

# AN INTRODUCTION TO GEOTHERMAL HEATING AND COOLING

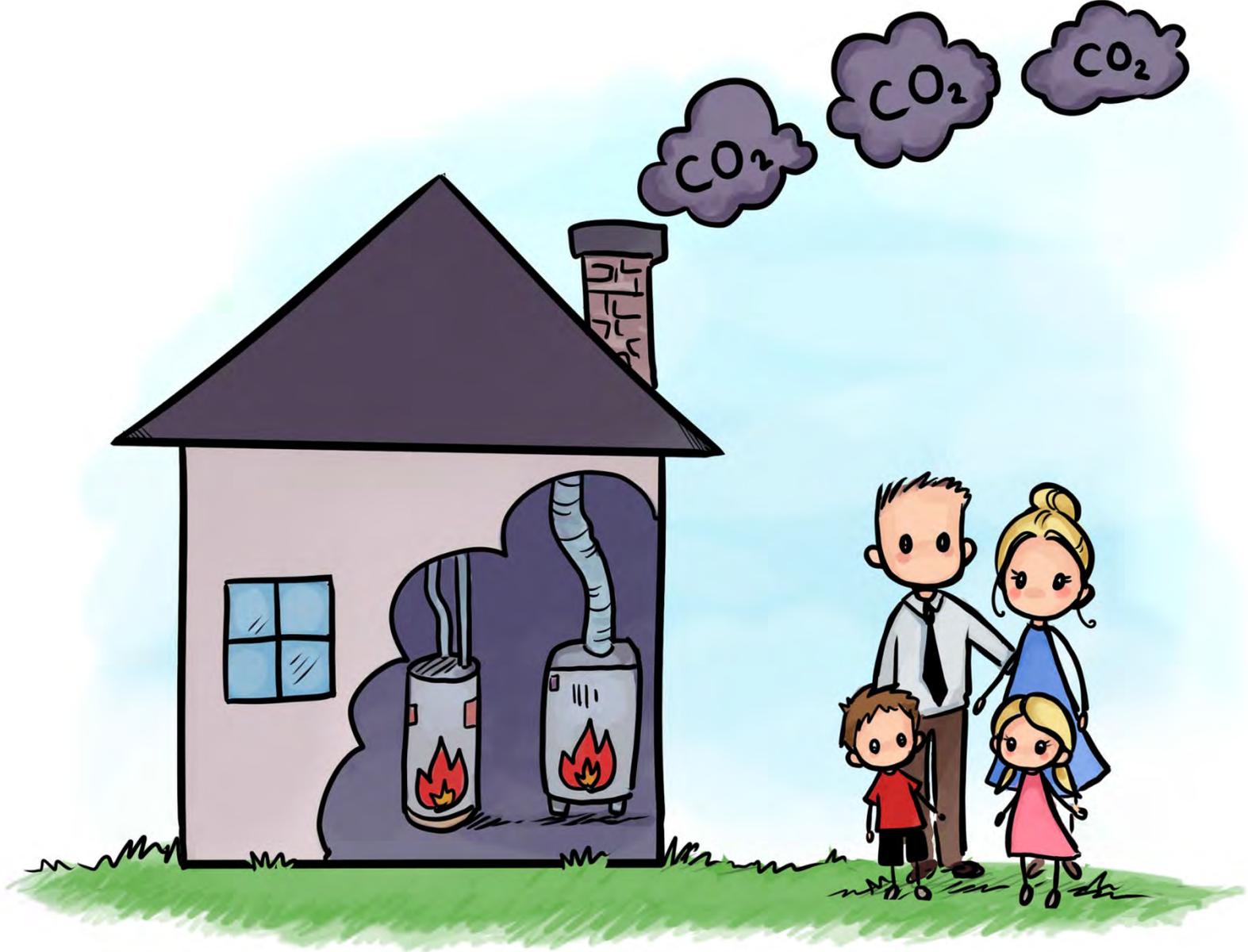
*For a  
Better Future!*

**Geothermal**

By Jay Egg

Illustrated by Sarah Cheney

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Burning fuels in a home is not necessary and can be harmful to us and to our environment.



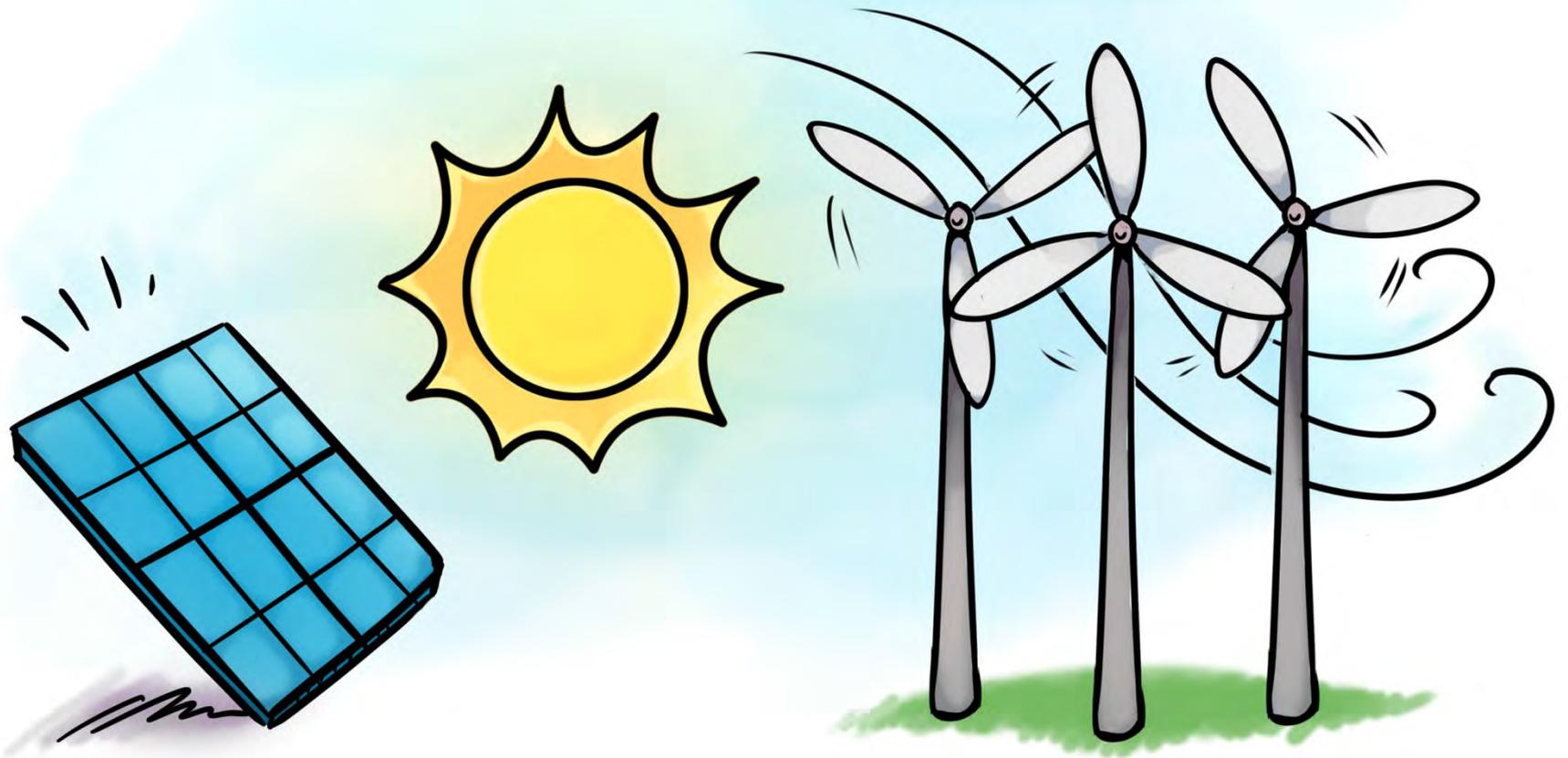
Combustion heating (burning fuels) contributes to climate change and health risks.



