

Shining a Light on Solar Power



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Overview

- What's the big deal about solar power?
- What is net metering and how does it work?
- What options are available to pursue solar power and net metering?

What's the Big Deal About Solar Power?



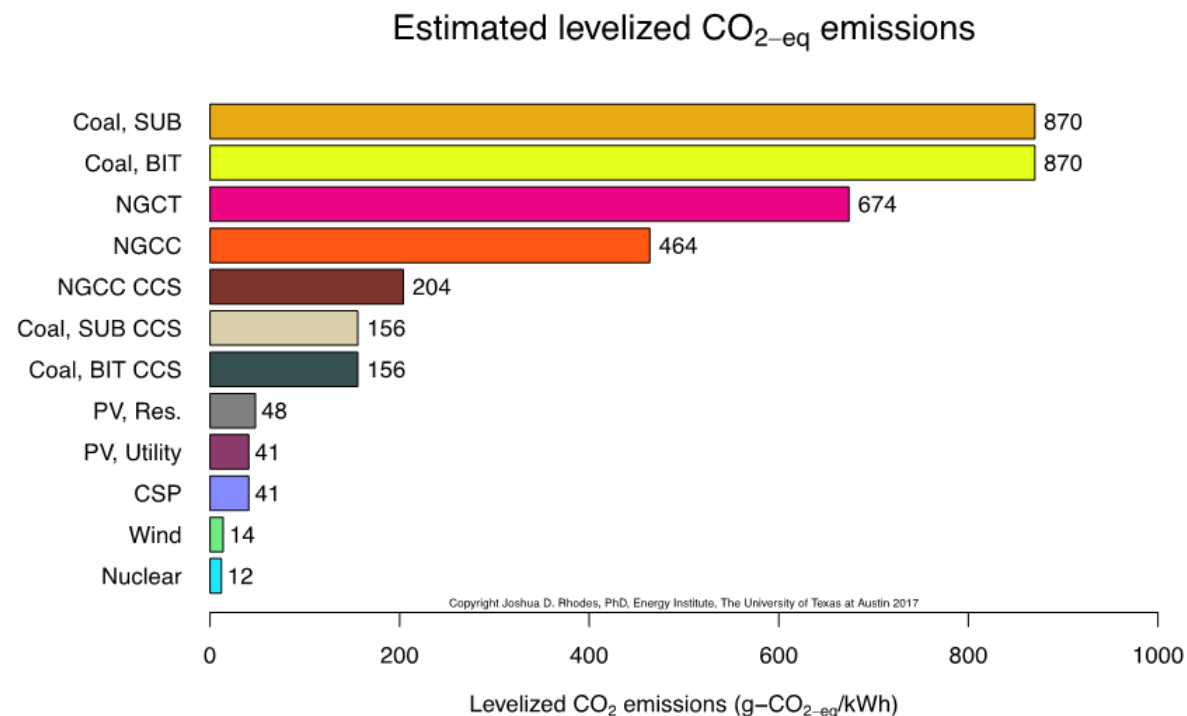
What's the big deal about solar power?

It's clean.

For more than two decades, people and businesses around the world have shown increasing concern about the effect of greenhouse gas emissions on the world climate.

In a 2019 Gallup Poll, a majority of respondents in every region of the United States expressed a “great deal” or “fair amount” of worry about global warming.

The Federal Energy Regulatory Commission has forecasted that renewable energy projects will more than double fossil fuel projects over the next two years.



