



Climate Change - Past, Present and a Future TBD

Dave Hunter

dfhunter@gmail.com

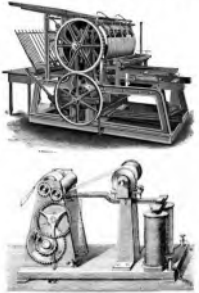


A copy of this presentation is available

THE PAST

FIRST INDUSTRIAL REVOLUTION

1
COMMUNICATION



2
TRANSPORTATION



3
POWER SOURCE



SECOND INDUSTRIAL REVOLUTION

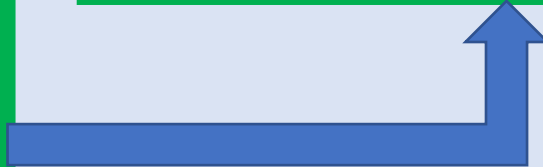
1
COMMUNICATION



2
TRANSPORTATION



3
POWER SOURCE



THIRD INDUSTRIAL REVOLUTION

1
COMMUNICATION



2
TRANSPORTATION



3
POWER SOURCE





Discovered the CO₂ Greenhouse Gas Effect In 1857

"Circumstances Affecting the Heat of the Sun's rays"



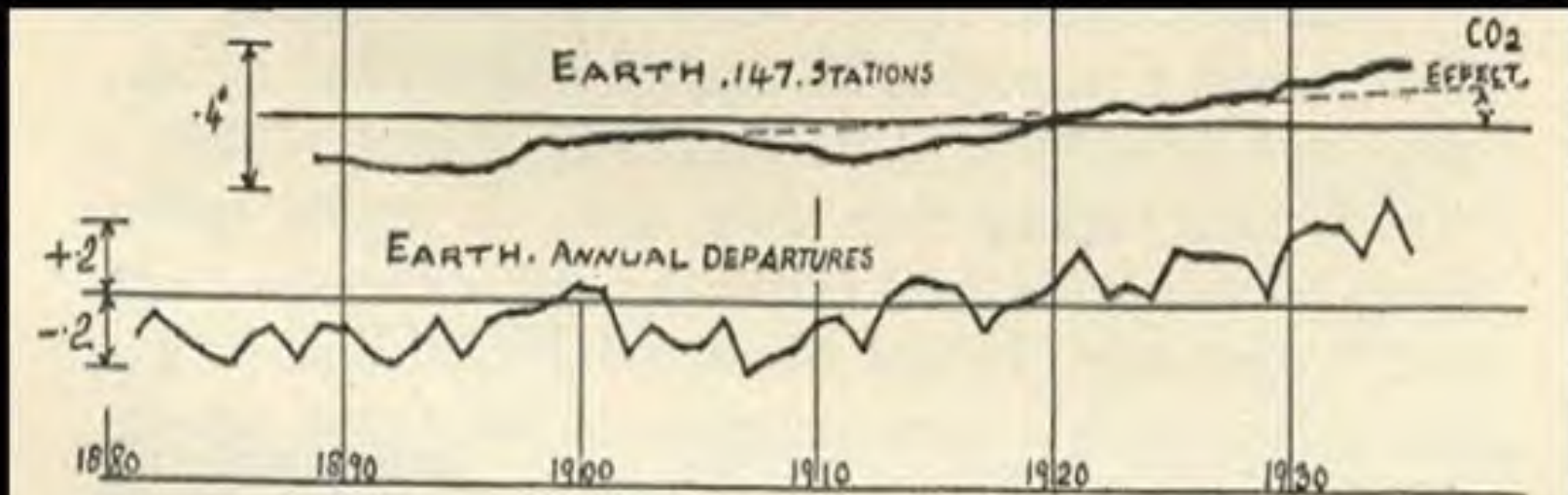


FIG. 4.—Temperature variations of the zones and of the earth. Ten-year moving departures from the mean, 1901-1930, °C.