But there's a better way to heat  
and cool our homes.

These are called "Renewable Resources" because they are unlimited.

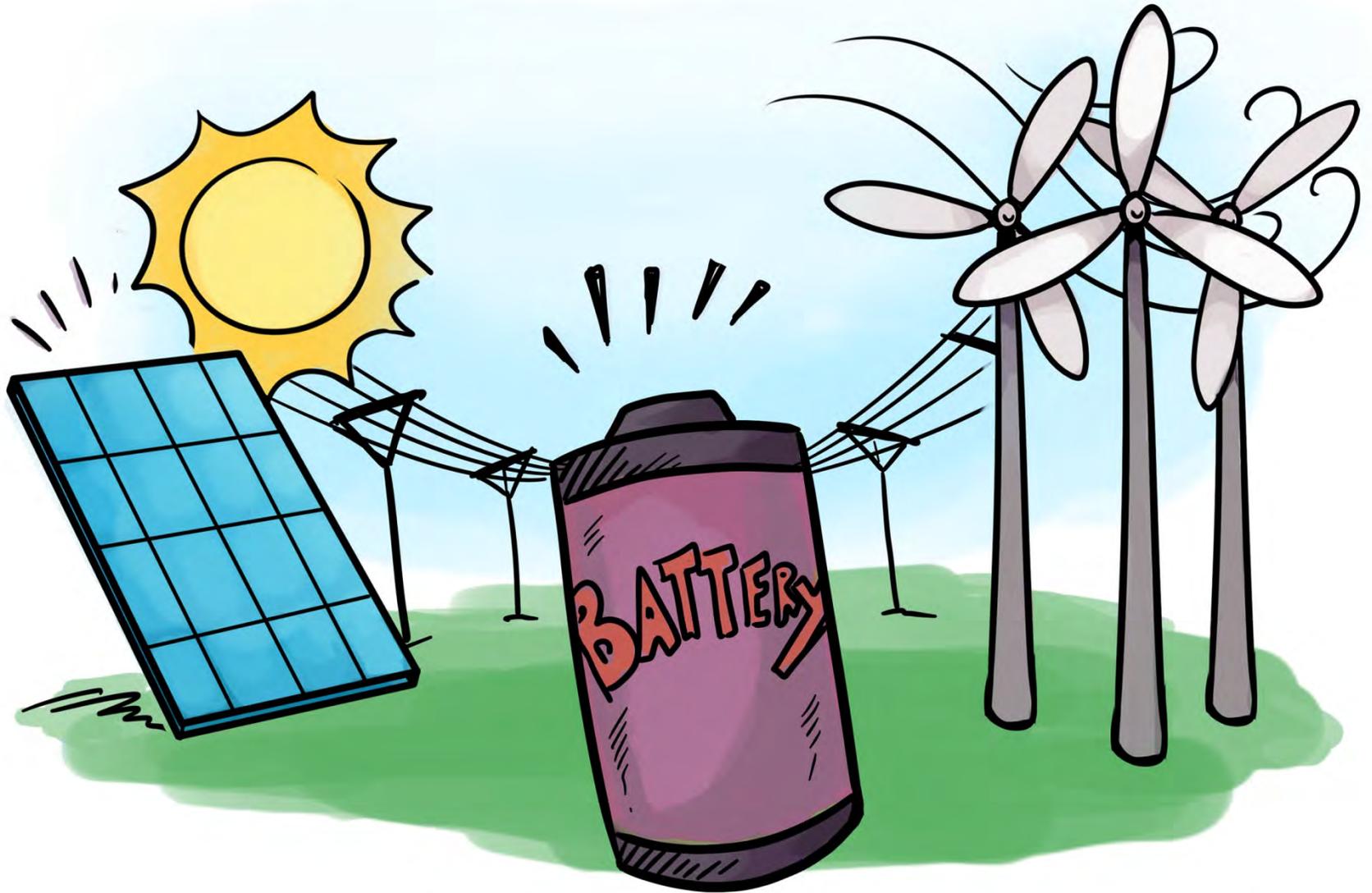




Solar and wind energy is renewable and clean.



Solar is unavailable at night and during cloudy weather, and if the air is still, the wind turbines don't turn.



Batteries can store solar and wind power energy for later usage.

