

The Benefits of Solar for Climate, Air Quality, & Health

Presented by Tracey Holloway, Ph.D

hollowaygroup.org

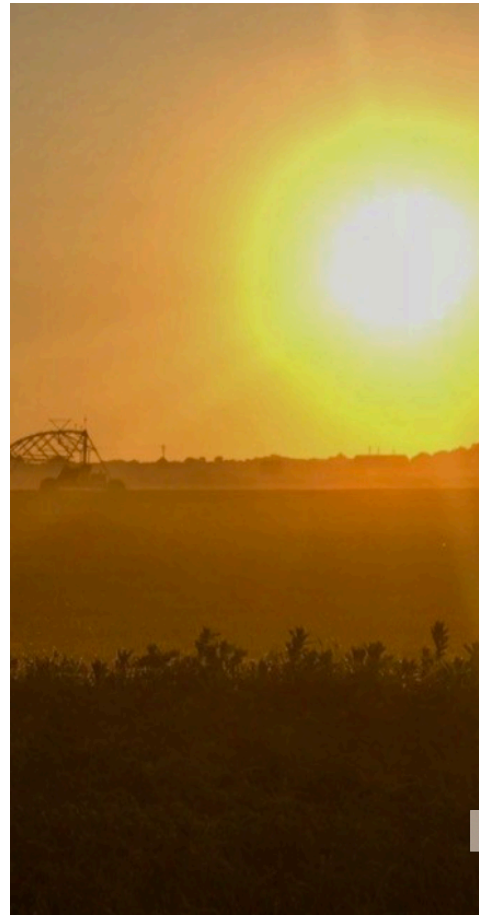


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WEATHER

Air quality health advisory in effect Monday for Long Island

By Denise Civiletti - Jul 29, 2019, 12:11 pm



Code Orange Air Quality Alert In Effect For Metro Atlanta

A Code Orange Air Quality Alert was issued for Metro Atlanta on Monday. The outdoor air quality is likely to be unhealthy for some people.

By Kathleen Sturgeon, Patch Staff
Jul 29, 2019 10:36 am ET | Updated Jul 29, 2019 10:37 am ET

