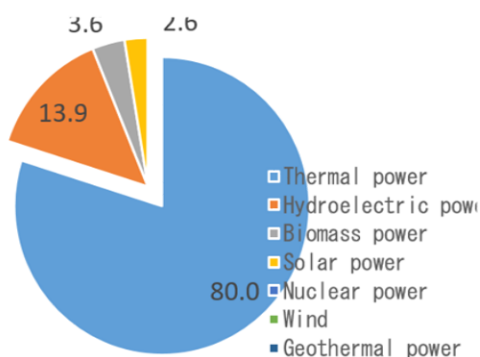
Hydropower

- Can have a flood control function (Since a dam is constructed)
- Can store energy by pumping water using surplus electricity
- The amount of power generation can be adjusted to some extent
- Residents need to relocate in submerged areas
- Impact on river and mountain ecosystems
- The construction site is far from the power demand area

Biomass power generation

- Waste can be used
- Carbon neutral in the long run
- Can store energy in the form of fuel
- Job creation is possible in the process of collection, transportation, processing, etc.
- It is necessary to process it into a fuel.
- Emits CO₂ for a short time
- It costs money to collect resources.

The Current Situation in Hiroshima



Power generation ratio by power source in Hiroshima

Geographical conditions / industry

- Third place in Japan for average solar radiation, 12th place in Japan for daylight hours
- Relatively low snowfall and rainfall (National average 1,757 mm, Hiroshima 1,573 mm)
- huge population
- Forestry 30%
- Forest rate 72% (611,222ha / 847,947ha)

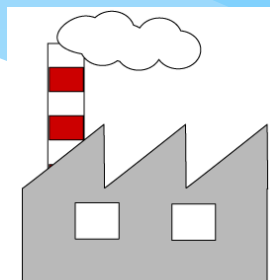
Issues in Hiroshima Prefecture

- Residential solar power generation adoption is 5% or less
- The timber distribution system is not working well.
- Forest land residue 2,533 tons
- Sawmill residue 51,040 tons (460,906 tons nationwide)
- Can be used as woody biomass chips

Local production for local consumption of energy



- ★ Spread solar power generation to ordinary households,
- ★ Use of storage batteries.



- ★ Solar power generation + biomass power generation
- ★ Power plant construction along the highway

Allows power to be secure in the event of a disaster
Reduces the amount of thermal power used