

BEYOND VS

CLIMATE CHANGE



#7

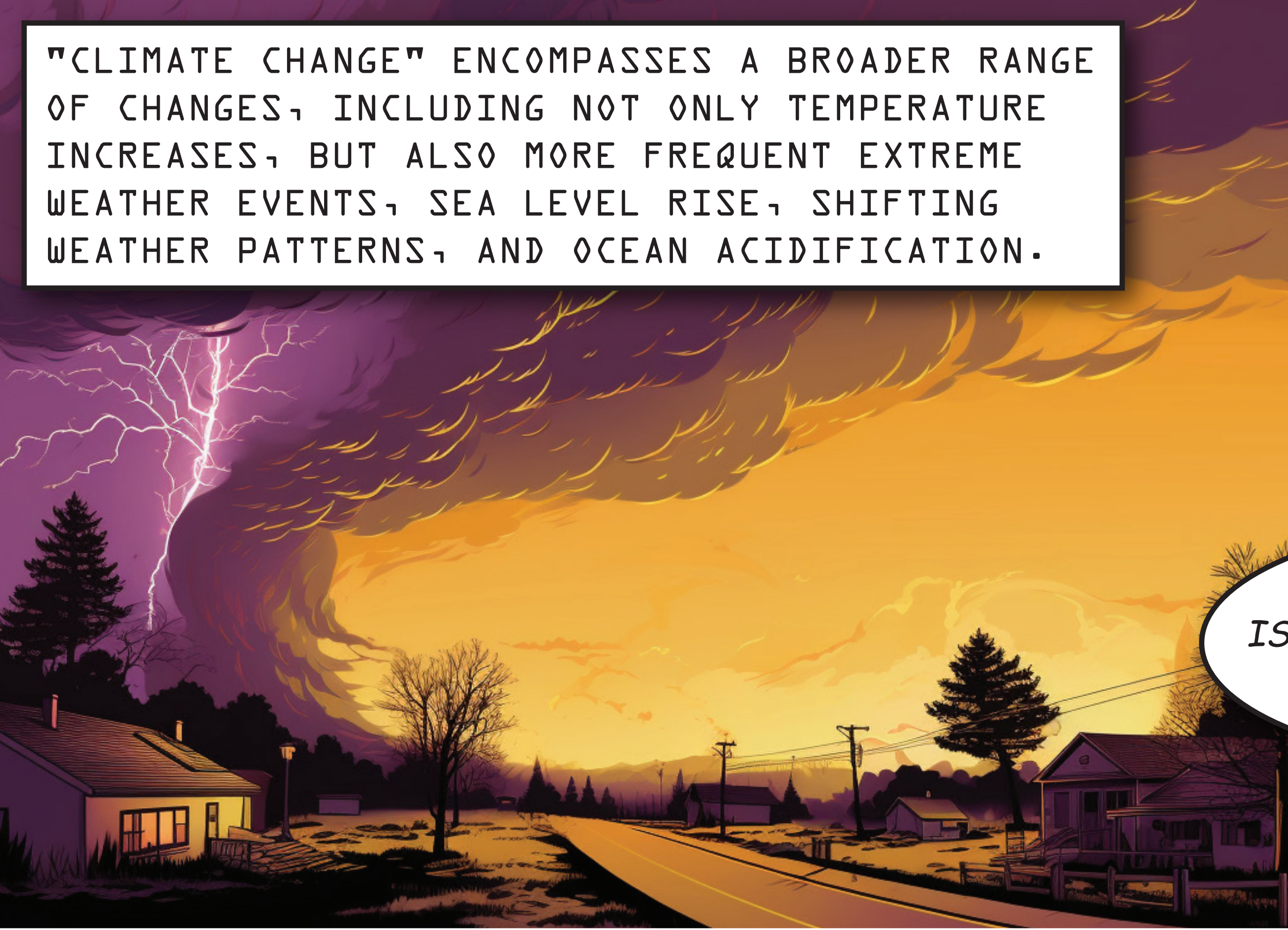




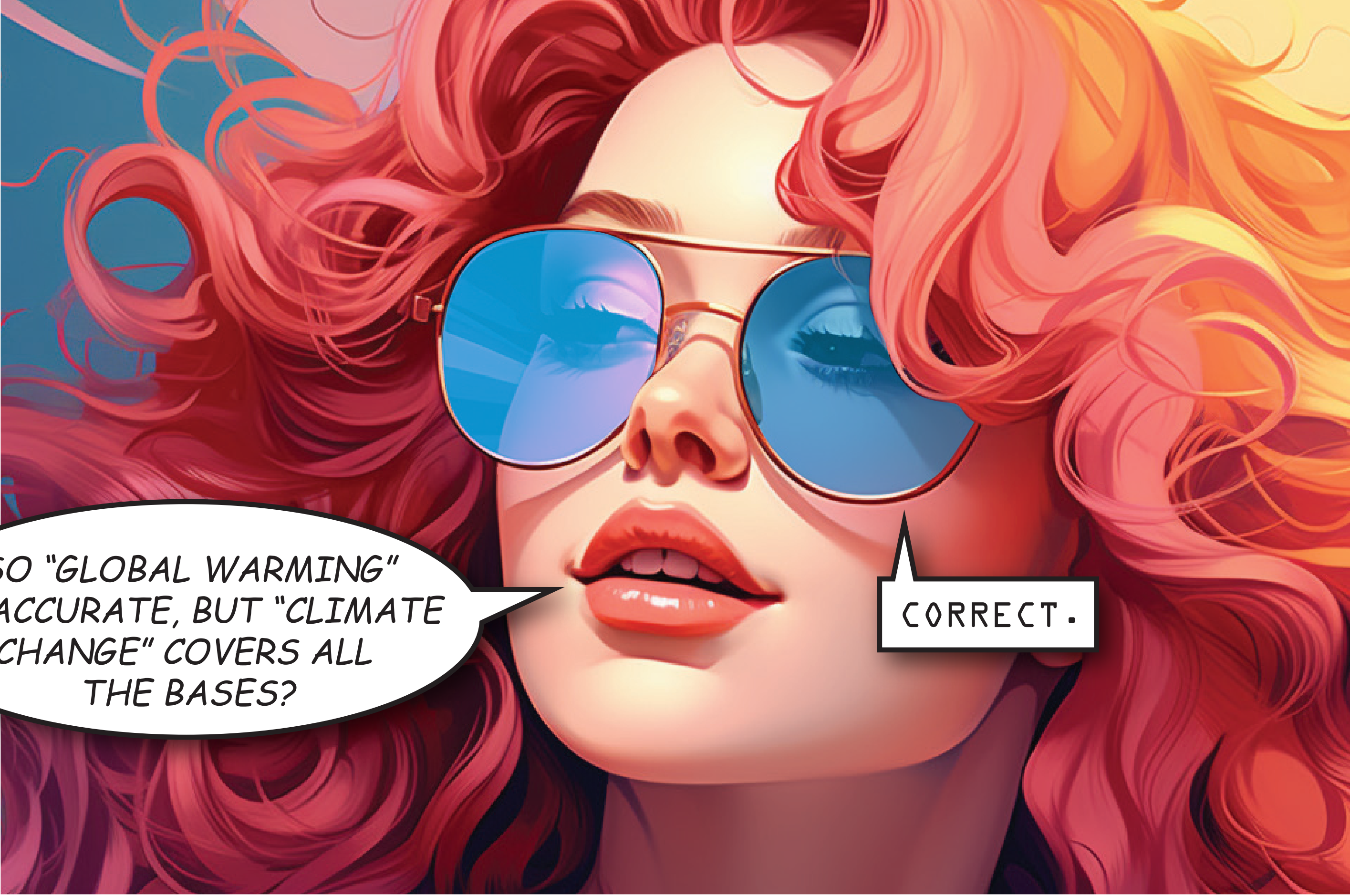
OKAY, OND, WE'VE TALKED ABOUT FOSSIL FUELS, BUT WHAT'S THE DEAL WITH CLIMATE CHANGE? IS THAT THE SAME THING AS GLOBAL WARMING?



