

Clean Energy States Alliance



Innovations in Renewable Energy Finance

Moderated by
**Robert Sanders, Senior Finance Advisor,
Clean Energy Group**

August 20, 2013

Housekeeping

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- You can enter questions for today's event by typing them into the "Question Box" on the webinar console. We will pose your questions, as time allows, following the presentation.
- This webinar is being recorded and will be made available after the event on the CESA website at

www.cleanenergystates.org/events/

About CESA

Clean Energy States Alliance (CESA) is a national nonprofit organization dedicated to advancing state and local efforts to implement smart clean energy policies, programs, technology innovation, and financing tools to drive increased investment and market making for clean energy technologies.

About CESA ITAC

- A collaborative group of state wind incentive programs and utility incentive providers working to create a national unified list of small and medium-sized wind turbines that would be eligible for program funding.
- ITAC evaluates the technical specifications, design, performance characteristics, operational history, and customer support of these turbines.
- ITAC members share best practices information.

Learn more at <http://www.cleanenergystates.org/projects/ITAC/>

Or email Val Stori, ITAC Project Director, Val@cleanegroup.org

Today's Guest Speakers

- Legal Associate Nihar Shah of United Wind
- Attorney Stephen Pearlman of Inglesino, Pearlman, Wyciskala & Taylor, LLC

Moderator:

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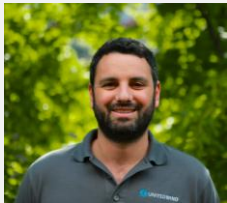
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Growing Small Wind – Opportunities in Leasing & Financing

Nihar Shah
Legal Associate
United Wind, Inc.
August 20th, 2013



Deep Distributed Wind Energy Experience



RUSSELL TENCER
CEO

- Founder, CEO, Wind Analytics
- Over 1,000 wind projects modeled
- Former equity fund manager, ETG Trade



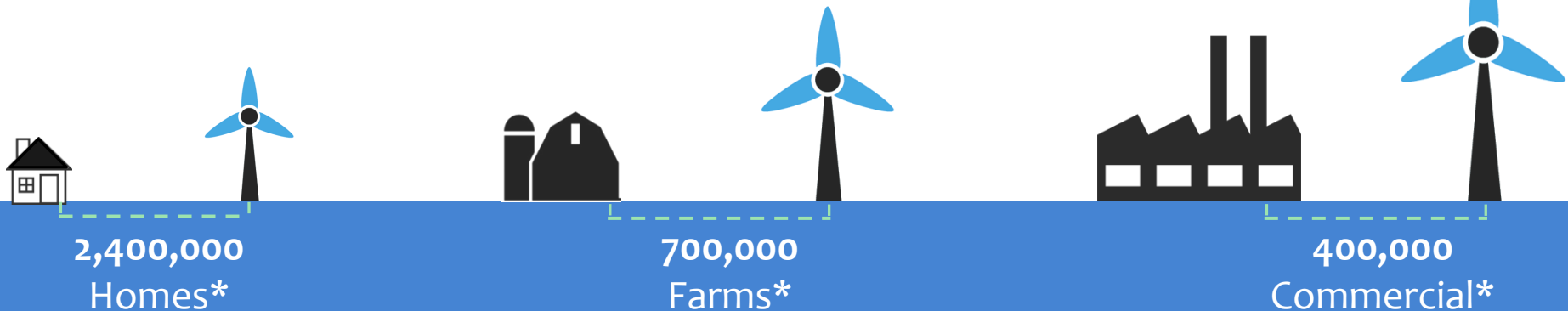
TAL MAMO
President

- Founder, President, Talco
- Built leading US wind turbine distributor
- Board Member: DWEA, SWCC

United Wind, Inc.
Founded 2013

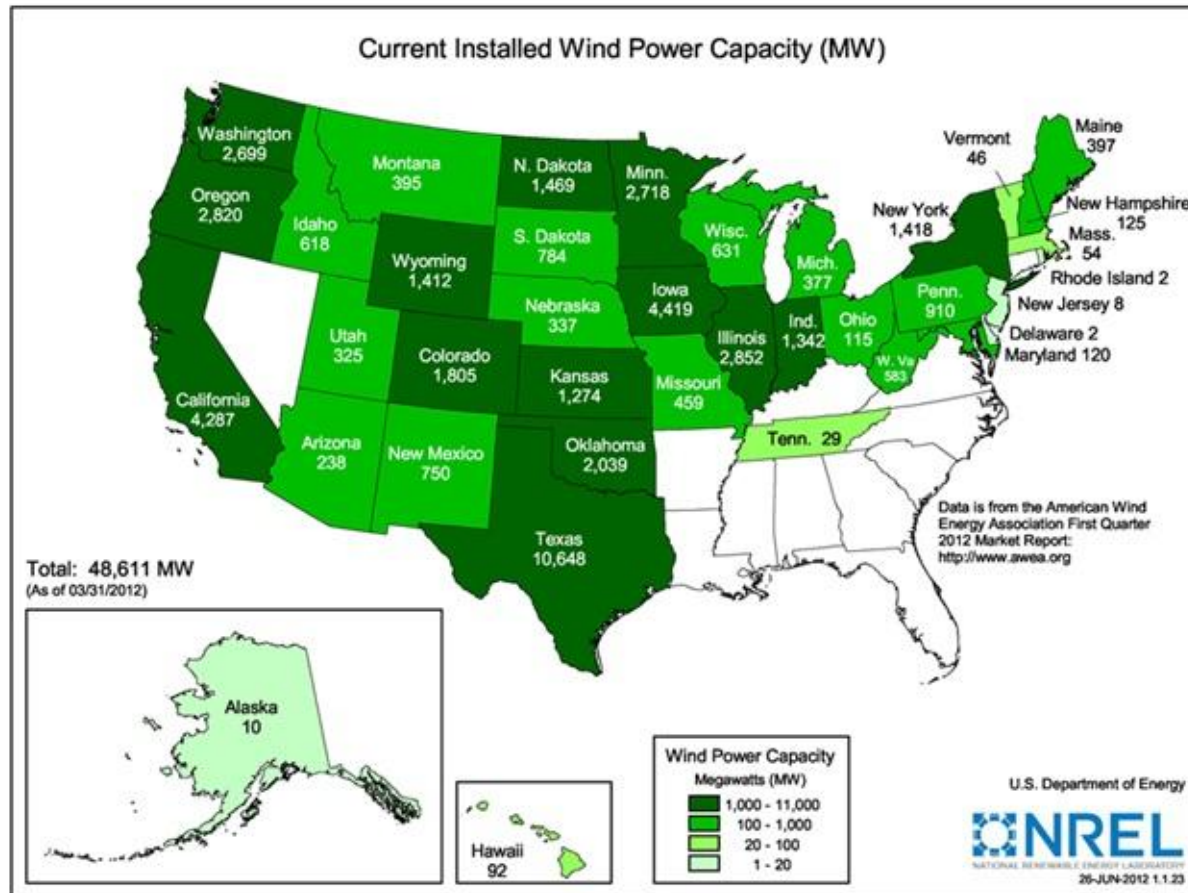
Solutions for Small Wind

- * Offering first-to-market, little- to no-money down leasing solution for small wind customers
- * Our vision: Lease a turbine to every suitable property in the United States (approximately 3.5 million)



*Suitable US properties based on internally modeled wind speeds, energy prices, expected customer savings, return requirements, and required developer fees

