



Wilson Sonsini Goodrich & Rosati
PROFESSIONAL CORPORATION

Commercializing Renewable Energy Technology

LSI Renewable Energy in the Pacific Northwest Conference

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Agenda

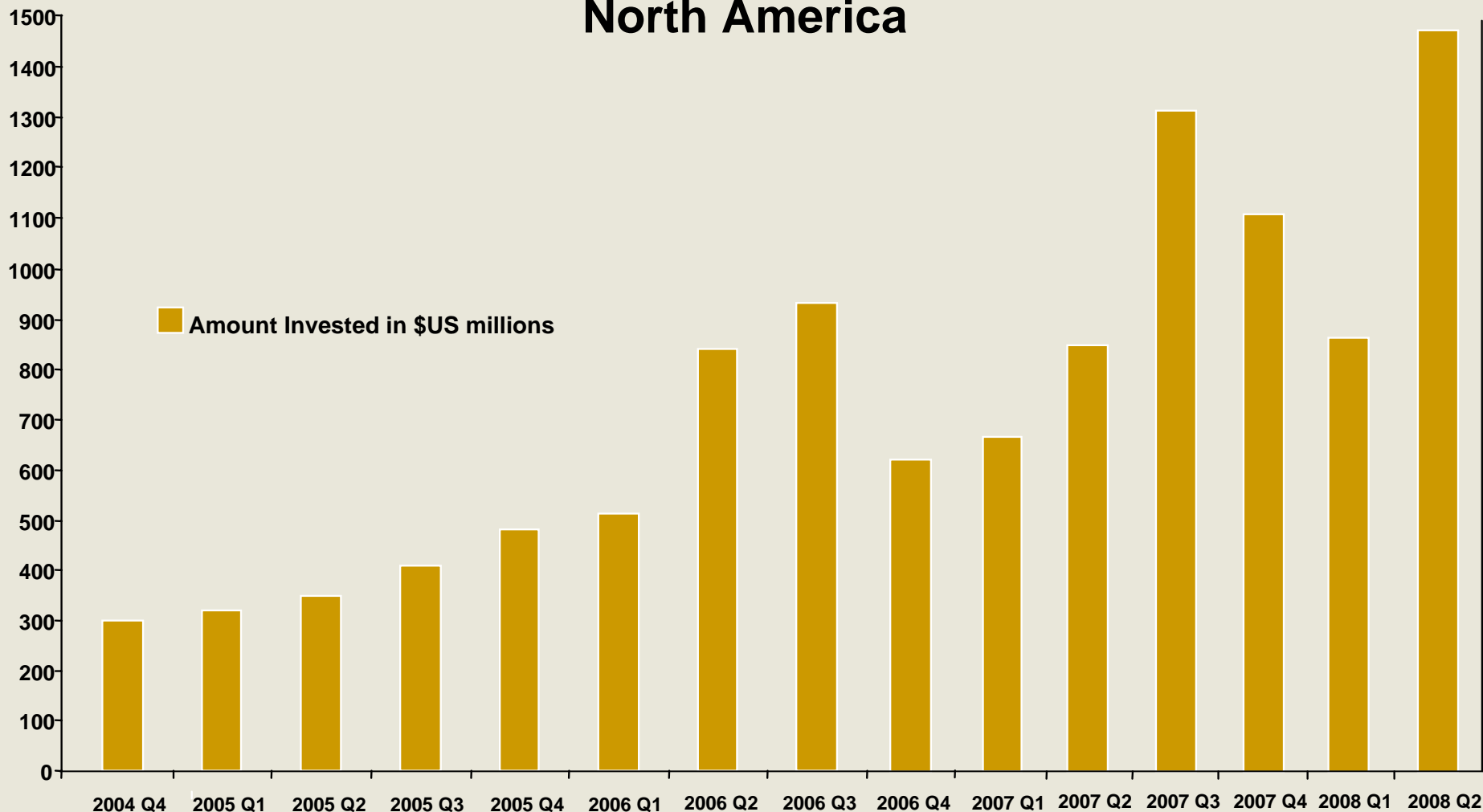
- Overview and Investment Trends
- Commercializing Large-Scale Renewable Energy Technology
- Commercializing Distributed Generation Technology

OVERVIEW AND INVESTMENT TRENDS

Perspective

- What is the goal?
 - Manage climate change and energy security
- Are we there yet?
- How do we get there?
 - Revolution in the way we produce and consume energy.
- What is required for the producer-side revolution?
 - New technologies and new business models

