Laws and Policies That Affect Adoption of Renewable Energy

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Overview of experience

- Construction financing of renewable energy generation projects, including:
  - Anaerobic digesters
  - Landfill-gas-to-energy
  - Solar installations
- Equipment leasing and finance
- Commercial finance and general corporate law
- Energy regulatory matters and representation of nonprofits in energy space

Example projects: Anaerobic digester (dairy farm)

Example projects: Landfill-gas-to-energy

Example projects: Solar Farm

Key terms

- “Utility scale”
  - large scale energy generation projects
  - designed for all the energy to go to the utility
  - examples are large solar farms, landfill gas-to energy plants, or anaerobic digesters
  - typically either owned by utility or utility buys energy from project through power purchase agreement

Key terms, cont'd

- "Distributed generation"
  - typically installed on homes or businesses
  - energy mostly used on the premises
  - common example is rooftop solar used to power a home or business
  - if interconnected with grid, may sell some power to the grid, but only any excess generated over what is used for current power needs

Summary of discussion

Types of laws that encourage renewable energy

- Federal
- State
- Local

Which of these laws exist in Alabama

Current efforts to change law in Alabama

Federal laws

- Investment tax credit ("ITC") currently 30% of eligible costs
  - recently extended through 2019
  - steps down:
    - 26% in 2020
    - 22% in 2021
    - 2023, residential drops to 0% and commercial drops to 10%

- Accelerated tax depreciation
  - Modified Accelerated Cost Recovery System (MACRS) = 5 years for solar

- Public Utility Regulatory Policies Act (PURPA)
  - requires utilities to buy power from small power generation facilities run by biomass, waste, renewable or geothermal power, at the same price it would have cost for the utility to generate that power itself ("avoided cost").

- States that have the most growth in renewable energy have done more.

New focus on states

- State and local laws are the new battlegrounds for solar
- Utilities are trying to scale back laws and policies favorable to solar, and the results of these battles determine how well solar will fare in those states

Examples of Positive State and Local laws and Policies

- Renewable portfolio standards
- Retail Net metering, Value-of-Solar laws/policies
- Third party ownership laws
- Interconnection standards
- Solar rights policies
- Community solar laws
- Financial incentives (grants, rebates, tax incentives)
- Integrated Resource Planning Process with public input

Examples of Negative Laws/Policies

- Limiting net metering to wholesale rates, or imposing caps
- Standby charges and other such fees for solar customers
- Unreasonable interconnection requirements, such as high insurance
- Zoning or HOA laws limiting solar
- Limiting public input in resource planning

Renewable Portfolio Standards

- Require utilities to either:
  - generate or purchase a certain amount of electricity from renewable sources, or
  - purchase renewable energy certificates
- Can take several forms
  - May encourage utility-scale
  - May have specific requirements for distributed energy or for specific energy types like solar

RPS, continued

- Exist in 29 states plus Washington, D.C.
- Does not exist in Alabama
- No current movement to pass RPS
- Sen. Jeff Sessions: "Solar is not effective in our area . . . Wind turbines . . . not going to work."

Net Metering

- Allow utility customers to sell excess electricity to the grid and receive credit on their bill
- 44 states plus Washington, D.C. have net-metering policies in place
  - 34 states credit at retail rates (not wholesale)
- Alabama has no state-wide net metering policy

Net metering laws in flux

- Utilities pushing to limit net metering, claiming net metering at retail rates places too high of a value on solar
- More than half of all states with net metering programs in place have either proposed or taken action recently to weaken or eliminate the programs
- “Value of solar” debate

Value of Solar (or “VOS”)

- Refers to economic value that solar energy installations confer to the grid and its customers, exerting downward pressure on rates

VOS Elements

- Economic values added to the grid:
  - Avoided energy production costs
  - Generation capacity deferral value
  - Generation O & M value
  - Reduced System Loss value
  - Favorable transmission system impact
  - Favorable distribution system impact
  - Favorable impact on reserves
  - Favorable environmental impact
  - Favorable economic development impact
  - Security enhancement
  - Favorable disaster recovery impact

Consequences in AL of no state-wide net metering law:

- Federal law requires utility to pay only its "avoided costs"
- AL passed state law stating that the AL PSC cannot require a utility to pay more than its avoided costs:
  - "The commission shall not require a utility to purchase electrical energy from any distributed generation facility at a price that exceeds the utility's avoided costs." *Ala. Code* § 37-4-140(b)(1).
  - Statutory definition of "avoided costs":
    - Costs that a utility or a commission non-jurisdictional electric supplier which purchases electrical energy from a distributed generation facility would have been required to incur but for the distributed generation facility's provision of electrical energy during the same period of time. To the extent such costs are actually avoided, the term may include incremental fuel costs, incremental energy losses, incremental emission allowance costs, and incremental fuel-related operation and maintenance expenses. **The term does not include, among other things, costs associated with the capacity, the transmission and distribution system, administrative and general costs, customer accounting costs, and general plant in service cost**s." Ala. Code § 37-4-140(a)(1)

Consequences of no net metering, cont'd

- Certain VOS elements prohibited from calculation
- Each utility pays what it wants, subject to federal law minimum requirements
- As a result, APCO pays only about 3 cents per kwh.
- No data regarding how APCO calculates

Fees and Standby Charges

- Another battleground nationwide – many states have recently either imposed or tried to impose fees on solar
- Such fixed charges recommended in "Disruptive Challenges" whitepaper published by utility trade group, Edison Electric Institute.
- Utilities claim when customers install solar, there is a “cost shift” to remaining utility customers bc smaller and smaller pool of customers pay for maintaining lines and existing power plants
- However:
  - Author of the EEI report, Peter Kind, later found the fixed charges approach to be flawed after reviewing further data
  - Cost shift theory has not been proven because of VOS, at least not until solar installations reach much higher levels than we are seeing now.