Source: University of Texas Energy Institute

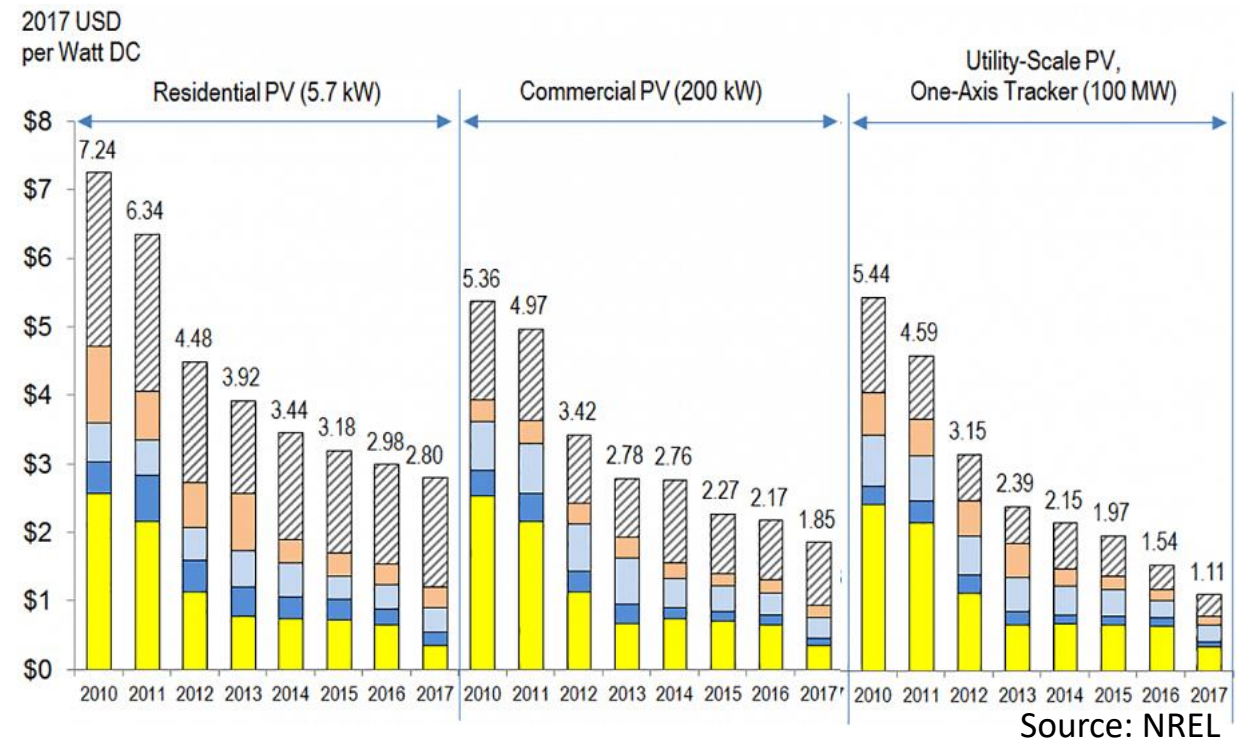
What's the big deal about solar power?

It's cheap.

For the past hundred years, it has been much less expensive to purchase electricity from a utility than to generate it yourself, even though utility generation has additional cost components.

TODAY, THAT HAS CHANGED.

- The cost to build solar power has declined rapidly.
- Federal tax benefits can further reduce the cost of solar power.
- **Arkansas net metering laws provide retail value for solar generation.**



What's the big deal about solar power?

It's ~~easy~~ easier.

- Anyone can generate their own electricity. The challenge is interconnecting a generator with an electric utility and operating it in parallel with the electric distribution system – so that electricity could easily flow in both directions. Electric utilities were not known for making this process easy.
- Today, net metering laws (A.C.A. 23-18-604(a) and 605(a)) require all electric utilities to interconnect compliant solar power facilities.

Contracting for solar power is flexible. Local governments are authorized to acquire solar power through:

- Traditional bidding
- Design-build
- Solar Service Agreements

What is Net Metering?

