



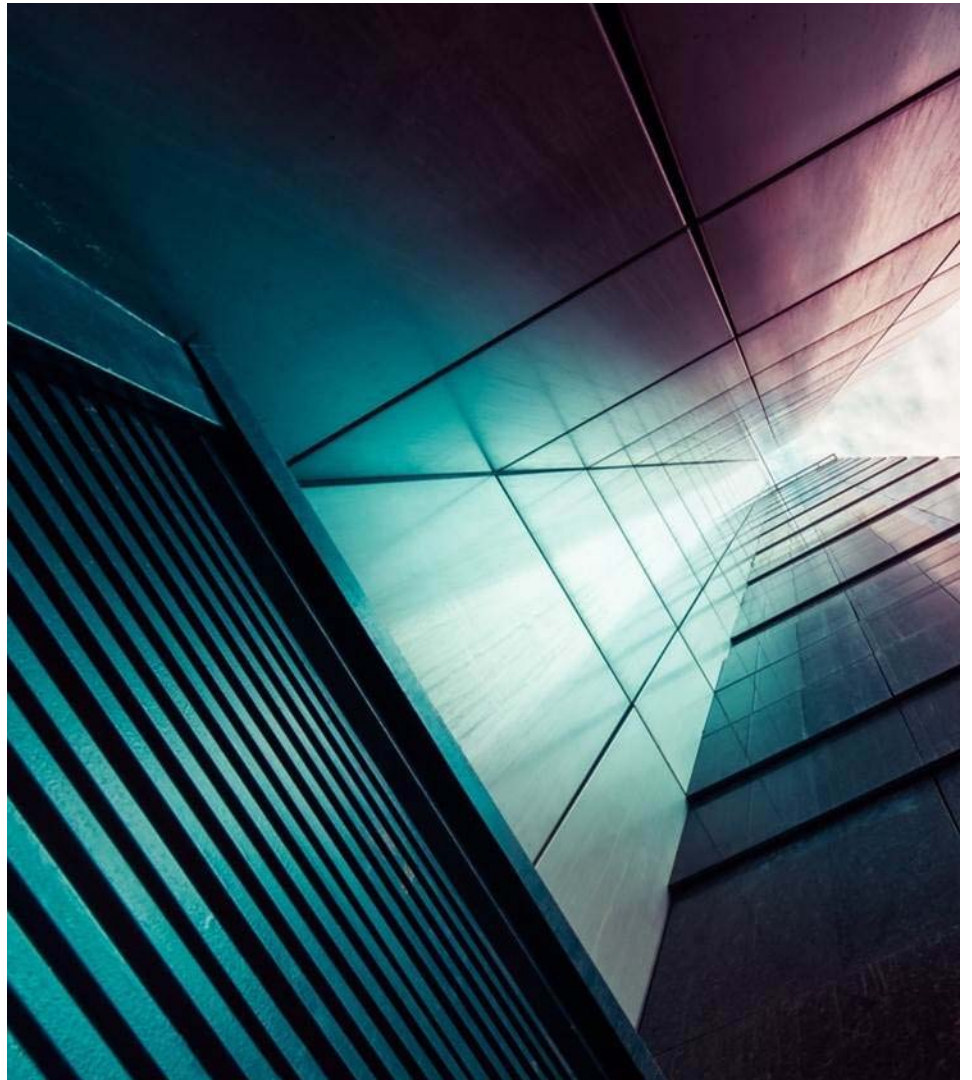
Investing in Solar:

The Distributed Generation Market & Tax Incentives

David Burton
Partner, New York

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Northeastern University

Norton Rose Fulbright US LLP



Fundamentals drive and support U.S. solar growth

Solar is the top provider of new energy capacity

Total installed U.S. solar capacity is expected to more than double over the next five years

By 2023, over 14 gigawatts of solar capacity will be installed annually

Market inefficiencies create the opportunity for outsized returns

Incongruent
documentation

Complex project, asset
management

Financial transaction
complexity

What is the distributed generation (DG) sector?

