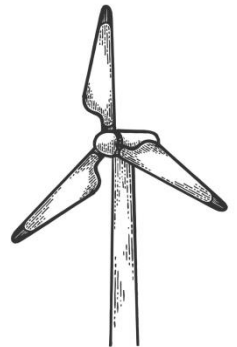
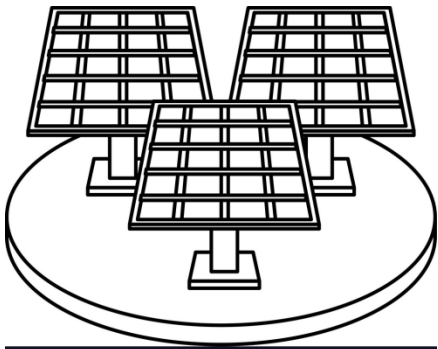
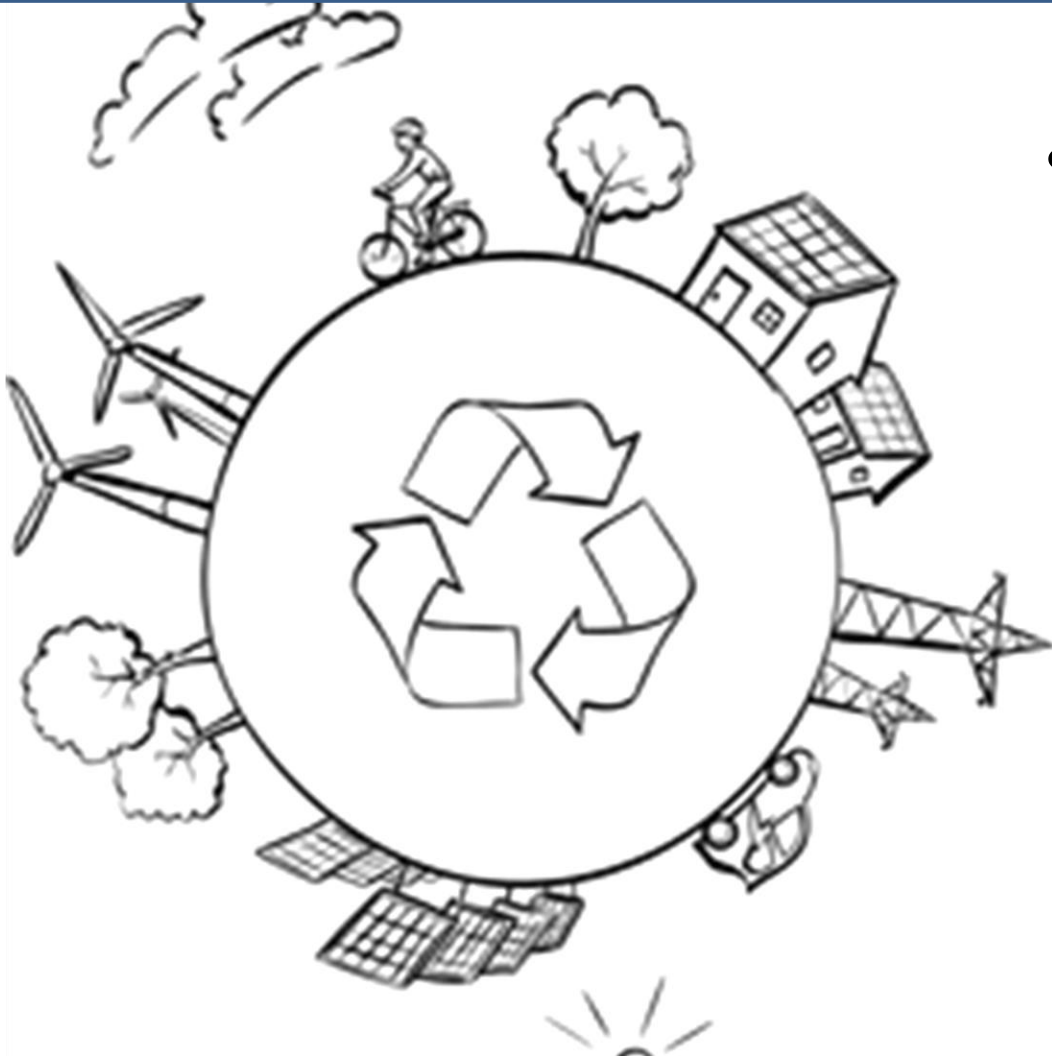


