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Advanced Alternative Financing

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Advanced Alternative Financing – Session Overview

- **Session Intent**

Explore the possibilities and discover the complexities of alternative financing projects—an immediate need, due to dwindling federal funds.

- **Session Description**

With decreasing funding for government agencies, alternative financing opportunities are a viable option to fulfill significant funding shortfalls. Alternative funding traditionally includes energy savings performance contracts (ESPCs), utility energy service contracts (UESCs), and enhanced use lease (EUL) contracting mechanisms. For many years, government agencies have benefited from these contracts. Yet, these contracts are complicated and carry risks for both government agencies and contractors who provide the required results. To be successful, both government and contractors must work together.

Advanced Alternative Financing – Presentation Overview

- **Renewable Energy (RE) Financing Overview**
 - The Basics
- **Renewable Energy Economics Puzzle**
 - Generation Markets
 - Renewable Portfolio Standards/Renewable Energy Credits
 - Federal Tax Incentives
 - Putting the Pieces Together
- **Renewable Energy Contracting and Financing Options**
 - Contract Vehicles
 - Power Purchase Agreements
 - Energy Services Performance Contracts & Utility Energy Services Contracts
 - Enhanced Use Leases
- **Case Studies**
 - Representative Corporate Solar Project
 - Representative Commercial Solar Project

Renewable Energy Financing Overview



RE Financing Overview – The Basics

- **The economic downturn had a severe effect on RE financing**
 - Before crash, most projects could be completed with a rating, (e.g. Ft. Detrick EUL)
 - Credit quality is now imperative for successful financing

- **Banks constrained from lending, particularly long term**
 - Increased use of equity for projects
 - Some projects cannot be leveraged

- **Federal and State Incentives critical drivers for projects**
 - Tax equity appetite beginning to return; pricing is expensive
 - 1603 Cash Grant is set to expire on December 31, 2011

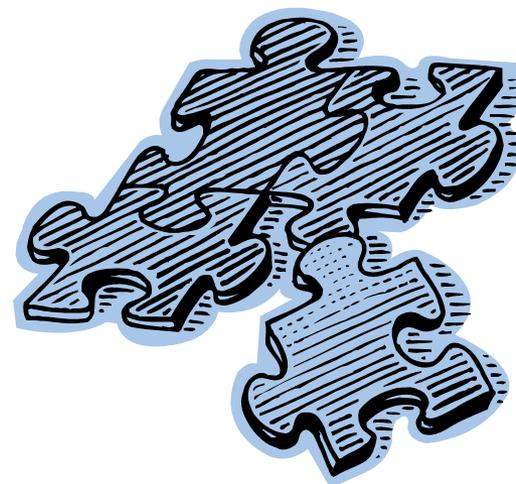
RE Financing Overview – The Basics

- **RE financing is “project finance”**
 - Cash flow driven
 - Non-recourse debt

- **RE projects are capital intensive (low cash flows vs. high project costs) with important requirements:**
 - Investment grade developer and Power Purchase Agreement counter-party
 - Projects need to be large enough to justify tax equity structure and achieve economies of scale
 - Proven technologies

- **Capital stack typically consists of:**
 - Debt (Supported by Power Purchase Agreement revenue)
 - Renewable Energy Credits (RECs)
 - Tax Equity (Supported by Tax incentives and Depreciation benefits)
 - Sponsor Equity
 - Other incentives

Renewable Energy Economics Puzzle



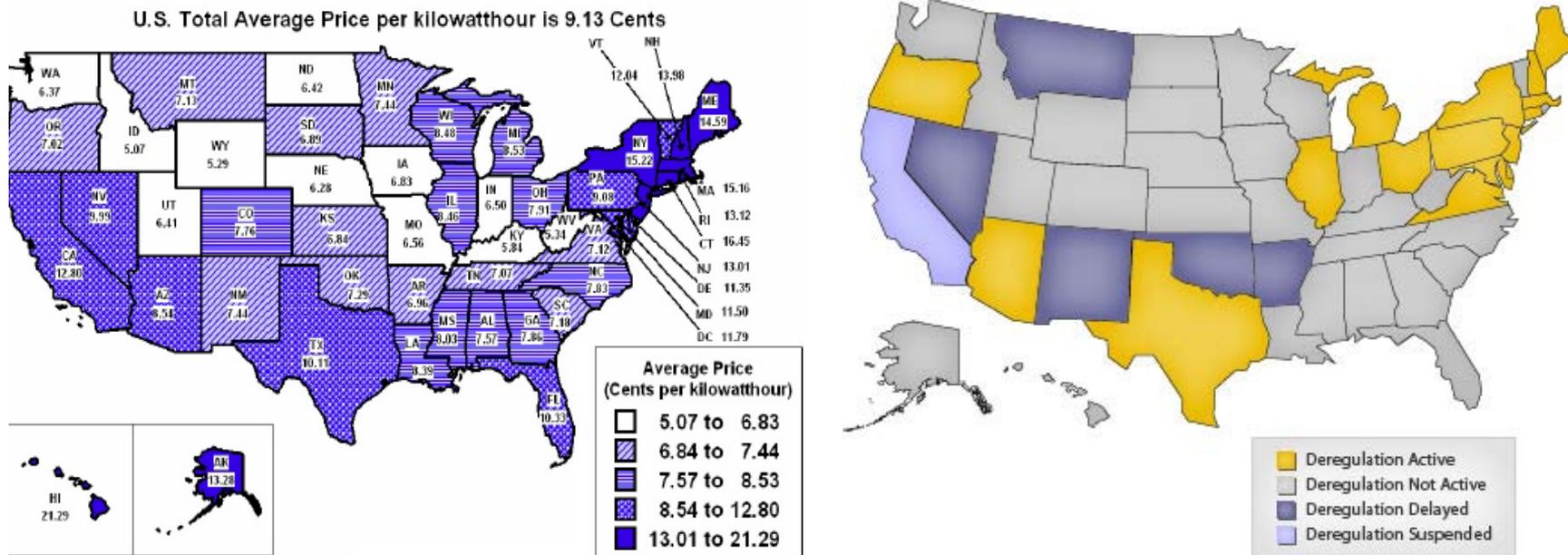
RE Economics Puzzle – What are the Pieces of the Puzzle?

