Quiz iconomix - Teaching guide

Theme & content

Switzerland has decided to phase out with nuclear while significantly decreasing its emissions of greenhouse gases. What will be the impacts on the Swiss energy system? What are the realistic options to meet this ambitious goal?

The energy calculator Energyscope allows students to create, in a user-friendly way, different scenarios for the energy transition. Students can also compare them, notably according to their socio-economic and environemental impacts.

Who created Energyscope?

The calculator **Energyscope** was developed by the Energy Center and the IPESE[a] group at EPFL. It aims at informing citizens on the major issues related to the energy transition, in a holistic approach. The development of this calculator benefited from the support of the SwissEnergy program of the Confederation, the Canton of Vaud and the city of Lausanne.

[a] Industrial Process and Energy System Engineering

Teaching format

Energyscope is an online energy calculator. It comprises a calculator in free access, as well as an interactive quiz that includes eight questions of increasing difficulty.

Possible scenario for courses

Step 1. introductory video (here) /or/ online own presentation of the Quiz or Calculator (more difficult)

Step 2. **Quiz**: the teacher and the students create their account online. The teacher creates an online class in which students register, before answering the quiz step by step. The teacher can monitor their individual progression or even organise competitions.

/or (more difficult)/

Calculator: in free access, witout account. It allows students to create their own scenarios. The teacher can elaborate his/her own questions in relation to the energy scenarios developed by the Swiss Confederation for 2035 and 2050.

Step 3. Discussion on the implications of the choices students made for Switzerland, notably in terms of economic (employment, costs), climatic (CO_2 emissions) and strategic (energy independence) impacts.

Areas of education

Economy, geography ; employment, costs, CO_2 emissions, energy transition

Educational level (Quiz)

Easy to expert. Depending on the specificity and the desired guidance, the module can be adapted to students' level of knowledge.

Targeted skills

General notions

Understand the interconnections, strengths and specificities of current energy sources and consumption, as well as their alternatives.

Understand the impacts of the energy transition (energy mix, cost, employment...)

Position oneself about future energy choices.

Specific knowledge

Recognise and analyse the possible conflicts occurring between economic issues related to the evolution of our consumption and needs, and the desirable decisions from an energy point of view.

Compare one's own energy scenarios with the others' and with the ones of the Swiss confederation (2035, 2050).

Explain to a public

Explain simply and concisely the challenges and strategic approaches of the Swiss energy transition.

Present and defend arguments and results of graphic analyses.

Explain the factors affecting the energy balance and the costs of the energy transition ; notions of energy mix and efficiency.

Complementary information

- 100 questions/answers: Ask your questions online by fields of interest or keywords and get the answers ! (French, German, English)
  from the book: ISBN 978-2-88915-110-3 (French) | 978-3-0355-0367-8 (German)
- course for all: 28 brief online videos created by EPFL specialists to understand the challenges of the Swiss energy transition (subtitles in all languages available).