State of the Market



State of the Market

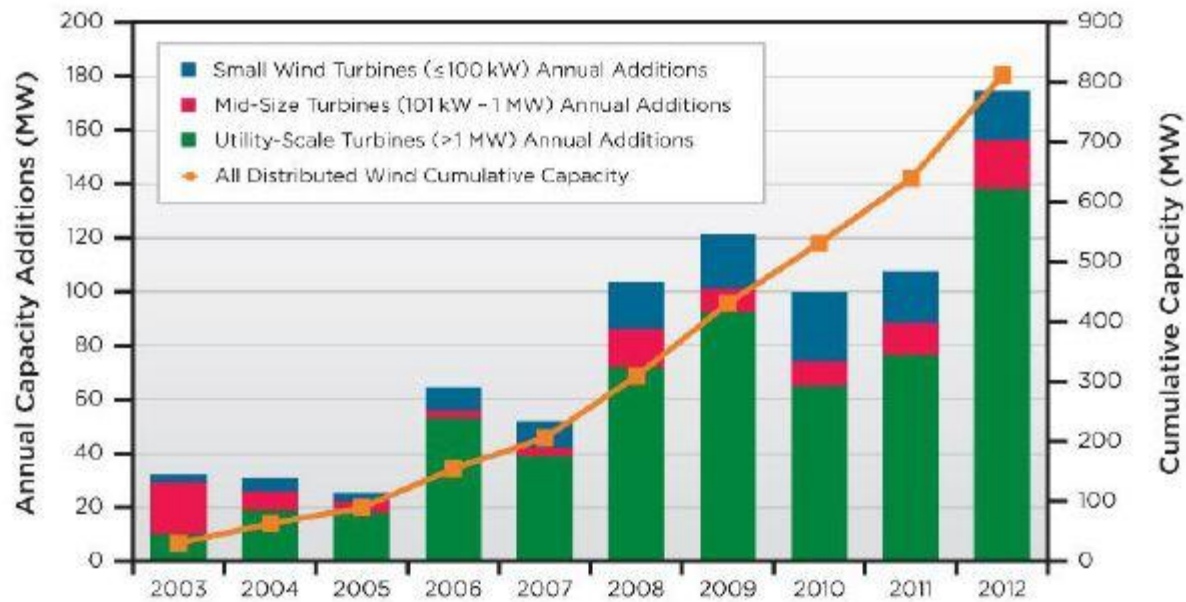
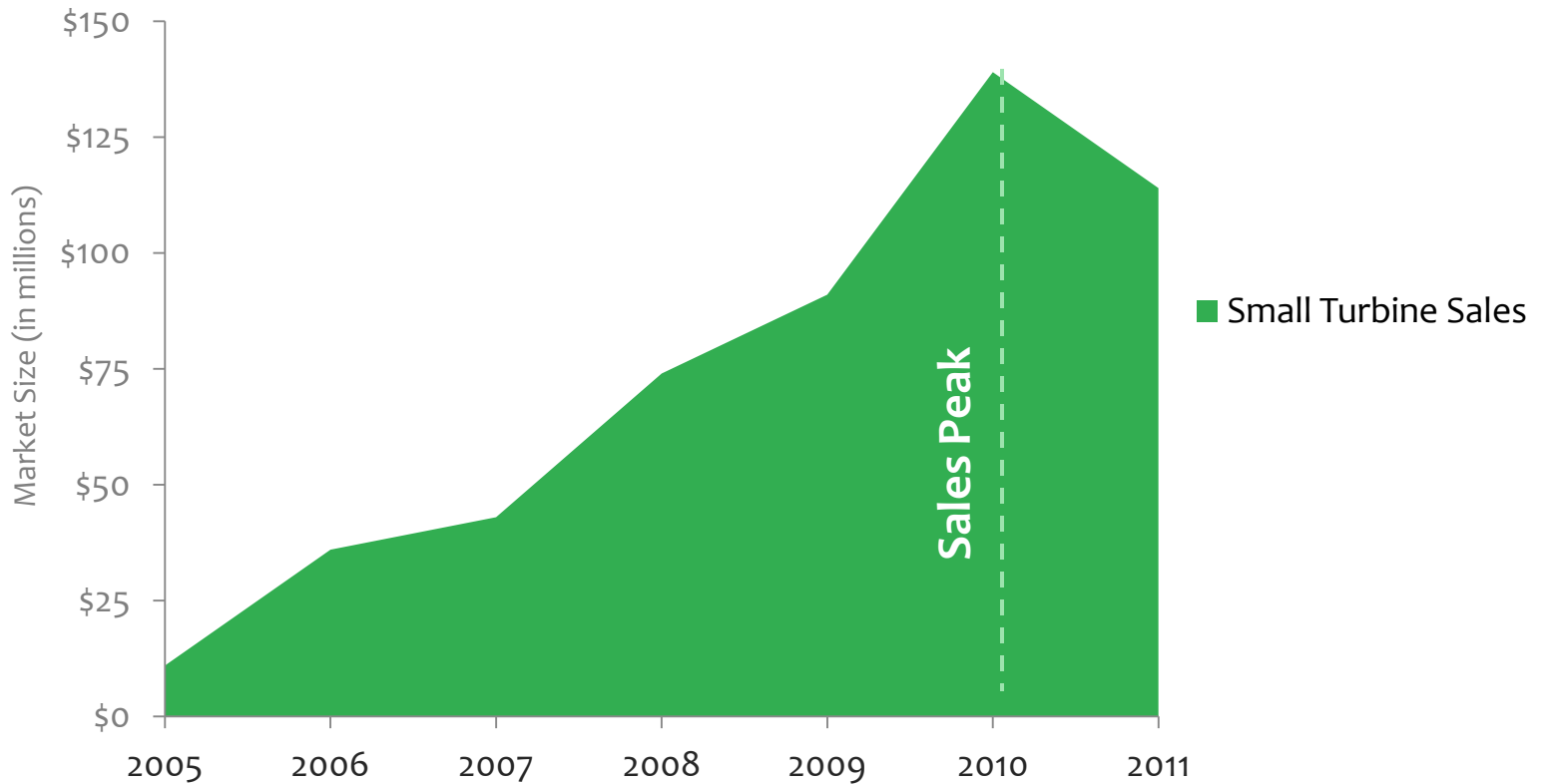