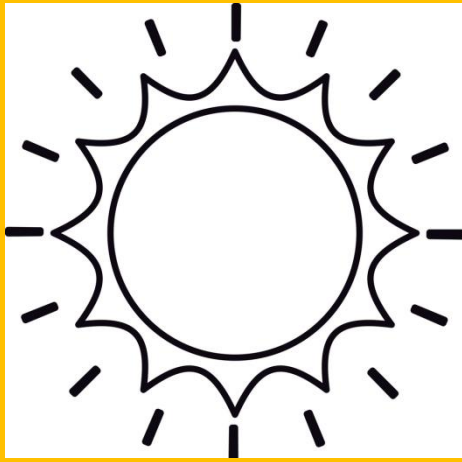
# RENEWABLE ENERGY



# WHAT IS IT?



- Renewable energy is a general term for all forms of energy that can be naturally replenished — like sunlight, wind, waves, or the Earth's own heat. They never run out



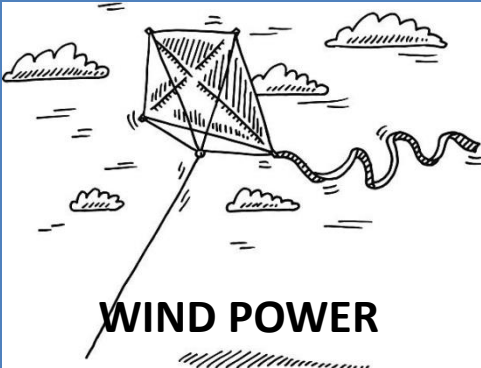
**SOLAR POWER**



**GEO THERMAL**



**BIOMASS**



**WIND POWER**



**HYDROELECTRIC**

# KINDS OF RENEWABLE ENERGY

# WIND POWER

- History

Harvesting energy from wind is a technique first used by humans over 1,000 years ago. Windmills on farms to pump water or grind cereals are age-old practices common even today.

- What is it?

Wind power or wind energy is the use of wind to provide mechanical power through wind turbines to turn electric generators for electrical power. Wind power is a popular, sustainable, renewable energy source that has a much smaller impact on the environment compared to burning fossil fuels.



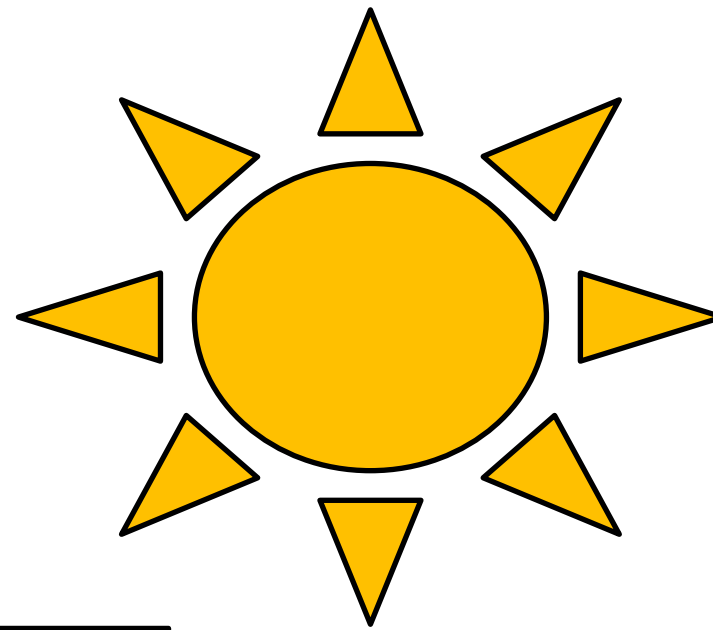


48 % of renewable energy sources as much as were produced by wind energy.

future, the amount of electricity generated by wind should increase.

if Lithuania wants to achieve the 100% renewable electricity target by 2050 the amount of electricity generated by wind power should be tripled.

