

Wind Project Finance in the Current Economic Climate

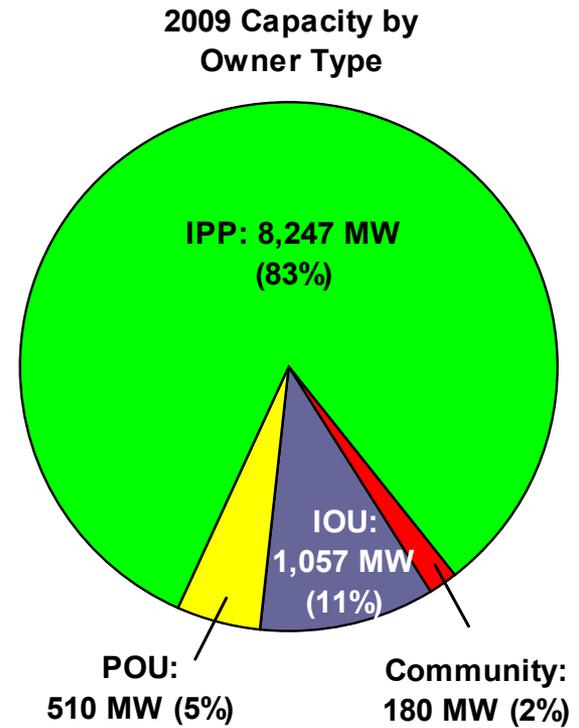
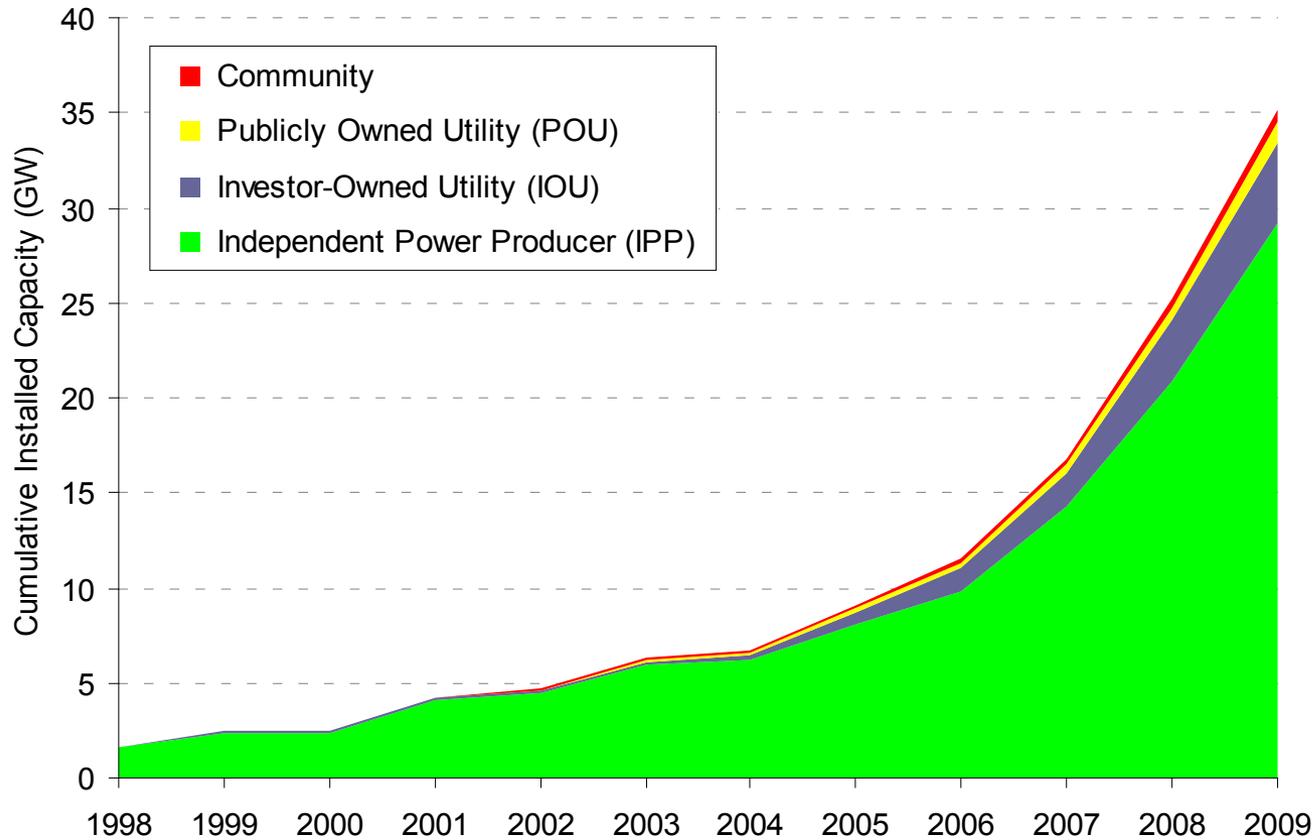