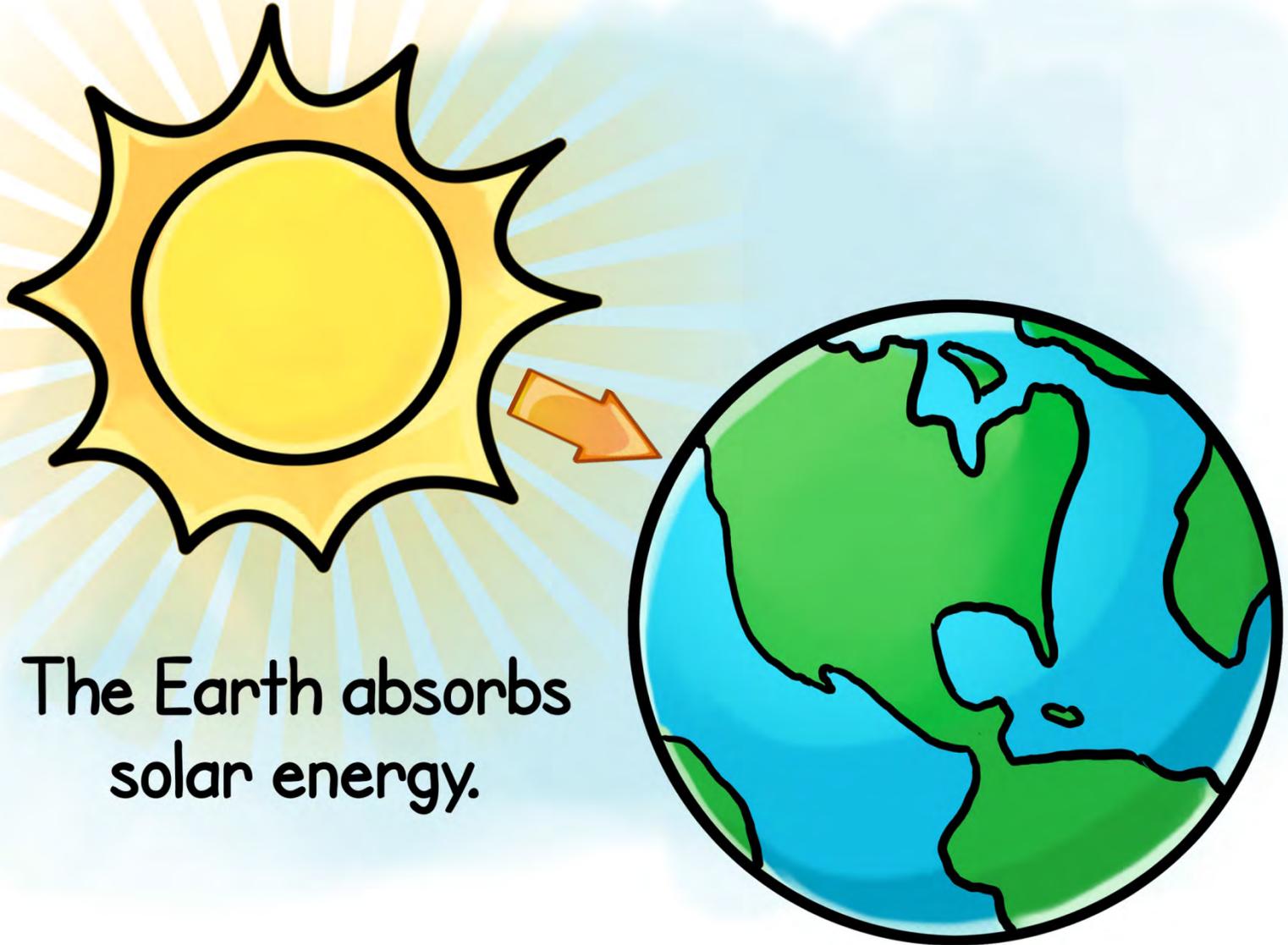


These batteries can meet our needs for energy when solar and wind power are not available.