- Solar generation (plus associated energy storage assets)
- Distributed generation
 - On-site or de-centralized
 - Community solar, utility or commercial & industrial offtakers
- Not large-scale, remote utility generation
- Not roof-top residential solar

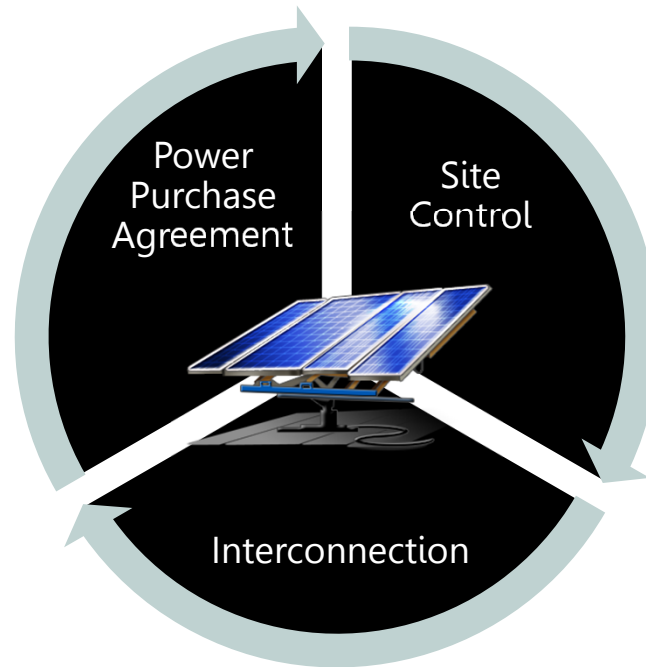
Why invest in DG solar?

- Quality of cashflows
 - Typically long term contracted revenue sources
- Federal tax and state incentives for renewable generation
- “ESG” (i.e., environmental, social and governance) considerations
 - Green energy investment mandates
- Size of market
 - Estimated \$3-5 billion of asset opportunity per year
- Ability to build a diverse portfolio
 - Technologies, locations, offtakers, capital structures
- Return potential
 - Typical project sponsor return (gross): 12%+

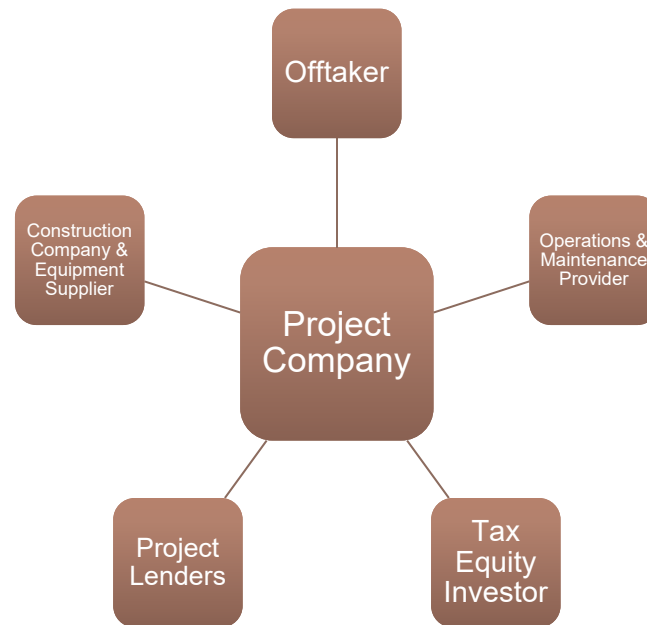
Typical project lifecycle



Three critical contracts



Parties to the transaction



Commercial and financing arrangements

Commercial Arrangements

- Project Company enters into equipment supply and construction contract
- Project Company enters into contracts for real estate and operations & maintenance
- Project Company generates revenue under long-term power purchase or lease agreement with offtaker(s)
- Project Company may need interconnection agreement with the local utility

