

# Friends of the Village Library

Keith Schue

October 16, 2022

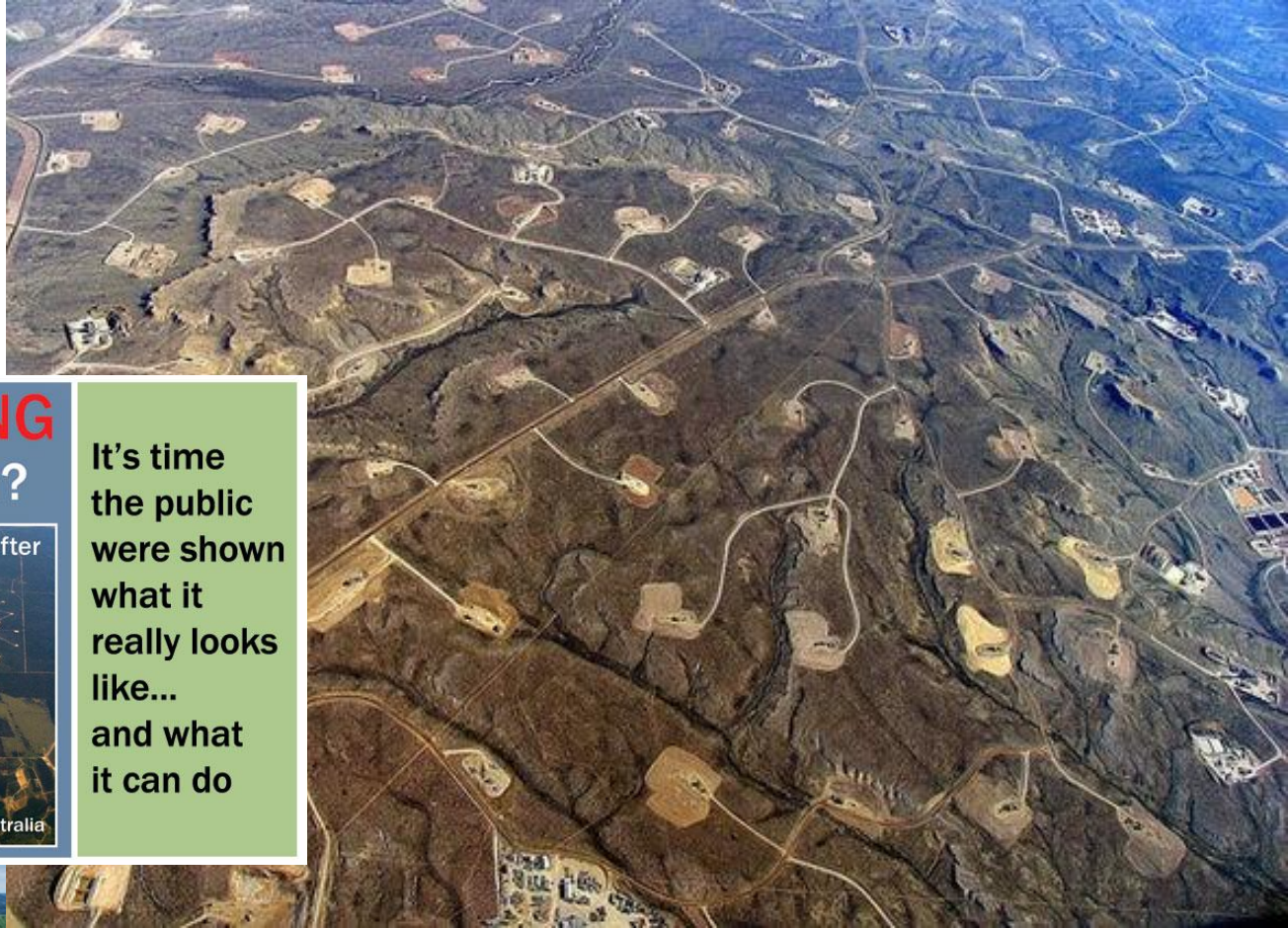


Otsego County, NY



*Urban Sprawl*

# Energy Sprawl



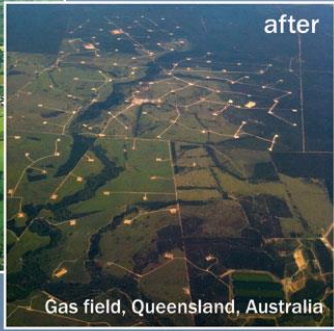
What does **FRACKING** mean?

before



Our countryside

after



Gas field, Queensland, Australia

It's time the public were shown what it really looks like... and what it can do



# *Energy Sprawl*







## TWU Pushes Back On NYS Climate Action Draft Plan

May 4, 2022 | Bob Hennelly | LaborPress

Progressive wing stressed by gas debate

New York, NY – Hundreds of rank & file members of Transport Workers Union Local 101, employed by the National Grid utility, rallied outside the site of the May 3 New York State Climate Action Council public hearing in Brooklyn to protest its draft plan as a “job killing disaster.”

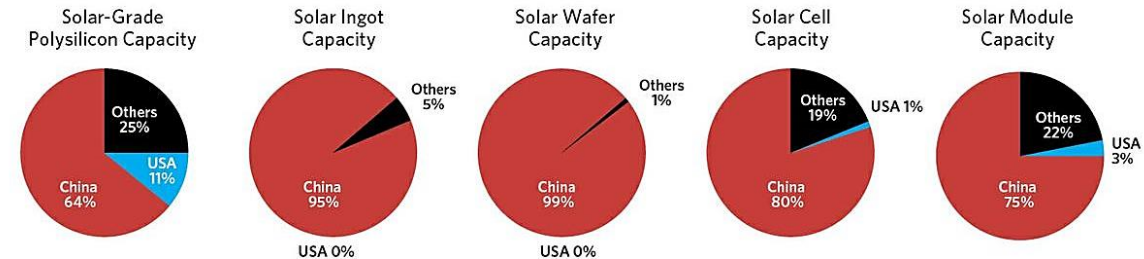
The packed public hearing at the Brooklyn campus of the New York City College of Technology was the seventh in series of hearings that have been scheduled to get comment on the CAC’s proposals.

The Climate Action Council was established back in 2019 with Albany’s passage of the Climate Leadership and Community Protection Act which committed the state to reduce greenhouse gas emissions by 40 percent across the economy by 2030 and “no less than 85 percent by 2050 from 1990 levels.” The draft plan calls for a dramatic shift away from the burning of fossil fuels which have been linked to the warming of the earth’s atmosphere and catastrophic climate change.



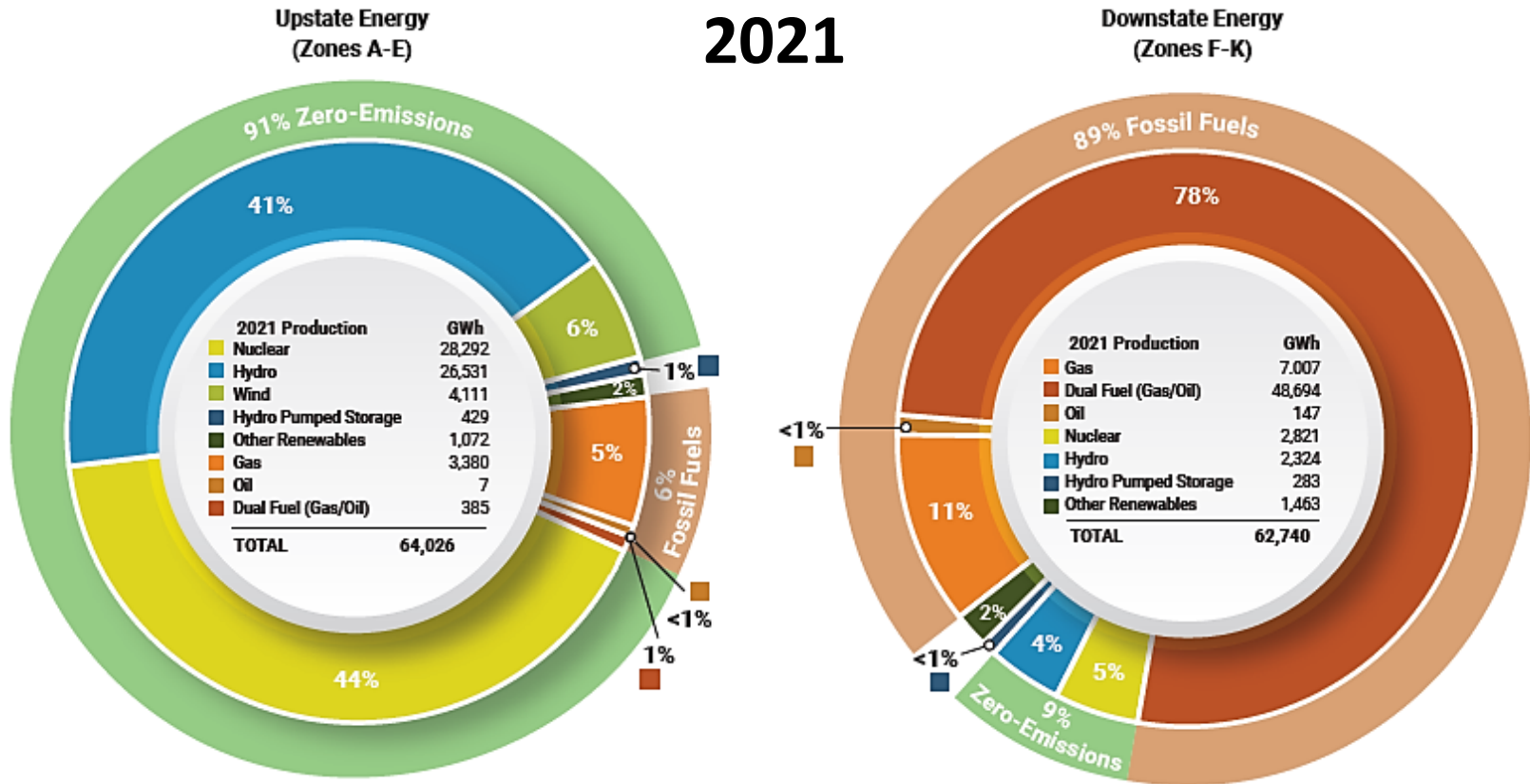
## The Solar Manufacturing Value Chain

China has a near monopoly on most solar manufacturing.




SOURCE: REC SILICON ASA

# 2021



> **Figure 12:** provides information on the production of electricity, by fuel type, in 2021. Stemming from the deactivation of Indian Point, production from nuclear generation fell from 29% of NYCA production in 2020 to 24% in 2021. That supply was primarily replaced by dual fuel units, which made up 39% of NYCA production in 2021 as compared to 35% in 2020. Combined, zero-emissions resources made up 91% of upstate production in 2021, which is very similar to 2020 production levels, while fossil units downstate made up 89% of the production from that region in 2021 as compared to 77% in 2020.


# NY Executive Law Section 94-c “Accelerating Siting” Accelerated Renewable Energy Growth & Community Benefits Act



LATEST NEWS  
2.2.2022

## Preempting Local Zoning Codes Fuels Opposition to Renewable Energy in New York

By Frederic M. Maubs



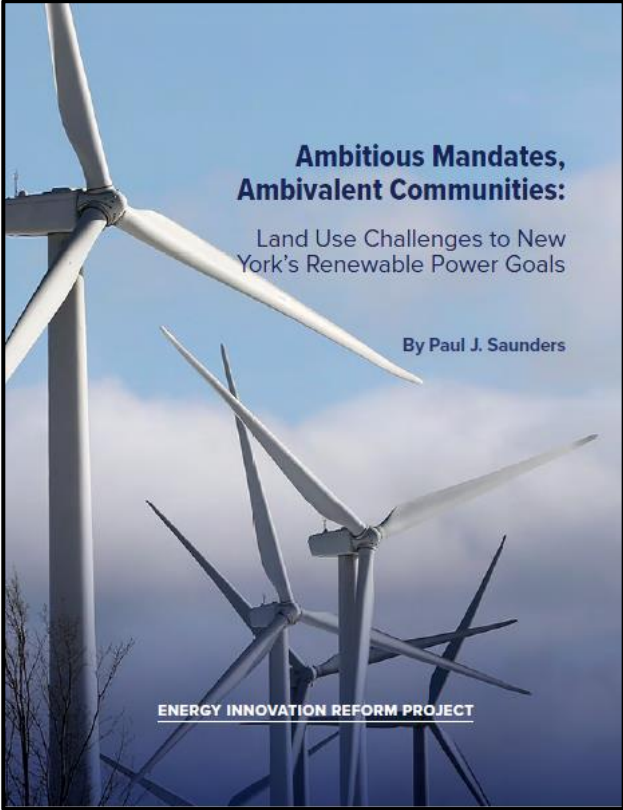
By now, many New Yorkers are aware that their state has adopted ambitious plans to lead the nation in the fight against climate change and global warming. The objectives established for New York’s electric grid in the Climate Leadership and Community Protection Act (CLCPA) [1] – to increase renewably generated electricity to 70% of total in-state production by 2030 and generate 100% emissions-free electricity by 2040 – are now entering our vernacular as the “70 x 30” and “100 x 40” goals, as stated in the Draft Scoping Plan and the NRDC website.