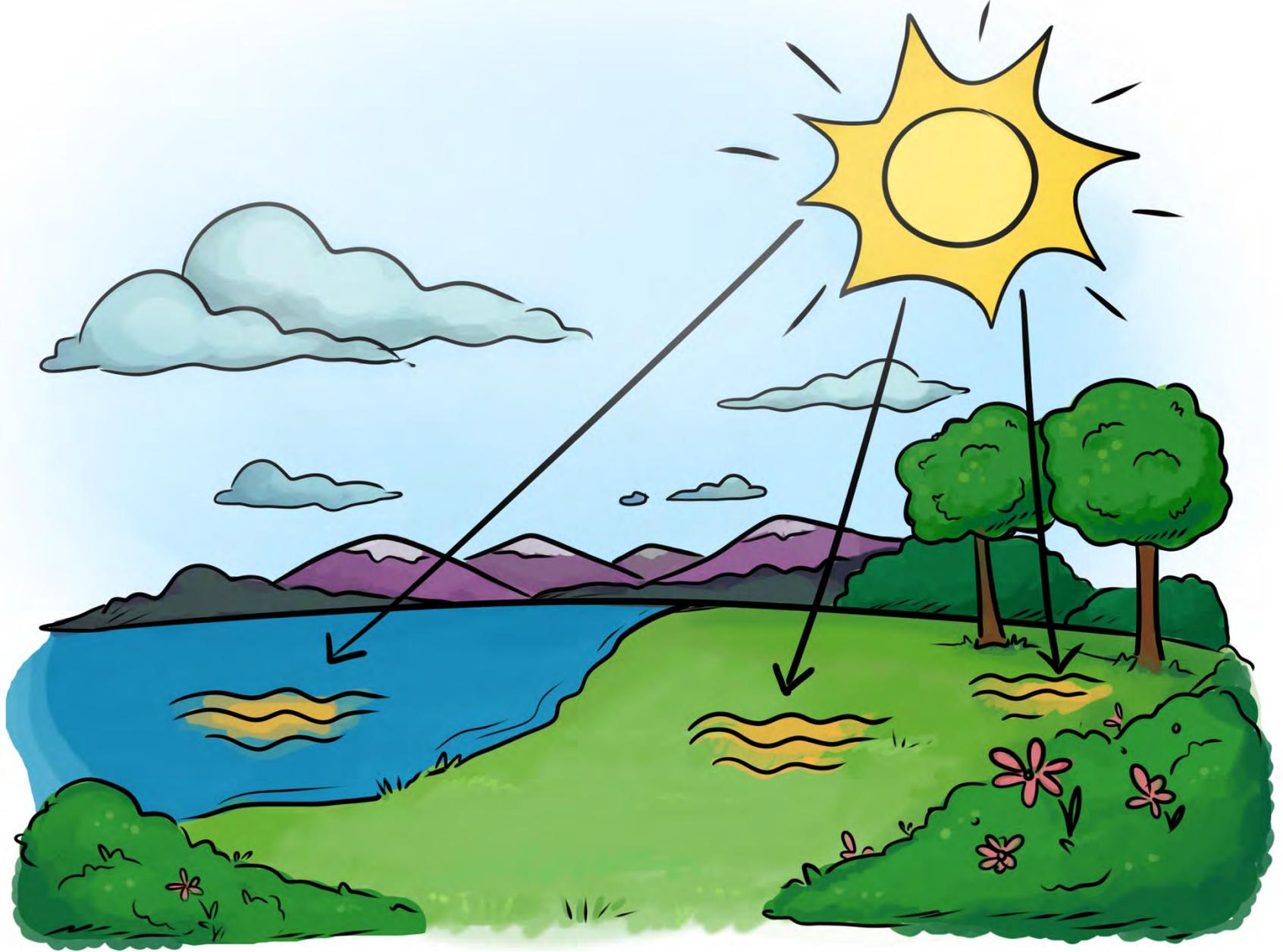


**But there's another renewable form of energy that you should know about...It's called Geothermal.**

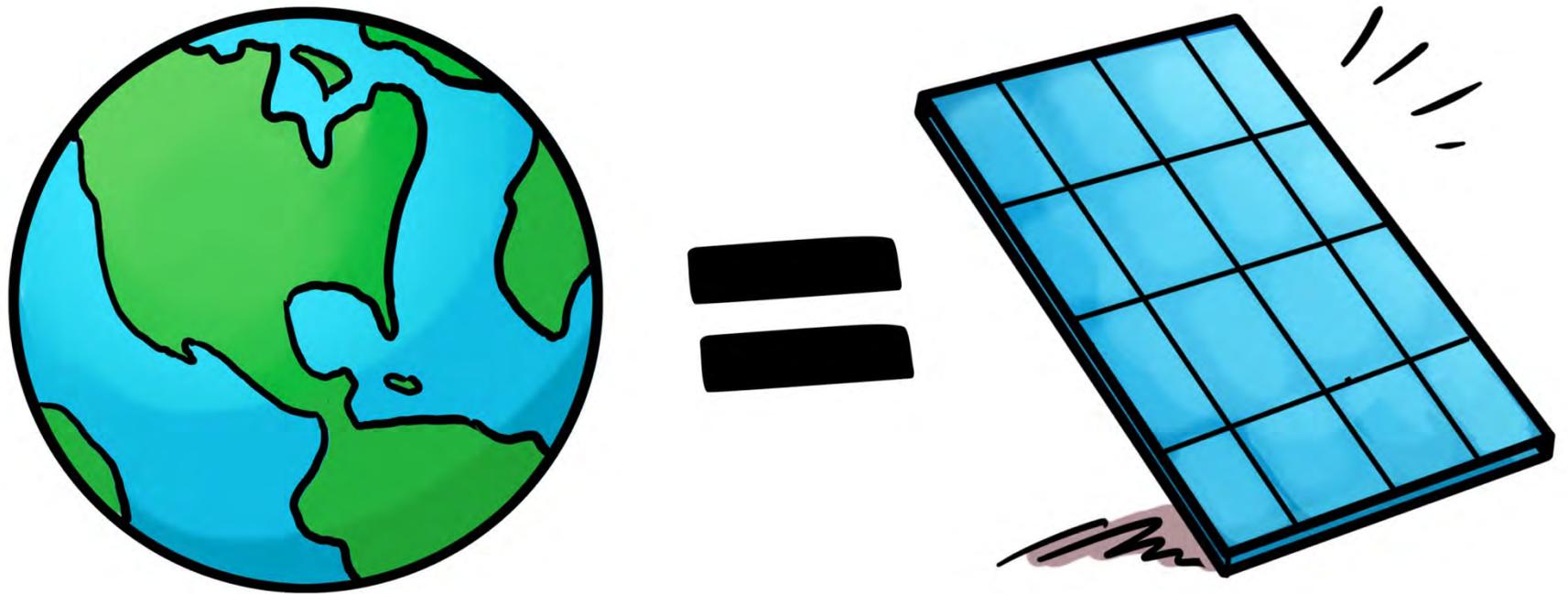
Here's how geothermal works...



The Earth absorbs solar energy.