# SOLAR



1. Began as early as the 7th century

2. Silicon is the main element in solar cells

3. Photovoltaics is the conversion of light into electricity

4. Cheaper alternatives



**When the sun shines onto a solar panel, photons from the sunlight are absorbed by the cells in the panel, which creates an electric field across the layers and causes electricity to flow**



Solar panels



- History

Using the power of moving water to perform work dates back to Ancient China and Greece. In these civilizations, and later in Europe and Colonial America, grinding wheat into flour, pounding metal ores, or sawing wood were common uses of hydropower.

- What is it?

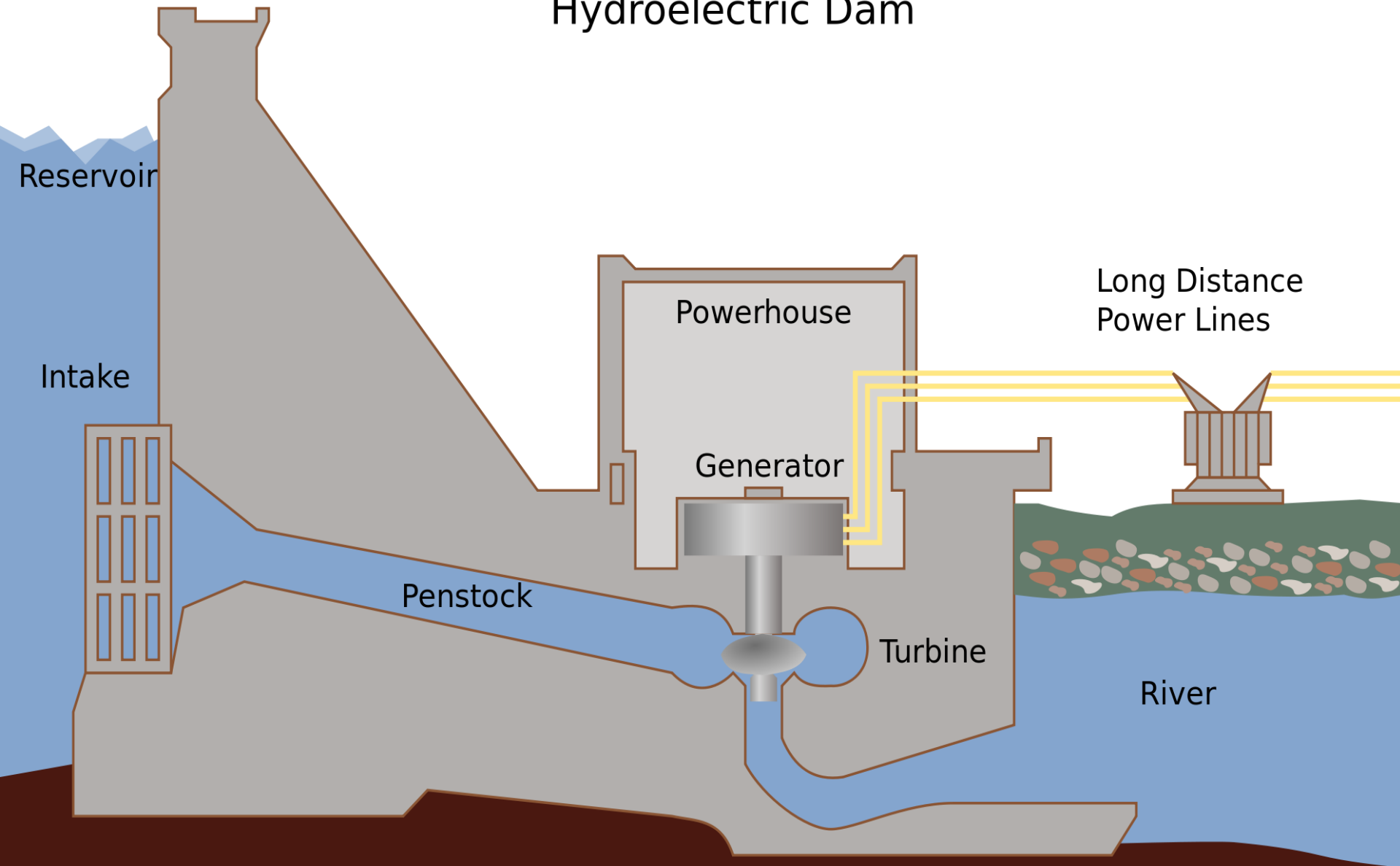
Hydropower, or **hydroelectric power**, is one of the oldest and largest sources of renewable energy, which uses the natural flow of moving water to generate electricity