Perhaps less well understood, however, is the enormity of the effort it will take to achieve these goals. The New York Independent System Operator estimates that 39,262 megawatts (MW) in nameplate capacity [2] must be sourced from grid-connected solar, as opposed to behind-the-meter solar (such as residential rooftop panels), to meet the 100 x 40 goal. [3] To put 39,262 MW into perspective, consider that the largest operating solar facility in New York State is the Long Island Solar Farm, a 32 MW nameplate capacity facility [4] that consumes 200 acres of land. If NYISO’s prediction is correct, then the equivalent of 1,227 more LISFs will need to be constructed in New York by 2040. This is in addition to the 35,200 MW capacity that New York’s onshore wind farms will need to furnish. [5]

However, the burden of hosting renewables facilities, especially solar farms, will not be distributed evenly throughout the state. Rather, they will be concentrated in those areas where it is easiest and least expensive for energy companies to build. This means that developers will choose sites where population density and land prices are low, the ground is level, the soil contains no rocks or roots, and transmission lines are close – typically within two miles. These also happen to be the very places where New York’s prime agricultural soils are located. In other words, the necessary solar and wind farms might well end up on New York’s most valuable farmland, in particular the areas encircling the Adirondacks, the horizontal belt just south of Lake Ontario from Buffalo to the Capital District, and the Hudson Valley between Albany and Poughkeepsie. [6]

Between 2011 and 2020, the process of permitting all “major” (over 25 MW) power facilities in New York, including renewable facilities, was governed by Public Service Law Article 10 and presided over by the New York State Board

<https://nysba.org/preempting-local-zoning-codes-fuels-opposition-to-renewable-energy-in-new-york/>



## Ambitious Mandates, Ambivalent Communities:

Land Use Challenges to New York’s Renewable Power Goals

By Paul J. Saunders

ENERGY INNOVATION REFORM PROJECT

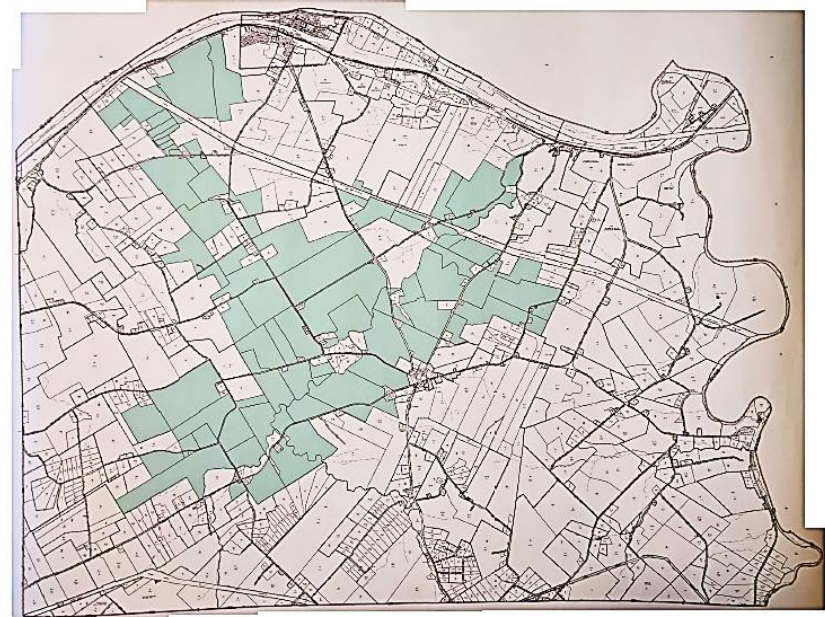
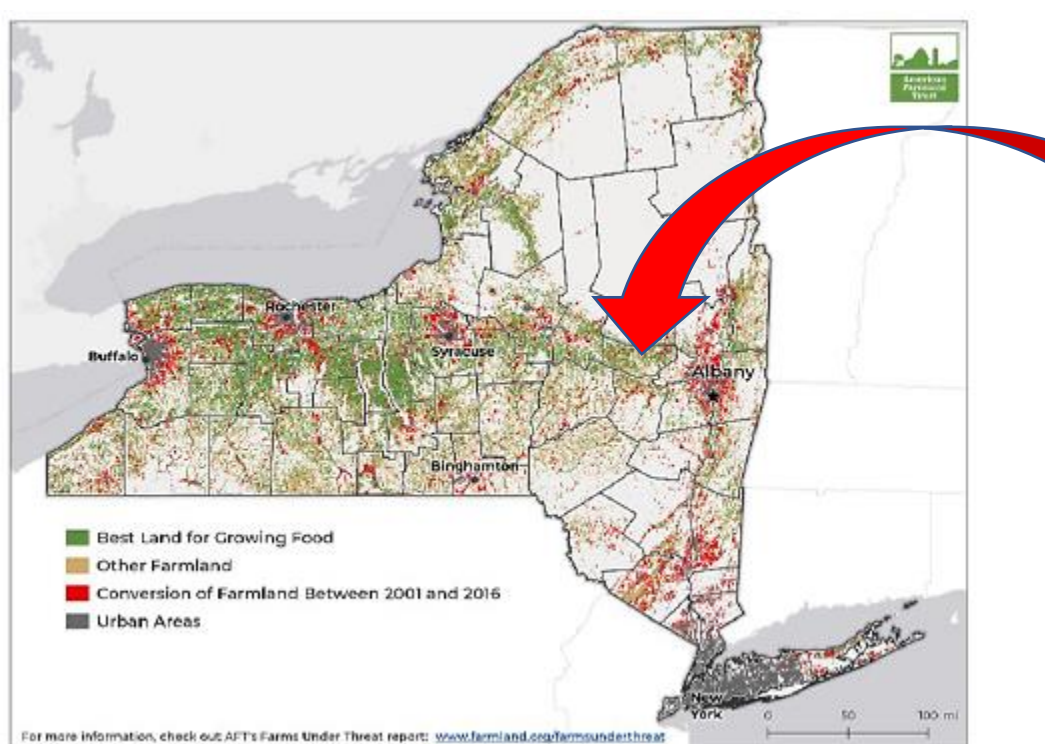
<https://www.innovationreform.org/wp-content/uploads/2021/09/Ambitious-Mandates.pdf>



## NY Executive Law **Section 94-c** “**Accelerating Siting**” Accelerated Renewable Energy Growth & Community Benefits Act

- Replaces Article X siting process to expedite **solar and wind projects >25 MW** (allows 20-25 MW applications)
- Creates **Office of Renewable Energy Siting (ORES)** to approve projects (siting board with participation of 2 community members eliminated)
- **Limits project review to 1 year**, otherwise project is automatically approved (also for transmission projects through PSC)
- **Preempts environmental review under SEQRA** (State Environmental Quality Review Act)
- **Allows ORES to dismiss local laws** considered “*unreasonably burdensome*”

**NY Bar:** “[T]he burden of hosting renewables facilities, especially solar farms, will not be distributed evenly ... [but] concentrated in those areas where it is easiest and least expensive for energy companies to build. ...[D]evelopers will choose sites where population density and land prices are low, the ground is level, the soil contains no rocks or roots, and transmission lines are close ... **These also happen to be the very places where New York’s prime agricultural soils are located.**”



ConnectGen 2020 initial proposal  
Town of Glen, Montgomery County

**NY Bar:** *“When invoked, [94-c] denies towns and villages the land use authority granted them under enabling statutes almost 100 years old.”*

## **HOME RULE**

***“Eliminating [home rule] entirely to promote green energy could exacerbate New York’s ever-present upstate-downstate, rural-urban divides.”***

***“The siting laws require the developer only to mitigate environmental harms to the extent possible on whatever land it proposes to build the facility. [T]he “unreasonably burdensome” test for preempting local law relates only to the facility as proposed... [T]he process makes local law and knowledge about where best to site the facilities irrelevant.”***

# Litigation relating to promulgation of 94-C implementing regulations ....

*To be Argued by:*  
GARY A. ABRAHAM  
(Time Requested: 15 Minutes)

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**New York Supreme Court**  
Appellate Division—Third Department

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TOWN OF COPAKE, AMERICAN BIRD CONSERVANCY,  
SAVE ONTARIO SHORES, INC., CAMBRIA OPPOSITION TO  
INDUSTRIAL SOLAR, INC., CLEAR SKIES ABOVE BARRE,  
INC., DELAWARE-OTSEGO AUDUBON SOCIETY, INC.,  
GENESEE VALLEY AUDUBON SOCIETY, INC., ROCHESTER  
BIRDING ASSOCIATION, INC., TOWN OF MALONE,  
TOWN OF SOMERSET, AND TOWN OF YATES,  
*Petitioners/Plaintiffs-Appellants,*

and

TOWN OF CAMBRIA, and TOWN OF FARMERSVILLE,  
*Petitioners/Plaintiffs,*

- against -

NEW YORK STATE OFFICE OF RENEWABLE ENERGY SITING,  
HOUTAN MOAVENI AS ACTING DIRECTOR OF THE OFFICE  
OF RENEWABLE ENERGY SITING, NEW YORK STATE,  
NEW YORK STATE DEPARTMENT OF STATE, AND  
JOHN DOES 1-20,  
*Respondents/Defendants-Respondents,*

and

ALLIANCE FOR CLEAN ENERGY NEW YORK, INC.  
*Intervenor-Respondent-Respondent,*

*(for continuation of caption, see inside cover)*

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**BRIEF FOR PETITIONERS/PLAINTIFFS-APPELLANTS**

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LAW OFFICE OF GARY A. ABRAHAM Gary A. Abraham, Esq. <i>Attorneys for Petitioners/Plaintiffs- Appellants</i> 4939 Conlan Road Humphrey, New York 14741 (716) 790-6141 gabraham44@comcast.net	WISNIEWSKI LAW PLLC Benjamin E. Wisniewski, Esq. <i>Attorneys for Petitioners/Plaintiffs- Appellants</i> 1150 Crosspoints Lane, Suite 2 Webster, New York 14580 (385) 364-1764 bew@bewlawfirm.com
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Albany County Clerk's Index No. 905502-21

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**Docket Nos.:**  
**534318**  
**534413**

## ARGUMENTS

- ORES neglected the “environmental protection” half of its statutory mandate to expedite the renewable siting and protect the environment.
- Failed to prepare Environmental Impact Statement (EIS)
- Misapplied “deferral theory” that regs have no impact because they do not approve a project
- Failed to take “hard look” at regulation impacts
- Waiver of local laws violates state constitution and legislature’s direction

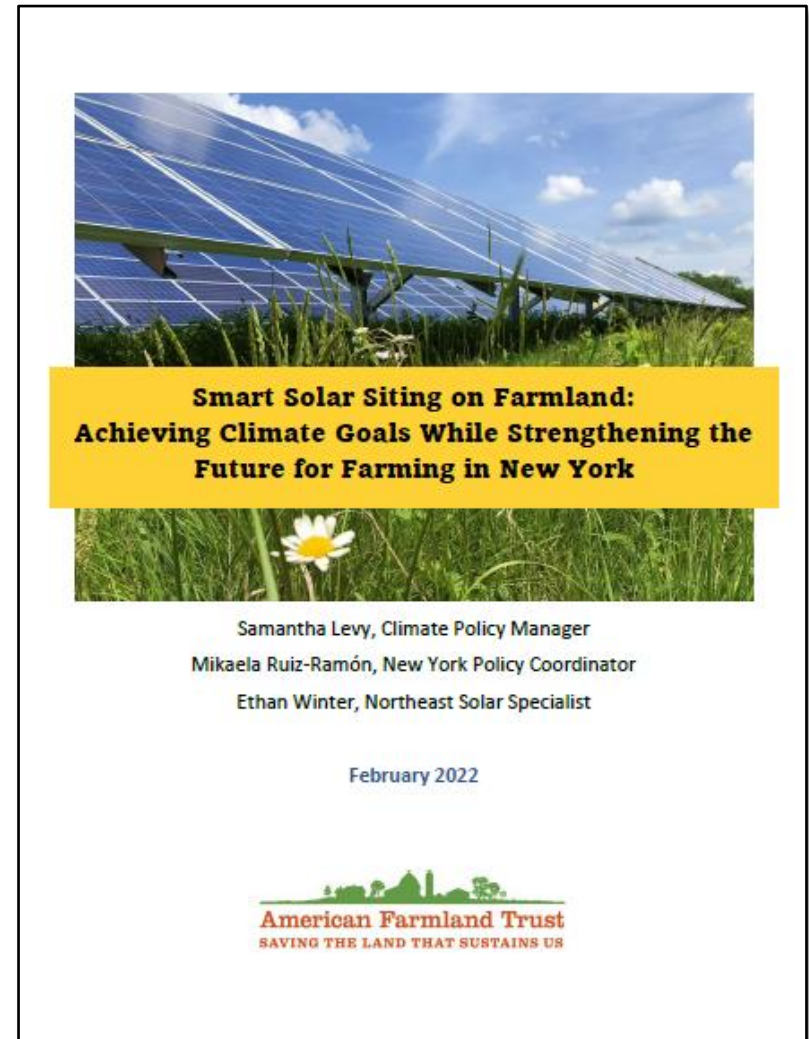


“New York will likely play a greater role in national food security in the future due to its fertile land, abundant water, proximity to population centers, and ability to grow the whole plate – and therefore must carefully consider what is at stake with every acre we lose.”