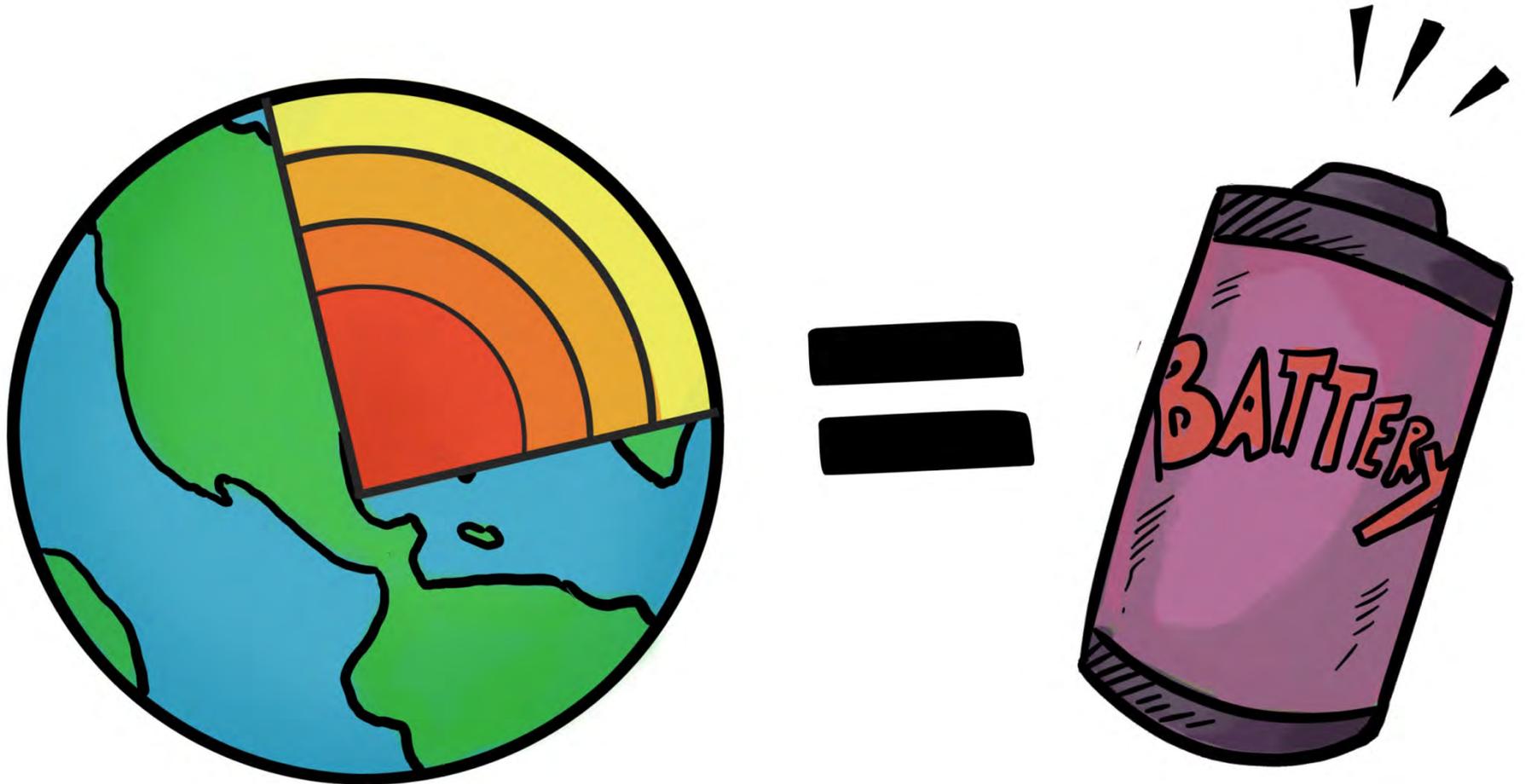


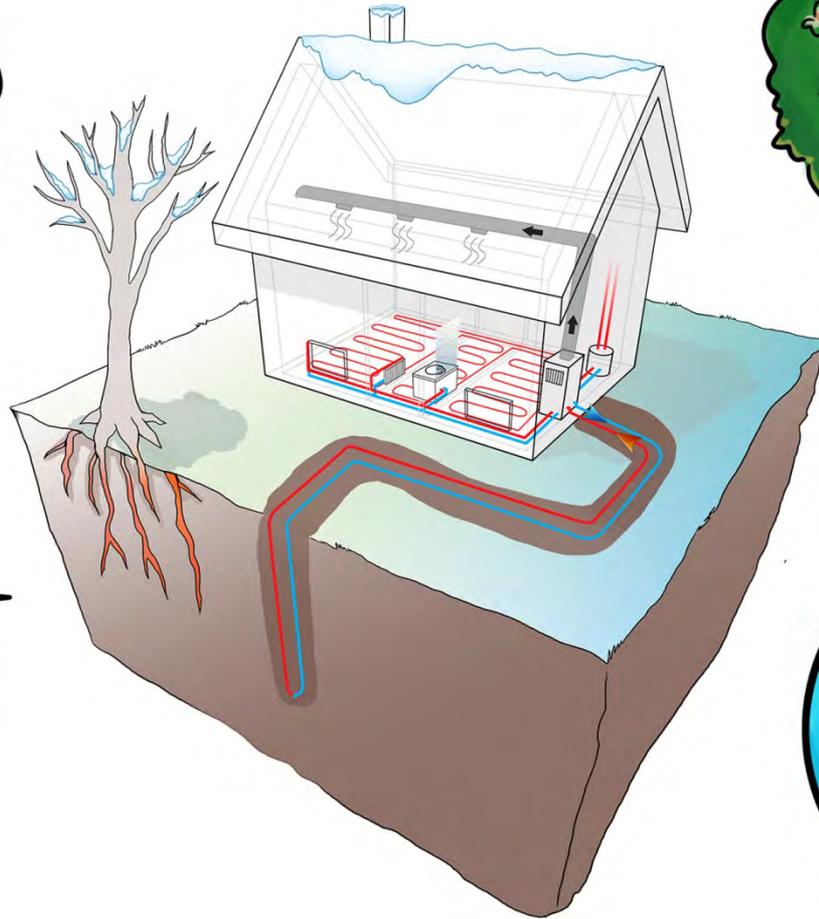
Half of the sun's energy goes into the Earth.



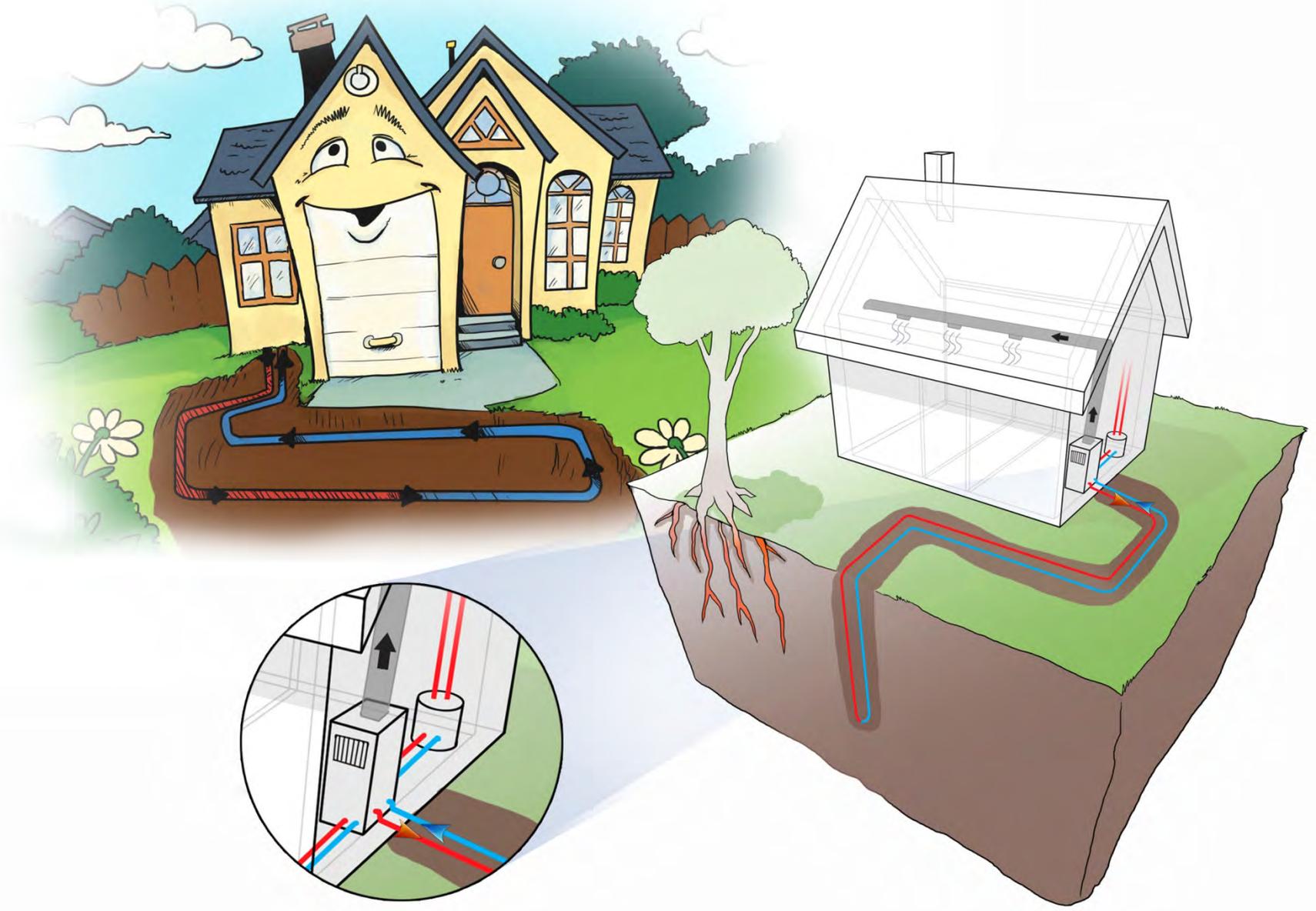
That means that the earth is a great,  
big collector of solar energy.

