

Climate Communication: Tools and Tips

Council of State Governments
Northeastern Legislative Climate and Energy Summit
May 11, 2018

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Climate Central

Climate Central:
non-partisan, **non-advocacy** climate
research and communications NGO
based in Princeton NJ

Roadmap

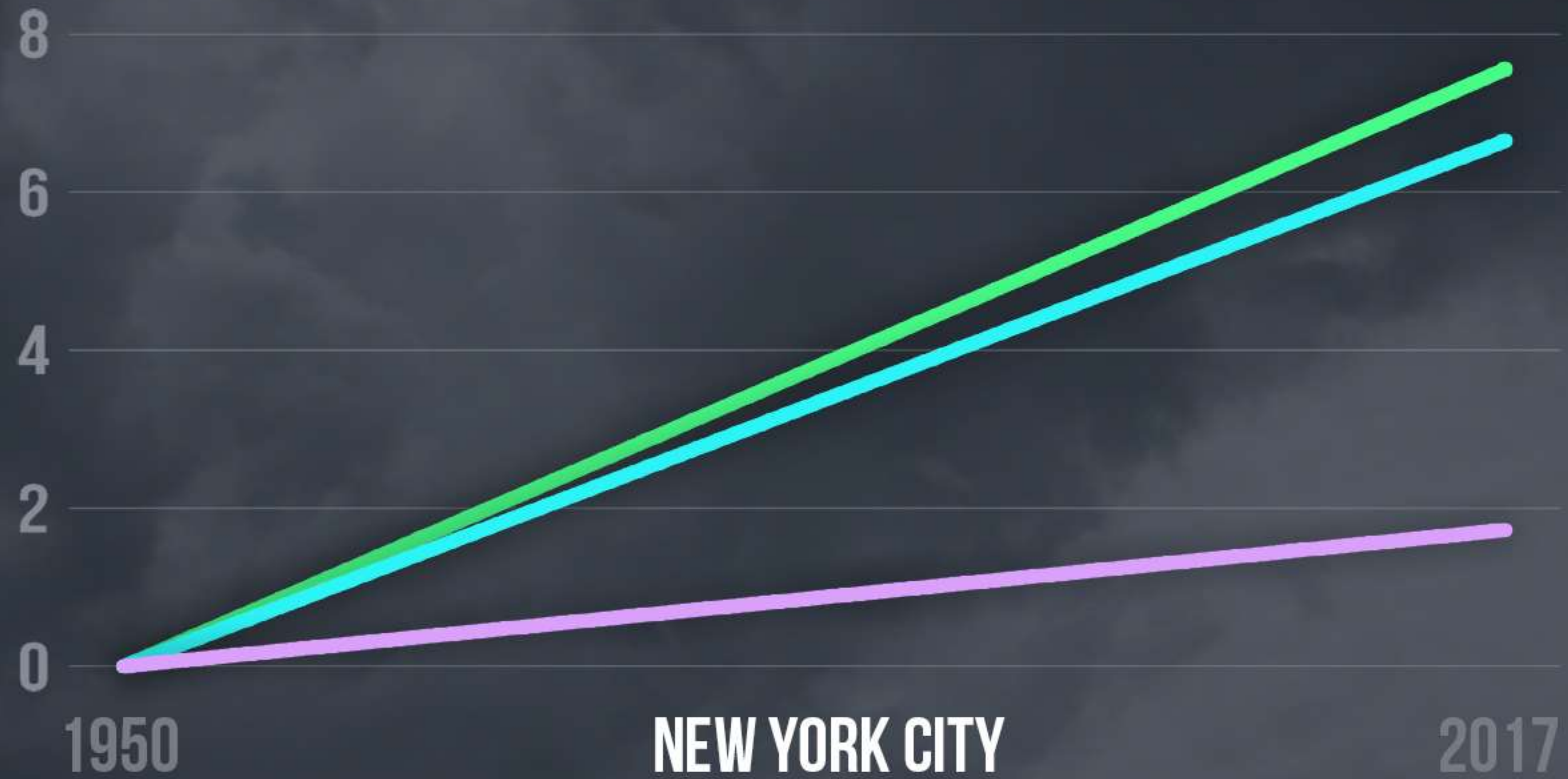
- Five tools [plus bonus tool mentioned during Q&A = Tool #6]
- Three tips

Tool #1: Localized Climate/Weather Visuals

- For each of the 244 media markets in the U.S.

HEAVY RAINFALL TRENDS

Change in days with: — 0.5" — 1.0" — 2.0"