- **The economic barrier to renewable energy – costs are generally higher than traditional carbon-based energy with significant upfront capital obligations**
 - Cost of installation has come down, but not enough to be competitive without incentives
 - Necessary to utilize all available energy incentives, tax incentives, and renewable energy credits in order to make projects economically viable
 - Important that owners are able to take advantage of tax incentives (private tax payers)

- **The pieces to the economic puzzle:**
 - Generation Market with electricity prices to support Power Purchase Agreement at “grid parity” with or without escalators
 - Renewable Portfolio Standard – Renewable Energy Credits (RECs)
 - Federal and State Tax Incentives

- **What are the market conditions in your project area and will the puzzle pieces fit together to make the economics work?**

RE Economics Puzzle – Generation Markets

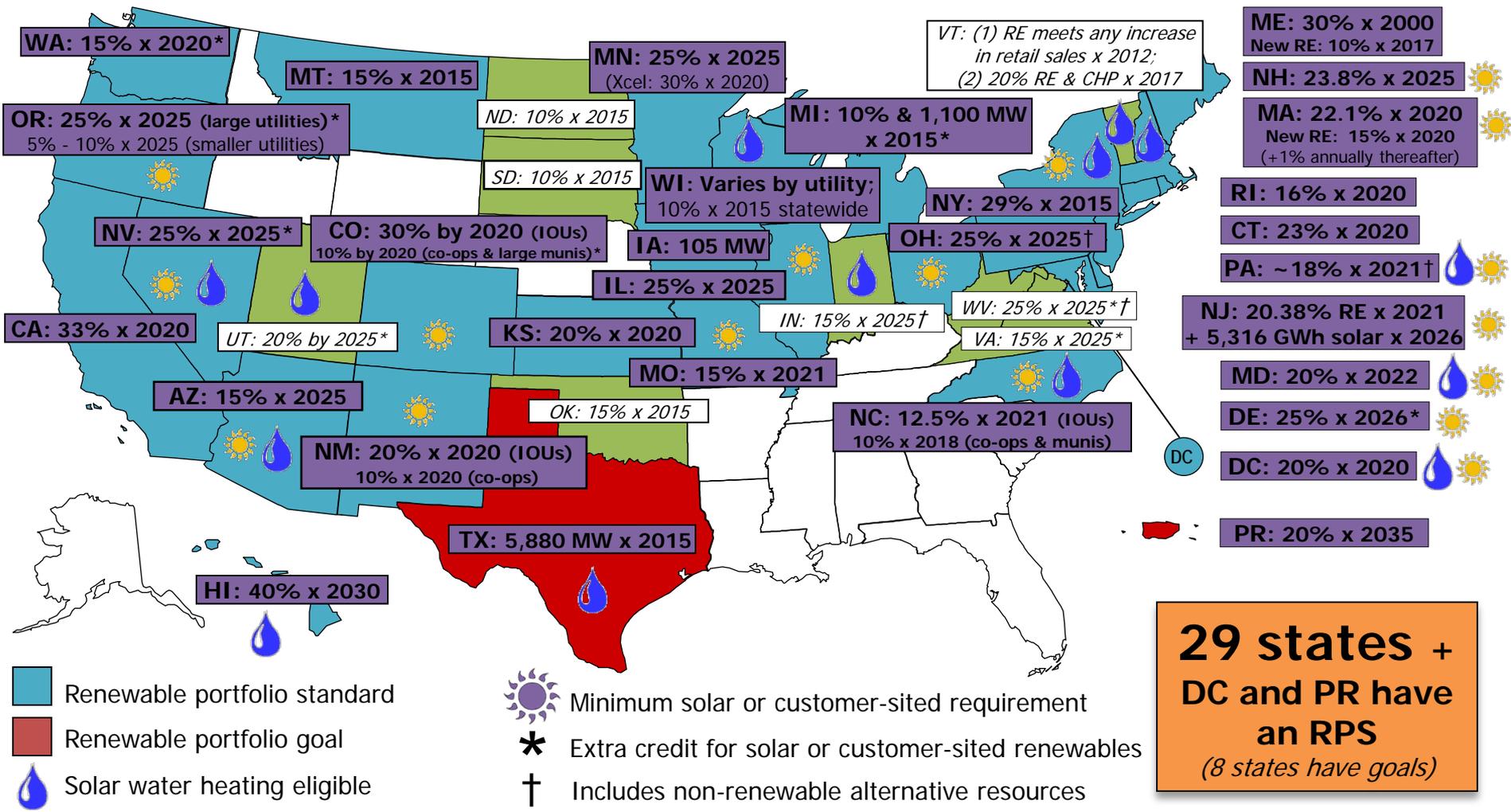


- Electricity prices vary state-to-state
- Deregulated states experience higher average prices
- Areas with higher rates better suited for RE development
- Low-rate areas demand innovative approaches
- Most areas in the US present renewable energy resources, though some areas are better for certain RE technologies than others (e.g., solar in California)

RE Economics Puzzle – Renewable Portfolio Standards/RECs

- **Many states have adopted Renewable Portfolio Standards (RPS)**
- **RPS requires utilities to obtain a minimum percentage of their portfolio from renewable sources by a mandatory date**
 - A utility can also satisfy the requirement by purchasing Renewable Energy Credits (RECs)
 - A REC represents the right to claim attributes and benefits of renewable power – 1 REC = 1 MWh
 - RECs are bought and sold through contractual arrangements
- **Debate continues over a Federal RPS – until then, RPSs will be implemented at the state level**

RE Economics Puzzle – Renewable Portfolio Standards/RECs



29 states + DC and PR have an RPS
(8 states have goals)