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WEATHER

Air Quality Advisory issued for northeast Ohio for unhealthy air levels

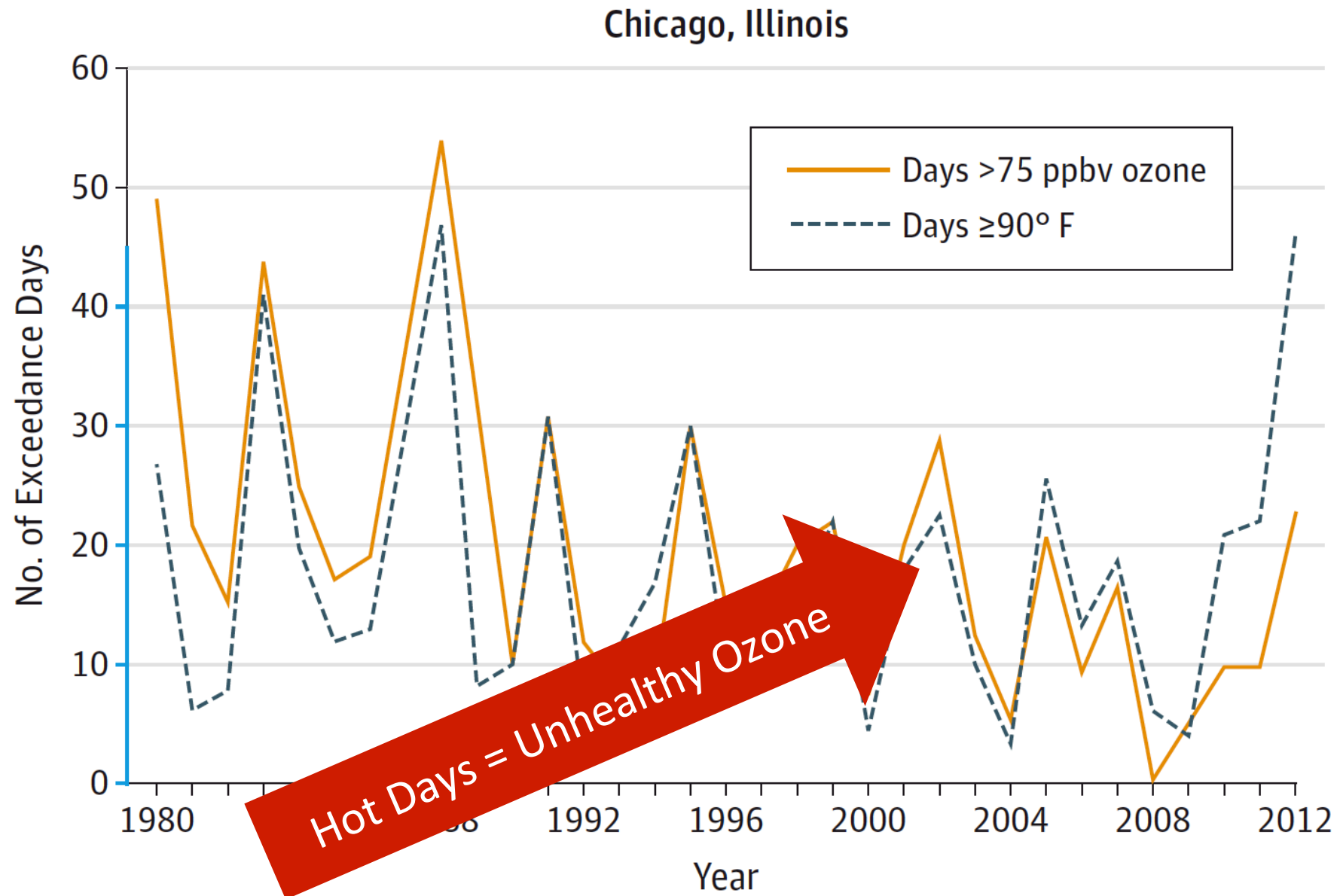
The quality of the air across northeast Ohio will be unhealthy on Friday.