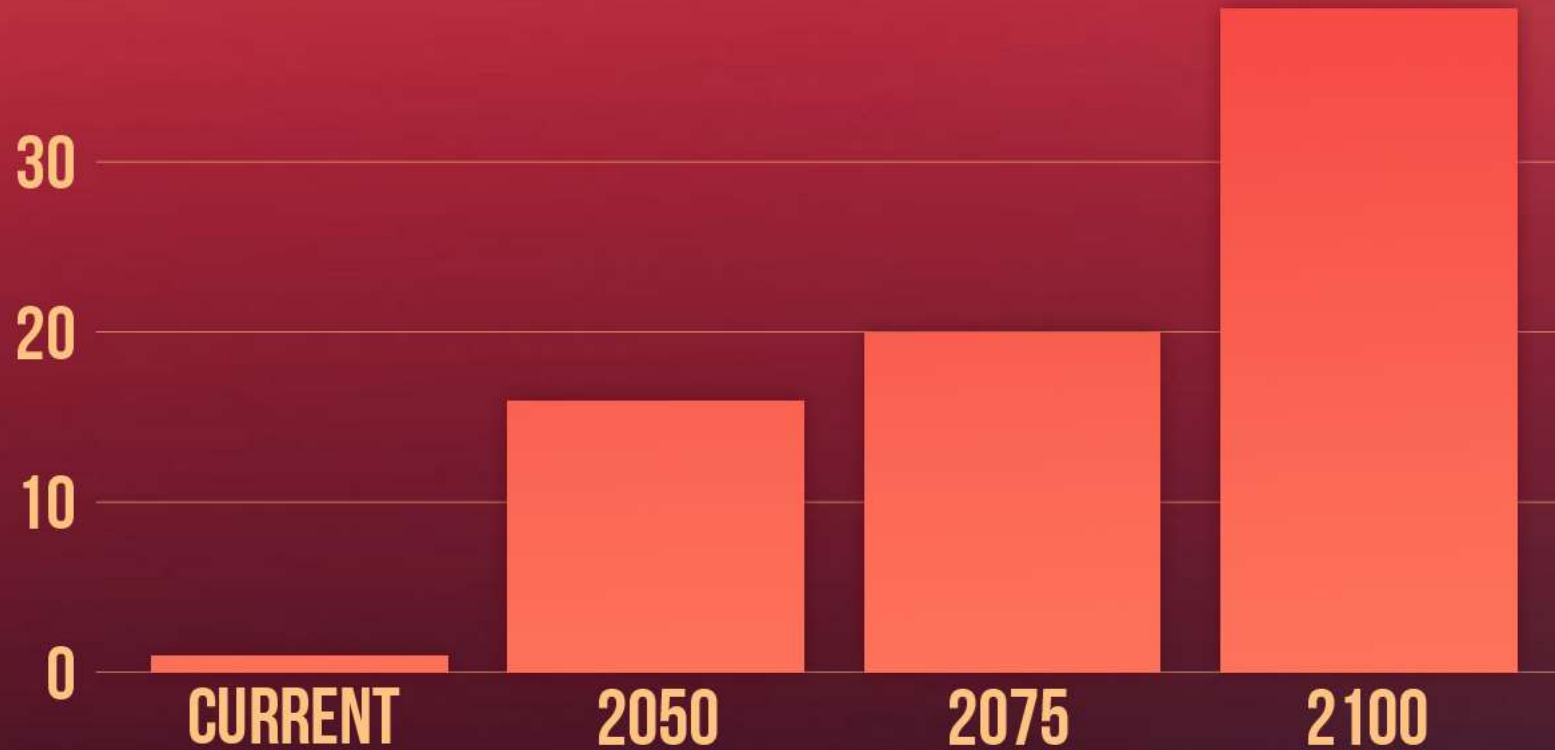
Change in days with specific rainfall thresholds fitted to 1950-2017 data
Source: Applied Climate Information System

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<http://www.climatecentral.org/outreach/alert-archive/2018/2018HeavyRain-ARCHIVE.html?market=NYC>

PROVIDENCE FUTURE DAYS ABOVE 95°

■ Current emission trends



Projections based on an ensemble of CMIP5 climate models (20-yr average)
Current values are the 1997-2016 averages from Daymet (ORNL)

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BALTIMORE

MOSQUITO SEASON GROWING

THEN

115
DAYS

On average per year
1980-1989

NOW

152
DAYS

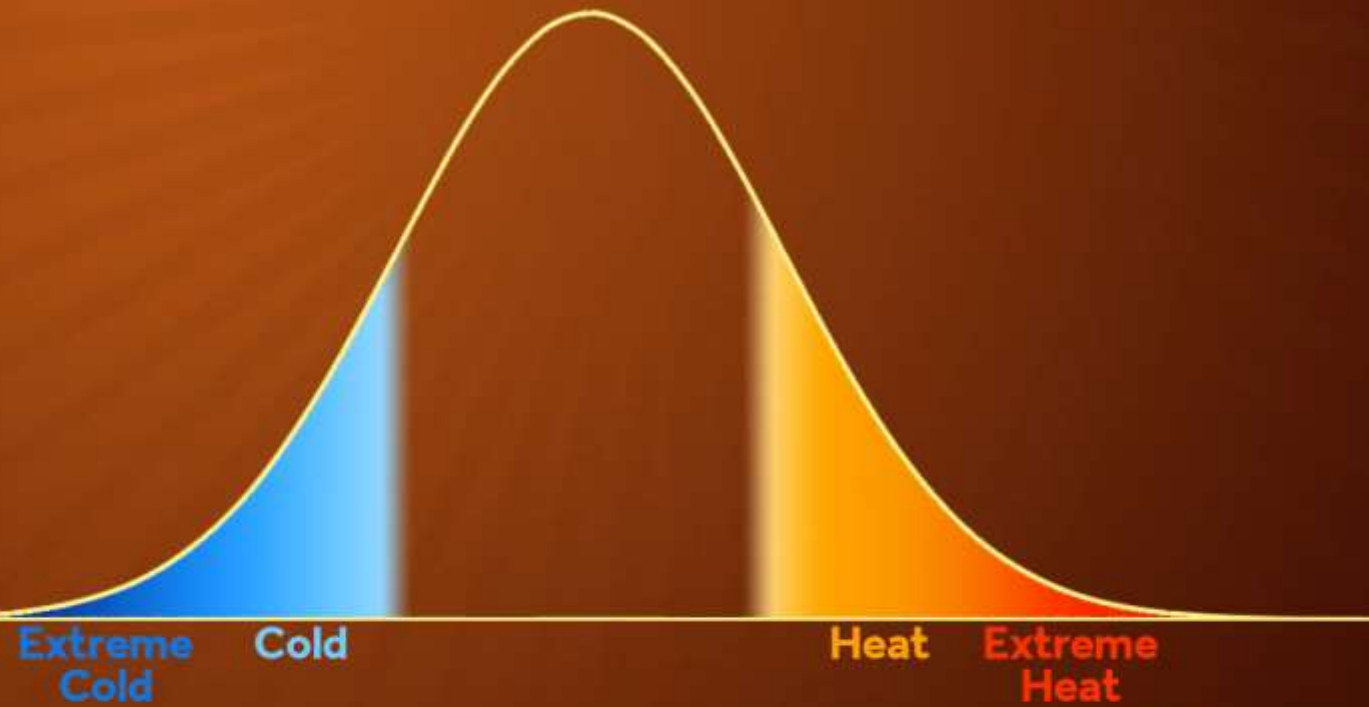
On average per year
since 2006



Source: Yamana and Eltahir (2013), NCBI,
National Institutes of Health. Daymet Data,
Oak Ridge National Laboratory

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SMALL CHANGE IN AVERAGE BIG CHANGE IN EXTREMES



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FALLING RESIDENTIAL SOLAR COSTS

Cost per Watt



Cost includes labor, equipment, and fees
Source: NREL Cost Benchmark 2017

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<http://www.climatecentral.org/gallery/graphics/falling-residential-solar-costs>

