



NYSERDA

Environmental Research

Environmental Research Planning: Air Quality and Health Effects

**NASA Health and Air Quality Applied Sciences Team:
Connecting NASA Data and Tools with Health and Air Quality Stakeholders**

November 27, 2017

Ellen Burkhard
Senior Project Manager Environmental Research
New York State Energy Research and Development Authority

New York State Energy Plan

Reforming the Energy Vision (REV): A comprehensive roadmap to build a clean, resilient, and affordable energy system for all New Yorkers

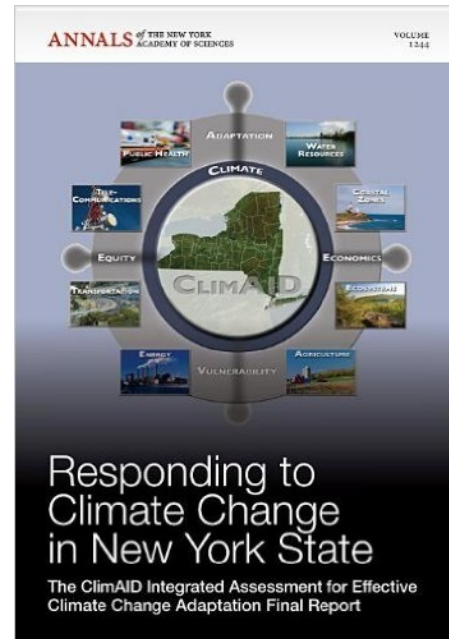
40% **Reduction**
in GHG emissions from 1990 levels

50% **Generation**
of electricity must come from renewable energy sources

23% **Decrease**
in energy consumption in buildings from 2012 levels

NYSERDA's Environmental Research Program

- Increase the understanding and awareness of the environmental and public health impacts of energy choices and emerging energy options
- Provide scientific foundation for creating effective and equitable energy-related environmental policies and resource management practices



Air Quality and Health Effects Research

What are the significant changes that are occurring in the power, building heating and cooling, and transportations sectors and what are the anticipated changes (increases and decreases) in emissions and exposure estimates?