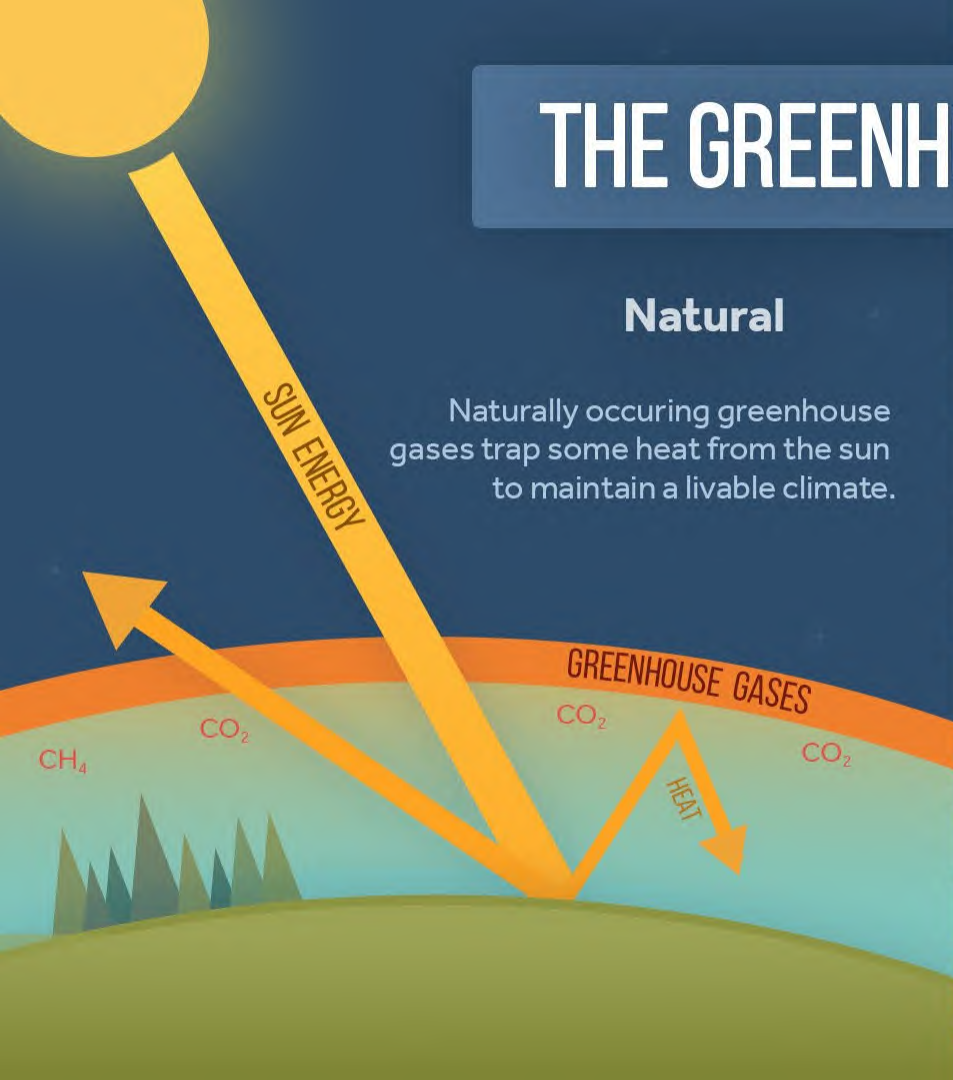


Guy Callendar first discovered
the world was warming in 1938

THE GREENHOUSE EFFECT

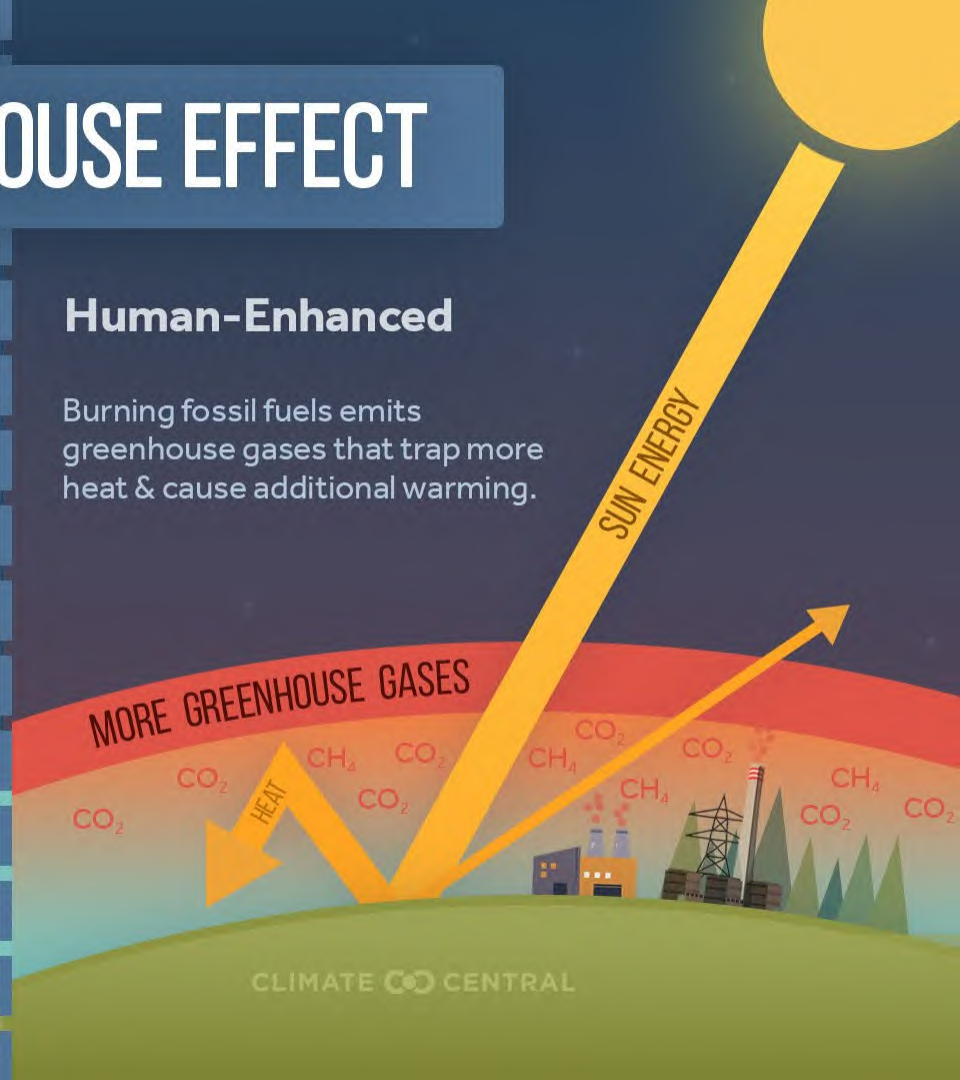
Natural

Naturally occurring greenhouse gases trap some heat from the sun to maintain a livable climate.



Human-Enhanced

Burning fossil fuels emits greenhouse gases that trap more heat & cause additional warming.



SOME RECENT HISTORY



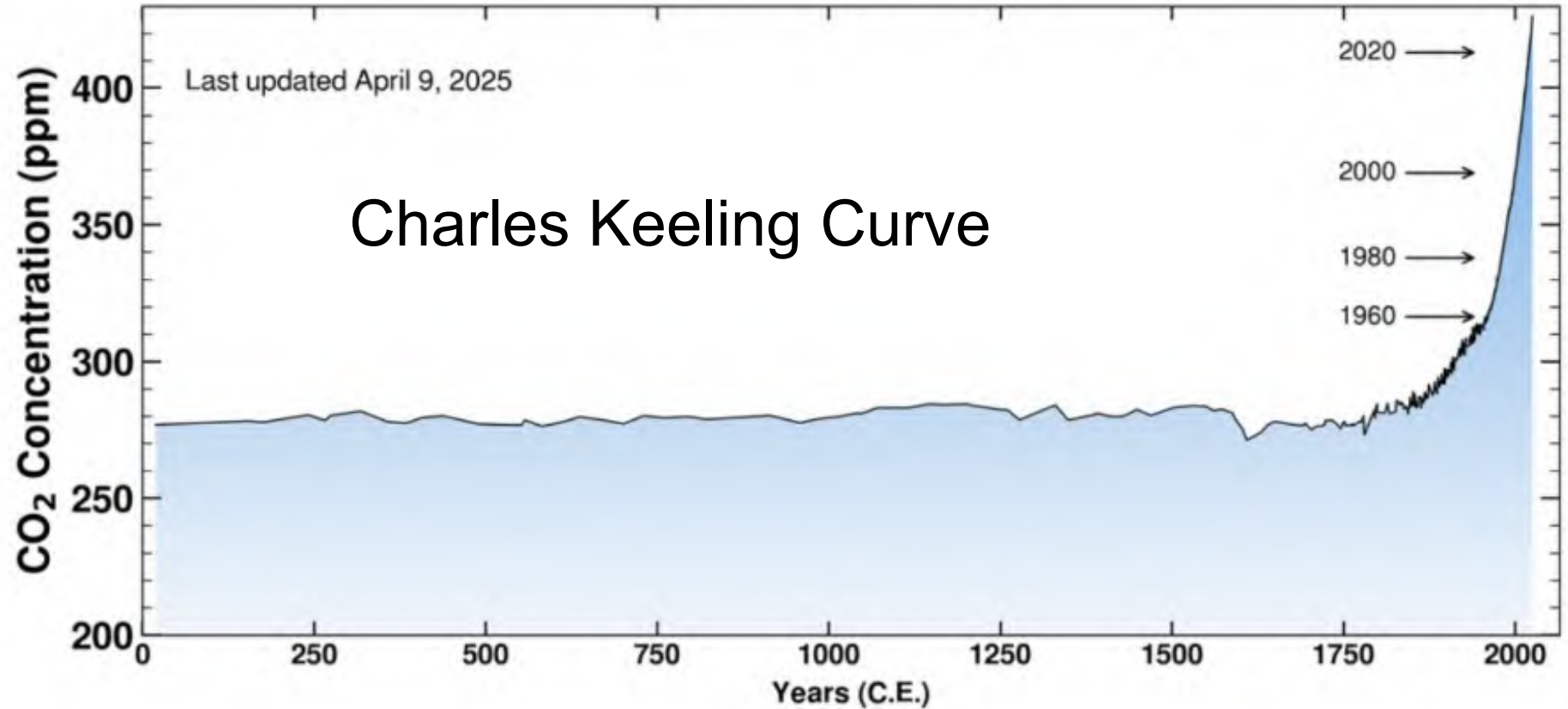
IN 1954, BELL LABORATORIES BUILT THE FIRST EVER SILICON SOLAR CELL.