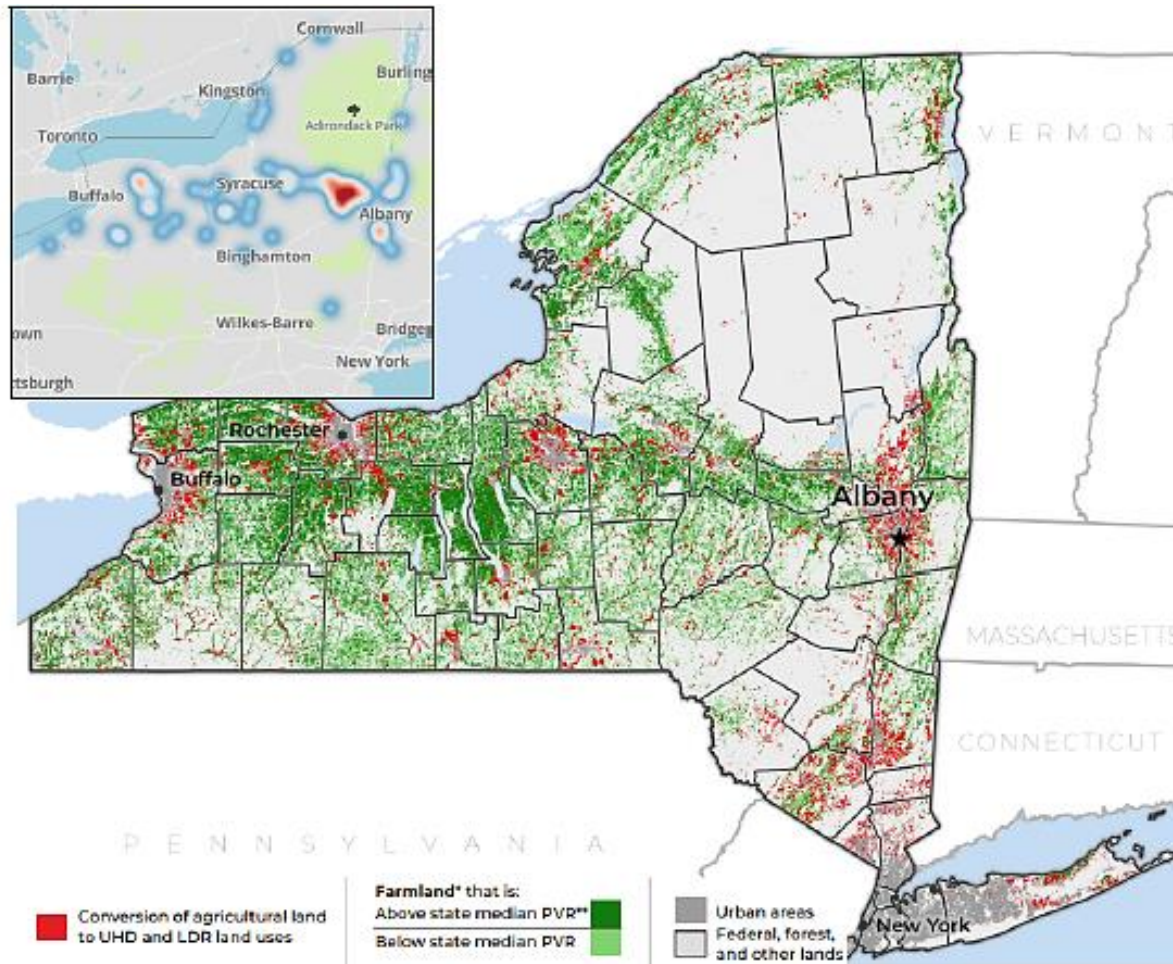
### Survey

- Expected impact mixed, some viewing solar as way of supplementing farming income, more saw negative farm-community impacts
- “Domino-effect”
- Displacement of farmer-renters (65%)
- Decommissioning concerns
- Some interest in “agri-voltaics”

[https://farmlandinfo.org/wp-content/uploads/sites/2/2022/01/NY-Smart-Solar-Siting-on-Farmland\\_FINAL-REPORT\\_1.31.22.pdf](https://farmlandinfo.org/wp-content/uploads/sites/2/2022/01/NY-Smart-Solar-Siting-on-Farmland_FINAL-REPORT_1.31.22.pdf)



American Farmlands Trust: New York faces highest farm loss in nation, a **quarter of a million acres** developed or fragmented by residential development 2001-2016.



## Farmland Conversion 2001-2016 to urban high-density/low density residential

American Farmland Trust: State of the States <https://csp-fut.appspot.com/>

PVC: productivity, versatility, resilience **Insert:** "Heat map" of large scale solar projects  
<https://data.ny.gov/Energy-Environment/Heat-Map-of-Tier-1-Solar-projects-in-NY/jbjk-ebc5>

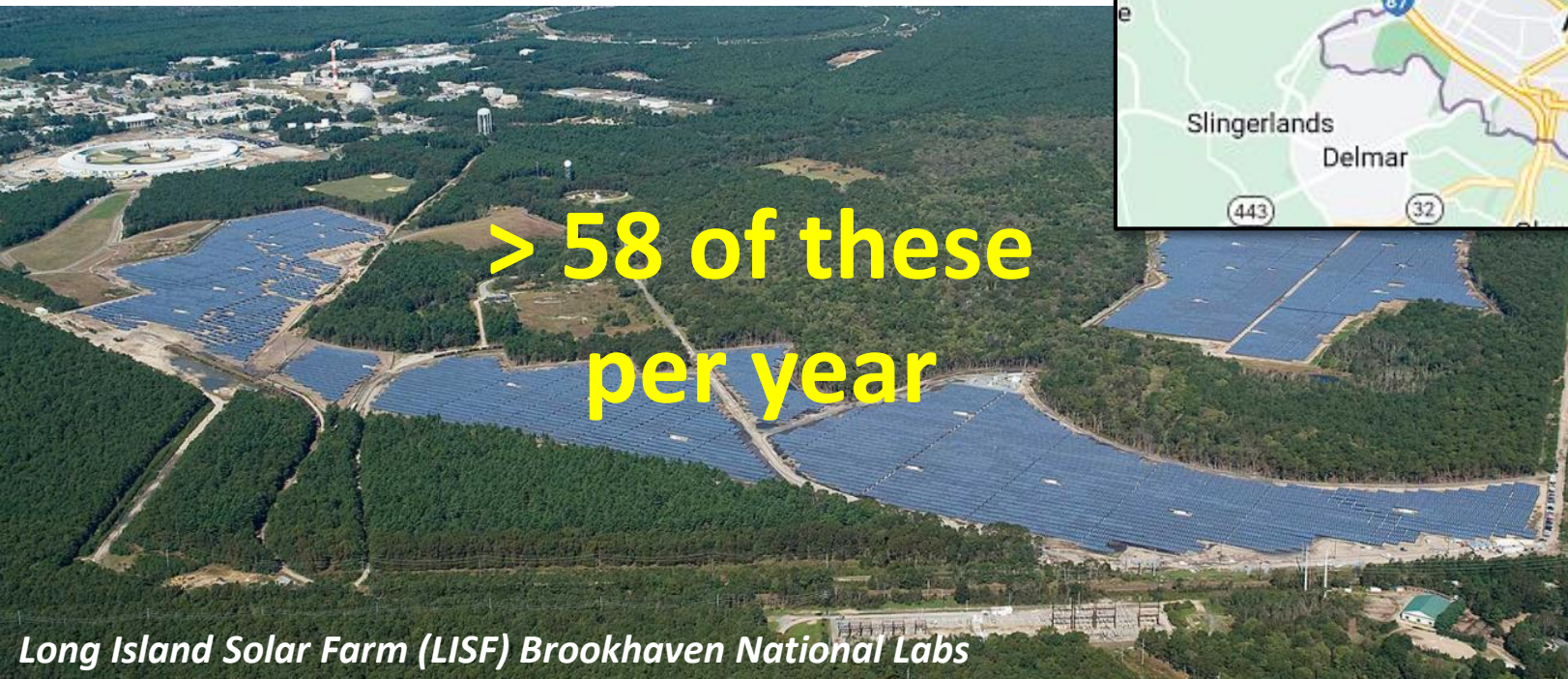
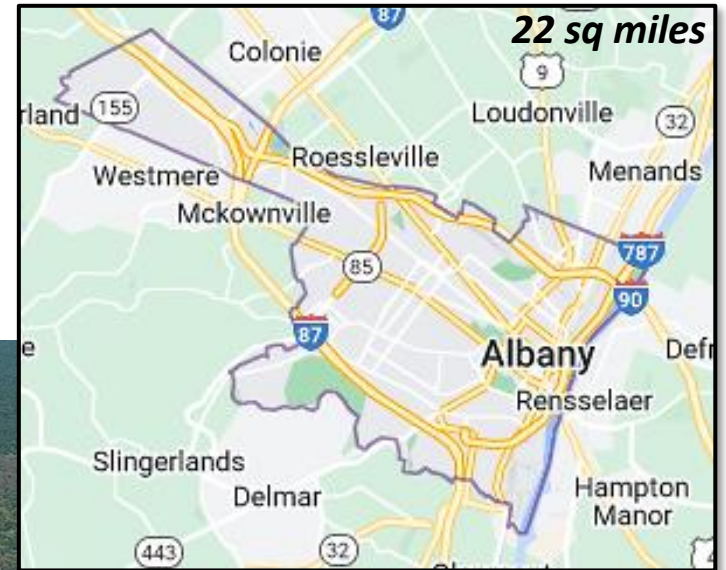
# Large Scale Solar (CLCPA Integration Analysis 2050 Scenario 3)

**44,840 MW** utility-scale single-axis tracking + **5,255 MW** community solar  
(assuming 1/3 of distributed generation is ground-mounted community solar or similar)

up to ~ 400,000 acres

= potentially over **600 square miles**

or **23 sq miles lost each year**



> 58 of these  
per year

*Long Island Solar Farm (LISF) Brookhaven National Labs*

<https://climate.ny.gov/-/media/Project/Climate/Files/IA-Tech-Supplement-Annex-2-Key-Drivers-Outputs.xlsx>

Large-scale single-axis tracking solar PV: 8 acres/MW<sub>AC</sub> <https://www.nrel.gov/docs/fy13osti/56290.pdf>

Long Island Solar Farm utilizes fixed panels, which require less area per MW but have lower capacity factor.