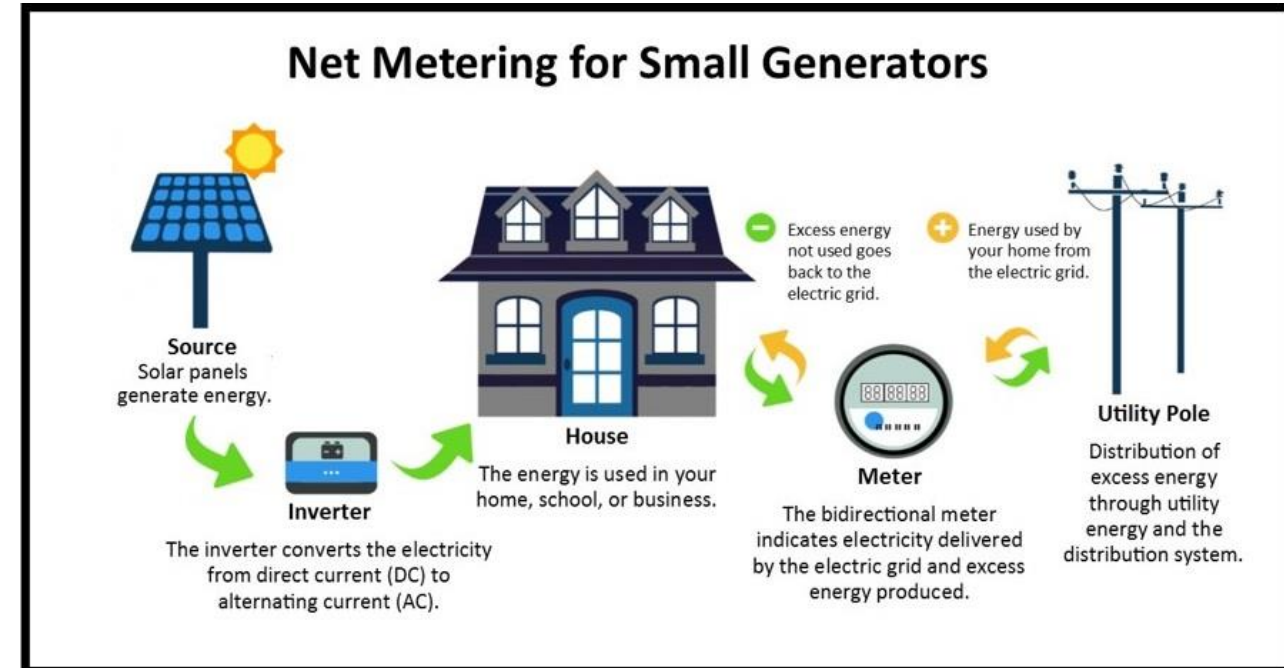


Background

- Act 1781 of 2001
 - The “Arkansas Renewable Energy Development Act” or “AREDA” created net metering in Arkansas.
 - Capacity limits: 25kW residential; 100kW nonresidential
 - Allowed special net-metering rates and charges, where warranted.
- Act 1026 of 2007
 - Increased nonresidential capacity limit to 300kW.
 - Required excess generation to be credited in the following month but expired after one year.
 - Defined “renewable energy credits” as property of the generation owner.
- Act 827 of 2015
 - Added language to avoid subsidization
 - Removed expiration of excess generation credits and added obligation to buy at avoided cost.
 - Added provision allowing capacity to exceed 300kW in certain circumstances
 - Authorized net meter customers to aggregate multiple meters for net billing.
- Act 464 of 2019
 - Increased nonresidential capacity limits to 1,000 kW – and potentially 20,000 kW
 - Added option to lock rate structures
 - Created separate structure for municipal electric providers

How it works

- “Net metering” means measuring the difference between the amount of electricity supplied by an electric utility to a customer and the amount of electricity generated by a customer and fed back to the electric utility.
- For governmental entities, a “net metering customer” means a customer of an electric utility that:
 - OWNS a net metering facility;
 - LEASES a net metering facility; or
 - PURCHASES power through a qualifying service contract with a net metering facility.



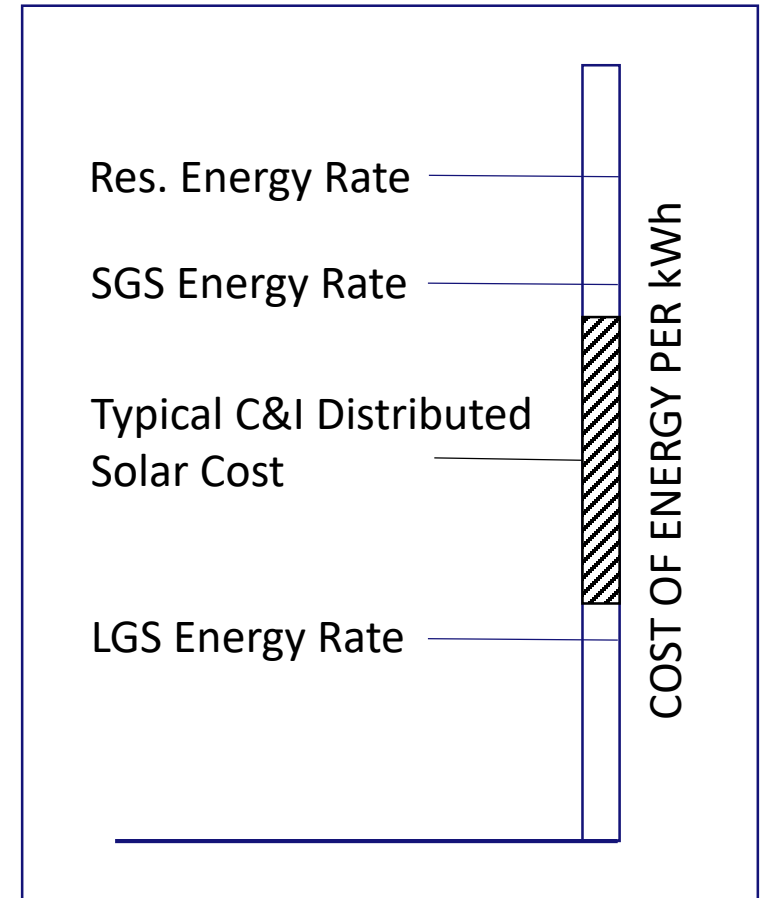
****These definitions are derived from Section 1 of Act 464.
The underlined words are changes from previous law.***

