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Renewable Energy Projects

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Introduction

- What are renewable energy projects?
- Why are we talking about them?
- Economics (follow the money)
- Valuation issues
- Future topics

What are renewable energy projects?

Today's focus

Wind and solar facilities that **generate** electricity

- Wind farms
- Solar farms
- Residential rooftop and other “distributed” solar (nearly 20% of all solar generation)

Future topics: Tell us your ideas at the end (carbon sequestration and *hot sauce*)

Nuts and bolts

Equipment

- **Solar:** steel pilings, racking systems, solar panels (often called modules), inverters, DC and AC cabling, generator step-up units, computer (SCADA) systems and substations
- **Wind:** foundations (gravity, monopod, tripod, jacket and floating), turbines, cables, substations, grid, vessels (if offshore)

Fencing, landscaping, operations and maintenance building

Intellectual or other intangible property

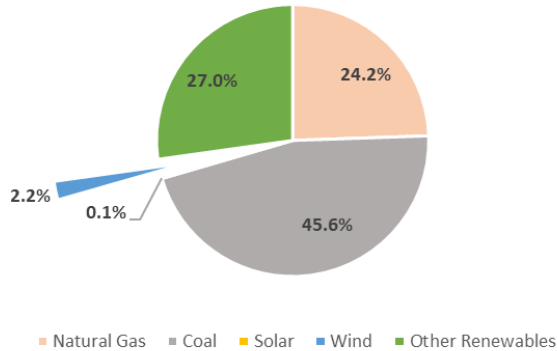




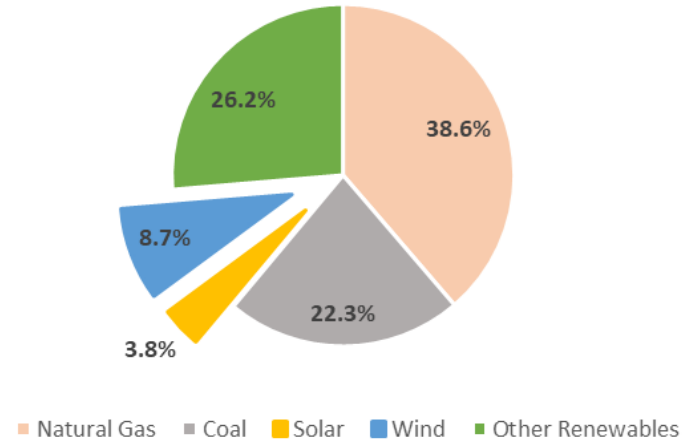
Why talk about renewable energy projects?

Still small today, but growing fast

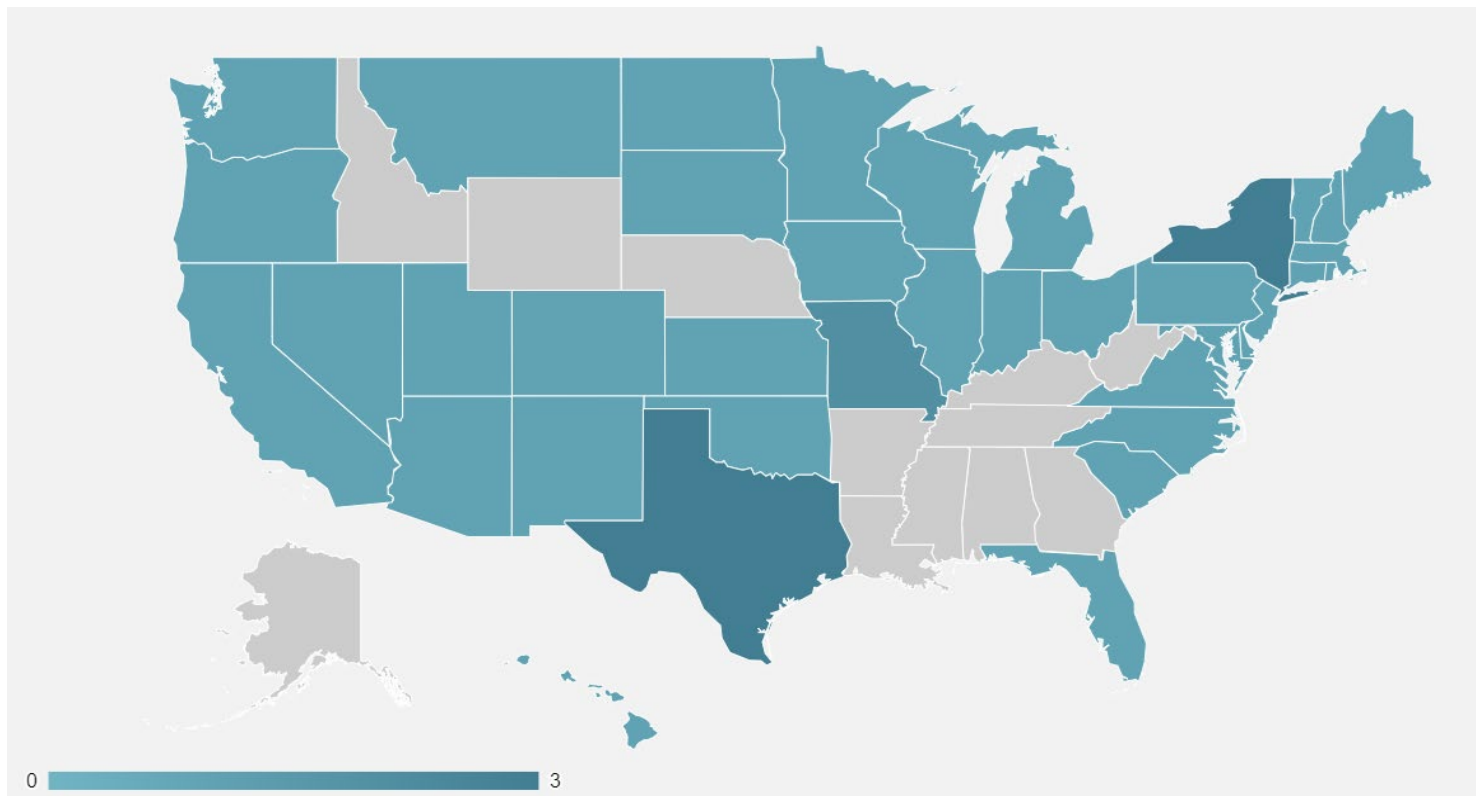
Net Electricity Generation by Source (2010)