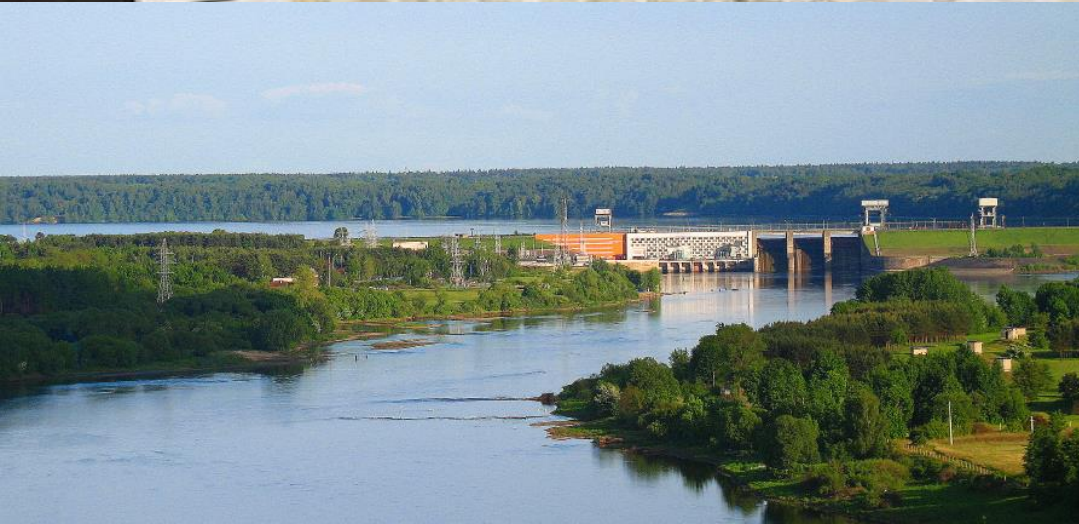
# HYDROPOWER



# Hydroelectric Dam



# Kaunas hydro electric power plant



Located on the Nemunas river and was completed in 1960.

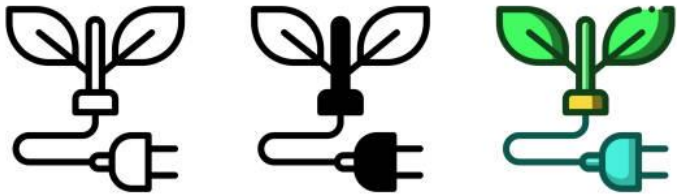
The plant generated 316 gigawatt-hours of electricity in 2002.

