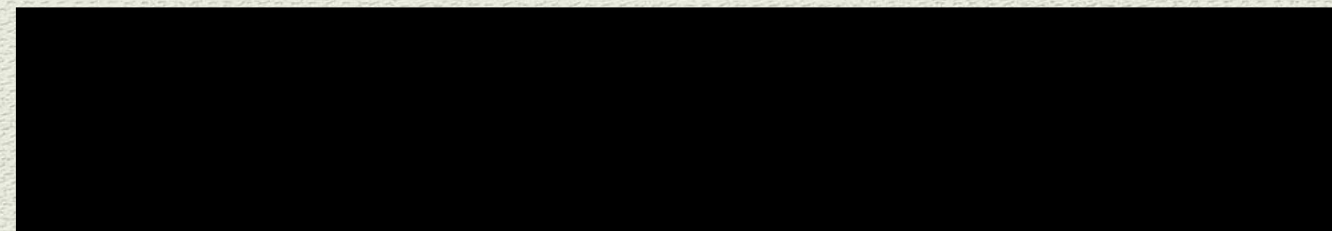




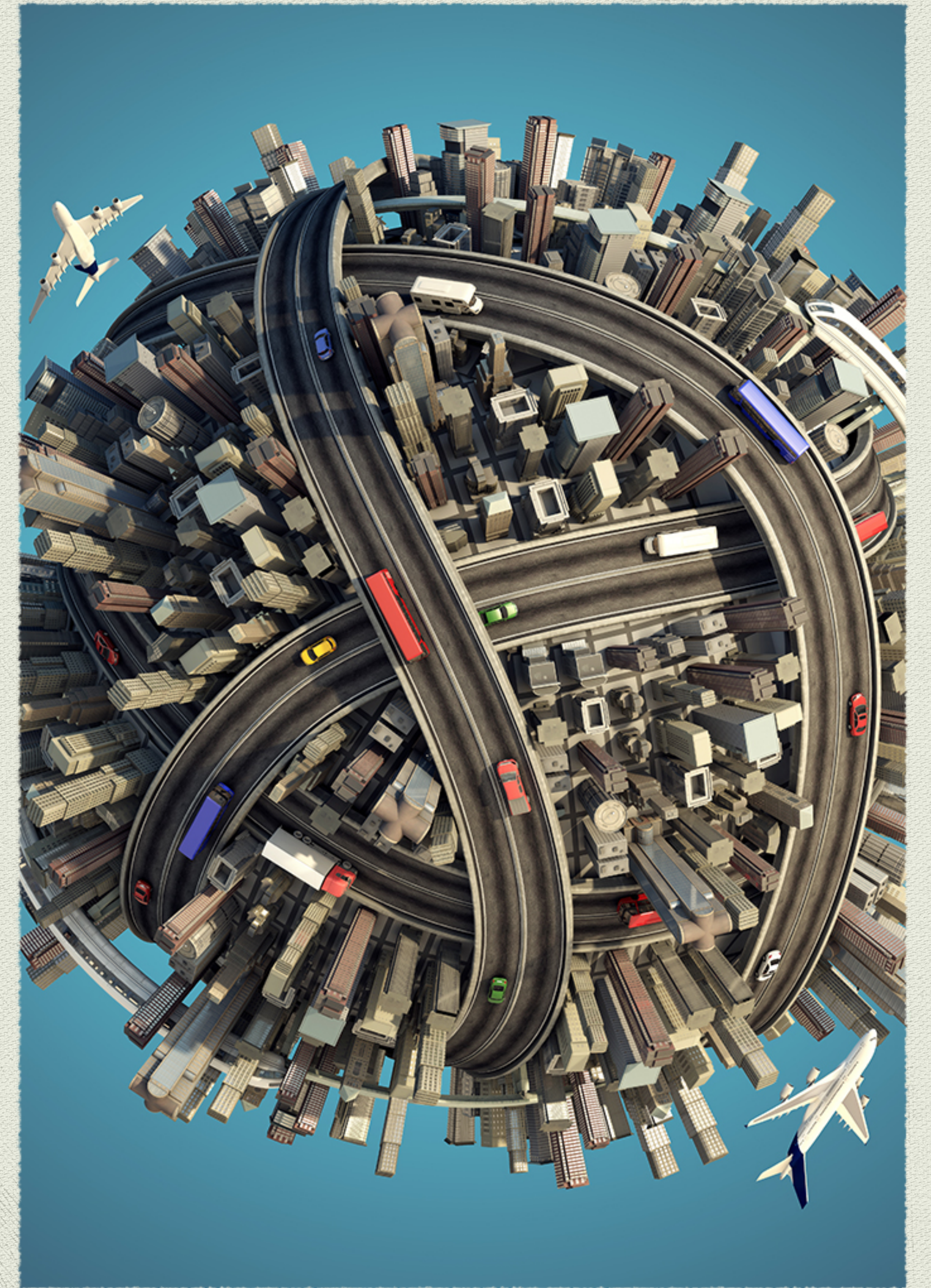
Transportation infrastructure



Background of the issue

What's the problem?