Cleantech Investment (Q4/04-Q2/08) North America



Source: CleanTech Venture Network



COMMERCIALIZING LARGE-SCALE RENEWABLE ENERGY TECHNOLOGY

Commercialization Challenges

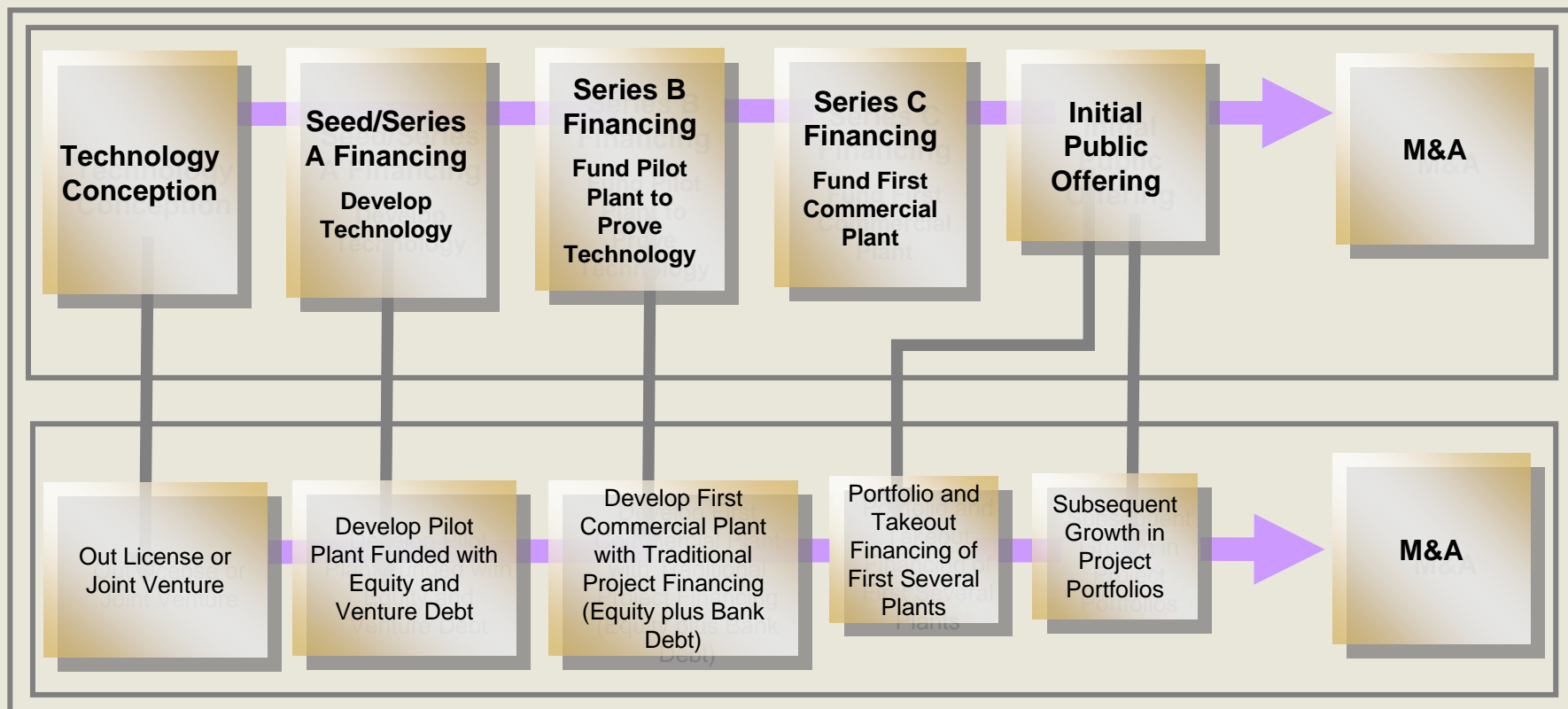
- Different from software, Internet companies
- Long, expensive, and risky process of:
 - Technology refinement and IP protection
 - Engineering and proof of concept
 - Scale-up
 - Commercial development
 - Project development
- Uncertain policy support

