



## Brightfields as Distributed Generation:

### Renewable energy projects on environmentally impaired lands Interconnected on the distribution system

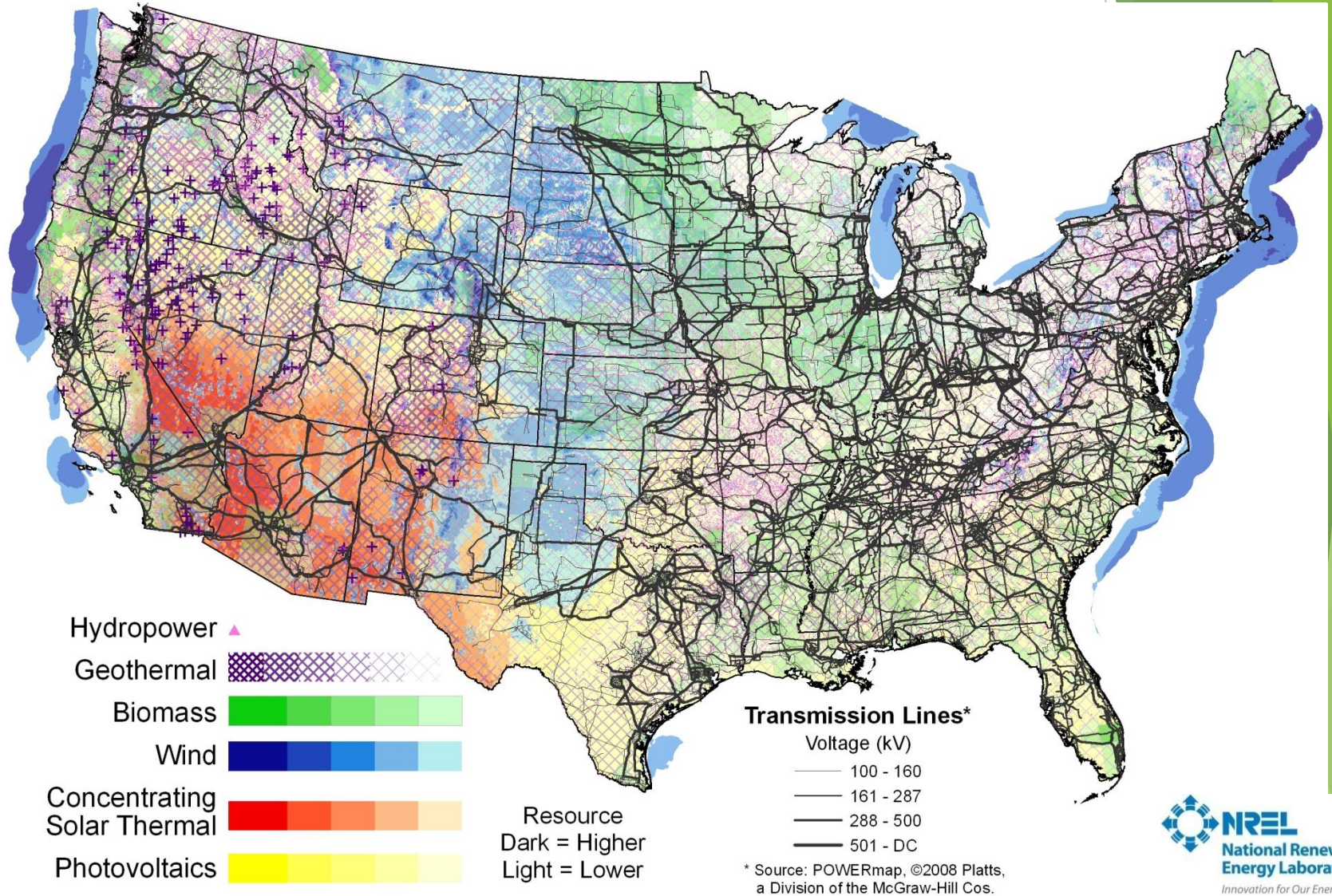
The Growing Importance of Renewable Energy and Distributed  
Generation:  
Legal, Political, and Technological Perspectives