RE Economics Puzzle – Renewable Portfolio Standards/RECs

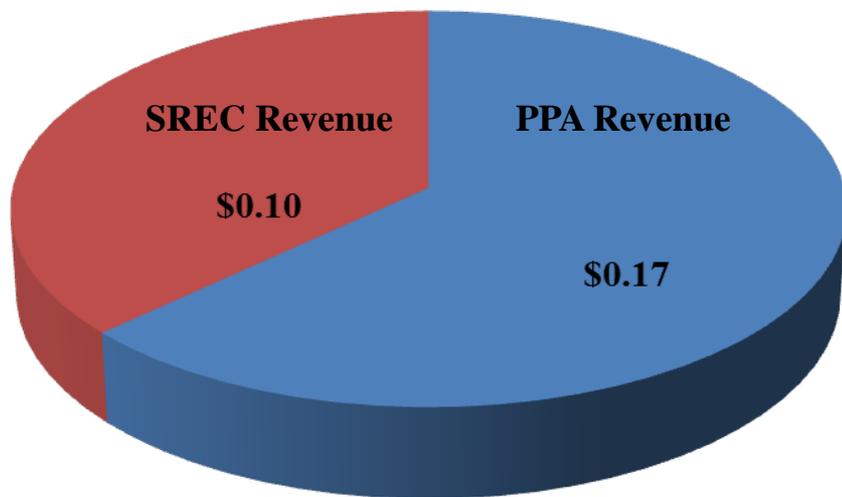
- **Why are RECs important?**
 - RECs can be critical for the success of RE projects, sometimes comprising up to 70% of the revenue stream year to year

- **What is the status of the REC market?**
 - Largest markets in NJ, PA, OH – but oversaturation of Solar RECs (SRECs) has caused value to decline in 2011, market not expected to rebound until 2013 in some areas
 - Still difficult to secure long term SREC contracts in excess of 3 – 5 years
 - Few entities are willing to take long term SREC risk or guarantee “floor” pricing
 - Despite RPS standards or mandates in 37 states and D.C., still a dearth of viable REC markets due to the lack of enforceable and stipulated Alternative Compliance Payments

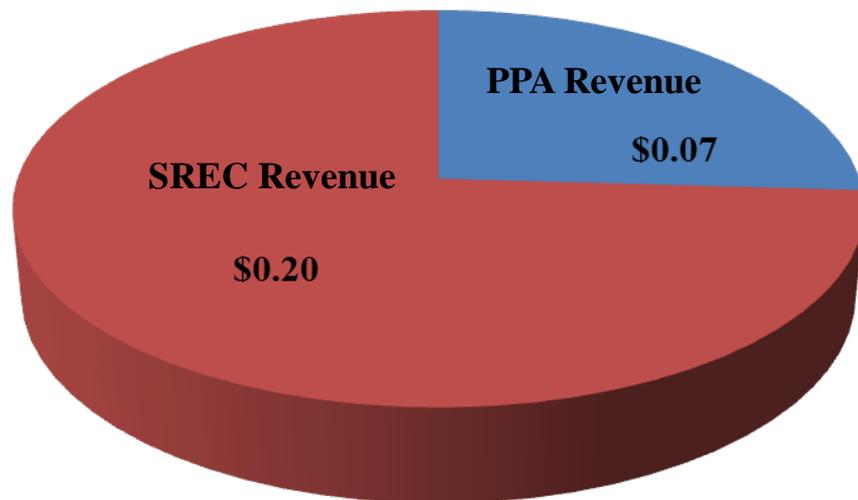
- **Uncertainty of REC markets further accentuates the role of strong, long term PPAs and tax incentives to generate project revenues to fund projects**

RE Economics Puzzle – Renewable Portfolio Standards/RECs

Total \$ / KWH= \$.27
For Project to Cashflow



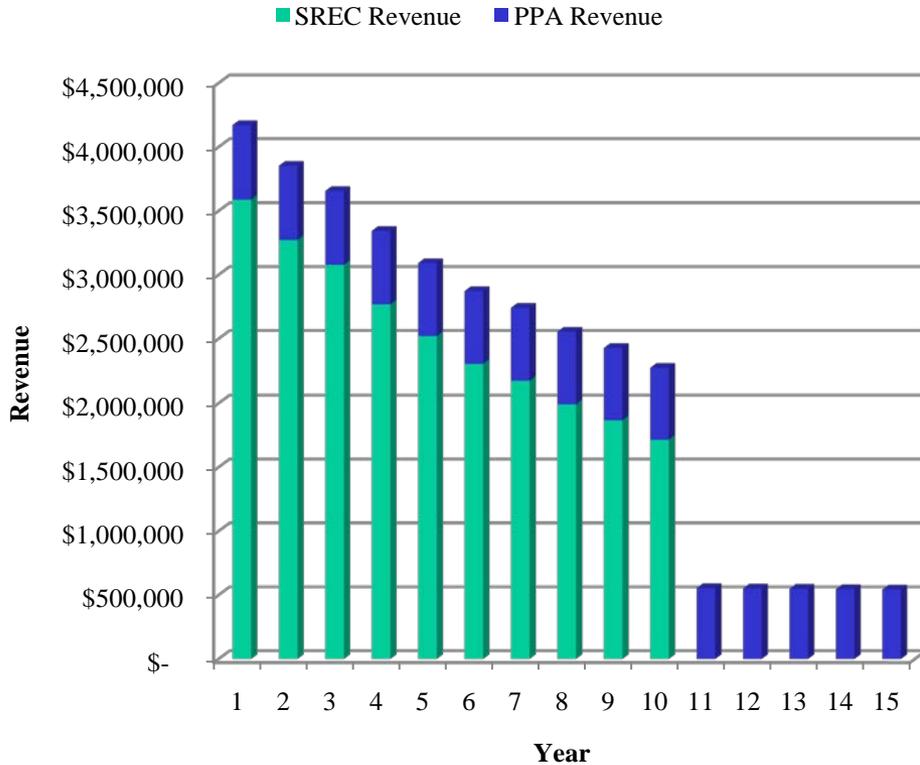
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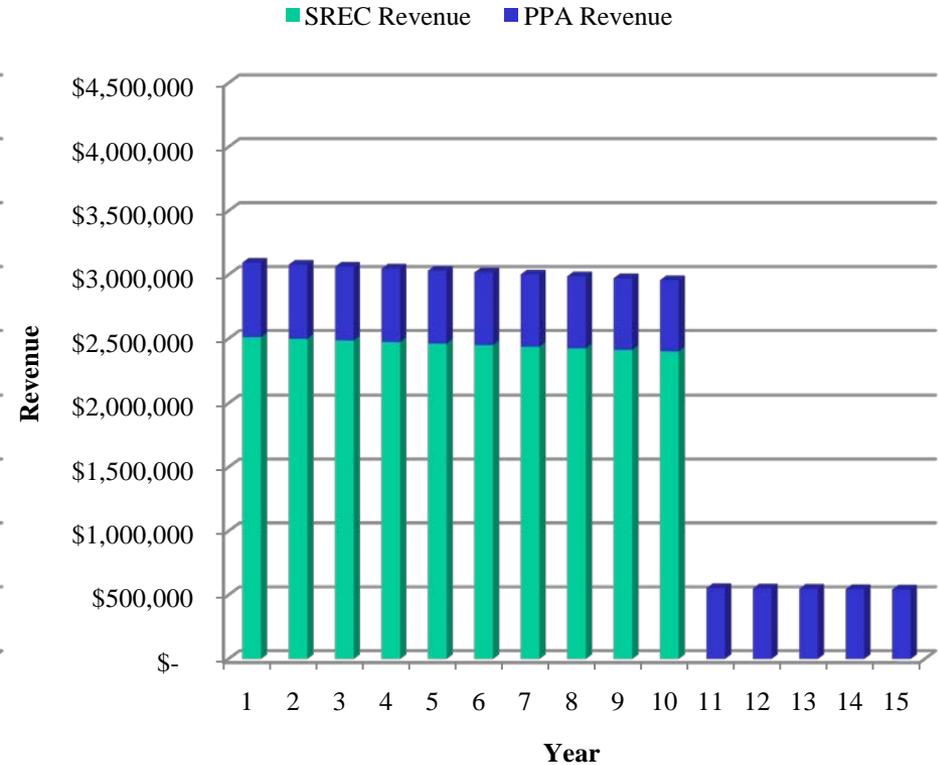
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RE Economics Puzzle – Renewable Portfolio Standards/RECs

