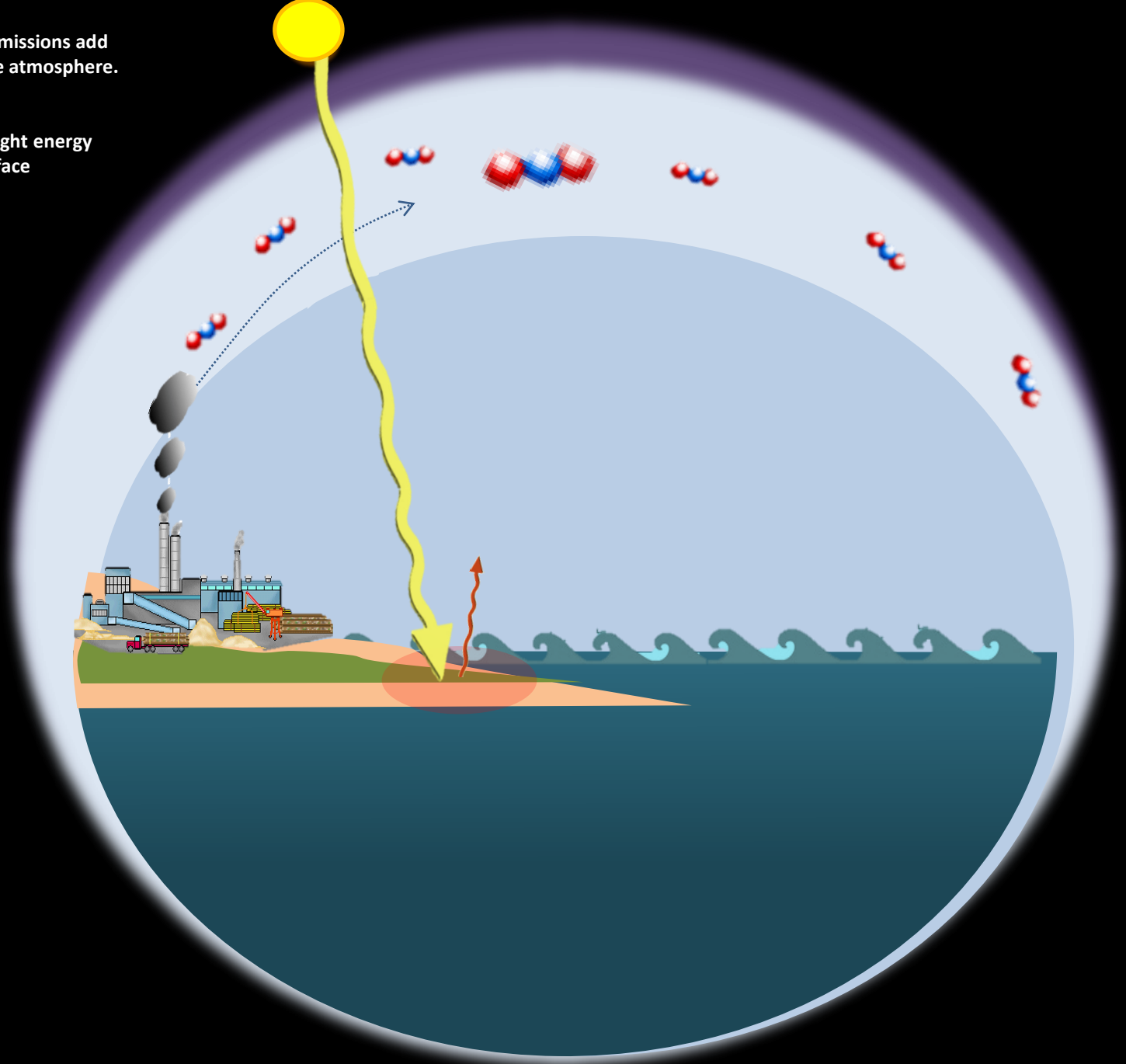
1. Industrial GHGs emissions add more GHGs to the atmosphere.