HEALTH



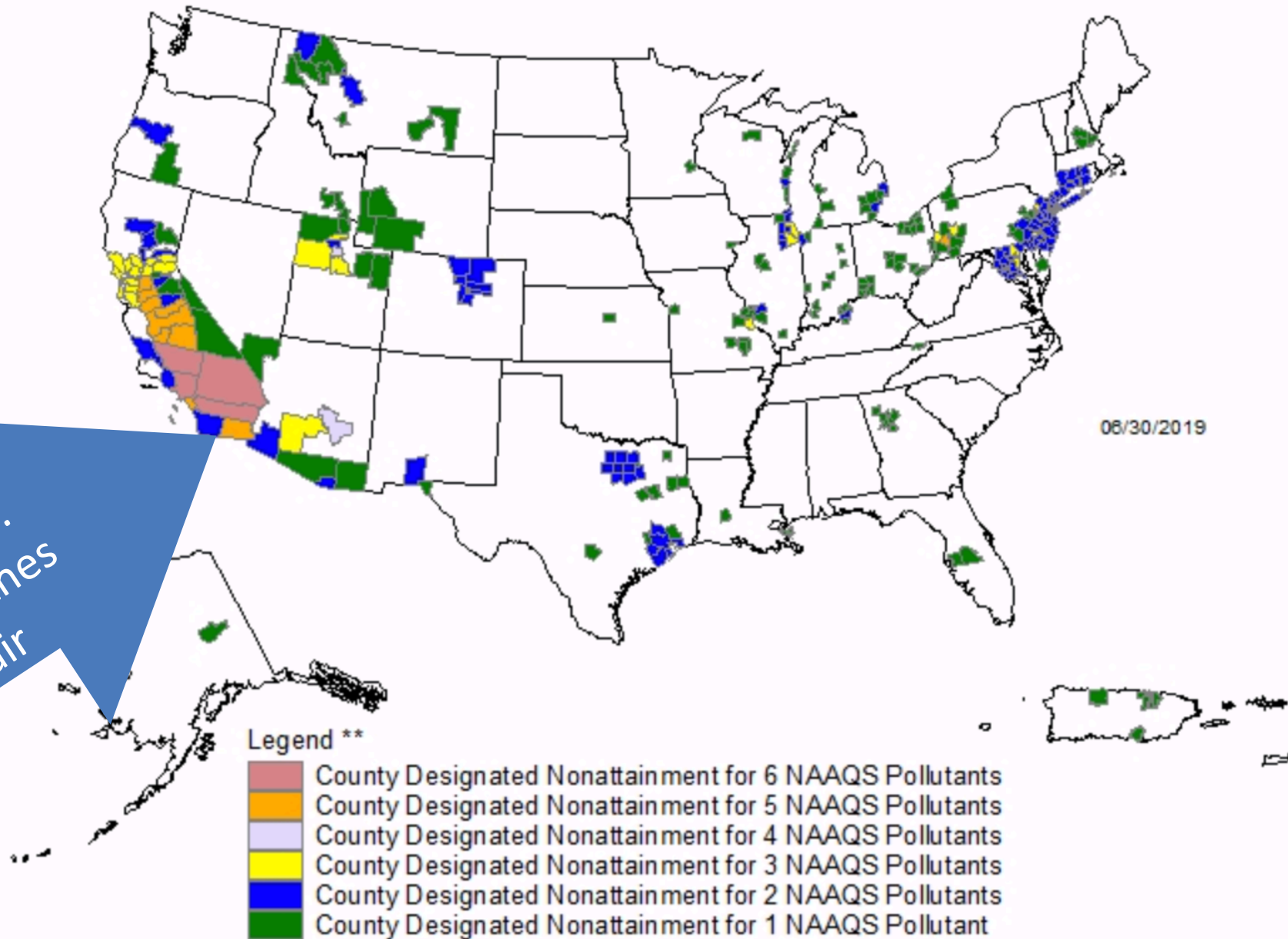
Hot Weather, Pollution Fuel Unhealthy Air Conditions in Chicago