1997 - 1st Hybrid Car

THE PRESENT

*Latest CO₂ reading: 427.76 ppm



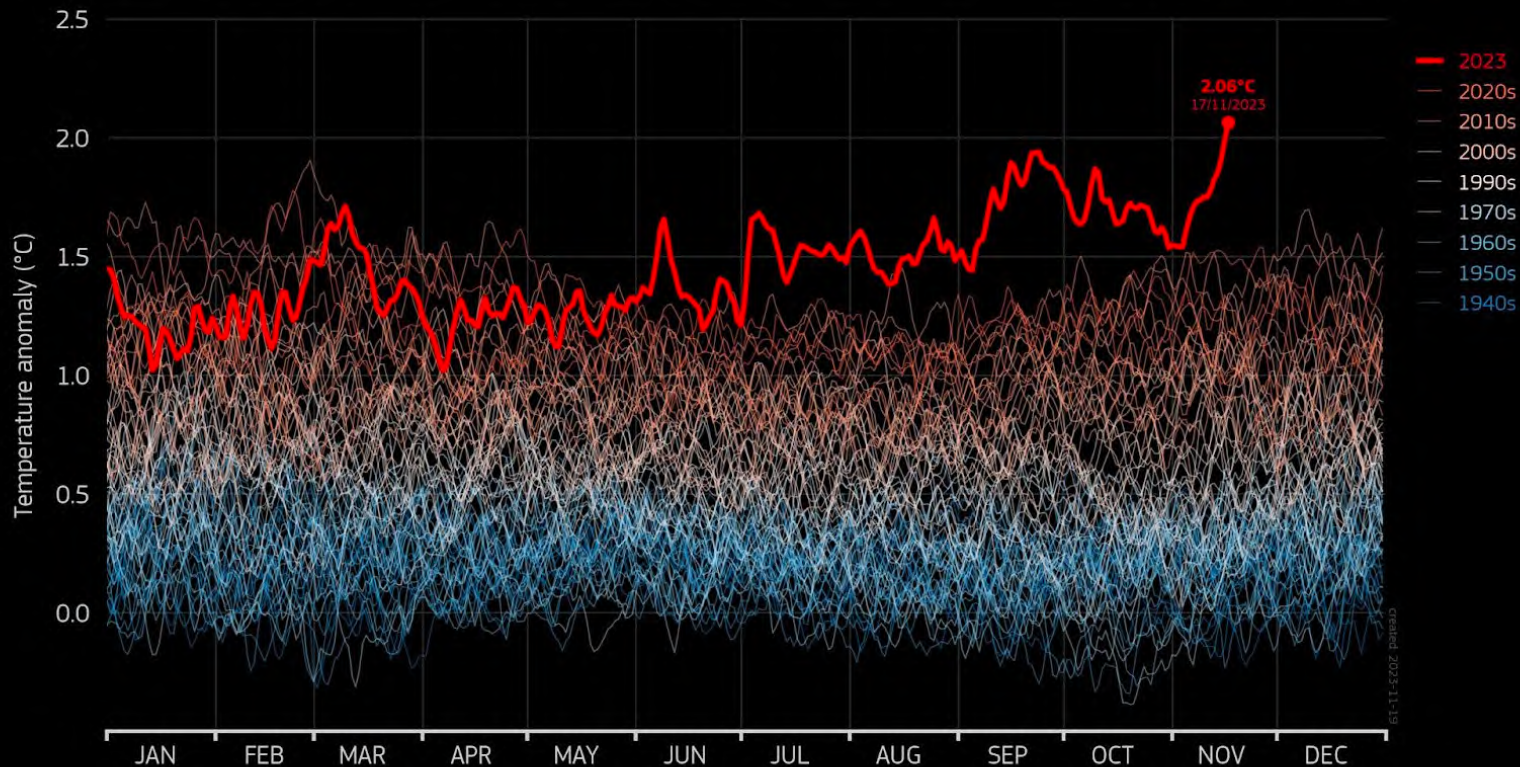
DAILY GLOBAL SURFACE AIR TEMPERATURE ANOMALY

Data: ERA5 1940–2023 • Reference period: 1850–1900 • Credit: C3S/ECMWF



Climate
Change Service

climate.copernicus.eu



PROGRAMME OF
THE EUROPEAN UNION



IMPLEMENTED BY
ECMWF

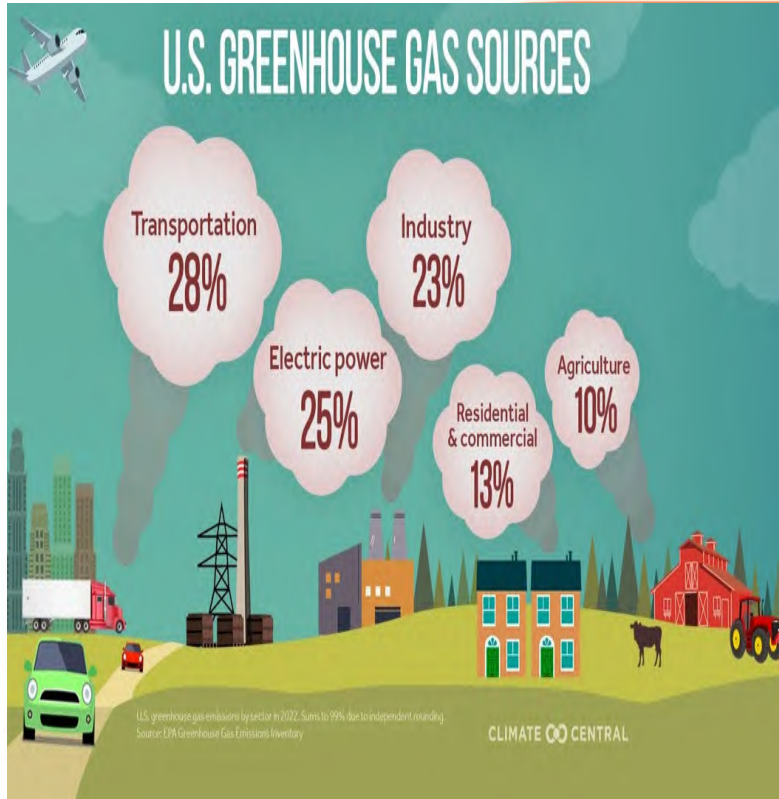
So what do we need to do?

Figure 1.4 — Reaching “Drawdown”



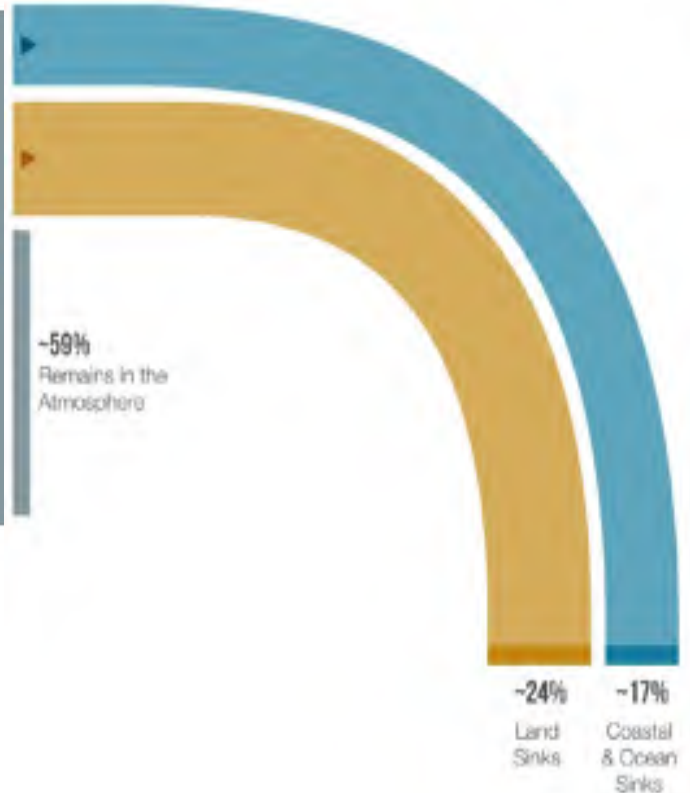
How Are We Going to Reduce the Level of CO2 in the Atmosphere?

Reduce Emission Sources



Increase Natural Sinks

THE ATMOSPHERE



A FUTURE
TBD

IT DRIES THE WASHING USING THE VERY
LATEST TECHNOLOGY - A COMBINATION
OF SOLAR AND WIND POWER

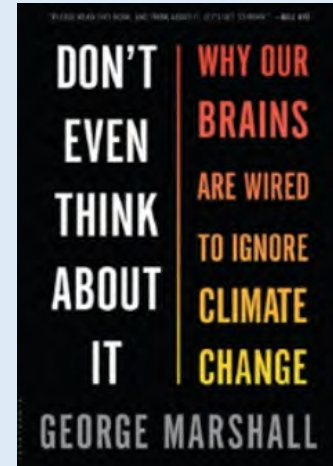


The Situation Today

NASA Analysis Shows Unexpected Amount of Sea Level Rise in 2024

Global sea level rose faster than expected.

The world's oceans are now **30% more acidic**, on average, than they were before the industrial revolution due to **CO₂ from burning fossil fuels**.



