Solar Powering Iowa
Power Purchase Agreements
Midwest Renewable Energy Association
March 24, 2016
Farmer’s Electric Coop – 800 KW
(Up until commissioning of CFU Community Solar Array, this was the largest solar array in Iowa)
PPAs – What are they and why do we use them?

• A Power Purchase Agreement (“PPA”) is a contractual agreement between a power consumer and an energy asset owner (Wind, Solar, Bio, whatever).

• Brief History of PPAs in Iowa
  • Have been around for a very long time.
  • Initially they were mostly prevalent in big wind projects.
  • A taxable 3rd party owns the energy asset, monetizes the tax incentives and sells the energy to the off taker under a long term agreement.
  • Executing a PPA does not make the Producer a PUBLIC UTILITY (in Iowa).
• Considerations for PPAs in Iowa

  • PPAs have a “Capital Source” owning the energy asset and an “Off Taker”), usually a utility.
  • Solar PPA’s in Iowa are relatively new and have been extremely controversial.
  • Solar PPAs are generally done to permit nontaxable entities to be able to produce clean energy from renewables in an economically viable way.
  • Non-taxable entities can’t:
    • Monetize the 30% federal ITC, State tax credits, or the tax benefit of depreciation expense.
  • 3rd party ownership permits this to happen.
Solar PPAs – Who are the parties and what roles do they play?

• Energy Offtaker

• PPA Capital Source

• Offtaker’s Utility

• EPC/Installer
Solar PPAs – How do they work? (Nontaxable Entities)

• A nontaxable entity decides they need to:
  • Effectively monetize tax incentives otherwise unavailable to them.
  • Reduce their carbon footprint.
  • Create a more sustainable environment for their constituents or students.
  • Hedge against utility inflation.

• Economic terms in a PPA for Offtaker and Capital Source
  • PPA rate ($/kWh).
  • PPA term (10 – 25 years are fairly common).
  • Energy inflation rate (an annual pre-agreed inflation rate) designed to mimic utility inflation.
  • End of PPA buyout terms.
  • Lots of ways to skin this cat! It’s all about returns,,,,
  • Deal must have acceptable economics and underwriting criteria for capital source.
  • Appropriate deal structure on capital source side. This is usually transparent to offtaker.
Procurement of Tax Equity Investor

- Usually PPA structure has a general investor (who typically owns as little as 1%)
- Tax equity investor monetizes tax attributes and gets a percentage of annual net earnings (and can have up to 99% stake)
- After a period of time, generally 7-10 years, there is often a “Flip Transaction” where the general investor buys out the tax equity investor at a calculated price to give a target ROI.
- Procurement of tax equity investors can be very difficult here in Iowa and the Midwest:
  - Cheap energy rates mean cheap PPA rates
  - Very few incentives other than statutory ones.
  - No SRECs (yet) in Iowa
  - Small deal sizes can make soft costs prohibitive
    - Opinions: Legal, tax, engineering
    - Big banks (JPMC, USB, Wells, etc.) don’t do small deals and thus require “Iowa Size” deals to be aggregated with fees to aggregators.
- Prior to ITC extension last December, 8+ GW of Utility Solar has largely filled the capital bucket for 2016.
Negotiation and Execution of PPA

• With Offtaker, nothing unusual. It is a contract.

• With Capital Source:
  • Requires tax and contract lawyers, accountants and engineers.
  • Subject to supply and demand for capital.
  • Fees galore (which come out of EPC margin).
  • Each capital source has their own preferred terms and contract documents.
  • Capital sources highly value experience, expertise and history.

• With Utility:
  • Fundamentally no different in terms of interconnection, net metering, and other factors in Iowa (now that we have a SC ruling).
Future of Solar PPAs

• Commercial (not discussed, they can self monetize tax incentives)

• Residential
  • While rare in Iowa and not addressed here, a huge percentage of residential solar in California, New Jersey, Hawaii and elsewhere PPAs and solar leases are the predominant formats.
  • Don’t work well in Iowa because of cheap electric rates.
  • Solar City, NRG and Sun Run do these PPAs and while growth has been substantial in numerous markets, profits are hard to find.

• Nontaxable (municipal, academic, religious)
  • Municipal and academic projects with the right economics present huge growth opportunities for Installers, EPCs, and vendors.
  • Underwriting risks to investors are extremely low.

• Utility Scale
  • That’s where the big $$’s are, but
  • Not my cup of tea because PPA rates are so low and terms are so onerous.
    • Sun Edison and their Yieldcos
  • Utilities are very hard to deal with as they view (eventually) DG as an existential threat.
  • Big banks like big deals but they never pay off at cheap PPA rates. Returns are hard to find on utility scale PPAs.
Conclusions

• PPAs on a small scale are very difficult to accomplish, mostly because soft costs eat the installer margin up.

• PPAs on a medium scale (municipalities and schools) are less difficult to accomplish but you often need to have an executed PPA before you can get a commitment from a capital source/tax equity investor.

• PPAs on a large scale
  • For utility scale are difficult because the EPC risk is high and margins are low.
  • For large General Service customers are generally not economically viable because solar developers can’t represent the solar array will reduce peak demand.
(More) Conclusions

• While executing Solar PPAs can be very challenging, we can ALL be very bullish about solar.
  • Component prices continue to come down.
  • Energy rates continue to inflate.
  • Nat gas is now abundant and cheap but fracking is no free lunch either.
  • CPP is forcing this migration to renewables
  • Climate change is real and is working in favor of renewables.
  • Climate agreement in Paris where virtually all nations signed on to reduced GHG strategies were agreed to.
  • Nuclear, what can we say?
  • Clean coal,,,,, who is kidding who?
  • Significant Value of Solar beyond energy
  • Storage will be a paradigm shift.

• What can we do to promote these financial structures as a way of deploying more solar?
  • Explain and recruit PPAs to local and regional banks that have a community spirit and want good low risk returns.
  • Taxable entities may use PPAs for tax and estate planning purposes.
  • For religious nontaxables, parishioners generally need to be recruited as capital sources because of underwriting considerations.
Thank You!

Q & A?