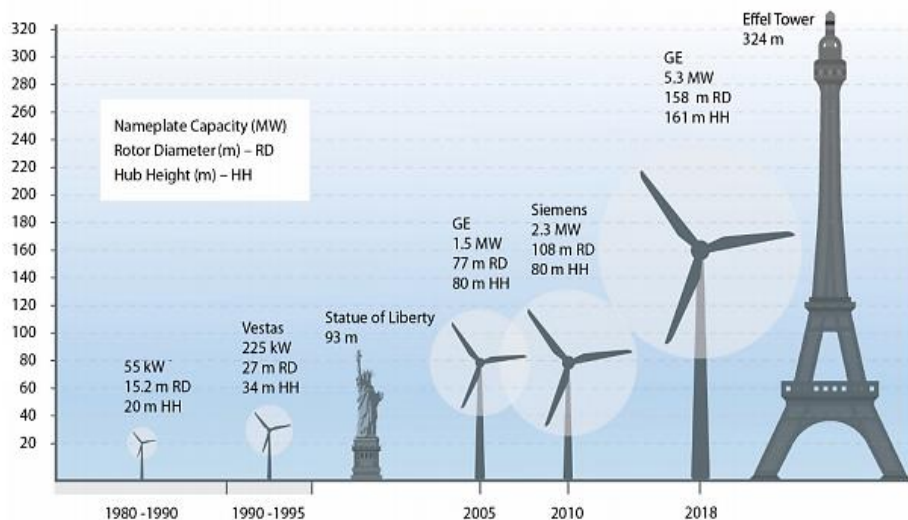
# On-Shore Wind (CLCPA Integration Analysis 2050 Scenario 3)

**10,154 MW** in-state + 6,593 MW imported (2022: 2192 MW in-state)

~ 8000 MW additional in-state

~ **2000 more wind turbines** upstate  
(@ 3-5 MW each)

~ 1-2 installs/week

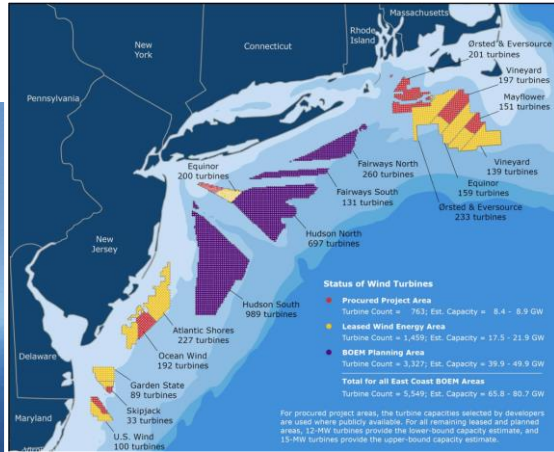




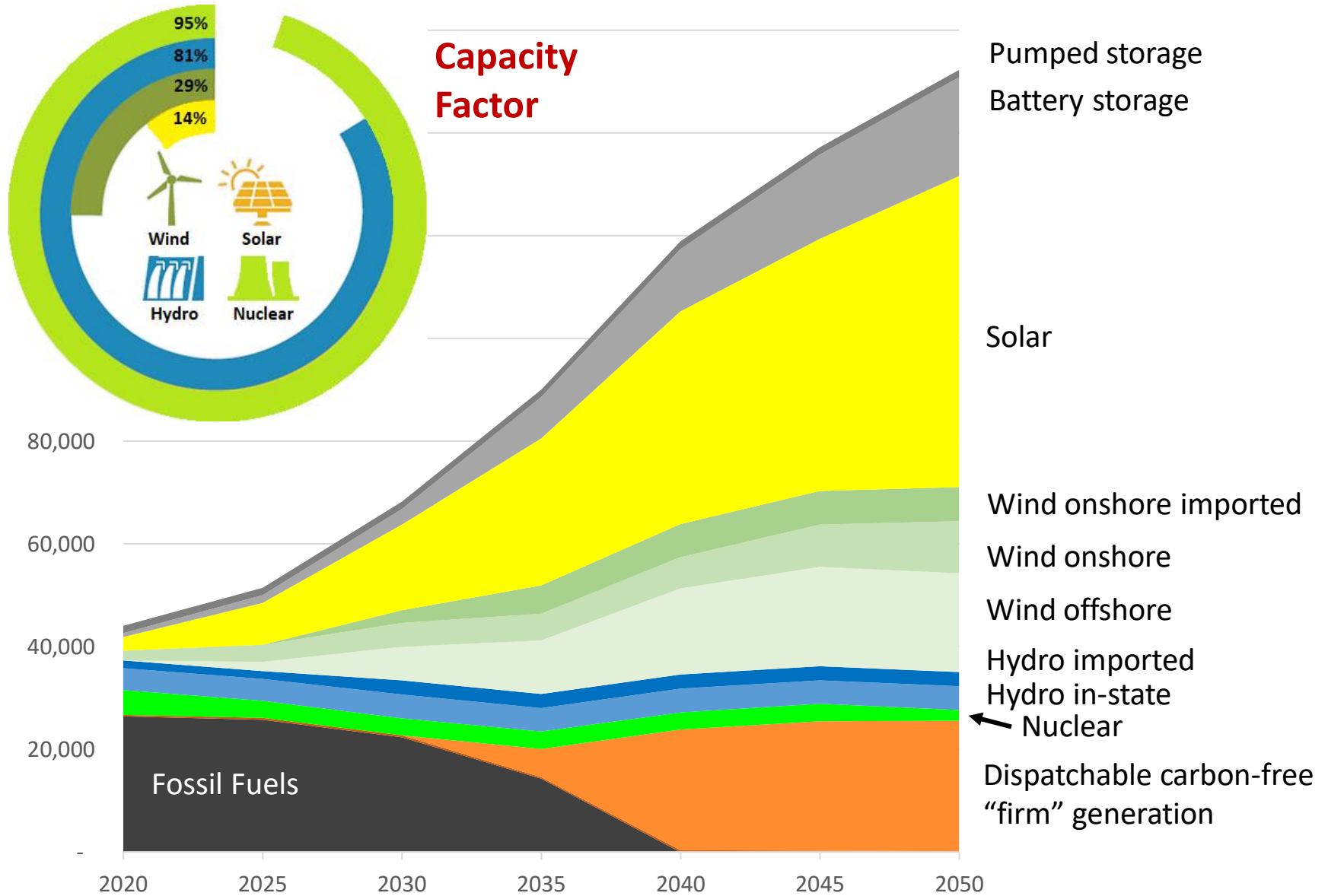
# Offshore Wind (CLCPA Integration Analysis 2050 Scenario 3)

**19,278 MW** (9000 MW by 2035)

**~ 1928 turbines** (@ 10 MW each)



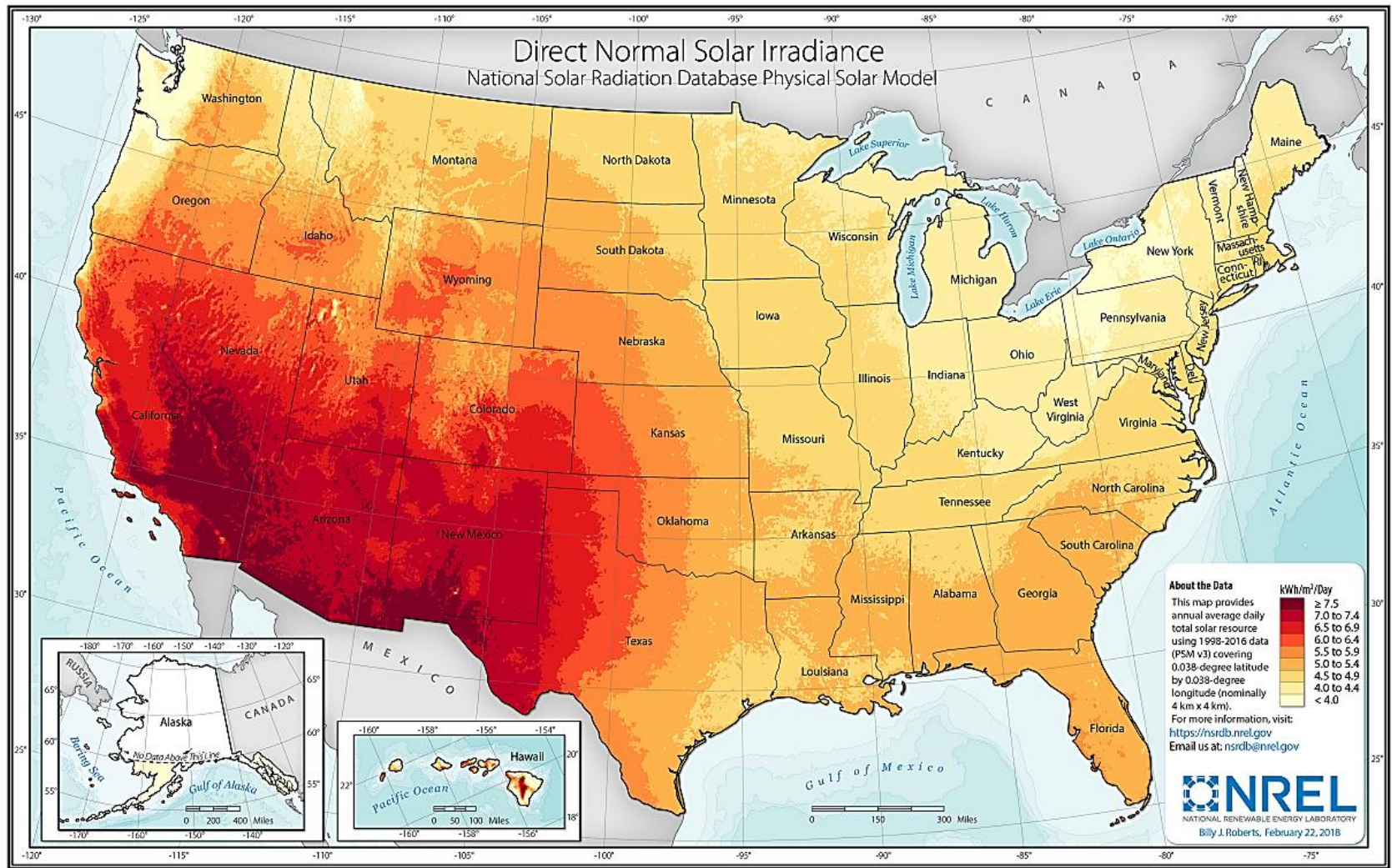
# CLCPA NYSERDA Scenario 3 Electricity Generation Capacity (MW)



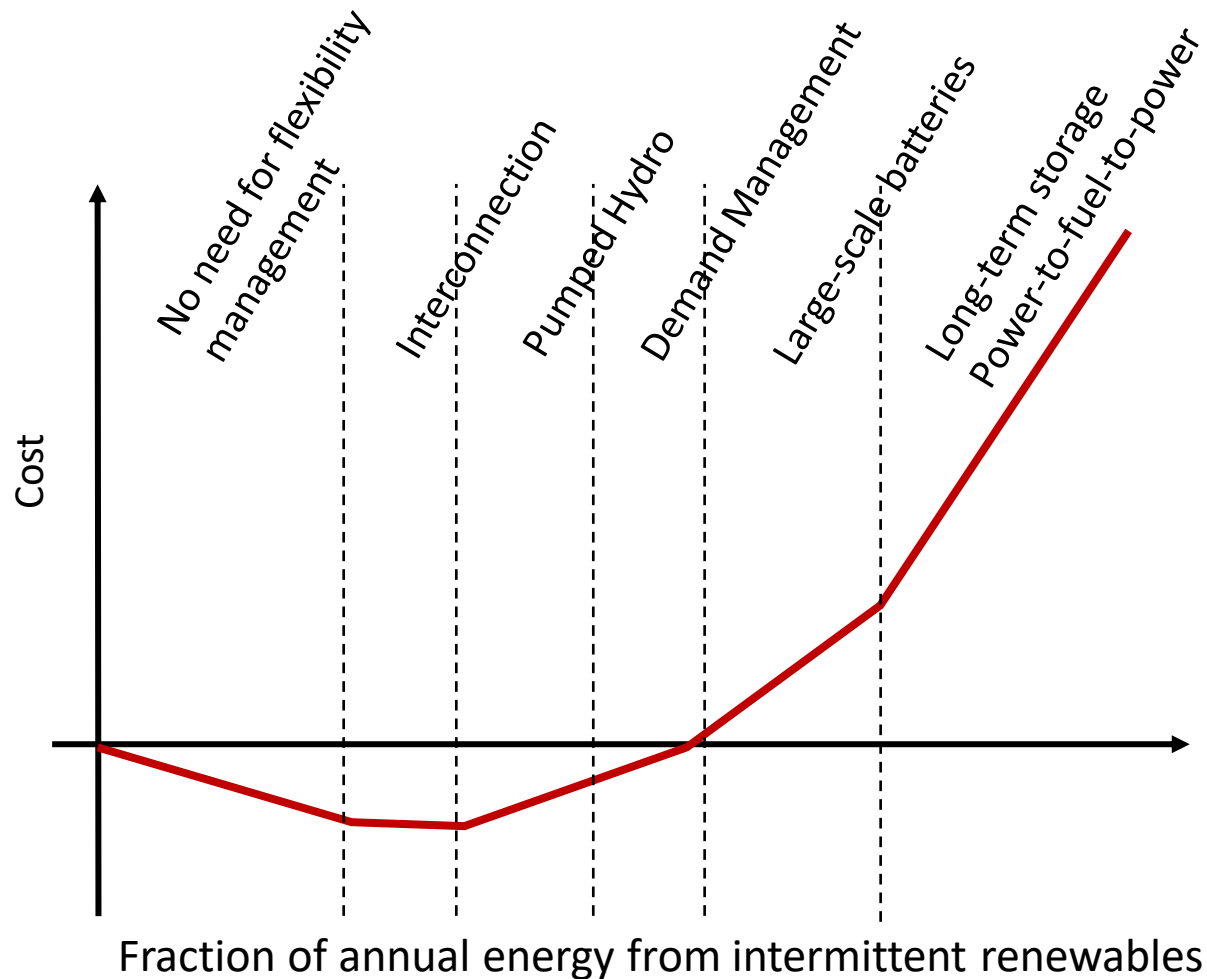
<https://climate.ny.gov/-/media/Project/Climate/Files/IA-Tech-Supplement-Annex-2-Key-Drivers-Outputs.xlsx>

