



Horizon 2020 Societal challenge 5:
Climate action, environment,
resource efficiency and raw materials



Constraining uncertainty of multi-decadal climate projections

GA number 820829

H2020-LC-CLA-2018-2

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| Deliverable number (relative in WP) | D5.11 |
| Deliverable name: | A stakeholder driven and bespoke communication tool for general audience (e.g. graphic novel) on near-term climate change |
| WP number: | WP5 |
| Delivery due date: | 30/06/23 |
| Actual date of submission: | 03/07/23 |
| Dissemination level: | Public |
| Lead beneficiary: | UNIVLEEDS |
| Responsible scientist / administrator: | Debbie Rosen |
| Contributor(s): | Alex Nauels |
| Internal reviewer: | Uta Kloenne |

1. Changes with respect to the DoA

Minor change of submission date (30/06/2023 to 03/07/2023) for practical reasons, as agreed with the Project Adviser.

2. Dissemination and uptake

This is a public deliverable and will be made available on the CONSTRAIN project website alongside other artworks being produced in autumn 2023, accompanied by a public launch.

3. Short Summary of results (< 250 words)

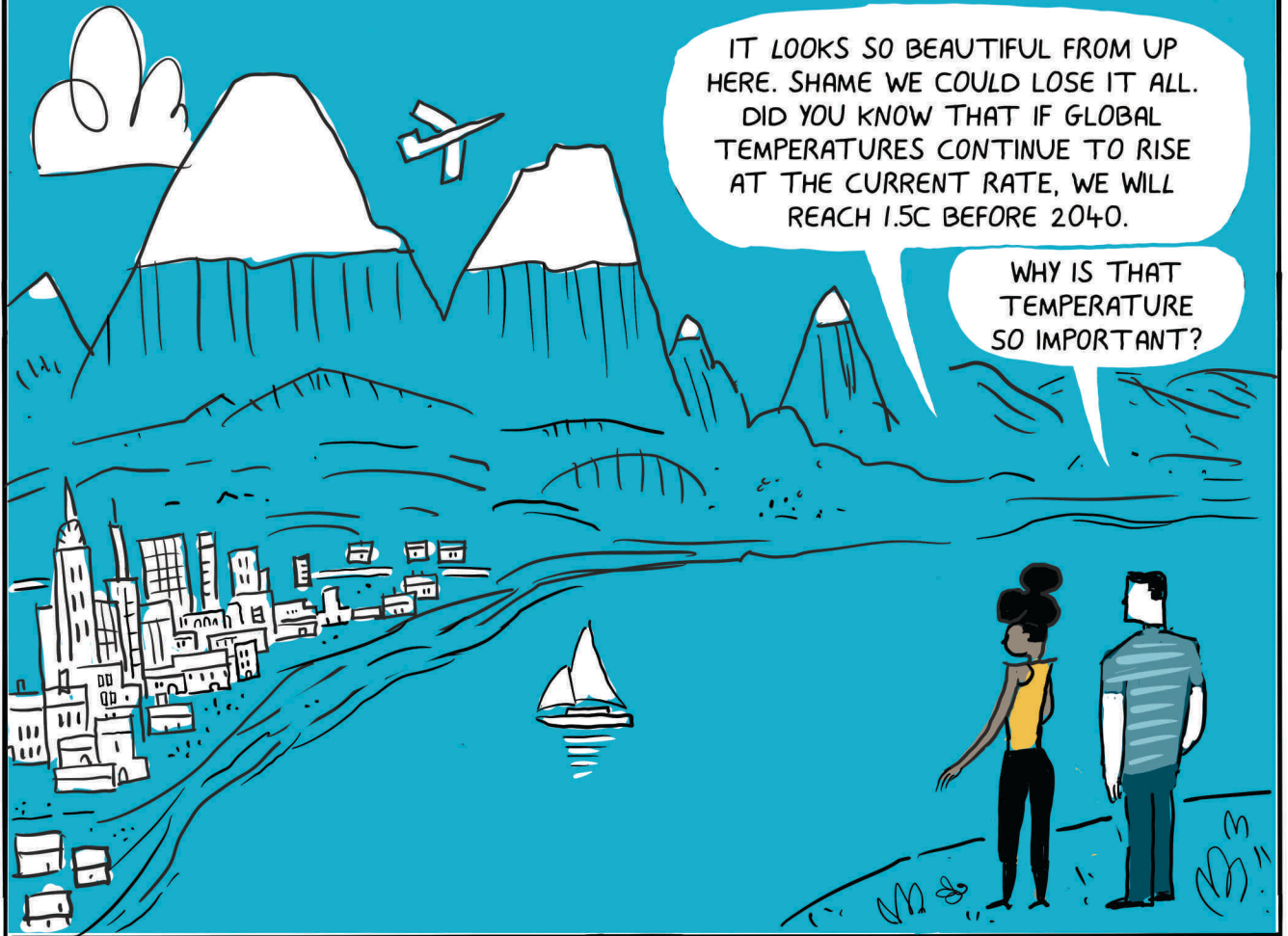
A graphic novel highlighting key messages around near-term climate change and the significance of the 1.5°C warming limit has been developed in collaboration with Darryl Cunningham, an award-winning cartoonist. A further piece of artwork has been completed by the graphic artists War and Peas, and another short graphic novel is still being developed for CONSTRAIN by artist Sayra Begum.