2. Long wave solar light energy warms planet surface

3. Infra-red short wave heat energy radiates from the planet



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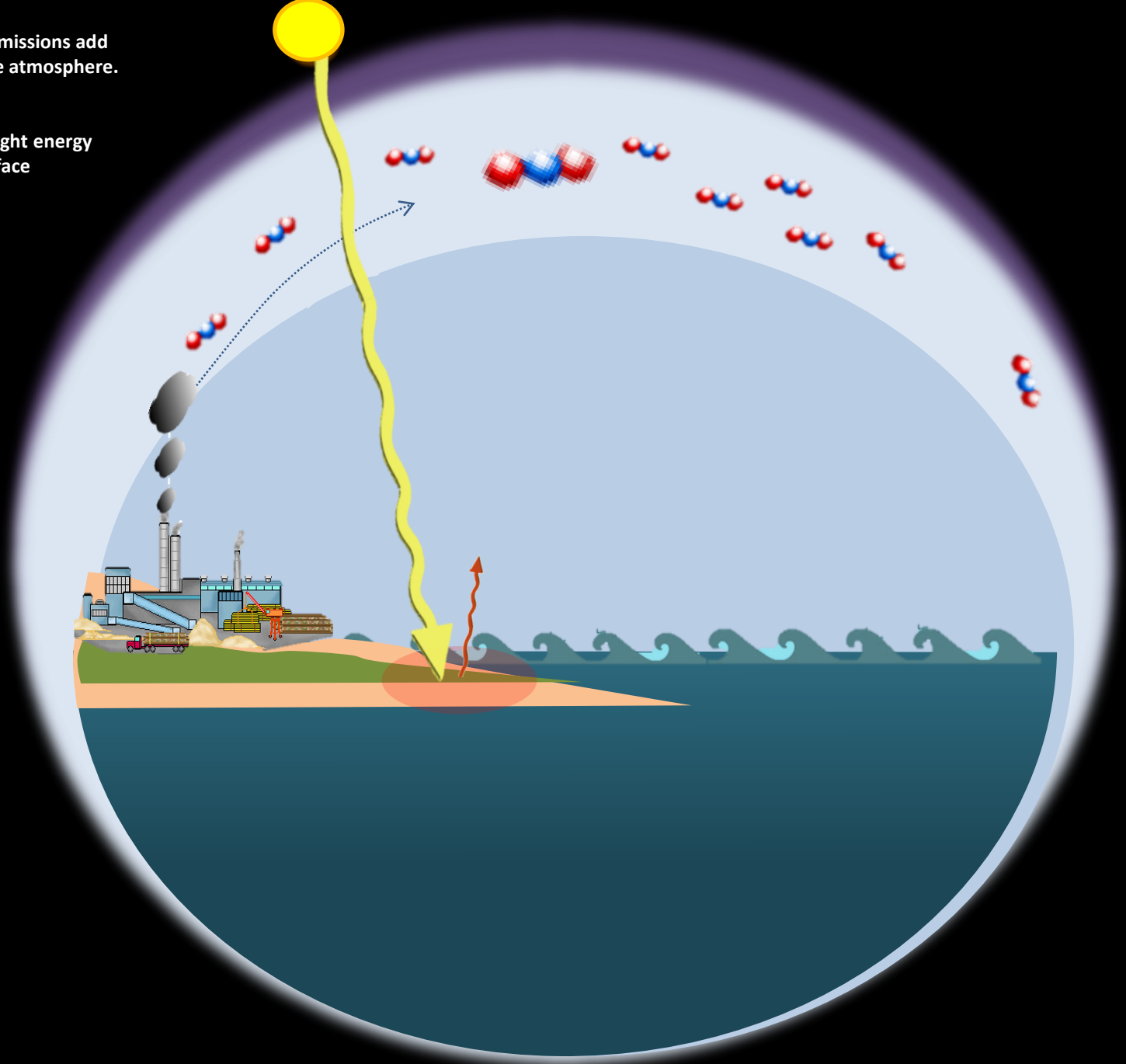
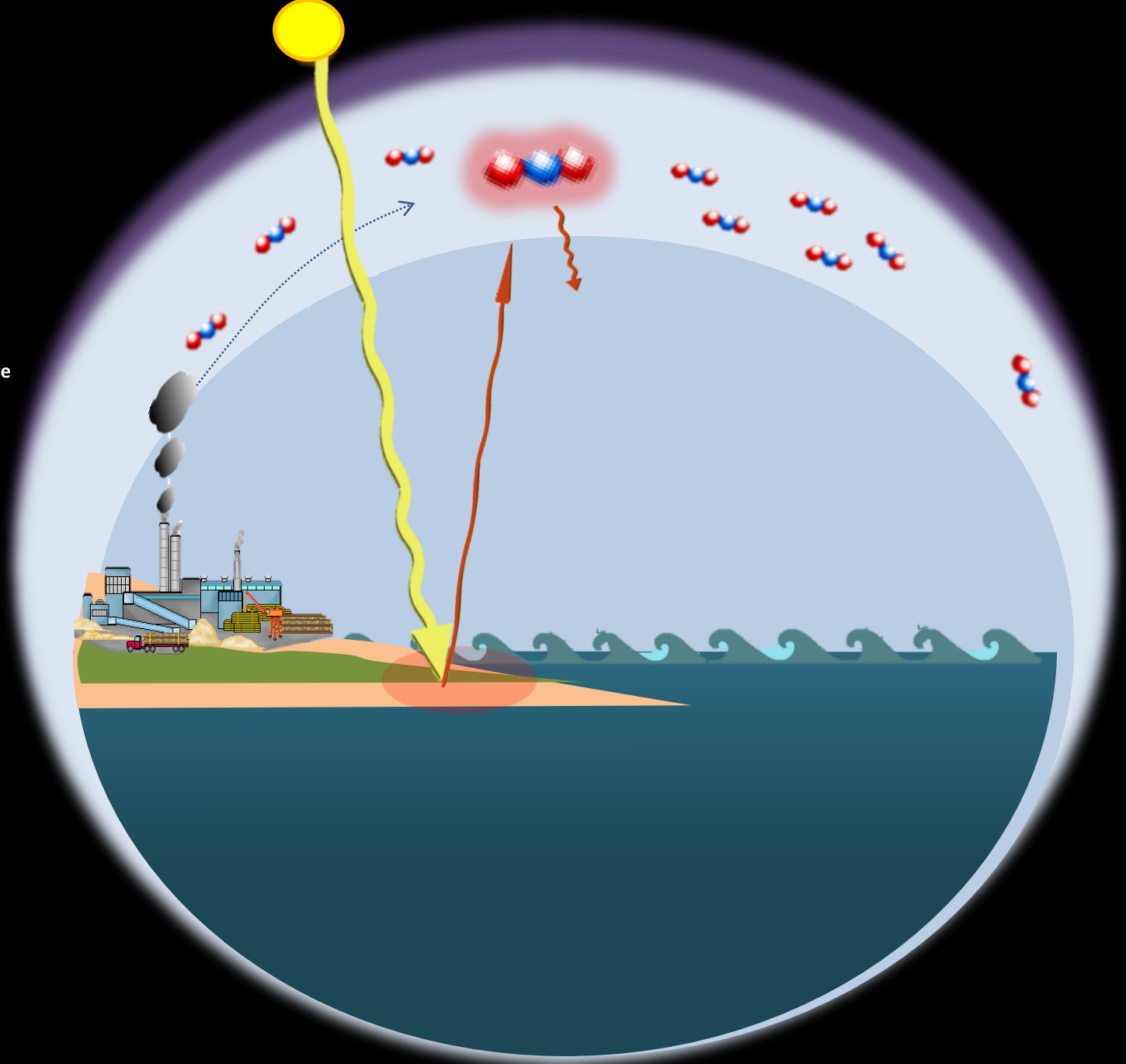


