

Realizing decarbonized society

Hiroshima Scenario

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What is Hiroshima Scenario ?

Hiroshima Scenario for decarbonization proposes (1) Electrification of apparatus using city gas, LPG, gasoline, diesel, and kerosine, (2) Provision of solar electricity using farmland etc., (3) Using batteries for mismatch of power generation and electricity demand, and (4) Introduction of technologies for energy conservation such as underground heat, renewable energy such as biomass, substitute battery such as electric vehicles to reduce energy cost. **2**

Development of Hiroshima Scenario

Hiroshima Scenario was developed through discussion in International Symposium on Fuels and Energy, held in Hiroshima every year.

Price of photovoltaic is getting less and less.

Battery is needed for mismatch between renewal power generation and electricity demand.

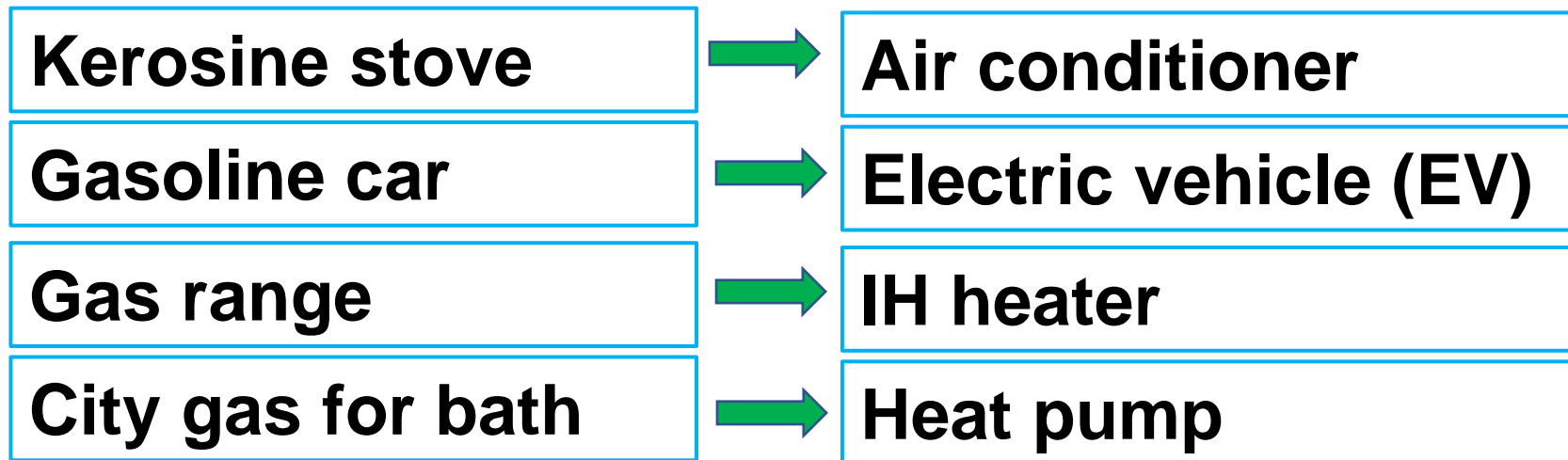
Energy that cannot be supplied by electricity should be provided by biomass.

Decarbonization is never possible while we continue using city gas and gasoline.

Battery is expensive. Cheap energy storage should be introduced as much as possible.