CLIMATE ACTION

Why female leadership is crucial to tackle climate change and other crises

Published Nov 23, 2021 - Updated Sep 10, 2024



Competencies	Ratings	
	WOMEN	MEN
— WHERE DIFFERENCE IS STATISTICALLY SIGNIFICANT		
• Takes initiative	60 <div></div>	50 <div></div>
• Learning agility	59 <div></div>	50 <div></div>
• Inspires and motivates others	59 <div></div>	52 <div></div>
• Develops others	58 <div></div>	49 <div></div>
• Builds relationships	58 <div></div>	51 <div></div>
• Displays high integrity and honesty	57 <div></div>	49 <div></div>
• Communicates powerfully and prolifically	57 <div></div>	52 <div></div>
• Collaboration and teamwork	56 <div></div>	50 <div></div>
• Champions change	56 <div></div>	51 <div></div>
• Makes decisions	56 <div></div>	49 <div></div>
Innovates	56 <div></div>	53 <div></div>
Solves problems and analyzes issues	56 <div></div>	53 <div></div>
Customer and external focus	56 <div></div>	54 <div></div>
• Drives for results	55 <div></div>	48 <div></div>
• Values diversity	55 <div></div>	45 <div></div>
• Establishes stretch goals	55 <div></div>	50 <div></div>
Develops strategic perspective	55 <div></div>	54 <div></div>
Technical or professional expertise	53 <div></div>	55 <div></div>
Takes risks	52 <div></div>	51 <div></div>



1962 – Rachel Carson,
Silent Spring book that
led to creation of the USA
Environmental Protection
Act & Agency (EPA)



1992 – Severn Suzuki,
UN Earth Summit Speech
(Rio de Janeiro)



Katharine Hayhoe (Canadian)
2011 - Texas Tech Climate Scientist
2014 - TIME Top 100 Influential People
2017 - FORTUNE Top 50 World Greatest
Leaders
2018 – TED Talk “How to Talk About CC”



2018 – Greta Thunberg,
Fridays-For-the-Future and
“No Planet B” (Sweden)



2018 – Kirsten Marcia,
Founder & CEO of DEEP,
1st Commercial Grade
Geothermal Service in
Canada (Regina)



2020 – Laura Lynch,
CBC “What on Earth” show &
host for environment related
events (Vanc) & Recent
Writers Festival



**2019 – Jennifer Clark, Chief
Scientist, Cascadia Seaweed
(Sidney, BC)**



2024 – Sarah Goodman,
CEO Centre for Clean
Energy & innovation
(Vancouver)



2025 – Lilly Yang Liu
Youngest Top 25 Canada Women
of Influence Award, Grade 11
Mulgrave School
(West Vancouver)



2025 – Courtenay Howard,
Chair, Global Climate & Health
Alliance, (Oxford, England)
2017 -- President CAPE
(Yellowknife)

Doctors demand ban on fossil fuel ads to save lives



CAPE
Canadian Association
of Physicians
for the Environment

Association canadienne
des médecins
pour l'environnement
ACME



Some Reasons for Optimism

**"I'm going to grow
a hundred
years old!"**

...and possibly she may—for the amazing strides of medical science have added years to life expectancy

• It's a fact—a warm, wonderful fact—that this five-year-old child, or your own child, has a life expectancy almost a whole decade longer than was her mother's, and a good 18 to 20 years longer than that of her grandmother. Not only

the expectation of a longer life, but of a life by far healthier.

Thank medical science for that. Thank your doctor and thousands like him...toiling ceaselessly...that you and yours may enjoy a longer, better life.



According to a recent Nationwide survey:

More Doctors smoke Camels
than any other cigarette!

NOT ONE but three outstanding independent research organizations conducted this survey. And they asked not just a few thousand, but 113,597, doctors from coast to coast to name the cigarette they themselves preferred to smoke.

Answers came in by the thousands...from general physicians, diagnosticians, surgeons, nose and throat specialists too. The most-named brand was Camel. If you are not now smoking Camels, try them. Let your "T-Zone" tell you (see right).

© L. J. Hornsby Tobacco Co., Winston-Salem, N. C.

CAMELS Costlier
Tobaccos



THE "T-ZONE" TEST WILL TELL YOU



The "T-Zone"—T for taste and T for throat—is your own proving ground for any cigarette. Only your taste and throat can decide which cigarette tastes best to you...how it affects your throat.

**NO
SMOKING**

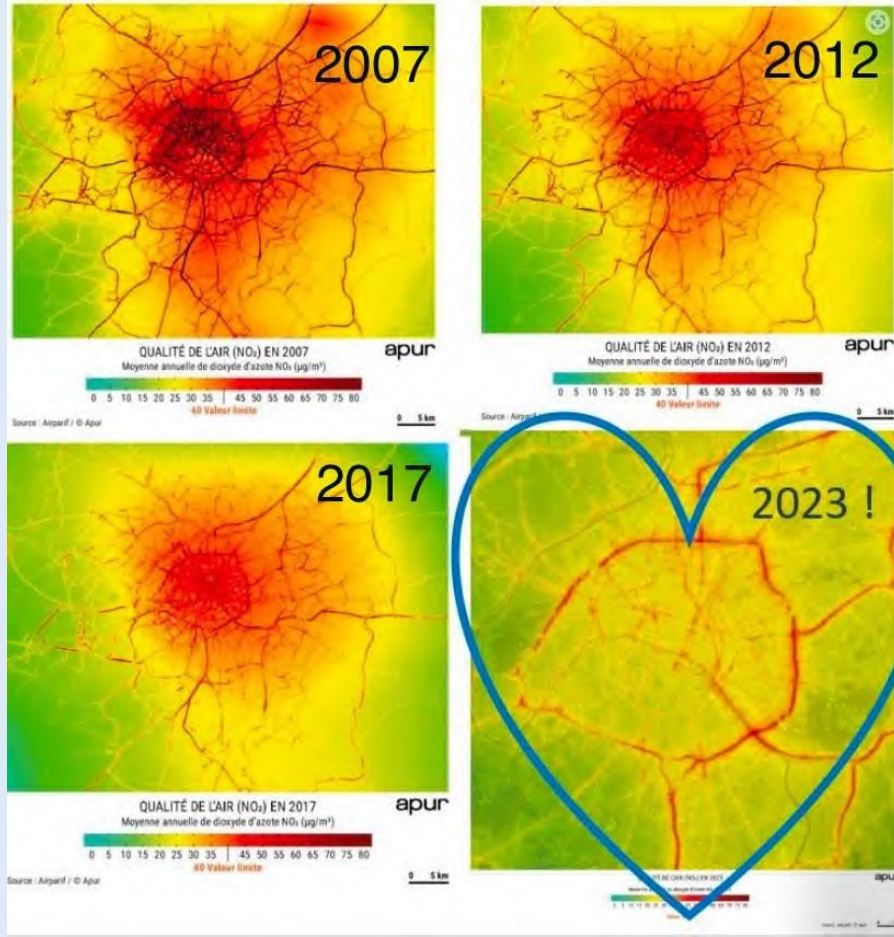


**WITHIN 25
FEET OF ALL
ENTRANCES**

SW-8144-NSNR

Some Reasons for Optimism

PARIS



IT ALWAYS
SEEMS
IMPOSSIBLE
UNTIL
IT'S DONE.