Earth stores solar energy, like a battery stores electric energy

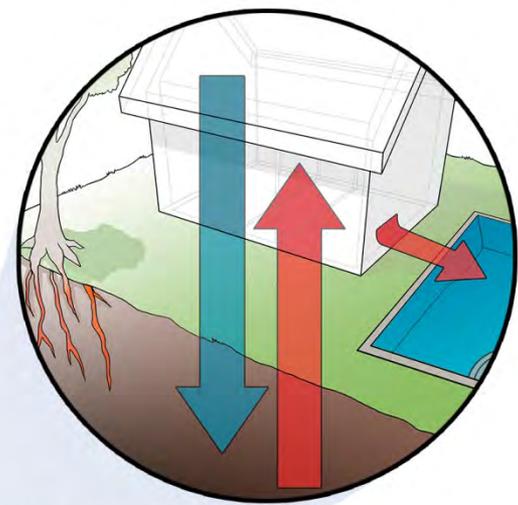
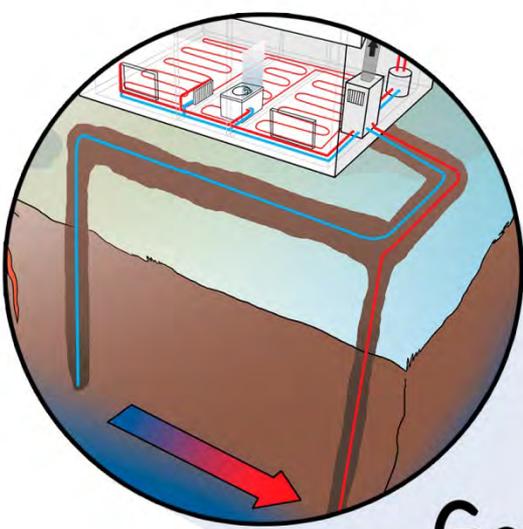




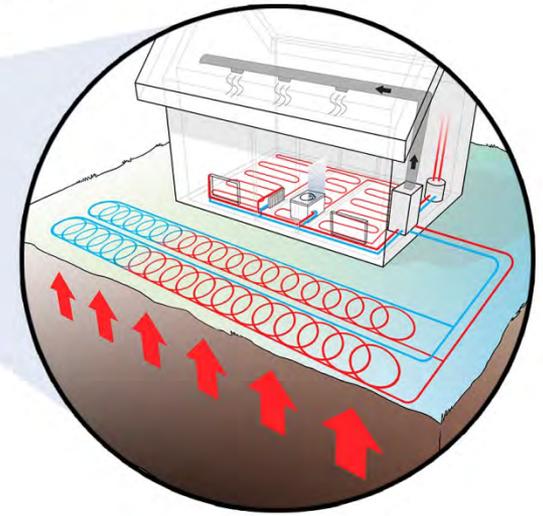
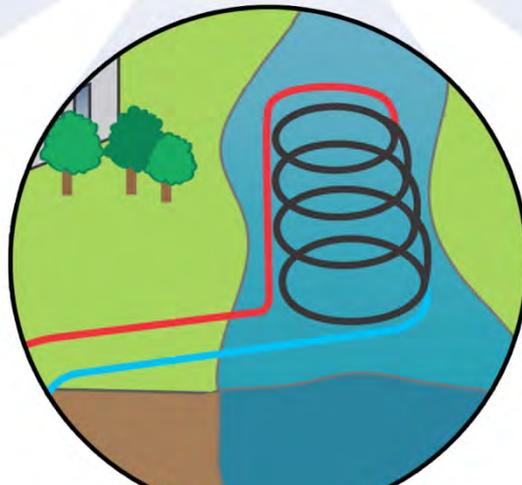
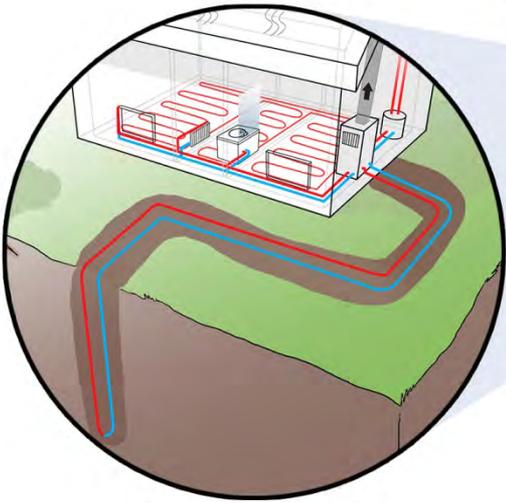
Trees and plants tap into the Earth all year round.