emissions characterization

epidemiology studies

ambient air quality monitoring

clinical health studies

source apportionment

accountability studies

improved modeling

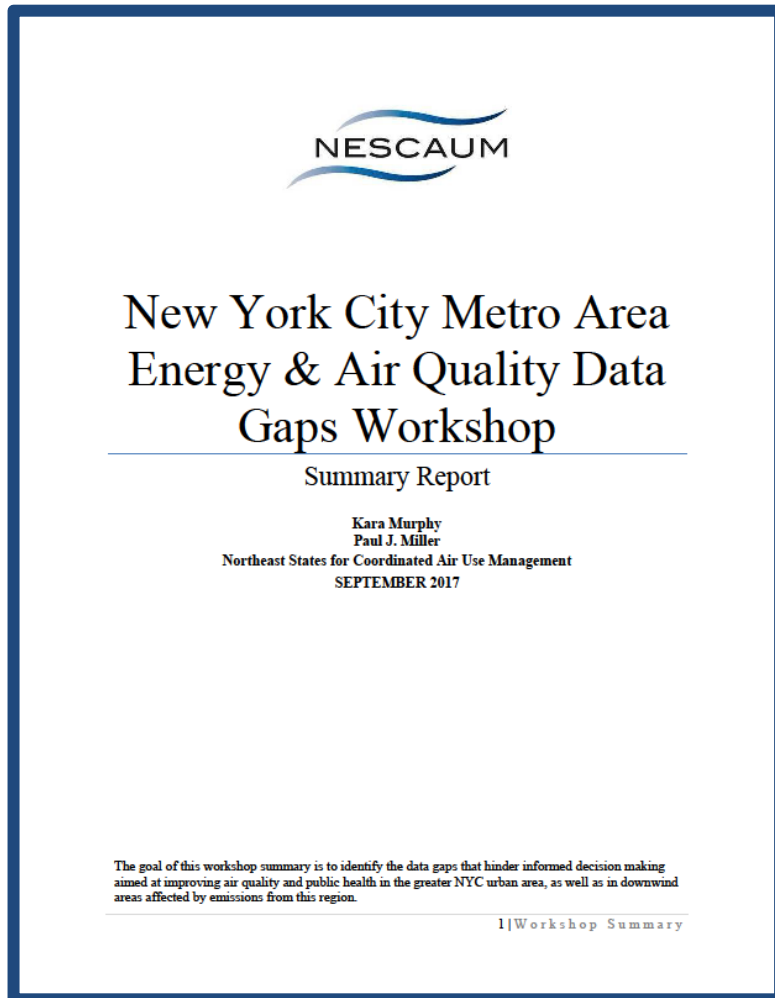
exposure assessment

trends analysis

health impact assessment

New York City Metro Area Energy and Air Quality Data Gaps Workshop

May 24th – 25th, 2017



Workshop Steering Committee

Ellen Burkhard, *NYSERDA*

Arlene Fiore, *Columbia University*

Daniel Jacob, *Harvard University*

Iyad Kheirbek, *NYC Dept. of Health and Mental Hygiene*

Paul Miller, *NESCAUM*

Rob Sliwinski, *NYS Dept. of Environmental Conservation*

K. Max Zhang, *Cornell University*

Environmental Research Planning: Air Quality and Health Effects

November 1, 2017

Exposure and Health Effects

Richard Schlesinger, Ph.D.

Air Quality Trends Including Monitoring and Modeling

Daniel Jacob, Ph.D.

Source Characterization, Pollution Control Technologies, and Emissions Estimates

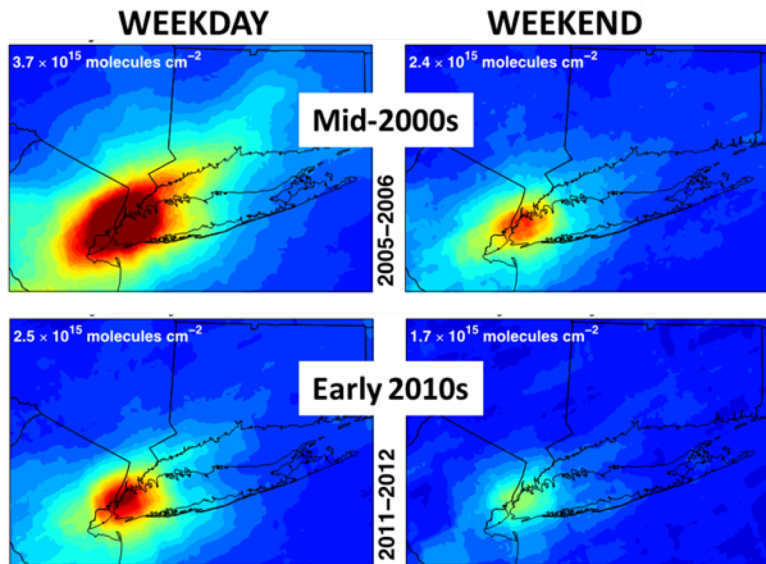
Praveen Amar, Ph.D.





HAQAST3 November 28-29

Hosted by Columbia University's [Lamont-Doherty Earth Observatory](#).



Following NO_x emission controls, current weekday tropospheric NO₂ columns look more like past weekends

Using NASA satellite data to help solve real-world public health and air quality problems