-NELSON MANDELA

A Future TBD



Clear Glass Solar Panels



Vertical Greenhouses

A Future TBD



A Future TBD

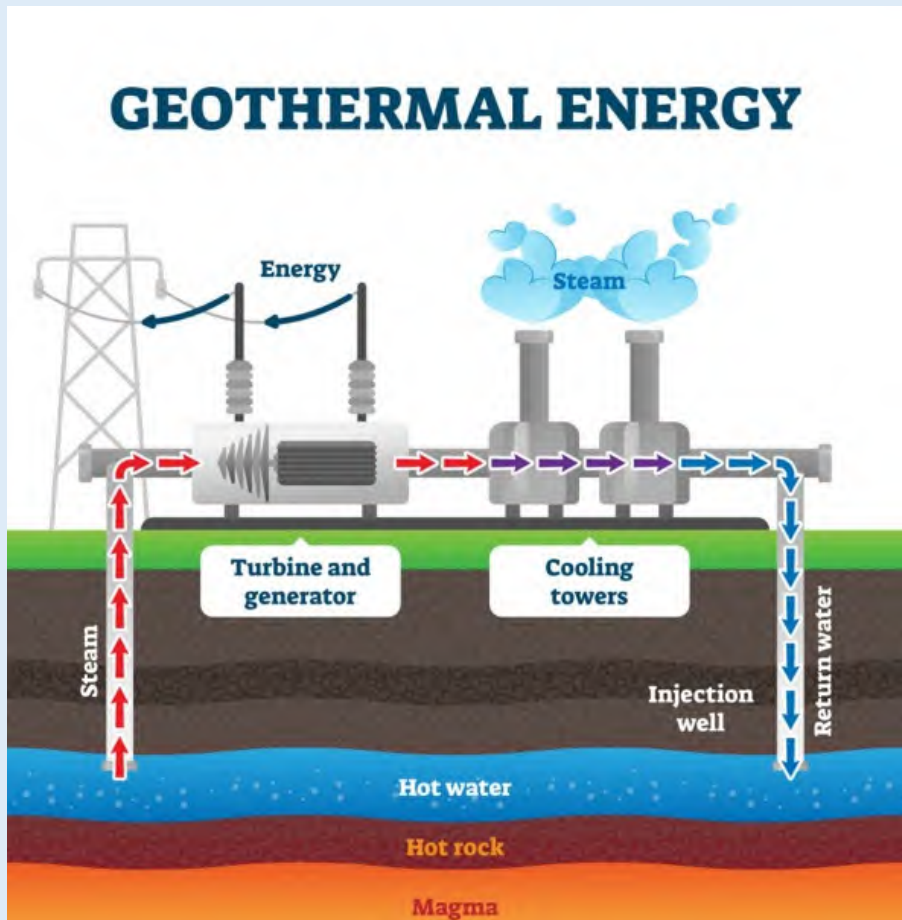


This Dutch technology aims to remove 90% of the plastic floating in the “Great Pacific Ocean Garbage Patch” by 2040



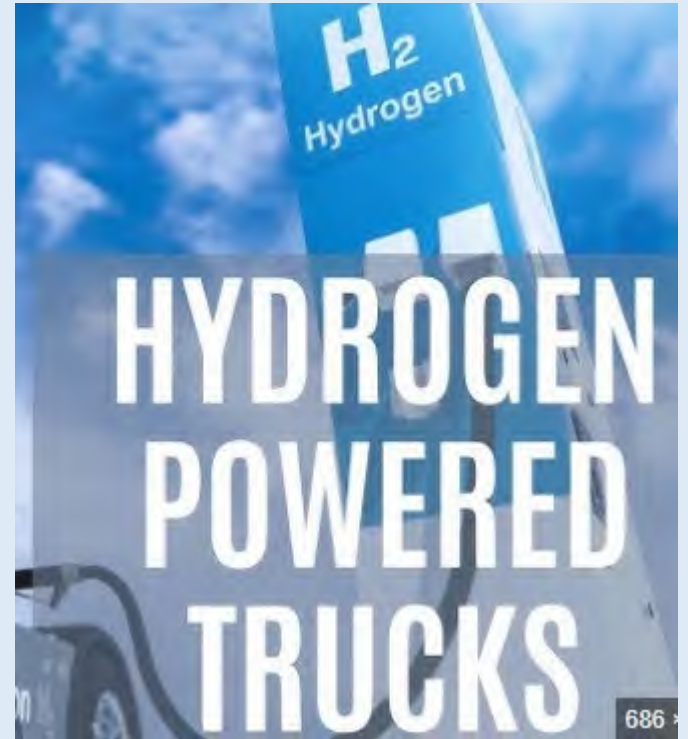
Women4Climate Mentorship Program

A Future TBD

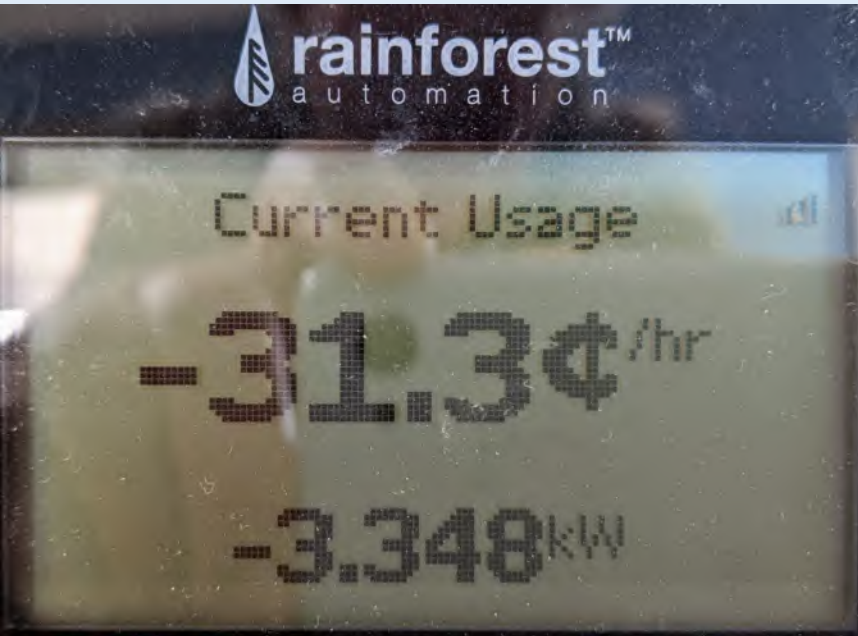


Dr Rebecca Pearce
Geophysicist, Lead Scientist &
Fellow at the Cascade Institute
TEDx Speaker at Royal Roads on May 2, 2025