3. Infra-red short wave heat energy radiates from the planet

4. Heat energy from the planet energizes GHG molecules in the lower atmosphere

5. GHG molecules radiate IR heat

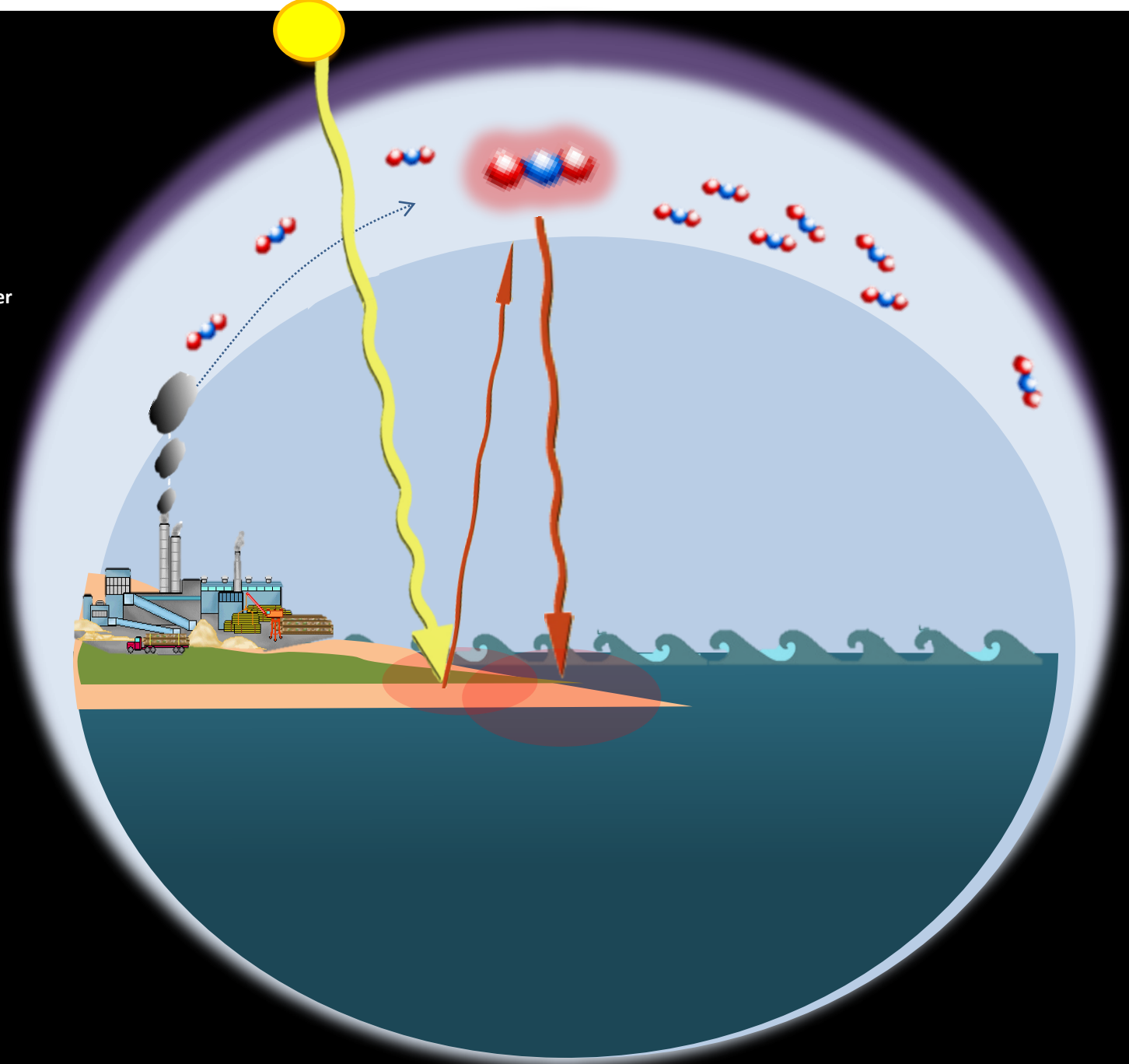
6 More GHGs means more heat in the lower atmosphere