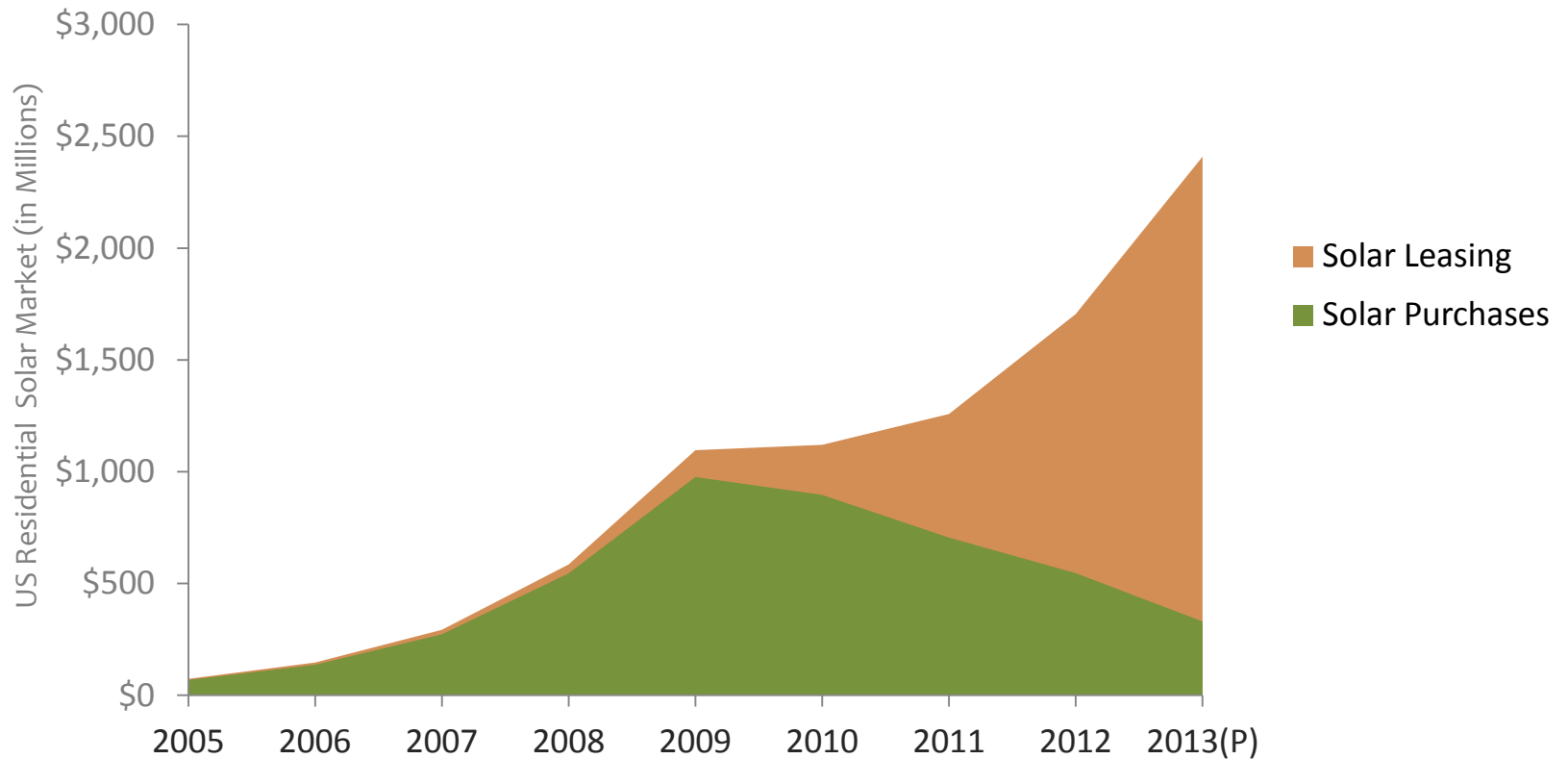
Figure 1. U.S. Distributed Wind Capacity by Turbine Type

State of the Market



Source: 2011 U.S. Small Wind Turbine Market Report

State of the Market



Source: Forbes: How CA is Democratizing Solar for the 99%

State of the Market

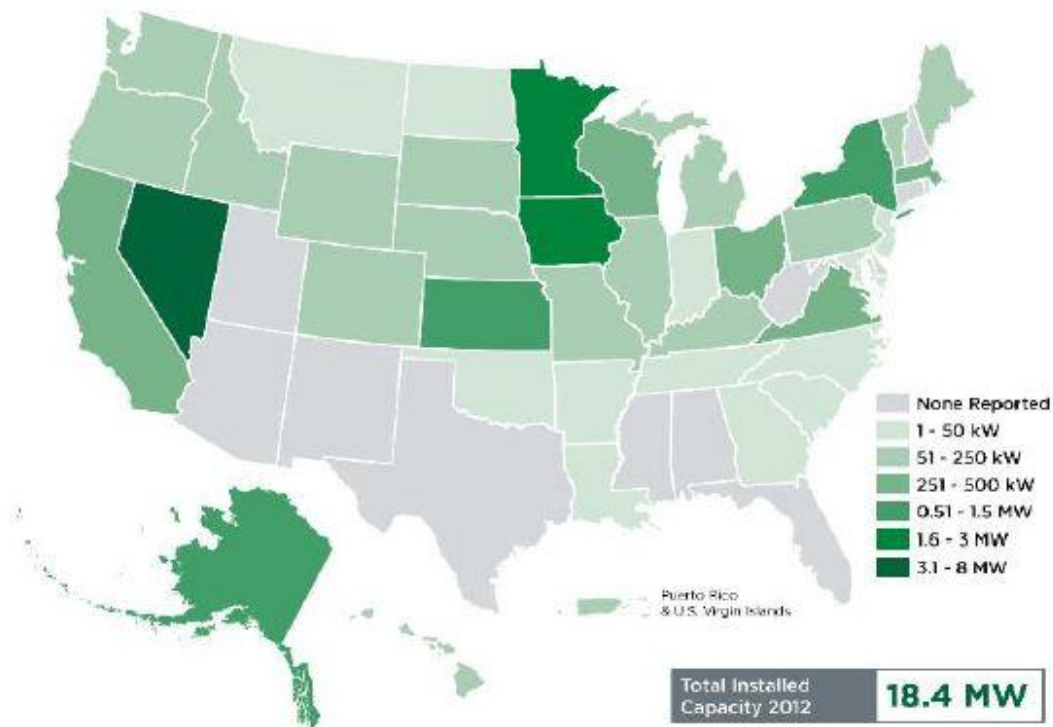
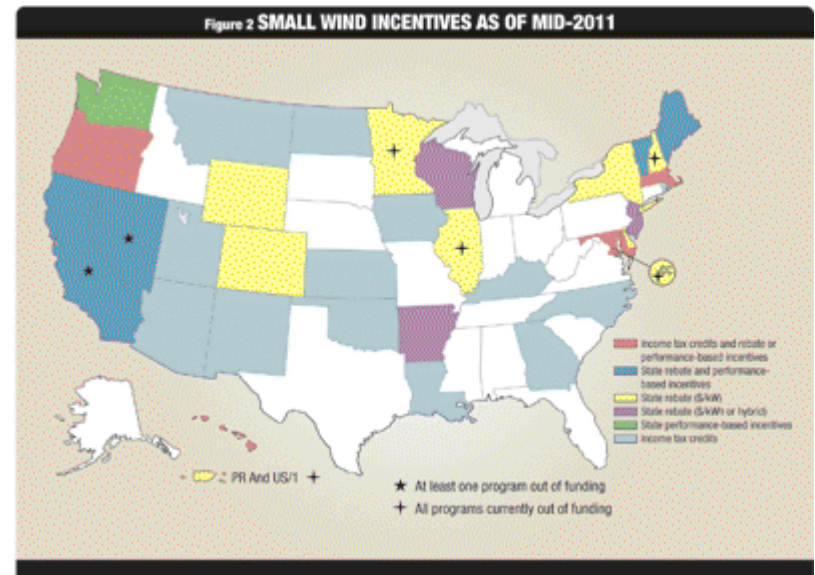


