

An aerial photograph of a lush green landscape, likely a rural area in Southeast Asia. The terrain is divided into numerous small, irregularly shaped terraced fields, some of which are filled with water, reflecting the sky. A narrow dirt path winds through the fields. In the upper right, a small, simple building with a thatched roof is visible. The overall scene is vibrant and verdant, suggesting a healthy, agricultural environment.

Renewable Energy Opportunities

WHY – HOW – WHEN

What is Renewable Energy... And why should I care?



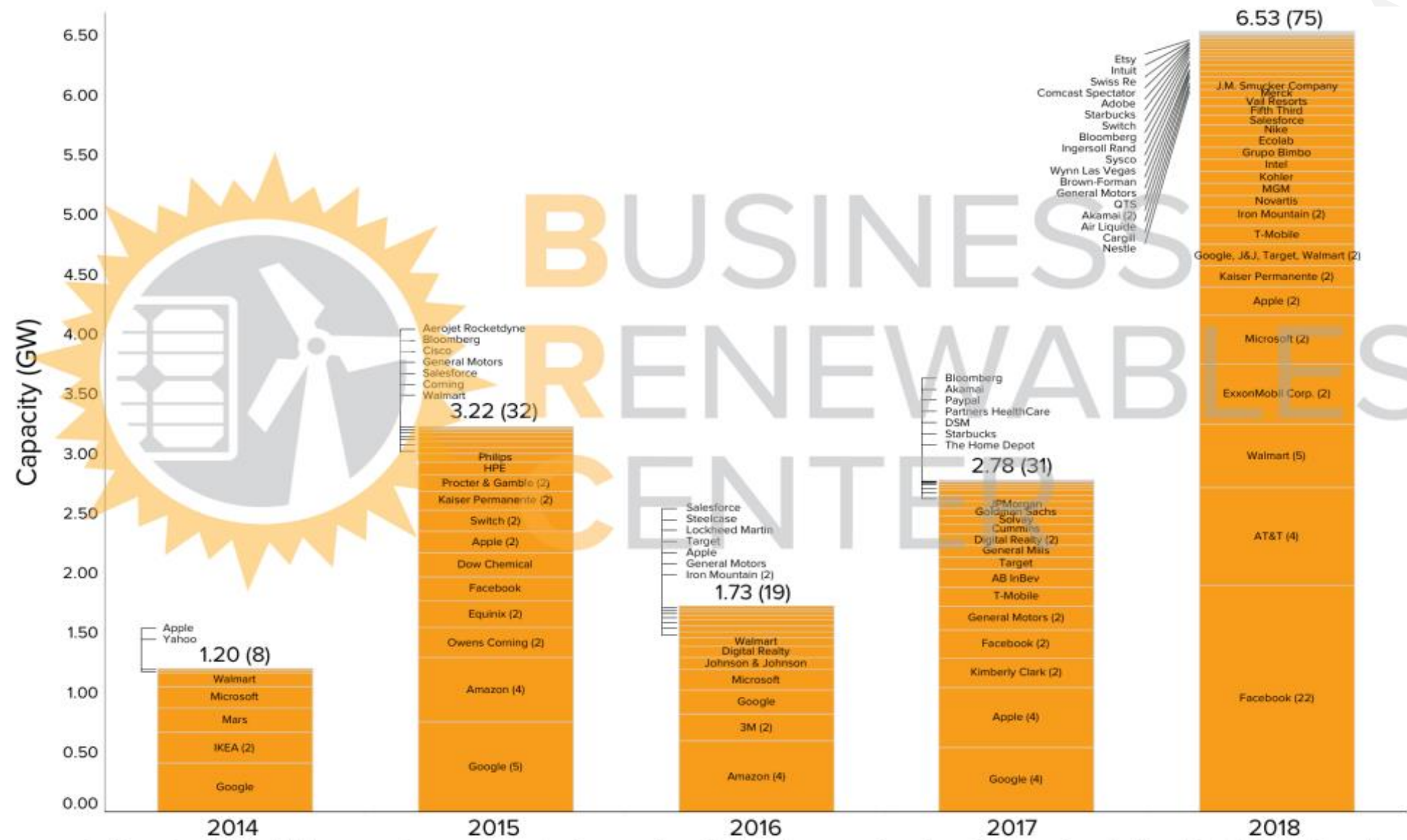
Definition -

- Renewable Energy is energy generated from renewable fuel sources that naturally replenish themselves – such as a wind, solar insolation, or biogas.
- Sometimes LFG, Biomass, Anaerobic Digestion Gas. These are cleaner generation technologies and address an existing waste problem.