Impact of SRECs on Total Revenues Under a "Shaped" Forward Pricing Scenario



Impact of SRECs on Total Revenues Under a "Flat" Forward Pricing Scenario



RE Economics Puzzle – Federal and State Tax Incentives

- **Two types of federal tax incentives:**

- Projects can claim one of the following credits/grants:

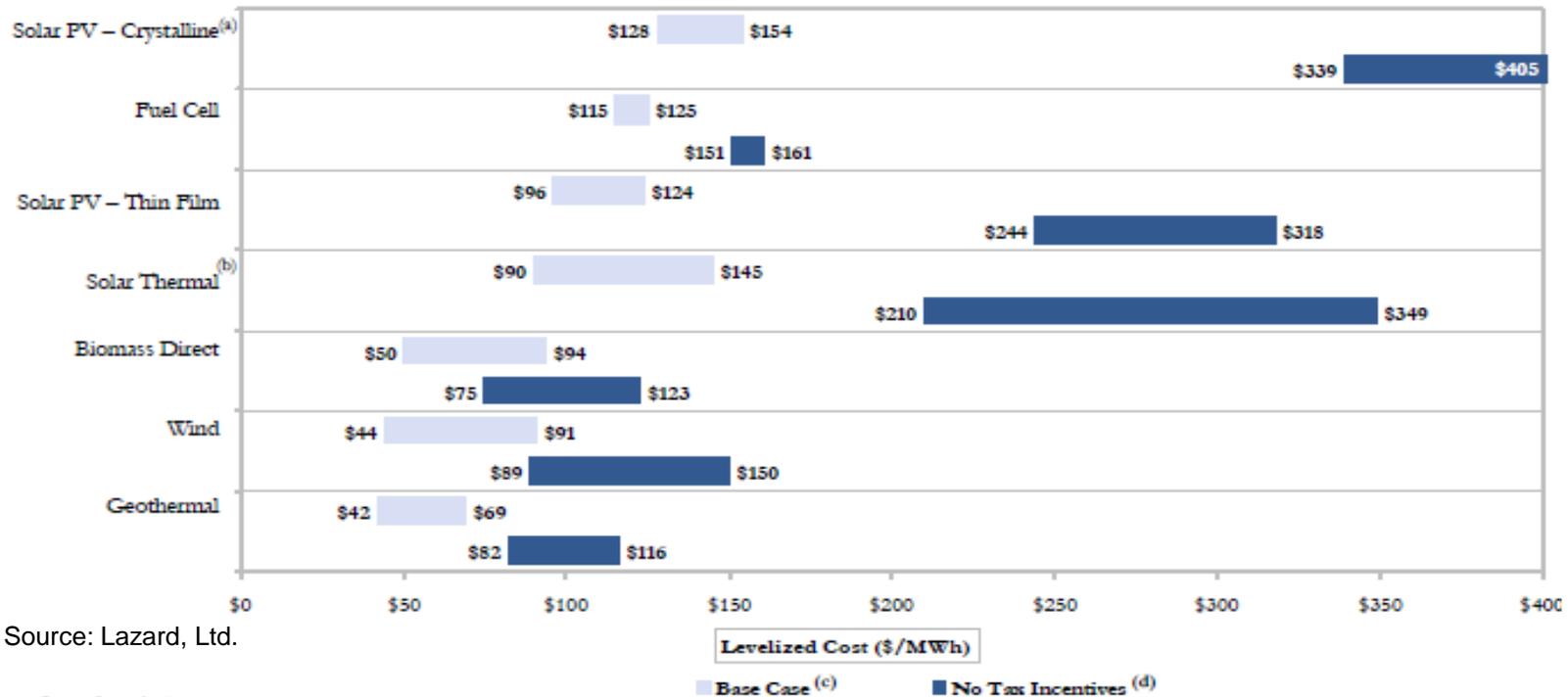
- Production Tax Credit (PTC): 10-year inflation adjusted credit per MWh produced (does not apply to solar), currently, \$21/MWh
- Investment Tax Credit (ITC): Credit on the depreciable installed cost when the project becomes operational – does not depend on ongoing generation of electricity
 - 30% for solar, fuel cell and small wind; 10% for others
- Section 1603 Grant Program: allows renewable energy developers to qualify for a 30% Federal grant for qualified capital costs (the same value as the ITC)
 - Recently extended through December 31, 2011