Instead of enriching our lives, these transportation infrastructures have had a major impact on the planet. They emit carbon dioxide.



◆ Why did you choose it?

One of the reasons I looked into transportation infrastructure was the shock of the number of planes flying over it.
My mother showed me that she accessing my aircraft from the internet when I actually flew from Japan to Canada.

I was shocked by that photo.
It became sad to think that the earth has endured this massive carbon dioxide emission for decades.
Mankind has sought the convenience too much and made the earth irretrievable.

This picture is the example of flight all over the world.

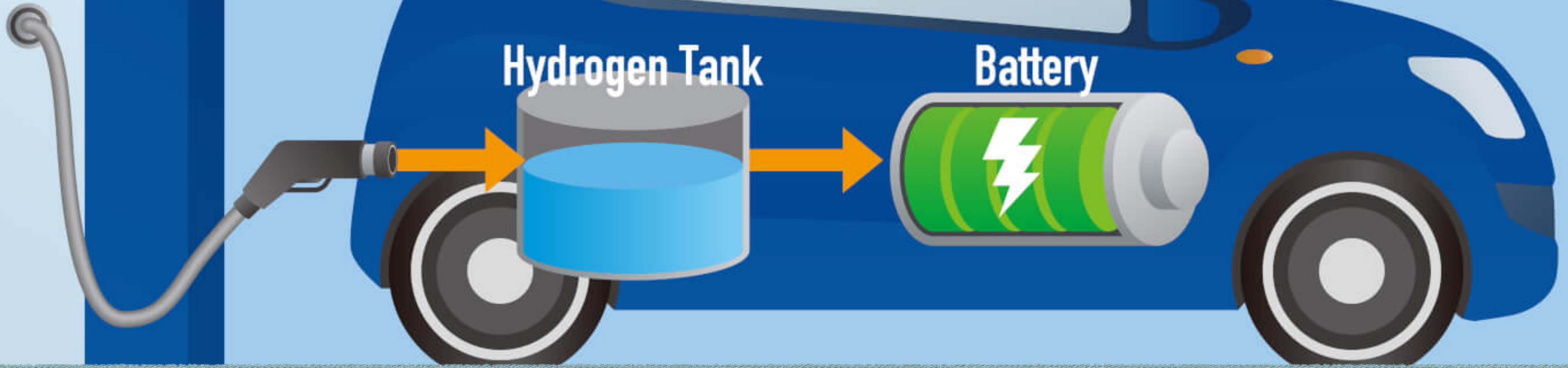


History of transportation infrastructure

The power of transportation includes natural power such as human power, livestock power, wind power and hydraulic power, and artificial power such as steam power, oil burning explosive power and electric power. Historically, in terms of power, transportation has become mechanized from horse-drawn carriages to steam locomotives and trains, and from sailboats to steamboats and motorboats.



H₂



Solution

Solution 1 (Promotion of telework)

Tokyo is famous for the large number of trains, cars and subways. For example, the Yamanote line trains that run in major cities in Tokyo run every two minutes. And most people who take trains use them as a means of transportation to get to the office.

Promoting telework will reduce the number of people who use them.

I think there are many advantages to staying at home with your family. We can avoid congestion during commuting.

We can create a system that allows women to work at home after giving birth.

For example, what about reducing the five-day commute to two days?



Solution 2 (Introduction of hydrogen energy)

I think that hydrogen cars should be introduced for vehicles that emit carbon dioxide.

A hydrogen vehicle is a vehicle that uses hydrogen as an energy source instead of gasoline. A mechanism to improve the gasoline engine and burn hydrogen directly. Combustion releases water and small amounts of NOx. No CO2 emissions.



Introduction of hydrogen energy

Strong point

Does not emit greenhouse gases such as CO₂.

It can use your existing engine. Since expensive raw materials such as rare metals are not used, the manufacturing cost is relatively low.

Weak point

Hydrogen production technology has not been established and production efficiency is poor. Hydrogen supply infrastructure is not in place.