- ABA SEER Renewable, Alternative, and Distributed Energy Resources Committee
- Columbia Law School's Environmental Law Society

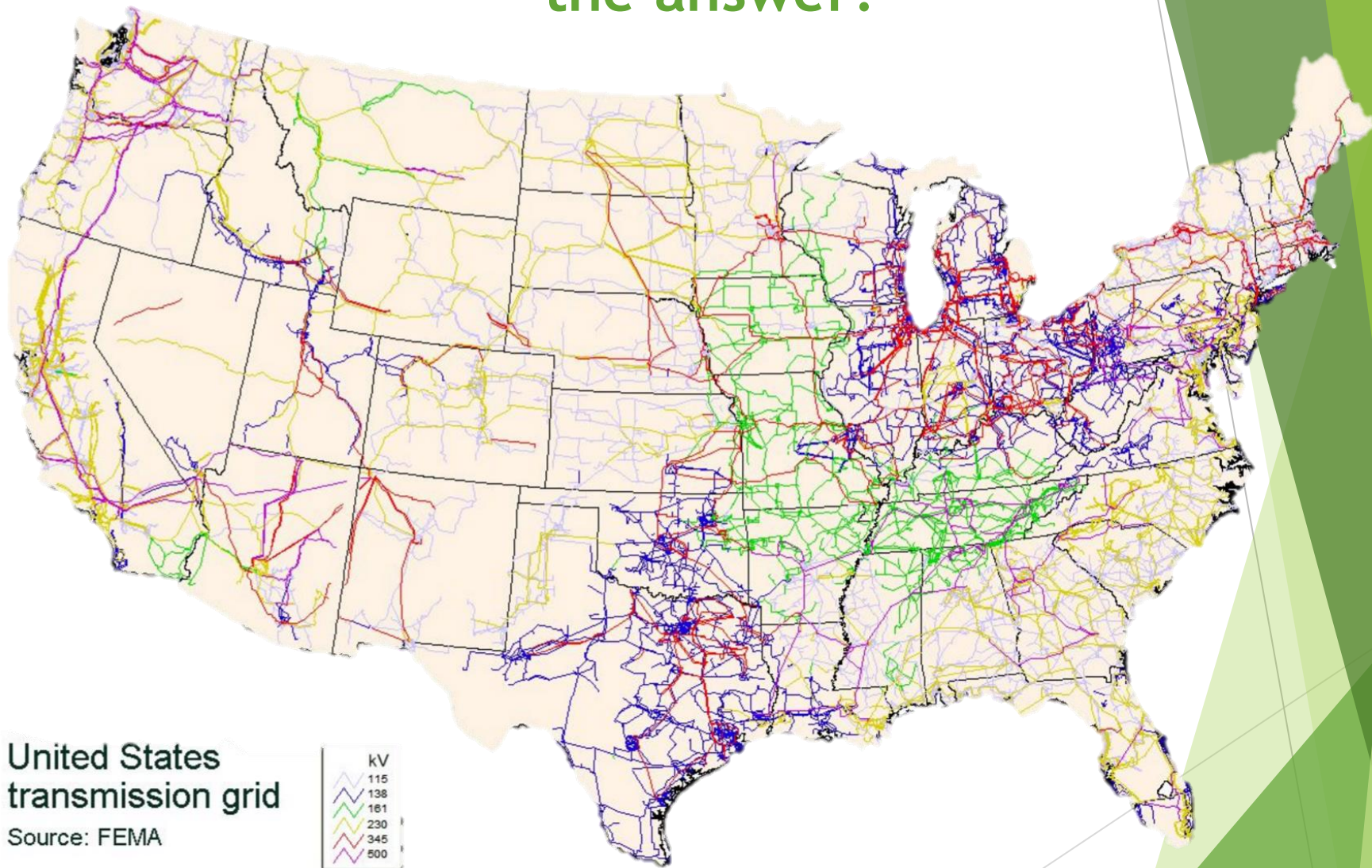
Monday, February 22, 2016

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# Renewable resources in the U.S.