- 5-year accelerated depreciation for most capital items

- 100% 1st year bonus depreciation through January 1, 2012
- 50% 1st year bonus depreciation in 2012

RE Economics Puzzle – Federal and State Tax Incentives

- The Effects of Federal and State Incentives on Levelized Cost of Renewable Energy



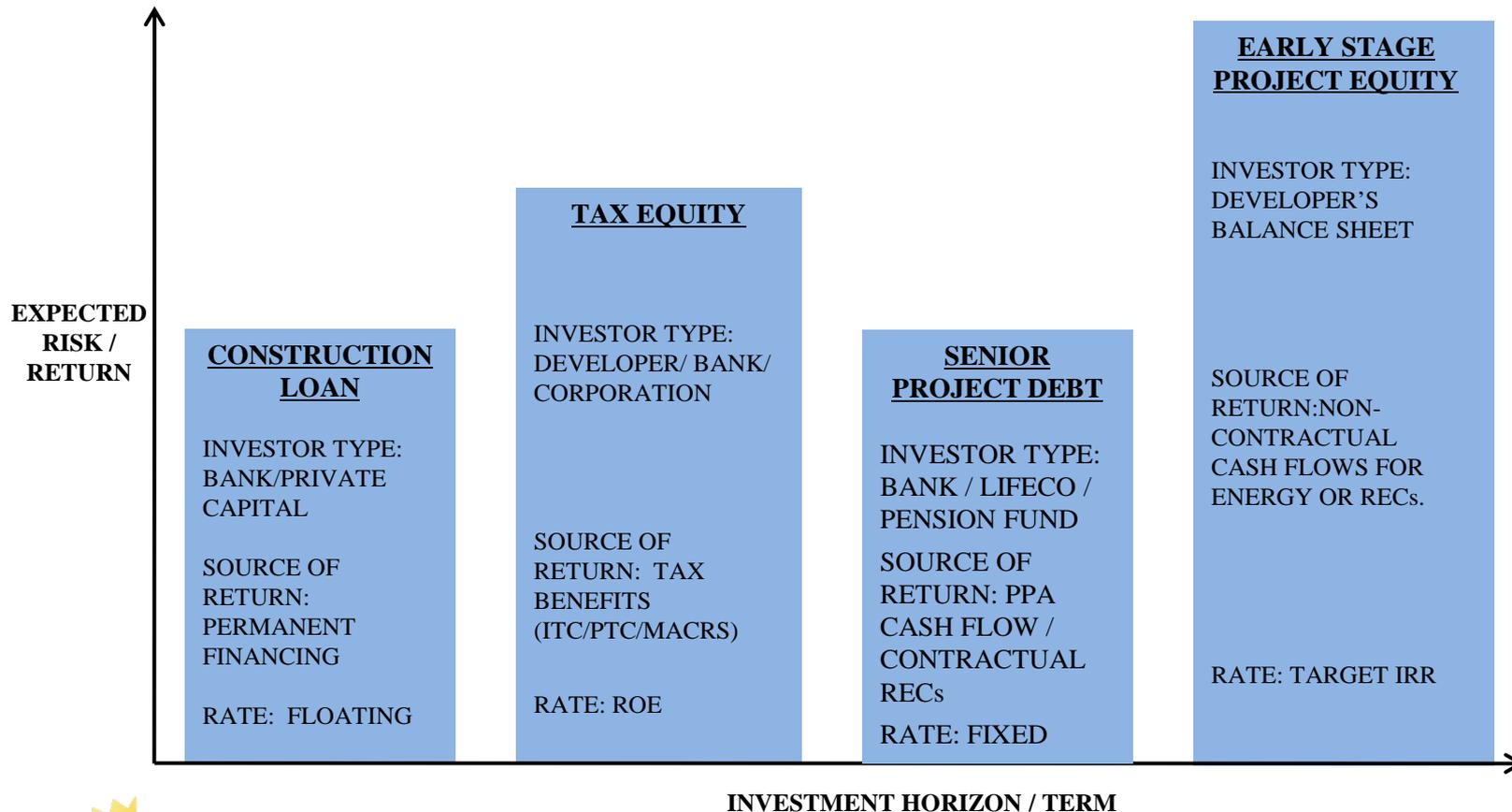
- Federal and state tax incentives can make renewable energy projects affordable
- Developers and financiers should utilize incentives in order to lower the levelized cost