WELL, BEY, "GLOBAL WARMING" SPECIFICALLY REFERS TO RISING SURFACE TEMPERATURES CAUSED FROM GREENHOUSE GASSES. WHILE THIS IS A MAJOR SYMPTOM OF THE CURRENT ENVIRONMENTAL CRISIS, IT DOESN'T CAPTURE THE FULL SPECTRUM OF CHANGES.



"CLIMATE CHANGE" ENCOMPASSES A BROADER RANGE OF CHANGES, INCLUDING NOT ONLY TEMPERATURE INCREASES, BUT ALSO MORE FREQUENT EXTREME WEATHER EVENTS, SEA LEVEL RISE, SHIFTING WEATHER PATTERNS, AND OCEAN ACIDIFICATION.



SO "GLOBAL WARMING" IS ACCURATE, BUT "CLIMATE CHANGE" COVERS ALL THE BASES?


CORRECT.




AND THAT MEANS EVEN THOUGH TEMPERATURES ARE RISING, SOME PLACES COULD HAVE RECORD SNOW BECAUSE THERE IS SO MUCH VARIATION IN CLIMATE.

VERY GOOD. SOMEONE HAS BEEN DOING THEIR HOMEWORK.


MAYBE...



SO I KNOW ABOUT THE MELTING GLACIERS AND RISING SEA LEVELS, AND HOW THAT COULD AFFECT POLAR BEARS, COASTAL CITIES AND OTHER SIMILAR EFFECTS, BUT WHAT ELSE SHOULD WE BE WORRIED ABOUT?




THE OCEANS ARE ABSORBING MUCH OF THE INCREASED CARBON DIOXIDE IN THE ATMOSPHERE, LEADING TO MORE ACIDIC WATERS. THIS IS HARMFUL TO MARINE LIFE, ESPECIALLY CORAL REEFS AND SHELLFISH.




LAND ANIMALS ALSO SUFFER. MANY SPECIES CAN'T ADAPT QUICKLY ENOUGH TO THE CHANGING CLIMATE, LEADING TO POPULATION DECLINE OR EXTINCTION. FOR EXAMPLE, CERTAIN SPECIES OF TREES, INSECTS, AND ANIMALS MAY BE DRIVEN OUT OF THEIR TRADITIONAL HABITATS.



THAT'S HEARTBREAKING. I HAVE A SOFT SPOT FOR ANIMALS.

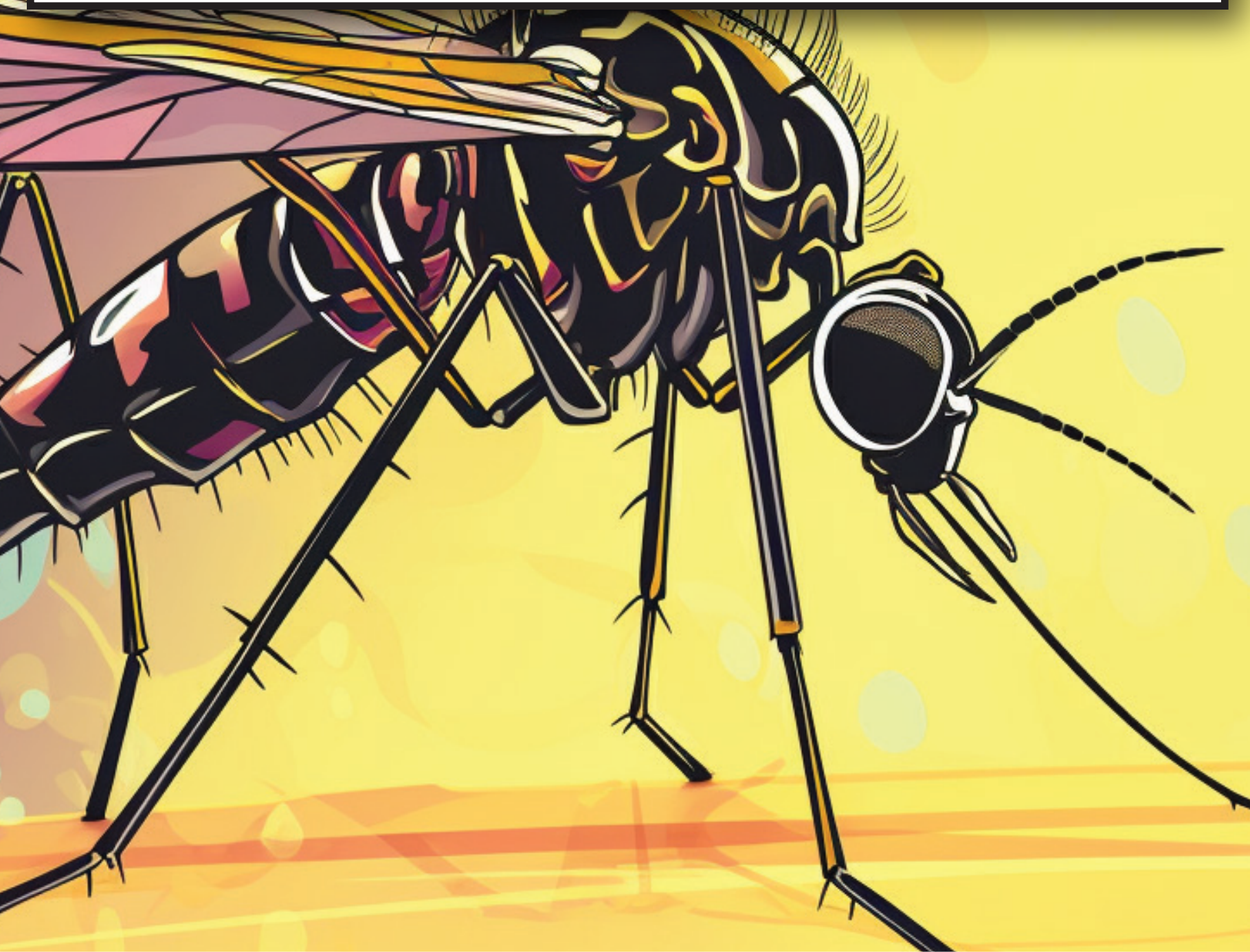


I KNOW, BEY. WHILE ACTIVISTS WORK TO SAVE ENDANGERED SPECIES, CHANGES TO THE CLIMATE MAY BE MORE SEVERE THAN CAN BE MITIGATED BY INDIVIDUALS AND ORGANIZATIONS FOCUSED ON PROTECTING WILDLIFE.