CARBON FARMING

Yearly Maximum CO₂ Uptake By Soils

New Jersey

162,000

Tons


24,000
Homes'
electricity

← Equal to
annual
emissions →


34,000
Cars
driven

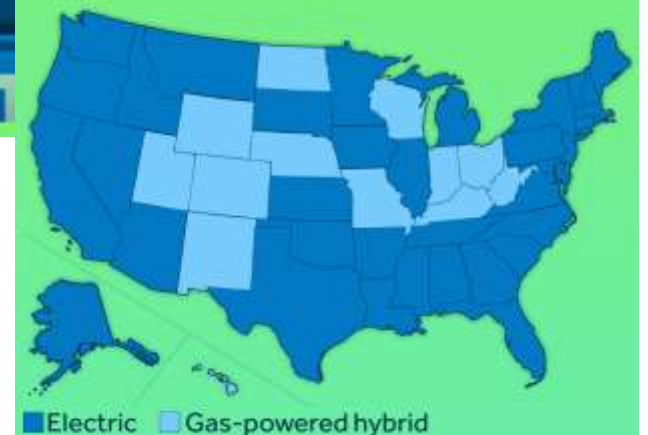
Source: Paustian et al. 2017

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Find your most climate-friendly car

Where do you live? >

Climate-Friendly Cars



<http://climatefriendlycars.climatecentral.org/>

CLIMATE MATTERS

[LEARN MORE ABOUT CLIMATE MATTERS](#)

RESOURCES

Localized data, analyses and multimedia — all grounded in science — to help you understand and share the story of our changing climate.

[View all resources >>](#)

GET CLIMATE MATTERS

Interested in receiving weekly, location-specific updates on climate trends and topics?

[Click here to receive Climate Matters >>](#)

Media Library

Keyword

Market

Topic

[Show more filters](#)

SEARCH

<http://MediaLibrary.climatecentral.org/>

Tool #2: Localized sea level rise visuals

Surging Seas RISK FINDER

Explore sea level and coastal flood risks

new jersey



New Jersey, USA

Bergen County, New Jersey, USA

Middlesex County, New Jersey, USA

Essex County, New Jersey, USA

Hudson County, New Jersey, USA

Places within New Jersey

Municipalities

Counties

Postal Codes

Congressional Districts

State Senate Districts

State Assembly Districts

School Districts

City Wards

Watersheds

Water Quality Management Areas

Metropolitan Planning Organizations

Towns

<https://riskfinder.climatecentral.org/>

Enter a global coastal place



Which sea level will we lock in?

When will this happen?





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Google Earth







Water level (ft) ?

What Is at Risk?



Population

Buildings

Infrastructure

Contamination Risks

Land

Total population below 5ft in Philadelphia



Population: All ▾	Total
Population	4,280
Population of color	3,068
African-American population	2,680
Medium social vulnerability population	2,102
Caucasian population	1,261
High social vulnerability population	1,122
Low social vulnerability population	732

Sources for raw population data: Census 2010 | [Details](#)

What Is at Risk?



- Population
- Buildings
- Infrastructure**
- Contamination Risks
- Land

Total infrastructure below 6ft in Philadelphia

Water level (ft)




Infrastructure: All ▼	Total
Roads	69 miles
Local roads	61 miles
Railroads	27
Non-mainline rail	20 miles
Secondary roads	11 miles
Mainline rail	7 miles
Intermodal freight terminals	6

Sources for raw roads data: Census 2012 | [Details](#)

What Is at Risk?



- Population
- Buildings
- Infrastructure
- Contamination Risks**
- Land

Total contamination risks below 6ft in Philadelphia 

Water level (ft) 



Contamination Risks: All 	Total
EPA listed sites	72
Hazardous waste sites	41
RADINFO sites	40
Minor hazwaste source sites	27
Wastewater sites	19
NPDES sites	17
Nonmajor wastewater sites	16

Sources for raw epa listed sites data: EPA 2013 | [Details](#)

What Is at Risk?



- Population
- Buildings
- Infrastructure
- Contamination Risks
- Land**

Total land below 6ft in Philadelphia

Land: All ▾	Total
Land	8.4 sq. miles
Property value	\$1.4 Billion
Protected land	2.1 sq. miles
Federal protected land	1.7 sq. miles
Local protected land	0.4 sq. miles
National Wildlife Refuges	12
Local parks	4

Water level (ft) ?





Extreme sea level

Current sea level

http://www.climatecentral.org/wgts/2017-lamm-sliders/mar-a-lago/index.html?utm_source=cc&utm_medium=embed&utm_campaign=Lamm-2017-Sliders-Mar-a-lago

