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 (i.e., 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 is 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)