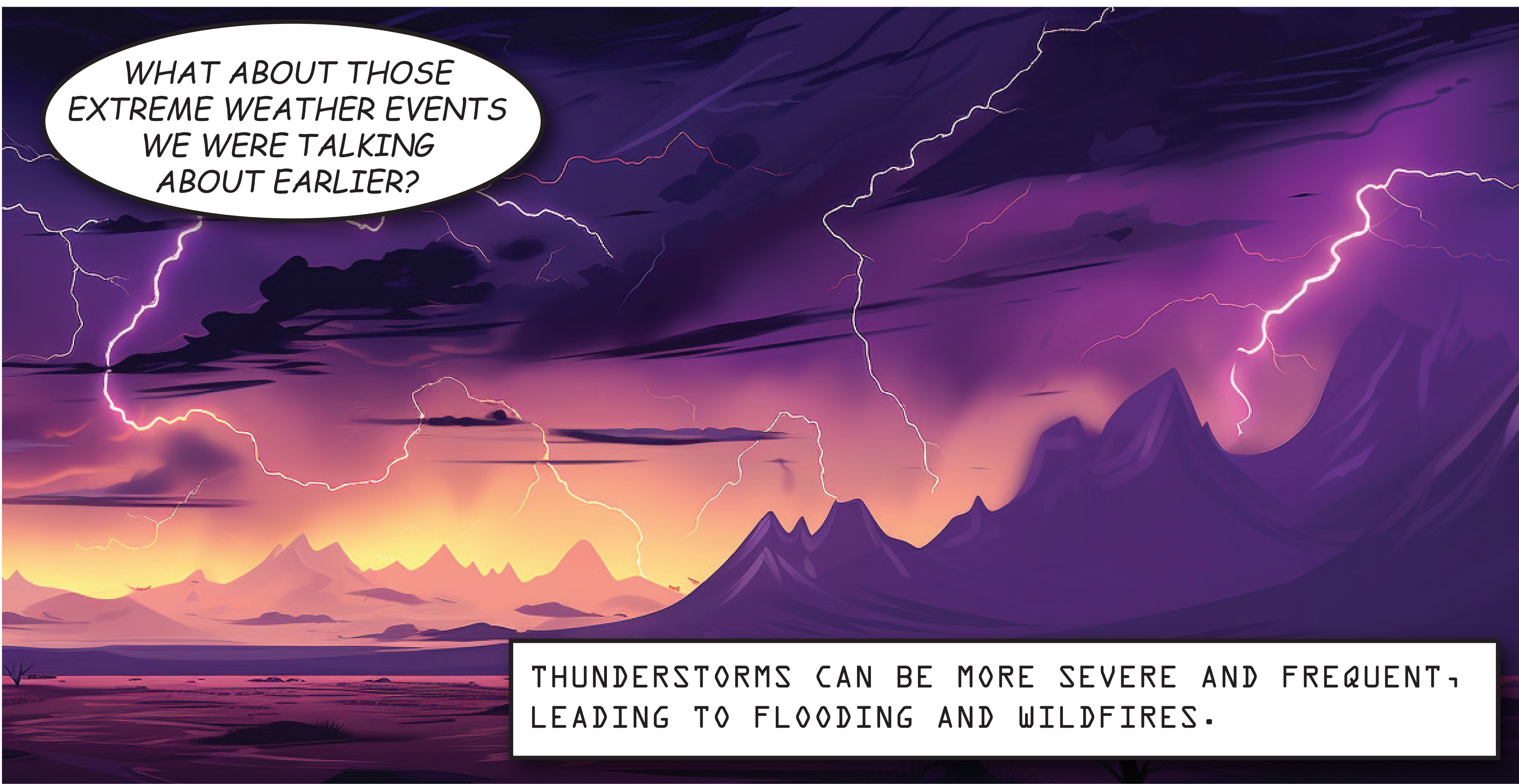


AND IT IS NOT JUST ANIMALS. CLIMATE CHANGE THREATENS FOOD SECURITY, AS CROPS SENSITIVE TO TEMPERATURE AND WATER CHANGES BECOME LESS VIABLE.

HEALTH RISKS ALSO INCREASE WITH MORE HEAT-RELATED ILLNESSES, AND VECTOR-BORNE DISEASES LIKE MALARIA AND DENGUE EXPANDING TO NEW AREAS.



WHAT ABOUT THOSE EXTREME WEATHER EVENTS WE WERE TALKING ABOUT EARLIER?