Net metering analysis – rates

- A typical government's electric bill for local has three components:
 - (1) **service or customer charge** = fixed monthly fee,
 - (2) **demand charge** = demand rate x peak energy consumption (kW), and
 - (3) **energy charge** = energy rate x amount of energy consumed (kWh)
- Net metering generation only “nets” against the energy charge
- Energy rates vary by utility and by classification of service
- A single customer may be served by more than one utility, each of which charges more than one rate to the customer
- To analyze the financial effect of net metering, electricity costs must be separated by utility, rate classification, and rate component.

IT IS IMPORTANT TO UNDERSTAND YOUR ENERGY RATES.

If it costs more to generate electricity than your energy rate, your overall cost for electricity will increase.



Net metering analysis – rates

Understand rate risk

- Electric rates may not continue to increase as they have in the past.
- Electric rates may be restructured by increasing service and demand charges and decreasing energy charges – which would reduce the value of net metering.
- Net metering rules may not allow full 1:1 credit for customer-owned generation
- Some states that adopted net metering laws have reversed course.
- In many situations, net metering customers are able to grandfather facilities that existed prior to a rule change. For example, A.C.A. 23-18-604(b)(10) provides a method for net metering customers to lock their rate structure for up to 20 years

The APSC is holding a hearing on net metering rates on February 19, 2020.

Net metering analysis – capacity

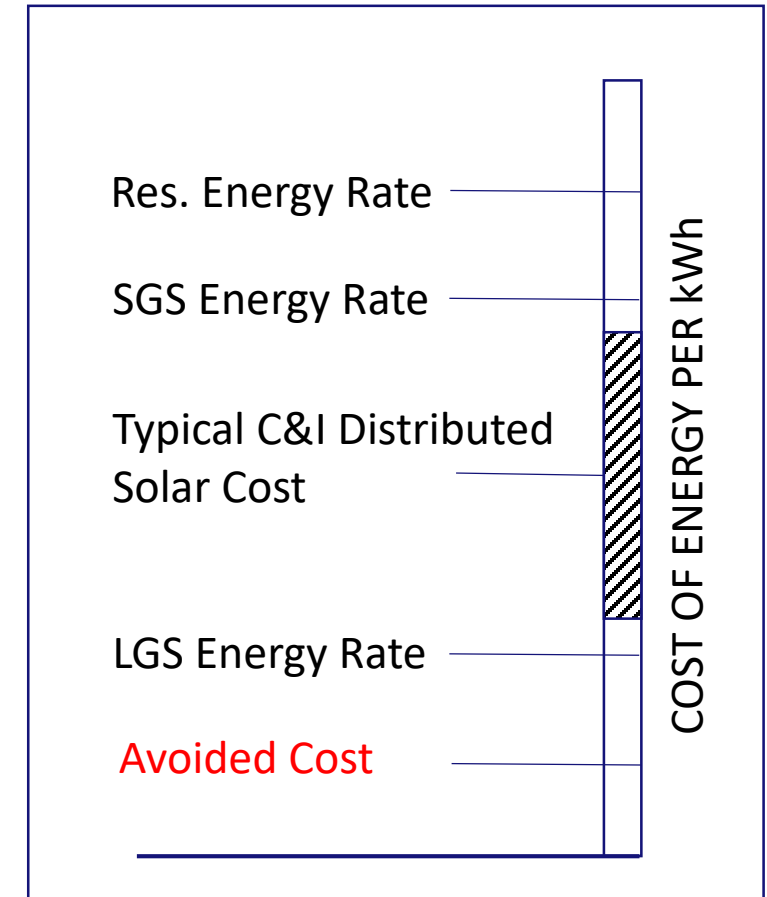
The capacity of a net metering facility must be “intended primarily to offset part or all of the net-metering customer requirements for electricity.” A.C.A. § 23-18-603(8)(E).