Representative Sectors

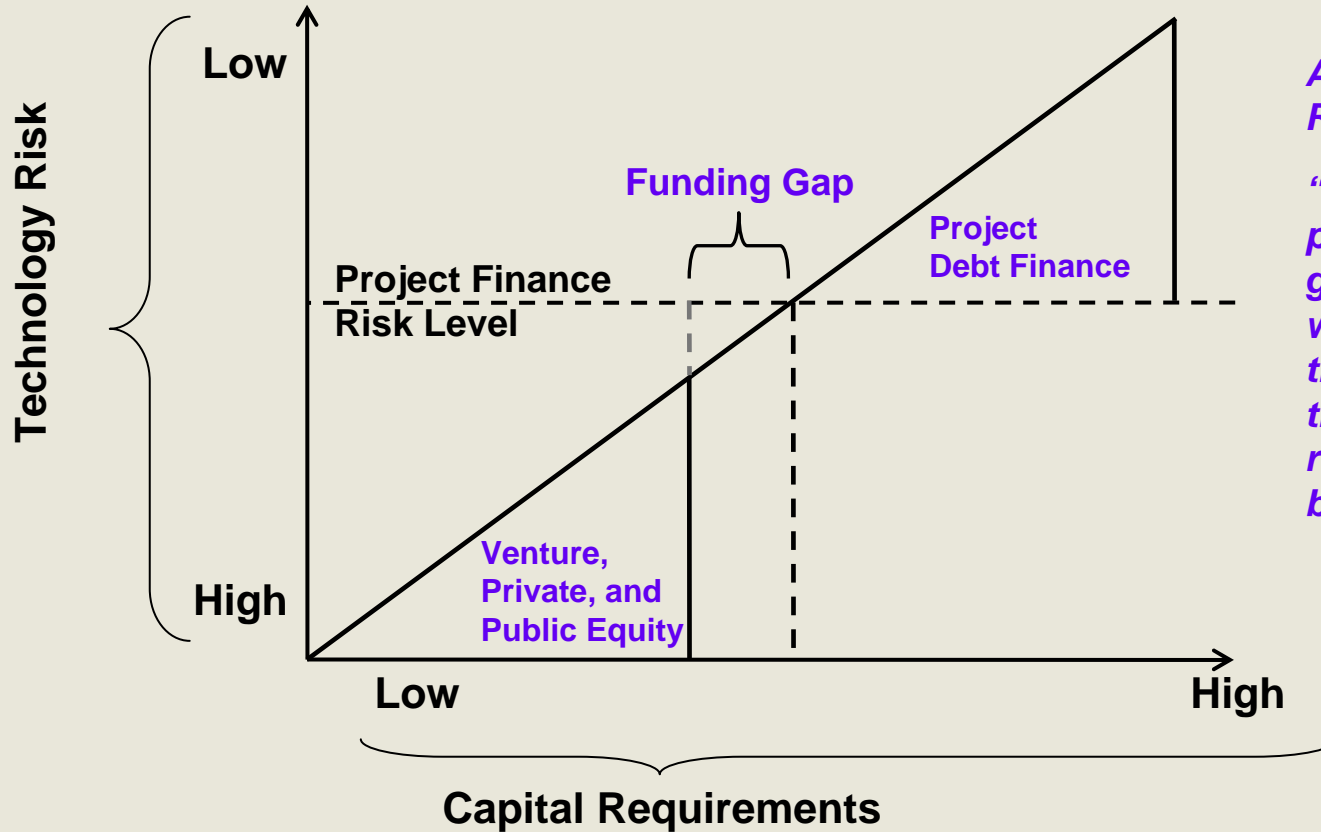
- Solar Thermal
- Thin Film Solar
- Biofuels

The Financing Life Cycle Is Fundamentally Different

Project-focused clean tech companies require a combination of traditional corporate finance and project finance



The Funding Gap Problem



Actual Quote from Recent Deal:

“We like the product, but can't get comfortable with the terms of this paper given the inherent equity risk of the business.”

Funding Solutions: Private

- Extended and Syndicated Venture Rounds
- VC-Equity Fund Affiliation
- Venture and other Higher-Risk Debt
- Strategic Partnerships

DOE EPAct Title XVII Loan Guarantees

- \$38.5B appropriated in FY08 for loan guarantees
- \$10B made available for renewable energy and energy efficiency projects
- Applications due 12/31/2008
- “New or Significantly Improved Technologies”

DOE EPAAct Title XVII Current Pipeline

- 143 pre-applications submitted in response to 2006 DOE solicitation
- 16 projects invited to submit full applications
- 4 projects have submitted applications
- No loan guarantees have been issued

