

Let's talk future

Group work: Scenario evaluation of the year 2100

How will our energy system look like in the future?

- Find yourself a group of 3 – 5 people.
- You will receive a card with a scenario on it, alongside a few questions.
- Discuss! What is great about this scenario, what not so much? Are there any negative or positive side-effects that you would like to add to the scenario? Do you think that the future will actually look like this?
- After discussing, please prepare a small presentation of the scenario to the rest of your group / class: try to identify what you think are the most important aspects.



Scenario 1


Market power

- Due to population and economic growth, global energy demand continues to rise: In 2100, global energy demand is 50 % higher than today.
- Nevertheless, lack of access to energy is a thing of the past. Pushed by increased demand and carbon taxes, rising energy prices for oil and gas have ensured that renewable energies have been greatly expanded. Renewable energies account for 80 % of total energy production. Transport is continuously being electrified and oil, coal and gas consumption has been declining since 2030.
- Many people have solar panels on their roofs. Municipalities and citizens' initiatives have invested in wind turbines as this provides cheaper energy.
- Yet, emissions continue to rise slowly. Due to the accumulation of CO₂ in the atmosphere, the temperature has increased by about 2° Celsius worldwide. Since access to energy enables continued growth, few politicians are responding to the ongoing climate crisis.
- Climate disasters are on the rise. Many communities are upgrading: Coastal protection, storm protection, water storage. Other communities cannot afford it.

Scenario 2

Successful political cooperation

- Renewable energy technologies have evolved. Supported by international cooperation and subsidies for clean technologies, we are able to use the world's resources in the most efficient way - with photovoltaics where the sun shines most and wind power where there is most wind.
- Smart supergrids and energy storage technologies secure the energy supply - even across borders.
- Access to clean energy helps fight poverty. Many inventions are collectivized, which means they are accessible to all.
- The successful transformation has made it possible to limit global warming to 1.5° Celsius.
- Rich countries support poorer states in coping with and preventing extreme weather conditions that are nevertheless unavoidable.



Scenario 3

Technology saves us

- Renewable energy technologies, together with storage technologies and smart grids, are making our energy supply clean and reliable.
- Technologies are also becoming more efficient: Transport, heat, electricity - we need less of everything while maintaining economic growth.
- Carbon capture and storage (a technology to remove CO₂ from the atmosphere) has been scaled up and CO₂ is stored deep underground or on the seabed.
- Global warming has been limited to 2° Celsius through technological advances.
- Politics and business are focusing on climate adaptation measures. Geoengineering (the technical manipulation of the weather) helps to prevent the worst disasters. However, the distribution of such technologies varies greatly around the world. Rich countries in particular benefit and can continue their economic growth.

Scenario 4

Empty promises

- Despite global protests and international climate conferences, political commitments on energy and climate have hardly been implemented. Regulation and international cooperation continue to fall short of the promises made.
- International security is threatened as wars over resources and millions of climate refugees fail to trigger adequate policy responses.
- Nevertheless, thanks to economic progress and new technologies, it has been possible to limit global warming to 2.5° Celsius, especially because private companies have pushed the expansion of renewable energies.
- Global warming has a strong impact on our environment. However, access to climate protection and adaptation measures and the associated life expectancy varies greatly depending on wealth.

Scenario 5 Collapse

- We have not managed to reach the international climate targets. Global temperatures have increased by more than 3° Celsius.
- Considering the growing population, we are consuming the resources of 3 planets.
- While there are measures to mitigate climate change in the countries of the Global North, people in the Global South suffer from high climate-related mortality rates and are affected by displacement. There have already been wars over resources as rich countries claim them all for themselves.
- Air quality and oxygen saturation are poor. Sea levels continue to rise. The world's ice caps have melted, leading to ever-rising temperatures. Large parts of biodiversity are lost.
- A rich elite has managed to make life on other planets possible.

Welcome back!

- Now, please introduce your scenario to your peers. Beware, theirs look a lot different!
- Once everyone has presented, what do you think about the other scenarios? Can you all agree on the best outcome? What would be the worst one? Why, or why not?
- How probably is this outcome, do you think? How do you feel when you imagine it?
- Can you think of what has to happen for the scenario to come true? Is there anything you can contribute to this?