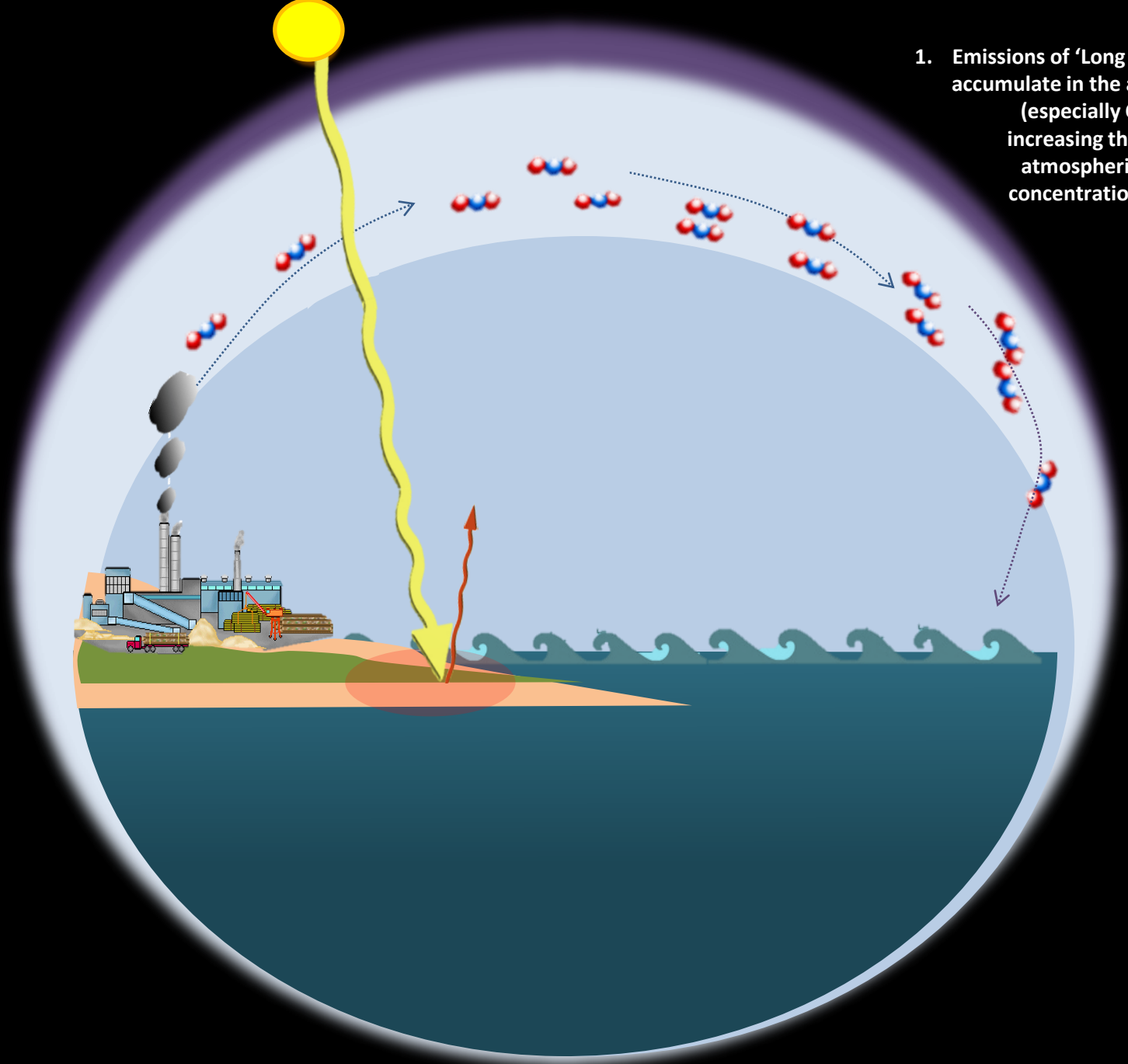


6 More GHGs means more heat in the lower atmosphere