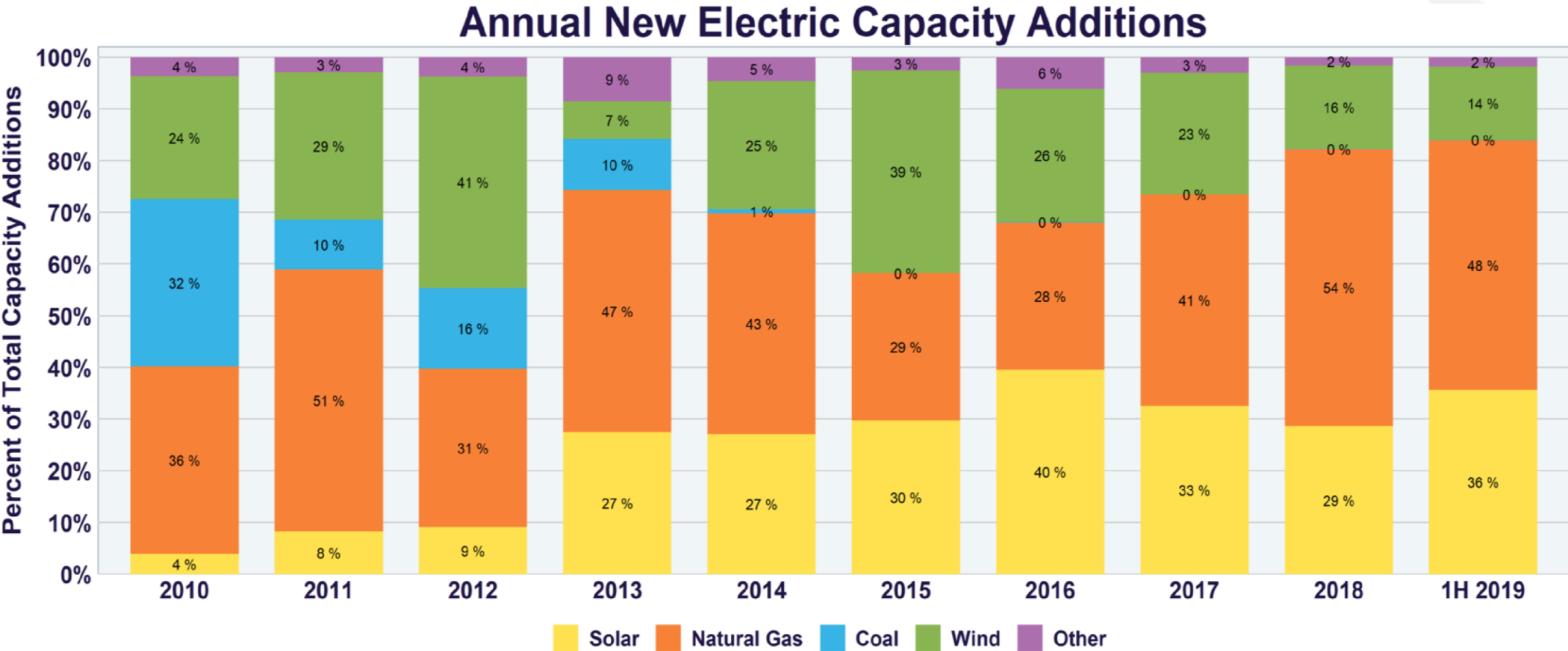
Why -

- It's good for the environment – less harmful air emissions
- Local or regional sourcing of power means less dependence on foreign fuels
- Generation diversity makes our national power supply more rugged
- And could result in savings, price stability, and expense hedging