Figure 14. 2012 U.S. Small Wind Capacity Additions

Policy Incentives

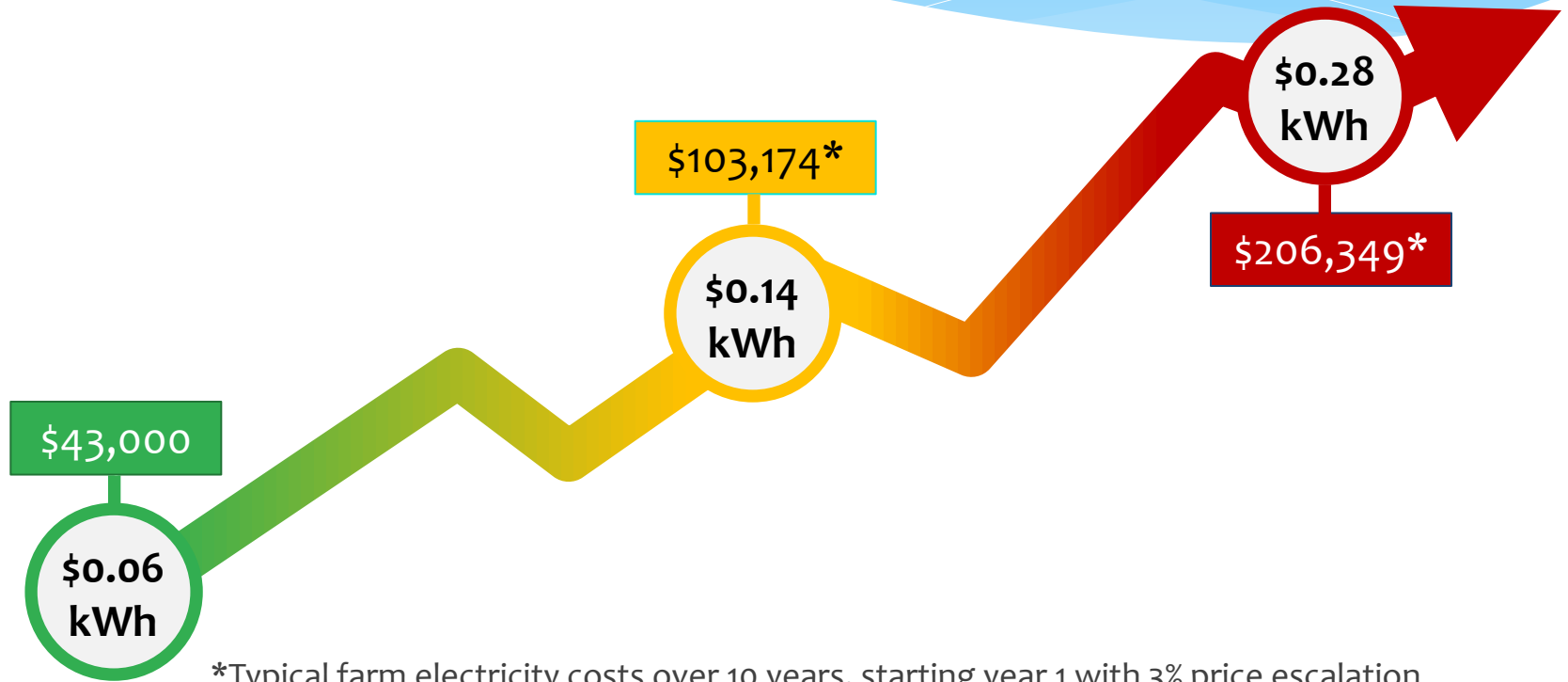
- * Federal
 - * MACRS Depreciation
 - * Investment Tax Credit (ITC)
- * State
 - * Renewable Portfolio Standards
 - * Feed in Tariffs
 - * Sales/Property Tax Exclusions
 - * Cash Grants
 - * Net Metering
 - * Utility Interconnection



WindLease™

- * First ever leasing solution for small wind customers
- * Products include fully prepaid, partial prepaid, and no-money down, 10 to 20 year leases
- * Includes multiple turbine options, selected for the type of customer, and the historical usage data gathered during due diligence

WindLease™



*Typical farm electricity costs over 10 years, starting year 1 with 3% price escalation

1992

Today

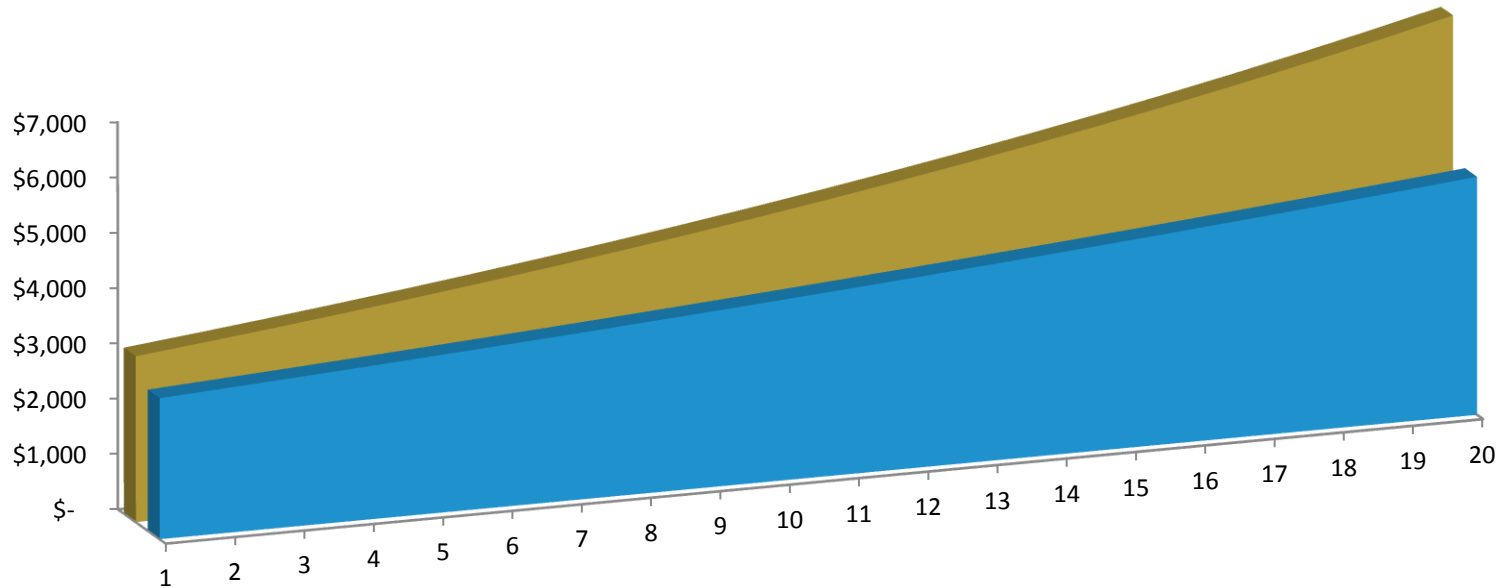
2032(P)

Source: U.S. Energy Information Administration, <http://www.eia.gov/cneaf/electricity/page/eia826.html><http://www.eia.gov/cneaf/electricity/page/eia826.html>

WindLease™

Annual Electric Payments

Utility United Wind



WindLease™



Leasing Structures

* Third party ownership – must use a “true lease”

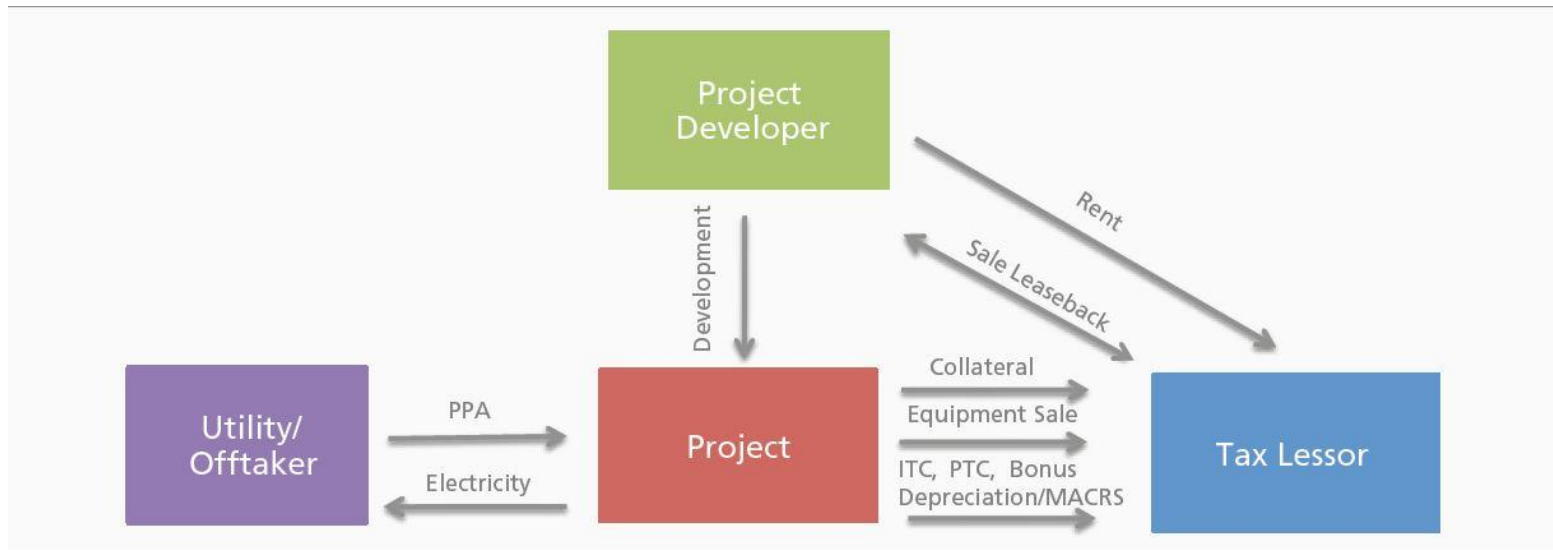
	Operating (“True”) Lease	Capital Lease
End of lease term	At least 20% of value and 20% of useful life remains in system	Ownership transferred to lessee
Purchase option	Never less than FMV at the time of purchase	Can be bargain (\$1)
Ownership	Lessor <i>always</i> remains the owner	Lessee is the owner
Risks and Benefits	Remains with Lessor (insurance, maintenance etc.)	All transferred to Lessee