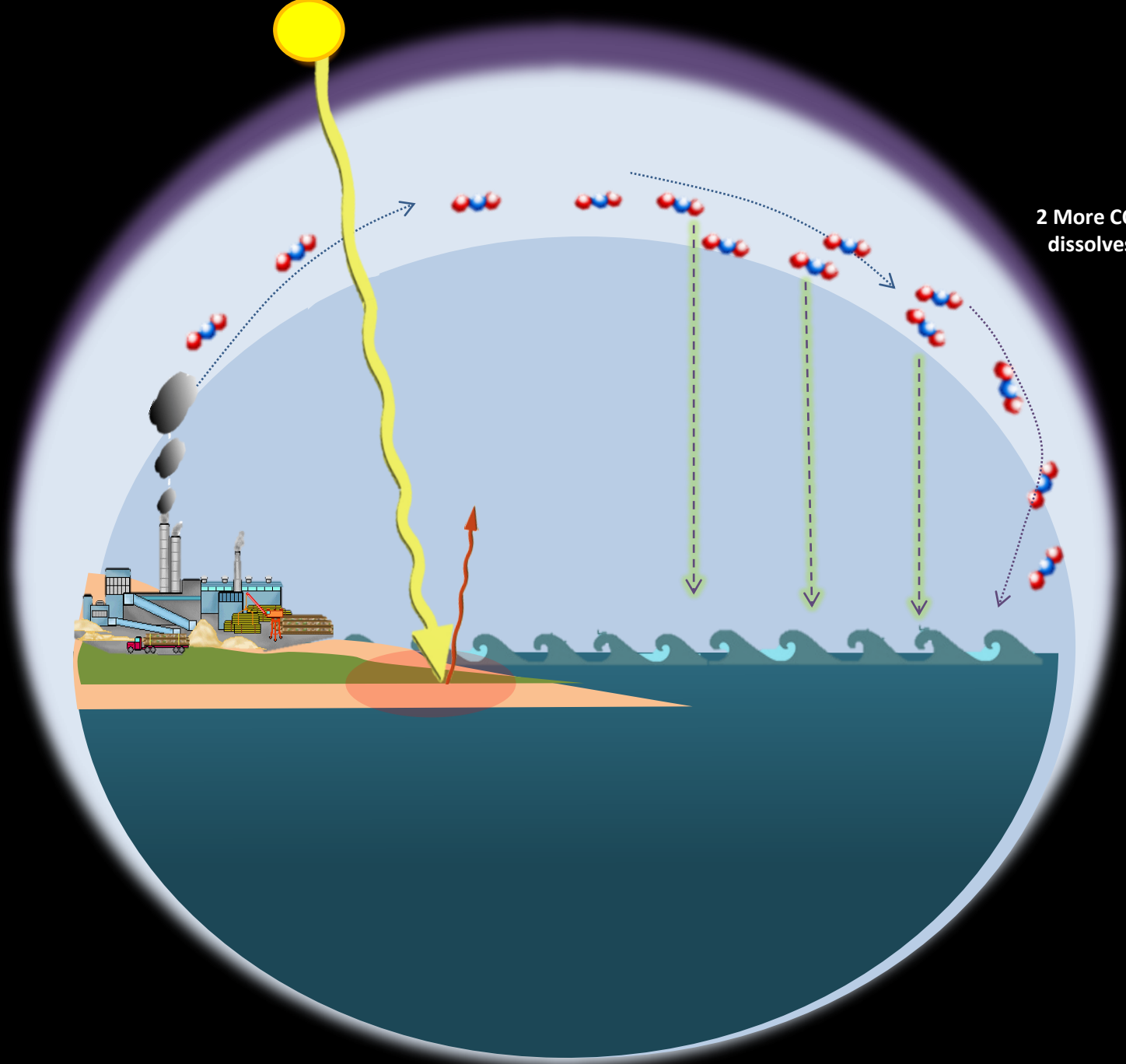
7. The warmer lower atmosphere warms the planet surface