RE Economics Puzzle – Putting the Pieces Together

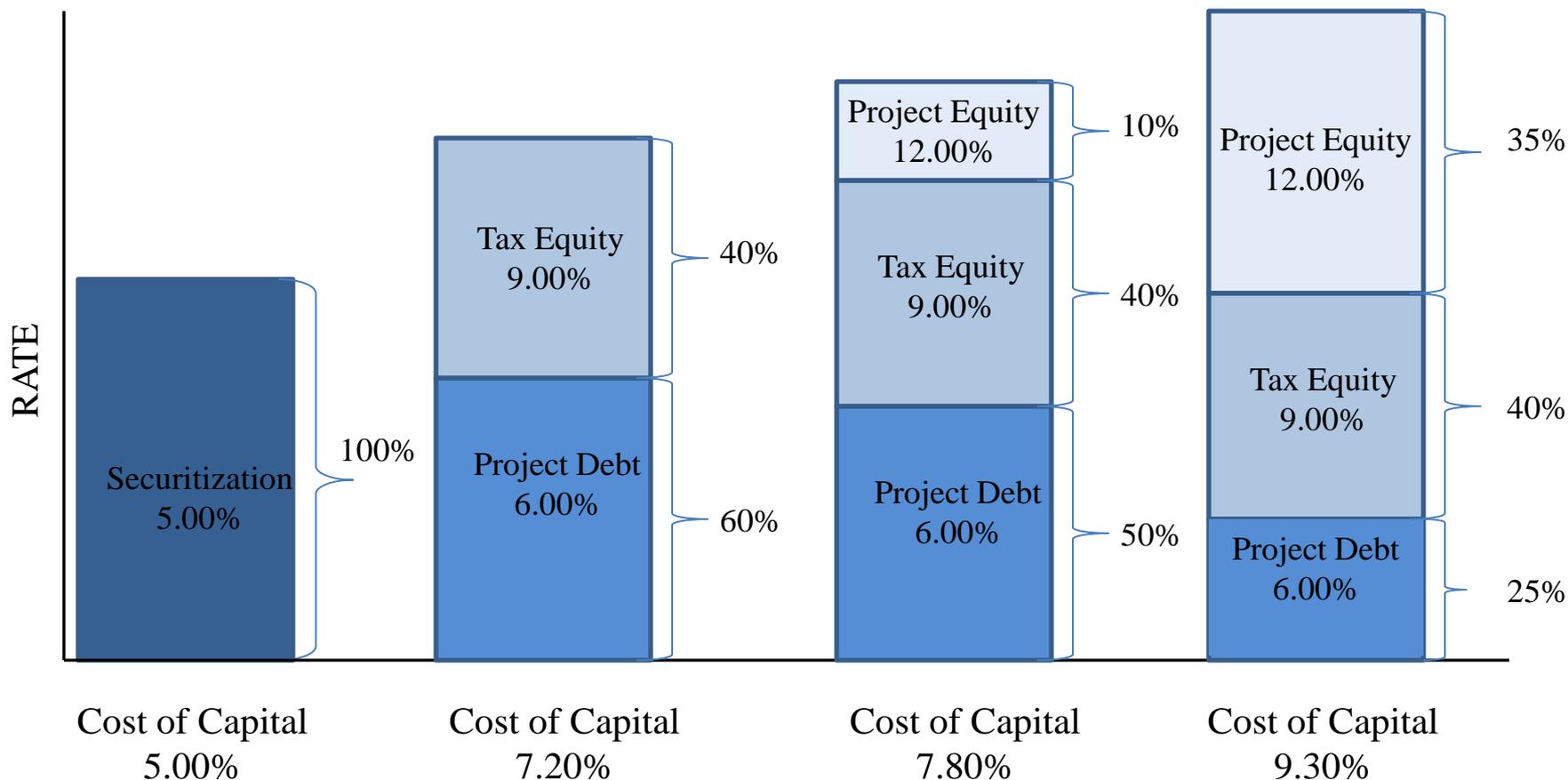
- Power Purchase Agreement or Renewable Energy Services Agreement.
 - Long-term PPAs are critical
- Renewable Portfolio Standards
 - RECs vary from state to state
 - Contractual terms for monetizing the RECs vary
- ITC or Cash Grant – 30% of project cost
- Depreciation – 100% 1st year bonus depreciation through January 1, 2012
- Important to utilize all pieces of the puzzle to make project economics work

RE Economics Puzzle – Putting the Pieces Together

- The capital markets is an all-encompassing term used to describe a market that business enterprises or public institutions can access to raise funds. The capital markets refer to both debt and equity markets and offerings can be placed as a primary or secondary transaction.
- Below are examples of capital market silos that could be accessed for RE projects:



RE Economics Puzzle – Putting the Pieces Together



Renewable Energy Contracting and Financing Options



RE Contracting and Financing Options – Contract Vehicles

- Summary of the options:

	<u>PPA</u>	<u>UESC / ESPC</u>	<u>EUL</u>
Utilization:	<ul style="list-style-type: none"> Secure fixed, long term pricing 	<ul style="list-style-type: none"> Allows installation to blend renewable energy with traditional ECMs through ESAs 	<ul style="list-style-type: none"> Authority can be effective when installation has underutilized land
Term:	<ul style="list-style-type: none"> 10 year terms or more; depending on the agency 	<ul style="list-style-type: none"> Up to 25 year terms 	<ul style="list-style-type: none"> Up to 50 year lease period
Key Considerations:	<ul style="list-style-type: none"> No upfront capital cost Shorter term contract limitations may hinder financing Taxable entity required to own the project in order to utilize tax incentives 	<ul style="list-style-type: none"> No upfront capital cost UESC, utility may provide RE projects on a sole source basis. Opportunity to buy the project at end of term at FMV, or extend agreement. 	<ul style="list-style-type: none"> Long development timelines In-kind consideration a requirement of EULs and benefit the installation Need a PPA in addition to Lease

RE Contracting and Financing Options – Contract Vehicles

- **ESPC Program**
 - IDIQ has been structured to include both traditional ECMs and renewable energy projects
 - Allows for third party ownership to leverage tax and renewable energy incentives
 - ESCO can provide Operations and Maintenance, Repair and Replacement
- **FAR 41 PPA Authority**
 - Utility Services – 10 year Authority
 - Other authorities provide 5 year authority (FAR Part 12)
- **Long Term PPA Authority**
 - 10 USC 2922A
 - Up to 30 year authority – requires Secretary of Defense Approval (or delegated authority)
- **Western Area Power Administration (and other regionals)**
 - Long term contract authority – at least 20 years
 - WAPA enters into the PPA on behalf of the Federal agency

RE Contracting and Financing Options – PPAs

- **Short-term PPAs are difficult to finance and are financed at a higher cost of capital**

10 Year PPA

(10 years - FAR Part 41)

- Sponsor earns returns in later years after Tax Equity has exited the transaction, so must take renewal risk
- Shorter Term PPAs provide little incentive for Sponsor to develop the projects
- Projects will be funded by more equity, driving cost of capital higher