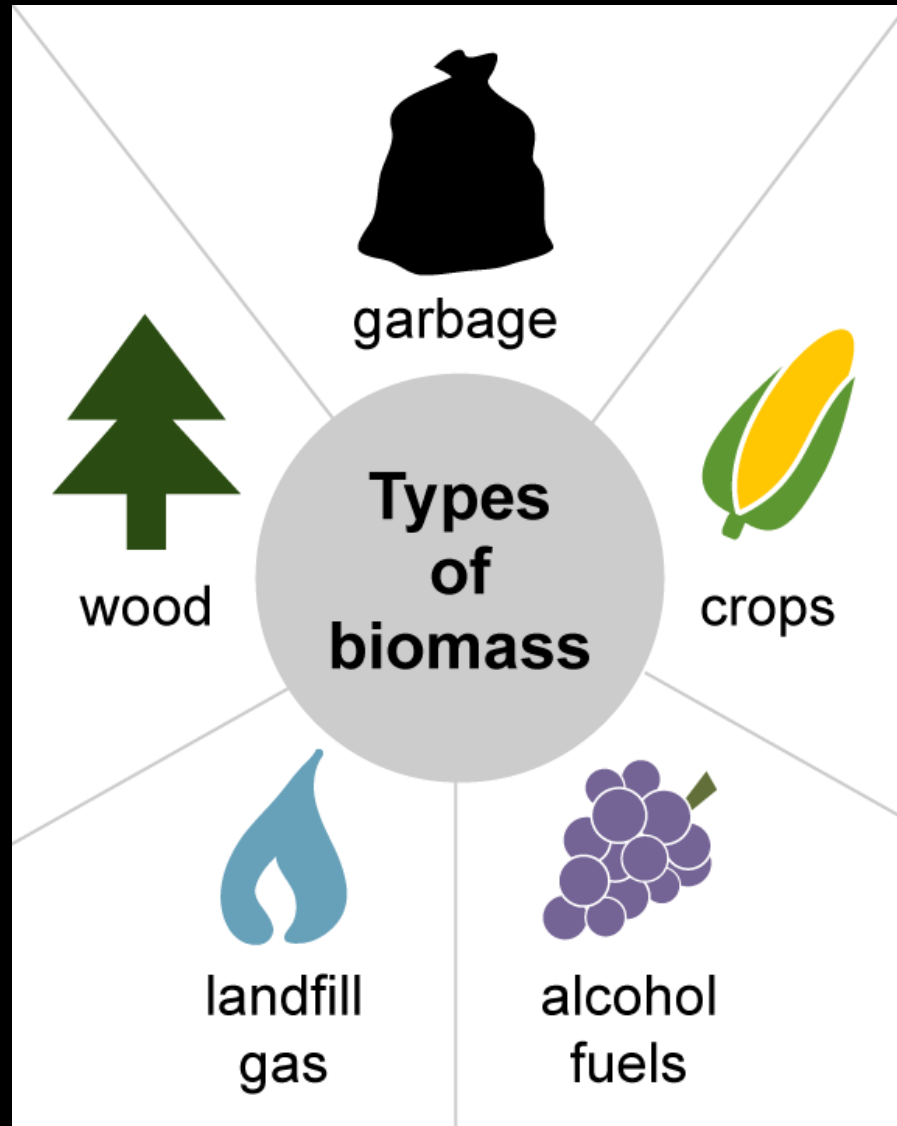
Now It supplies about 3% of the electrical demand in Lithuania.

# BIOMASS



- Biomass – organic plant and animal matter
- Photosynthesis
- Not ideal, better than burning fossil
- Wood – the most popular biomass
- Drawbacks





# GEOHERMAL

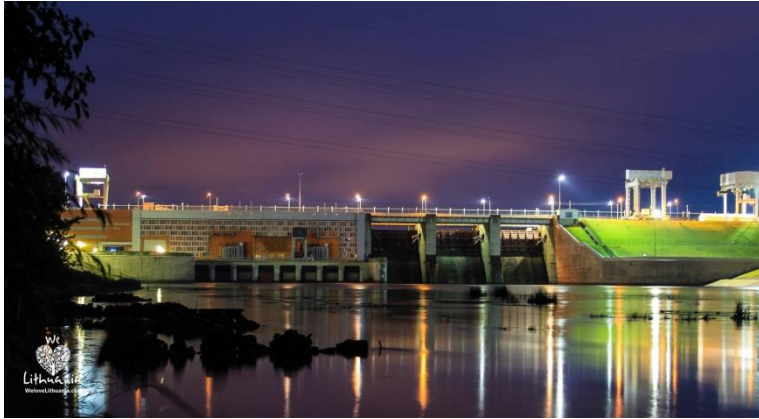
Geothermal energy is **heat within the earth**