Kristen Thometz | July 18, 2019 2:04 pm

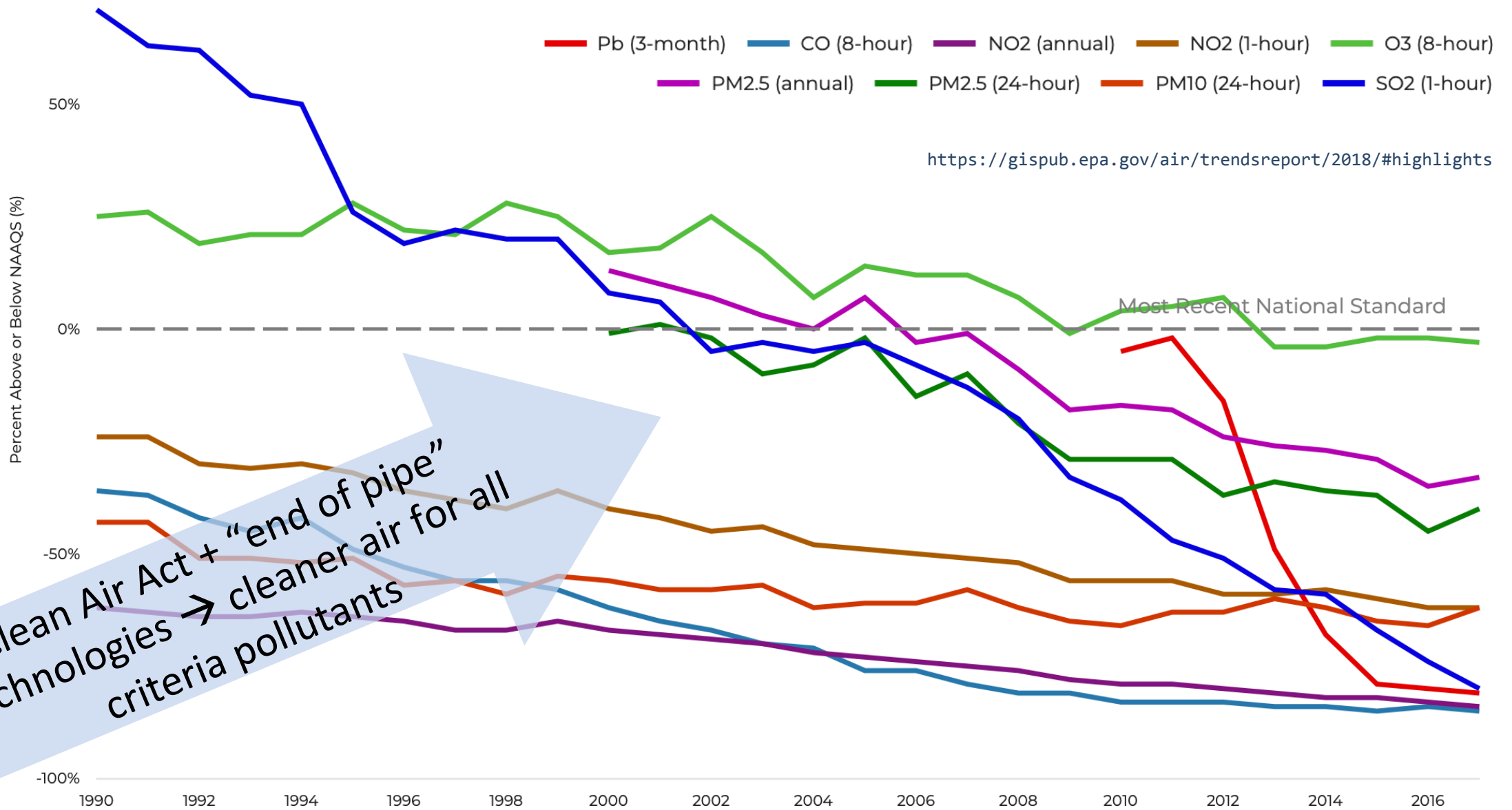


Counties Designated "Nonattainment"