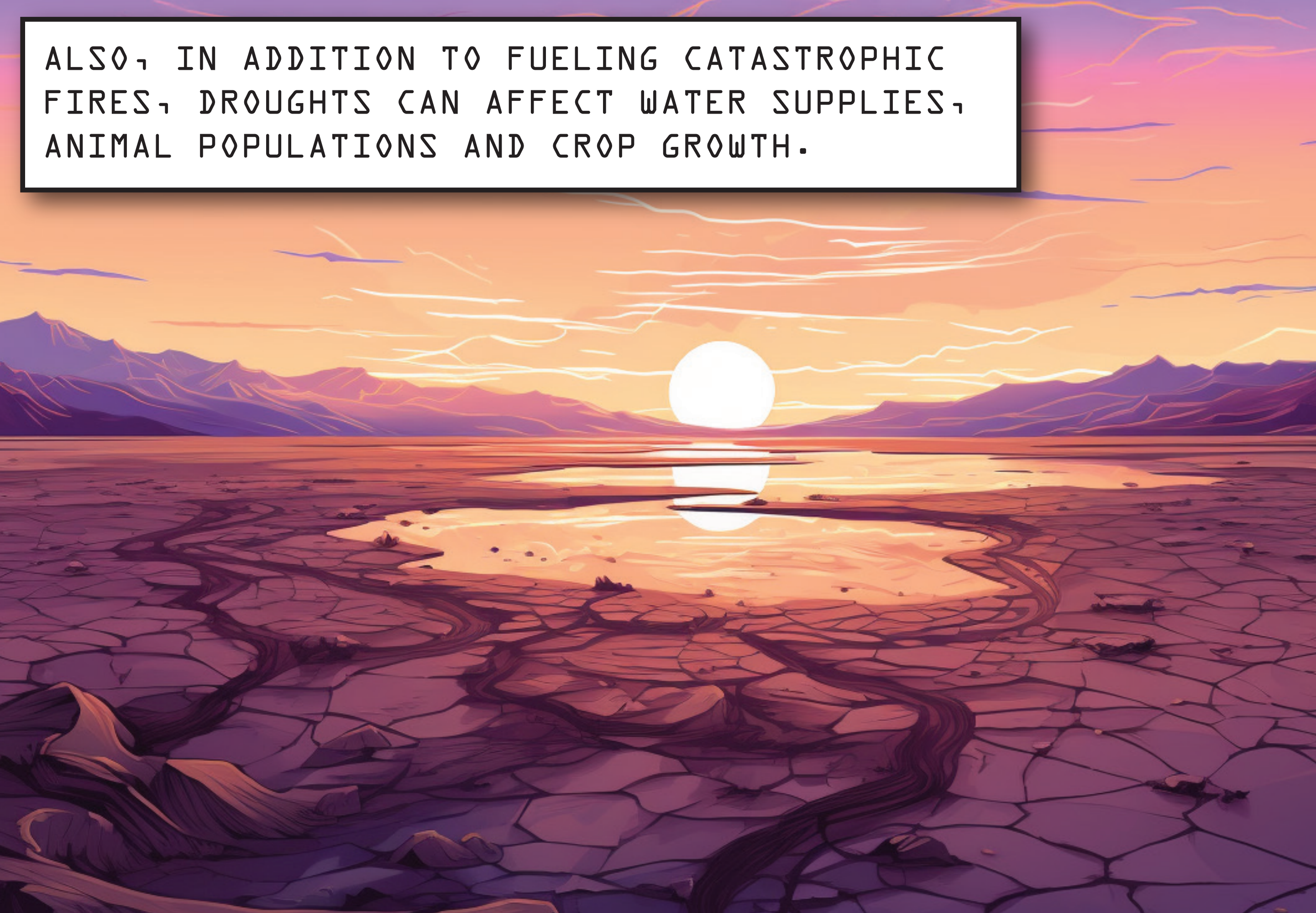


THUNDERSTORMS CAN BE MORE SEVERE AND FREQUENT, LEADING TO FLOODING AND WILDFIRES.

WILDFIRES - CAUSED BY HUMANS OR NATURE - CAN BE MORE DEVASTATING DUE TO EXTENDED DROUGHTS.



ALSO, IN ADDITION TO FUELING CATASTROPHIC FIRES, DROUGHTS CAN AFFECT WATER SUPPLIES, ANIMAL POPULATIONS AND CROP GROWTH.



FLOODING CAN BE DEADLIER DUE TO DRIER GROUND CONDITIONS AND SEVERE CLOUDBURSTS.



I'VE SEEN THOSE 'TURN AROUND, DON'T DROWN' BILLBOARDS WARNING AGAINST DRIVING THROUGH FLOODS.

ABSOLUTELY. IT'S A VITAL MESSAGE TO REMEMBER, ESPECIALLY AS CLIMATE CHANGE INTENSIFIES.





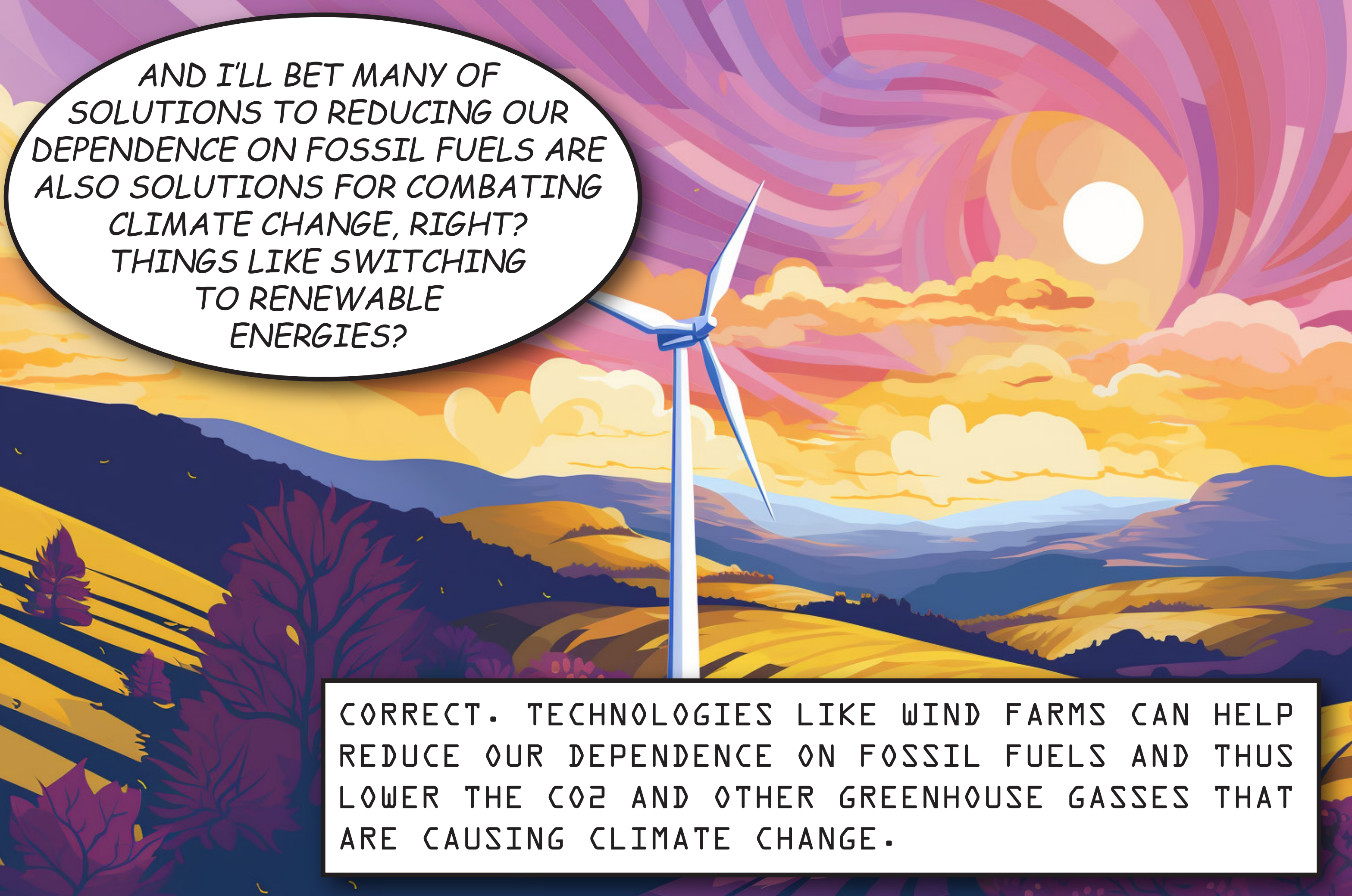
POLLUTION, LANDFILLS, FLOODING, DROUGHTS, WILDFIRES --WHAT A MESS!

IT'S A DAUNTING - EVEN INCOMPLETE - LIST, BUT THERE IS HOPE, BEY.

I'M ALL EARS!