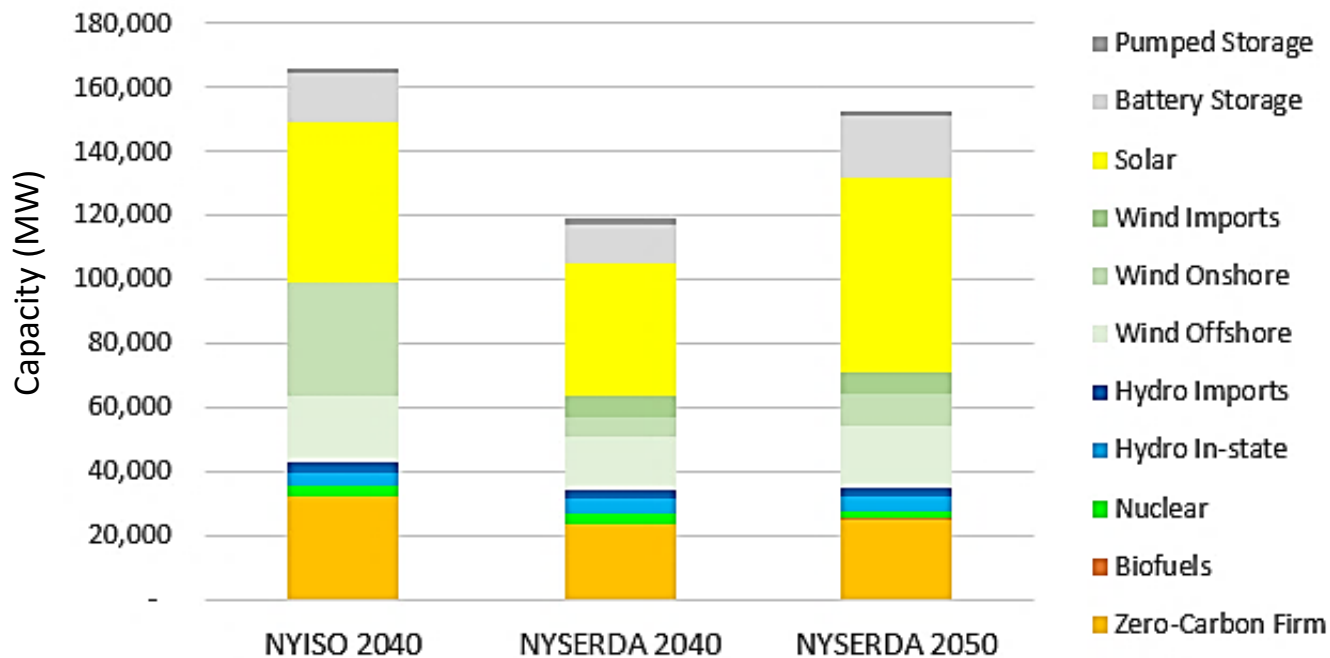
Annual capacity factors of non-emitting Resources, <https://www.nyiso.com/documents/20142/2223020/2020-Power-Trends-Report.pdf/>

A solar panel in southern California can produce much more electricity over time than the same solar panel in upstate New.



# The system-level difficulties and cost of integrating intermittent renewables into the grid grow with increased penetration





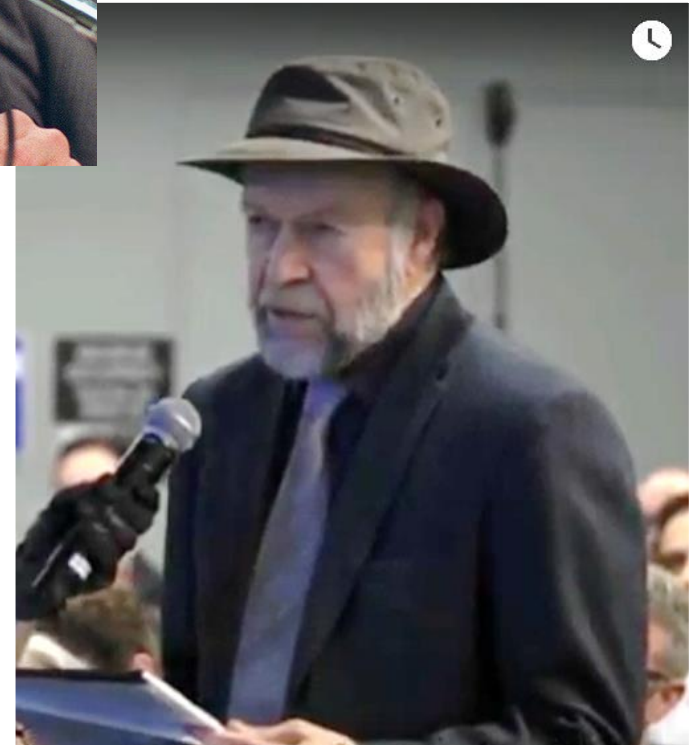
NYISO finds that a wind & solar focused plan would need more generation and storage capacity in 2040 that NYSERDA estimates for 2050



U.S. Congress, 1988

## **Dr. James E. Hansen**

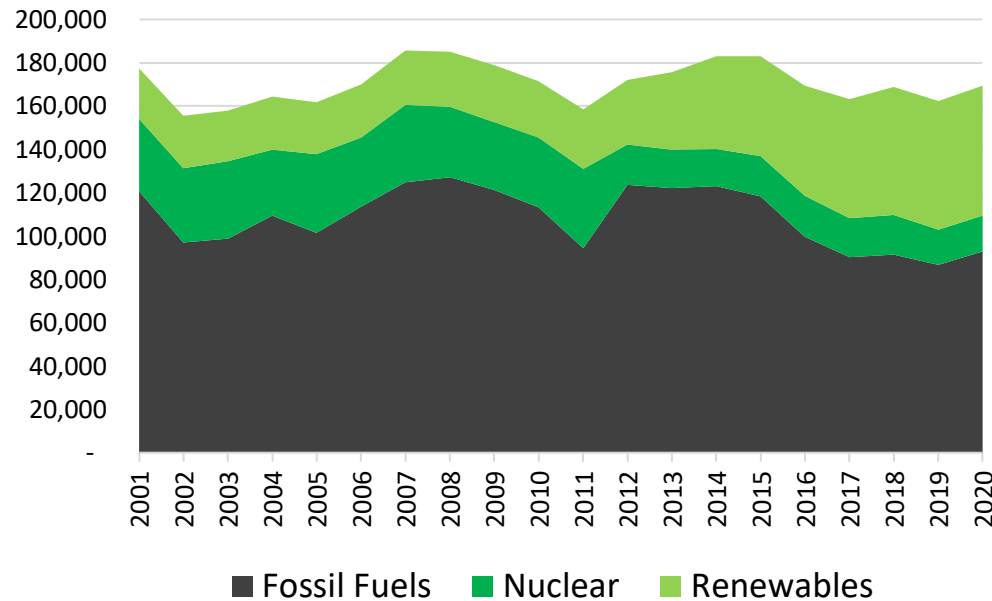
Former Director of NASA Goddard Institute  
Columbia University Earth Institute  
Climate Science, Awareness & Solutions



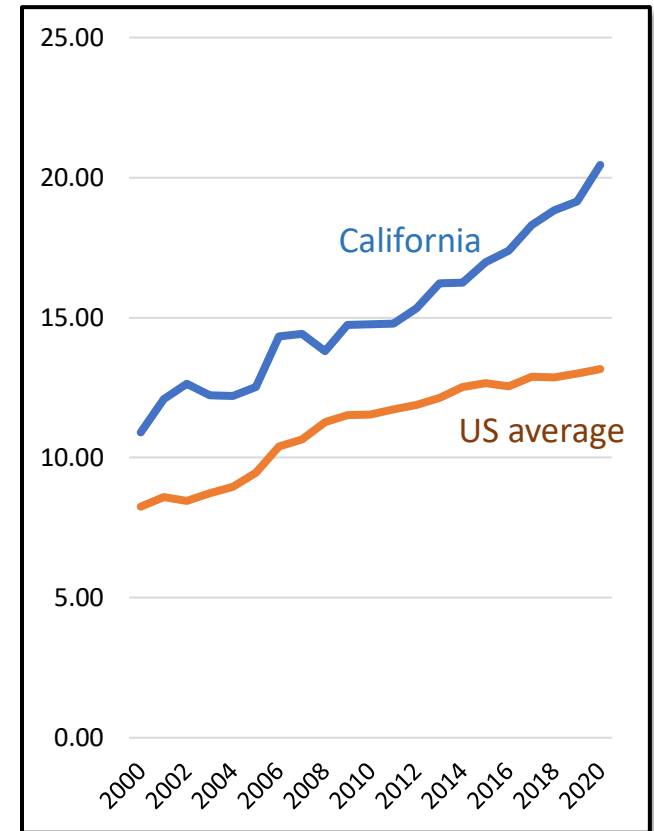
NY Climate Action Council, 2022

# Learn from mistakes: **California**

## California Electricity Generation (GWh)



## Residential Electricity Rate (cents/kWh)



## Blackouts

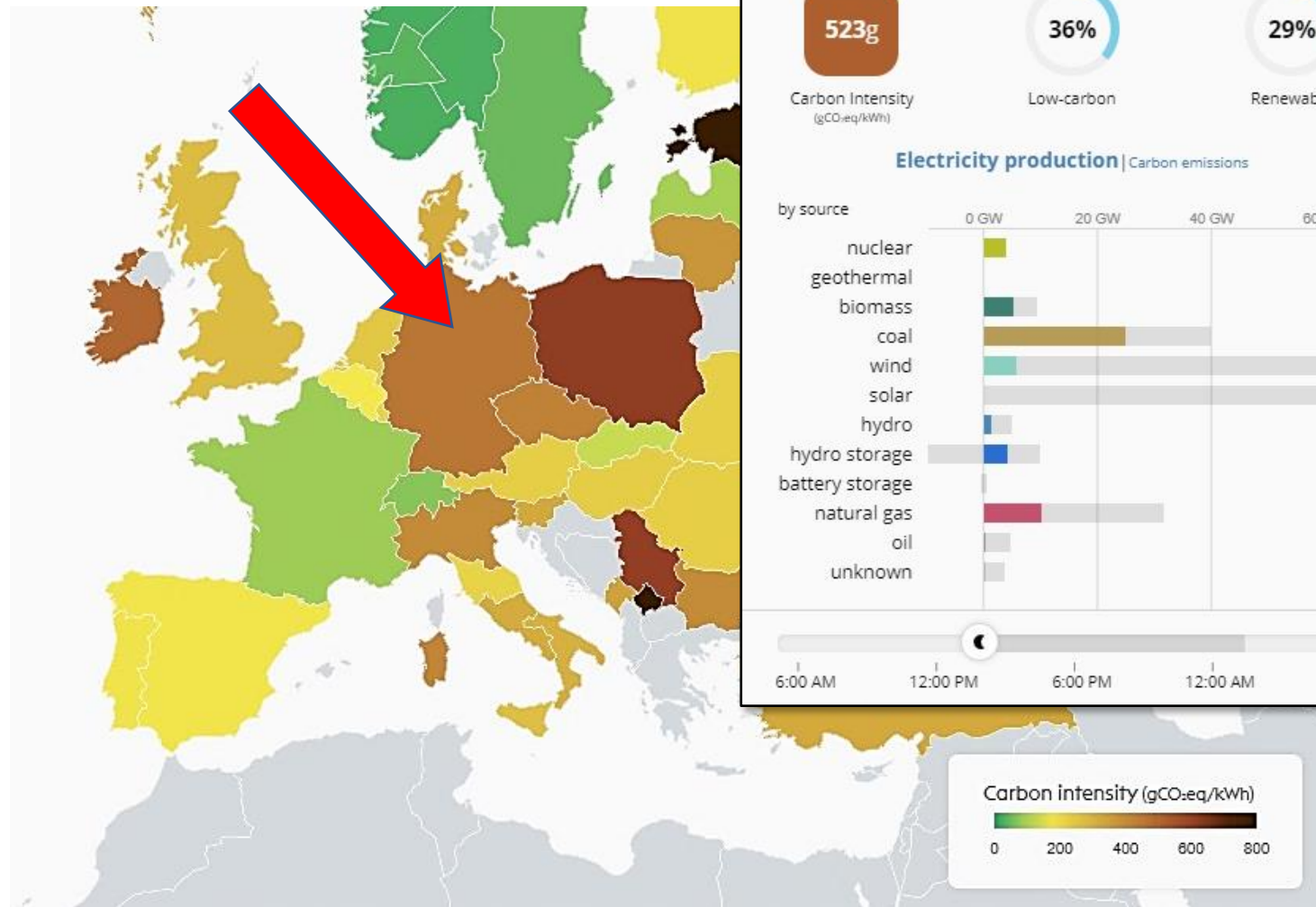


<https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/electric-generation-capacity-and-energy>