DOE EPA Act Title XVII Current Pipeline

- Solar (2 projects selected to apply)
 - Solyndra – Thin-film solar modules
 - Luz II – Concentrating solar-thermal
- Biomass (6 projects selected to apply)
 - Alico – Commercial cellulosic ethanol
 - Endicott Biofuels – 2nd generation biodiesel
 - Choren USA – Biomass gasification facility

2007 DOE Commercial Biorefinery Grants

- 6 Projects selected in 2006 for negotiations with DOE for \$385M in grants from 2007-2011.
- Under construction
 - Range Fuels Inc. - \$76M received from DOE
- Granted Phase One awards
 - BlueFire Ethanol Fuels
 - POET Energy
 - Abengoa
- Cancelled/Suspended
 - Iogen
 - Alico

DOE Solar America Initiative

- PV Incubator Program
 - VC Level Funding
 - Administered by NREL
 - 2007 Funding: \$10.1M provided to 10 businesses
- Technology Pathway Partnerships (TPP)
 - Systems Development
 - Administered by Golden Field Office
 - 2007 Funding: \$34.1M provided to 11 projects
- Future Funding
 - \$170M total FY08 appropriation for solar
 - \$156M total FY09 requested
 - \$229M recommended by Senate Appropriations Committee
 - \$220M recommended by House Appropriations Committee

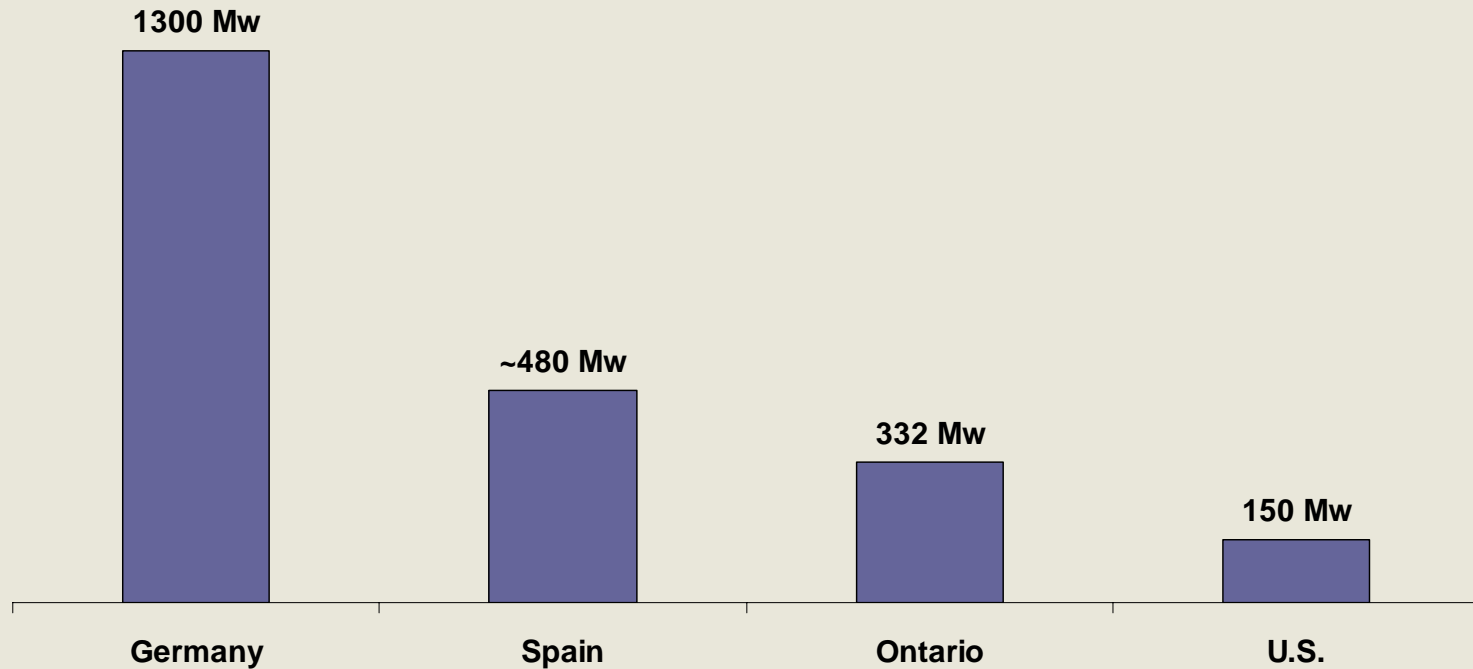
DARPA Algae-to-JP8 Program

- Goal – Spur development of low-cost algal oil production and conversion to JP8 (military-grade fuel)
- Cost Targets
 - Phase 1 cost of <\$2 gallon for triglycerides (TAG)
 - Phase 2 cost of <\$1 gallon for TAG (or <\$3 gallon finished cost at 50mmgy)
 - Contemplates construction of a facility (or multiple facilities) to produce 50mmgy of JP-8.
- Teams and Selectees
 - ~1/2 dozen teams submitted proposals Feb 2008. (large defense contractors, start-ups, universities)
 - SAIC and General Atomics
 - Selection process currently under protest