**National Wind
Technology Center**

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Paul Schwabe**

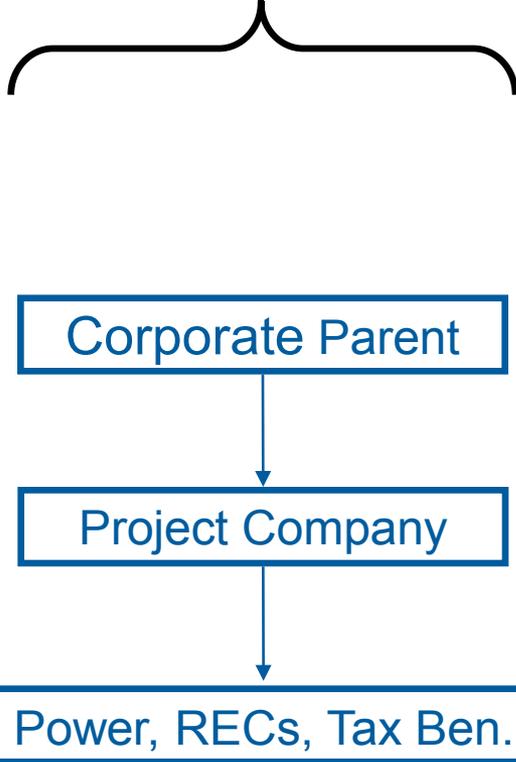
Sep 1, 2010

IPP Ownership Remained Dominant, But Utility Ownership Gains Ground

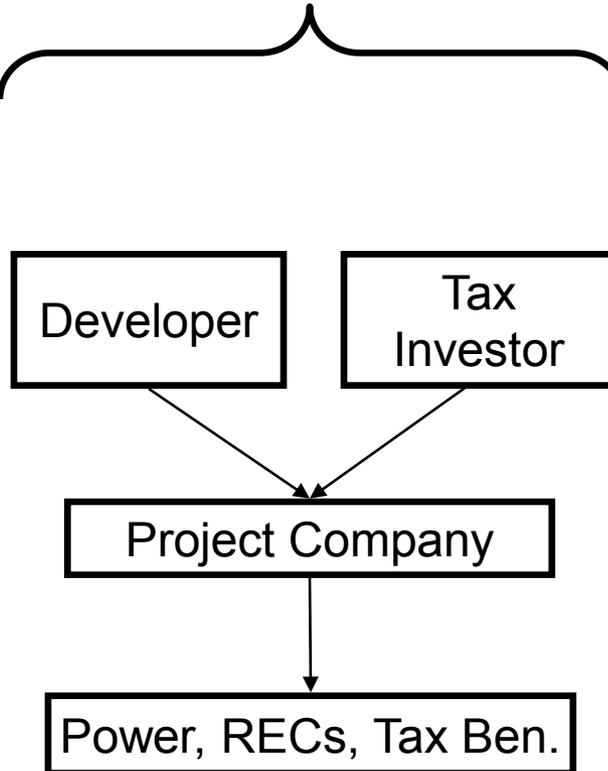


How Have Wind Projects Been Financed?

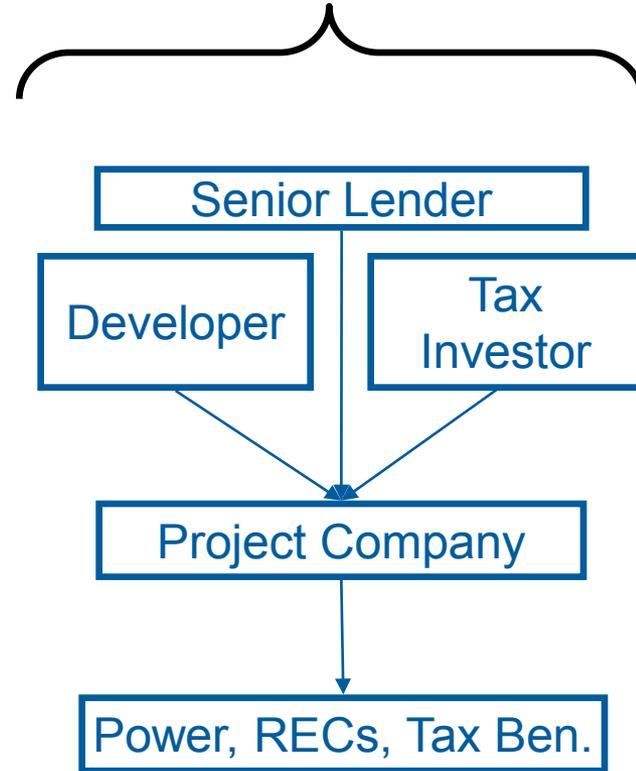
1) Single Developer / Investor (IOU, POU, COM)