Large Corporate PPA Growth Continues – mostly Wind



The Trend is Renewable Energy



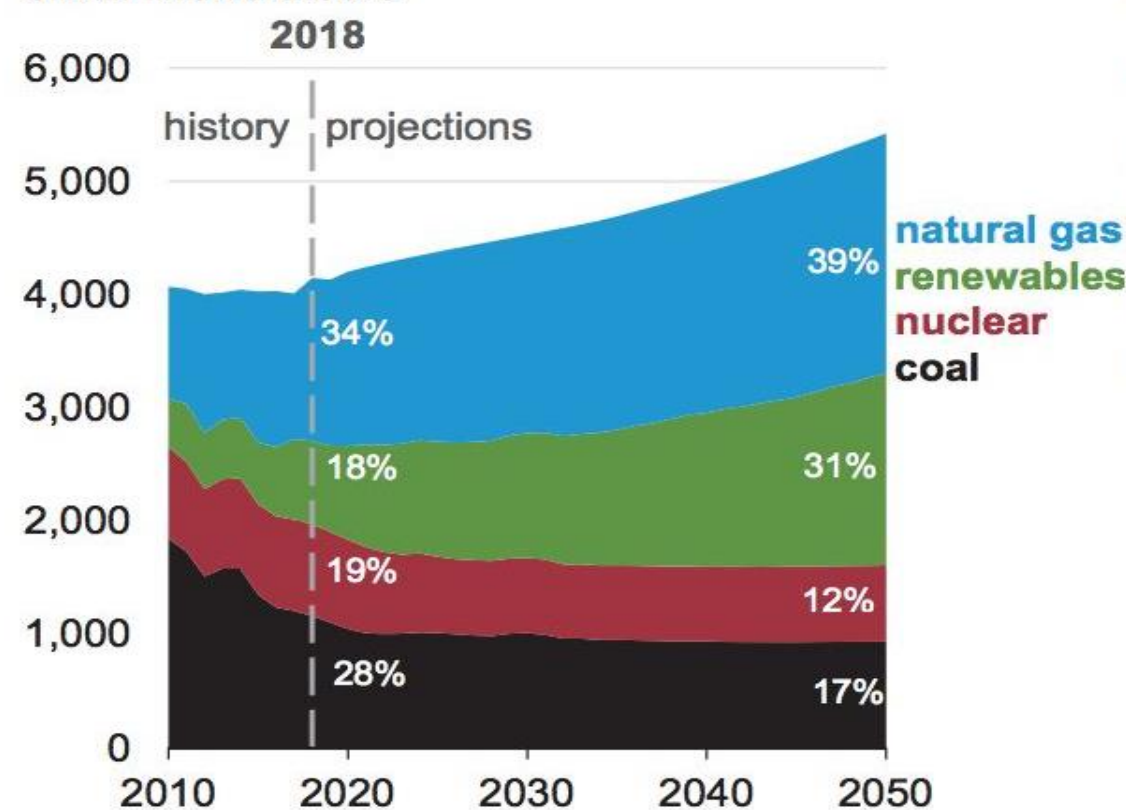
Source: SEIA/Wood Mackenzie Power & Renewables U.S. Solar Market Insight; FERC

** Solar and Natural Gas grow while Wind slows and Fossil Fuels decline dramatically.*

More Details: Renewable Energy increases while shares of nuclear and coal generation decreases

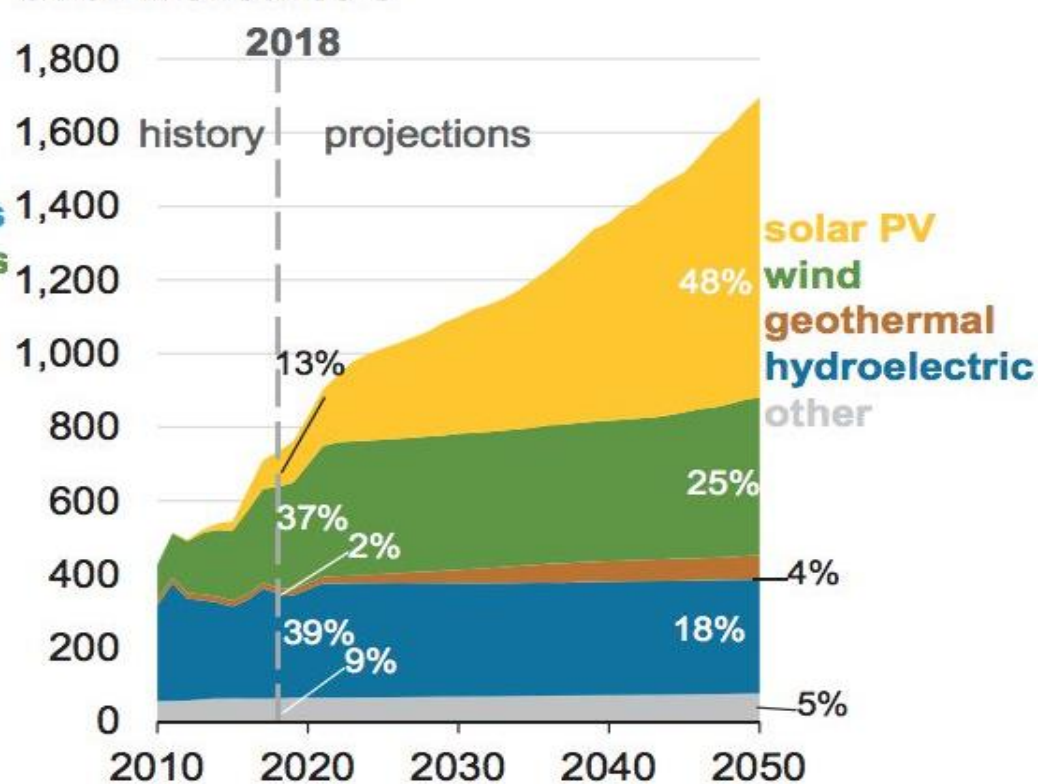
Electricity generation from selected fuels
(Reference case)