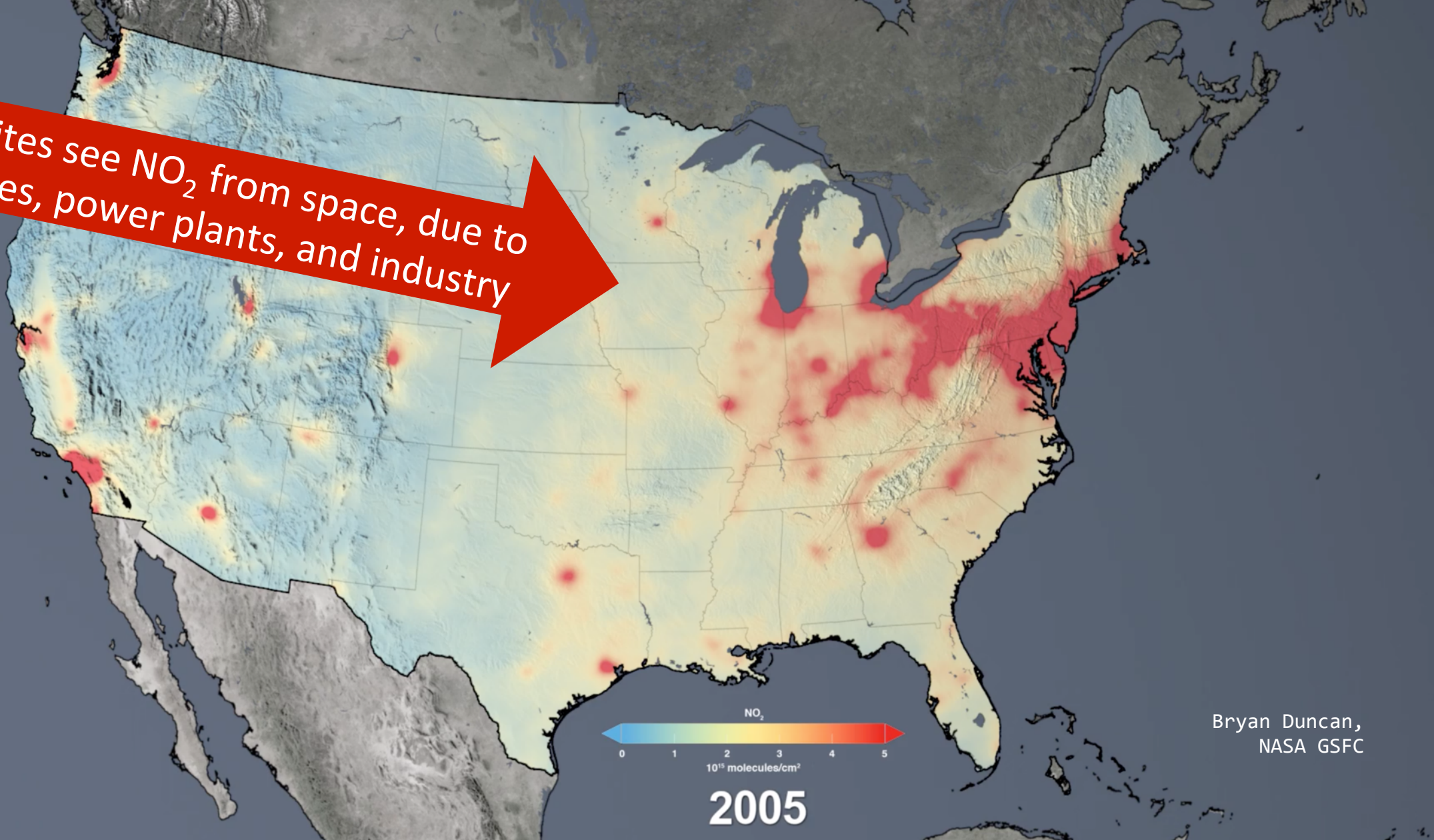
for Clean Air Act's National Ambient Air Quality Standards (NAAQS) *