Financing Structures

- * What is Tax Equity?
 - * IRS has determined only the subset of taxpayers with “passive” income may take advantage of federal Investment tax Credit
 - * 503(c) and governmental entities unable to claim ITC
 - * Most developers do not have their own passive income, so they “sell” the tax credits to third parties who can claim the ITC for a reduced price (ex. \$1 in real dollars for \$1.20 in tax credits)

Financing Structures

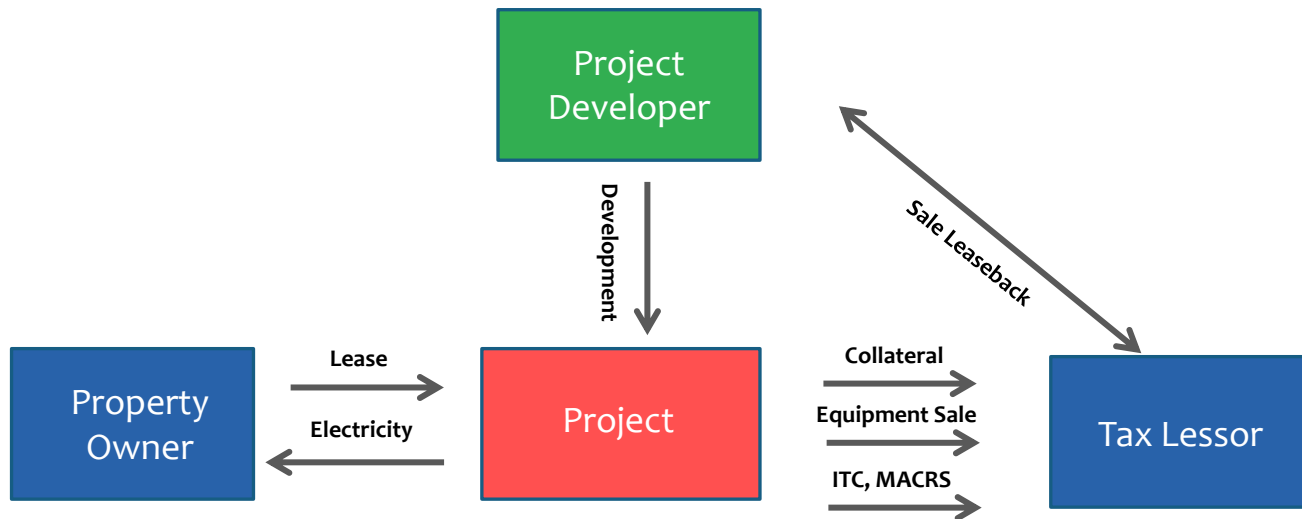
Utility Scale Sale-Leaseback Model



Source: Renewable Energy Project Finance in the U.S.: 2010-2013 Overview and Future Outlook, Mintz Levin Cohn Ferris Glovsky and Popeo PC

Financing Structures

WindLease™ Sale-Leaseback Model



Financing Small Wind – Tax Equity

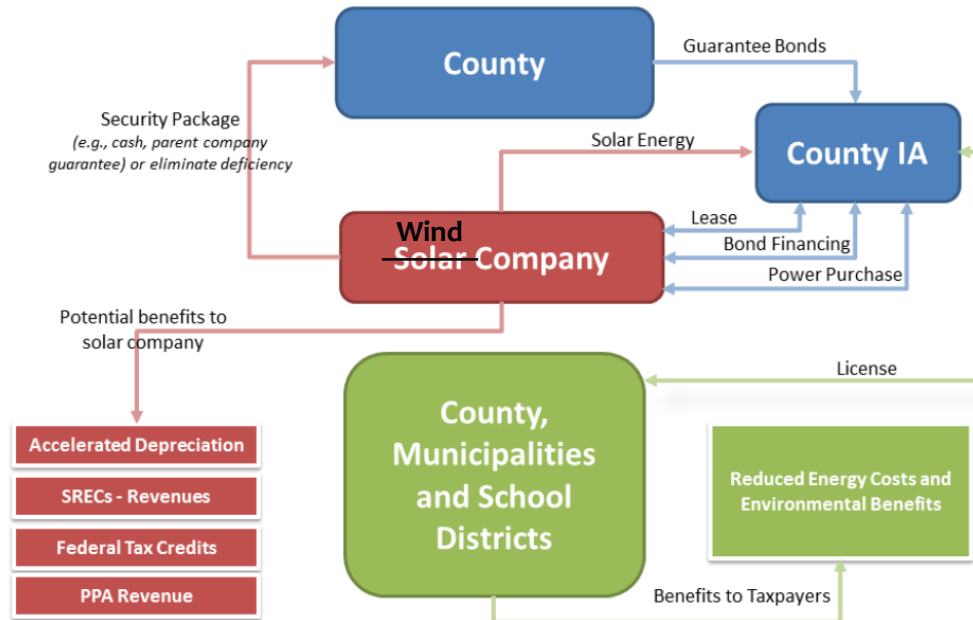
* Who is providing tax equity?

FIGURE 1 – RESIDENTIAL SOLAR TAX EQUITY INVESTORS (2010-EARLY 2013)

Tax Equity Investor	Beneficiaries
Bank of America Merrill Lynch	SolarCity
Citibank	Sungevity, SunPower
Credit Suisse	SunRun, SolarCity, SunPower
Goldman Sachs	SolarCity
Google	SolarCity, CPF
Mainstreet Power	CPF, OneRoof
Morgan Stanley	CPF, OneRoof
PG&E	SolarCity, SunRun
Rabobank	Sungevity, SolarCity
U.S. Bancorp	SolarCity, OneRoof, Vivint, SunRun
U.S. Renewable Energy Group	SolarCity
WGL Holdings	American Solar Direct