We plan to launch all three pieces simultaneously at the Lakes Comic Art Festival, along with a side event with the artists and various communications including a press release for the comic industry. Presence at one other comic festival is also planned, and a marketing strategy is being put in place to maximise the reach of the final products.

4. Evidence of accomplishment

See: <https://constrain-eu.org/resources/d5-11-a-stakeholder-driven-and-bespoke-communication-tool-for-general-audience-e-g-graphic-novel-on-near-term-climate-change/>

DEGREES OF CHANGE: A CLIMATE COMIC



IT LOOKS SO BEAUTIFUL FROM UP HERE. SHAME WE COULD LOSE IT ALL. DID YOU KNOW THAT IF GLOBAL TEMPERATURES CONTINUE TO RISE AT THE CURRENT RATE, WE WILL REACH 1.5C BEFORE 2040.

WHY IS THAT TEMPERATURE SO IMPORTANT?

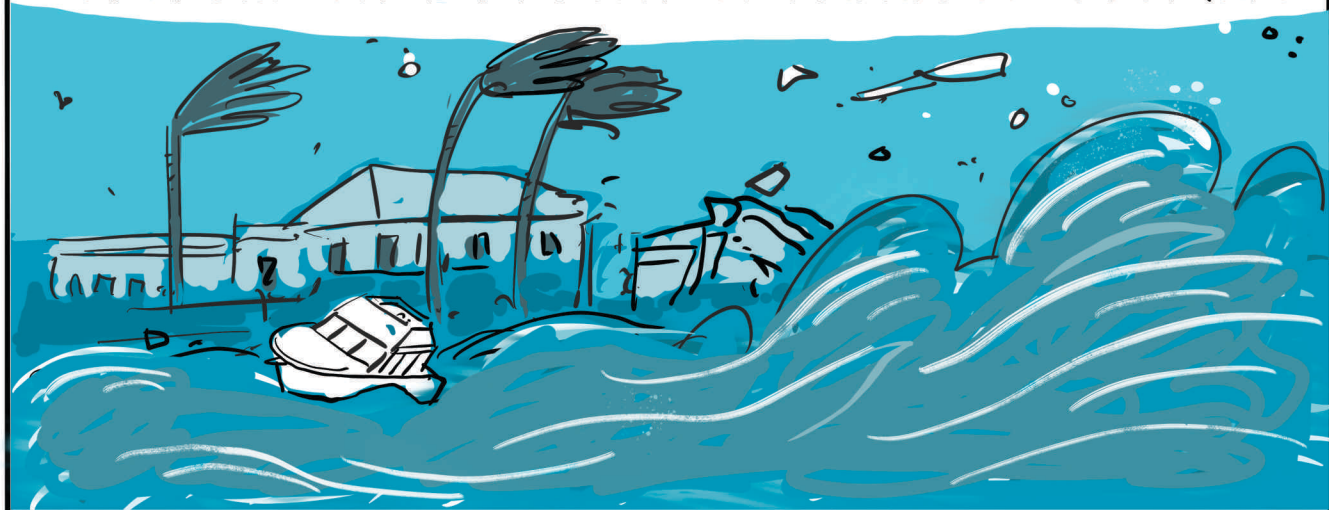
GLOBAL AVERAGE TEMPERATURES HAVE ALREADY RISEN BY 1.2C. CLIMATE CHANGE IS HAPPENING RIGHT NOW.