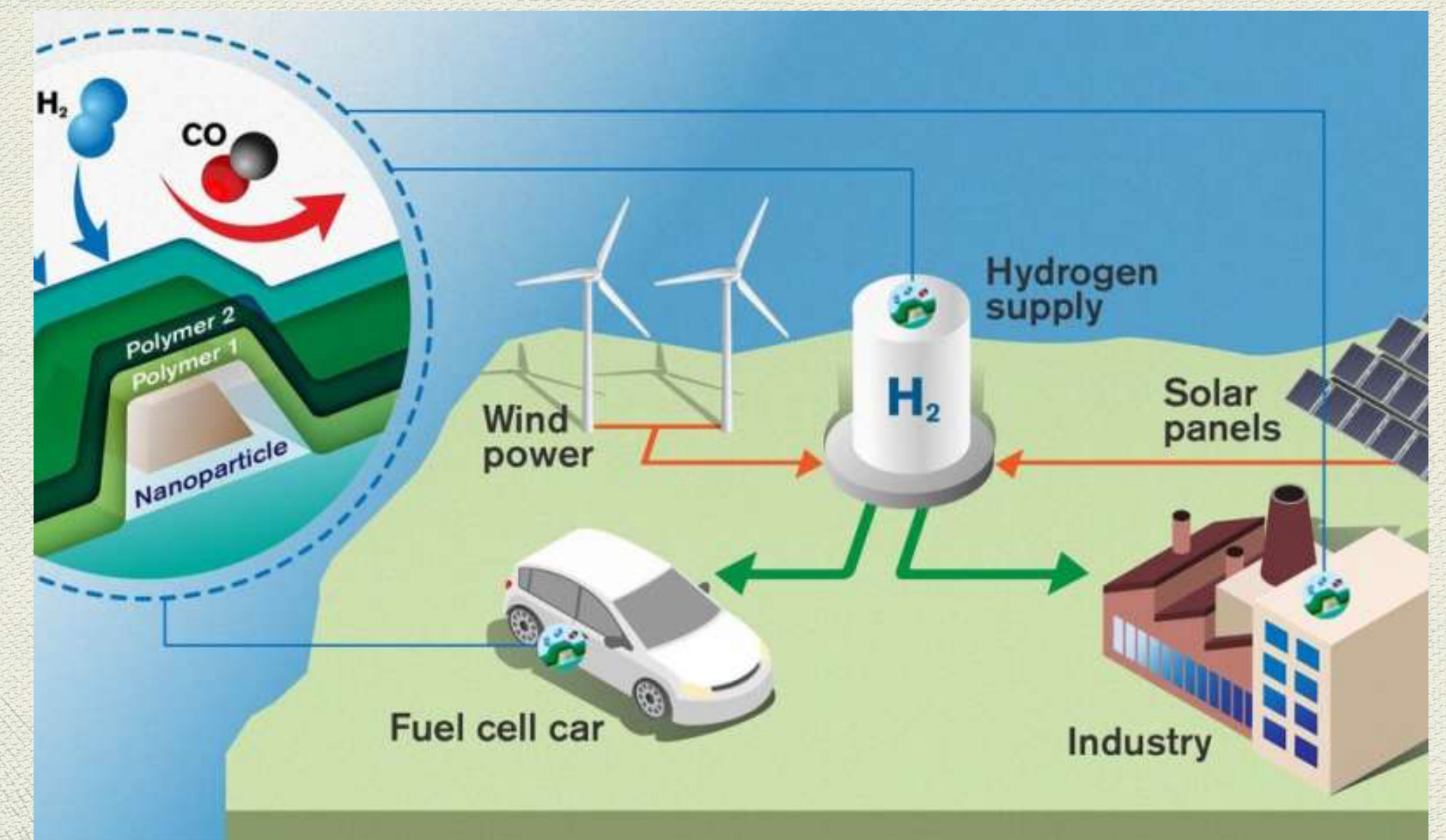
It is necessary to ensure the safety and miniaturize the tank that stores hydrogen gas.