Long Term (15-20+) Year PPA

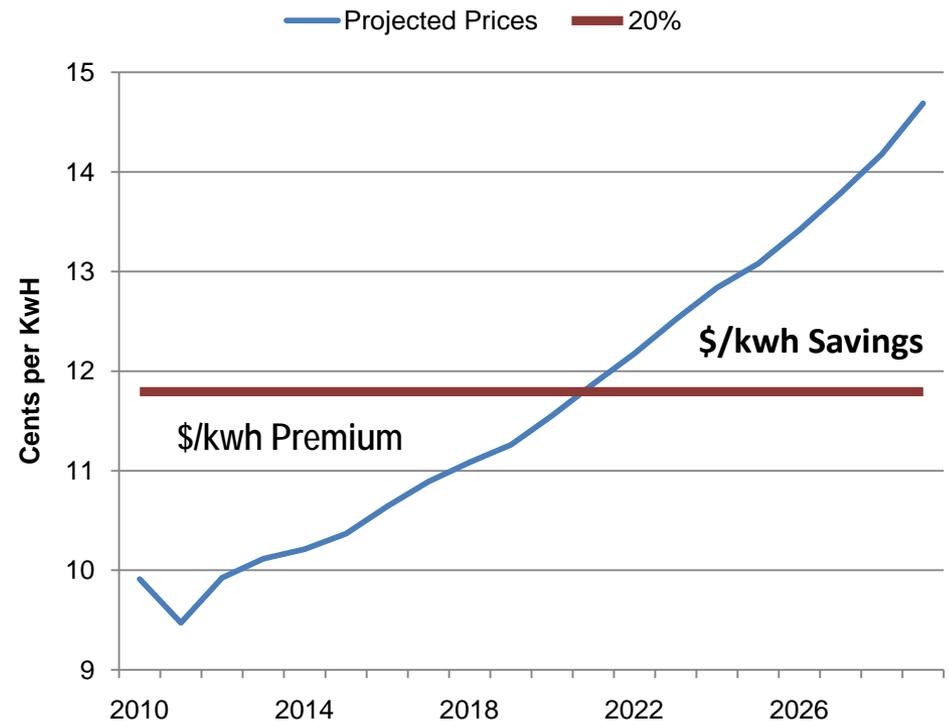
(up to 30 years - 10 USC 2922a)

- Longer term provides greater price certainty and lower cost of capital
- Provides opportunity for longer term debt financing up to the term of the PPA resulting in greater proceeds
- Less upfront equity needed / lower cost of capital
- OMB Scoring considerations

RE Contracting and Financing Options – PPAs

- PPAs efficient way to secure energy at an installation, and for developers and financiers to raise capital for RE projects
- PPAs provide fixed long-term energy price certainty and protection against rising energy costs
- Revenues generated from PPAs drive debt and equity returns; long term PPA necessary to secure financing
- No initial outlay of capital to procure energy
- Power contractually delivered to installation, tenants on-site, or to the grid with assured quality and in assured quantities
- In absence of a PPA, feed-in tariffs or net metering may be available
- How much is energy security worth to an installation?

Electricity Prices vs. Flat PPA with Initial Price Premium



RE Contracting and Financing Options – ESPCs & UESCs

The US Government has two programs for developing and financing combined energy efficiency and renewable energy projects for federal agencies:

Energy Services Performance Contracts

- Customer or third party investor must own the equipment to utilize Tax incentives
- Customer uses savings or generation to repay for installation over time
- Can accommodate energy efficiency, renewable energy, and self-generation
- 25-year contract terms
- Experienced RE project installers
- No upfront capital costs to customer
- ESCO guarantees savings or generation; responsible for any shortfall
- ESCO responsible for operations and maintenance

Utility Energy Services Contracts

- Customer can partner directly with their franchised or serving utility on a sole source basis; Utilities able to utilize investment tax credits
- Customer repays over time out of savings or generation
- Can accommodate energy efficiency, renewable energy and self-generation
- 10-25 year contract terms, depending on the agency
- No upfront capital costs to customer
- ESCO guarantees savings or generation; responsible for any shortfall
- ESCO responsible for operations and maintenance
- Avoid potential interconnection issues

RE Contracting and Financing Options – ESPCs & UESCs

■ Challenges of ESPCs and UESCs:

- Not always easy to incorporate ownership to leverage tax incentives (ITC, PTC and accelerated depreciation)
- May have limited experience with RE projects
- Termination for Convenience
- Assignment for financing purposes
- Agency/site performance of O&M increases performance risk
- Utility may not offer UESC