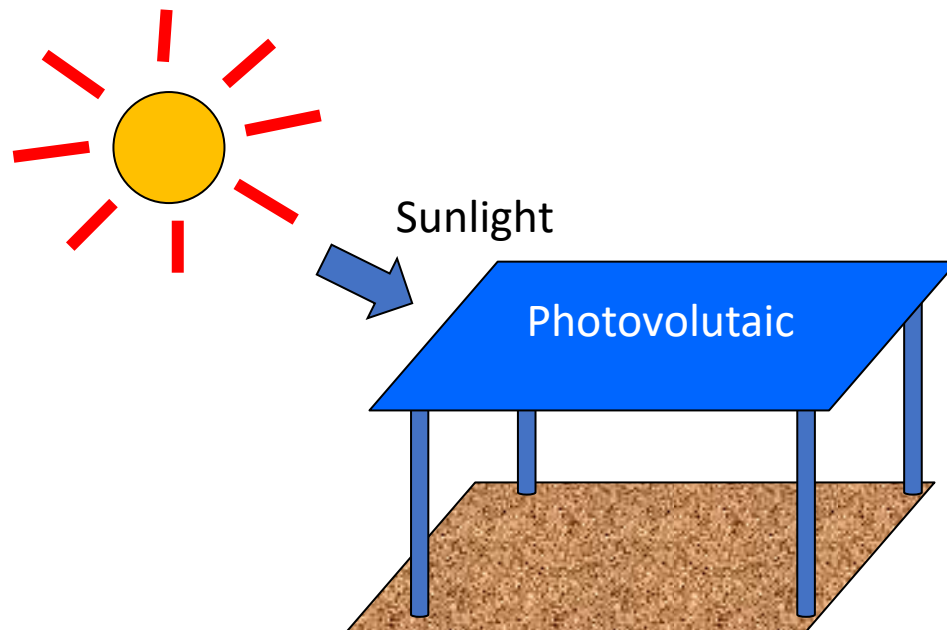
Action 1 Electrification

CO₂ from city gas, liquid petroleum gas (LPG), gasoline, diesel, and kerosine is released to the atmosphere. Electrification is needed to avoid these distributed CO₂ emission.



Action 2 Photovoltaic utilization

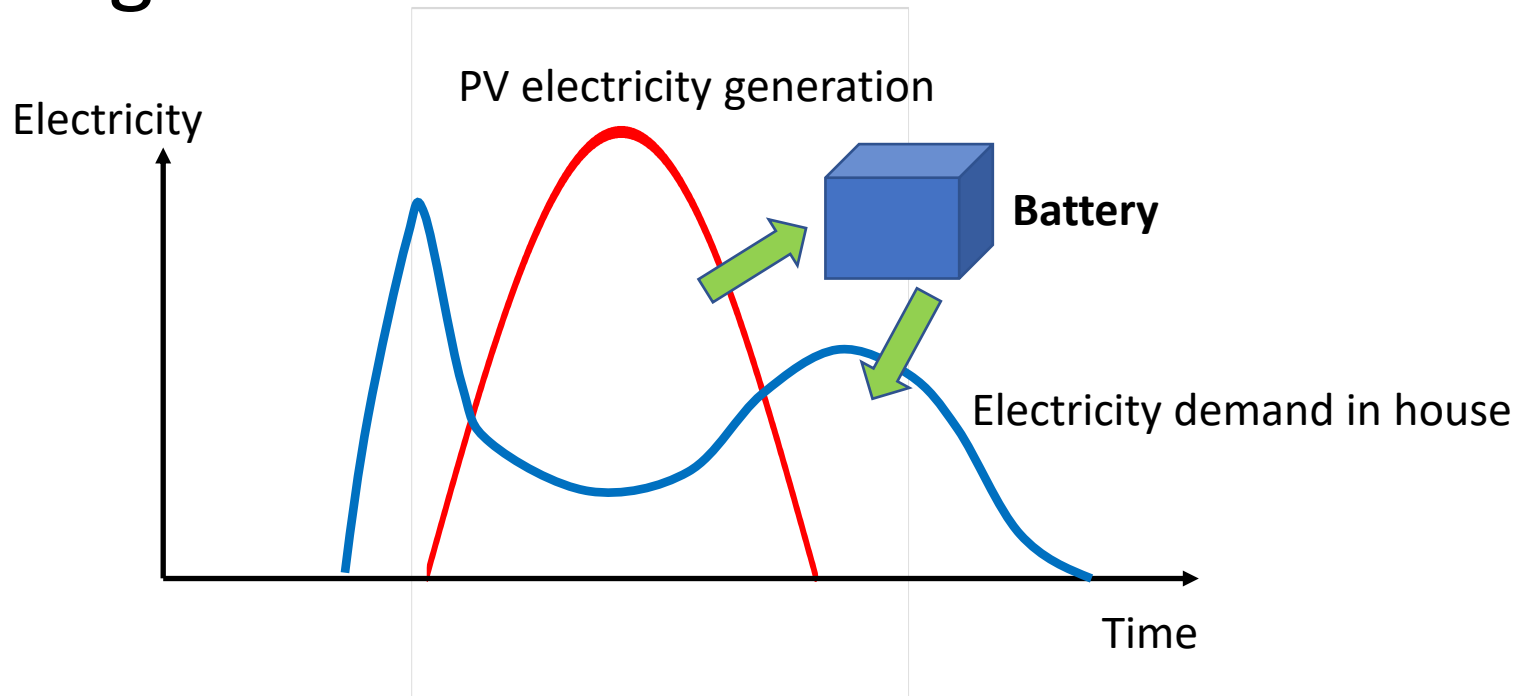
Cost of photovoltaic (PV) is getting cheaper. Electricity from PV at abandoned farmland and by solar sharing* at farmland should be provided.