The capacity of a net metering facility may be as large as 1,000 kW without approval from the Arkansas Public Service commission. Capacity limits may be increased to:

- 5,000 kW if warranted by utility benefits and public policy.
- 20,000 kW if previous conditions are met and no unreasonable allocation of costs to other customers occurs.

IT IS IMPORTANT TO UNDERSTAND YOUR ENERGY USAGE TO PROPERLY SIZE A NET METERING FACILITY.

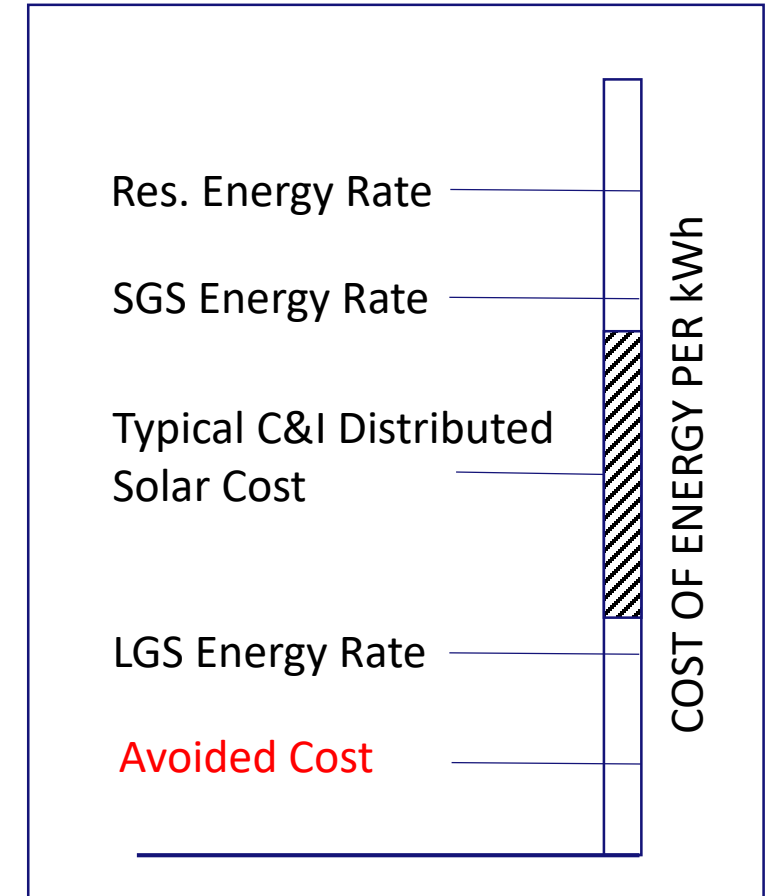
Electricity that is generated but not consumed may only be sold at avoided cost which is less than the value afforded by net metering.



Net metering analysis – capacity

Understand capacity risk

- The cost of solar power can be reduced by scale. Bigger equals cheaper cost per unit.
- Solar facilities are long term commitments. They should be planned so that usage > generation for 20 years or longer.
- ENERGY EFFICIENCY. As electricity is used more efficiently, less electric generation is needed. If solar capacity is determined prior to installing energy efficiency improvements, the facility may end up oversized and produce suboptimal value.
 - Before exploring solar power – explore energy efficiency
 - When sizing solar facility – account for future energy efficiency
- GROWTH. When anticipating an increase in electric requirements, there are less concerns about capacity risk. When anticipating a decrease in electric requirements, capacity risk can become significant.



Net metering analysis - siting

Because solar facilities are intended to endure for decades, siting decisions are very important.