Nearly 50% of U.S.
population breathes
unhealthy air




Satellites see NO₂ from space, due to vehicles, power plants, and industry



Bryan Duncan,
NASA GSFC



Bryan Duncan,
NASA GSFC

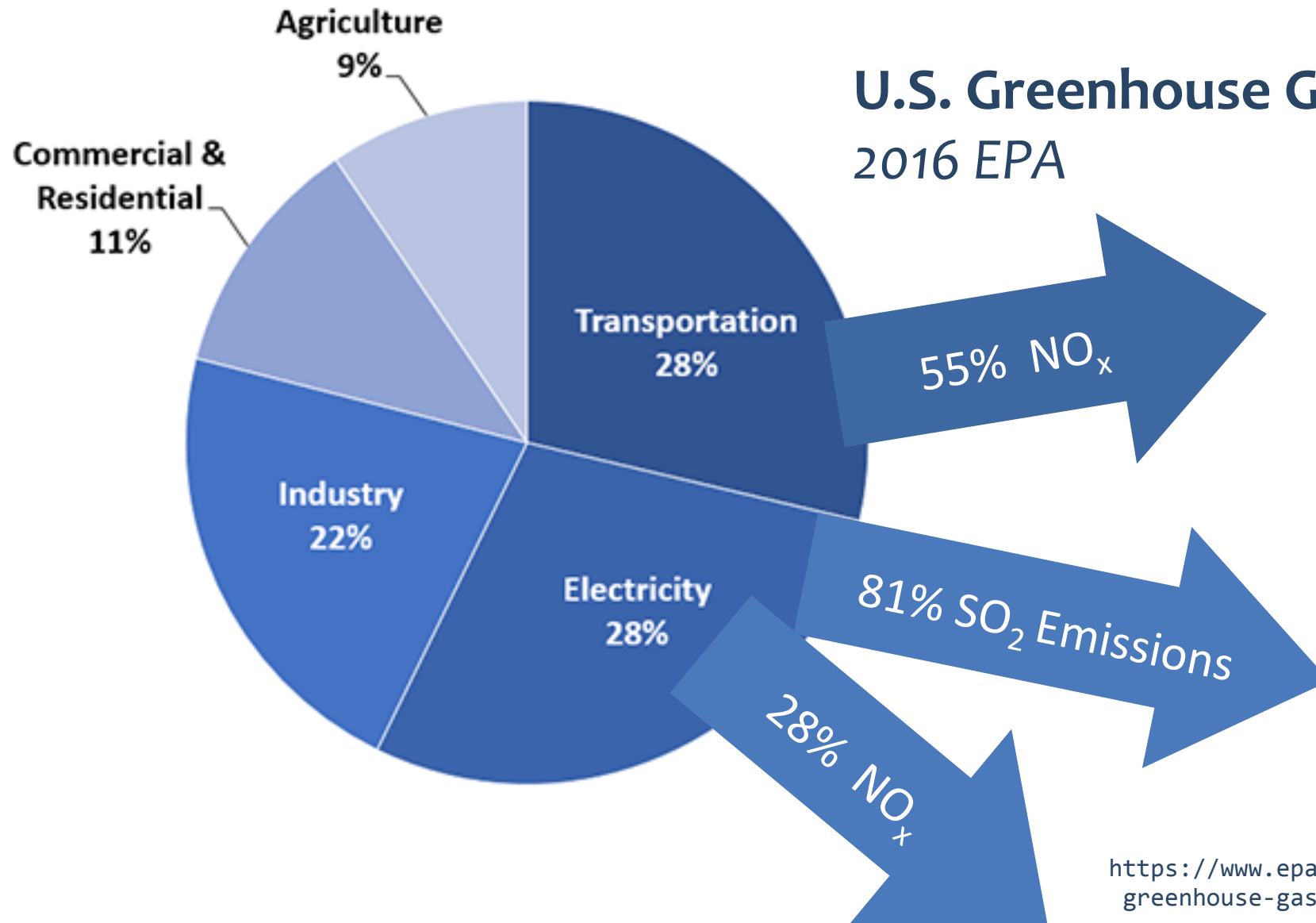


How does solar energy...

- Reduce emissions from fossil fuel combustion?
- Improve air quality, especially on the dirtiest days?
- Help states meet air quality standards?
- Improve public health?

<https://www.publicdomainpictures.net/en/view-image.php?image=17407&picture=smog-and-electric-lines>

U.S. Greenhouse Gas Emissions 2016 EPA





SunShot 2030 for Photovoltaics (PV): Envisioning a Low-cost PV Future

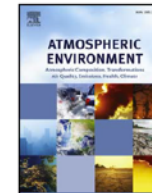
Wesley Cole, Bethany Frew, Pieter Gagnon, James Richards, Yinong Sun, Jarett Zuboy, Michael Woodhouse, and Robert Margolis
National Renewable Energy Laboratory



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Atmospheric Environment

journal homepage: www.elsevier.com/locate/atmosenv



Potential air quality benefits from increased solar photovoltaic electricity generation in the Eastern United States