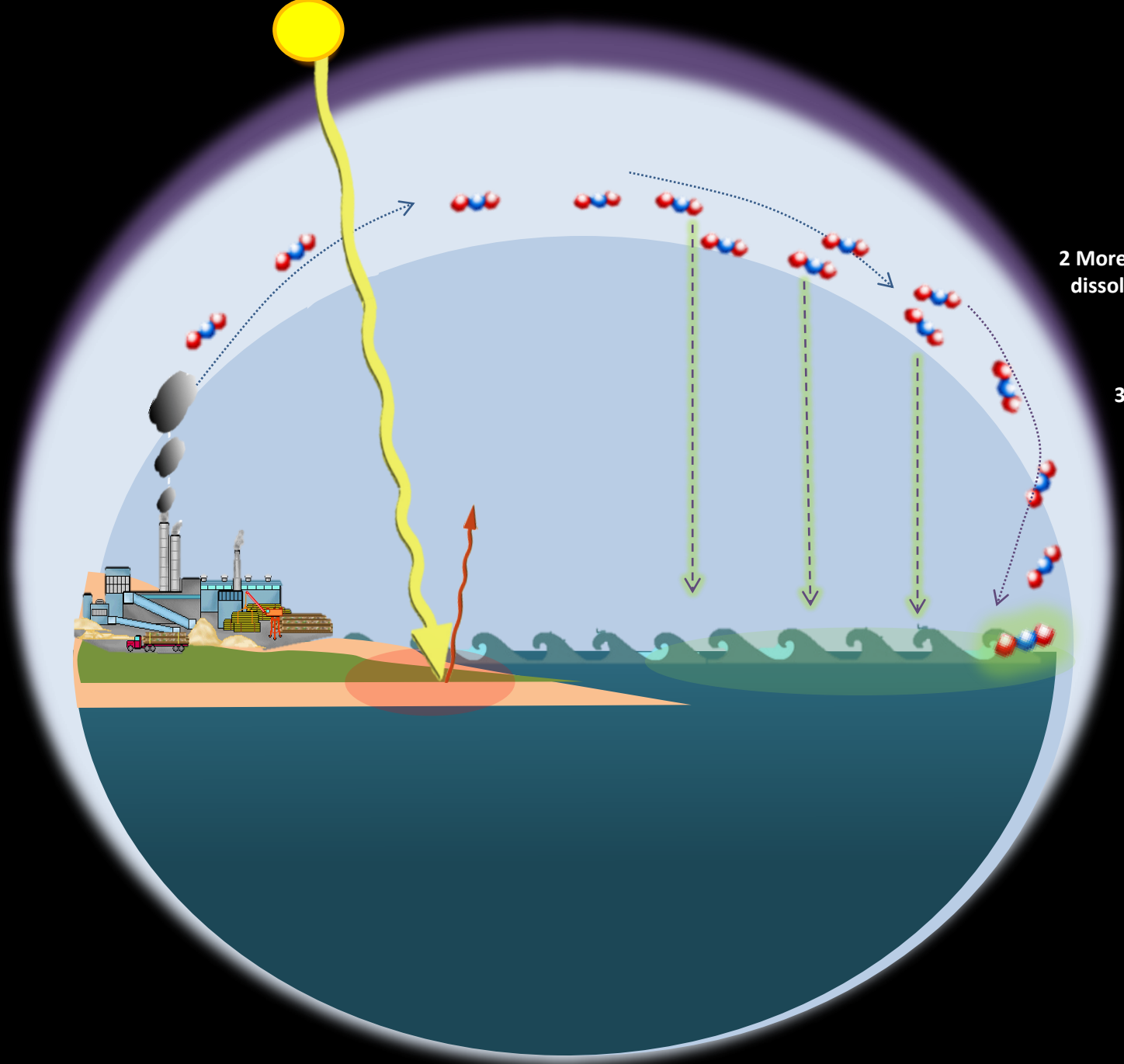
8. As the planet is mainly water the oceans take up most of the extra global warming heat.





