



California Clean Energy Fund



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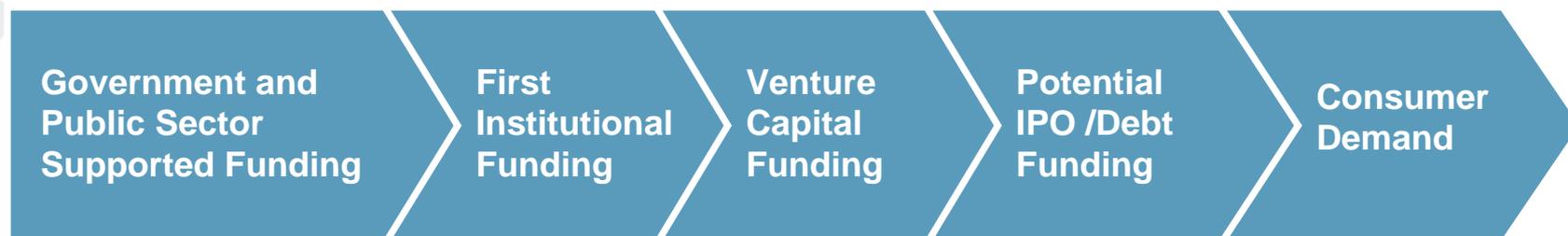
Investment Climate and the Status of VC Investing in CleanTech

Economic and Technology Advancement Advisory Committee

Sacramento CA April 29th 2009

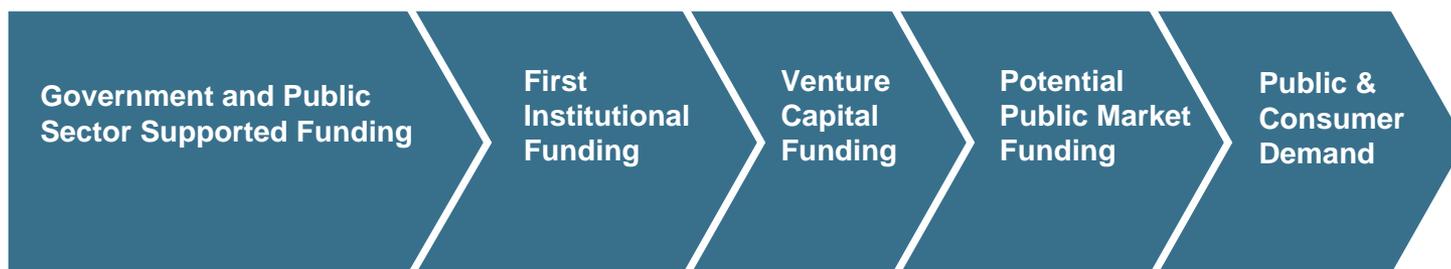
Dan Adler, President, CalCEF

The Continuum of Technology Development



- New technologies must navigate most, if not all, of these stages
- Each stage presents different policy, technology and financial challenges
- No technologies remain unchanged through this cycle; no entrepreneur has mastered the dynamics of each stage; no financier is comfortable with the risks inherent in each category
- This process is essential to the energy challenge - and may be more difficult than for other technology types

CalCEF Strategies and Programs - Close the Gaps in Clean Energy Finance



UC Davis Energy Efficiency Center

- Commercialization focus
- Window on new technologies
- Business partner outreach
- Efficiency awareness

Seed Funding and Strategy Development Programs

- CalCEF Angel Fund
- CalCEF *Innovations*
- Growth strategies focused on deep market knowledge
- Stakeholder outreach: PIER, LBL, PARC, NREL

CalCEF Fund-of-Funds I

- Company mentoring
- Convening meetings
- Thought leadership
- Deal flow analysis

Charles Dickens, Venture Capitalist

How is the market for CleanTech venture investing?