# Is new transmission the answer?



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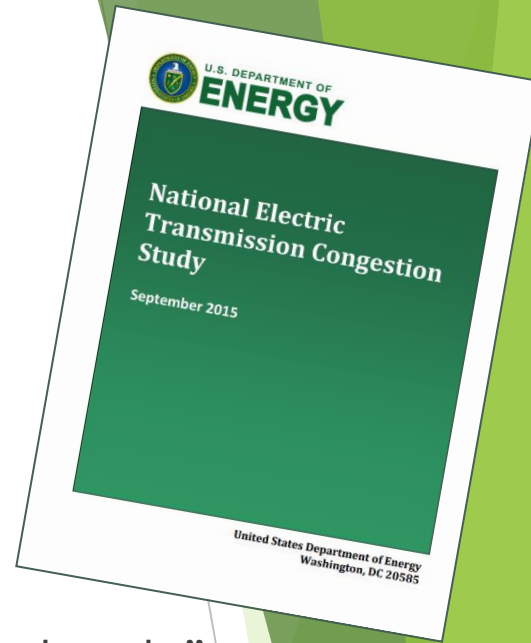
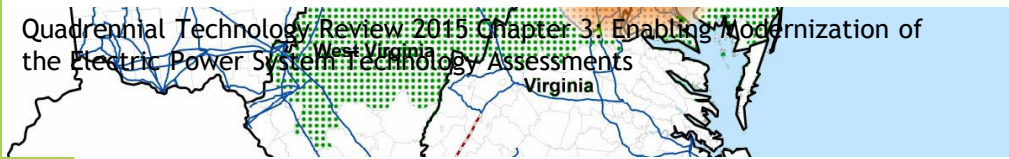


Table 3.F.3 Cost per Mile for New Transmission and Distribution Construction<sup>27</sup>

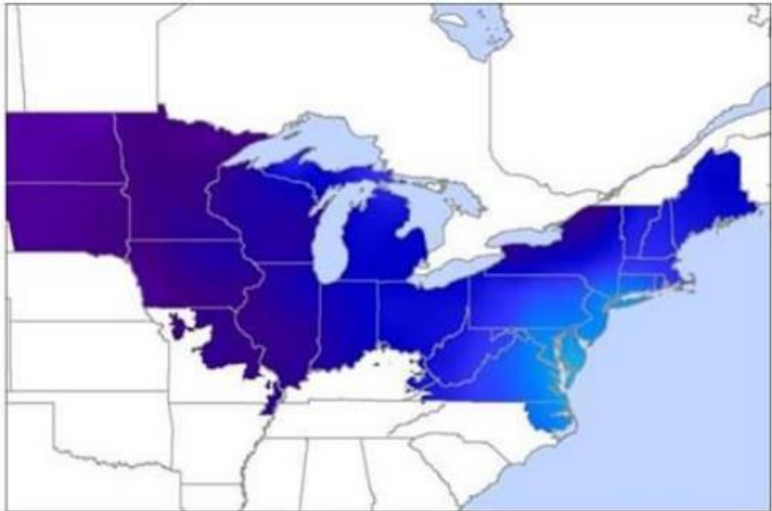
Cost per Mile: New Construction Transmission						
	Overhead			Underground		
	Urban	Suburban	Rural	Urban	Suburban	Rural
Minimum	\$377,000	\$232,000	\$174,000	\$3,500,000	\$2,300,000	\$1,400,000
Maximum	\$11,000,000	\$4,500,000	\$6,500,000	\$30,000,000	\$30,000,000	\$27,000,000

Cost per Mile: New Construction Distribution						
	Overhead			Underground		
	Urban	Suburban	Rural	Urban	Suburban	Rural
Minimum	\$126,900	\$110,800	\$86,700	\$1,141,300	\$528,000	\$297,200
Maximum	\$1,000,000	\$908,000	\$903,000	\$4,500,000	\$2,300,000	\$1,840,000

