

# How to spread Geothermal Power Generation from the perspective of ESG



Konan Boys' High School

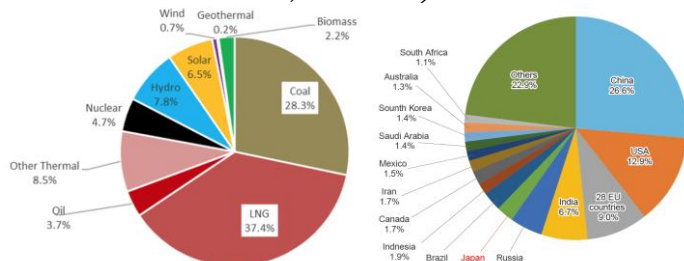


## Introduction

- **Japan** 2019 renewable energy ratio → **18.5%**
- **Denmark** 2019 renewable energy ratio → **84%**

“What is an **ESG** perspective?”

**Environment, Social, Government**



ratio in Japan(2019)

Source: ISEP based on data of METI

Share of greenhouse gas emissions produced by each country (2018)  
Source: IEA CO2 emissions from Fuel combustion(2018 Edition)/2015 greenhouse gas emissions (2018Edition)

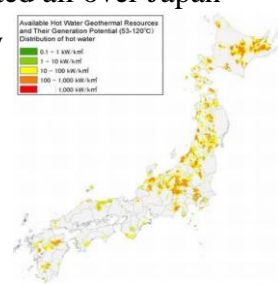
## Geothermal Power generation

- Japan has the world's **third** largest geothermal capacity. **60** % of which can be developed
  - Long-term stable power supply
  - **No. 1** world share of Geothermal Power Generation's technology
  - Geothermal energy is distributed all over Japan
- Can respond in an emergency

Country	No. of active volcanoes	Geothermal	Installed geothermal capacity (as of 2010)
U.S.	160	30,000	3,093
Indonesia	146	27,790	1,197
Japan	119	23,470	536
Philippines	47	6,000	1,904
Mexico	39	6,000	958
Iceland	33	5,800	575
New Zealand	20	3,650	628
Italy	13	3,270	843

Source: New Energy and Industrial Technology Development (NEDO)  
(prepared based on data from the National Institute of Advanced Industrial Science and Technology and other organizations)

Distribution of hot water geothermal resources (53 - 120°C)  
Source: Ministry of the Environment



## Solutions

### For enterprises

(For heavy industry that **emits CO2**)

Impose a tax

**G**eothermal **P**ower  
**P**romotion **T**ax

**Geothermal power Generation**

(Infrastructure capital investment)

Use more geothermal power generation

### For individuals



**Tax reduction**  
or  
**No reduction**  
for the households which **electricity self-generation**



Impose **GPPT** for the households Which don't use electricity **self-generation** (cogeneration or solar power)

## Pros

- Independent of the weather
- Doesn't emit CO2
- Don't worry about exhaustion of resources

## Cons

- More than 80% of geothermal resources are in national parks
- Protest by hot spring operators

## Conclusion

- I. Impose a **GPPT**  
(**G**eothermal **P**ower **P**romotion **T**ax)



- II. Use more **geothermal power** generation