New generation of satellites:
NOAA/NASA GOES-R
ESA/SRON TROPOMI
NASA TEMPO

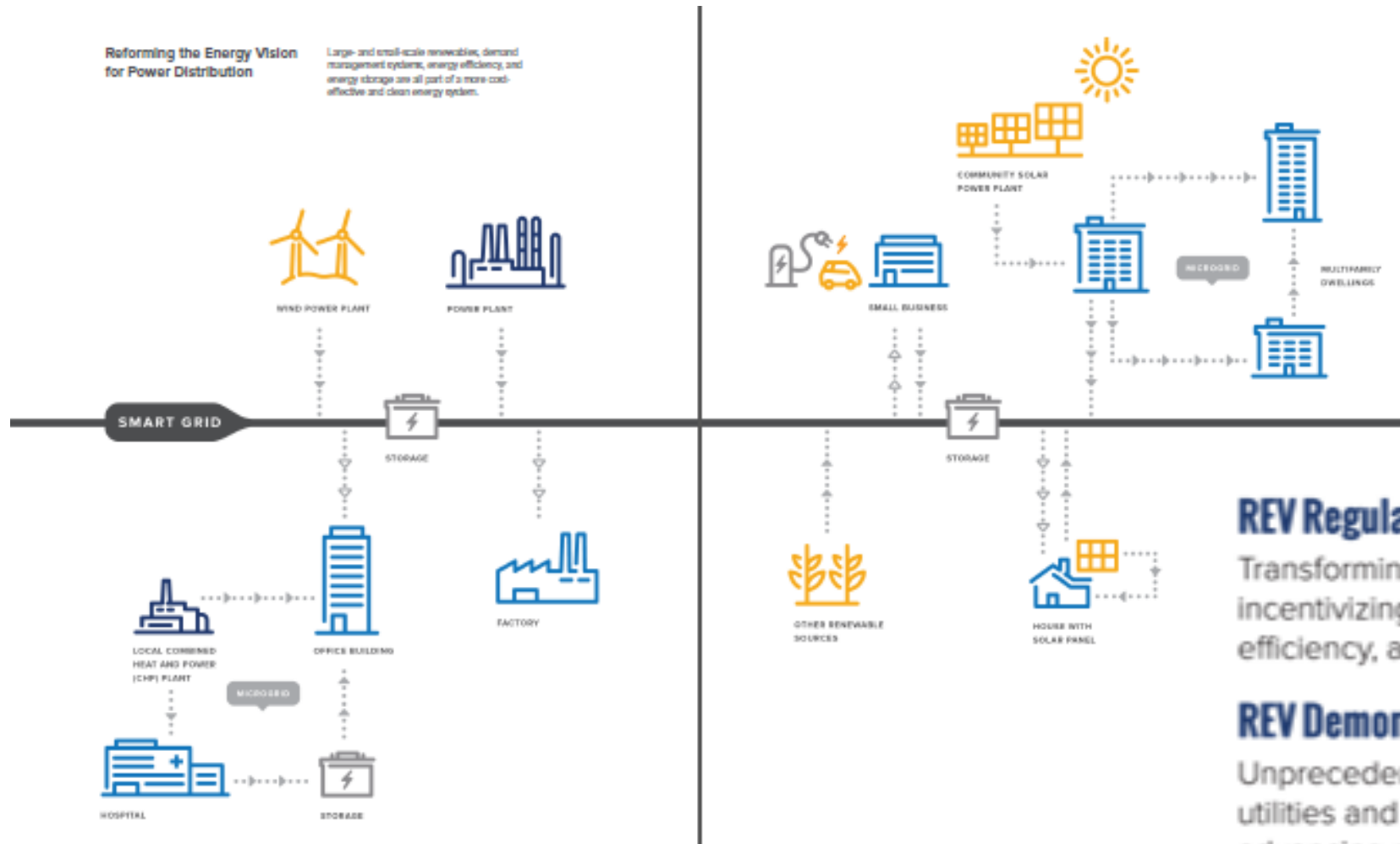
Thank you

Ellen Burkhard

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New York State Energy Plan

REFORMING the ENERGY VISION (REV)



REV Regulatory Reform

Transforming the way utilities operate by incentivizing smart energy management, efficiency, and renewable energy.

REV Demonstration Projects

Unprecedented partnerships between utilities and technology companies advancing private investment in clean energy.