A Future TBD

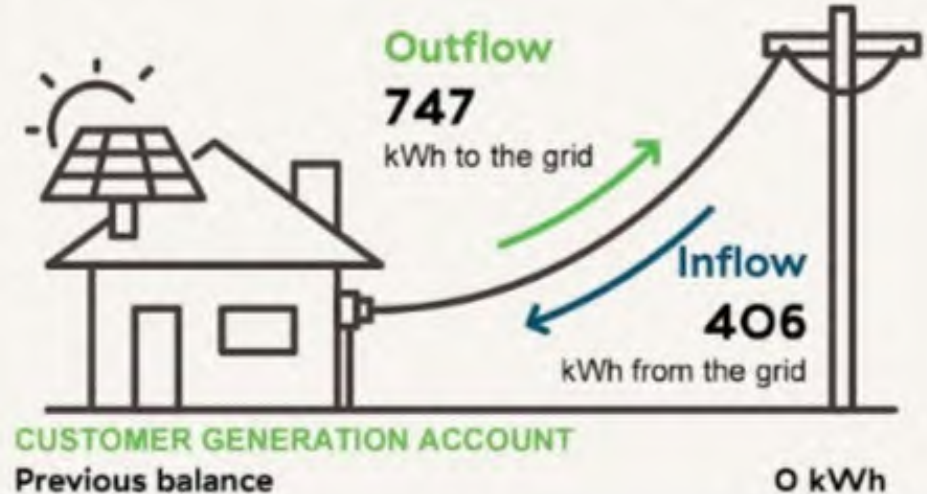


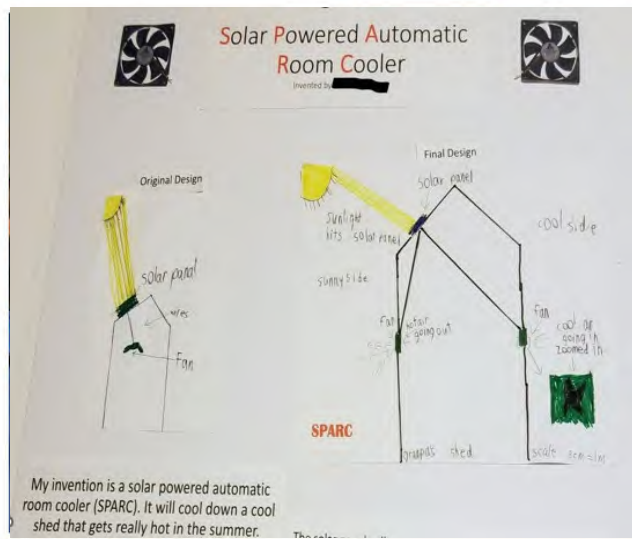
A Future TBD



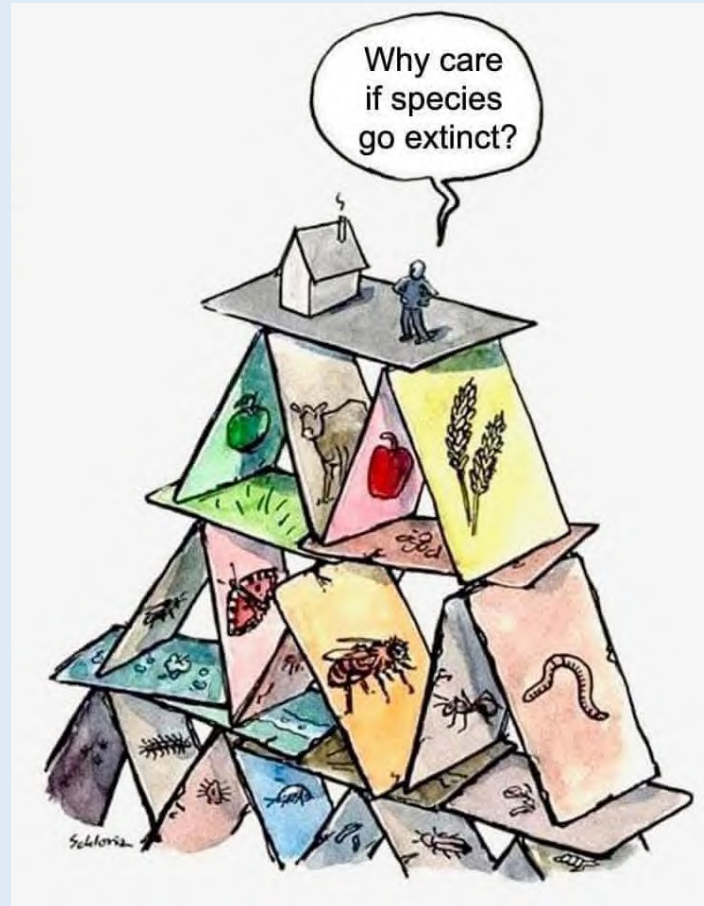
Your net metering this period

As a net metering customer, your smart meter runs in two directions: inflow (electricity from the grid) and outflow (electricity to the grid.) Here is how your net electricity usage is determined:





A Future TBD




A Future TBD



OLD GROWTH
CONSERVANCY SOCIETY

West Vancouver

 Search

email: ogcs.wv@gmail.com

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[HUMAN IMPACTS](#)

[TOURS – 2025](#)

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[ABOUT US](#)



“In wildness,
is the preservation of the world.”
Henry David Thoreau

[West Vancouver Old Growth Conservancy Society](#)

[Old Growth Facts](#)

A vertical photograph of a dense evergreen forest. The foreground is filled with sharp, green coniferous trees. The middle ground shows more trees, some of which are partially obscured by a thick layer of white mist or fog. The background is a soft, hazy expanse of more trees, creating a sense of depth and atmosphere. The lighting is diffused, typical of a foggy day.

There's no difference between a pessimist who says, "Oh, it's hopeless, so don't bother doing anything," and an optimist who says, "Don't bother doing anything, it's going to turn out fine anyway." Either way, nothing happens.

-YVON CHOUINARD,
Founder of Patagonia

There are several ways to stay informed.....

Radio → CBC Laura Lynch Sundays at 11:00am (& Podcasts)

Internet →



Films →



Books →



Senior Centres →





CLIMATE SUMMIT

WHAT IF IT'S
A BIG HOAX AND
WE CREATE A BETTER
WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.





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ADDITIONAL SLIDES

NOT USED IN THIS PRESENTATION

Meet Lily YangLiu, Top 25 Women of Influence+ Award Recipient

Lily's commitment to climate advocacy is reshaping the landscape for young people, with initiatives like her climate literacy workshops, social media platform, and youth leadership roles, all driving impactful change in both local and global conversations on climate action.

March 4, 2025

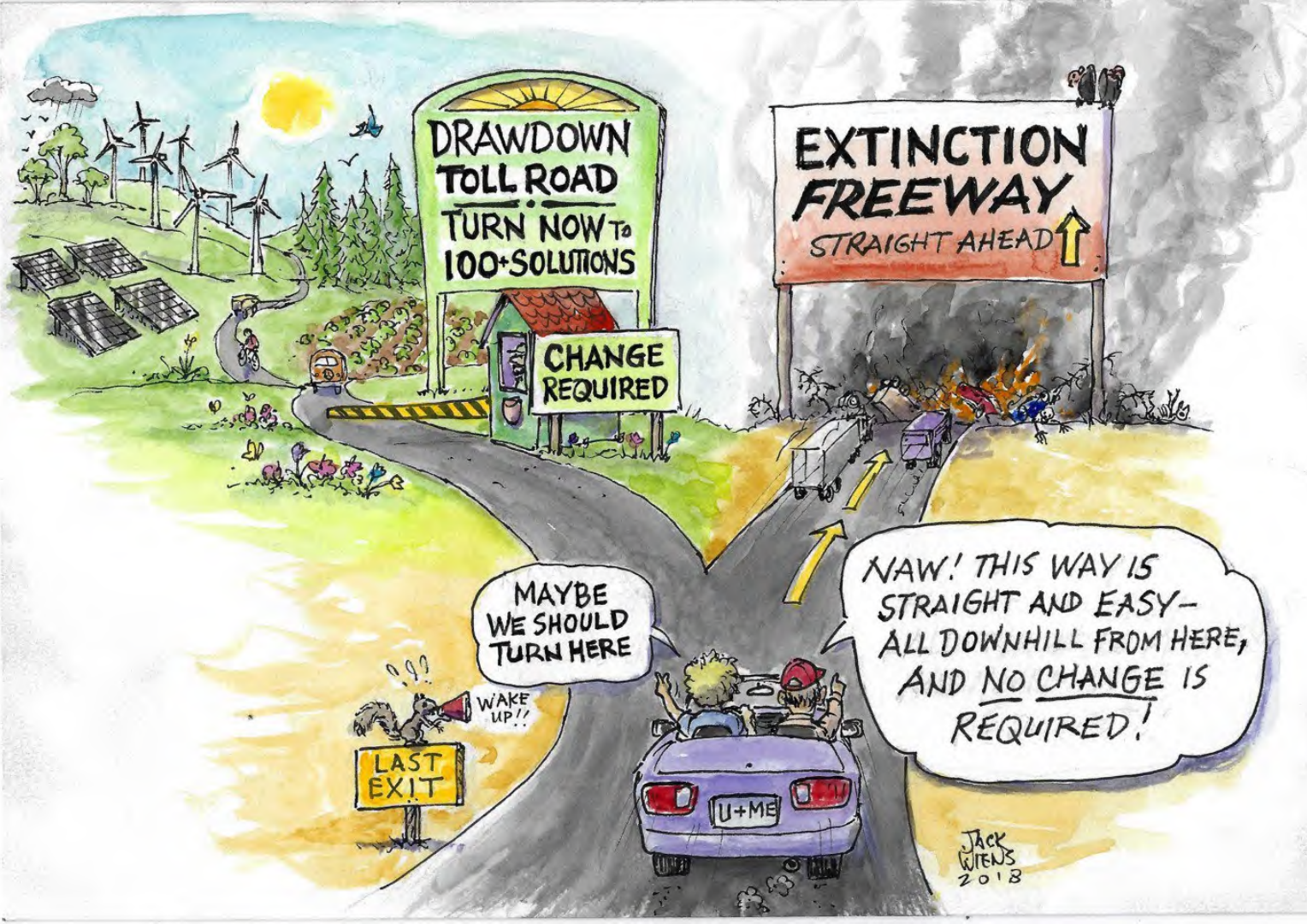
Top 25 Women of Influence+ 2025

Youngest winner ever

Grade 11, Mulgrave School, West Vanc

[Here is Link to NS News article](#) on April 2, 2025





DRAWDOWN
TOLL ROAD
TURN NOW TO
100+ SOLUTIONS

CHANGE
REQUIRED

EXTINCTION
FREEWAY
STRAIGHT AHEAD ↑

MAYBE
WE SHOULD
TURN HERE

LAST
EXIT

WAKE
UP!!