2) Equity Partnership (Com, IPP)

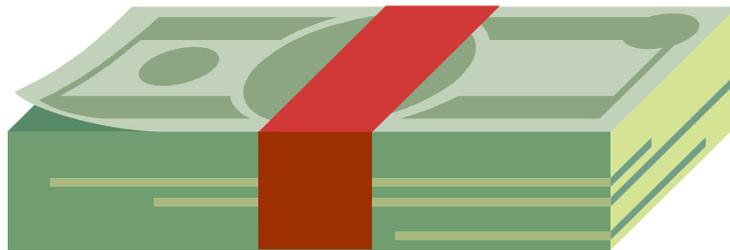


3) Equity Partnership With Debt (IOU, IPP)

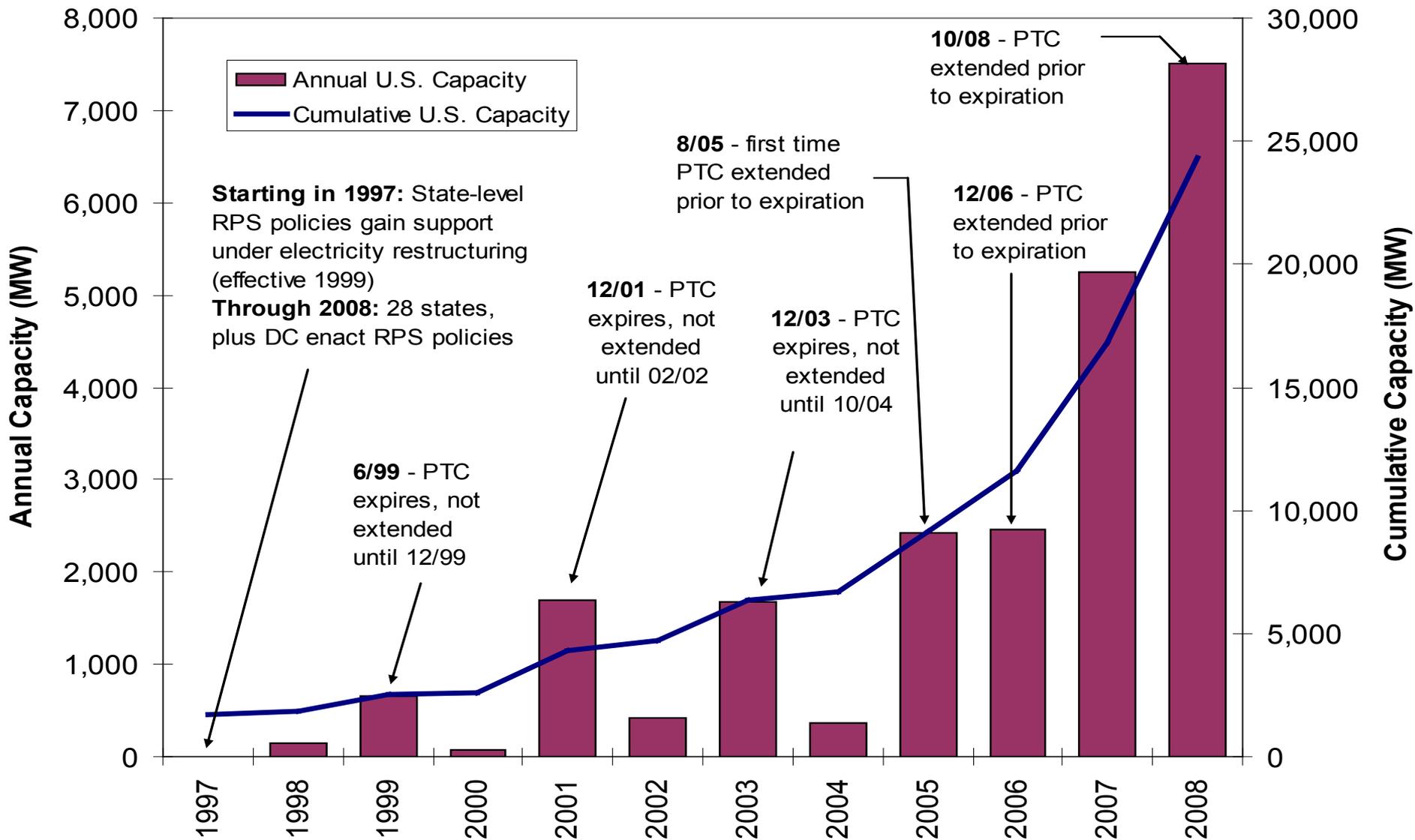


Current Wind Financing Mechanisms

- Renewable Portfolio Standards
- Renewable Energy Certificates
- Tax Incentives **≈ 50% Project Value!**
 - 30% Production Tax Credit
 - Accelerated Depreciation
- Clean Renewable Energy Bonds
- Energy Service Performance Contracts