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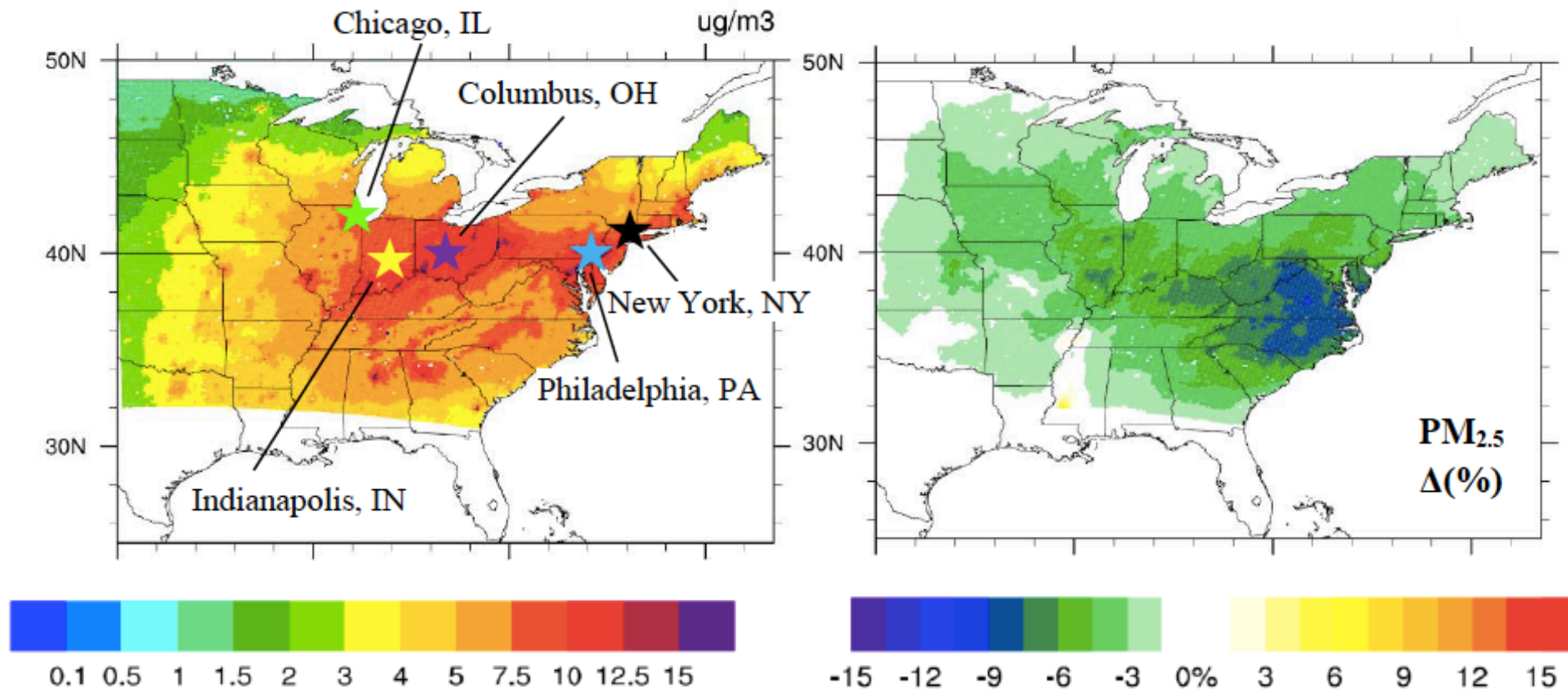
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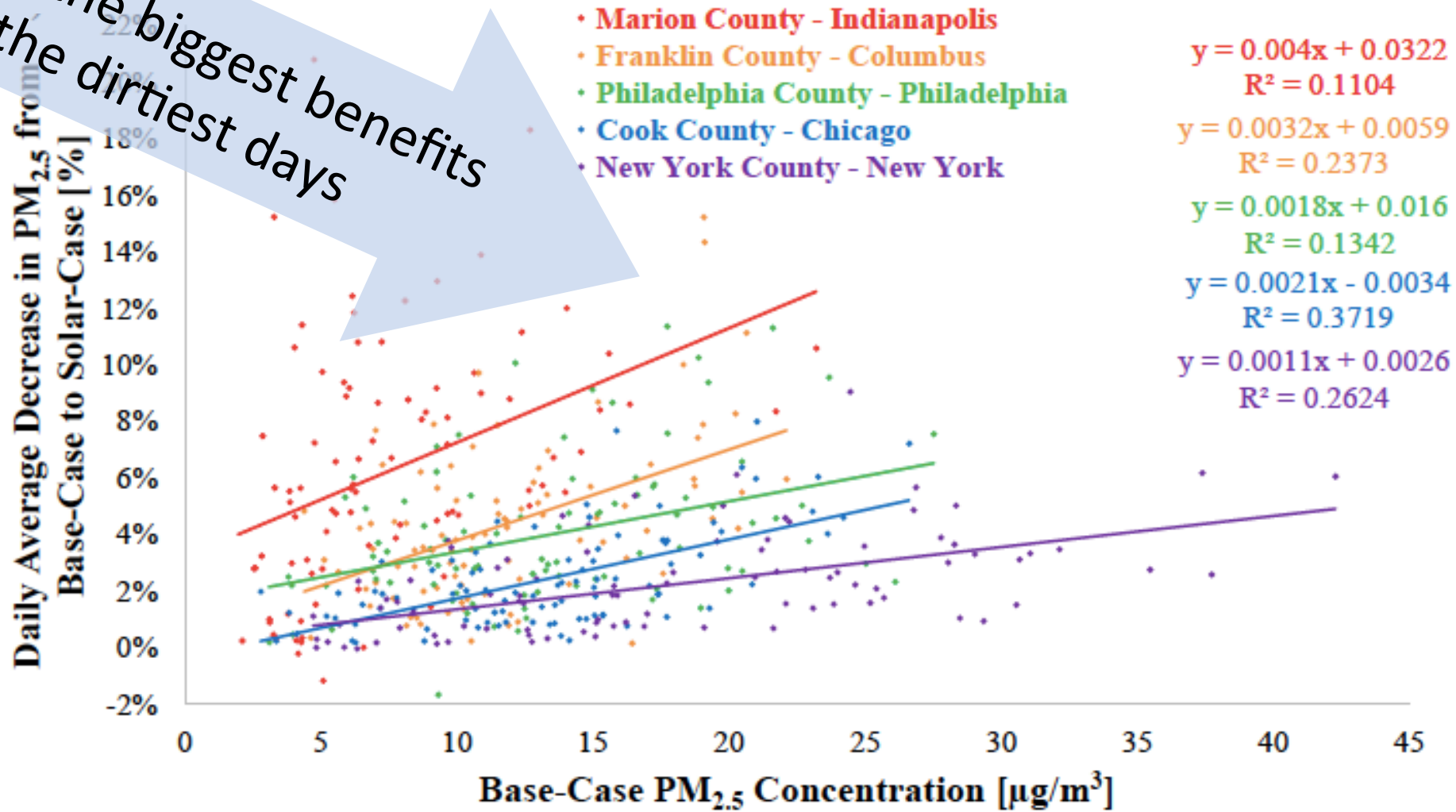
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ture=solar-panels](https://www.publicdomainainpictures.net/en/view-image.php?image=9099&picture=solar-panels)

“What if....” there were more solar energy?
We modeled air pollution over the U.S. to answer that question

Left: Summer $\text{PM}_{2.5}$ (Business-as-Usual); Right: % reduction due to 17% PV



Solar has the biggest benefits
on the dirtiest days





UW Study: Turning Off The Lights Reduces Both Economic, Human Costs

Reducing Pollution From Energy Production Can Have Tangible Health Impacts, Research Finds

By Mary Kate McCoy

Published: Thursday, April 4, 2019, 4:25pm

This One-Second Action Could Save Someone's Life

A quick and easy act could have ripple effects on health and the environment.

Psychology Today

The cost of cool

Air-conditioners do great good, but at a high environmental cost

The rapid growth in their use makes it urgent to limit the damage

The Economist

Pollution Peaks When Temperatures Top Out

SCIENTIFIC AMERICAN

07/13/2018

Under Climate Change, The AC Giveth And The AC Taketh Away



Sci FRI

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Solar benefits health and air quality
immediately... *A powerful motivation for
low-carbon energy*

Contact: Tracey Holloway, taholloway@wisc.edu