

Learning about the energy transition

Primary School Training



Course developed by

fondazione

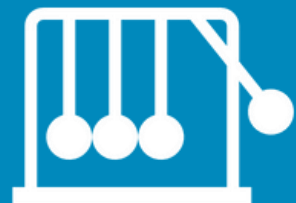
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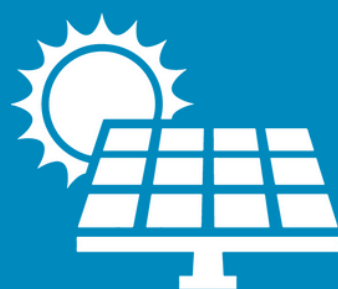
COURSE TOPICS:



Energy



Global warming



The energy transition



Energy efficiency

Energy Definition

Try to imagine a cold and still world, without evolution,
without the slightest form of life...
This is how the earth would be if there were no energy.

But luckily energy exists, and it is everywhere.
It is heat, strength, movement, work and light. It is found
in different forms in plants and animals, in rivers, in the
atmosphere and underground, in our bodies, in homes
and factories.

*But where does energy come from?
Which is its origin?*



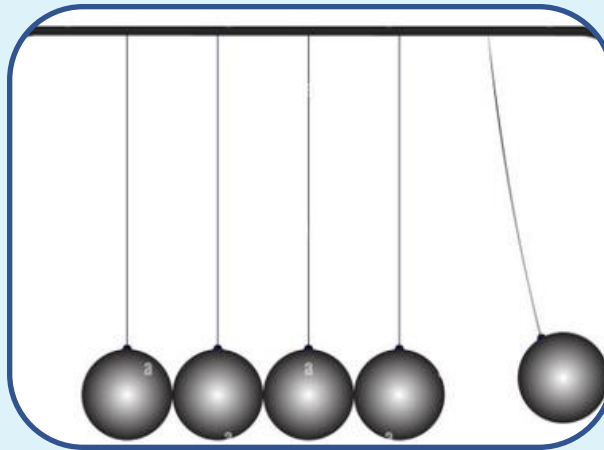
Energy

the principle of conservation

Everything is energy

Energy is neither created nor destroyed, but transformed: part of it, during the transformation, is dispersed in the form of **heat**

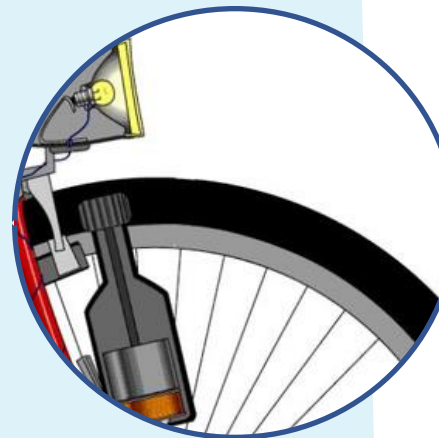
Kinetic energy



Light energy



The bicycle dynamo transforms the kinetic energy of the wheel into...



Thermal energy Food is our energy



2

Light energy and thermal energy (the bike light bulb is hot!)

1

Electricity that powers the light bulb...



Energy

Sources of energy



Primary sources

As the sun, wind and oil, they exist in nature and are readily available for use.



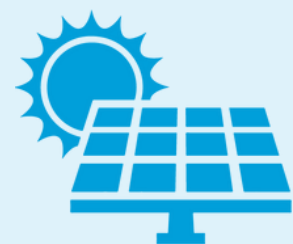
Secondary sources

Generated from converting original sources, like electricity.



Non-renewable sources of energy

They cannot regenerate at the rate at which they are used, like oil.



Sources of renewable energy

They have a slow rate of depletion or replenishment.

Energy

Energy sources

Non-renewable energy sources

Oil



Coal



Natural gas



Renewable energy sources

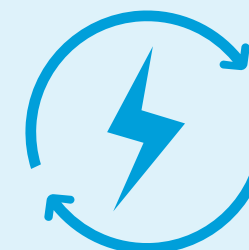
wood –
biomasses



water –
hydropower



calore-geotermico



wind power

Global warming

The main causes and consequences of global warming



Cause

- Carbon dioxide
- Deforestation and intensive resources consumption
- Intensive farming



Intensive farming



Deforestation



CO2
emissions



Consequences

- Melting glaciers
- Lack of rainfall and desertification due to increasing temperatures
- Increasingly hot and sultry cities



Desertification



Increasingly hot cities



Melting glaciers

Global warming

Forestry to tackle global warming



The importance of greenery in cities

Cities are the places where most of the world's population is concentrated. According to the United Nations, 70% of the world's population will live in cities by 2050.

Cities occupy little space on planet Earth but are the places responsible for most of:

- greenhouse gas emissions
- energy consumption
- local rise in temperatures (**heat island**).



Chlorophyll photosynthesis

It is the ability to absorb carbon dioxide while returning oxygen.



