

Challenge 1: Powering cities without harming the climate

One of the main targets of the European Green Deal is renewable energies to account for 32% of energy production by the year 2030. As a matter of fact, clean energy production is only one side of the coin as there seems to be some underestimation of the importance of energy efficiency and energy saving. Needless to say, it will be much easier to meet the clean energy goals as far as the reduction of the emissions greenhouses gases is concerned, when the overall energy demand is much lower.

Saying this, there is a strong need to push for Climate Neutral Cities; yet some important questions are still to be answered e.g. What improvements are necessary to improve energy efficiency at the city scale? How do we introduce renewable energy in the city operation? How should we shape our energy mix to avoid problems related to instability of some of the renewable energy sources? Do we perceive coal or nuclear power as a recommended solution for providing energy? Keywords: Energy production and consumption, energy efficiency, decarbonization and Climate Neutral Cities, clean energy, air pollution

Proposed discussion points:

- What are the energy sources used to supply your city?
- What is the impact of each energy source to climate as far as the production of greenhouse gases is concerned?
- What is a Climate Neutral City?
- Which are the goals of the European Union for energy production and consumption;
- How do these goals relate to climate change?
- In what way can you use less energy while retaining high quality of home and school-life? Which of these solutions have a scale-up potential?
- How can we include renewable energy in the city operations?
- What are the challenges (e.g. environmental, economic) in scaling-up the development of renewables and how can we overcome them?

Exemplar Science Team's projects:

Towards climate-friendly cities. How to turn our city into Climate Neutral one? – Science Teams investigate the energy status of their city – which are the energy sources used to supply the city at present, how do they affect the state of the environment (potential pollution, use of non-renewable resources, emissions of air pollutants) as well as human lives (quality of air, smell/noise etc.), what is the average energy consumption per person? etc. Following, the Science Teams research for solutions to decrease energy demand and supply the city with clean energy.



Let's work with energy! How to reduce energy consumption of our city or our neighborhood or our school? – Science Teams investigate the energy status of their city/neighborhood/school – which activities are the most energy-consuming ones? What can people change to save more energy? Afterwards, Science Teams look for solutions to reduce energy consumption of the city/neighborhood/school.

Resources to find out more about this Challenge:

- Information about The European Green Deal <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN> (available in 23 European languages);
- Urban Agenda for the EU <https://ec.europa.eu/futurium/en/urban-agenda-eu/what-urban-agenda-eu>;
- Clean Energy for all Europeans https://ec.europa.eu/energy/topics/energy-strategy/clean-energy-all-europeans_en;
- A Roadmap for moving to a competitive low carbon economy in 2050 – factsheet in EN
https://ec.europa.eu/clima/sites/clima/files/strategies/2050/docs/roadmap_fact_sheet_en.pdf; full document <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52011DC0112> (available in 23 European languages).

Linked to Sustainable Development Goals (SDGs):