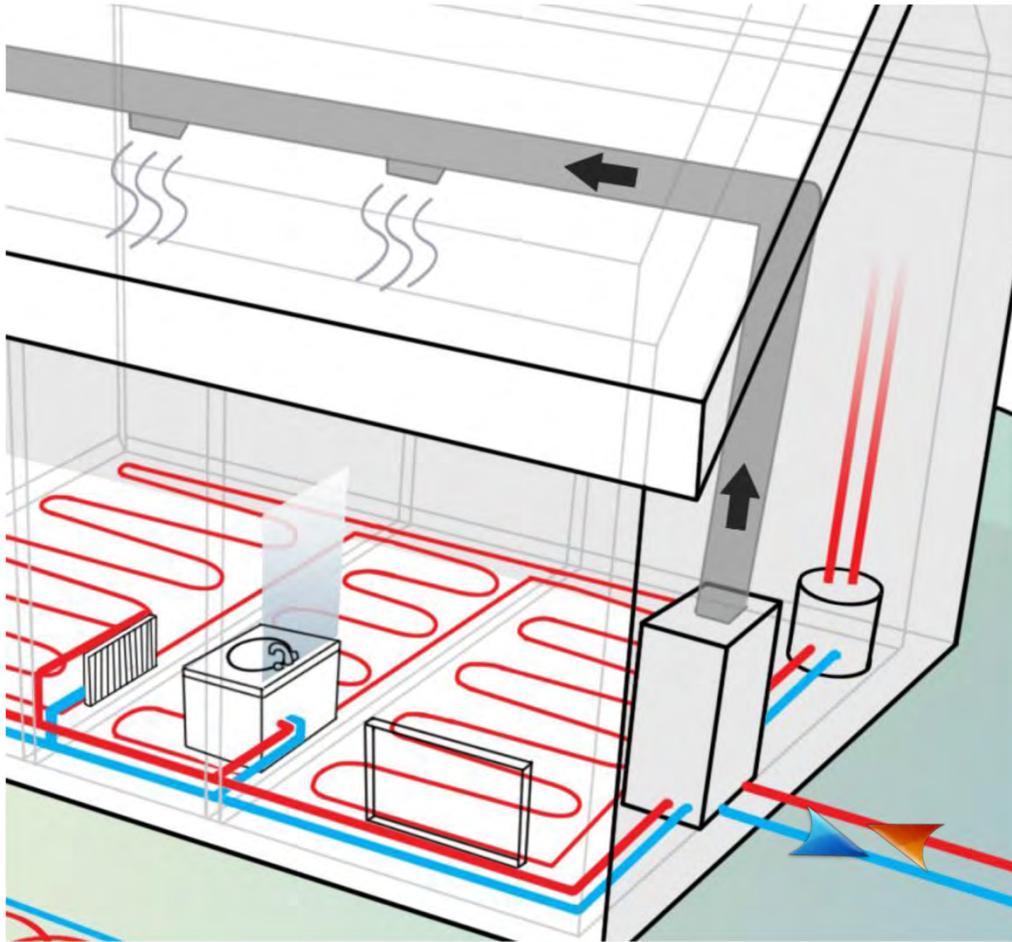


Buildings can tap into the Earth the same way.



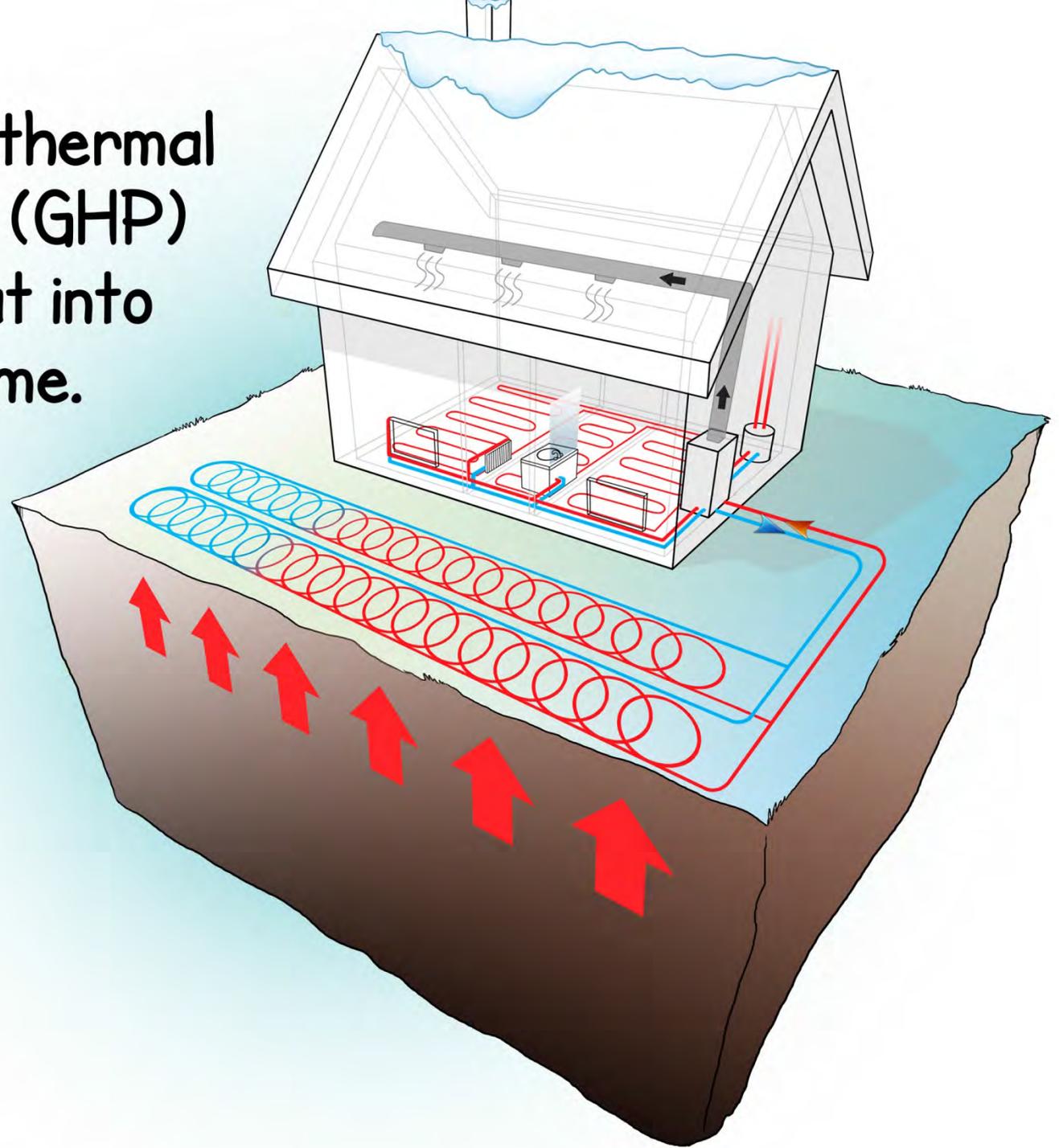
Geothermal taps  
into the solar energy in  
the earth using  
underground pipes.