1. Emissions of ‘Long lived’ GHGs accumulate in the atmosphere (especially CO2) increasing their atmospheric concentration .

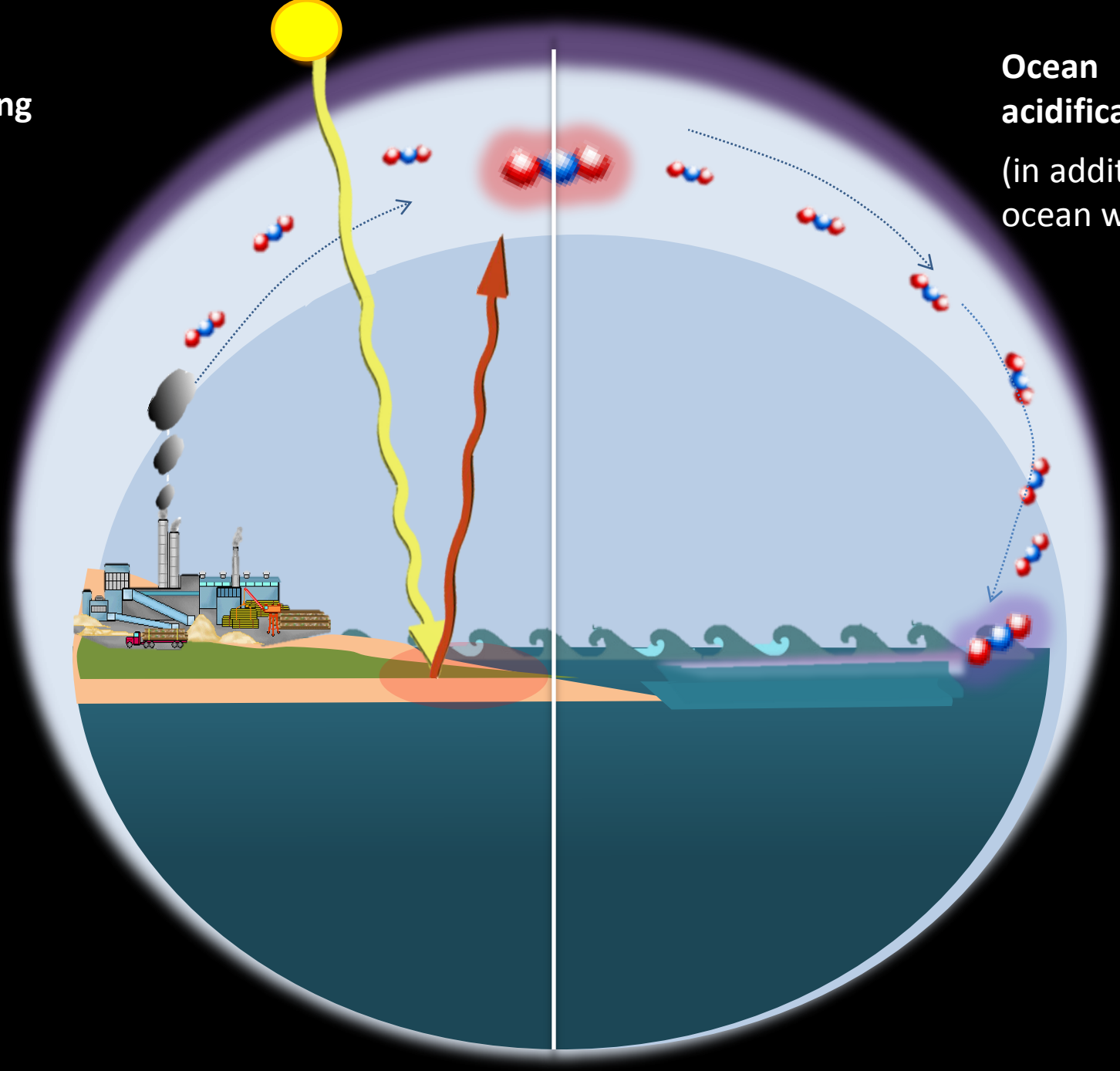

2 More CO2 from the air dissolves in the surface ocean water