billion kilowatthours



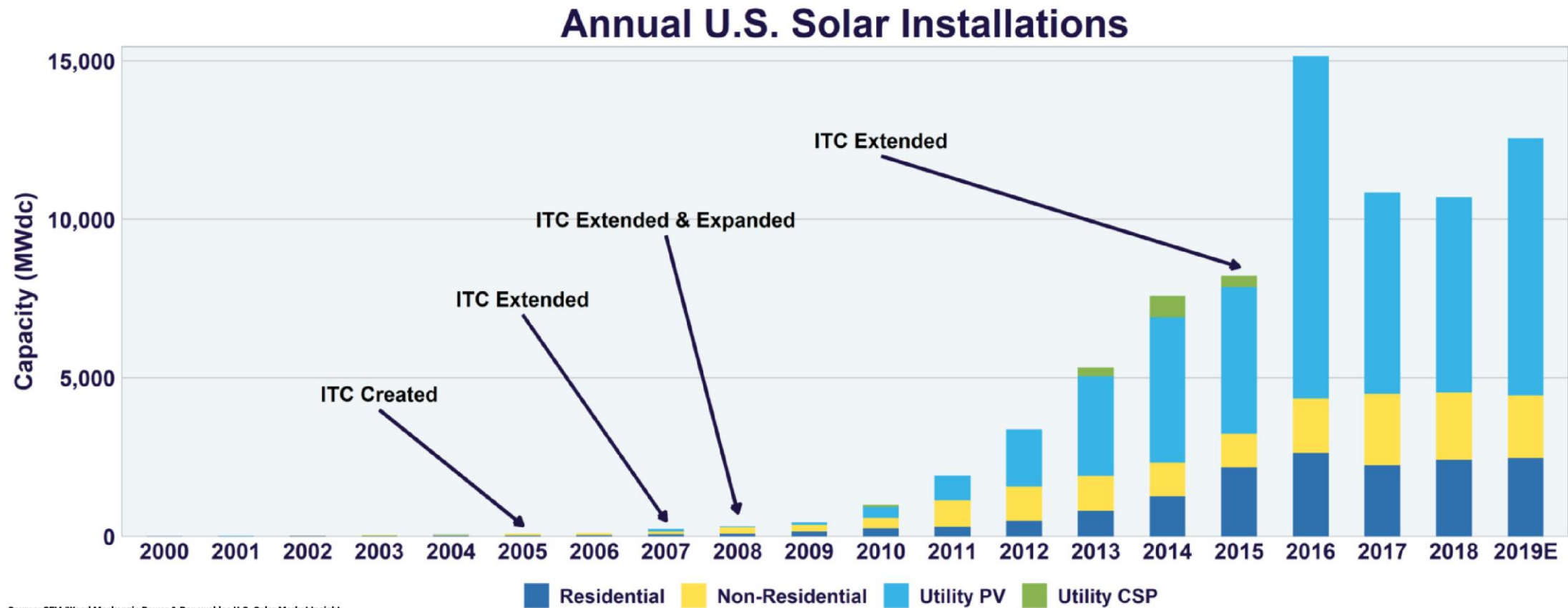
Renewable electricity generation, including
end-use (Reference case)