NY-Sun

Making solar affordable for all New Yorkers

Progress:

- 800% increase since 2011
- 8,000 people in industry
- Costs cut in half in 5 years
- 814 MW solar installed + 1,142 MW in pipeline -> building towards goal of **3,000 MW**

Offshore Wind

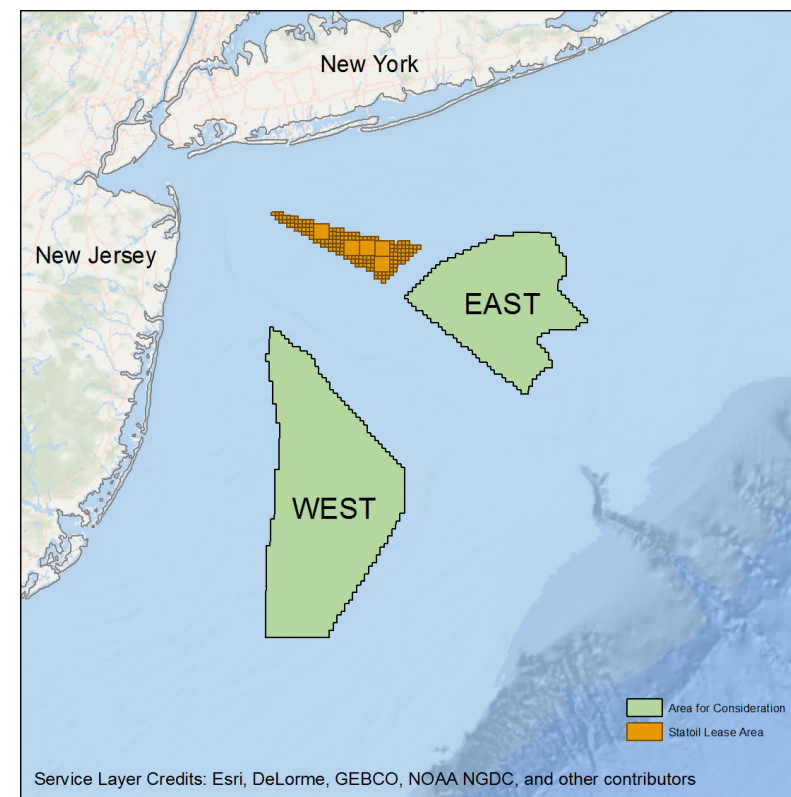
up to 2,400 MW by 2030

2017 Master Plan

A comprehensive state roadmap for advancing development of offshore wind in a cost-effective and responsible manner

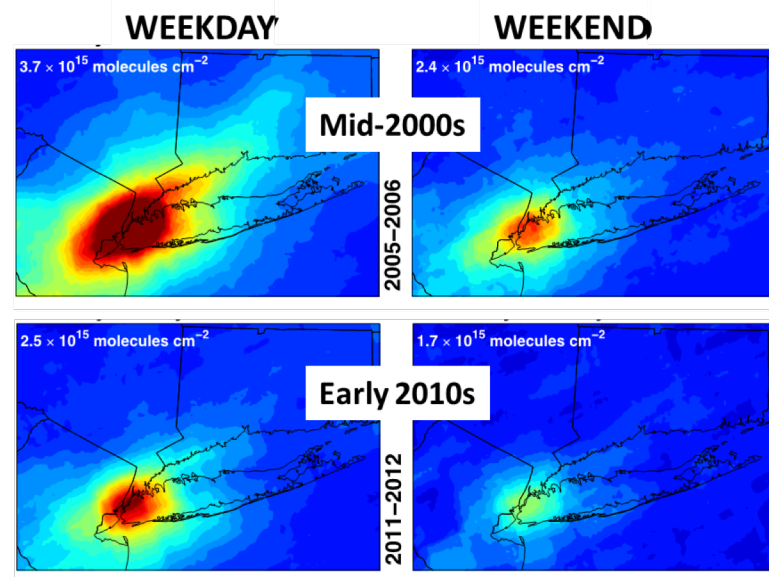
Key Elements

1. Recommended development sites
2. Guidelines for developers
3. Analysis and support for cost-effective electricity purchase



Significant opportunities to partner

- Long-term monitoring sites (Queens College, Whiteface Mountain, Pinnacle State Park)
- MESONET
- City College of NY
- New generation of satellites:
 - NOAA/NASA GOES-R
 - ESA/SRON TROPOMI
 - NASA TEMPO



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