I DON'T KNOW. THESE TINY RISES IN TEMPERATURE DON'T SEEM LIKE MUCH TO ME. WHAT'S THE BIG DEAL?



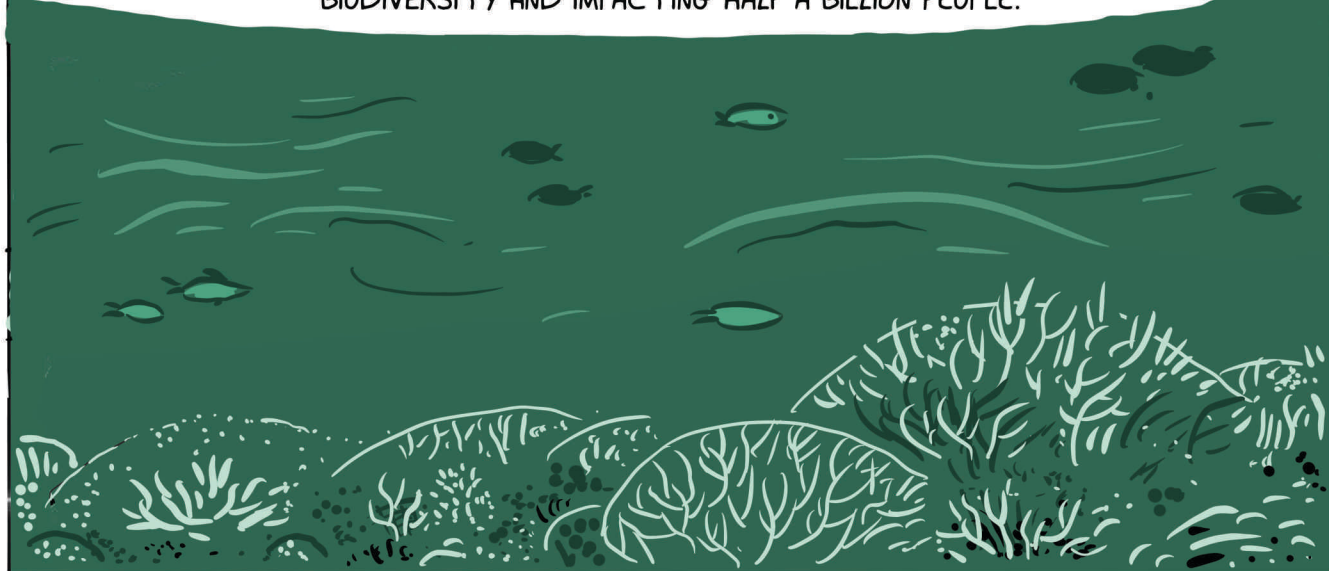
THAT MEANS CLIMATE IMPACTS ARE ALREADY OCCURRING ACROSS THE WORLD. WITH EVERY FRACTION OF A DEGREE THE PLANET WARMS, THESE IMPACTS INCREASE. FLOODING, HURRICANES AND OTHER EXTREME WEATHER EVENTS WILL ALL BECOME MORE FREQUENT.



AND IF GLOBAL TEMPERATURES WARM BY 2C, 61 MILLION MORE PEOPLE IN URBAN AREAS WILL BE EXPOSED TO SEVERE DROUGHT, THAN AT 1.5 DEGREES OF WARMING.



CORAL REEFS COULD DECLINE BY AS MUCH AS 99 PER CENT, SHARPLY DECREASING OCEAN BIODIVERSITY AND IMPACTING HALF A BILLION PEOPLE.



ON A THERMOMETER, A TENTH OF A DEGREE MIGHT SEEM TINY, BARELY NOTICEABLE.