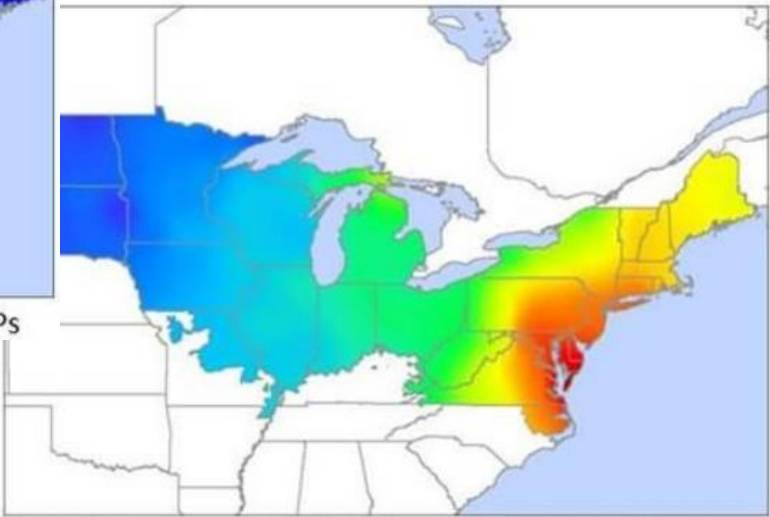


- ▶ Regional “bottlenecks”
- ▶ Inconsistent investment
- ▶ Reliability regulation (NERC)
- ▶ FPA, EPACT05, the FERC Financial Incentives, DOE Corridor Study, & the lurking federalism issue
- ▶ Fragmented approval process
- ▶ Long lead times
- ▶ New transmission costs \$2 to \$11 million per mile
- ▶ Thus, focus on **distributed generation/”Smart Grid”**

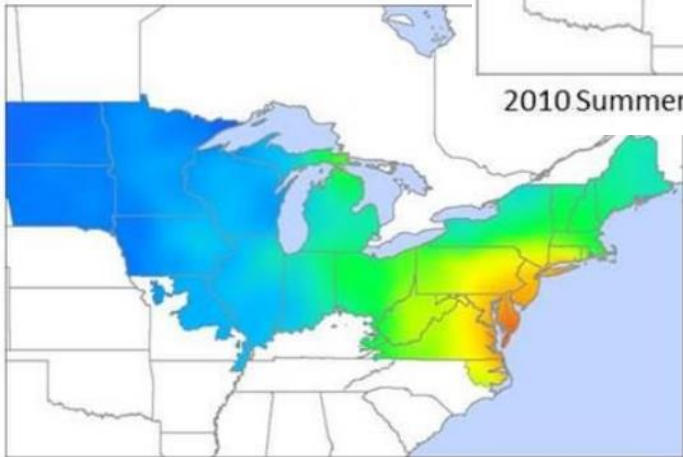
# Is new transmission the answer?



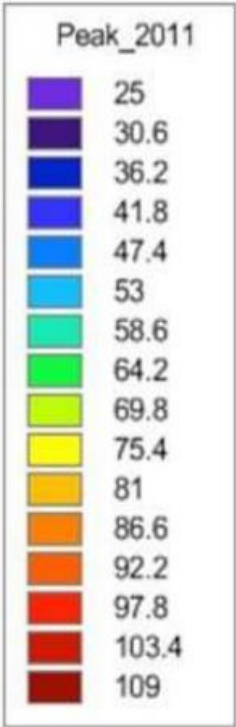
2009 Summer Peak (Weekdays 3-7 pm, Jul-Sep) LMPs



2010 Summer Peak (Weekdays 3-7 pm, Jul-Sep) LMPs



2011 Summer Peak (Weekdays 3-7 pm, Jul-Sep) LMPs



Average hourly LMPs [\$/MWh]

# Additional issues w/ renewable energy at scale

- ▶ Utility-scale renewable energy facilities often require large amounts of land, displacing
  - ▶ Open space
  - ▶ Agricultural lands
  - ▶ Other greenfield lands.
- ▶ "NIMBYism"
  - ▶ Legitimate (& not) fears about aesthetic and ecological impacts from large scale projects.
  - ▶ Recall
    - ▶ Cape Wind project off Cape Cod
    - ▶ Flicker and sound issues associated with 100-meter wind turbines
    - ▶ Dead California condors at the early Altamont Pass wind farm in California.