[https://www.eia.gov/electricity/sales\\_revenue\\_price/](https://www.eia.gov/electricity/sales_revenue_price/)

Learn from mistakes: **Germany**

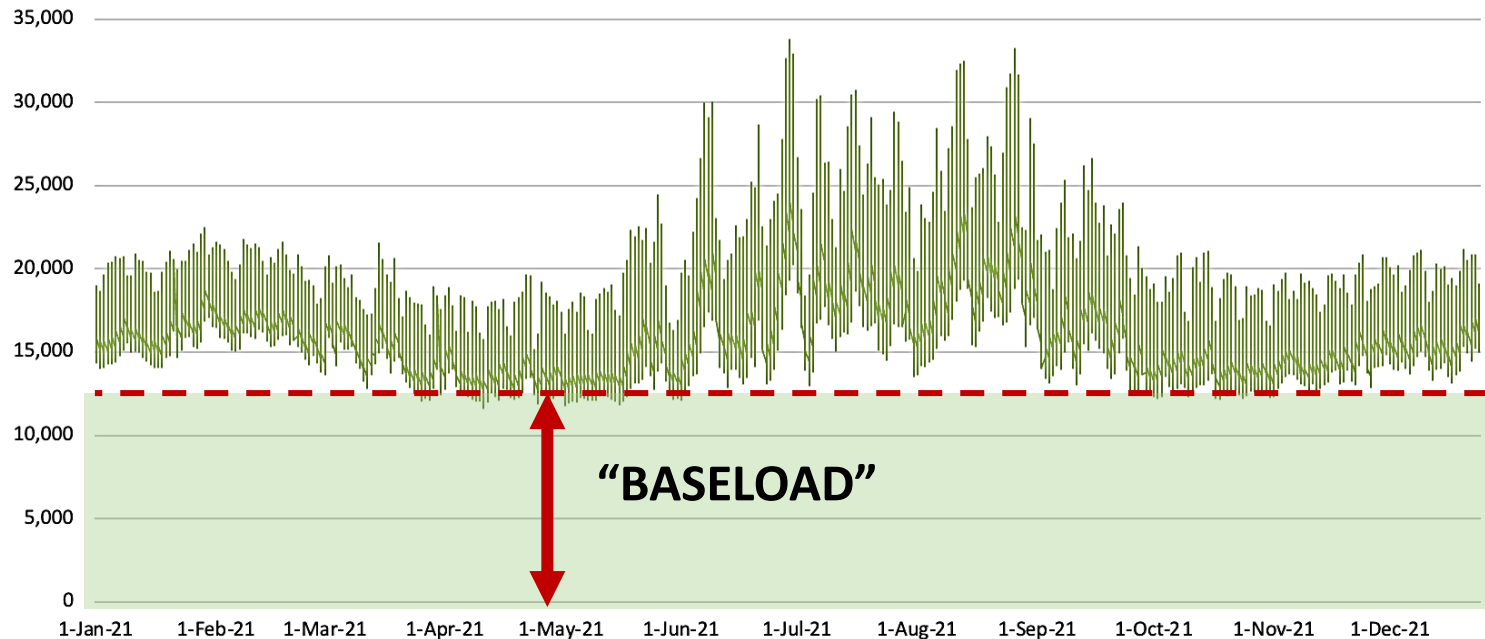
“Energiewende”





# Much of New York's total electricity demand is 24 x 7

## New York Electricity Demand (MW)

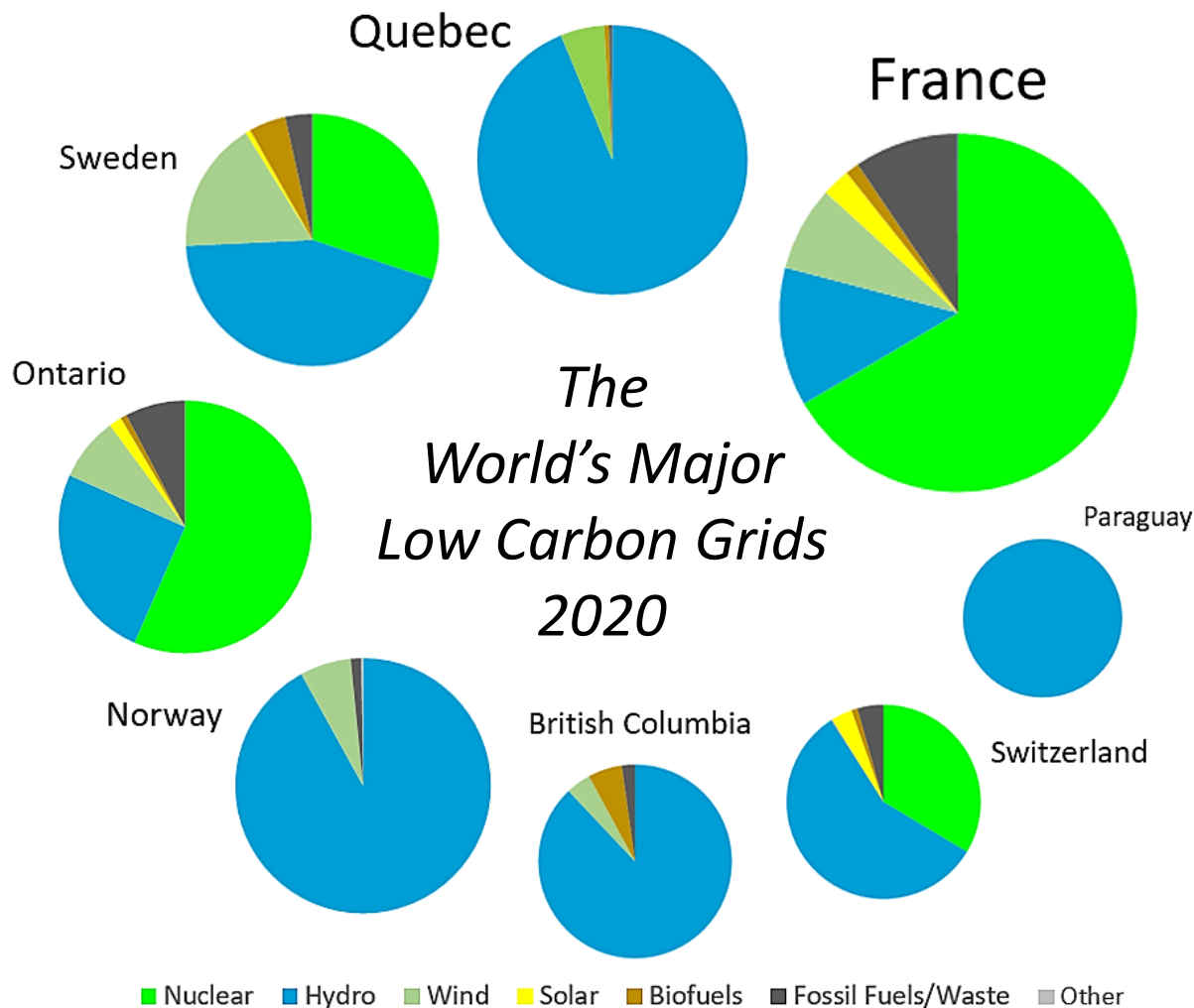


Source: NYISO 2021

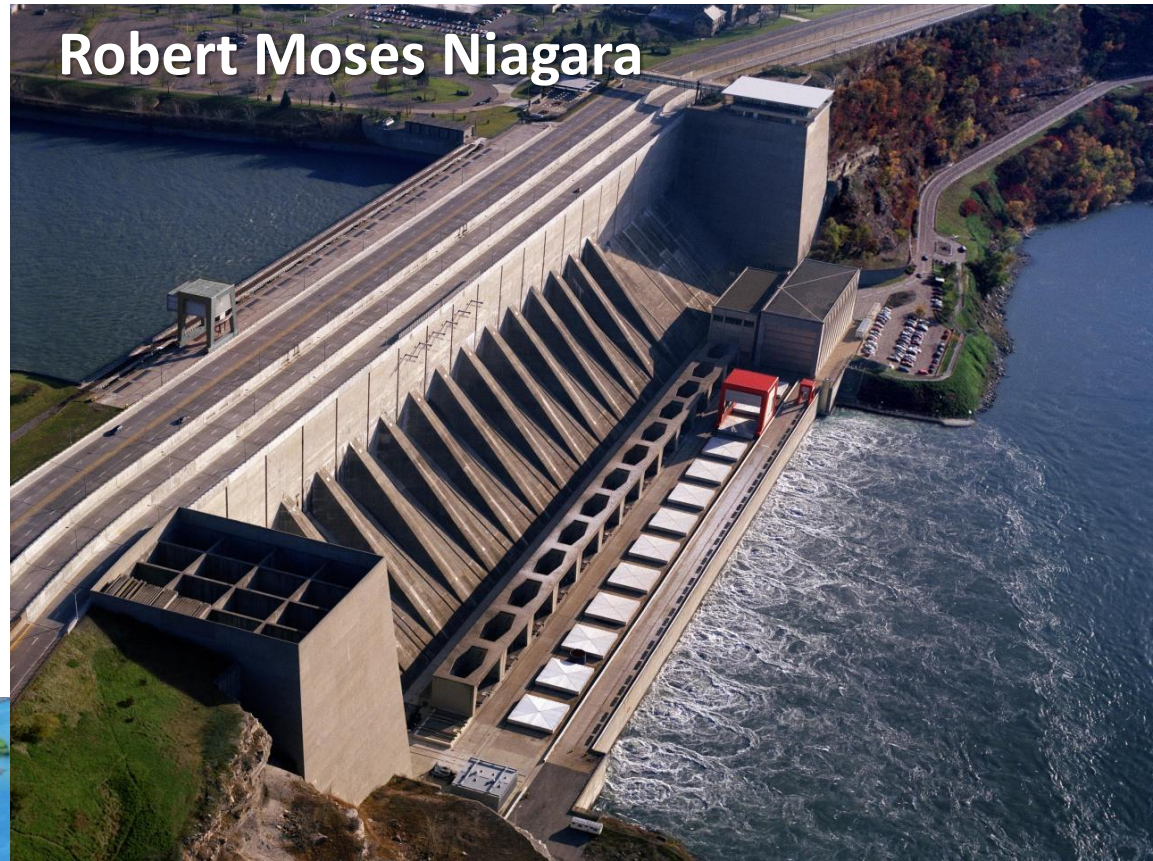
**SYSTEM-LEVEL** efficiency = Optimal use of generation capacity

“Firm” carbon-free capacity is valuable not merely as “backup”, but rather as the **backbone** of an efficient decarbonized grid.

# Reliable carbon-free baseload or dispatchable generation is key to real-world grid decarbonization. ( Hydropower and Nuclear )