Net Electricity Generation by Source (2021)

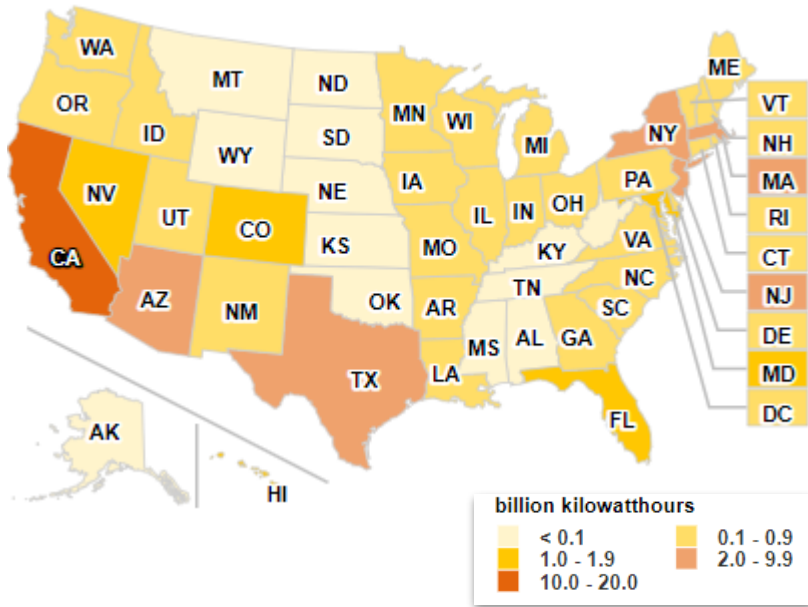


Growth driven by state renewable portfolio standards

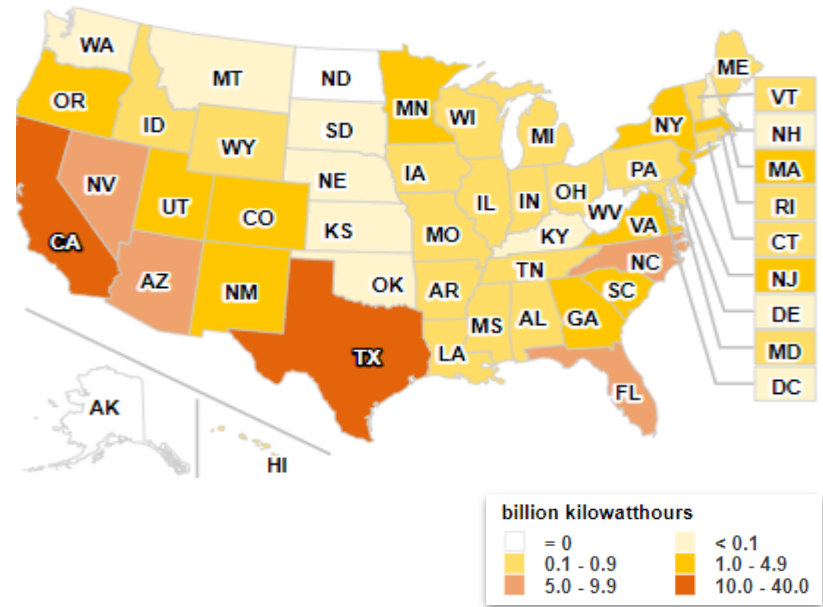


Solar widely used

Small-scale solar photovoltaic

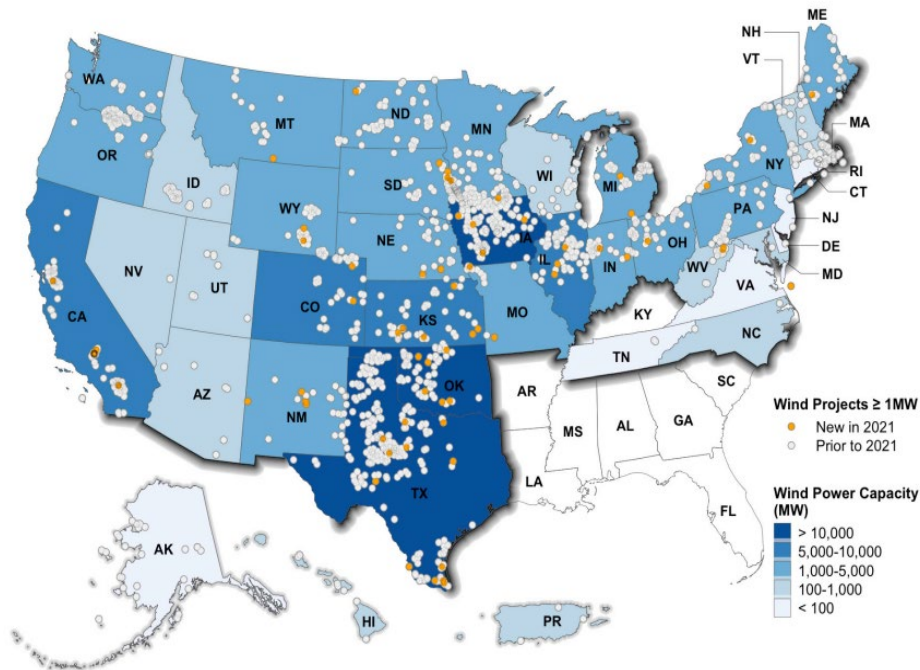


Utility-scale

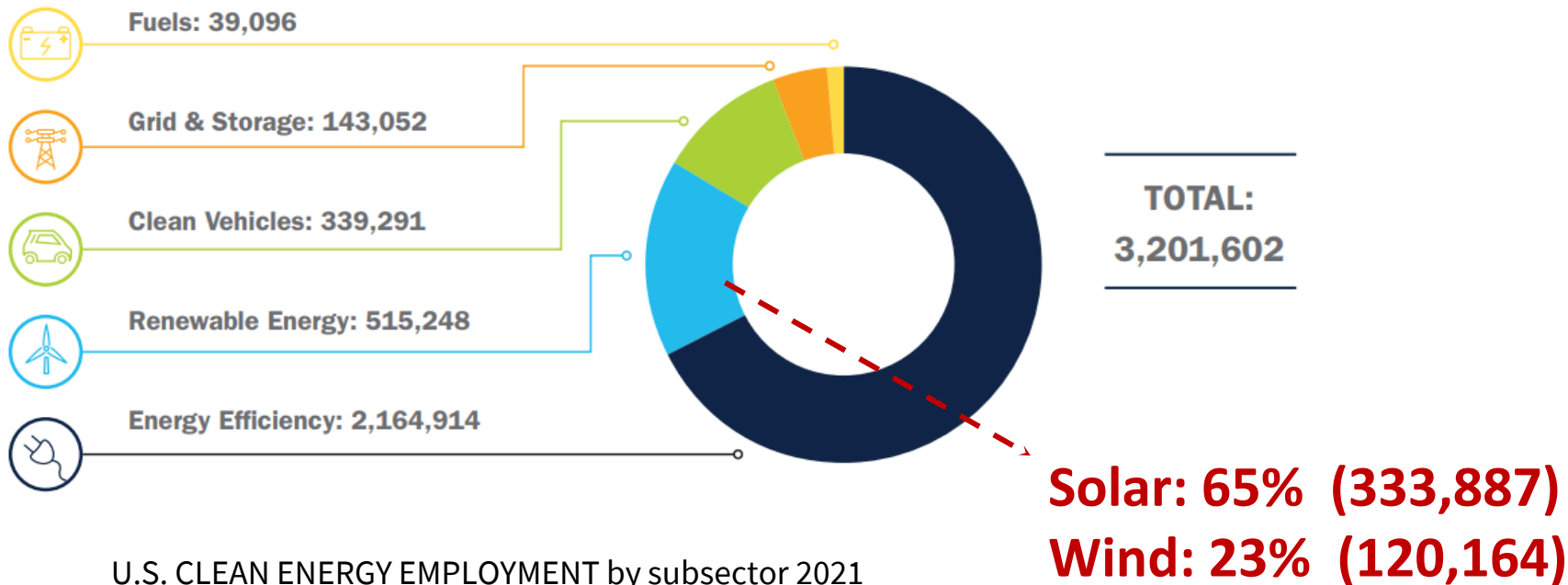


Wind is coming right down the plains

2021 utility-scale wind electricity generation by state and project



Clean energy employment and other benefits



U.S. CLEAN ENERGY EMPLOYMENT by subsector 2021

Economics of renewable energy projects

Follow the money

Who builds large-scale projects?

- Independent power producers (investor-owned LLCs or LPs)
- Utilities operating outside their service territory (nonregulated)
- Utilities operating within their service territory

Who buys the power?

- Utilities
- Major industrial users
- Self-generating

What's a power purchase agreement?

Keep following the money

Who pays for the projects?

- Ratepayers
- Taxpayers through incentives

Who gets the rest of the money?

Local governments

- Property tax based on value of improvements
- Incentive payments (PILOT or statutory fees)

Farmers, other private or public landowners

Construction and maintenance providers

Incentives for renewable energy projects

Common incentives for solar or wind projects

- Exemptions
- Explicit valuation standards
- PILOT--Payment in lieu of tax or similar agreement