Financing Small Wind – Bond Strategies

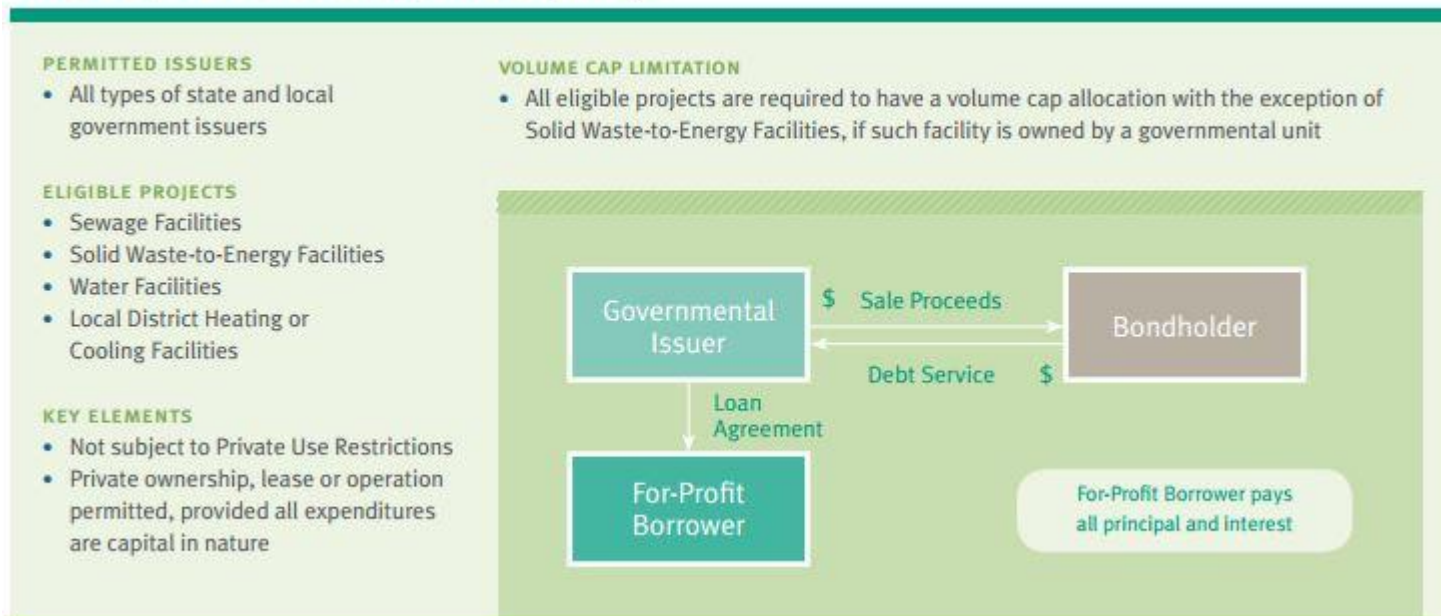
* Applying the Morris Model



Financing Small Wind – Bond Strategies

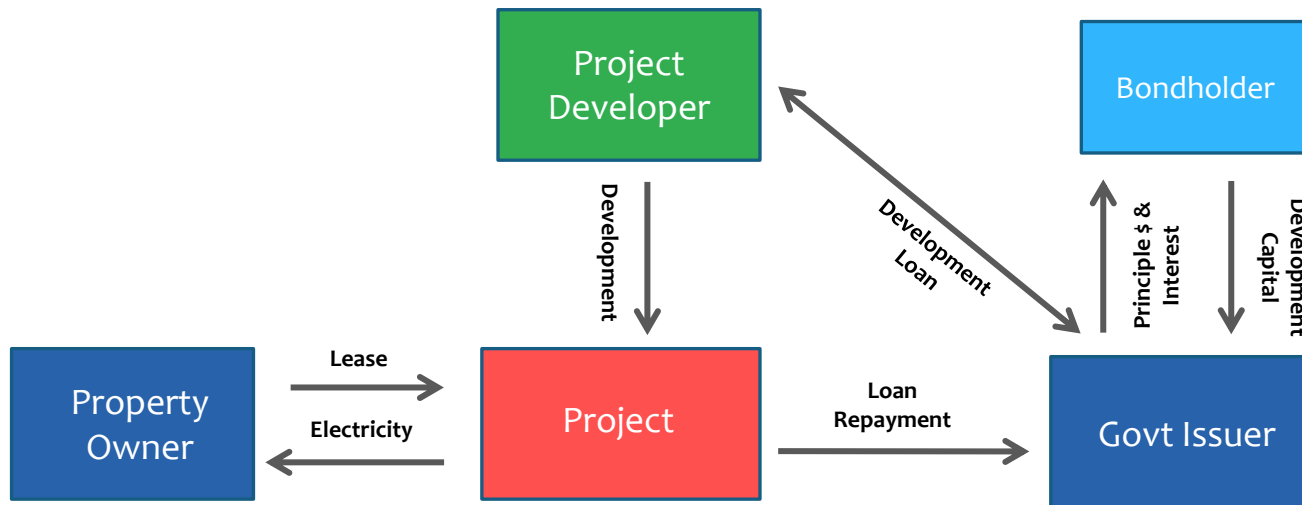
* Private Activity Bonds (PABs)

Tax-Exempt Private Activity Bonds (PABs)



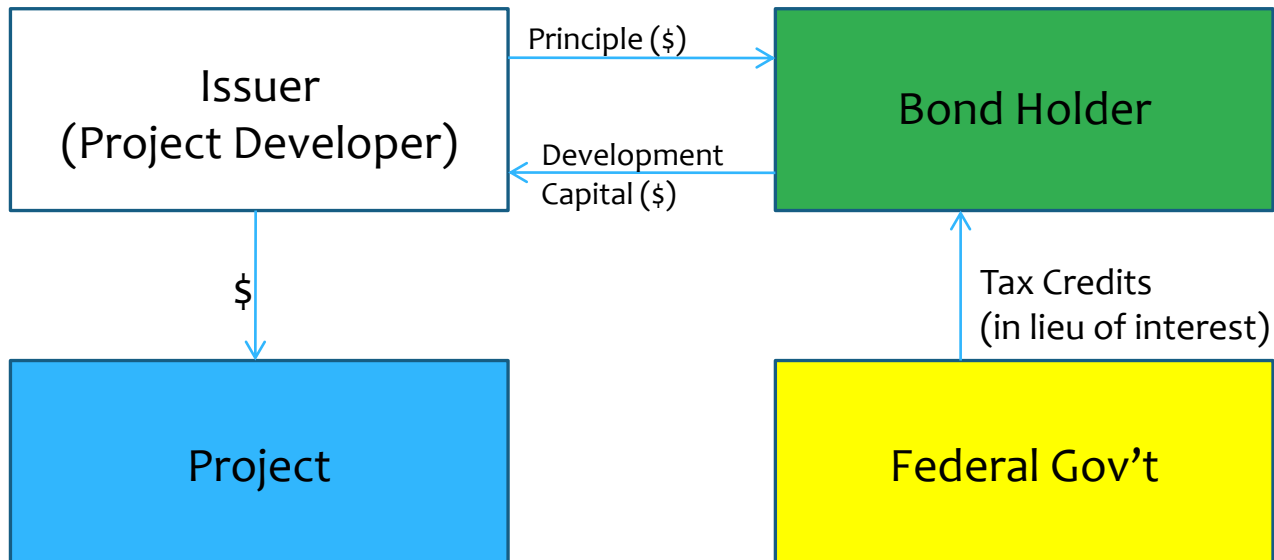
Financing Small Wind – Bond Strategies

- * Applying PABs to the WindLease™ model



Financing Small Wind – A Case Study in CREBs

* Clean Renewable Energy Bonds (CREBs)



Financing Small Wind – A Case Study in CREBs

- * Why didn't it work?
 - * Interest rates on tax credits not competitive with bond market
 - * Size of program too limited for utility-scale, too onerous for distributed scale
 - * Transaction costs could reach \$3million for a \$10million project
 - * Award process mired with uncertainty

Challenging the Public Market

- * Some successful bond policies have included:
 - * State-level backup of municipalities with sub-AA credit rating
 - * Streamlined application and interest payment process
 - * Multi-year funding guarantee, to make the money “bankable” to project investors
- * Successful state policies have included:
 - * DG carve-out in state RPS
 - * Required interconnection and permitting rules
 - * Change to production based incentive standards (as opposed to capacity based)

Challenging the Public Market

- * Key questions for policymakers:
 - * What types of activities, and changes, do developers need to achieve to access existing types of government-supported financing?
 - * What areas of emphasis need to be strengthened to help policymakers decide on opening new avenues of financing?