Tool #3: Fabulous Photos



www.climatevisuals.org

Climate Solutions



Climate Impacts



Climate Causes



Panos

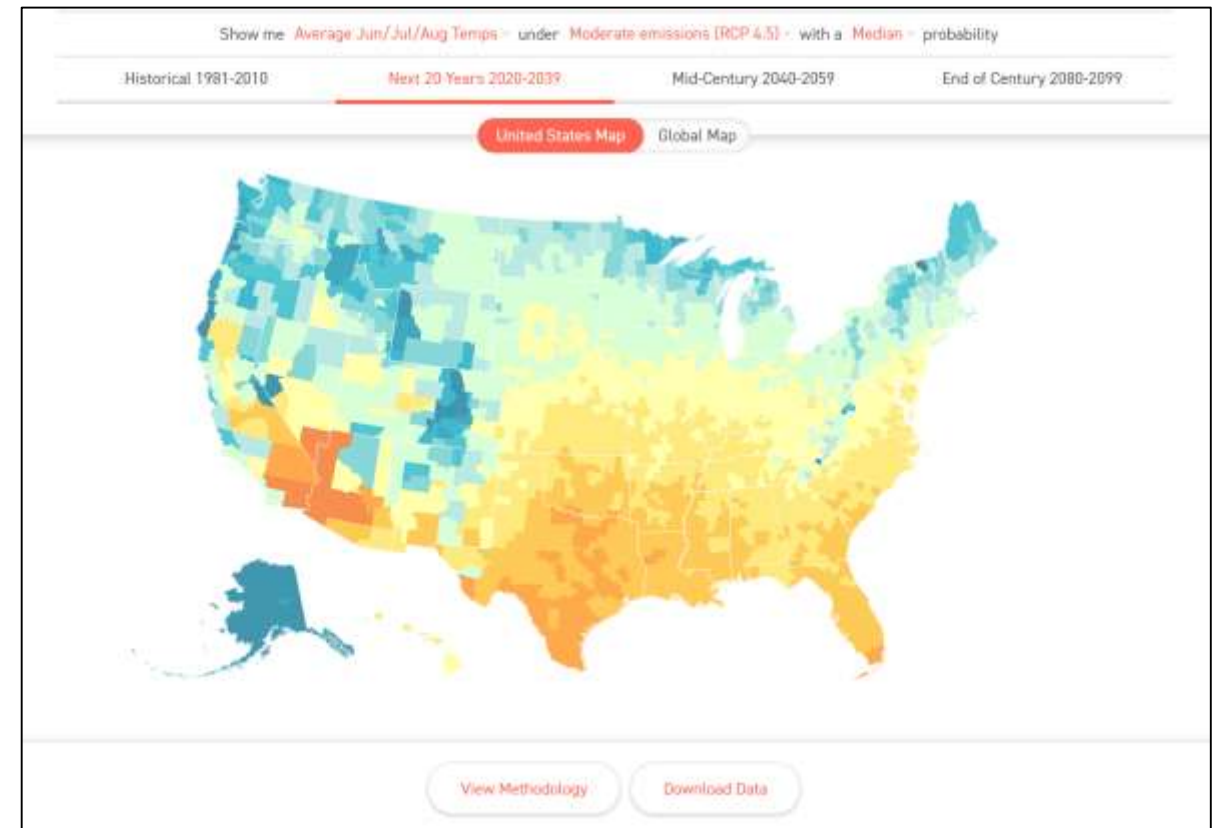


Tool #4: Economic Impacts

www.impactlab.org



**Climate
Impact Lab**



Show me **Average Jun/Jul/Aug Temps** under **High emissions (RCP 8.5)** with a **Median** probability

Historical 1981-2010

Climate

Average Jun/Jul/Aug Temps

Average Dec/Jan/Feb Temps

Average Annual Temps

Days < 32°F/0°C

Days > 95°F/35°C

Mortality

All ages - deaths/100,000

< 1 year old - deaths/100,000

1-44 years - deaths/100,000

45-64 years - deaths/100,000

> 65 years - deaths/100,000

Impacts

Agricultural Yields

Low-Risk Labor

High-Risk Labor

Property Crime

Violent Crime

Energy Expenditures

Coastal Damage

Total Direct Damages

9

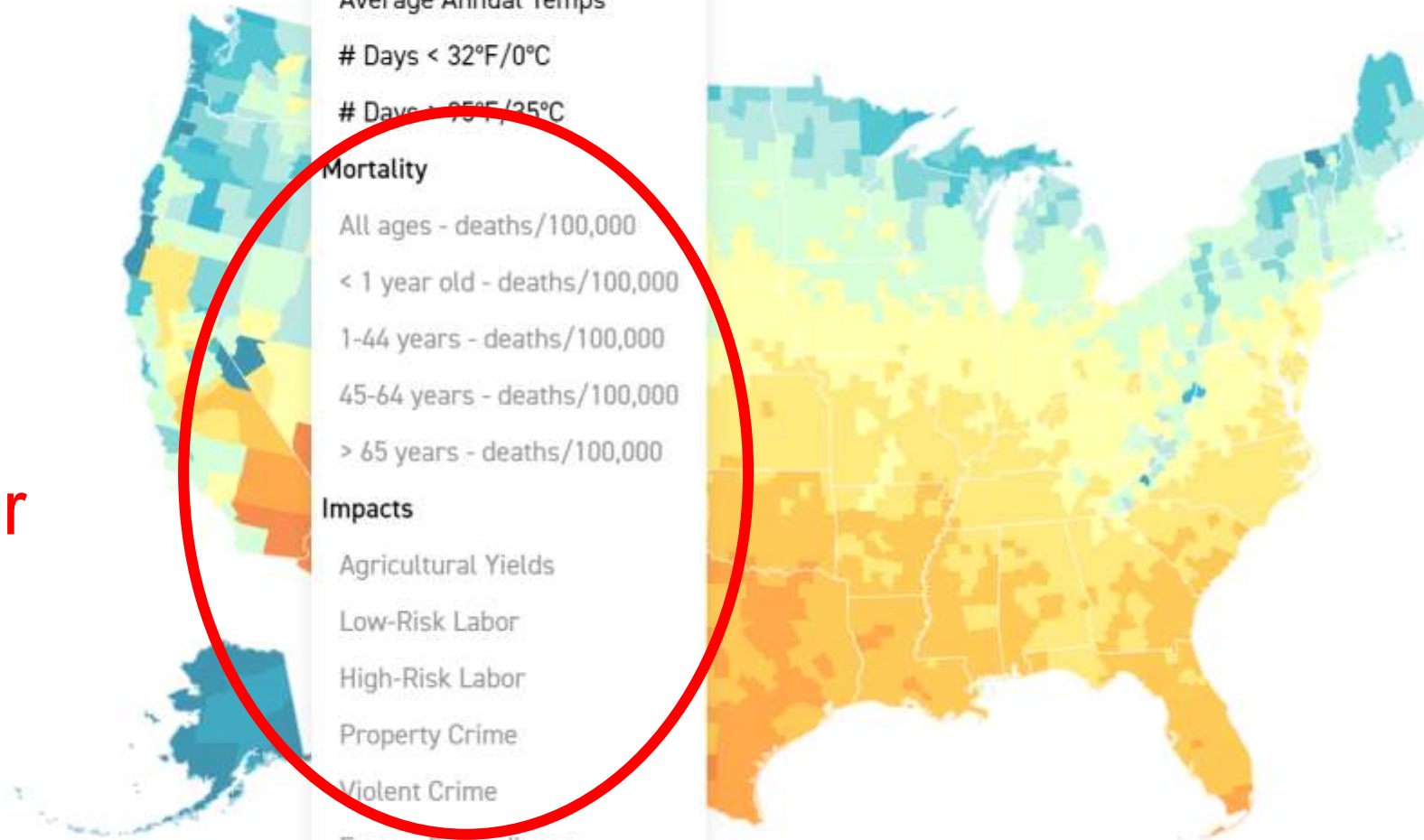
Mid-Century 2040-2059

End of Century 2080-2099

States Map

Global Map

Arriving
Summer
2018:



Mortality

All ages - deaths/100,000

< 1 year old - deaths/100,000

1-44 years - deaths/100,000

45-64 years - deaths/100,000

> 65 years - deaths/100,000

Impacts

Agricultural Yields

Low-Risk Labor

High-Risk Labor

Property Crime

Violent Crime

Energy Expenditures

Coastal Damage

Total Direct Damages

Tool #5: Localized solutions info

lower legislative districts

Geography: **New Jersey** (State)

Solar + Wind + EE Jobs Off On

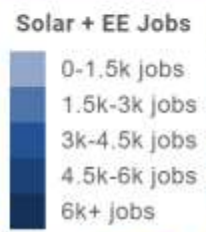
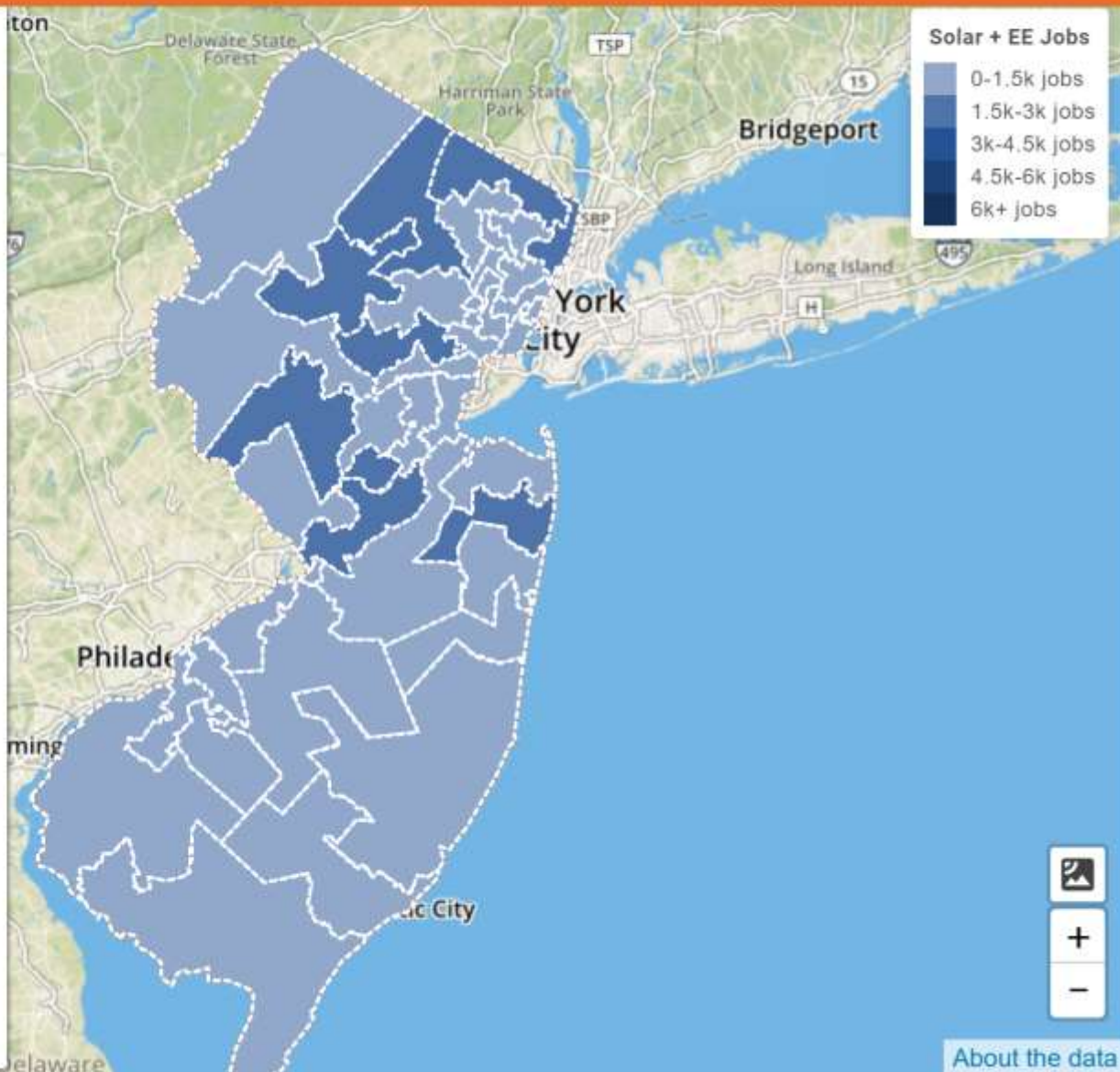
	Jobs
Solar	6,056
Wind	750
Energy efficiency	38,377
Totals	45,183 jobs

Solar + Wind Investment Off On

	SMM (USD)	MWh
Residential	1,488.36	623,047.68
Commercial	413	240,538
Utility	974	723,661
Totals	\$2,875 MM investment	1,587,247 MWh production
		193,075 equivalent homes

Solar + Wind Projects Off On

	Installations	MW Capacity
Residential	79,868	479.21
Commercial	320	186.83
Utility	111	547.28
Totals	80,299	1,213.32



lower legislative districts

Geography: **MA state lower house - 4th Essex** (State Legislative District (Lower))