**SWITCHING  
GEARS  
ABIT...**

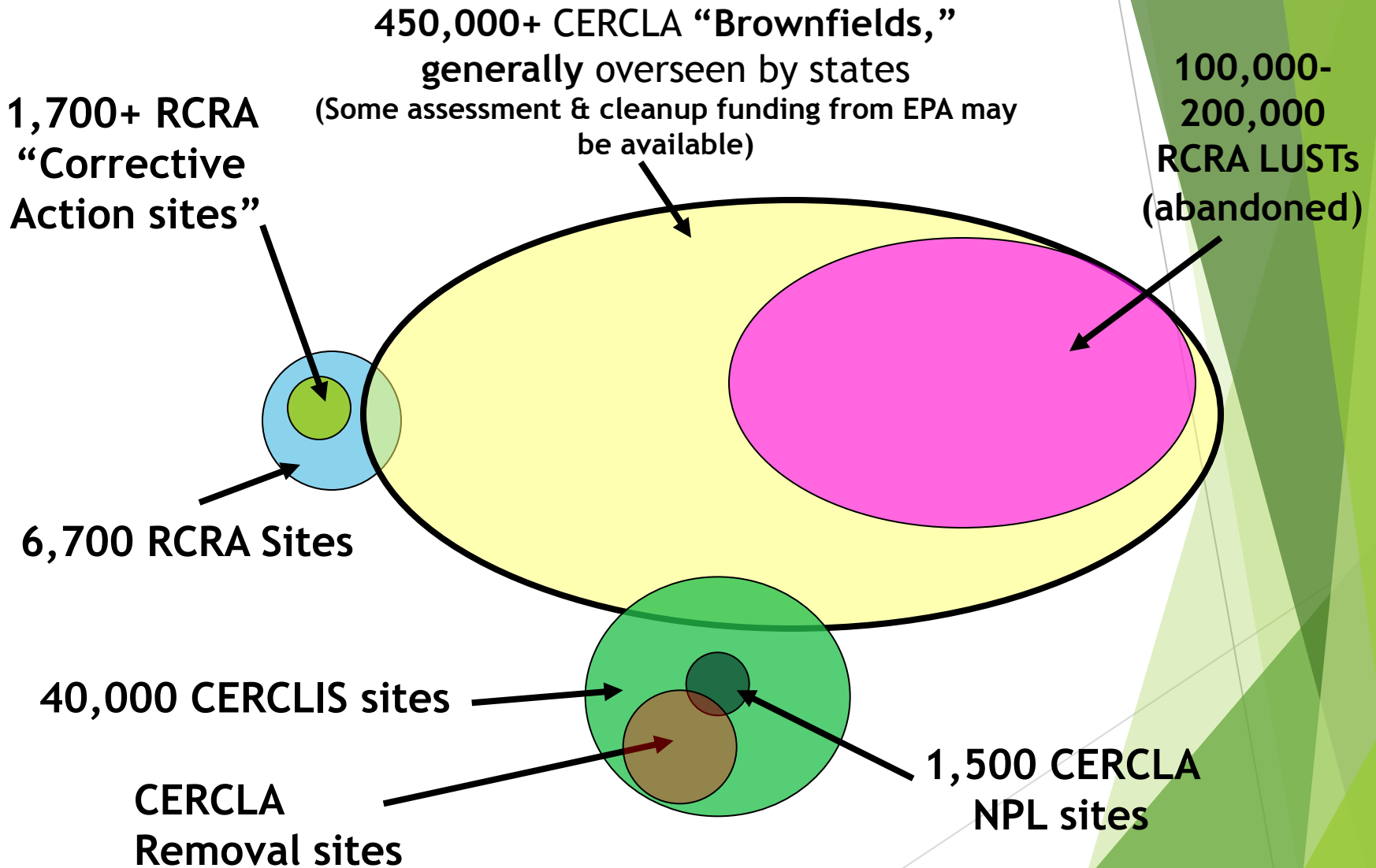


# Environmentally impaired sites





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# Environmentally impaired sites

