

Presentation to CPI Workshop

The risks of investing in climate

The headline

- 2009 venture investing in cleantech only slightly below 2008.
- 2009 infrastructure investing down about 30%, but picking up in 2010
- But
 - Driven by very specific opportunities eg German feed-in tariff
 - Focused in a small number of expensive sectors
- The headlines hide just how dire the financing situation is

The Risks of Climate Investing

- Lack of regulation risk
- Expiring regulation risk
- Change in regulation risk
- Lack of counter parties (ie not enough, right kind investors)
- Next round financing risk
- Large scale debt financing (including tax financing) risk
- Demonstration project financing risk (particularly true for emerging infrastructure technologies)
- Liquidity risk
- Transaction complexity or details
- Returns uncertainty risk (mainly in energy efficiency)
- Unfamiliarity risk

Impact of these risks

- Case 1: Utility in Europe
- 263 MW wind portfolio, fully permitted, signed off-take agreements, half built
- Utility wants to move asset off their balance sheet, will retain 45% interest.
- Selling 55% stake to equity investor for 11-14.5% cash on cash return; with leverage investor can get 16-18% return
- Utility wants right to buy back from years 5-7 so no liquidity until year 7
- What's wrong:
 - Regulatory change risk
 - Small number of potential investors
 - Unfamiliarity risk for others

Impacts

- Case 2: Excellent solar project developer in Western US
- 250 MW projects with land, permits, transmission and draft PPAs, another 750 MW in development
- Offering \$15m senior debt into development company with fixed 3x return, callable in four years
- Option to invest \$45m in larger projects at fixed 14% cash on cash return, soft option to invest up to \$500m in 2-5 years at normal project returns (market but probably 8%).
- What's wrong
 - Uncertain regulatory environment
 - Tax equity financing uncertainty
 - Transaction uncertainty (PPA contracts)
 - Unfamiliarity risk

Impacts

- Case 3: Energy Efficiency in Ireland
- Meat packing factory with large scale refrigeration, industrial engines, etc.
- EE upgrade would cost €976,000 and safely yield annual savings of €480,000; additional upside from use of tallow as a biofuel for power generation. Equipment comes from several vendors, each of which is thinly capitalized.
- Owner believes in the savings but can't allocate €1m capital; banks unresponsive; doesn't fit VC model; so no money
- What's wrong
 - Policy
 - Returns uncertainty risk

Impacts

- Case 4: Waste “black liquid” to biofuel in timber industry
- 100% waste black liquid from pulp and paper processing. Economic process to turn into biofuel at lower cost than corn ethanol. Very well regarded management team, good venture investors, strong government R&D support
- Demonstration plant must be built next to a P&P processor at cost of \$1 billion
- What’s wrong
 - Transaction complexity
 - Returns uncertainty
 - Unfamiliarity

Add

- Emerging market risk
- Local legal frameworks risk
- Currency risk
- Technical risks (ie grid interconnection)
- “System” risks (ie can’t build power in North Africa without a similar investment in a grid, and can’t build a grid without financed solar projects)

Why aren't governments stepping in

- [Phantom regulation]
 - Renewables mandates
- [Poorly designed regulation]
 - US loan guarantee program
 - EU NER reserve funding
 - EU and UK CCS support
- [Phantom government funding support]
- Crowding out the private sector

The list will go on

- Large scale infrastructure
 - Desertec and necessary grid upgrades
- Innovative Technology
 - New solar, tidal or other infrastructure

The results will be

- Delay
- Costs higher than the cost curve (excludes “transaction costs”)