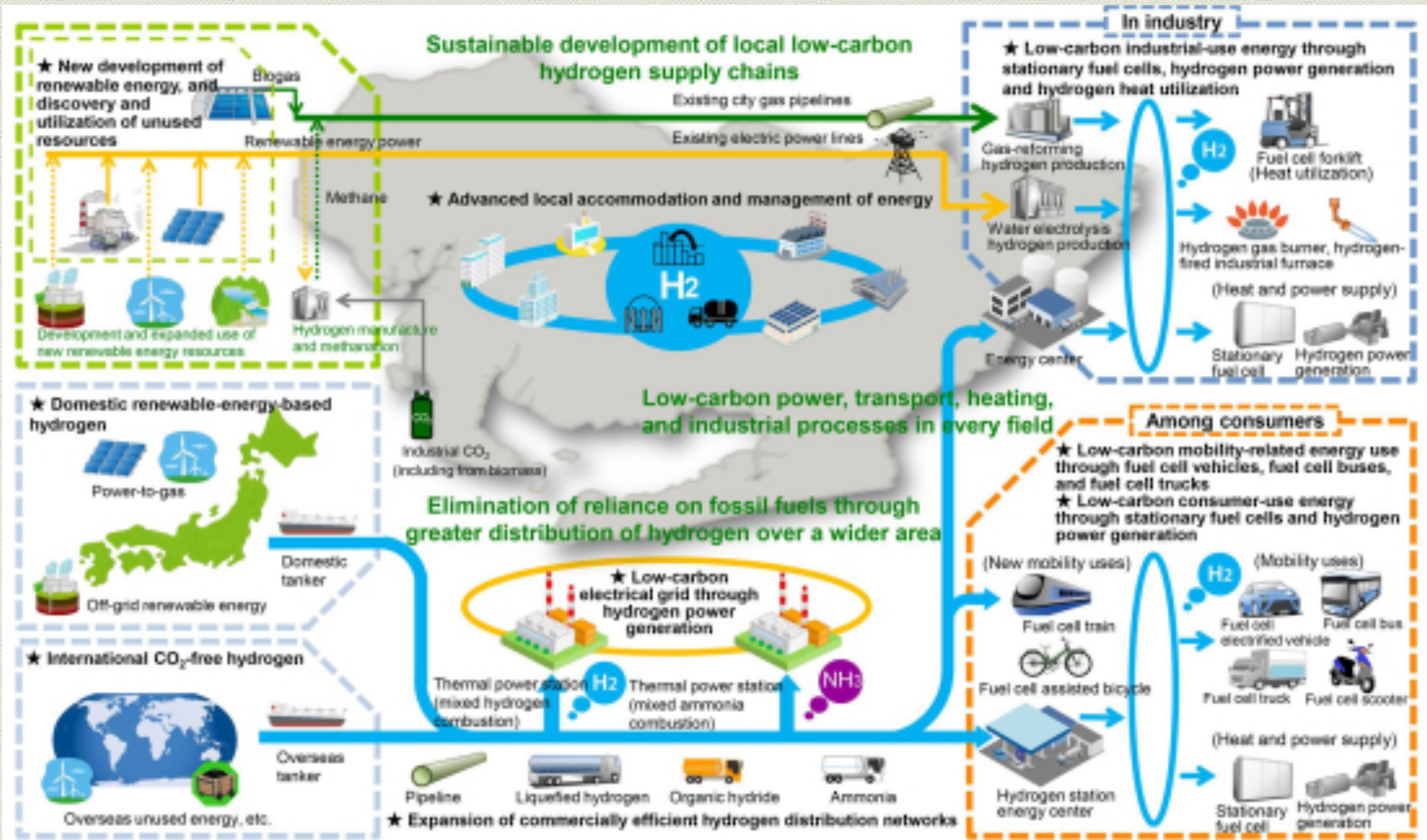
Alternative system procedures

- ◆ First, the spread of fuel cell vehicles is important. Going forward, the government will need to work with major car companies and gas stations to add hydrogen stations and build fuel cell vehicles. The amount of hydrogen supplied from the hydrogen station is equivalent to 20 to several tens of units supplied per day.
- ◆ it will be necessary to consider some kind of large-scale hydrogen supply means, such as supply from refineries and hydrogen pipes.
- ◆ In order to make the business attractive, it is possible to combine a hydrogen station and a fuel cell to supply thermoelectric power to the neighbourhood and the surrounding area.

What can ONE individual do to help fix the problem?(What would the world look like if the problem was fixed using your solutions?)

- ◆ I also feel that we need to continue this story on a global scale. I think our earth will really be broken if left untouched. I'm sure it's difficult to change the world in the midst of my own opinion, but I think that if the number of people who have the same ideas as I is increasing, the movement to improve transportation infrastructure will increase.





Future

- ◆ Improving global warming by reducing carbon dioxide
- ◆ Reduction of coal and oil
- ◆ The production rate of gas generated in the factory is extremely low.
- ◆ Electric power generation that does not rely on nuclear power or thermal power is possible.



Thank you for watching!!

–Hana Kubo