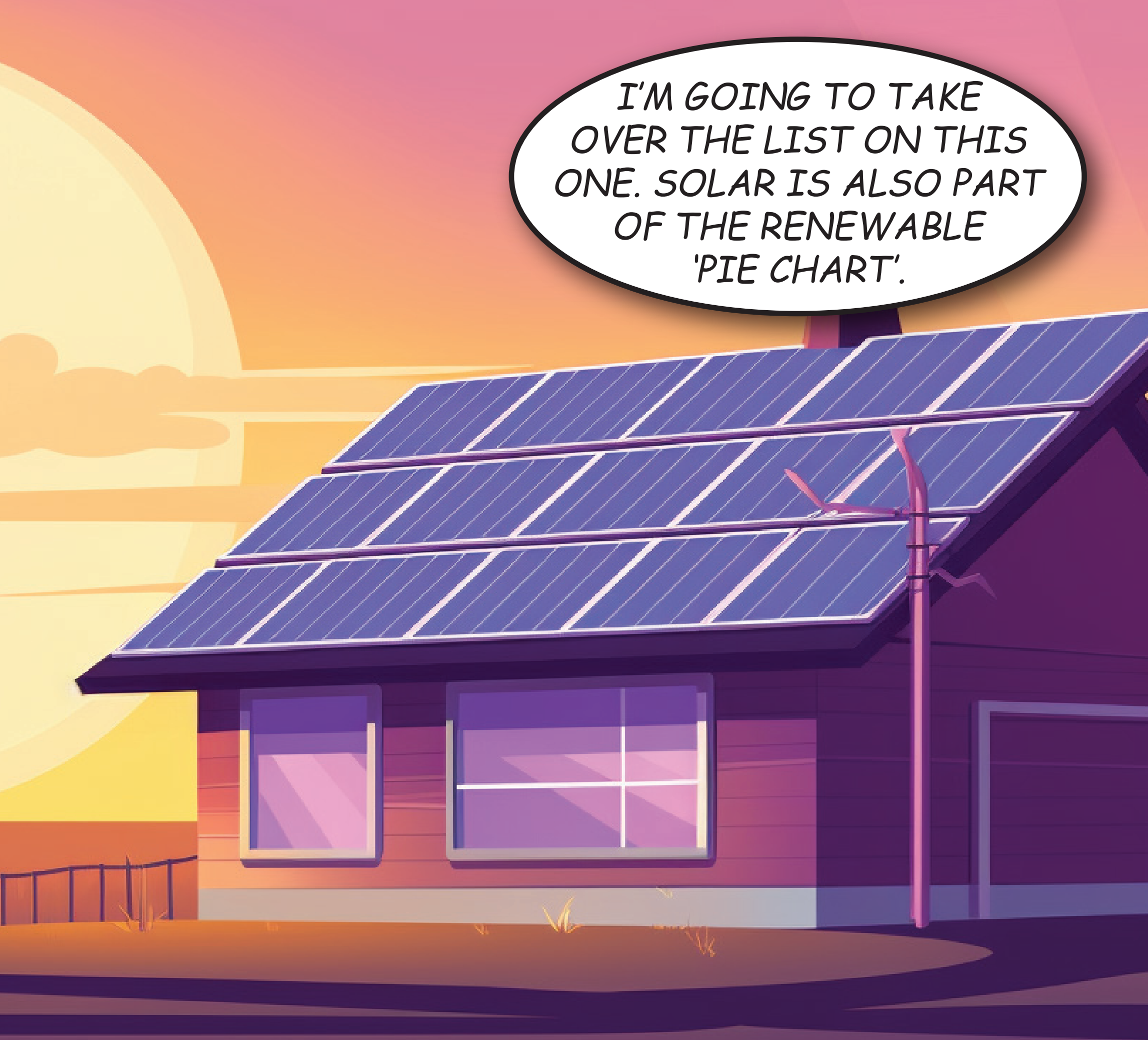


AS THIS IS ONE OF THE BIGGEST RISKS TO HUMANITY, WE HAVE SOME OF THE SMARTEST INDIVIDUALS AND MOST CAPABLE GOVERNMENTS AND ORGANIZATIONS ALREADY WORKING ON SOLUTIONS.



AND I'LL BET MANY OF SOLUTIONS TO REDUCING OUR DEPENDENCE ON FOSSIL FUELS ARE ALSO SOLUTIONS FOR COMBATING CLIMATE CHANGE, RIGHT? THINGS LIKE SWITCHING TO RENEWABLE ENERGIES?

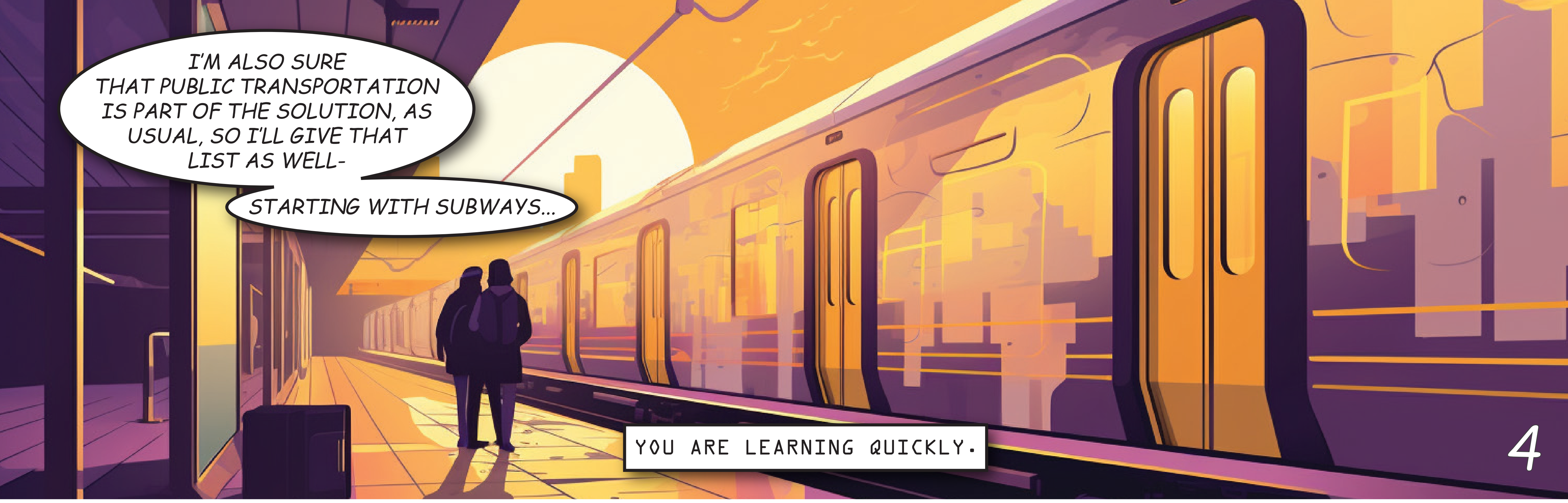
CORRECT. TECHNOLOGIES LIKE WIND FARMS CAN HELP REDUCE OUR DEPENDENCE ON FOSSIL FUELS AND THUS LOWER THE CO2 AND OTHER GREENHOUSE GASSES THAT ARE CAUSING CLIMATE CHANGE.