# Large-scale Hydropower in New York



Robert Moses Niagara



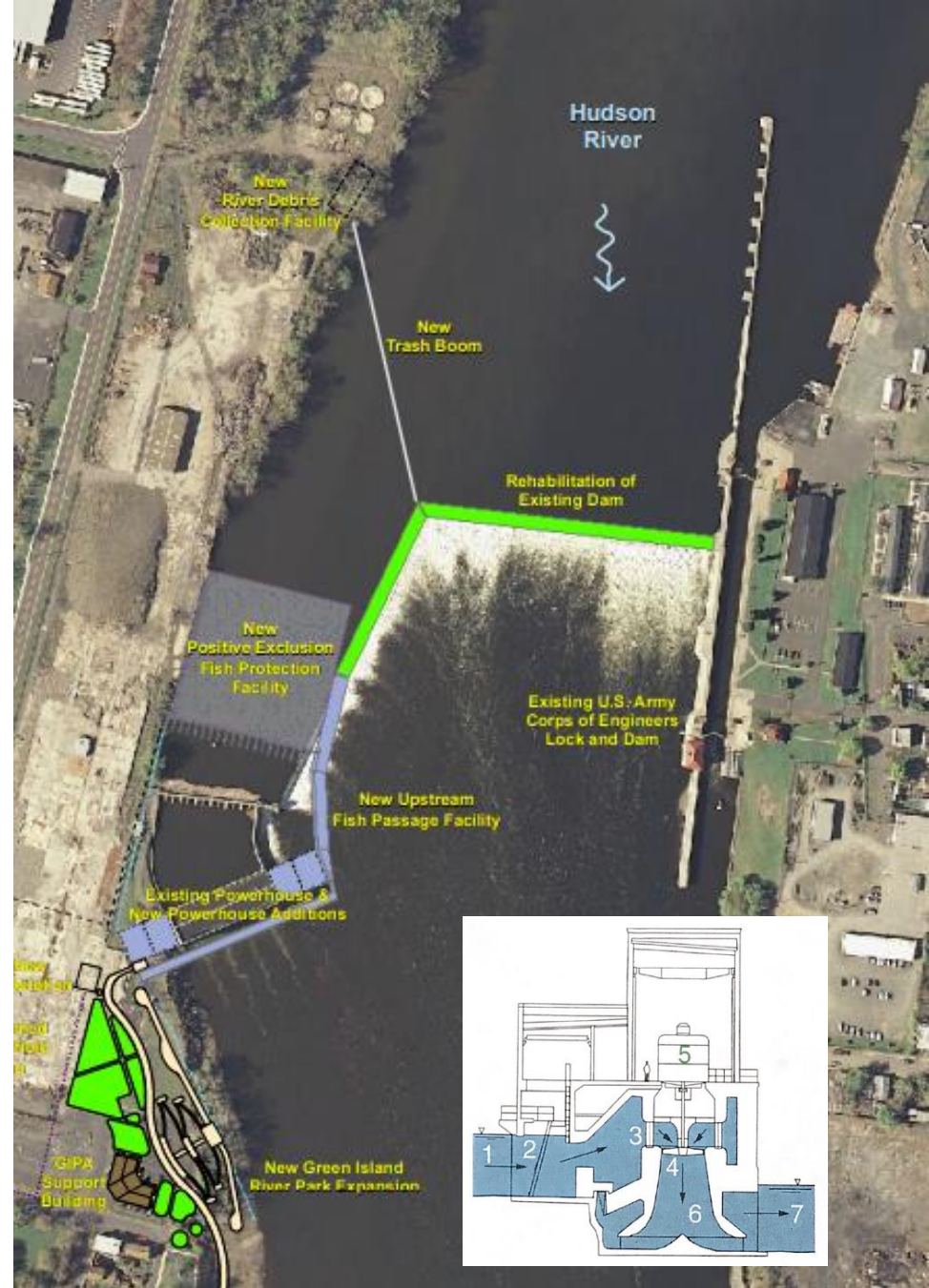
St Lawrence-FDR

# ...and some small-scale opportunities

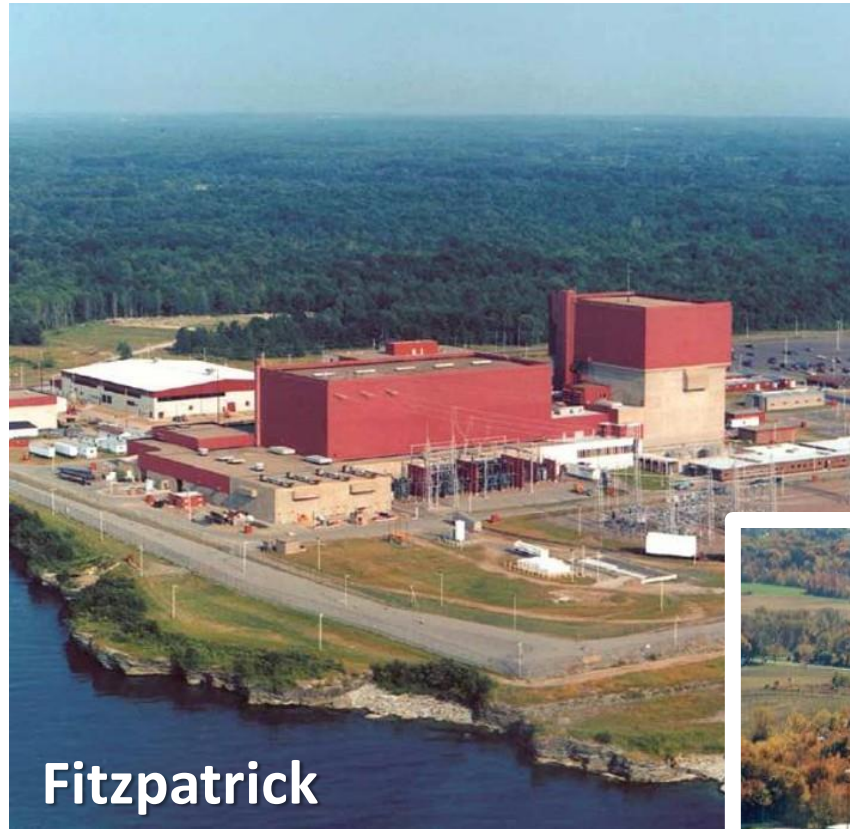


TODAY: 6MW (4 x 1.5MW turbines)

PROJECT: 48MW (8 x 6MW turbines)



# New York's Nuclear Assets



Reliable, carbon-free.  
We need them.



# ...and Advanced Nuclear for the future



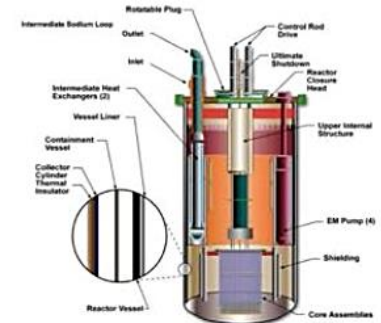
- PWR
- BWR



- AP1000
- ESBWR



- NuScale
- B&W mPower
- Holtec SMR-160
- Westinghouse SMR



- Sodium Fast Reactor
- High Temperature Gas Reactor
- Lead Fast Reactor
- Gas Fast Reactor
- Molten Salt Reactor