2 More CO2 from the air dissolves in the surface ocean water

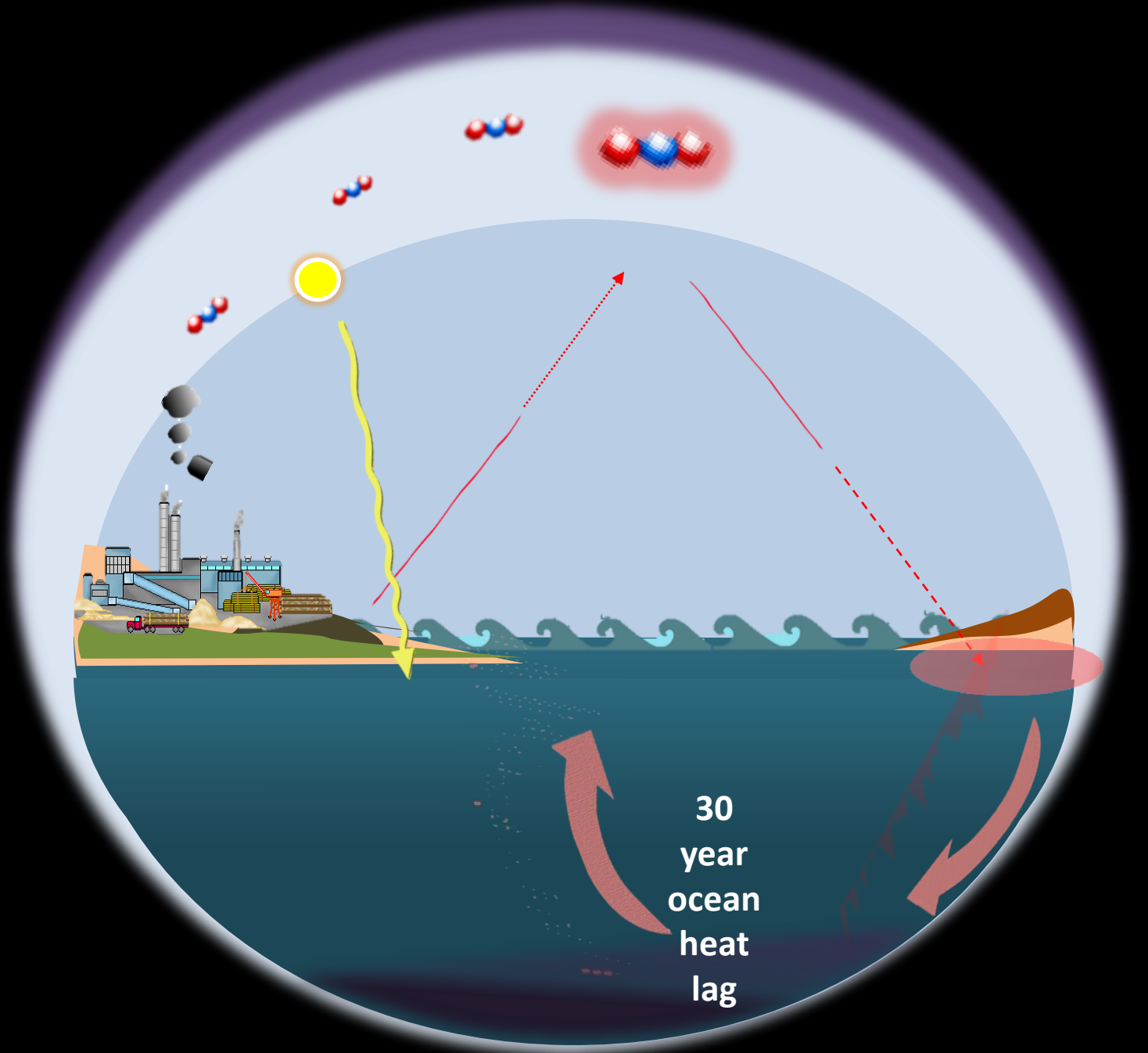
3. More carbonic acid is formed acidifying the ocean..

Global warming



Ocean acidification

(in addition to ocean warming)


30
year
ocean
heat
lag