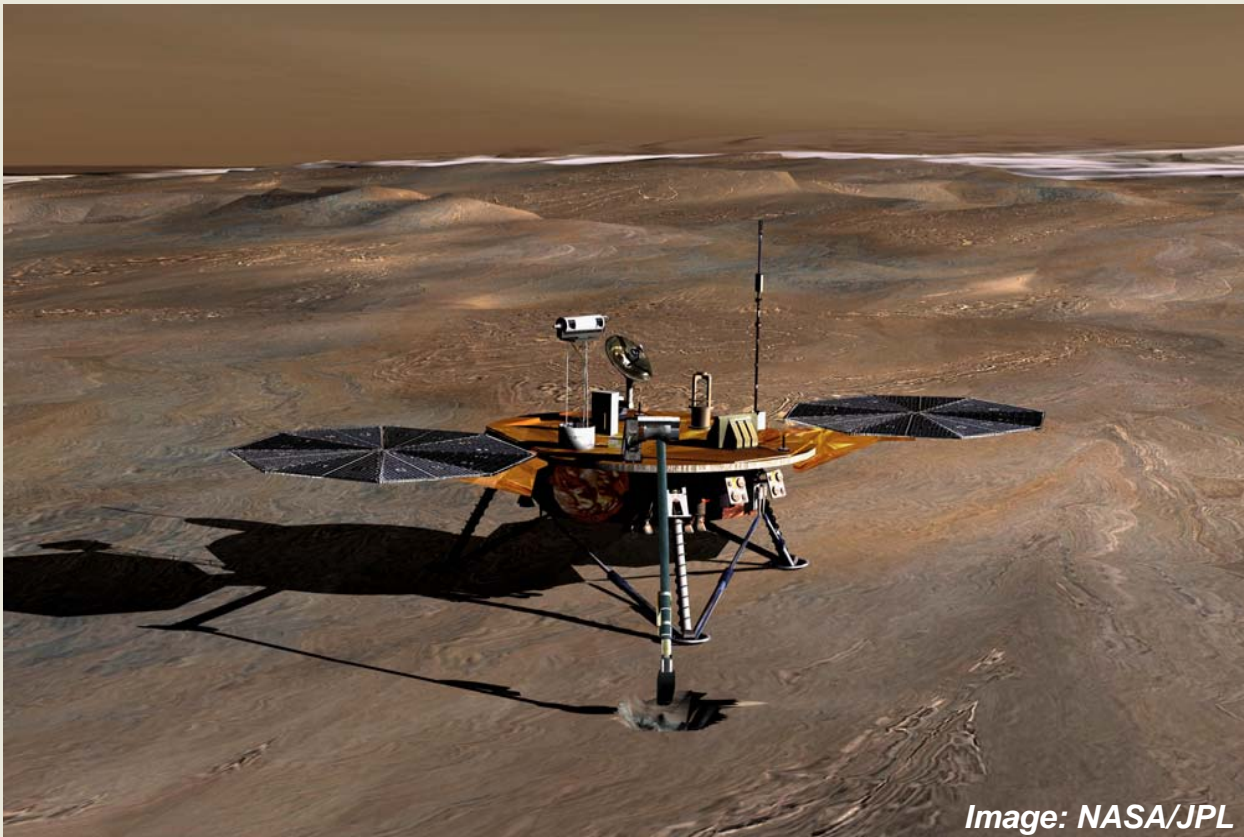


COMMERCIALIZING DISTRIBUTED GENERATION TECHNOLOGY

Solar PV Capacity Installed in 2007



Overall Legal Challenges of TPO Business



- **DG: Smooth and Simple at Point of Delivery**
- **Massive Efforts Back at Mission Control**
- **NASA-like Costs**

Image: NASA/JPL

Third-Party Ownership Goals and Challenges

- Goals
 - Improve customer status quo: cheaper, cleaner power
 - Minimize customer risks
 - Make money
- Challenges
 - Intermediation between customer, regulatory regime and financing parties
 - Address a wide variety of risks over a long term
 - Make money