NAW! THIS WAY IS
STRAIGHT AND EASY—
ALL DOWNHILL FROM HERE,
AND NO CHANGE IS
REQUIRED!

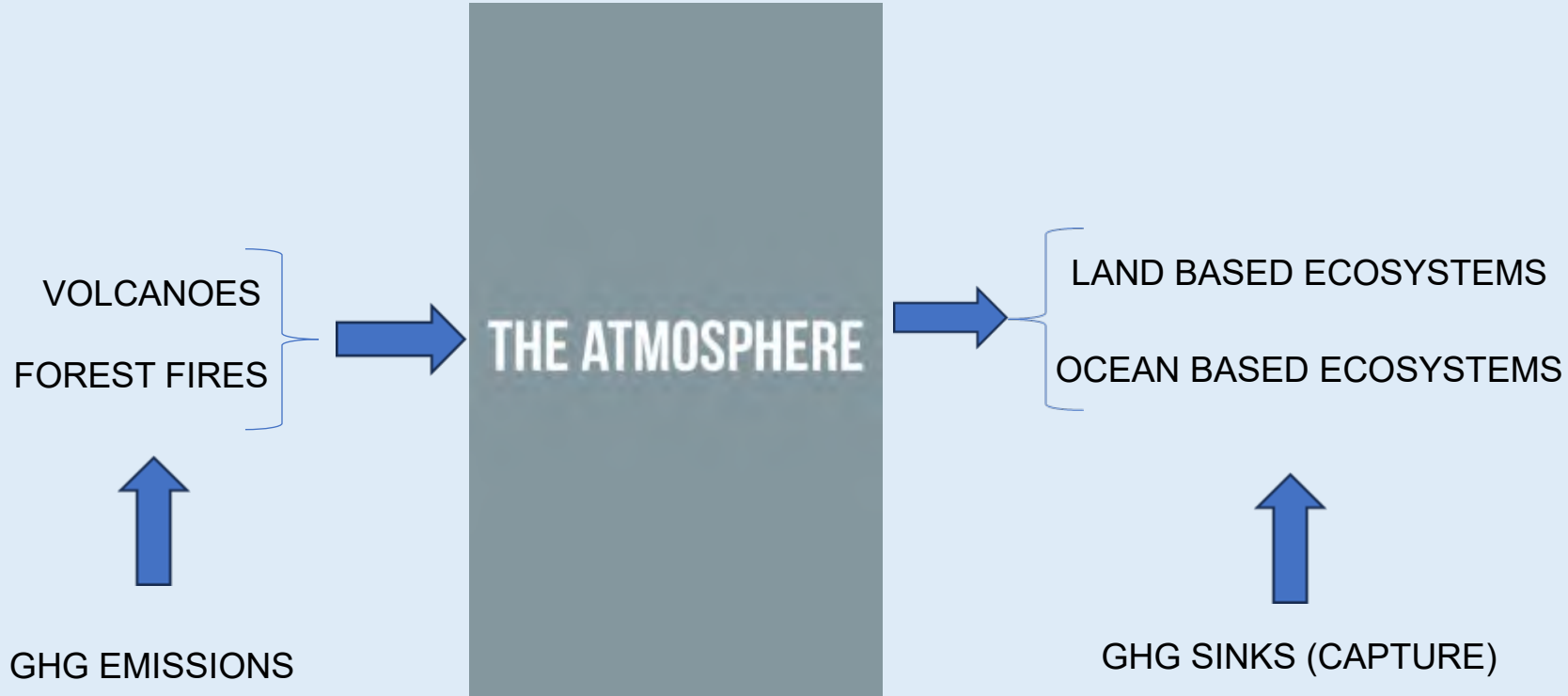
JACK
WRENS
2018

WE SHOULD NOT GO BACK TO
NORMAL,



BECAUSE
NORMAL WAS THE PROBLEM.

Before the Industrial Revolutions GHG Emissions and Capture were in Balance



COUNTRIES WITH THE HIGHEST SOLAR ELECTRICITY PRODUCTION 2022

*in billion kilowatthours

 China	427.27	 UAE	7.74
 United States	205.07	 Greece	7.15
 Japan	93.27	 Belgium	7.01
 India	92.20	 South Africa	6.22
 Germany	57.90	 Canada	5.95
 Australia	39.68	 Israel	5.35
 Spain	35.00	 Thailand	5.02
 South Korea	28.92	 Egypt	4.89
 Vietnam	28.40	 Hungary	4.59
 Brazil	27.22	 Ukraine	4.20
 Italy	27.07	 Switzerland	3.80
 France	20.21	 Austria	3.79
 Netherlands	17.65	 Portugal	3.52
 Türkiye	16.75	 Jordan	3.45
 Chile	15.71	 Argentina	2.91
 Mexico	14.10	 Czechia	2.63
 United Kingdom	13.84	 Russia	2.56
 Taiwan	10.68	 Malaysia	2.19
 Poland	8.31	 DR Congo	2.11

Did we listen?

The Intergovernmental Panel on Climate Change's special report was a wake-up call. To optimists, the IPCC's findings were a relief: 2030 still seemed enough time for humanity to respond. Others felt shocked that we had only 12 years to seriously begin decarbonizing the global economy

ALAN WEISMAN

SPECIAL TO THE GLOBE AND MAIL

PHOTO ILLUSTRATION: THE GLOBE AND MAIL. SOURCE PHOTO: AFP/GETTY IMAGES

PUBLISHED APRIL 25, 2025

135



A year-long series looking back on the most significant moments of the past 25 years, how they changed our world, and how they will continue to shape the next 25.



CHANGE CAN COME IN THE TWINKLING OF AN EYE

Easter morning 1900: 5th Ave, New York City. Spot the automobile.