I'M GOING TO TAKE OVER THE LIST ON THIS ONE. SOLAR IS ALSO PART OF THE RENEWABLE 'PIE CHART'.



AS ARE HYDROELECTRIC, GEOTHERMAL, BIOMASS, NUCLEAR AND OTHER MORE GREENHOUSE GAS FRIENDLY ENERGY SOLUTIONS.



I'M ALSO SURE THAT PUBLIC TRANSPORTATION IS PART OF THE SOLUTION, AS USUAL, SO I'LL GIVE THAT LIST AS WELL-

STARTING WITH SUBWAYS...

YOU ARE LEARNING QUICKLY.

...RAIL SYSTEMS
AND BUSES...

LET'S NOT FORGET
WALKING, ROLLING AND
BIKING...



...AS WELL AS ELECTRIFYING
TRANSPORTATION, LIKE CARS
BUSES, RAIL AND SO ON.



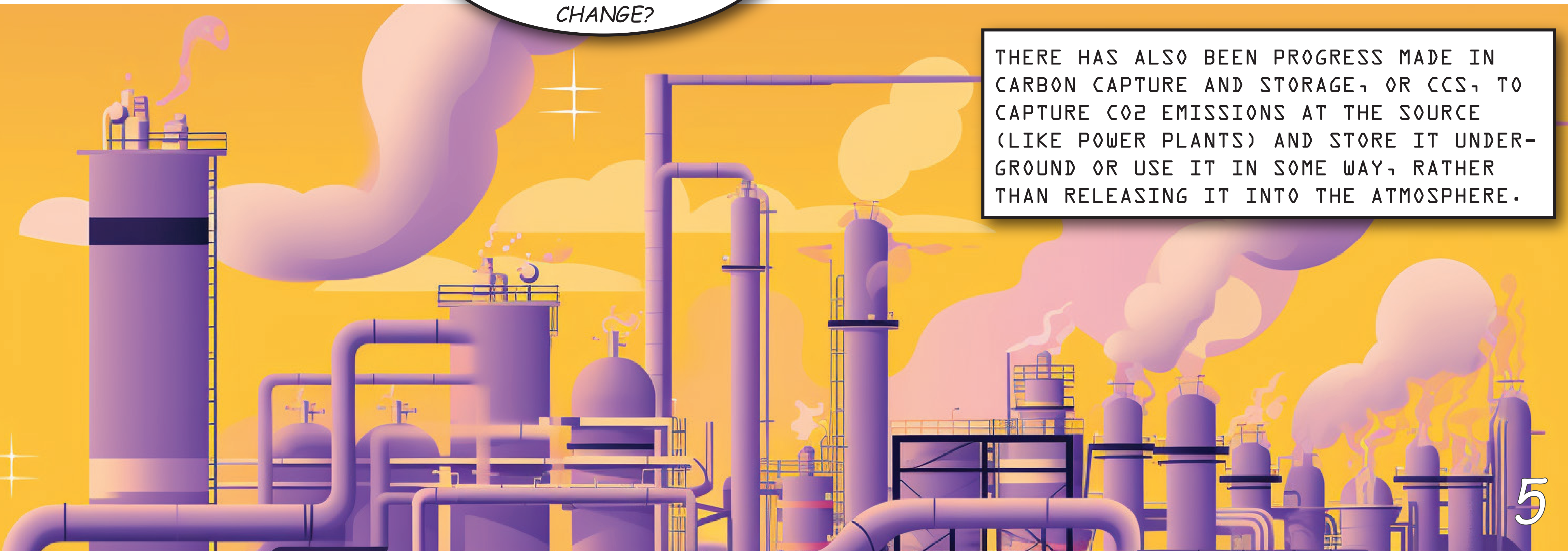
YOU ARE 'ON A ROLL', BEY.

HA! THAT'S ALL I
GOT. AND THOSE SEEM LIKE
PRETTY SLOW AND REACTIVE
SOLUTIONS. WHAT CAN BE
DONE PROACTIVELY TO
FIGHT CLIMATE
CHANGE?

PLANTING AND PROTECTING FORESTS ARE VITAL
AS TREES NATURALLY CAPTURE CO₂ AND HAVE
MANY OTHER BENEFITS TO PEOPLE AND WILDLIFE.



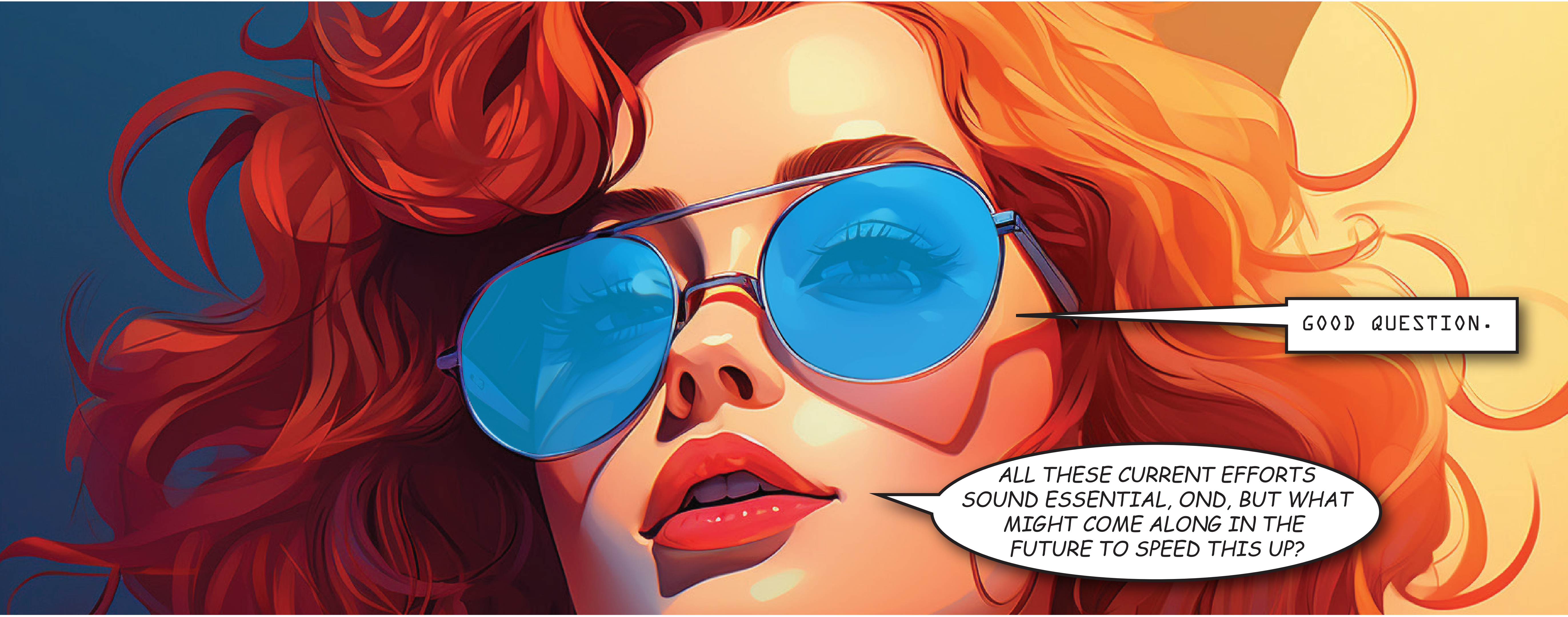
THERE HAS ALSO BEEN PROGRESS MADE IN
CARBON CAPTURE AND STORAGE, OR CCS, TO
CAPTURE CO₂ EMISSIONS AT THE SOURCE
(LIKE POWER PLANTS) AND STORE IT UNDER-
GROUND OR USE IT IN SOME WAY, RATHER
THAN RELEASING IT INTO THE ATMOSPHERE.