- Replace property tax with excise tax based on amount of energy generated

Timing is everything

Site selection issues affecting project economics

Where's the resource?

Where's the closest transmission line?

How fast and easy are construction permits?

State and local incentives

Legal issues affecting project economics

Size matters

- Small-scale facilities for on-site use may be assessed locally or “add no value”
- Large systems may be assessed as utilities by state revenue department using unit valuation

Real vs. personal property

- States vary
- Can affect depreciation, property tax exemption, sales tax treatment

Lease vs. ownership of underlying property

- Can affect treatment as real vs. personal property
- On bare land vs. on existing improvements
- On public or other tax-exempt land
- On land used for farming or other tax-favored use

They may be real farms, too



Land planted to attract pollinators

Panels protect plants







Valuation issues

Applying the income approach

Factoring in incentives

PTC impact on income approach (federal “production tax credit”)

- Does the PTC cash count?
e.g. PTC is an intangible *Kingfisher Wind, LLC v. Matt Wehmuller, et al* (Memorandum Opinion, CV-2016-241)
- Potential obsolescence arguments
e.g. California Board of Equalization *Guidelines for the Assessment of Wind Energy Properties*, June 27, 2017

Applying the cost approach

Obsolescence

- Repair vs. replacement vs. upgrades vs. overhaul vs. new technology vs. “repowering”

ITC impact on cost approach (federal or state “investment tax credits”)

- *e.g. ARS 42-13056 “...‘taxable original cost’ means the **original cost minus the value of any investment tax credits**, production tax credits or cash grants in lieu of investment tax credits”*

Starting points: cost tables, state guidelines, environmental impact statement, construction cost sources

Example from Michigan

DTE Electric Co v. Bloomfield & Sigel Townships, Docket No. 16-003995
(Michigan Tax Tribunal June 11, 2021)

Full opinion available here: https://www.michigan.gov/-/media/Project/Websites/taxtrib/Folder8/DTE_16-003995_FOJ_with_calculations-Combined.pdf?rev=e85657542fa94725b9817c9b3229576b

Potential future topics

“Frequent flyer” tax litigation issues

- Deeper dive on valuation
- State tax incentives: disqualification and lurking legal issues
 - E.g., Pelleverde Cap., LLC v. Bd. of Assessors*, 101 Mass. App. Ct. 739 , ___ NE 3d ___ (Sept 21, 2022)
 - E.g., Johnson v. Springfield Solar 1, LLC*, 648 S.W.3d 101 (Mo Aug 11, 2022)

Other ideas

- Manufacturing of renewable energy equipment
- Energy storage (“pumped,” “thermochemical,” “compressed air”)
- Carbon sequestration (don’t forget **hot sauce!**)
- “Stranded” assets (fossil fuel assets displaced by renewables)

Your ideas?

Conclusion: Other cool stuff