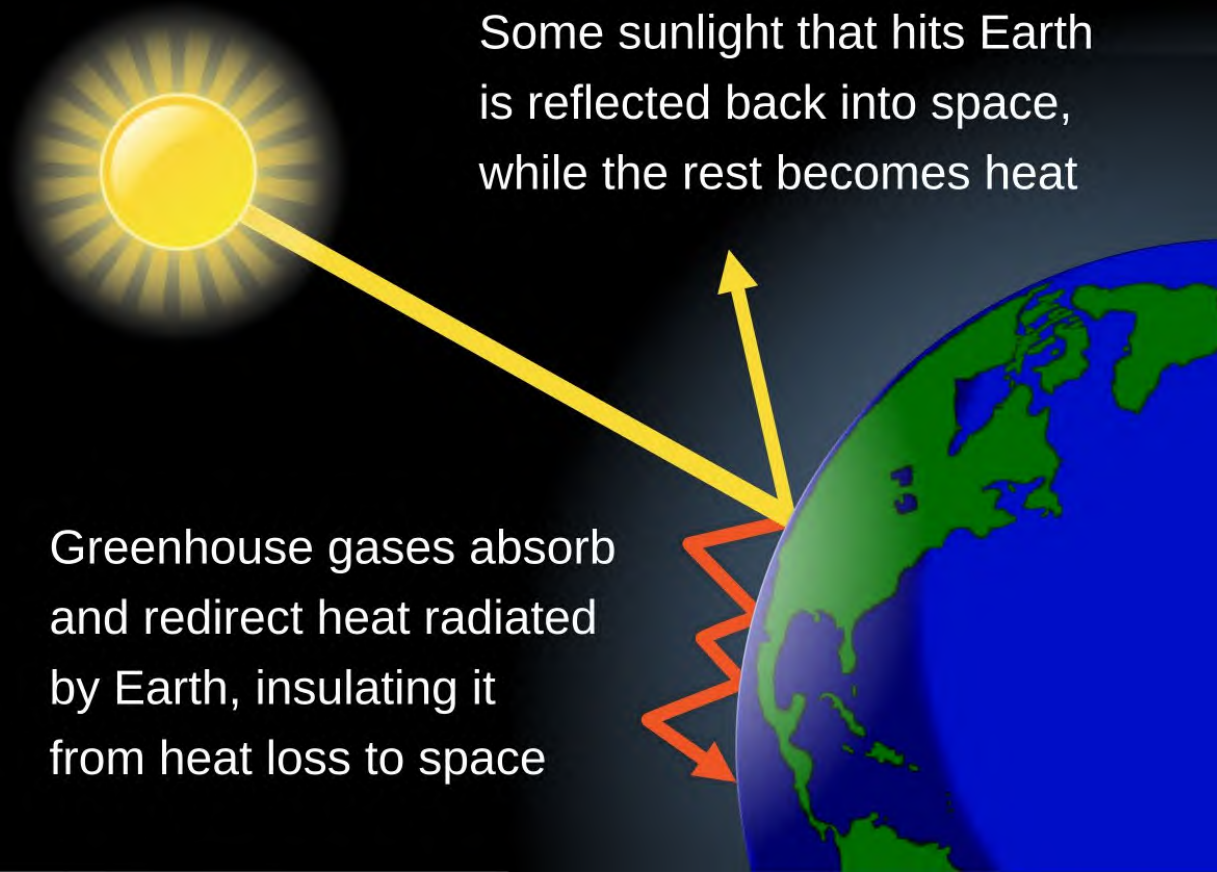
Source: US National Archives

Easter morning 1913: 5th Ave, New York City. Spot the horse.



Source: George Grantham Bain Collection.

The Greenhouse Effect



Some sunlight that hits Earth is reflected back into space, while the rest becomes heat

Greenhouse gases absorb and redirect heat radiated by Earth, insulating it from heat loss to space

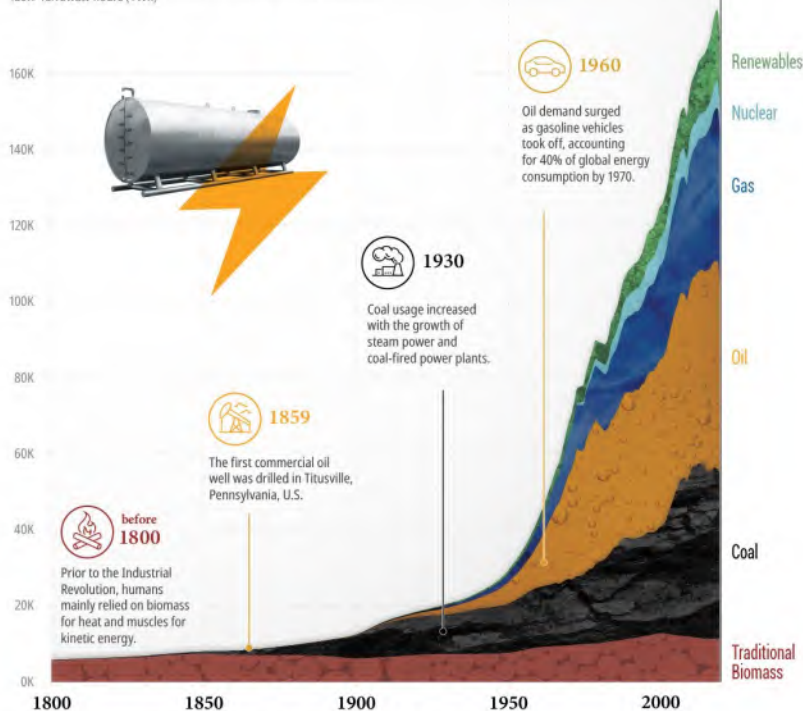
THE HISTORY OF Energy Transitions

The economic and technological advances over the last 200 years have transformed how we produce and consume energy.

Here's how the global energy mix has evolved since 1800.

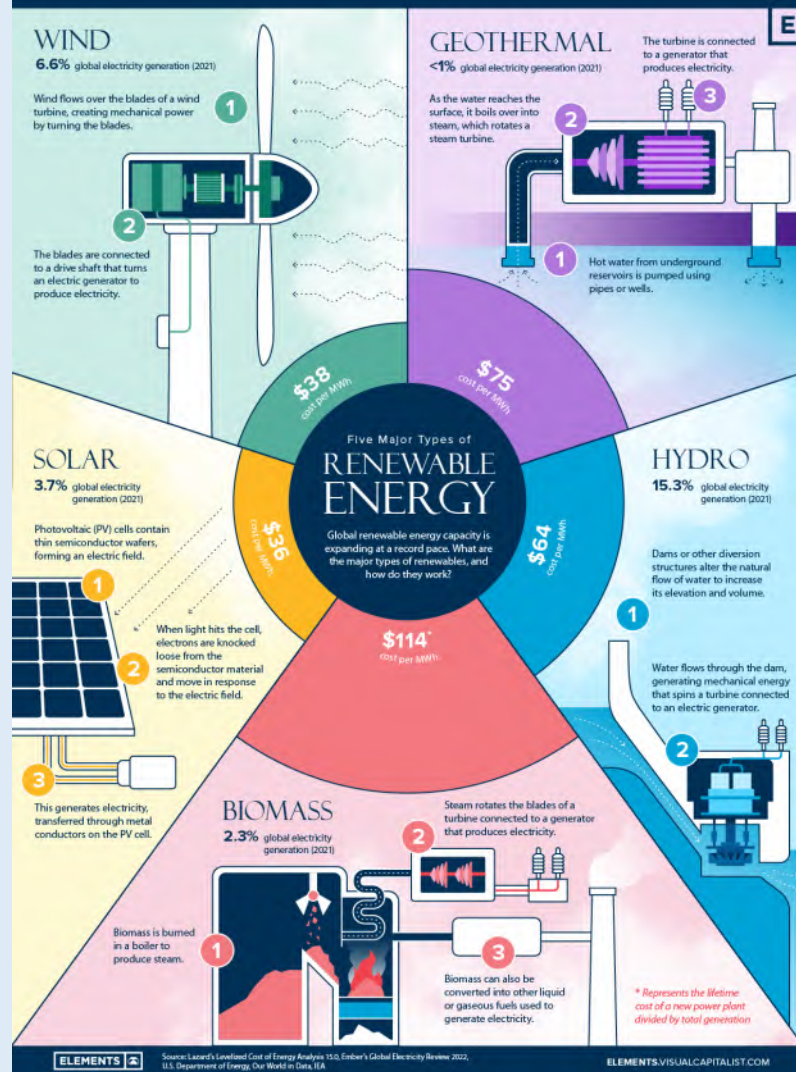
Global Primary Energy Consumption by Source 1800-2020

180K Terrawatt-hours (TWh)



Source: Václav Smil (2017), BP Statistical Review of World Energy via Our World in Data

Replace with chart showing where energy comes from today



NEW YORK TIMES BESTSELLER

DRAWDOWN

THE MOST COMPREHENSIVE
PLAN EVER PROPOSED TO
REVERSE GLOBAL WARMING
EDITED BY PAUL HAWKEN

DRAWDOWN.ORG



Re generation Ending the climate crisis in one generation

REGENERATION.ORG

Paul Hawken



A Future TBD