Solar + Wind + EE Jobs Off

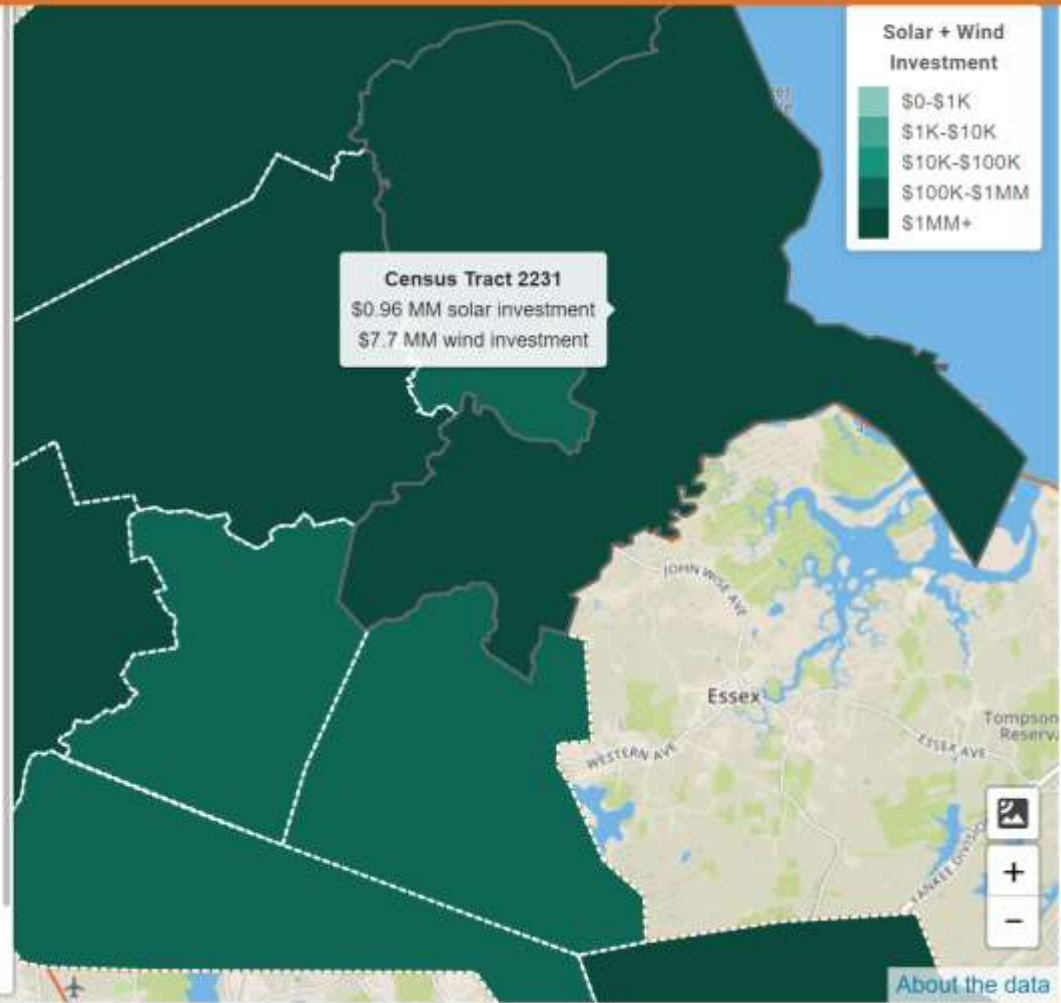
	Jobs
Solar	65
Wind	N/A
Energy efficiency	365
Totals	430 jobs
	0.44 % of state's total renewable energy jobs

Solar + Wind Investment On

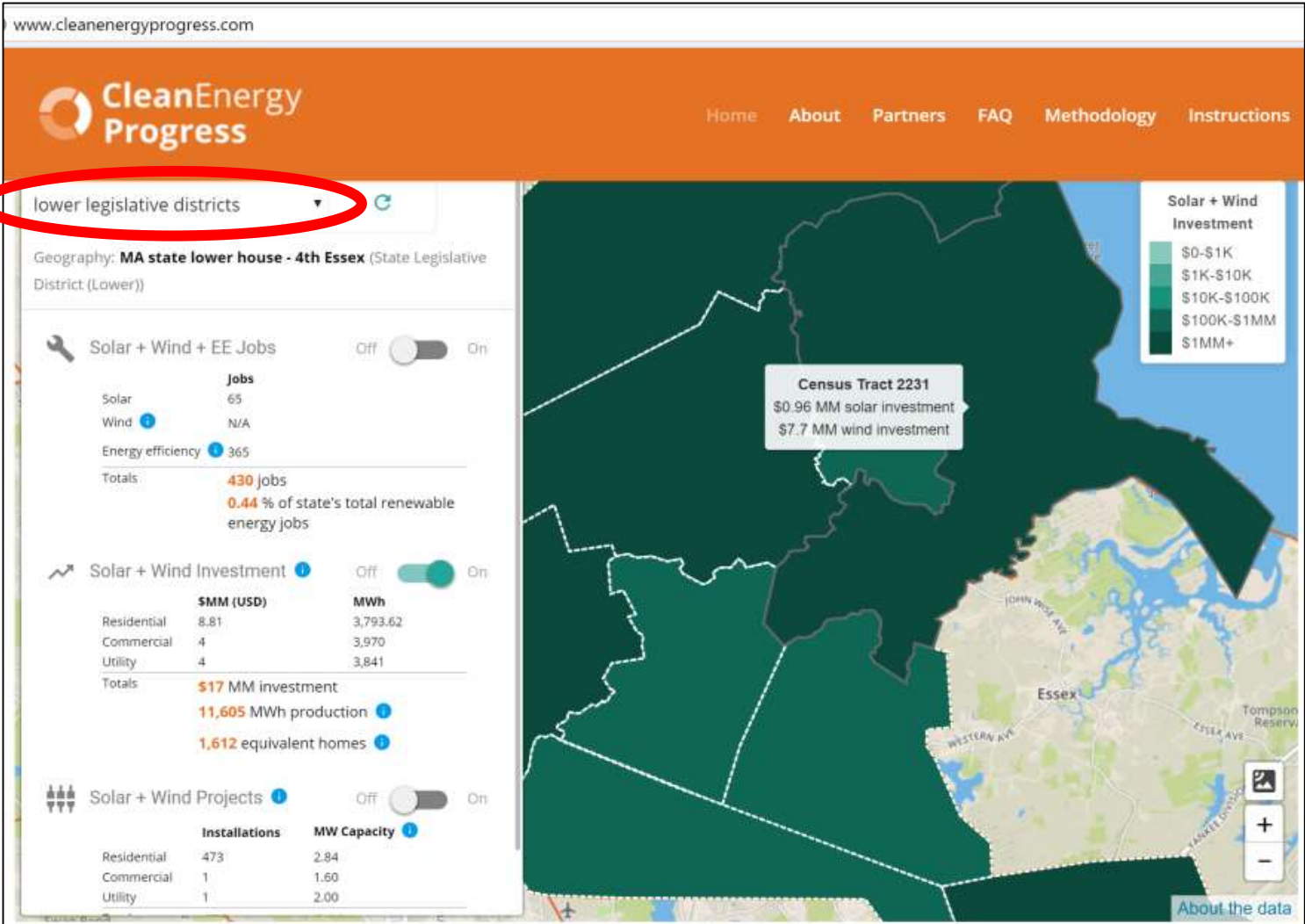
	\$MM (USD)	MWh
Residential	8.81	3,793.62
Commercial	4	3,970
Utility	4	3,841
Totals	\$17 MM investment	
	11,605 MWh production	
	1,612 equivalent homes	