- Meter aggregation allows the electricity that is generated at one location to be credited against electricity that is consumed at one or more other locations.
 - Authorized by A.C.A. § 23-18-604(c)
 - Creates significant flexibility in siting
 - Cannot cross utility boundaries
- For planning purposes, allocate six acres per 1,000 kW of capacity.
- The surrounding electric infrastructure will affect interconnection costs. Local government entities can collaborate on a solar project. However, no more than two governmental entities can co-locate on a single site under A.C.A. § 23-18-604(c)(2)(A)(ii)

Net metering analysis - siting

Understand siting risk

- The solar facility must comply with zoning and land use controls.
- Environmental concerns are less than traditional generators, but they do exist.
- Community visibility is often a key factor in siting a solar facility.
- A remote facility may have increased operation and maintenance costs.
- Locating a solar facility where energy is consumed may reduce demand charges.
- Consuming large areas of land with tax-exempt solar panels can reduce future property tax revenues.
- Is there a better long-term use for the land? Relocating a solar facility can be expensive.

Solar Power Options



Solar power options

Previously, local governments who wanted solar power had to build it and own it themselves through traditional contracting processes. Now, additional options are available, primarily due to Acts 464 and 612 of 2019:

- Design-build
- Lease
- Solar service agreements
- Proposed SEPO rate

Design-build

- “Design-build” is a method of project procurement through negotiation with a single responsible entity to perform under a single contract for both design and build a project
 - Sometimes include operations and maintenance agreements
 - Major advantage: single point of responsibility
 - Major disadvantage: price transparency/limited design
- Act 612 of 2019 amended A.C.A. § 22-9-203(j)(1) to allow a municipality, sanitation authority, water system, or consolidated waterworks system, to use contract with a single entity to design, build, maintain, and/or operate “solar energy generation equipment and facilities”

Design-build

Process is defined by A.C.A. § 22-9-203(j)(3)-(8):

- Hire professional to help identify project parameters (§ 203(j)(8))
- Establish criteria for the evaluation of contractors for previous 5 years (§ 203(j)(4))
- Solicit qualifications-based competitive sealed proposals (§ 203(j)(3))
- Contract is made with most responsible and responsive entity whose proposal is most advantageous (§ 203(j)(6))
- Government must use independent professional to monitor performance (§ 203(j)(7))

Consider structuring contract to pay for materials directly, rather than through the contractor, to reduce project costs.

Lease

- Solar power leases are now eligible for net metering under A.C.A. § 23-18-603(7)(B), as long as:
 - The lease is not based on the amount of electricity (kWh) generated
 - The lease does not include any kWh or kW charge
- Leases are uncommon with government entities.
 - Leases are limited to 5-year terms by §2 of Amendment 78.
 - As a financing tool, a lease is often more expensive than other forms of municipal borrowing
 - Governmental solar leases are not eligible for the federal investment tax credit (ITC), like a solar service agreement

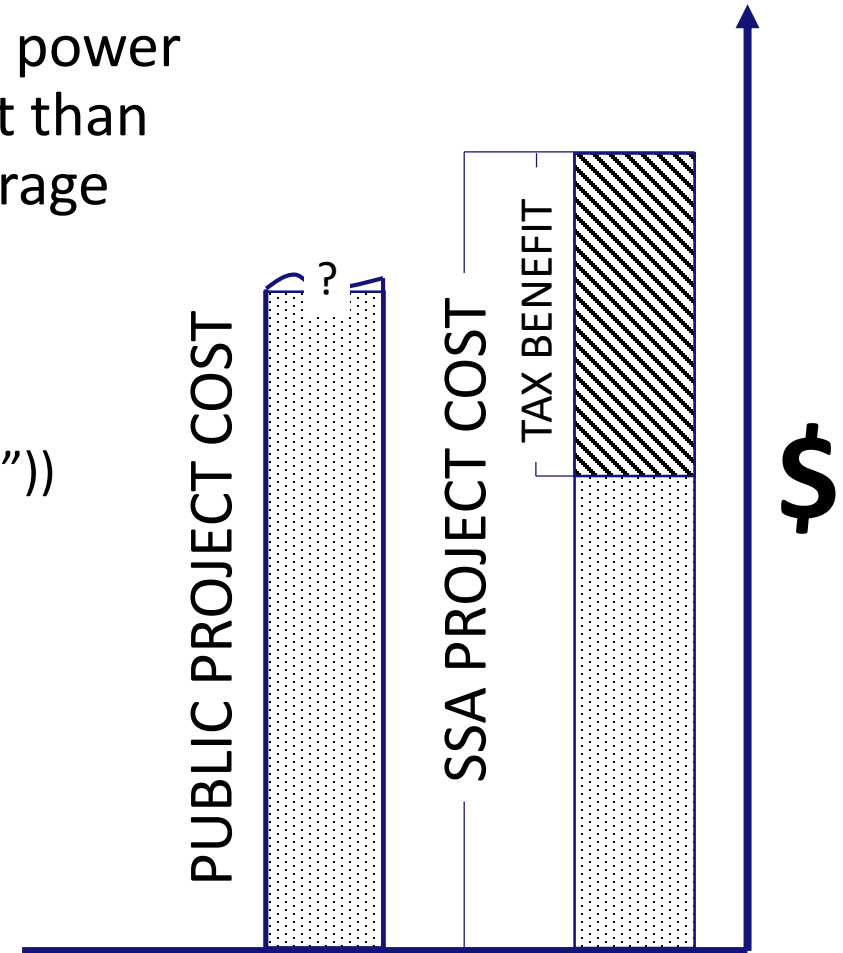
In general, a solar power lease is considered a more expensive and less transparent method to acquire solar power.

