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
• 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”)