billion kilowatthours



* Source: U.S. EIA

Solar Growth Continues

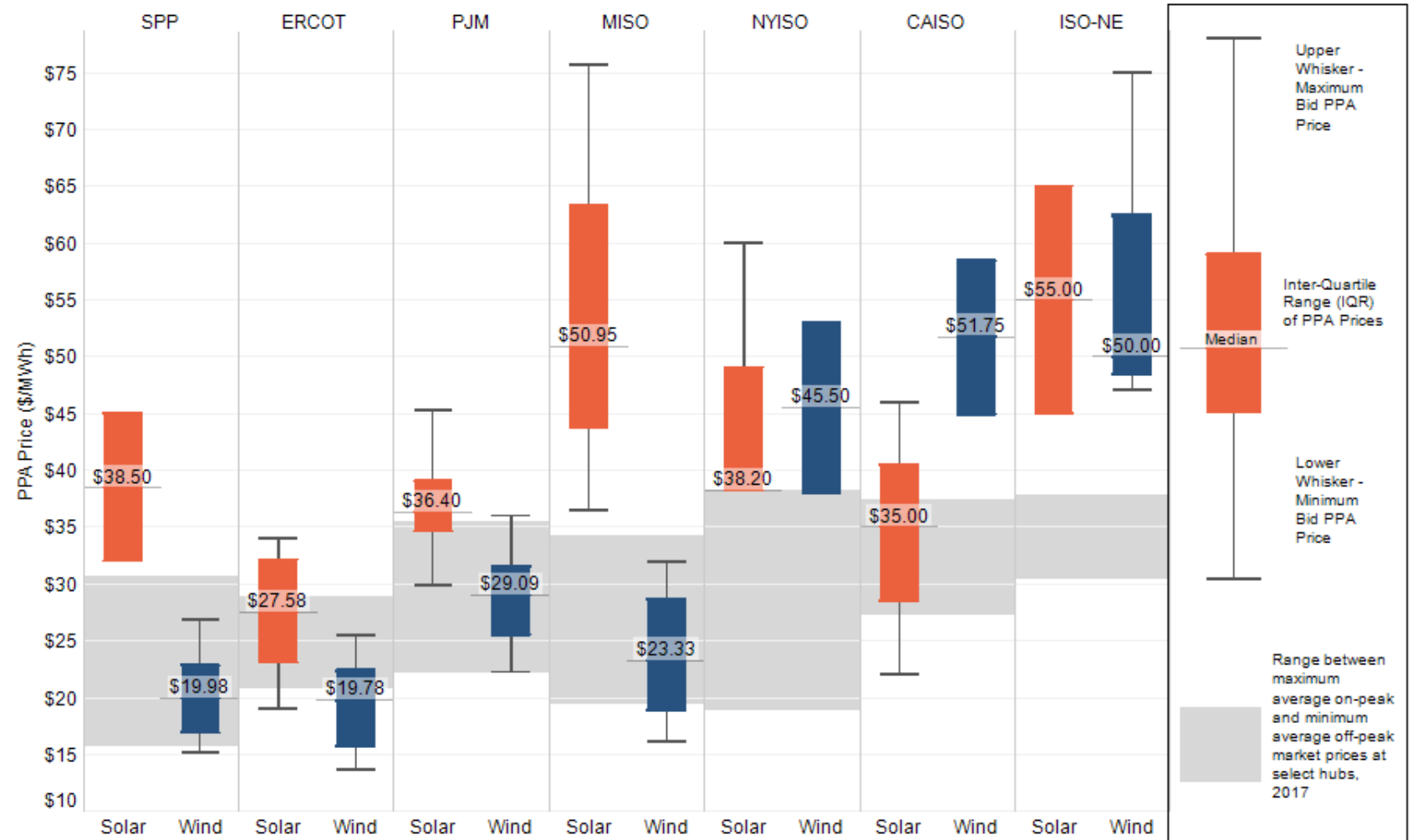


Source: SEIA/Wood Mackenzie Power & Renewables U.S. Solar Market Insight

* Solar across all application is growing. Large scale facilities are beginning to replace “big wind”.

Offsite Renewable Energy PPA Pricing

- › PPA pricing is **available at or below wholesale market prices** in a number of markets today