Solar service agreements

- Solar service agreements are now eligible for net metering by nonprofit and governmental entities under A.C.A. § 23-18-603(7)(C)
- Solar service agreement must qualify under safe-harbor rules that apply to the Investment Tax Credit (ITC) found at 26 U.S.C. § 7701(e)(3)(A)
- Safe-harbor restrictions (26 U.S.C. § 7701(e)(4):
 - The service recipient cannot operate the facility (*this does not apply to a right to inspect the facility*)
 - The service recipient cannot bear any significant of nonperformance (*except for temporary shut-downs for maintenance or burden related to insolvency of provider*)
 - The service recipient cannot receive any significant benefit from reductions in operating costs (*but can benefit from improved output*)
 - The service recipient cannot have an option to purchase at a fixed and determinable price (other than fair market value)

Solar service agreements

- Theoretically, local government can acquire solar power at a lower cost through a solar service agreement than other methods, because private entities can leverage federal tax benefits that are unavailable to local government.
 - Investment Tax Credit (“ITC”)
 - Modified Accelerated Cost Recovery System (“MACRS”))
- The challenge is ensuring that the solar service agreement is actually a better deal. Consider:
 - Cost of financing (transactional and interest)
 - Property and sales taxes
 - Cost of insurance products
 - Solar developer profit



Solar service agreements

Ten major focus points in solar service agreements:

1. Price escalators
2. Purchase option -
 - Available after tax credits are consumed
 - Aim for flexibility in exercise of option
 - Typically a listed price or fair market value, whichever is more
3. Design approval
4. Interconnection processing
5. Renewable energy credits / environmental attributes (RECs)
6. Potential ancillary values (grants and other energy products)
7. Non-appropriation
8. Below-market leases of gov't property
9. Risk allocation (usually changes at point of delivery)
10. Insurance and indemnity requirements

Entergy Arkansas, LLC SEPO proposal

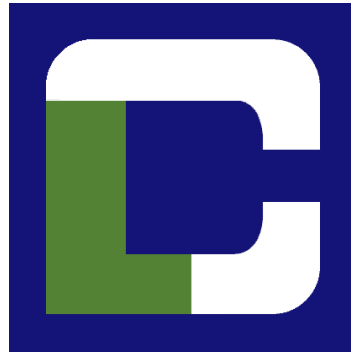
- On 8/15/19, Entergy submitted a request to add a “solar energy purchase option” rate
- The proposed rate would only be available to entities eligible for net metering through a solar service agreement
- The proposed rate for energy + energy riders is \$0.05345/kWh
- Subscriptions would run on an annual basis
- Capacity amount based on request
- Hearing scheduled for April 16, 2020

Current APSC Proceedings

The Arkansas Public Service Commission has a few open dockets pertaining to net metering and solar power:

- 19-055-U:** (9/13/20) Implementation of Act 464 of 2019. The APSC has issued orders directing utilities to comply with the new law. On 1/14/20, Entergy appealed to the Arkansas Court of Appeals. The Attorney General also appealed on 1/15/20. The cases are consolidated as CV-20-24.
- 19-042-TF:** (8/15/19) Entergy SEPO rate. Next scheduled hearing is 4/16/20.
- 19-019-U:** (4/30/19) Filed by Entergy for approval of large solar facility near Searcy. Next scheduled hearing is 2/25/20. The issues appear partially settled.
- 16-027-R:** (4/29/16) Implementing net metering rules under Act 827 of 2015. Hearing scheduled for 2/19/20. Order likely in March which could affect 1:1 net metering credit.

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