Questions and Comments

Thank you!

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SPECIAL THANKS

Jack Murray

Kyle Andrucyk

SAVING WITH SOLAR: UNDERSTANDING RETAIL SOLAR POWER PURCHASE AGREEMENTS



August 20, 2013

**WEBINAR
RENEWABLE ENERGY FINANCE**

SOLAR POWER PURCHASE AGREEMENT (PPA)

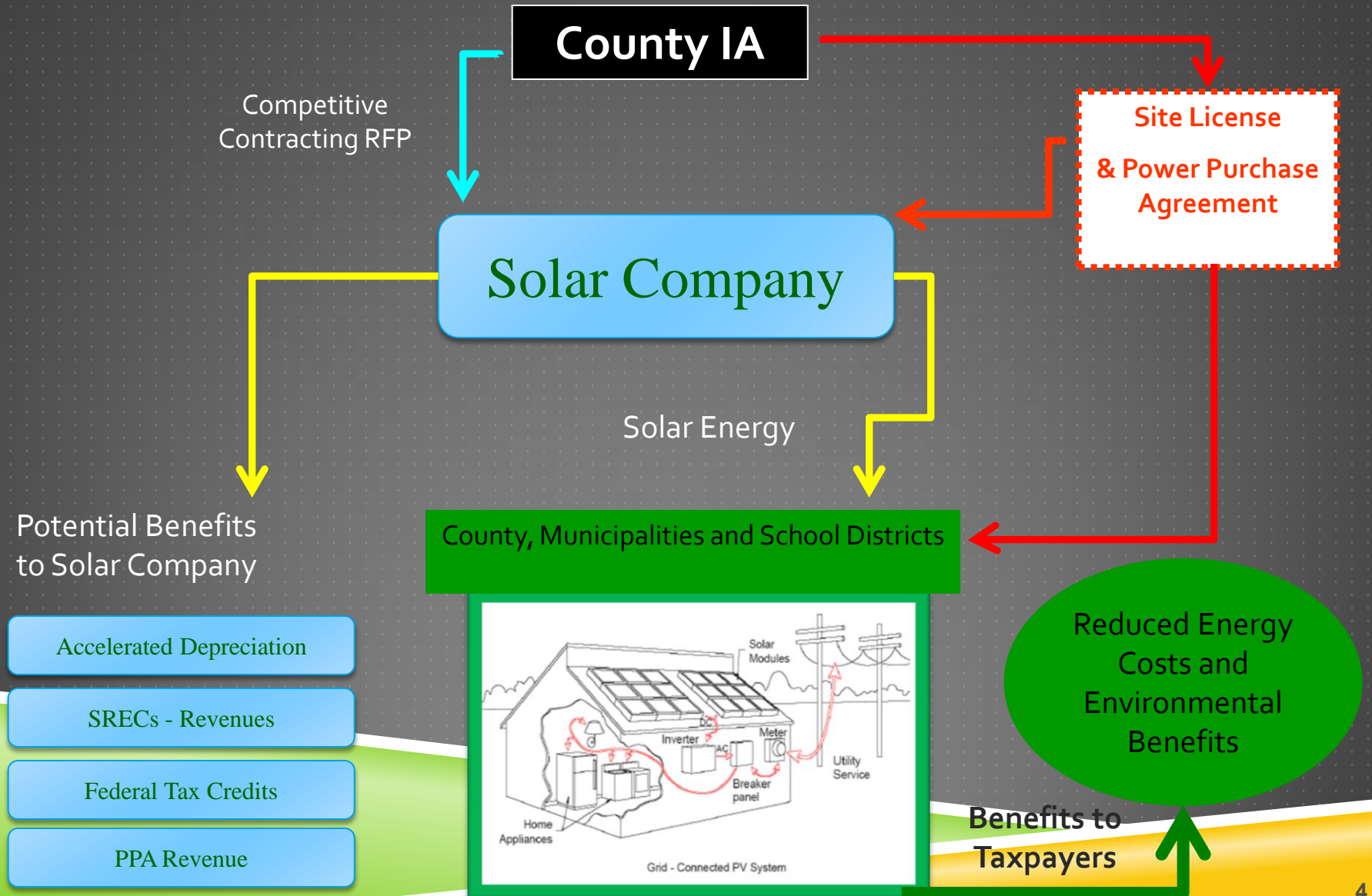
- **Advantages:**
 - Turnkey, private solar developer
 - Includes Financing and O&M
 - Developer tax incentives embedded in PPA Price.
- **Disadvantages:**
 - PPA pricing sub-optimal (most financing benefits to developer)
 - Potential Risks in PPA (due to gov't action / inaction)
 - FMV purchase at end of term, if term < useful life (not nominal, due to tax law)

PPA RISKS

- Downtime (*lost PPA price + SRECs + Profit, regardless of fault*)
- Security obligation on Government
- Performance Guaranty from Solar Developer?
- Higher Rated Government Payment Guaranty?
- Limitation on Real Property Options (*mortgaging, lease, disposition*)
- Early Termination Penalties (*benefit of bargain*)

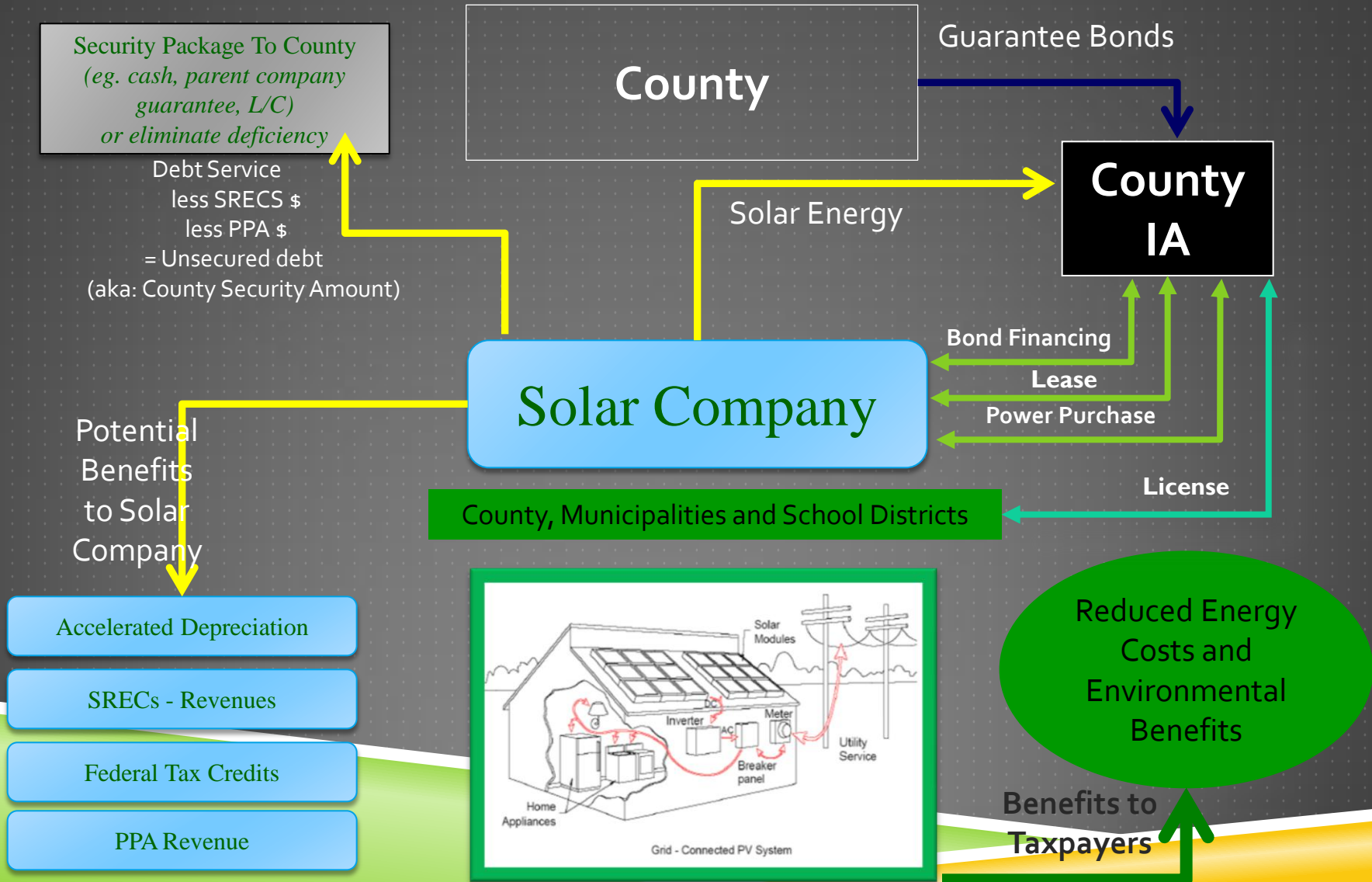
HOW DOES THE PROGRAM WORK ?