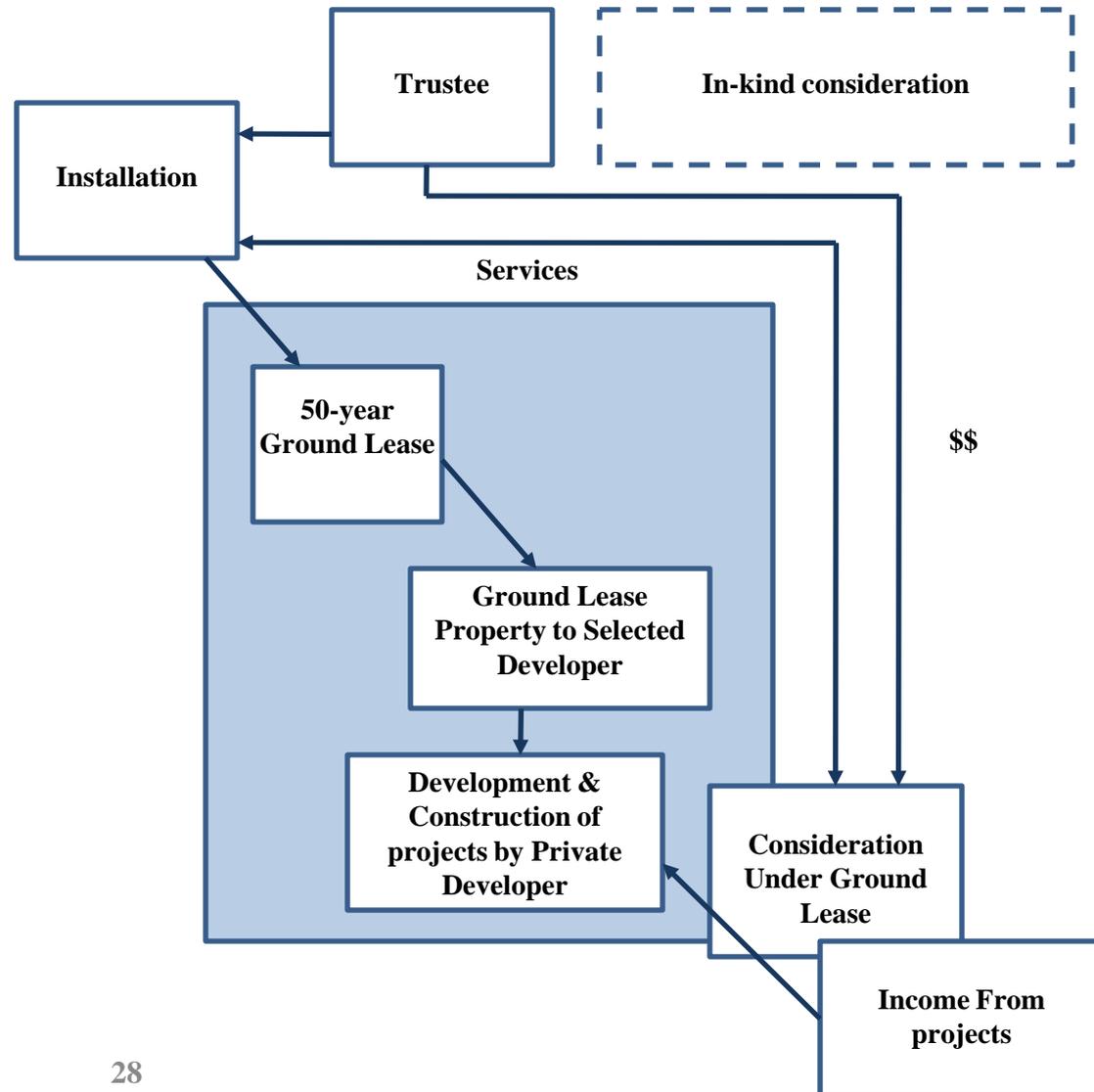
RE Contracting and Financing Options – Enhanced Use Leases

- Enhanced Use Leases (EULs) are part of a legislative authorization for military departments to lease underutilized and non-excess real property, governed by Section 2667 Title 10 United States Code
- Law requires the lessee to pay an amount (cash or in-kind) that is not less than the fair market value of the lease interest
- Categories of in-kind consideration that may be accepted in lieu of cash include construction of new facilities, restoration (including environmental), acquisition, alteration, and other services
- Initially used principally for real estate developments; now being employed for energy projects (e.g. cogeneration and renewable power)

RE Contracting and Financing Options – Enhanced Use Leases

■ Structure of an EUL transaction:

- Installation provides 50-year ground lease
- Developer assumes all risk and responsibility
- Installation receives a minimum of FMV as in-kind consideration for the ground lease
- Developer develops the project based upon market demand from government and non-government users
- Commitment by installation or any other agency to enter into PPA improves project feasibility



RE Contracting and Financing Options – Enhanced Use Leases

- Leased Land up to 50 years
- In-kind consideration
- Open book
- Environmental issues
- Transmission accessibility/capacity issues (e.g. long term application waiting periods with local utilities)
- Permitting issues
- Inside the fence affects exit strategy

Case Studies



Case Studies – Representative Corporate Solar Project

10 MW Photovoltaic Array with A-rated utility for PPA and SRECs

- **Developer:** Global, BBB Rated
- **Installation:** Ground Mount, Fixed-Tilt Array
- **Panel Provider:** Global, Investment-Grade Firm
- **EPC:** Industry Leader
- **PPA:** 20 year Term, fixed rate
- **PPA Pricing:** Year one at parity with Retail rates (Approx. \$.06/kWh)
- **SREC Contract:** 10 year fixed price Contract
- **Tax Incentives:** 30% Treasury Cash Grant, 100% Bonus Depreciation
- **Project Cost:** \$45,000,000
- **Financing Structure:** Sale-leaseback
- **Required Return on Equity:** 8%
- **Point of Interest:** Sponsor will use leverage, increasing equity return well above 8%



Case Studies – Representative Commercial Solar Project

6 MW Photovoltaic Array, Commercial Customer, Virgin Islands

- **Developer:** Energy Services Company, A Rated
- **Installation:** Roof Mount, Fixed-Tilt Array
- **Panel Provider:** Global, Investment-Grade Firm
- **EPC:** Energy Services Company
- **PPA:** 20 year Term, 2% escalation
- **PPA Pricing:** Year one discount of \$.10/kWh to Retail rates
- **SREC Contract:** None available
- **Tax Incentives:** 30% Treasury Cash Grant, 100% Bonus Depreciation
- **Project Cost:** \$35,000,000
- **Financing Structure:** Leveraged Partnership
- **Debt/Equity Split:** 45/55
- **Debt Service Coverage Ratio:** 1.5x
- **Debt Pricing:** +300 basis points over Treasury Index
- **Required Return on Equity:** 15%



Conclusions

- **RE projects are complex with steep learning curves**
 - Important to assemble the team early
 - Projects need a “champion” at the facility
 - Work with a public/private mentality and remain adaptive and flexible
- **Bring the financing in early**
 - Build a business plan with conservative assumptions yielding market –based returns
- **Documents and structures are crucial components for all parties**
 - Financing vehicles (PPAs, ESPC/UESC, EUL) present opportunity for installations to meet their energy goals and achieve energy security.
 - Long term contracts (i.e. PPAs) are essential for financing.
- **Markets, incentives, and technologies continue to drive projects**
 - Important to understand federal and state incentives, standards, and energy prices in order to determine complete revenue picture
 - Important to determine what technologies are best suited to specific geographic conditions

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