BUT SMALL CHANGES IN AVERAGE TEMPERATURE CAN CREATE BIG CHANGES ACROSS THE GLOBE, INCREASING THE RISKS OF FOOD AND WATER SHORTAGES...



...CONTRIBUTING TO POLITICAL INSTABILITY, RESOURCE SCARCITY AND EXTREME WEATHER, AND FORCING PEOPLE TO MIGRATE.



BUT THE EFFECTS OF TEMPERATURE CHANGE CAN BE MORE SUBTLE THAN THAT.



ALL SORTS OF BIOLOGICAL PROCESSES ARE AFFECTED BY TEMPERATURE, INCLUDING WHEN FRUITS FORM, INSECTS HATCH, AND FISH SPAWN.



OH, I SEE WHAT YOU'RE SAYING. IT'S LIKE THE TREES HERE. CATERPILLARS FEED ON THOSE LEAVES, AND BIRDS IN TURN FEED ON THOSE CATERPILLARS.



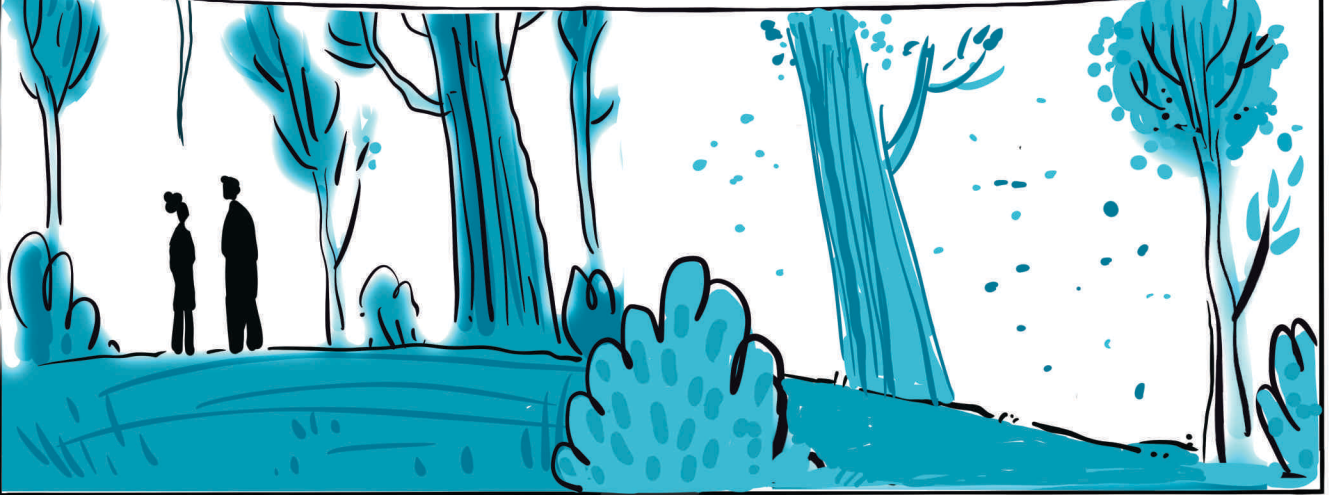
WHAT IF TREES BEGAN OPENING THEIR LEAVES BEFORE CATERPILLARS HATCH, AND BECAUSE OF THIS THE CATERPILLARS MISS OUT ON TASTY NEW LEAVES?



THERE WOULD BE FEW CATERPILLARS FOR THE BIRDS TO EAT WHEN THEY RETURNED FROM MIGRATION, AND THIS IN TURN WOULD HAVE CONSEQUENCES THROUGHOUT THE SYSTEM.



YES, AND IT ONLY TAKES THE SMALLEST SHIFT IN TEMPERATURE TO PRODUCE SUCH EFFECTS. 1.5C WASN'T CHOSEN LIGHTLY AS A LIMIT TO GLOBAL TEMPERATURE. THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) REPORT HIGHLIGHTING 1.5C WAS PREPARED BY A GROUP OF NEARLY 250 CLIMATE SCIENTISTS FROM MORE THAN 40 COUNTRIES.