OPTION I – PPA MODEL



HOW DOES THE PROGRAM WORK ?

OPTIONS 2 HYBRID STRUCTURE



SAMPLE SOLAR DEVELOPER PROCUREMENT CRITERIA

- PPA Price – Economic Benefit
- Developer Approach to Comply with RFP Requirements, including Technical Specs
- Developer Ability to Deliver Turnkey Project, including O&M
- Experience – Contracts of Similar Size and Scope
- Management – Key Personnel and Knowledge of Applicable Laws/Regs
- Logistics of Implementing Plan (1 year construction – multiple sites)
- Financial Strength (single purpose entity – guarantor)
- Construction Security (amount and strength)
- Funding of Deficiency (Developer default, left w/ PPA and SREC – amount and strength)
- Material Changes to Posted Documents Proposed?
- Other Economic Benefits Proposed?
- Restoration Security Included? (option to guaranty roofs restored at end)

BENEFITS OF HYBRID – REGIONAL APPROACH

- ▶ Benefits of these Solar Renewable Energy Programs
 - No cost of solar feasibility study to local units
 - Lower cost of project installation through aggregated county-wide RFP
 - Better pricing of the PPA
 - Ability for smaller facilities to take part in a PPA
 - Budget certainty
 - Compliance with local procurement regulations

CASE STUDY – PILOT

MORRIS COUNTY IMPROVEMENT AUTHORITY

SOLAR RENEWABLE ENERGY PROGRAM – CLOSED ON FEBRUARY 18, 2010

- 3.2 MW from 19 facilities for 7 local unit governments
- Bond Pricing with AAA County Guaranty, 4.46%
- PPA Pricing: \$0.106 / kWh the first year
- 3% escalation, PPA Price in year 15 = \$0.16 / kWh (approximately today's market price!)
- 15 year PPA
- Sharing of 35% of SRECs if value over \$200 / SREC in years 11-15
- Market Price of SRECs today over \$600 / SREC in spot market
- 35% Average Savings / Local Unit

CASE STUDY

SOMERSET COUNTY IMPROVEMENT AUTHORITY

SOLAR RENEWABLE ENERGY PROGRAM – CLOSED NOVEMBER 2010

- 7.6 MW from 31 facilities for 15 local unit governments
- Low Cost Financing Bond Pricing with AAA County Guaranty,
- 3.9%, 15 year maturity
- PPA Price: \$0.048 cents/kWh
- 2.75% escalation, PPA Price in year 15 = ~ \$0.07(half of present rate)
- 15 year PPA
- 60% savings off of 15/16 cent/kWh utility rate

CASE STUDY

SOMERSET COUNTY IMPROVEMENT AUTHORITY

TRANCHE II SOLAR RENEWABLE ENERGY PROGRAM – CLOSED AUGUST 25, 2011

- 7.056 MW from 35 facilities for 18 local unit governments
- Bond Pricing with AAA County Guaranty, 4.02%
- PPA Pricing: \$0.041/kWh the first year
- 3% escalation, PPA Price in year 15 = \$0.10/kWh (lower than today's market price!)
- 15 year PPA
- Estimated Savings Over 15 Years = \$12.5M
- 23% Average Electric Savings for those facilities that participated
- Par Amount of Bonds: \$23,980,000
- Equity contribution of roughly 1/3 of total project cost eliminates CDA

CASE STUDY

MORRIS COUNTY IMPROVEMENT AUTHORITY

TRANCHE II SOLAR RENEWABLE ENERGY PROGRAM – CLOSED DECEMBER 8, 2011

- 8.598 MW from 24 facilities for 10 local unit governments
- PPA Pricing: \$0.075 cents/kWh the first year
- 3% escalation, PPA Price in year 15 = \$0.113/kWh (lower than today's market PPA!)
- 15 year PPA
- Estimated Savings Over 15 Years = \$7.9M
- 35% Average Electric Savings for those facilities that participated
- Equity contribution of roughly 1/3 of total project cost eliminates CDA

CASE STUDY

MORRIS COUNTY IMPROVEMENT AUTHORITY – SUSSEX COUNTY
SOLAR RENEWABLE ENERGY PROGRAM – CLOSED DECEMBER 2011

- 6.9 MW from 20 facilities for 12 local unit governments
- PPA Pricing: \$0.0935 cents/kWh the first year
- 3% escalation, PPA Price in year 15 = \$0.15/kWh (lower than today's market PPA!)
- 15 year PPA
- Estimated Savings Over 15 Years = \$5.5M
- 32% Average Electric Savings for those facilities that participated
- Equity contribution of roughly 1/3 of total project cost eliminates CDA

LESSONS LEARNED

- Local Unit Commitment at all Steps
- Potential Closing of Local Unit Facilities in the Future
- Roof Warranties
- System Size & Regionality
- Solar Developer Experience and Balance Sheet
- Balance Maximum Savings with Minimal County Risk
- Building Inspectors and DOE Long Range Plan Updates
- Monitor SREC benefits

HYBRID MODEL – OTHER STATES?

- 4 Essential Laws Required
 - Energy Law (sufficient RPS – in NJ, SRECs can be 40% of subsidy)
 - Bond Law (streamlined approval v. voter requirement)
 - Local Public Contracts Law (multi-year contracting for 15 or more years of PPA)
 - Procurement Law (competitive process v. low bid v. negotiation)
- Regional Approach
 - State or County
 - Group purchasing power and amortize soft costs
- Deep Pocket Required
 - Conduit Issuer and General Obligation Guarantor
 - Dedicated Revenue Stream (e.g. sales tax)

FOLLOW-UP TO MORRIS MODEL

- Advantages and Disadvantages
- Target Market for Morris Model
- Replication of Morris Model
- Adoptability of Morris Model and other Clean Energy Technologies and Market Sectors (e.g., UMTC for 501(c)(3))
- Government Issues with Guarantying Government
- Compatibility with other Financing Models (e.g. Capital Stack and in kind equity)

CONTACT INFORMATION

- ▶ For any further questions, please contact:

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Summary and Questions

Thank You!