- ▶ Abandoned, closed or under-used industrial or commercial facilities
  - ▶ An abandoned factory in a town's former industrial section
  - ▶ A closed commercial building or warehouse in the suburbs
- ▶ Many sit idle & unused for decades
  - ▶ Cost of cleanup can be high, (& in some ways even worse) uncertain
- ▶ Often in prime locations
  - ▶ Close to transportation (rail, interstate)
  - ▶ Local workforce
  - ▶ Load



# Benefits -- Why renewables on environmentally impaired lands on the electricity distribution system

Provide low-cost, clean power to communities

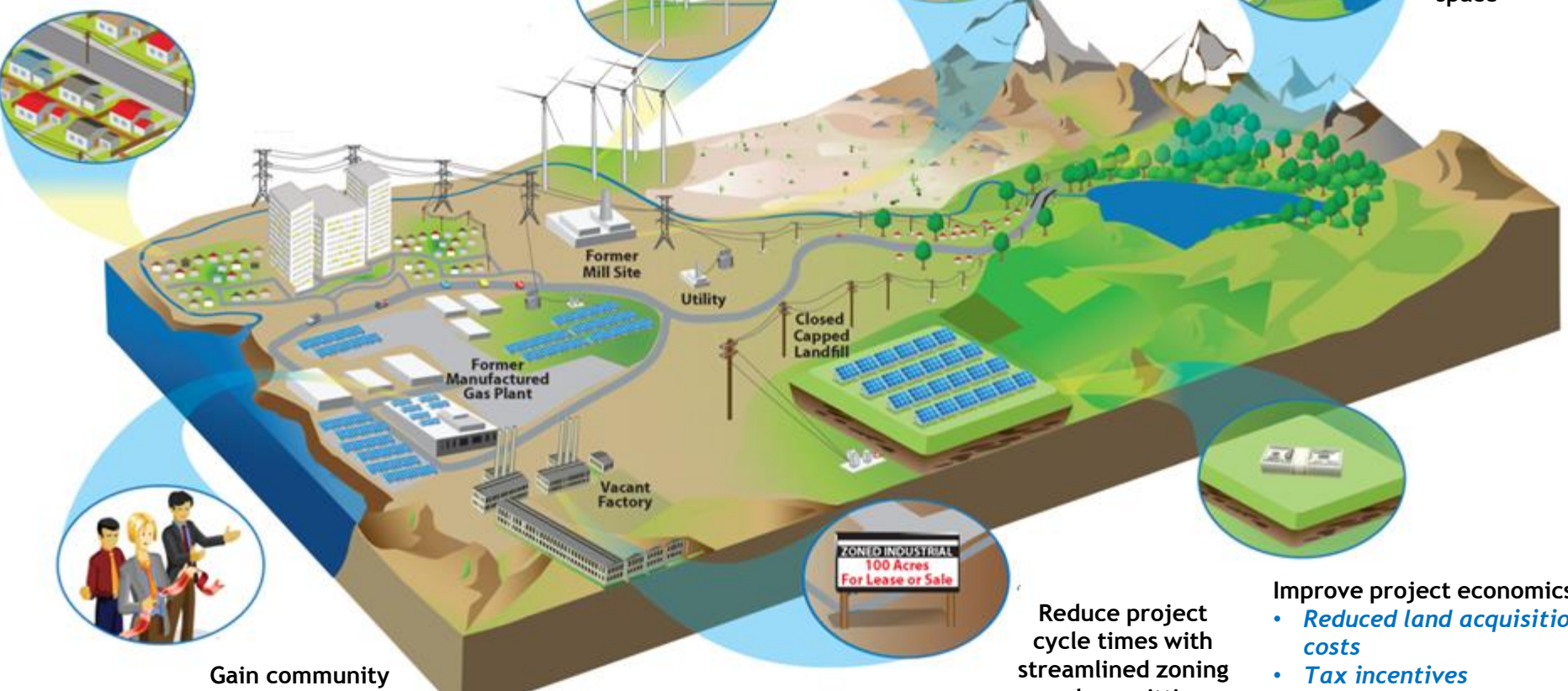
Drivers:

- Regulatory (RPSs)
- 'Nudges' (net metering, CPP)
- Voluntary (e.g. "Renewable Energy Buyers' Principles" (Google, Facebook, HP, Intel, et al.))