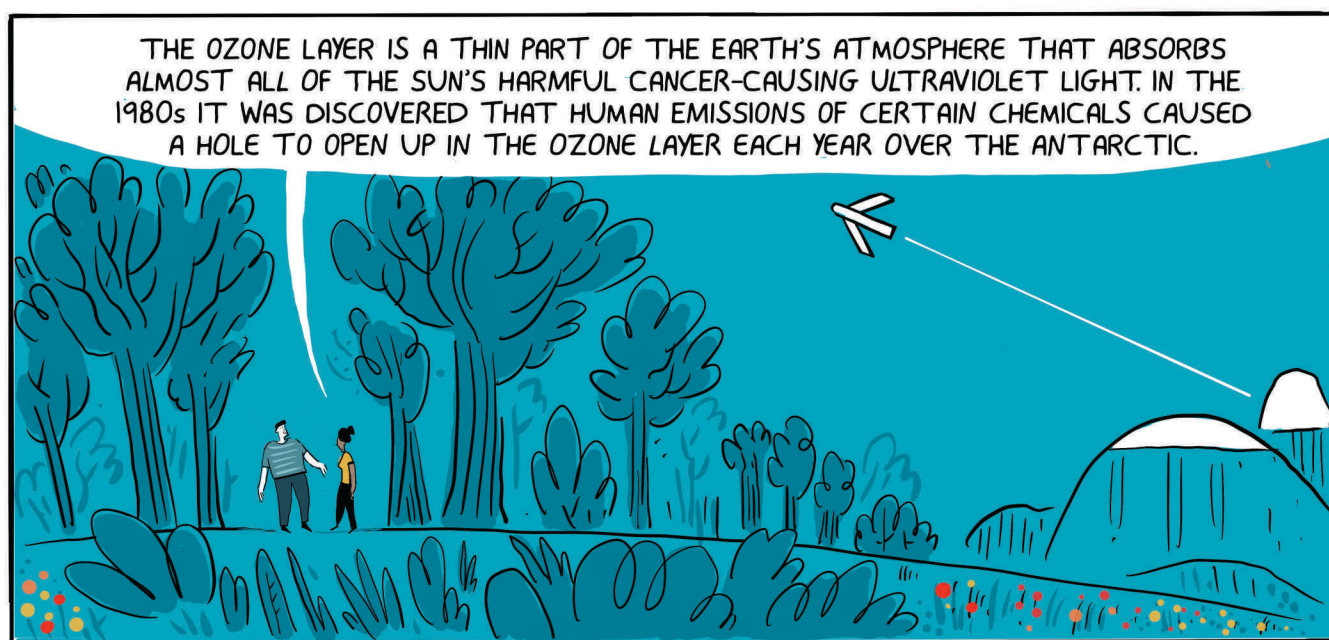
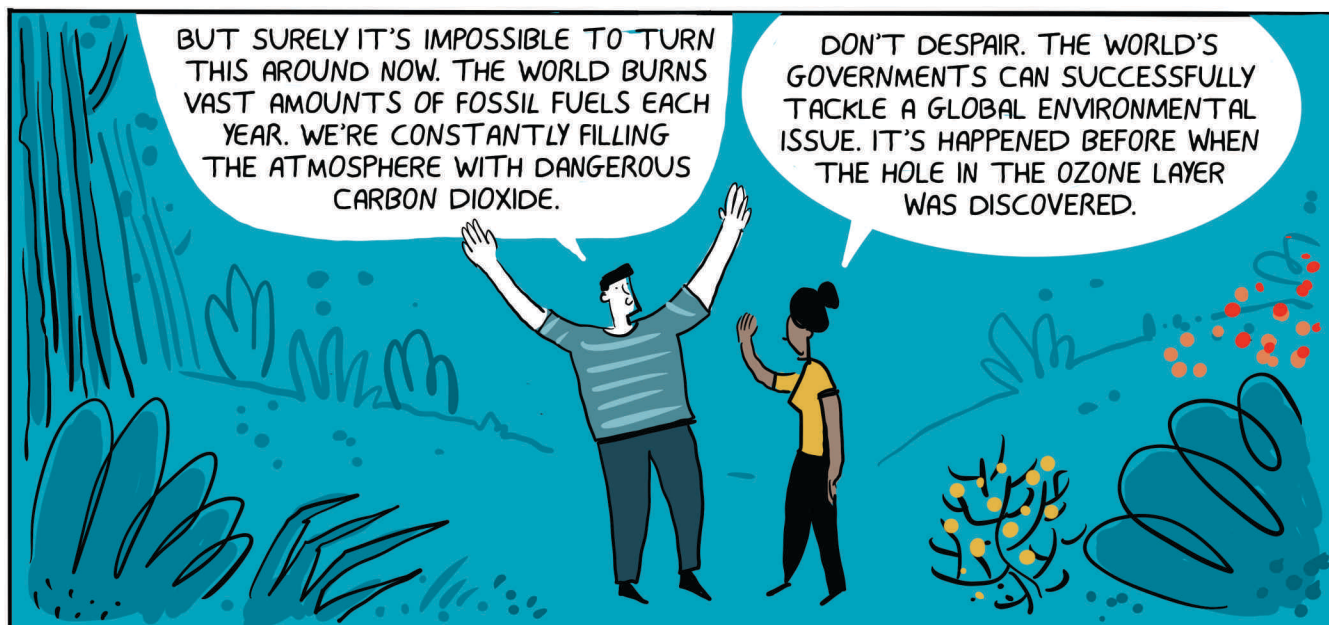
WHICH WAS THEN REVIEWED BY A SEPARATE GROUP OF ANOTHER 400 SCIENTISTS.