- Efficiency

While air-source heat pumps have efficiency levels of 175 to 250 percent, a geothermal heat pump offers efficiency of **300 to 600 percent in extreme temperatures**. A geothermal heat pump is between 3.5 and 5 times more efficient than a fossil fuel furnace.



# Companies that use renewable energy in Lithuania:



## **Kaunas hydroelectric power plant**

This is the biggest and the only hydroelectric power plant in Lithuania



**Green  
Genius  
Lithuania**

Annually the company generates approximately 300 GWh of green energy allowing them to save more than 280 thousand tonnes of CO<sub>2</sub>. That's approximately the amount that 13 million trees absorb in a year.

- Nogridas



N o G r i d

The company is famous for building solar panels In everyday homes.

In 2016 this company built more than 800 solar panels in Lithuania.

Nogridas reassures that their technologies are trustworthy and can last a life time

- Švyturys – Utenos alus



GO NEALKOHOLINIS

In 2010 the company won the title of the most ecological company in Lithuania

Every year the workers organise an event where everyone picks up the trash.

Also Švyturys Utenos alus is famous for it's low rates on CO2 emission

# 5 WAYS TO POWER YOUR HOME WITH RENEWABLE ENERGY

- **1. Solar power for electricity** – Use solar power to generate electricity for your home through solar panels that are installed on your roof.