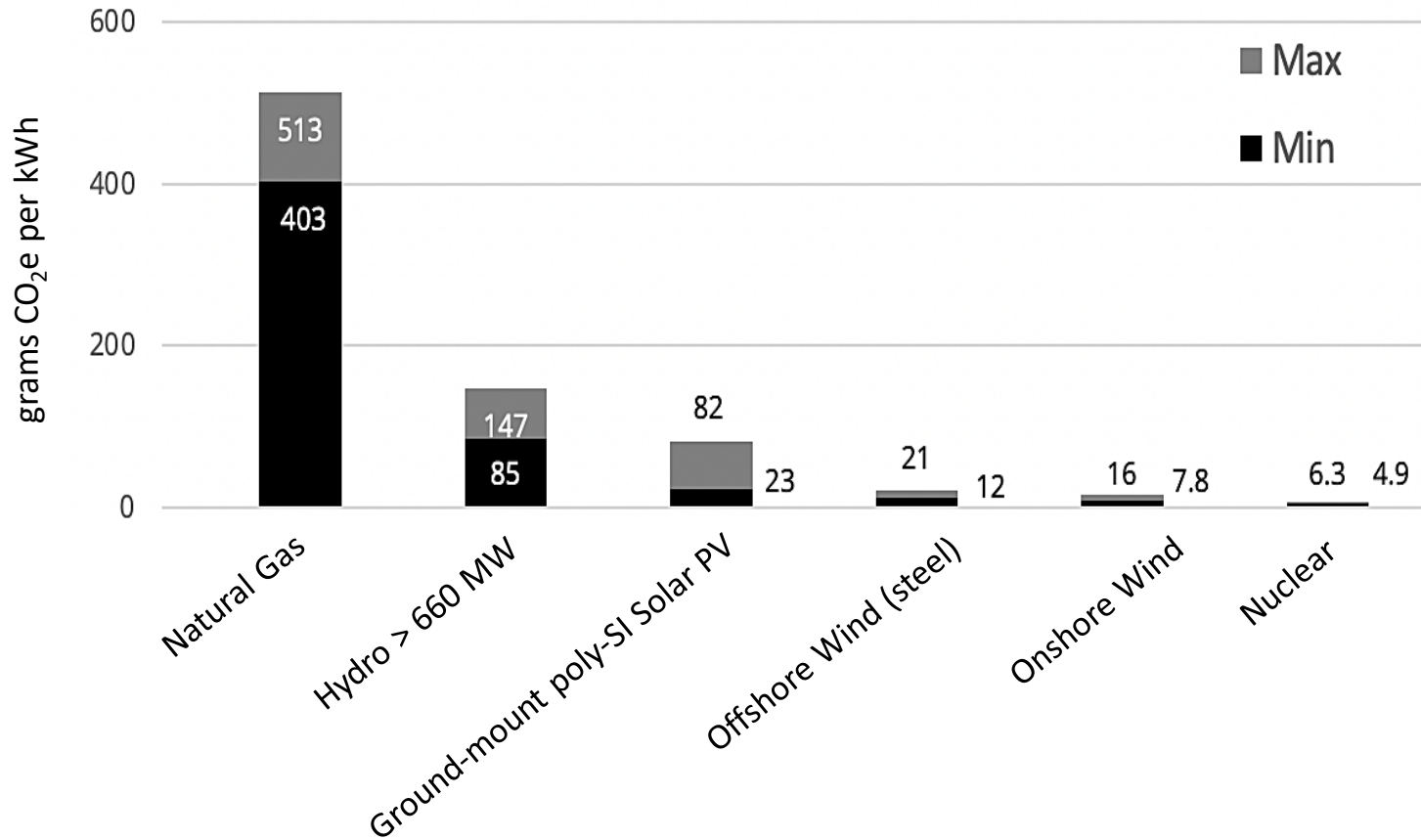
GEN II

GEN III +

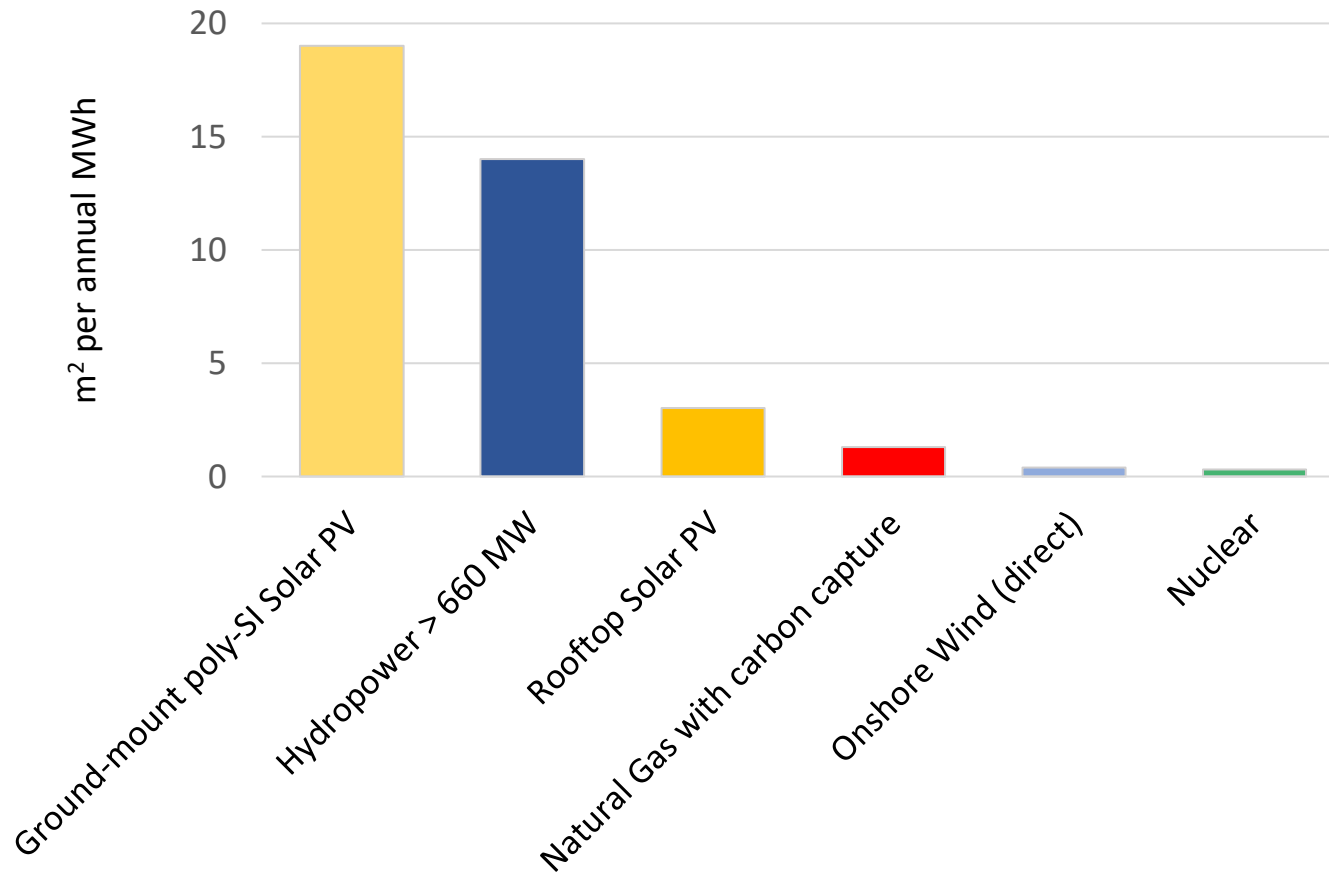
SMR

GEN IV Advanced Reactors

# Lifecycle Greenhouse Gas Emissions by source

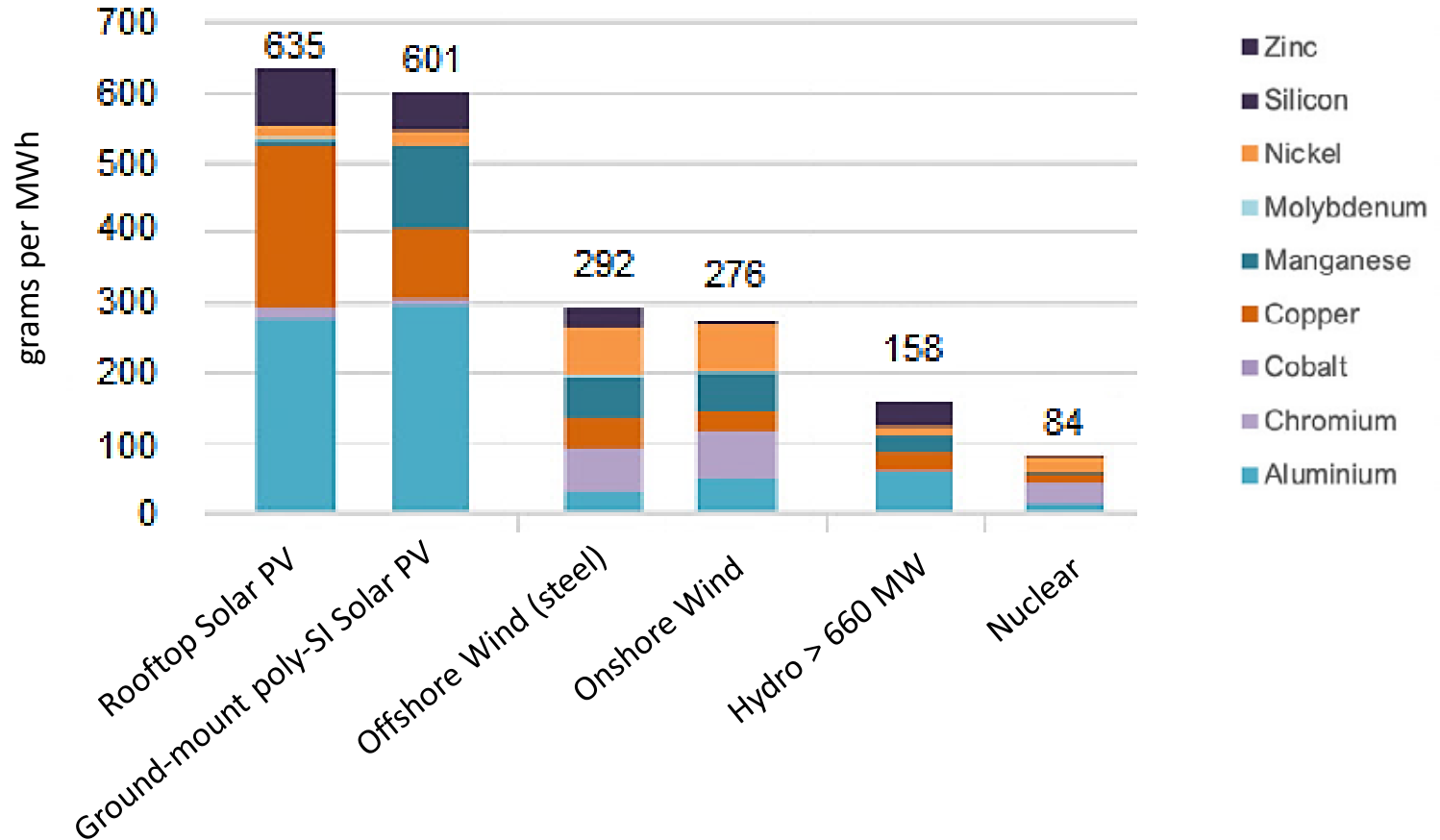


# Lifecycle Land Use Intensity by source

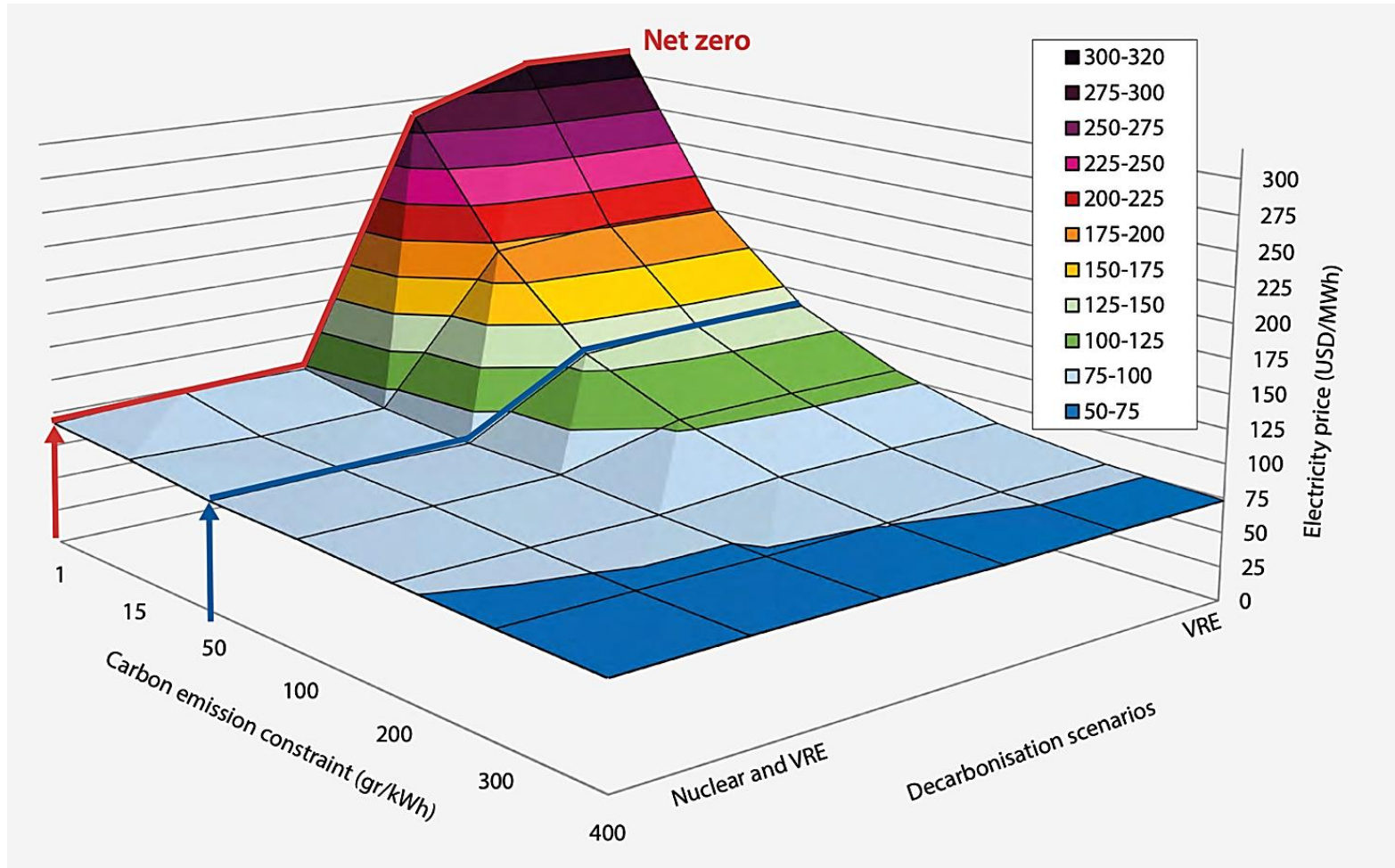




# Material Use by source



# System-wide cost as a function of emission reduction and firm/variable generation



# **RECOMMENDATIONS**

## Legislative/ORES siting reform

- Require meaningful community input and credible environmental review/mitigation
- Limit amount of prime farm land conversion within a town, region, or Ag district
- Expand “Build-Ready” initiatives to prioritize siting on impacted lands
- Require decommissioning/restoration fund

Bills have been proposed to help address some of this, such as S7677/A9109.

**Comprehensive growth management / land-use planning  
and a robust public/private land conservation program**

Both should be informed by large landscape-level analysis  
of natural resources and ecosystems.



©TMC

## An Assessment of the Potential Impacts of High Volume Hydraulic Fracturing (HVHF) on Forest Resources

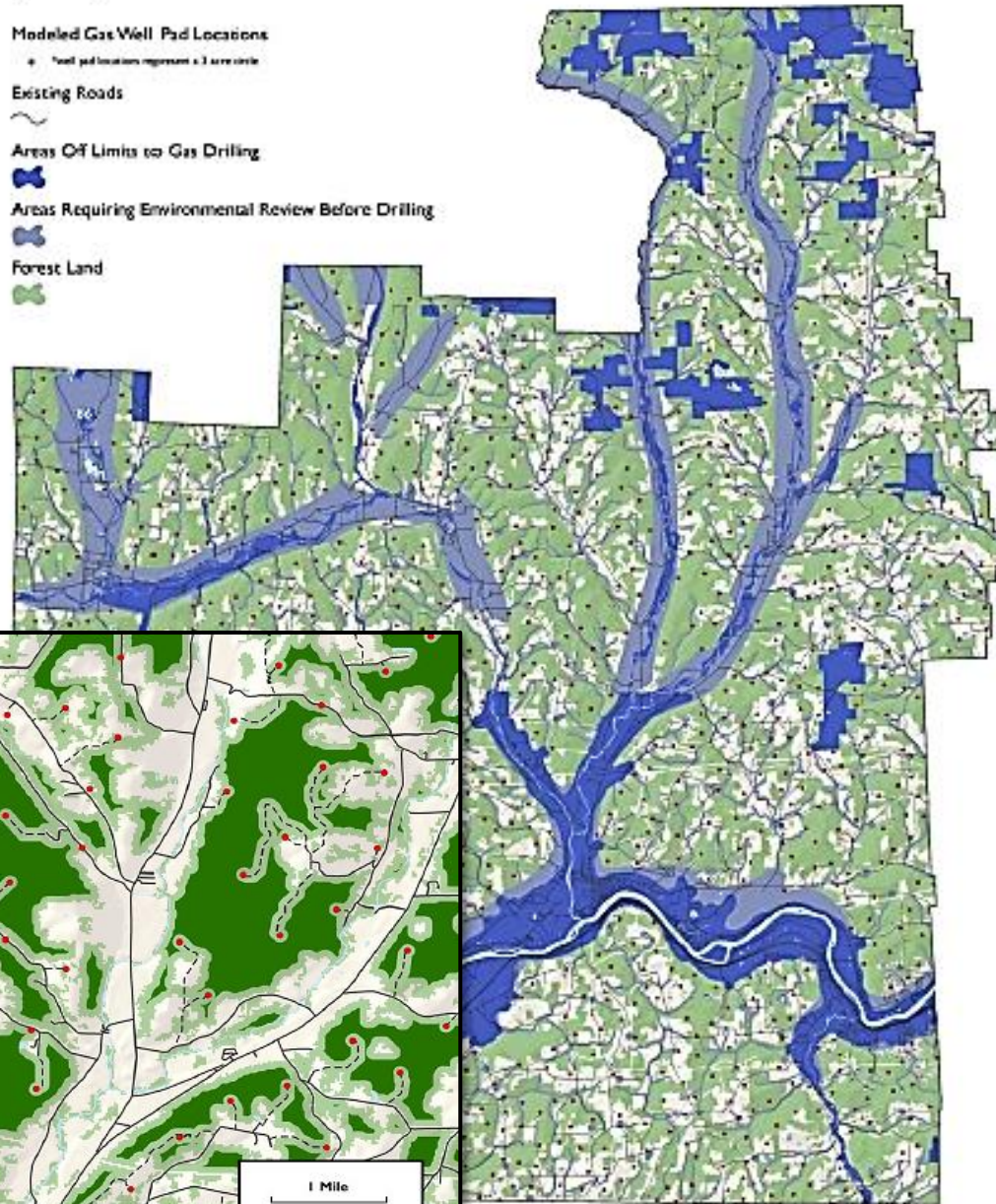
Tioga County, New York

### Gas Well Pad Projections for Tioga County, NY

Average Development Scenario

0 Miles 4

- Modeled Gas Well Pad Locations
  - Well pad locations represent a 3 acre circle
- Existing Roads
- Areas Of Limits to Gas Drilling
- Areas Requiring Environmental Review Before Drilling
- Forest Land



Example of GIS-informed large landscape-level analysis

**Develop a credible energy plan that does not discriminate against viable carbon-free sources**



***Thank You***