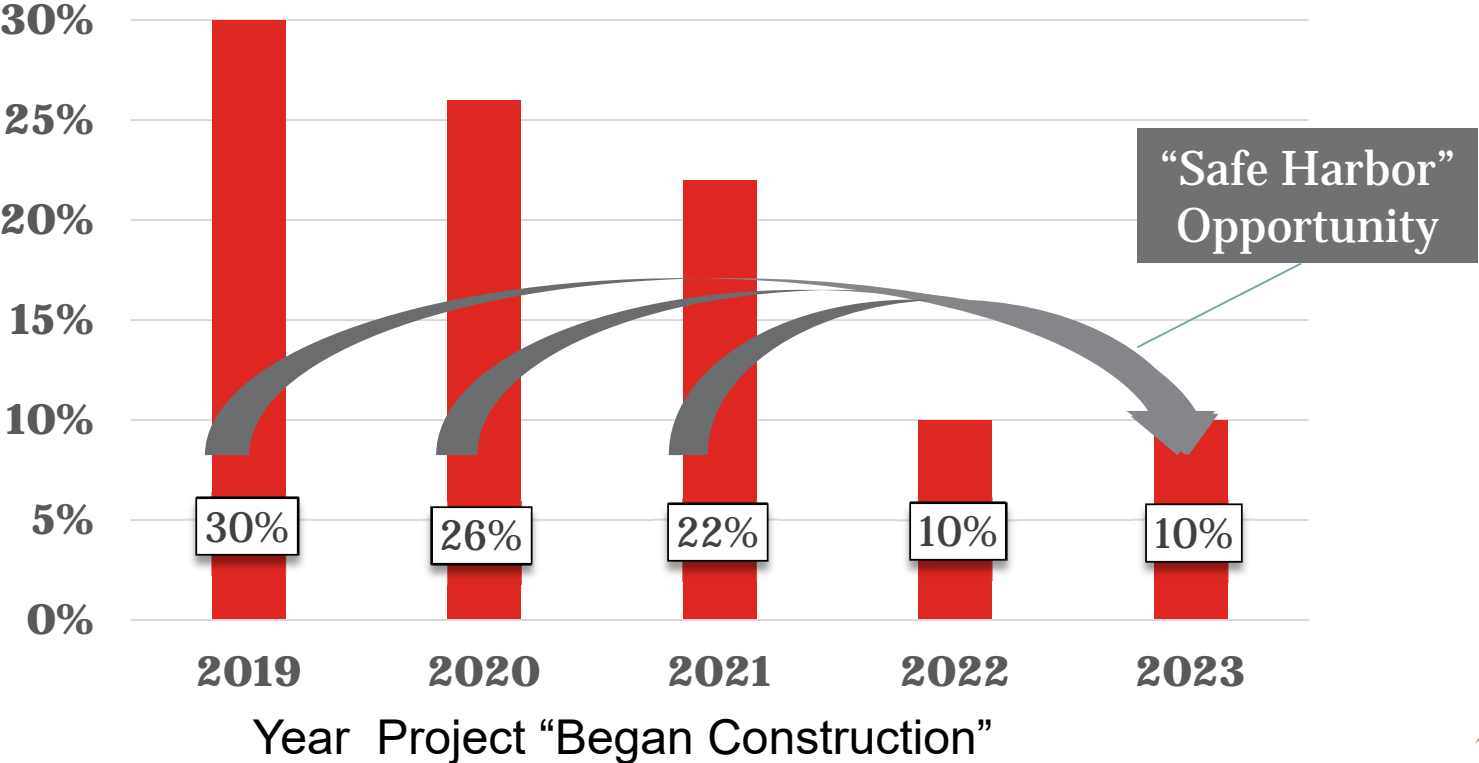
Financing Arrangements

- Initial funding with equity and construction period debt
 - Focus on price, timing, interaction with construction arrangements
- Term funding with tax equity and term debt
 - Tax equity substantially monetizes the tax attributes: investment tax credit and depreciation

Tax credits primary US clean energy policy

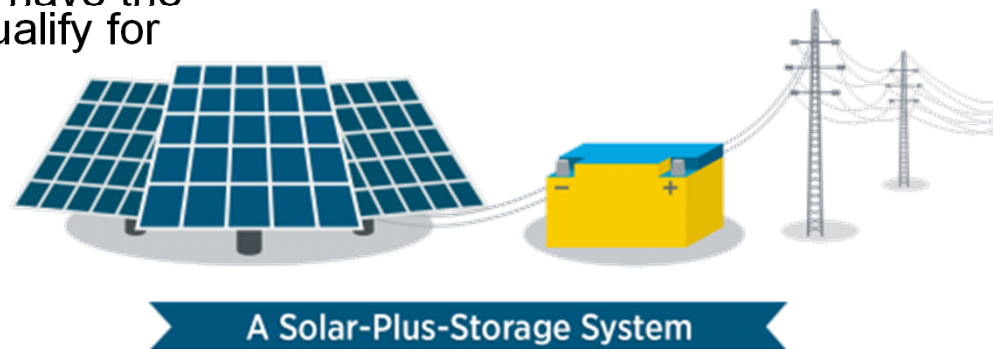
- Federal policy primarily promotes clean energy through tax credits
- Solar gets a 30% investment tax credit assuming the project “began construction” in 2019
 - Solar project costs \$1 million earns \$.3 million investment tax credit
 - Investment tax credit available in the first year the project is operational
 - Investment tax credit can be carried back 1-year and forward 20-years

Solar tax credit to decrease to 10%



Tax credit for batteries charged by solar

- Batteries charged more than 75% by solar qualify for the same investment tax credit as solar
- Opportunities for investment in retrofitting existing systems
- Solar and battery systems must have the same owner for the battery to qualify for the investment tax credit