Wind Development and PTC Status



Source: EIA Electric Power Monthly

Renewable Exposure to Financial Crisis

- Use of federal **tax credits** to encourage RE development
 - Works if the economy is solid and tax equity appetite exists
- **Debt** availability for development and construction costs
- Broad, systemic U.S. economic recession
- Uncertainty of additional RE support from federal government economic stimulus

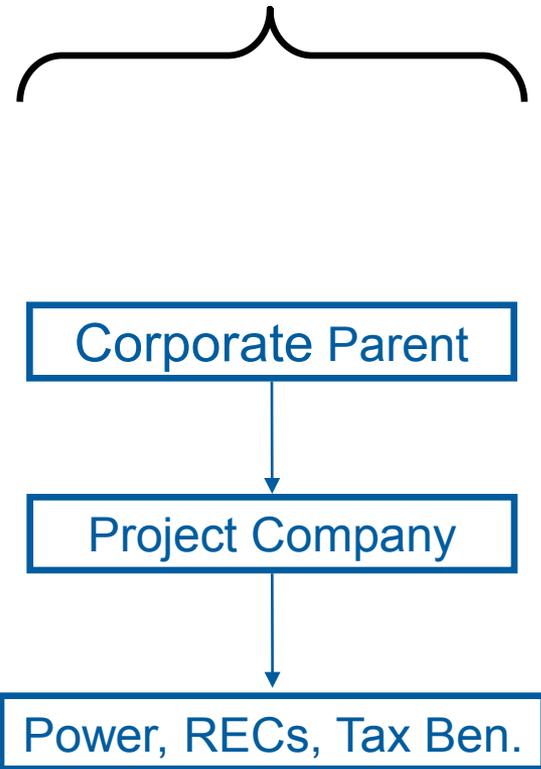


Financial Crisis: Mixed Impact on Wind Financing

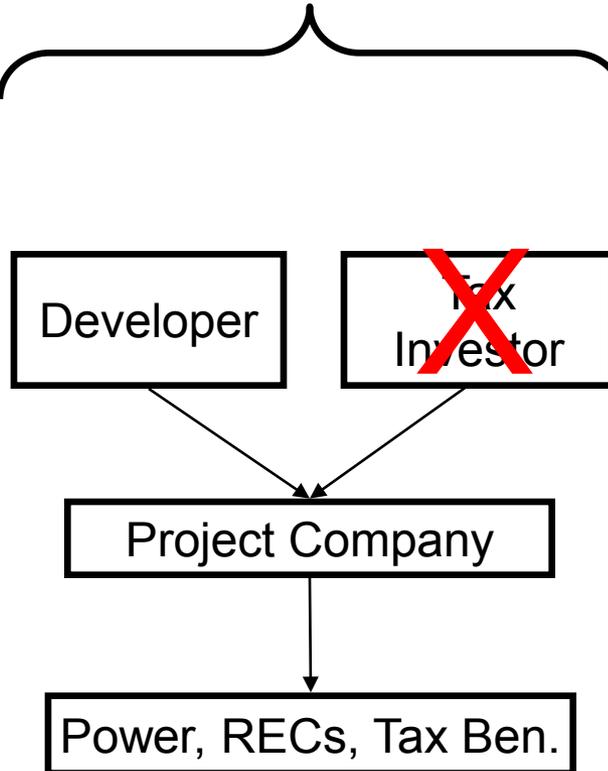
- **Tax equity** capital market sizably smaller
 - Struggling/insolvent traditional investors
 - New investors possible, but only if project returns increase
- **Debt financing** market is tight; deleveraging
 - Interest rates said to be going up; though little debt happening
- Impact on renewable energy projects depends on timing
 - Most projects financed **prior to Oct. 2008** are moving forward
 - **Near-term** RE development seems to be challenging
 - **Long term** RE financing outlook is positive
 - Govt. economic stimulus could provide certainty for the market

How Have Wind Projects Been Financed?