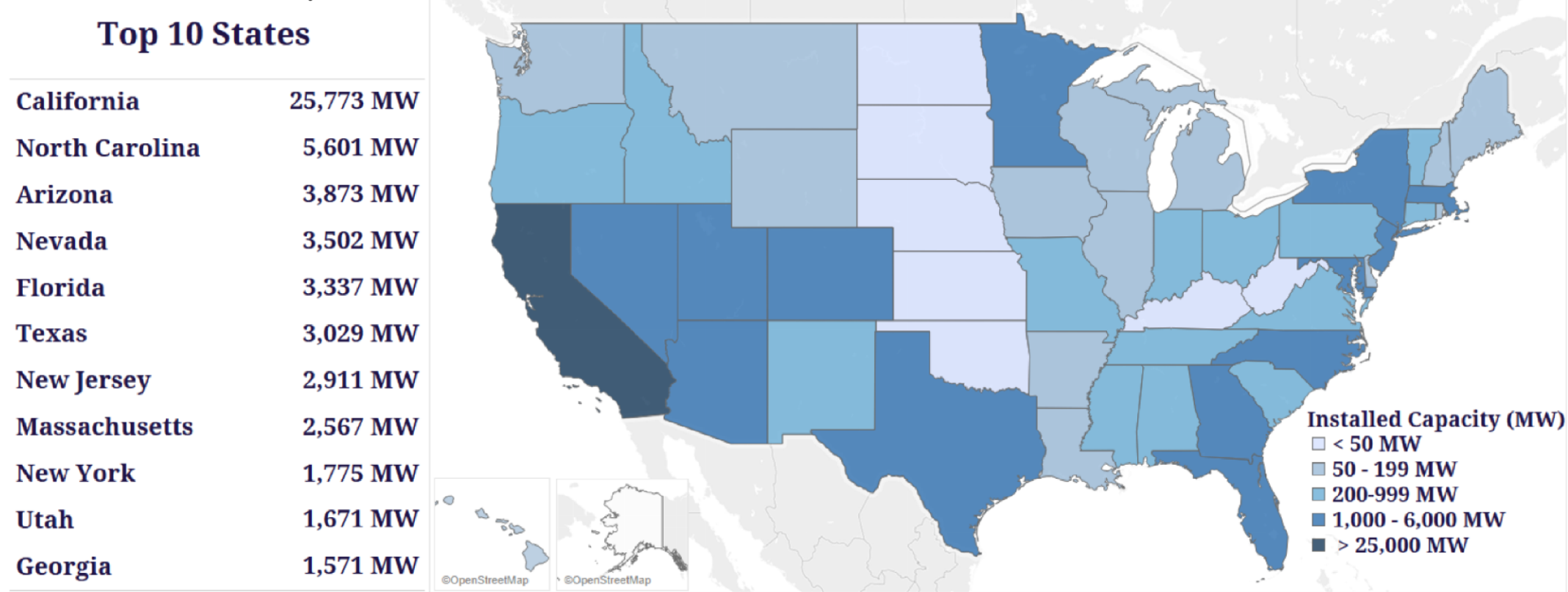


What should I be looking for?

Renewable Situation	Host Requirements	State Incentives	Renewable Resource	Good for My Business
Onsite Solar – Rooftop	<ul style="list-style-type: none"> - Usually ownership of building - New roof or one that needs replacing 	<ul style="list-style-type: none"> - Generally required 	<ul style="list-style-type: none"> - Sunniest states are best but state incentives can close the gap 	<ul style="list-style-type: none"> - Rooftop solar is the fastest growing market and is applicable with savings and other benefits across the country
Onsite Solar – Ground mount	<ul style="list-style-type: none"> - Open acreage (more than 10 acres) - Investment, lease, or PPA 	<ul style="list-style-type: none"> - They help... but not a deal breaker 	<ul style="list-style-type: none"> - Sunnier is better but check incentives and local pricing 	<ul style="list-style-type: none"> - Ground mount is making a surge with lower pricing for those with open land to spare - Application advances such as canopy and carport
Onsite Wind – Large	<ul style="list-style-type: none"> - Open acreage (more than 5 acres) - Friendly permitting - Investment 	<ul style="list-style-type: none"> - They help... but not a deal breaker 	<ul style="list-style-type: none"> - Very windy - If the wind annoys you daily - 6 m/s (13 mph) 	<ul style="list-style-type: none"> - There have been a few of these but rarely make financial sense
Onsite Wind - Small	<ul style="list-style-type: none"> - Less space needed, light poles - Investment 	<ul style="list-style-type: none"> - They help... but not a deal breaker 	<ul style="list-style-type: none"> - Windier is better but these are sometimes simply for "demonstration" 	<ul style="list-style-type: none"> - Same as the large onsite wind -- if you see one there's a pretty good chance it's costing them money - Exception: remote applications
Offsite Wind or Solar (larger contracts)	<ul style="list-style-type: none"> - Minimum contract size (> 10 mw - 40,000 mwh per year) - PPA or other 3rd party structure 	<ul style="list-style-type: none"> - Not required 	<ul style="list-style-type: none"> - "fair to middling" resource... depends on market price of power 	<ul style="list-style-type: none"> - Both are very competitive and usually the best priced situation available - If you have the size! Some aggregation plans are in play but tough to coordinate
Bio-based products	<ul style="list-style-type: none"> - Can be PPA'd, could be onsite 	<ul style="list-style-type: none"> - Not required 	<ul style="list-style-type: none"> - Proximity to fuel source is critical - LFG less now, AD making a comeback based on RFS rules 	<ul style="list-style-type: none"> - "Does it solve another problem?"