AND WHAT IS THIS INTERGOVERNMENTAL PANEL?



THE IPCC IS THE UNITED NATIONS BODY FOR ASSESSING THE SCIENCE RELATED TO CLIMATE CHANGE.





LAST YEAR A MAJOR MILESTONE WAS PASSED WHEN WIND AND SOLAR POWER PRODUCED MORE OF THE EUROPEAN UNION'S ELECTRICITY THAN GAS FOR THE FIRST TIME.

RENEWABLE ENERGIES WERE RESPONSIBLE FOR A RECORD FIFTH OF THE BLOC'S ELECTRICITY.



THE INTERNATIONAL ENERGY AGENCY (IEA) HAS SAID THAT RENEWABLES ARE SET TO ACCOUNT FOR OVER 90 PERCENT OF GLOBAL ELECTRICITY CAPACITY EXPANSION IN THE NEXT FIVE YEARS...

...AND THAT RENEWABLES WILL BECOME THE LARGEST SOURCE OF GLOBAL ELECTRICITY GENERATION BY EARLY 2025, SURPASSING COAL.



IN EUROPE, THE IEA ESTIMATE THAT THE CONTINENT'S RENEWABLE ELECTRICITY EXPANSION WILL DOUBLE OVER THE 2022-2027 PERIOD.



BUT WHAT ABOUT JOBS? ISN'T ALL THIS CHANGE KILLING TRADITIONAL JOBS.



JOBS ARE BEING CREATED. WORLDWIDE RENEWABLE ENERGY EMPLOYMENT REACHED 12.7 MILLION LAST YEAR, A JUMP OF 700,000 NEW JOBS IN ONE YEAR.



SOLAR ENERGY IS THE FASTEST-GROWING SECTOR. IN 2021 IT PROVIDED 4.3 MILLION JOBS, MORE THAN A THIRD OF THE CURRENT GLOBAL RENEWABLE WORKFORCE.



AND THIS IS ALL HELPING THE WORLD ACHIEVE, WHAT IS IT CALLED - NET ZERO?



WE NEED TO REDUCE EMISSIONS OF GREENHOUSE GASES AS MUCH AS WE CAN, AND BALANCE THE REST WITH WAYS OF TAKING UP CARBON DIOXIDE FROM THE ATMOSPHERE.



THAT'S WHAT WE MEAN BY NET ZERO.



THE NUMBER OF THE WORLD'S NATIONS AND CITIES THAT ARE INTRODUCING NET ZERO TARGETS IS INCREASING.