IMPROVEMENTS IN SUSTAINABLE AGRICULTURE HAVE DUAL BENEFITS BECAUSE THEY CAN PROTECT CROP PRODUCTION FROM CHANGES IN CLIMATE WHILE ALSO REDUCING THE CARBON FOOTPRINT OF THE PRODUCTION.

PLUS, SUSTAINABLE FARMING AND MEAT ALTERNATIVES HELP REDUCE METHANE EMISSIONS FROM LIVESTOCK.



GOOD QUESTION.

ALL THESE CURRENT EFFORTS SOUND ESSENTIAL, OND, BUT WHAT MIGHT COME ALONG IN THE FUTURE TO SPEED THIS UP?



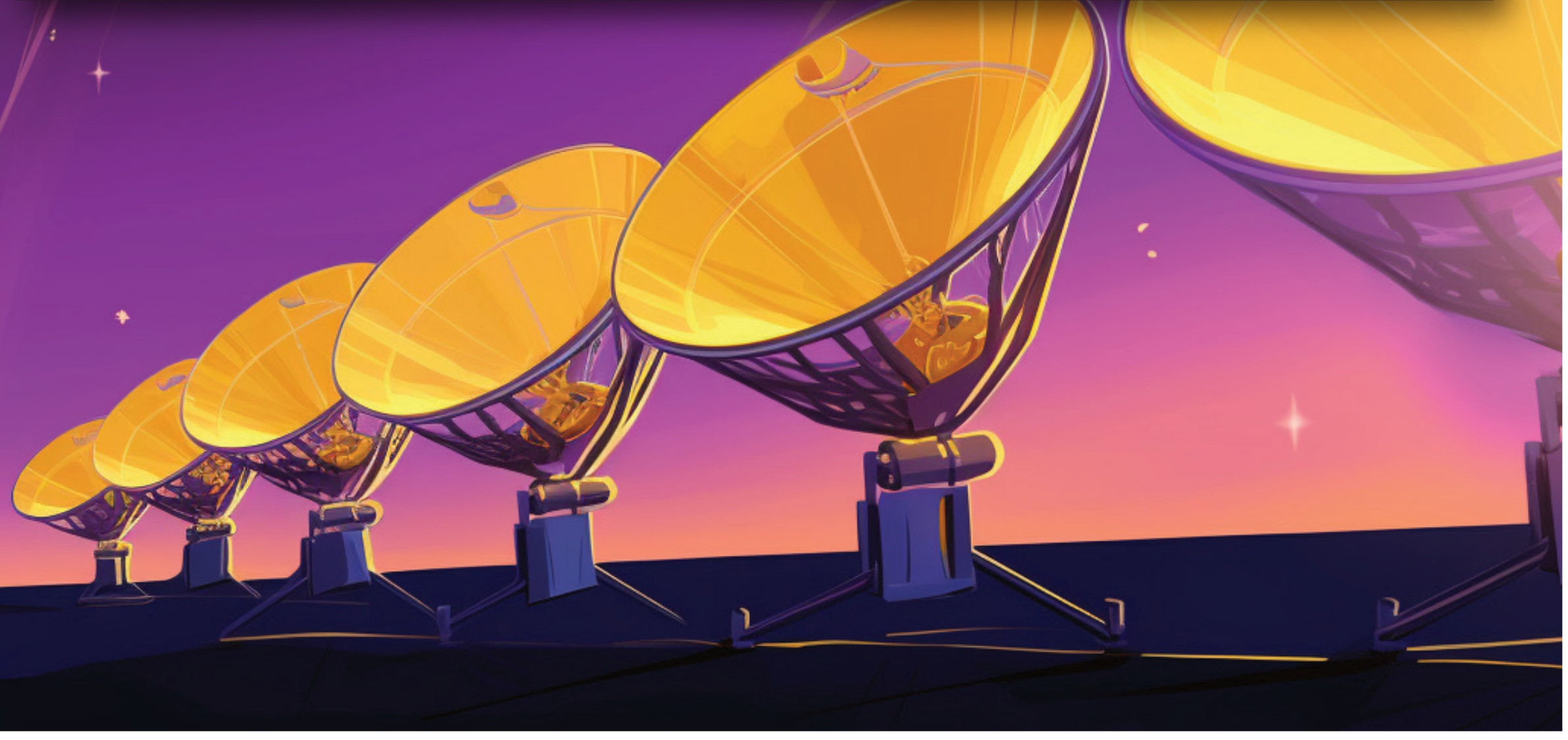
I MENTIONED CARBON CAPTURE BEING USED TO PREVENT BURNED FOSSIL FUELS FROM CONTRIBUTING TO GREENHOUSE GASSES. IN THE FUTURE, MORE ADVANCED TECHNIQUES HOPE TO PULL IT DIRECTLY OUT OF THE AIR AND INTO THE GROUND, WHICH COULD SUBSTANTIALLY HELP OUR FIGHT AGAINST CLIMATE CHANGE.

SOME EVEN HOPE TO CONVERT THIS CAPTURED CO2 INTO USEFUL PRODUCTS LIKE ASPHALT, CONCRETE OR EVEN CONSUMER PRODUCTS.



IMPRESSIVE!

THERE ARE ALSO THEORIES THAT SOLAR RADIATION MANAGEMENT MIGHT REFLECT A SMALL PERCENTAGE OF SUNLIGHT BACK INTO SPACE USING MIRRORS. MANY ARE WORKING ON OTHER IDEAS TO DIRECTLY AND INDIRECTLY COOL THE EARTH.



OTHERS ARE ALSO WORKING ON RESEARCH FOR MORE EFFICIENT AND NATURAL FORMS OF CO2 CAPTURE LIKE PHYTOPLANKTON AND ALGAE.

AND WHO KNOWS WHAT IS POSSIBLE WITH ADVANCES IN AI. IF INTELLIGENCES ARE DEVELOPED FAR SUPERIOR TO HUMANS, THERE MAY BE BETTER SOLUTIONS THAT HAVEN'T EVEN BEEN THOUGHT OF YET.