Standby charges, cont’d

- APCO Company currently charges a fixed capacity reservation charge ("standby charge") of $5 per kilowatt of its customer's installed solar capacity.
- For a typical residential installation of 4 to 5 kW of nameplate capacity, the standby charge would total $20 to $25 per month.
- Of the states that have approved similar charges, the $5/kW fee charged by Alabama Power Company is among the highest in the nation.

Standby charges, cont'd

- APCO is also among a small handful of utilities that charge a high fixed charge on top of a very low payment for electricity, significantly reducing economic value and deterring investment in solar
- According to a recent news article, in Alabama Power Company's service territory, there are only about 60 grid-tied solar systems among the utility's 1.2 million residential customers

Third Party Ownership

- Sometimes called “third party financing”
- Alternative to taking out a conventional loan
- Parties:
  - Electricity user (usually homeowner or business)
  - Utility
  - Solar developer
- Developer buys, installs and **owns** the solar panels on the customer’s premises, then either:
  - **leases** the panels to the premises owner, or
  - enters into a contract (**PPA**) with the user for the sale of the electricity

TPO terms

- Power Purchase Agreement ("PPA"):
  - contract agreeing to sell electricity produced by solar equipment to the customer for an agreed rate per month per kilowatt hour
  - essential structure is sale of electricity
- Lease:
  - contract agreeing to lease solar equipment to customer for fixed amount of rent, regardless of how much electricity is generated

Popularity and Importance of TPO

- In 2015, 65% of commercial installations were financed through TPO.
- For residential installations, the TPO model's share of the national market represented:
  - 62% in 2012
  - 67% in 2013
  - 72% in 2014.
- According to *Forbes*, "The U.S. solar energy boom would not be possible" without TPO financing
- States that do not clearly permit TPO tend to lag behind in installed distributed solar capacity

Benefits of TPO model

- Developer bears the upfront costs
- Developer usually handles installation, operations, and maintenance
- Customer often has option to purchase equipment at the end of the contract term
- Provides financing to people:
  - without good credit
  - who already have too many loans to qualify for additional loans
  - who do not have enough taxable income to benefit from tax credits
  - who do not own their rooftops (apartment dwellers or businesses leasing space)
- Developer can take 30% ITC and pass some of that benefit on to the customer in the form of savings on cost of electricity
- PPAs allow tax-exempt entities to take advantage of ITC savings

Legality of TPO

- Roughly half of states clearly permit PPAs
- Other half either forbid PPAs or their legality is unclear
  - In most cases, problem stems from utility monopoly laws that say only utilities can sell electricity.
- Leases are more likely to be accepted than PPAs (because not structured as sale of electricity), but legality of leases not always clear

TPO in Alabama

- Legality of TPO in Alabama needs to be clarified
- DSIRE database classifies Alabama as forbidding TPO, but law not that clear
- Lack of clarity means TPO, as a practical matter, not generally available
  - Developers will not go into a market where they believe they may get sued

Current Efforts to Allow TPO in AL

- Alabama Property Rights Council introduced HB 277 in AL legislature last year to allow TPO
  - sponsored by Republican Ken Johnson in the House of Representatives
- Will be re-introduced in next legislative session
- Similar to law passed in Georgia in 2015: Solar Power Free-Market Financing Act
- APRC is affiliate of SPRC, which wrote and lobbied for the GA legislation
- SPRC and its affiliates appeal to conservative legislators by emphasizing:
  - property rights of citizens to use free-market financing
  - economic benefits of solar, including jobs

Interconnection standards

- Set of rules and processes to connect solar panels to the grid
- Affects ease and cost of connecting solar to grid
- May pose barriers, such as insurance or unnecessary extra “safety” measures
- May be unnecessarily complicated or opaque

Interconnection standards, cont'd

- Alabama has no statewide interconnection standard
- Left up to each utility, so there is a lack of standardization, increasing compliance costs
- Study by IREC and Freeing the Grid gave Alabama the grade of "F" on interconnection standards
- APCO imposes high insurance standards

Solar rights policies

- Local laws or homeowners' association rules may pose barriers to solar installations
- State solar access laws protect solar customers from unreasonable local restrictions
- Almost half of states have solar access laws
- Alabama does not have solar access rights law

Community solar laws

- Allow multiple users to share one solar installation
- Particularly benefits consumers who have no good place to install solar panels
- Alabama has no laws regarding community solar

Other incentives

- State tax credit for solar (not in AL)
- Sales and use tax reduction and property tax abatement:
  - OPTIONAL in Alabama
  - Can be applied for and granted on case-by-case basis at city, county, or state level
  - Applies only to non-educational taxes
  - Expires at the end of 2018, except for projects applied for before that time
- Loan programs: Low-interest loan through AlabamaSAVES
- Certain localities: Local governments have the authority to establish Property-Assessed Clean Energy (PACE) financing programs, allowing property owners to borrow money from the local government to pay for energy improvements. Not all local governments in Alabama offer PACE financing.

Integrated Resource Planning Process

- IRP is a planning process at the state public utility commission that is used to determine the least-cost way to meet forecasted future demand for electricity, and how to meet that demand through investments in power sources (whether it be coal or gas or solar) and energy efficiency measures
- TVA: does involve the public in IRP process
- APCO: no public involvement in IRP:
  - The Alabama PSC does not allow the public to comment on APCO's IRP
  - PSC does not require APCO to release the plan to the public
  - One study concluded AL PSC plans are made "behind closed doors" and described the process as "opaque." (See "Left in the Dark," Institute for Energy Economics and Financial Analysis)
  - hinders the development of clean energy goals and solar initiatives.