Tax depreciation: 100% expensing

- Solar projects qualify for 100% expensing in the first year
- “Basis” that can be depreciated must be reduced by half of investment tax credit
- 100% expensing is not what is used for financial statement purposes (GAAP)
- Bonus depreciation benefit starts to decline in 2023
- Without bonus depreciation, the depreciation for solar is 5-year “MACRS” (i.e., double declining balance depreciation)

Solar tax benefit example

- Example: project costs \$1,000,000
 - Investment tax credit is \$300,000
 - Tax basis is \$1,000,000 less 50% of tax credit or \$150,000 so \$850,000
 - Bonus depreciation tax benefit is \$850,000 multiplied by federal corporate tax rate of 21% which is \$178,500
 - Total federal tax benefit in the first year is \$300,000 + \$178,500 = \$478,500

Federal tax subsidy for solar is 47.8%

But taxpayers who can benefit from tax credits and depreciation is limited

- In the 1980s, many individuals in the US were persuaded by brokers to invest in “tax shelters”
 - The US Internal Revenue Service ruled many of these “tax shelters” did not work
 - Congress passed strict rules to limit individuals from benefiting from tax credits and depreciation
- Tax credits and depreciation can only be used efficiently by profitable banks, insurance companies and public traded corporations
 - Creates too much “supply” of tax credits from projects and too little “demand”
 - Most solar sponsors cannot efficiently use tax credits and depreciation

Solution: tax equity investment structures

Tax equity investments

- Federal tax credits and depreciation cannot be “sold”
- To benefit from tax credits and depreciation must, generally, be an owner or a partner in the owner
- Most tax equity investors are not in the solar business
- Complex structures developed so tax equity investors can be a partner in the owner but with narrow operational involvement
- Tax equity distributed generation solar returns are 9% to 12%+ after tax

Major tax equity investors

JP Morgan

US Bank

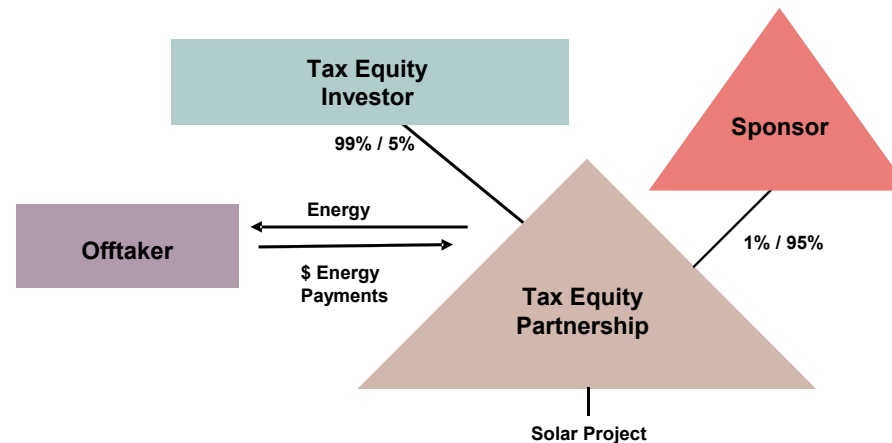
Wells Fargo


MUFG

Goldman Sachs

Berkshire Hathaway

Tax equity structure: partnership flip



- Project is financed with sponsor equity and tax equity and, in some cases, debt
 - Tax equity investor typically makes an up-front investment of about 50% of project FMV in several installments. Before the project is operational, the tax equity investor must invest at least 20% of its total investment.
- Cash can be shared in different percentages than those above 

For more information



- **David Burton**
 - *Partner, New York*
 - Norton Rose Fulbright US LLP
 - david.burton@nortonrosefulbright.com
 - +1 212-318-3311
- David advises clients on a wide range of US tax matters, with an emphasis on project finance and energy transactions. In addition, he advises clients on the tax aspects of the formation and structuring of private equity funds with particular expertise regarding renewable energy funds. David has extensive experience structuring tax-efficient transactions, such as flip partnerships, sale-leasebacks, pass-through leases and other structures, for the acquisition and financing of renewable energy assets that qualify for tax credits and other incentives.
- Earlier in his career, David was the managing director and senior tax counsel at GE Energy Financial Services (GE EFS), one of the world's leading investors in energy projects. At GE EFS, David oversaw all of the tax aspects for more than US\$21 billion in global energy projects from structuring transactions to accounting for taxes to formulating tax policy initiatives. During his tenure at GE EFS, the division's investments in wind, solar, hydro, biomass and geothermal power grew to US\$6 billion, making GE EFS the largest tax-advantaged energy investor in the US. Before joining GE EFS, David was a tax lawyer at GE Capital and primarily focused on aircraft and equipment leasing and financing and asset acquisitions.
- Blog: www.TaxEquityNews.com