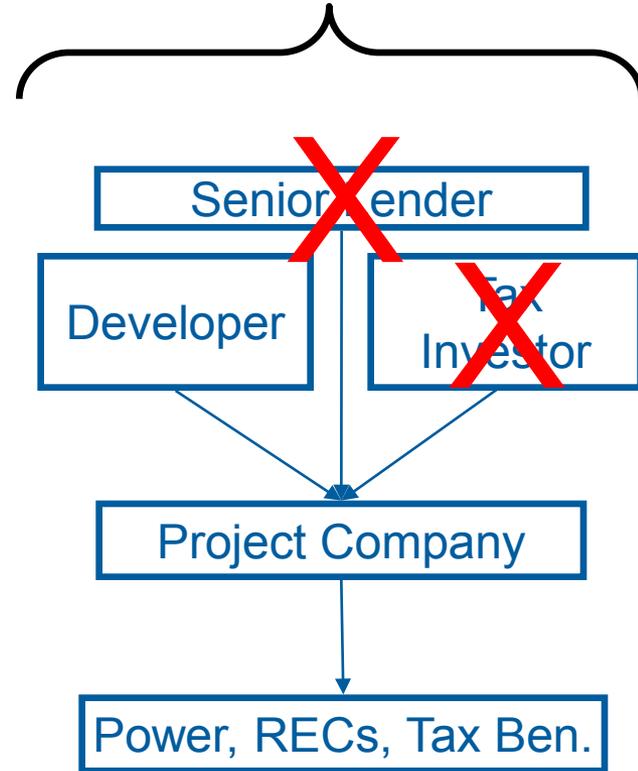
1) Single Developer / Investor



2) Equity Partnership



3) Equity Partnership With Debt



The Tax Credit Equity Market

- **Before:** Large corp. with sizeable income tax liabilities looking for investment opportunities
 - Concentrated in the financial industry
 - ~ 18 investors last year
 - Investor returns as low as 5-6%
- **Crisis:** Investor profitability down
 - Mergers/acquisitions (e.g. Wells Fargo, Wachovia)
 - Banks retrenching; “flight to quality” investments
- **Now:** Survivors have their pick of investments
 - ~ 4 Tax equity players – remaining tax appetite?
 - Main competition is affordable housing, which does not have production risk (unlike wind PTC)