Build sustainable land development strategy

Leverage existing infrastructure

Protect open space



Gain community

Reduce project cycle times with streamlined zoning and permitting

Improve project economics

- Reduced land acquisition costs
- Tax incentives
- Fed, state grants & cheap loans

# *Distinguish federal and state liability laws; Relationship of developer to site*

- ▶ Federal law - CERCLA, or 'Superfund' - holds liable:
  - ▶ current "owner" or "operator" of a facility
  - ▶ former "owner" or "operator" of a facility "at the time of disposal"
  - ▶ one who "arranges for disposal" at, or "transports for disposal" to, a facility
- ▶ Standard of liability
  - ▶ Strict liability
  - ▶ Joint and several liability
- ▶ RCRA
  - ▶ Owners, operators of facilities, & one "causes or contributes" to contamination, potentially liable for Corrective Action
- ▶ But note some 'safe harbors'
  - ▶ Bona fide prospective purchaser (CERCLA)
  - ▶ State Voluntary cleanup programs
  - ▶ Site specific settlements
  - ▶ 'Comfort' letters

## *Distinguish federal and state liability laws; Relationship of developer to site*

- ▶ Courts, not EPA or state agencies, ultimately determine scope of liability, unless a site-specific agreement with a government or private party plaintiff is reached
  - ▶ Whether particular activities at a site trigger liability is a site-specific issue
  - ▶ Case law construing liability still somewhat unsettled, can vary by jurisdiction
  - ▶ Agencies have limited resources, focus their attention on worst sites
- ▶ Some qualified statutory ‘safe harbors’ added in recent years, at federal and state level
  - ▶ Statutes, Guidance
- ▶ Relationship of developer to the site - purchase vs. lease - can make a difference to analysis of potential liability
- ▶ BTW, don’t assume other large swaths of land are any easier to develop
  - ▶ Some communities are barring RE projects on agricultural lands, protecting open space
- ▶ So, unfortunately,
  - ▶ Consult a lawyer

# RE-Powering America's Land Projects installed nationwide

Wind turbines installed during remediation at abandoned steel mill



*New York*

Concentrators installed on remediated mine tailings



*New Mexico*

Wind turbines at former industrial site



*Wyoming*

Solar array installed on landfill cap



*Colorado*

Solar array at former manufactured gas plant



*Massachusetts*

Solar array at former foundry



*Illinois*

Solar geomembrane capping landfill



*Georgia*

Solar array at Superfund site



*California*



*The Reilly Tar & Chemical site in Indianapolis—now home to the Maywood Solar Farm—produced refined chemicals and treated wood products from the 1950s to 1972 (Photo courtesy of Hanwha Q CELLS and Vertellus Specialties, Inc.)*

# Closing thoughts

- Env. agencies (EPA & the states) each balance goals that sometimes conflict
  - Statutes' enforcement provisions ('polluter pays')
  - Revitalization of environmentally impaired lands
  - Promotion of cleaner power sources
- Is there anything special about renewable energy projects, vis a vis liability?
- Your budding deal may not be EPA's priority
  - Enforcement actions, agreements take time
  - State VCP programs promise you more interaction with the regulator
  - But we all get that RE on contaminated sites can often be Win Win Win
- It's all about allocation of risk, there are no absolutes (including 'safe harbors')
- 'If I had a million dollars . . . .'
  - (w/ apologies to The Bare Naked Ladies)
- A New Jersey town, with a farm and a Superfund site