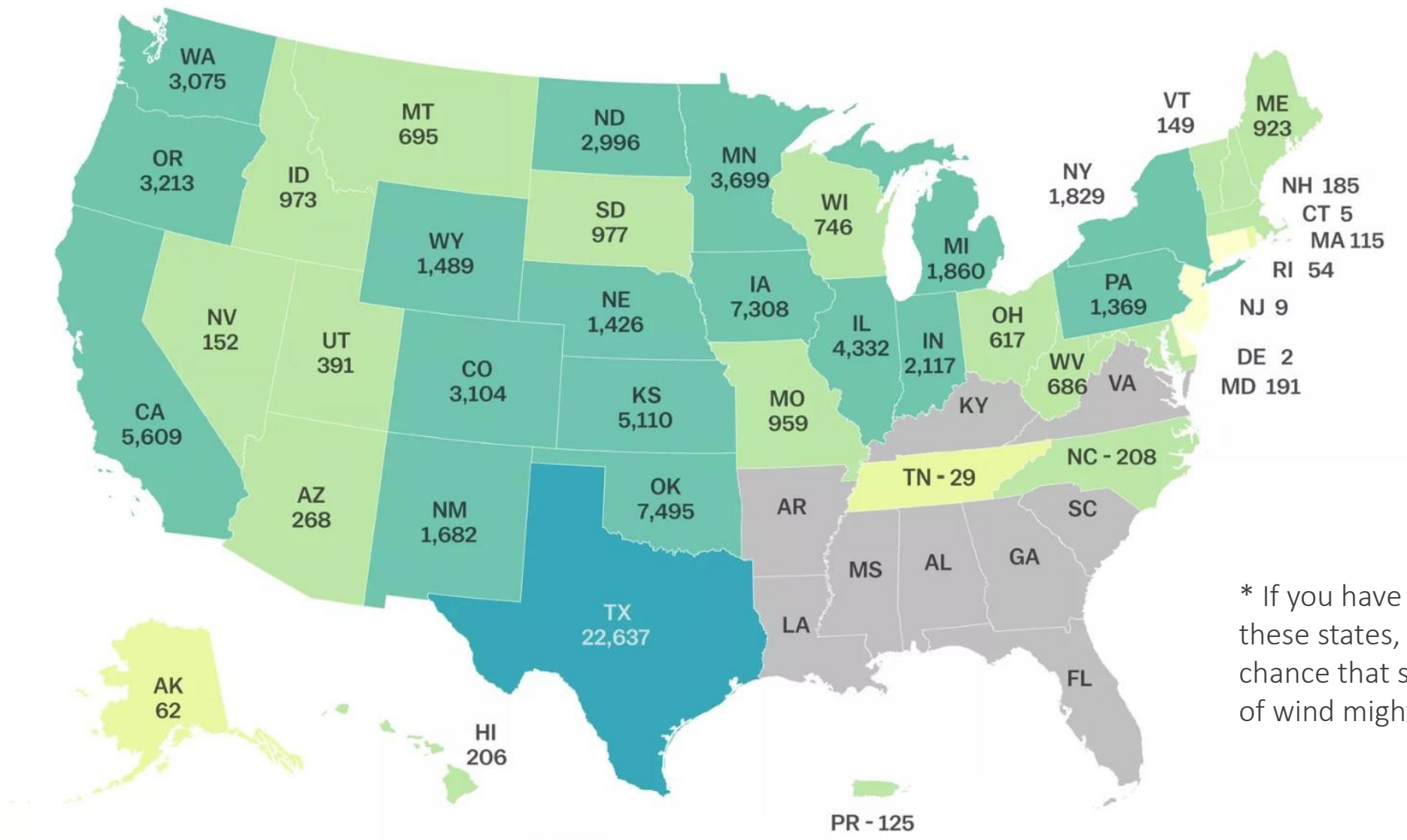
Top States for Utility Scale Solar

Source: SEIA/Wood Mackenzie Power & Renewables U.S. Solar Market Insight



* If you have facilities in these states, there's a good chance that some application of Solar will work for you.

Top States for Utility Scale Wind (end of 2017)



* If you have facilities in these states, there's a good chance that some application of wind might work for you.