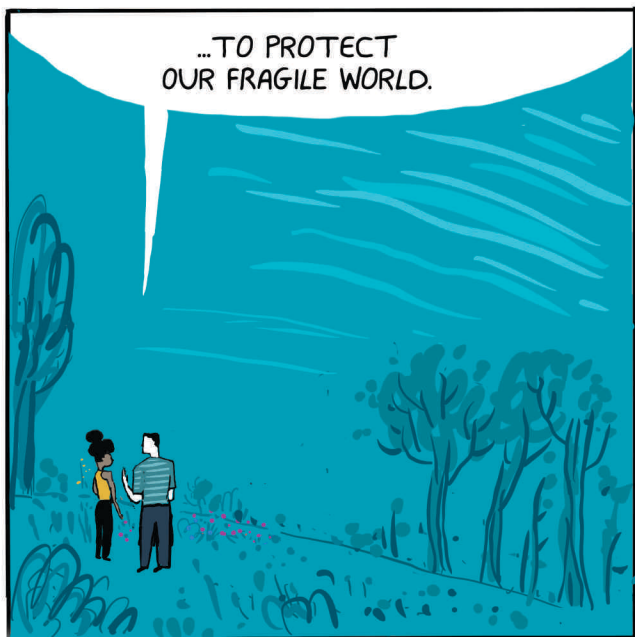
AND THE NUMBER OF LARGE CITIES
WITH NET ZERO TARGETS HAS
DOUBLED - FROM 115 TO 235 -
BUT MORE THAN 900 LARGE CITIES
STILL LACK A NET ZERO TARGET.



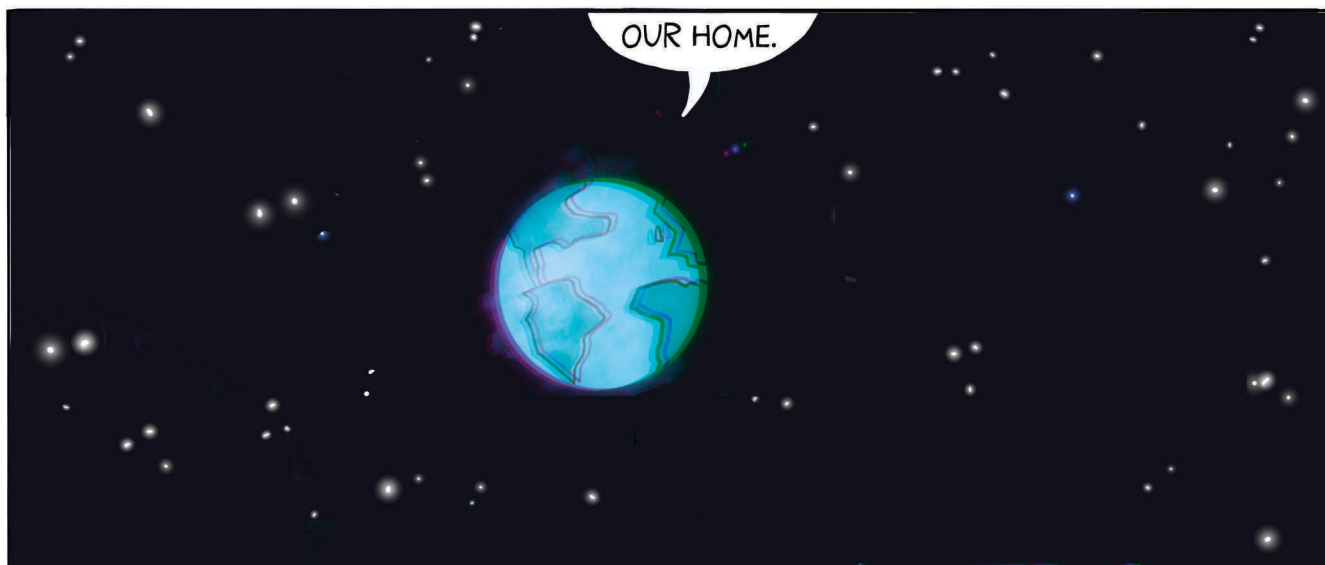
SO THERE'S STILL
MUCH TO BE DONE...



...TO PROTECT
OUR FRAGILE WORLD.



OUR HOME.



CONSTRAIN

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