Solar + Wind Projects On

	Installations	MW Capacity
Residential	473	2.84
Commercial	1	1.60
Utility	1	2.00



About the data



- lower legislative districts
- congressional districts
- lower legislative districts
- upper legislative districts
- counties

Partners



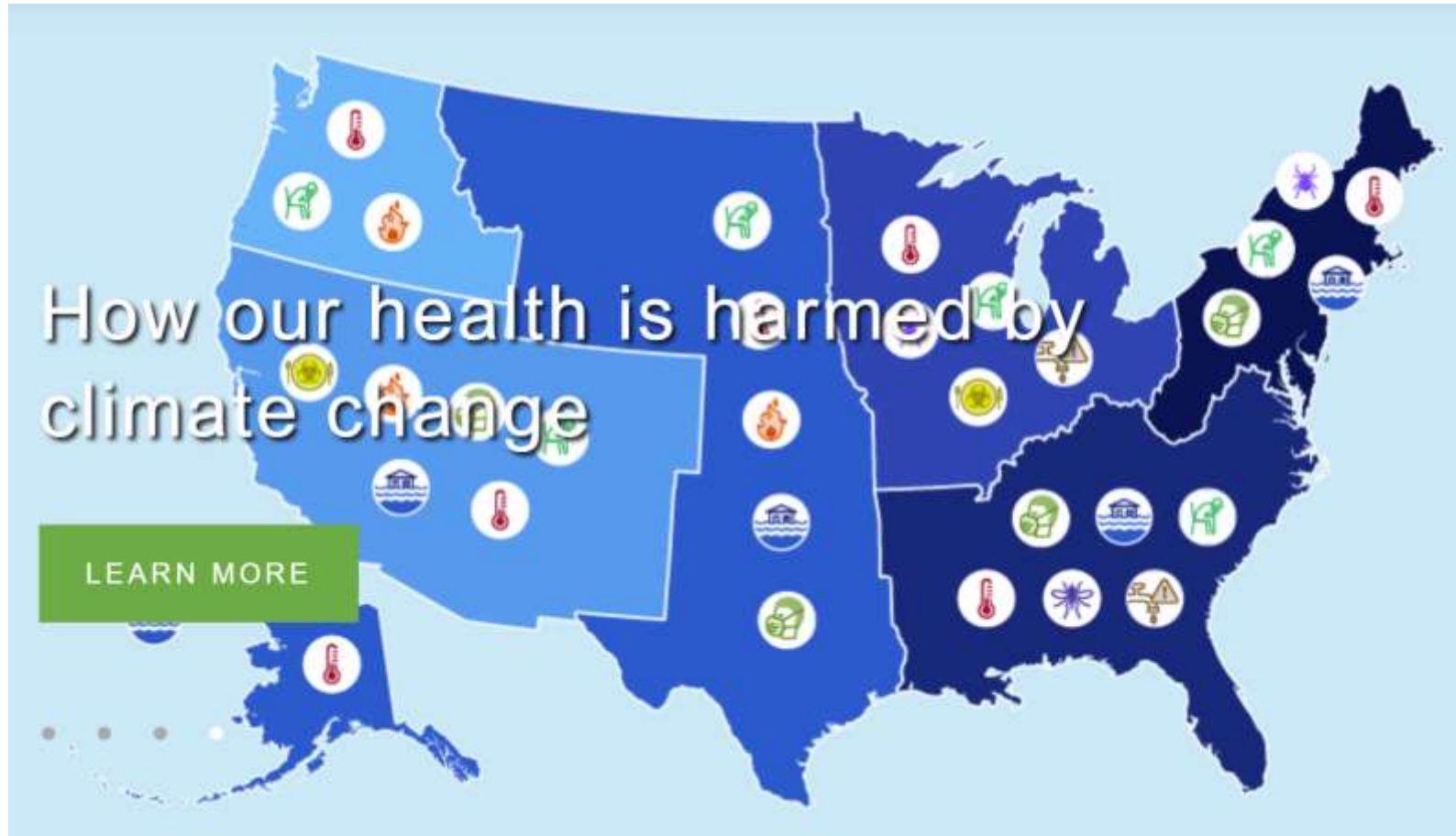
CleanEnergy
Progress

- ALLIANCE TO SAVE ENERGY
- BLUEGREEN ALLIANCE
- CLEANCAPITAL
- ENVIRONMENTAL DEFENSE FUND
- INK COMMUNICATIONS CO.
- INGERSOLL RAND
- LEAGUE OF WOMEN VOTERS
- OPERATION FREE

NEW! Tool #6: Health connections

Medical Society Consortium on Climate & Health

<https://medsocietiesforclimatehealth.org/>



Post-script



Today's Trio of Tips

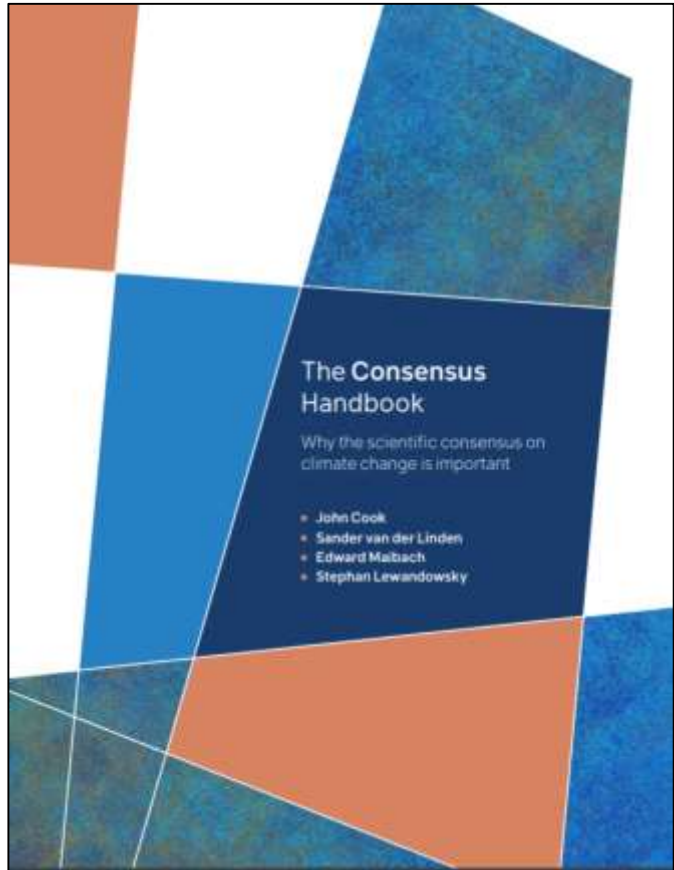
Tip #1: Keep It Simple & Straightforward