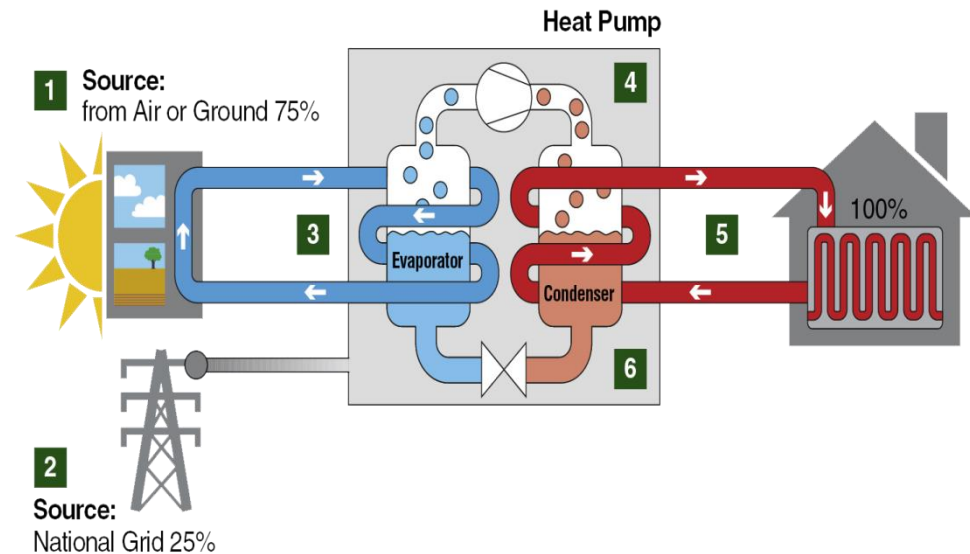


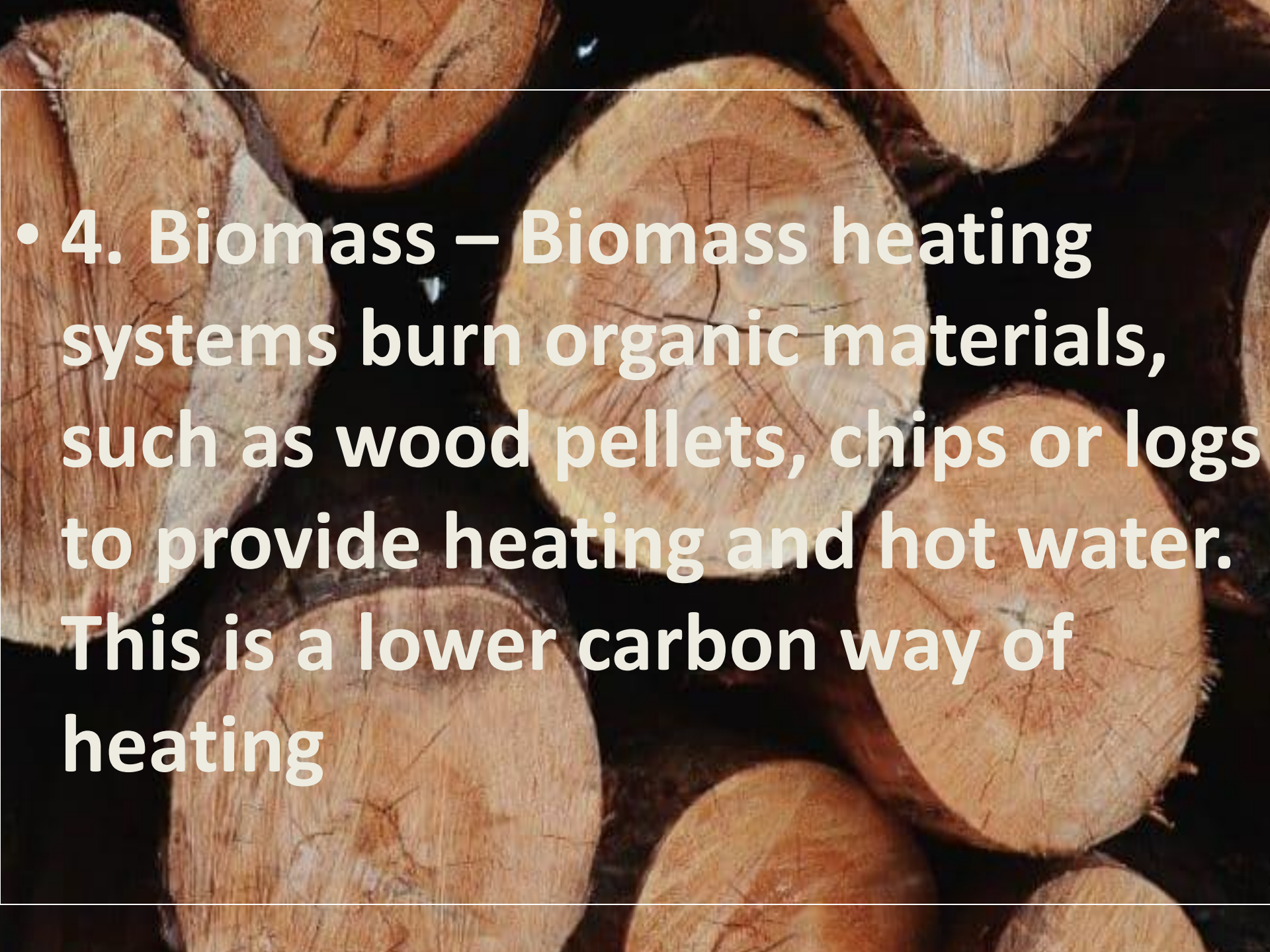


- **2. Wind power** –Smaller wind turbines are available for homes, either as a free-standing pole or installed on the building directly. They generate electricity by the wind turning the blades, and creates power



- **3. Air source heat pumps** – An air source heat pump is a renewable energy system that uses the heat from the outside air to provide you with heating and hot water



- 
- **4. Biomass – Biomass heating systems burn organic materials, such as wood pellets, chips or logs to provide heating and hot water. This is a lower carbon way of heating**



**6. Hydroelectric systems** – This renewable energy source uses water flowing downhill to generate electricity - so if your home is close to a lake or river it could be a great option for you