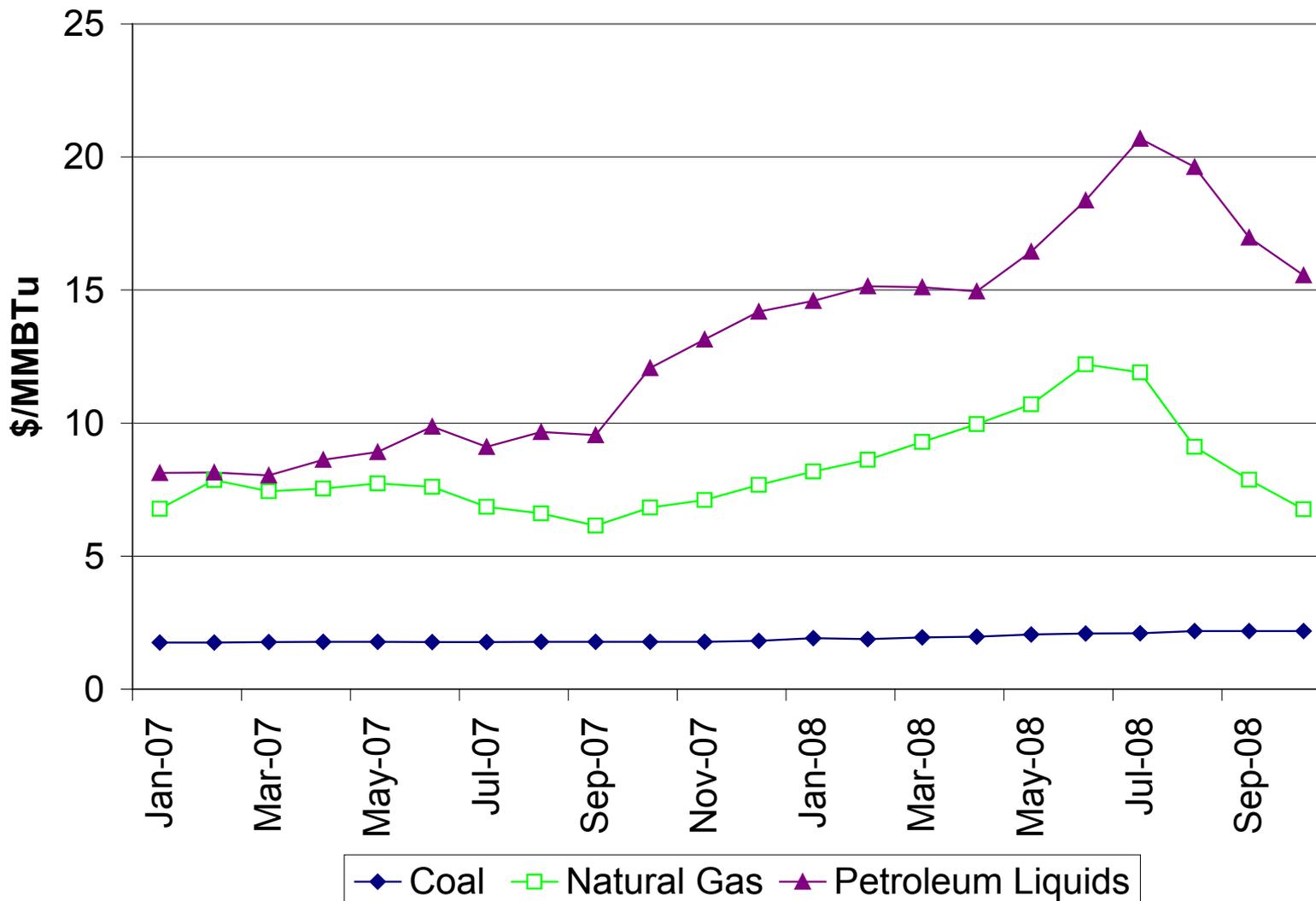


Debt Financing Market

- Little wind project-level debt, prior to crisis
 - May be required going forward with tight equity market
- Appears that few are lending money (Dexia, Fortis)
 - Massive deleveraging right now
 - Banks retrenching; “flight to quality” investments
- Interest rates appear to be going up
 - Risk has been re-priced
 - Old Rates: LIBOR + 200 basis points
 - New Rates? LIBOR + 350 to 600 basis points
- No apparent relief from wind turbine manufacturers
 - However buyers market for turbine