1. CO2 traps heat – measurable in the lab
2. Burning fossil fuels releases CO2
3. A few degrees matter (a lot)
4. Risks are big – global food & water supplies, mass displacements, etc.
5. Solutions already abundant and increasingly cheap – *but take time to deploy at scale*

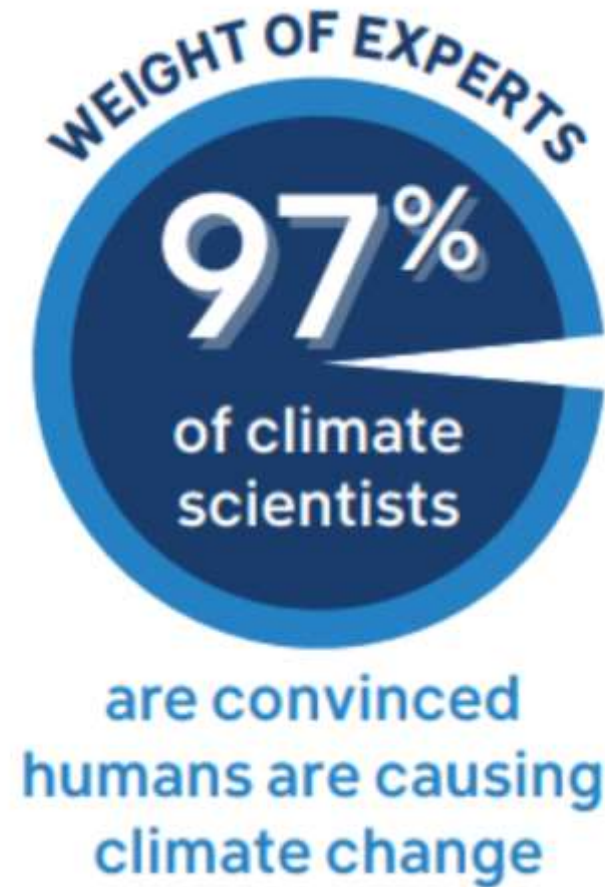


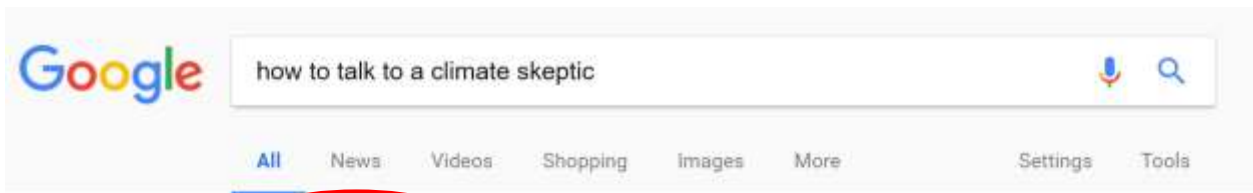
CLIMATE

Tip #2: Science Consensus



www.climatechangecommunication.org





About 469,000 results (0.36 seconds)

How to Talk to a Climate Skeptic: Responses to the most common - Grist

<https://grist.org/series/skeptics/>

Below is a complete listing of the articles in "How to Talk to a Climate Skeptic," a series by Coby Beck containing responses to the most common skeptical ...
'There is no evidence' – Yes ... · Global warming is part of a ...

How to talk climate change with a skeptic: 5 critical tips ...

<https://www.edf.org/blog/2016/11/22/how-talk-climate-change-skeptic-5-critical-tips>

Nov 22, 2016 - We've entered a new political era and emotions are raw – even over a scientifically settled topic such as climate change. Discussions that ...

How to Talk About Climate Change So Anyone Will Listen – Science ...

<https://www.thecut.com/.../how-to-talk-about-climate-change-so-anyone-will-listen.ht...>

Nov 30, 2016 - A primer for getting climate skeptics – or people who are just indifferent – to care about the future of the planet.

What should you say to a climate change skeptic? - Los Angeles Times

www.latimes.com/.../la-sci-sn-climate-change-arguments-20170818-htm1story.html

Aug 18, 2017 - There are plenty of folks out there who deny the existence of climate change ... Suddenly, you realize you're talking to a climate change skeptic.

How to Talk to a Climate Skeptic: Responses to the ... - Climate Access

https://climateaccess.org/.../Beck_How%20to%20Talk%20to%20a%20Climate%20Ske...

Below is a complete listing of the articles in "How to Talk to a Climate Skeptic," a series by Coby Beck containing responses to the most common skeptical ...

How To Talk To A Climate Change Denier - Science Friday

<https://www.sciencefriday.com/.../how-to-talk-about-climate-change-with-a-denier/>

Jan 11, 2017 - Use these tips to have more productive conversations about climate ... a conversation about climate change that could change a skeptic's mind.

About 469,000 results



<https://www.climatechangecommunication.org>

Responding to Climate Change Skepticism and the Ideological Divide

JESSICA M. SANTOS

School of Natural Resources and Environment, University of Michigan,
Ann Arbor, MI 48109 & Climate Central, Princeton, NJ

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Climate Central, Princeton, NJ

Volume 5, Issue 1

<http://dx.doi.org/10.3998/mjs.12333712.0005.102>

<https://quod.lib.umich.edu/m/mjs/12333712.0005.102/--responding-to-climate-change-skepticism-and-the-ideological?rgn=main;view=fulltext>

Tip #3: Sez Who

“The risk of climate change is clear
and the risk warrants action”
-- Exxon, 2014