*Solar sharing is to put roofs over part of the farmland so that both agriculture and solar power generation is made simultaneously.

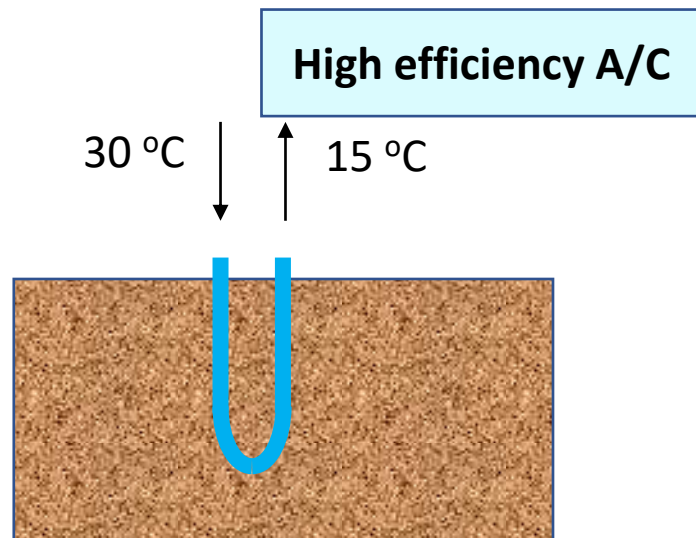
Action 3 Battery electricity storage

PV cannot generate power at night and during bad weather. Batteries are used to store PV electricity to be used at night and during bad weather.



Action 4 Appropriate technologies

Battery is still expensive. Some energy cannot be supplied by electricity. Appropriate energy utilization is needed such as heat storage, underground heat, and biofuel for jet.



*Underground temperature is constant throughout year. It can supply cold water when hot, and hot water when cold to achieve high efficiency of air conditioner.

Q&A

Q: Do we have to take actions in the order of the number?

A: No, do from what you can do. Especially, cheap and possible action such as switching to city gas for lower CO₂ emission as action 4 should be made as soon as possible.

Q: Do not we emit more carbon dioxide by electrification?

A: If we keep using thermal power, yes. When we introduce renewable electricity together, decarbonization is possible.

Q: Do we have sufficient area for photovoltaic?

A: For Higashi-Hiroshima City, for example, less than 1/10 of its area is sufficient by rough calculation.

Q: Does not electricity price go up due to expensive batteries?

A: Presently, we are using cheap fossil fuel. Decarbonization is inevitably costly. To reduce the cost as much as possible, cheap appropriate technologies such as other renewable energy and energy conservation are to be introduced.