SOMEONE FEELING PRETTY HIGH ON THEMSELVES TODAY?

IT ISN'T BOASTING IF IT IS THE TRUTH.



YOU DO HAVE A POINT, THOUGH. TECHNOLOGY HAS ADVANCED SO QUICKLY IN THE LAST 50 YEARS, THERE'S NO TELLING WHAT WE MIGHT BE ABLE TO ACCOMPLISH IN THE NEXT 50.



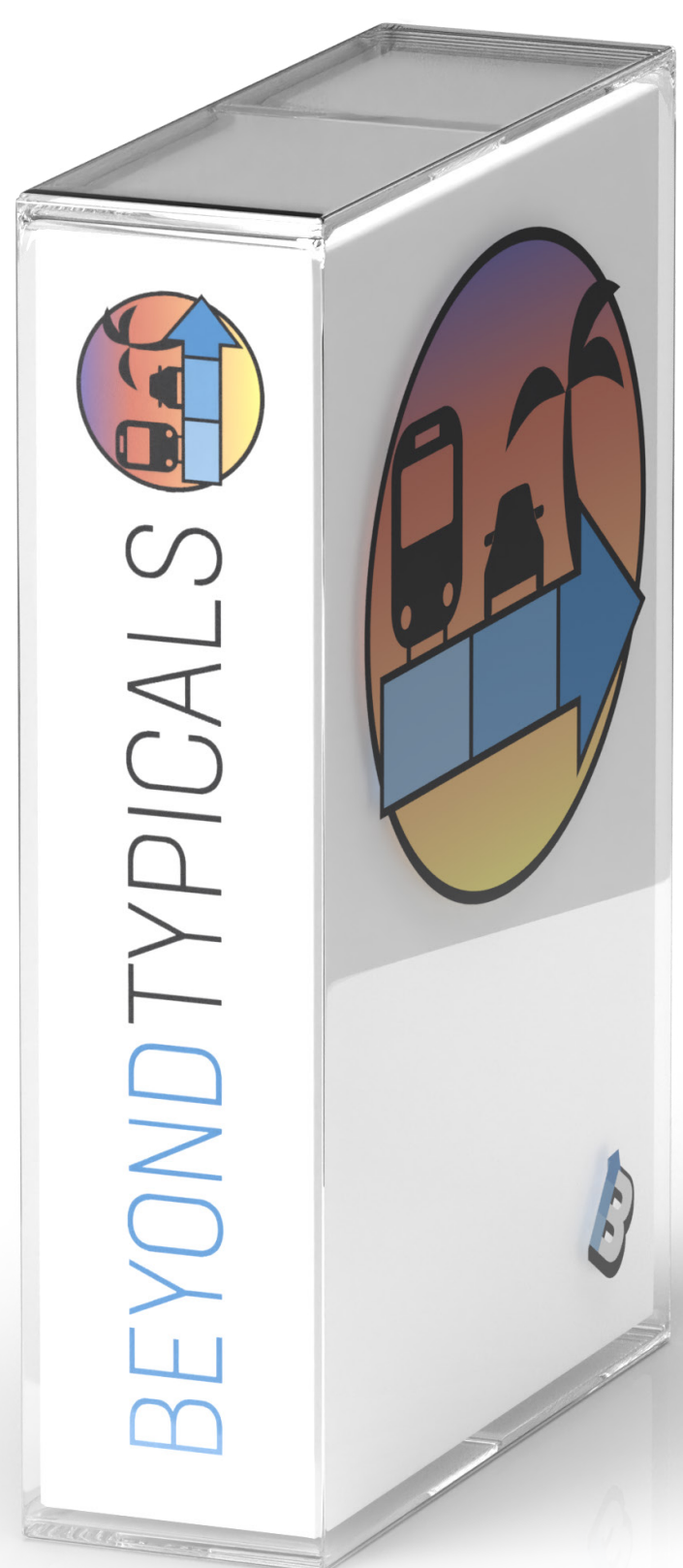
HONESTLY, BEY, THE BEST HOPE MAY BE THE NEXT GENERATION. GIVEN THE RIGHT TOOLS, THE NEXT EINSTEIN MAY SAVE US ALL.

NO KIDDING. HAVE YOU EVER SEEN A 3-YEAR-OLD WITH A TABLET?



HERE'S HOPING THE FUTURE IS IN GOOD (TINY) HANDS.

AND NOT STICKY ONES!



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WRITTEN BY: SAM LYTLE, PE
BRIAN SROUFE, PE
CHAT GPT

LAYOUT AND DESIGN: SAM LYTLE, PE

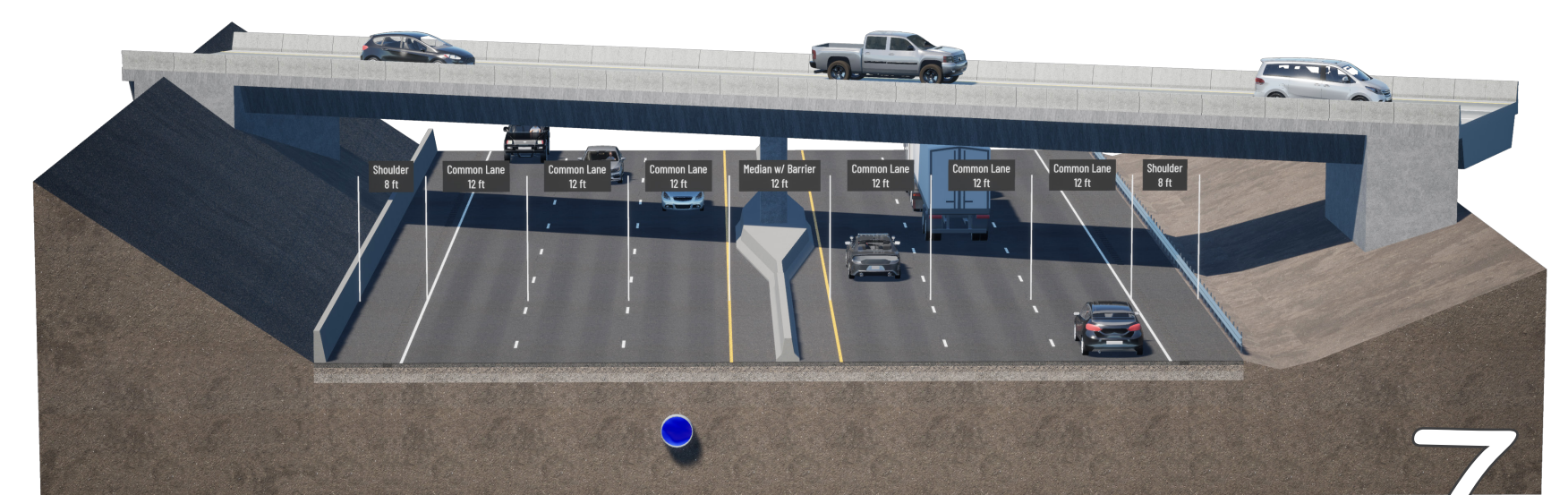
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