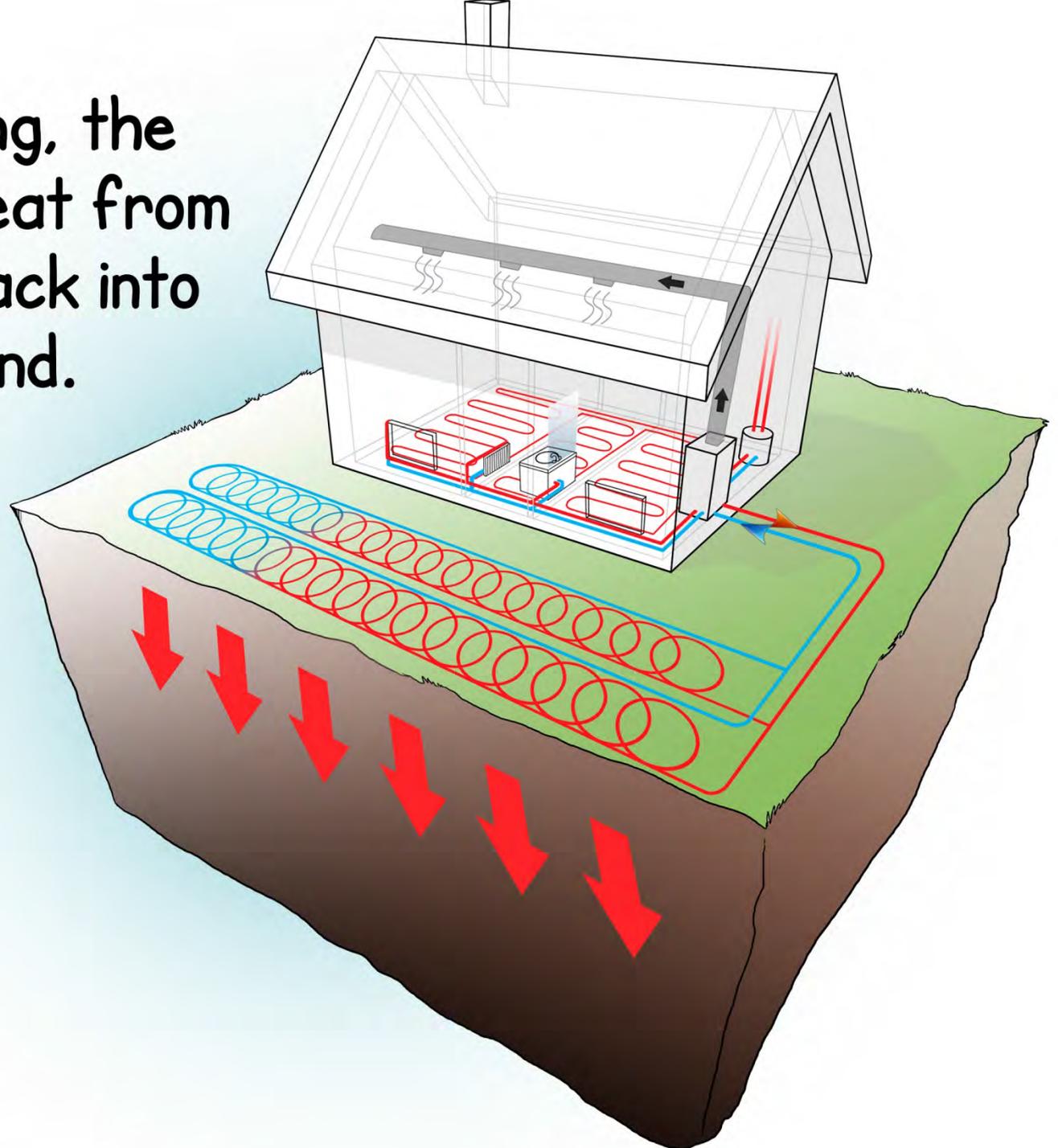


Then that solar energy is supplied to a geothermal heat pump (GHP).

And the Geothermal Heat Pump (GHP) pumps heat into your home.



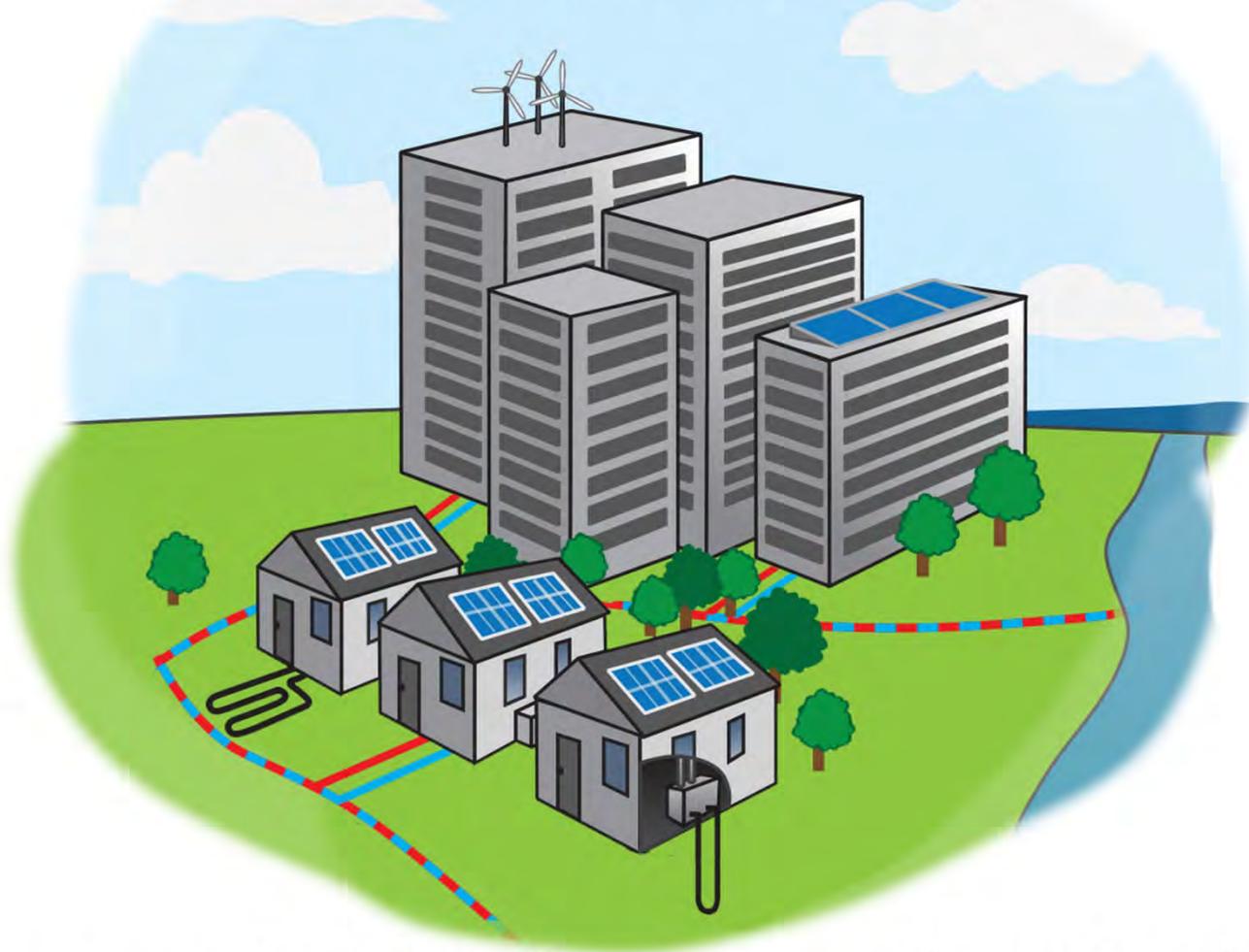
Or for cooling, the GHP pumps heat from your home back into the ground.



That's how we do "Geothermal" heating and cooling.



But, the ideal energy goal is something called "Zero-Net Energy."



When we use electricity from sources like wind, solar, or hydro power, we can "make-up" the difference after we reduce electricity consumption as low as possible.

The best way to get Net-Zero Energy is with a Geothermal Heat Pump and a Solar Collector or other renewable electricity source.



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