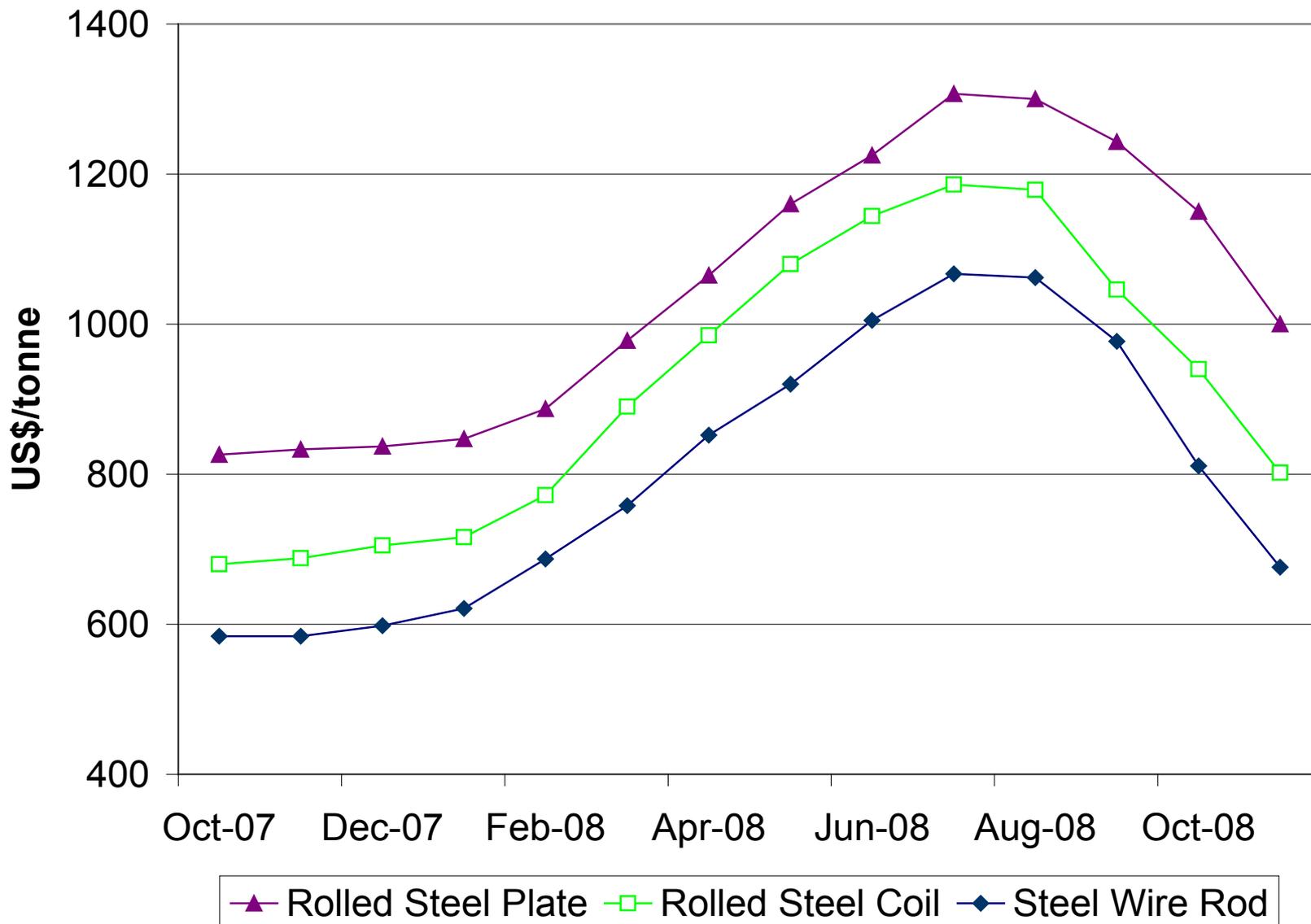


Electric Power Industry Fuel Costs, Jan 2007 - Oct 2008



Source: EIA Electric Power Monthly

World Carbon Steel Transaction Prices Oct 2007 - Nov 2008



Source: Steelonthenet.com

Possible Economic Stimulus Package Revisions

- 3 Year PTC extension
- Tax credit refundability through grants
- 5 year tax credit carry back
- Removal of tax credit double dipping restrictions (“haircut”)
- Removal on tax credits for small wind projects
- Additional CREBs funding (\$1.6 billion)
- Additional loan guarantee funding





Thank you for your attention!

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Current Wind Financing Drivers

Helpful:

- Reduced commodity prices
- Buyers market – turbine availability
- Expected project cost decreases



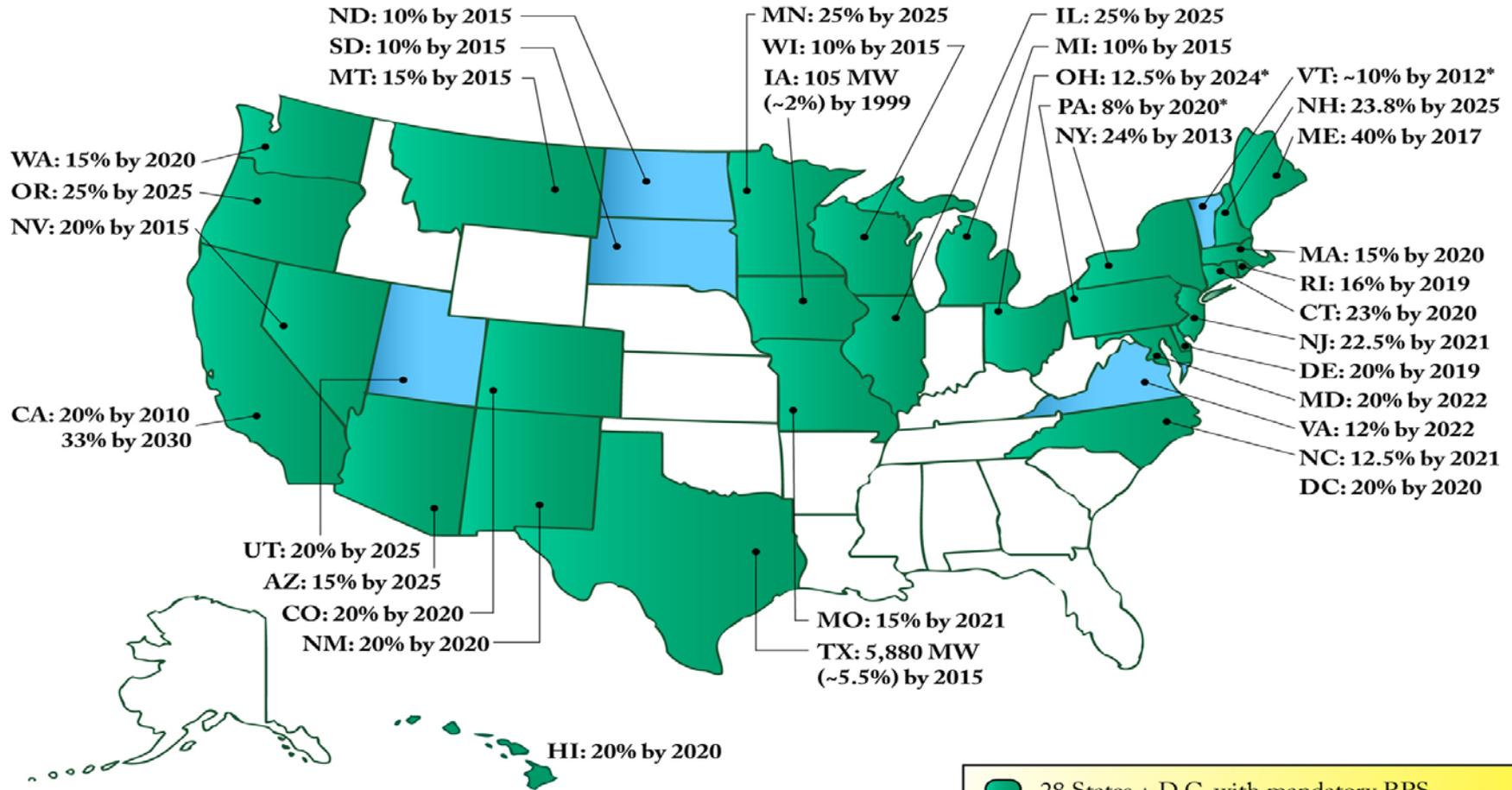
Challenges:

- Traditional generation price decreases
- Tax equity market consolidated, expensive
- Debt market illiquid, expensive



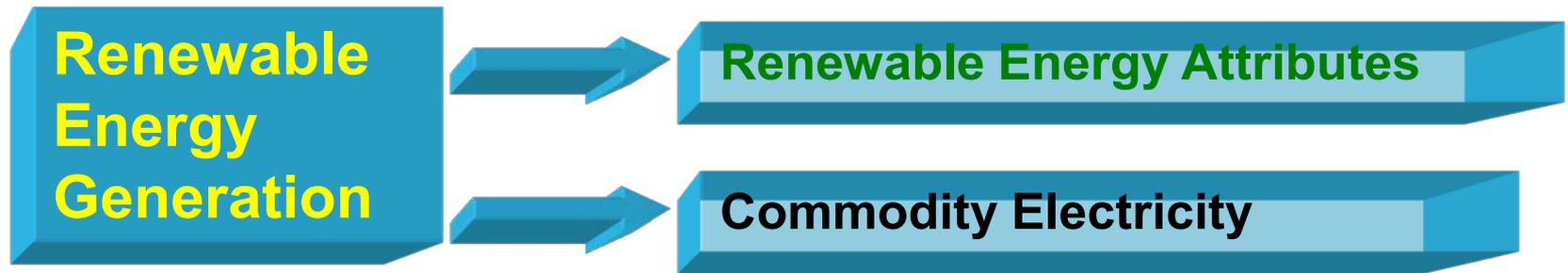
Renewable Portfolio Standards (RPS)

States with Renewable Portfolio Standards



Source: National Renewable Energy Laboratory, DSIRE, and Berkeley Lab (December 2008)

Renewable Energy Certificates (RECs)



- Commonly used for mandatory and voluntary markets
- A REC represents the non-electrical attributes of 1 MWh of renewable energy generation
- Has value separate from commodity electricity
- RECs can be critical to getting projects financed

	RECs
Voluntary	\$1-7/MWh
RPS	\$3-22/MWh
RPS (shortage)	\$48-56/MWh

Sources: Evolution Markets, NREL, Xcel, NJ Clean Energy Program

Federal Incentives – CREBs, or Clean Renewable Energy Bonds

CREBs

- Apply to the IRS for an allocation
- Federal tax credit to bond owner in lieu of interest payment from bond issuer
- May be more attractive than tax-exempt municipal bonds
 - Issuer only pays back bond principal (for most part)

Total allocation of **\$2.0 B**

- Up to 62.5% for public sector projects (rest: coops)
- Round 1: X of 610 public sector *wind* projects
- Round 2: Y262MM for public-sector *wind* projects
- Additional funding with economic stimulus bill



Federal Tax Incentives

Value of
Tax Breaks

~=

Value of

Power \$ +RECs

Production Tax Credit (PTC)

- 30% credit for wind through 12/31/09

Modified Accelerated Cost Recovery System (MACRS)

- Accelerated depreciation of assets over 5 years

Upfront tax credit for microturbines (10%)

- \$4,000 residential cap



Reduced Tax Equity Implications

- 2009 **wind projects** reported in jeopardy

- Another challenge: 2009 PTC expiration

May be possible to attract **new investors**

- Companies in energy: Google, John Deere, oil co

- Companies with tax appetite: industrial companies, hotel chains, and other “old” industry companies

- Hard to quickly replicate experience of Goldman Sachs, Merrill Lynch

- Required **return on equity going up**

- From 5-6% up to 10-12%; 15% may be needed, ultimately

- First project that gets structured will likely lead the way