Common Challenges to Tackling Renewable Energy



Internal Alignment



Lack of Independent Analysis



Market Access



Limited Internal Resources

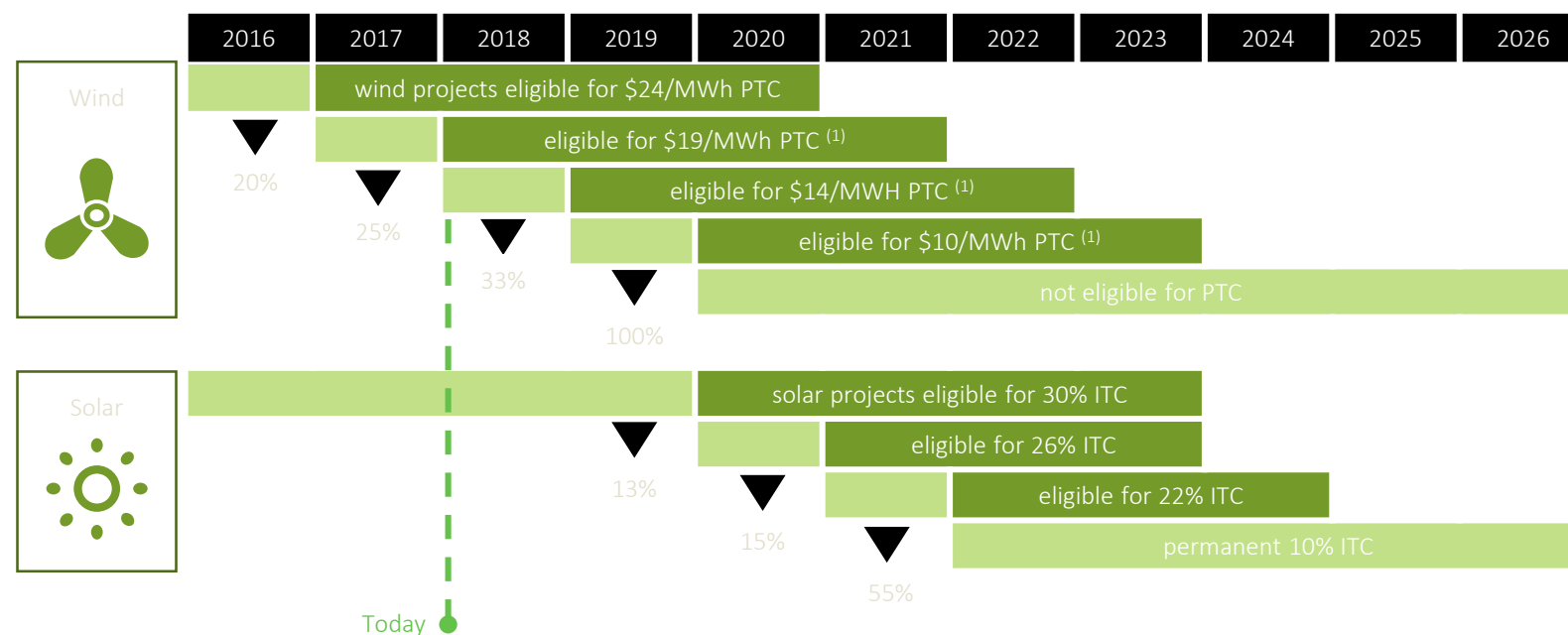


Unfamiliarity with Contract Structures

Phase Down of Tax Credit Programs for Renewables

Reductions in the federal incentives for renewable energy projects are a serious headwind for buyers.

Renewables tax credit program schedule



- The Production Tax Credit (PTC) and Investment Tax Credit (ITC) are scheduled to step down over the next 4 years
- In order to achieve the full PTC value, projects should achieve commercial operations date (COD) by 2020
- Failure to obtain 100% PTC puts projects in the 20% stepdown period. To keep investor returns stable, the PPA prices offered to corporations would need to be at least 25% higher than today's rates
- For a 100MW wind farm, for example, this equates to ~\$20M in cash flow over 15 yrs.

Legend

(1) Exact PTC values will depend on the inflation-adjustment factor used by the IRS in the respective tax years. The Consolidated Appropriations Act of 2016 phased the PTC down from its full value, for projects that begin construction by the end of 2016, to 80% of its full value for those that begin construction by the end of 2017, 60% by 2018, and 40% by 2019. The IRS has issued detailed guidance on the definition of "commence construction," summarized as beginning "physical work of a significant nature" or showing that 5% or more of the total cost of the facility was paid or incurred. A project developer has four years from the end of the year in which the project starts construction to place it in service, otherwise the developer must prove continuous work on the project in order to qualify for the tax credit.

For companies with renewable energy goals or ambitions, Edison Energy strongly encourages preparing for transacting no later than Q3 2018. The earlier companies are able to begin education and deal evaluation, the less they will find themselves competing amongst other corporate, utility and bank buyers.

What next? The call to action.

Savings, hedging against rising prices, future-proofing for future regulations, resiliency, reputation, internal pride, environmental stewardship, corporate goals... all benefits that might be available to you now through Renewable Energy.

- Commit to investigating if there is a renewable energy application that is right for you
- Don't be limited or halted by lack of resources, expertise, or bandwidth
- Get some help – don't go it alone



Thank you

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