Legal Drivers for U.S. TPO Business

Part I: Financial

- **Investment Tax Credit**
 - 30% tax credit when system placed in service
 - 50% “bonus” depreciation in first year
 - Use of 5-year MACRS for remaining 50%
- **State Incentives**
 - California Solar Initiative: Rebates/Production Incentives for eligible systems
 - New Jersey, Colorado: Solar Set-asides in RPS
- **Environmental Attributes**
 - RECs and Carbon Credits
 - Voluntary and Compliance Markets

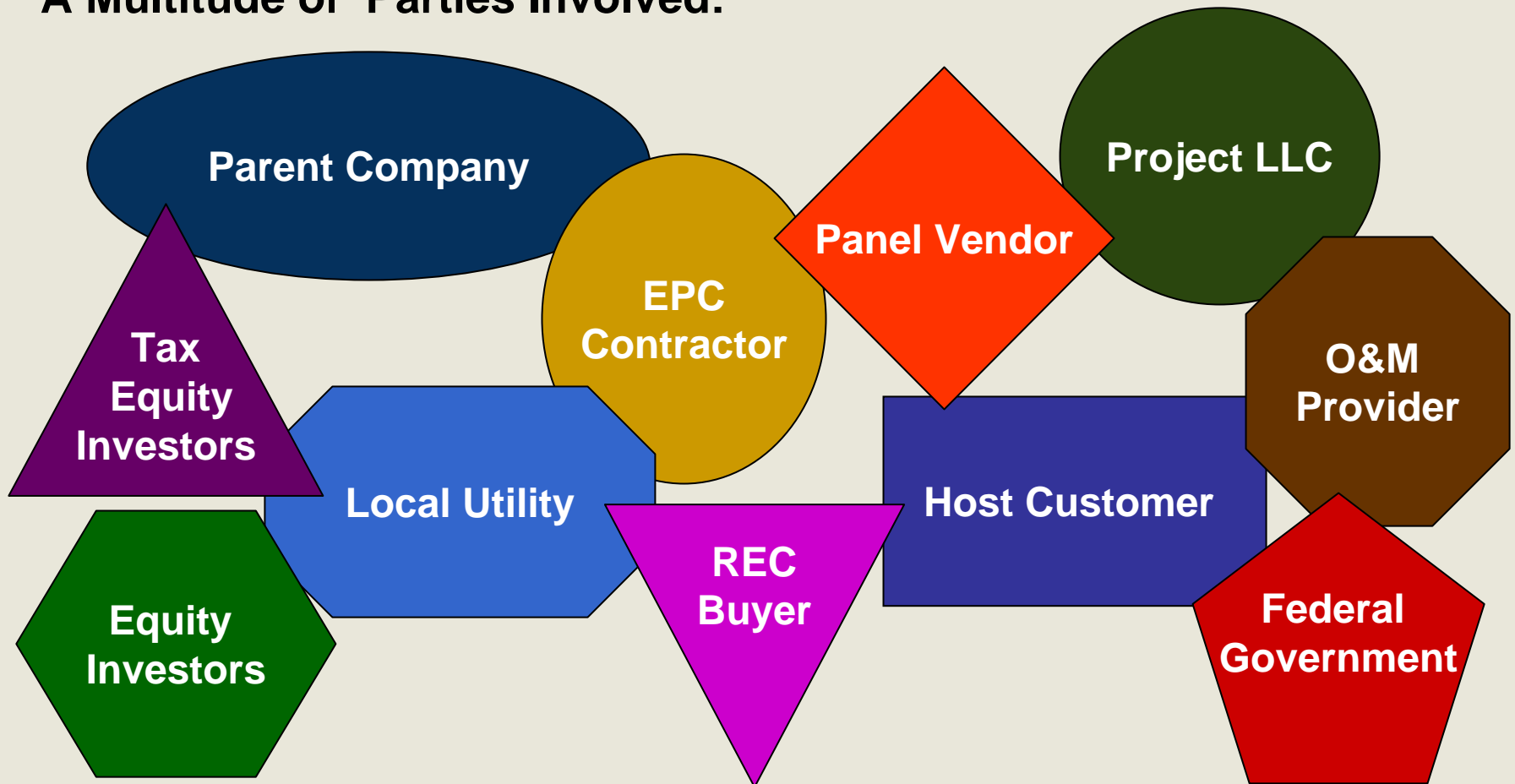
Legal Drivers and Barriers for TPO Business