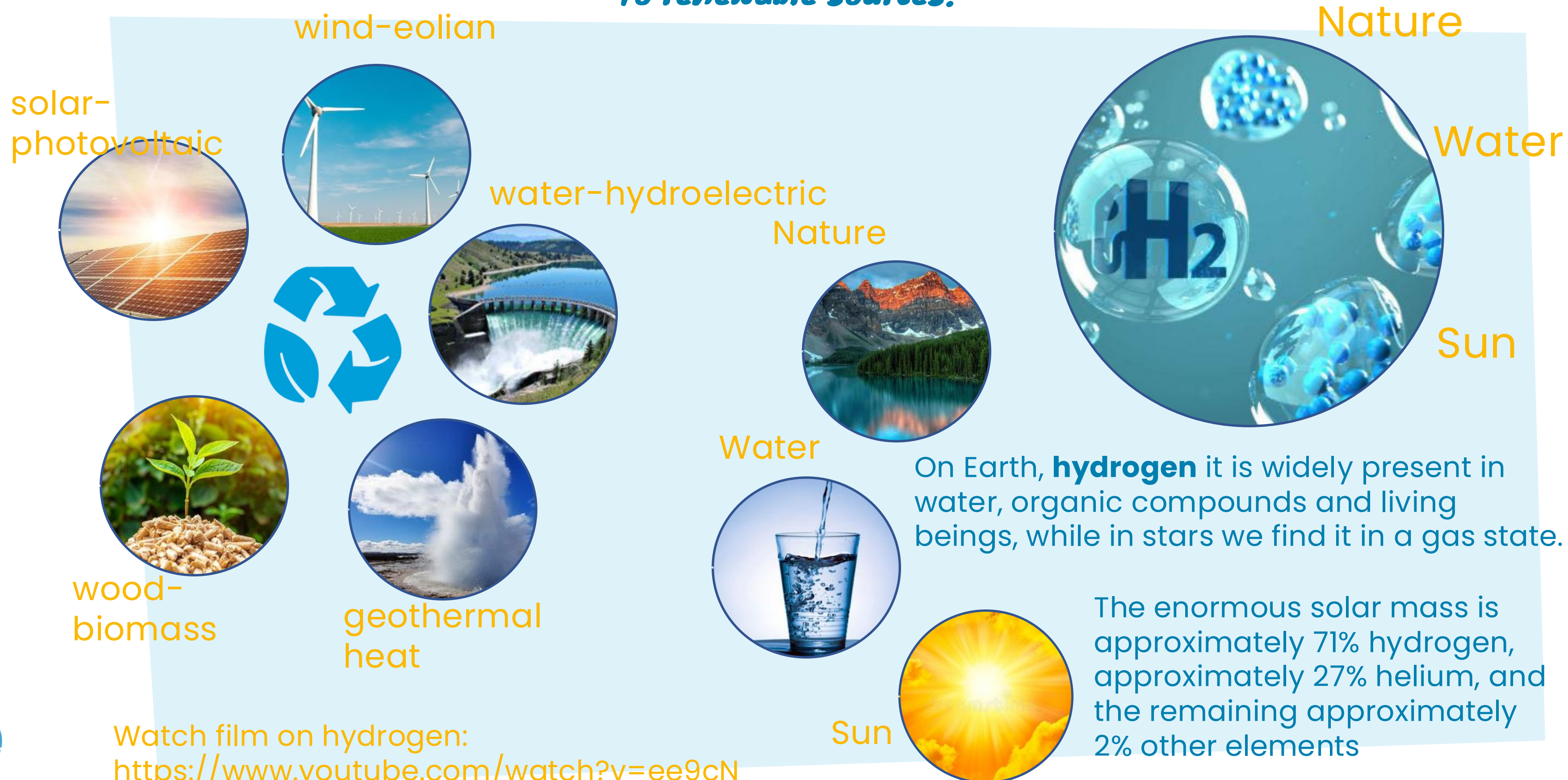
Trees are vital because:

- They absorb water from precipitation
- They produce oxygen and absorb CO2
- Barriers against noise pollution
- During the summer they provide shade with their leaves
- They promote animal and plant biodiversity



The energy transition

The energy transition is the transition from the use of non-renewable energy sources to renewable sources.



The energy transition

The UN 2030 Agenda and energy poverty



Access to energy is not the same for everyone

Access to energy (Global goal no. 7) is today recognized as a prerequisite for any development goal.



Energy poverty



Difficulty paying bills Difficulty warming up

Difficulty accessing energy

Energy efficiency

How to reduce energy consumption



WIFI

- Avoid leaving it on when not used



REFRIGERATOR

- No to hot foods, avoid heat sources,
- short door opening times
- Periodic cleaning of internal ice (unless it is equipped with no frost technology)



CELL PHONE CHARGER

- Remember to remove chargers from the power socket.
- Attach them only as long as strictly necessary



WASHING MACHINE

- Washing at full load and at low temperatures
- Cleaning the filter and trays (use a limescale remover if necessary)

Energy efficiency

How to reduce energy consumption



SHOWER OR BATH

Prefer a shower to a bath. **Water consumption for a bath can be up to four times higher** than that for a shower.

Obviously, it depends on the duration of the shower, however a bathtub contains 100-160 liters of water, while a 5-minute shower consumes 75-90 liters



TAPS

The installation of a tap aerator on all the taps in the house allows a family of three people to save approximately 30% per year (approximately 6,000 liters of water).

Less water consumption allows for less expenditure on water and energy, especially for those who use an electric boiler to heat water



WASH THE DISHES

According to a study conducted by the University of Bonn, Germany, who washes the dishes **by hand uses on average 49 liters of water. The dishwasher consumes only 10 liters on average.** The belief that washing dishes by hand is better and more economical no longer makes sense



BRUSH TEETH

Turning off the water tap while brushing your teeth saves 6 liters of water every minute



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