Part II: Regulatory

- **Interconnection/Net Metering Rules**
 - Electrical interconnection issues/concerns
 - Safety concerns (e.g., pending CA fire safety guidance)
 - Net metering issues (system size cap; statewide cap; pricing regime, aggregation, etc.)
- **Utility Regulations Impacting Business Models**
 - Third-Party Ownership
 - ▶ States with ambiguity in definition of “public utility”
 - ▶ States with direct prohibitions of 3rd party ownership
 - Multi-Customer Service
 - ▶ Issue with public utility definition
 - ▶ States with relevant pending legislation

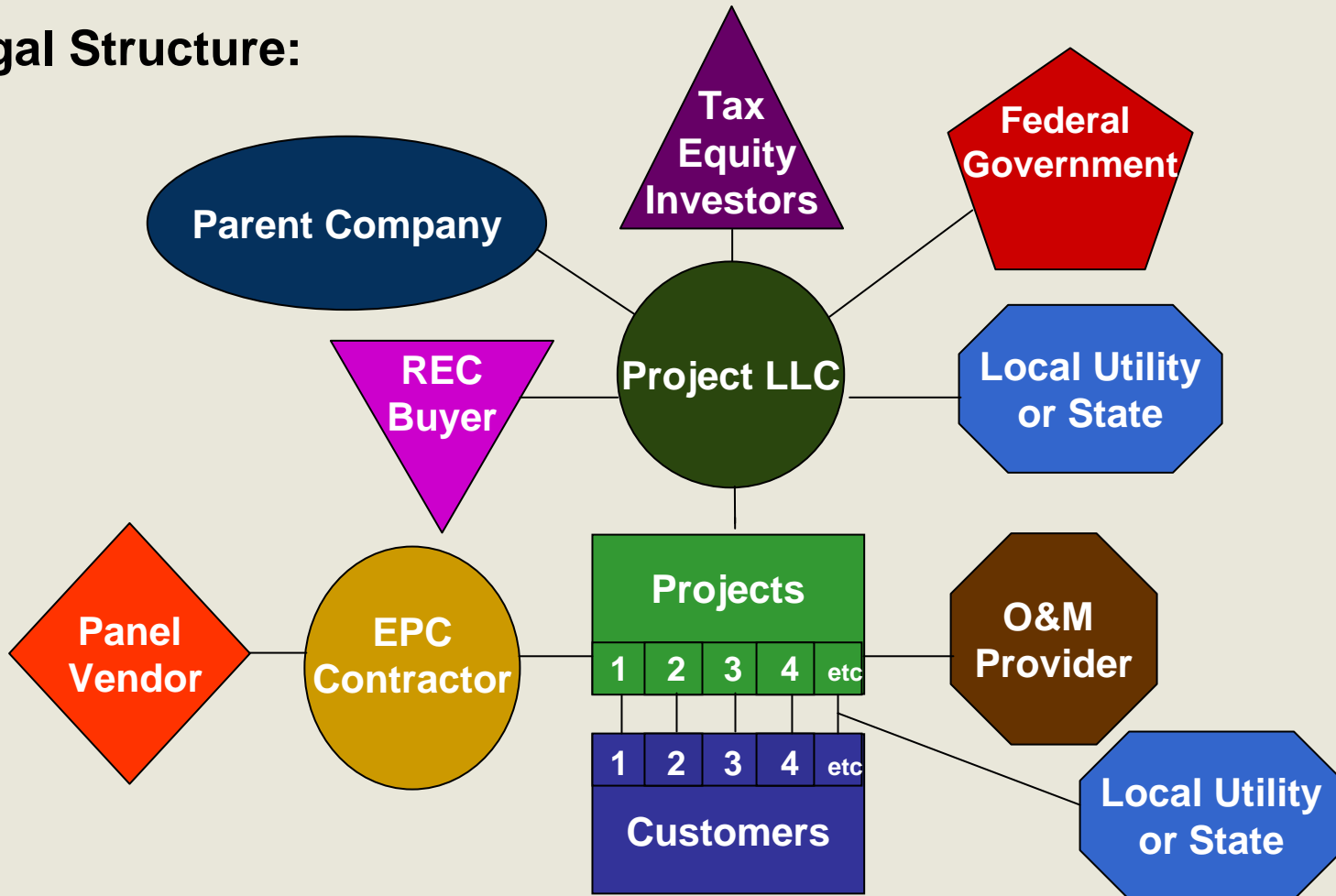
PPA Company Legal Structure

A Multitude of Parties Involved:



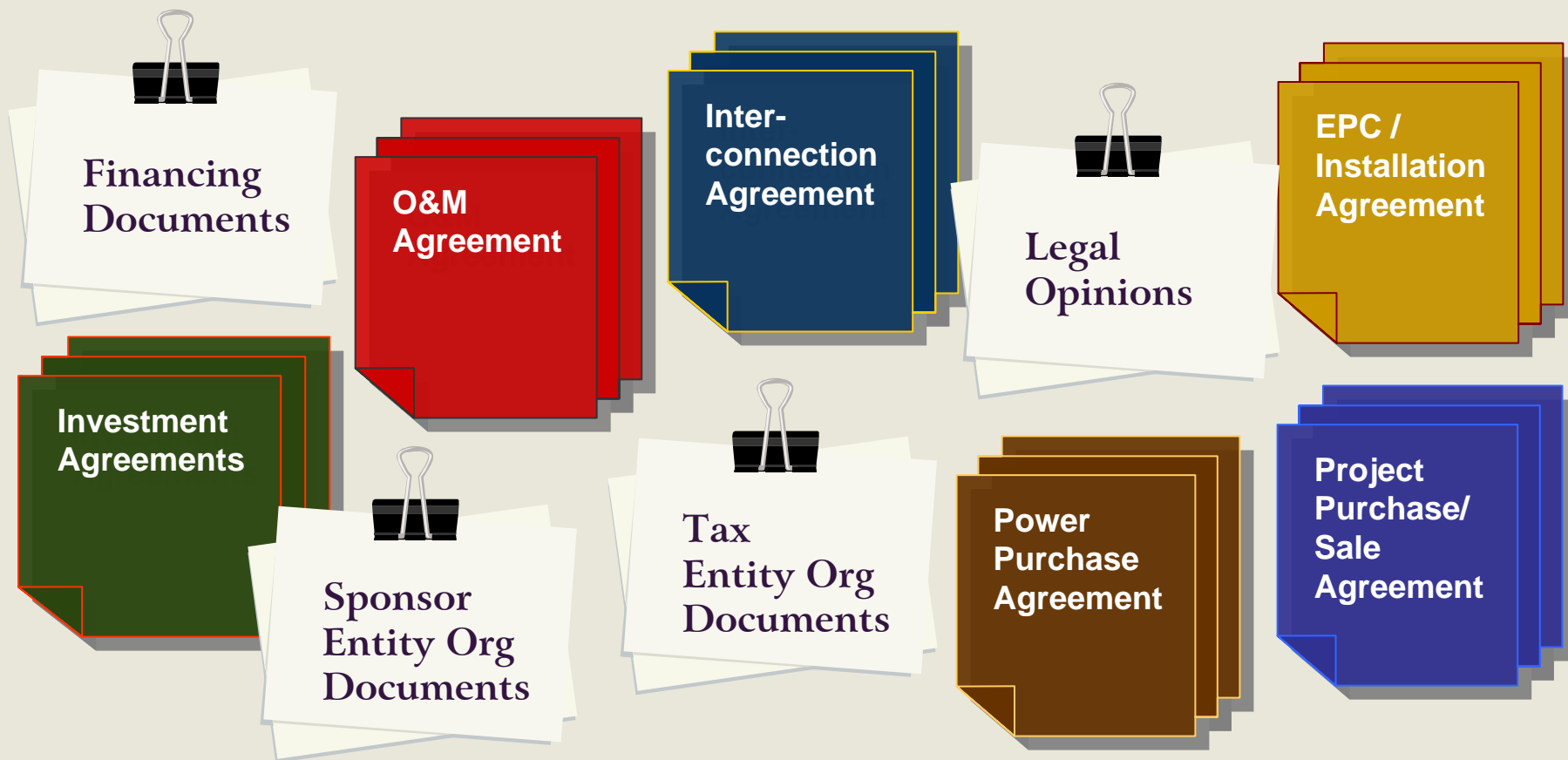
PPA Company Legal Structure

Legal Structure:



PPA Business Documentation

Representative PPA Business Contracts and Documents



Tax Structures

- Flip structure
 - T1: Tax investor has almost all ownership; sponsor has remainder
 - T2: Flip
 - ▶ Tax credits used; recapture period expired
 - ▶ Tax investor reaches targeted return
 - ▶ Flips to minority ownership
 - T3: Tax investor sells remaining interest
- Lease structure
 - Structure
 - Rationale



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