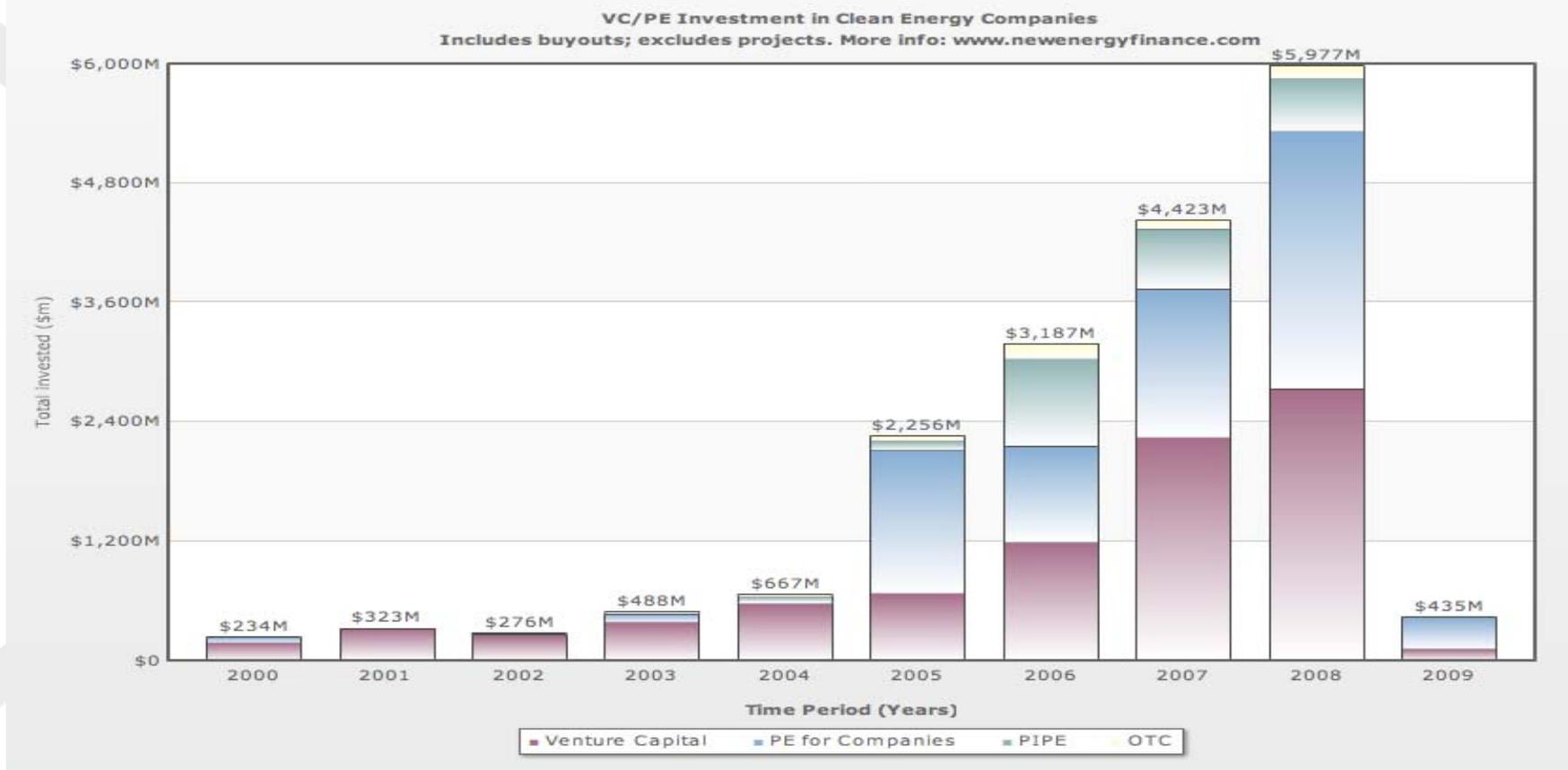
■ **One Word - Good**

- Billions under VC management, new entrepreneurs every day, a buyer's market for IP, and a surge from the Obama transition.

■ **Two Words - Not Good**

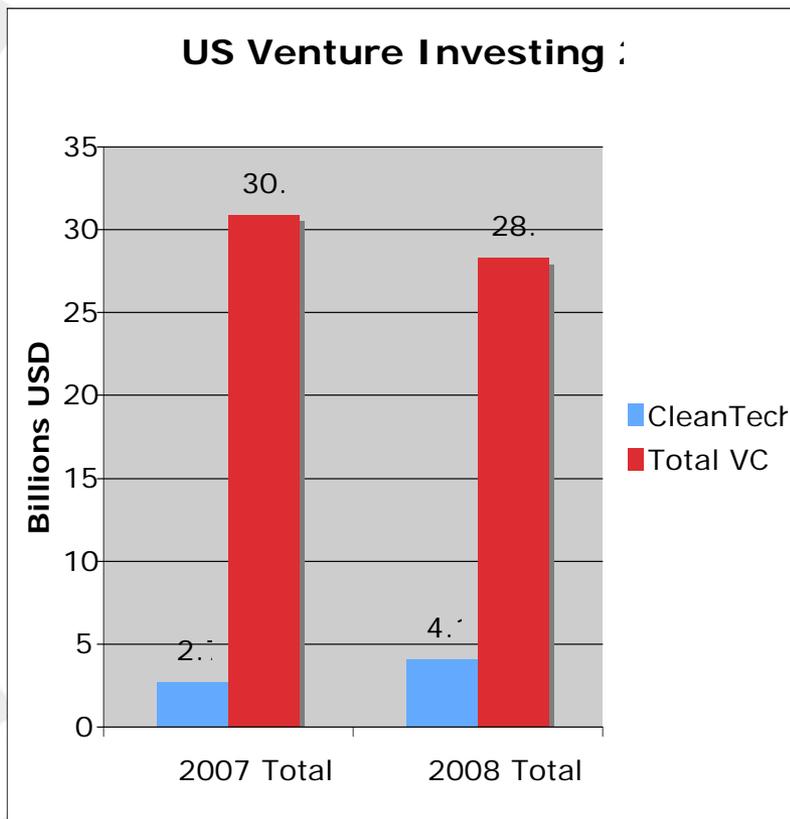
- Not enough differentiated strategy, depressed energy prices, broken debt markets, and industrial incumbents in retreat.

US CleanTech VC Since the (Previous) Bubble



Source: New Energy Finance

Recent US VC Investing slows; CleanTech is a bright spot



■ Despite the mounting turmoil of 2008, US VC investors still favored cleantech opportunities and drove substantial growth in the sector.

- 52% increase invested dollars
- 16% increase in deal volume
- 15% of all VC investment dollars, up from 9% in 2007.

■ Note: Q4 08 investment down 14% vs. Q3 - is this noise or signal? VC record is ambiguous.

Source: NVCA

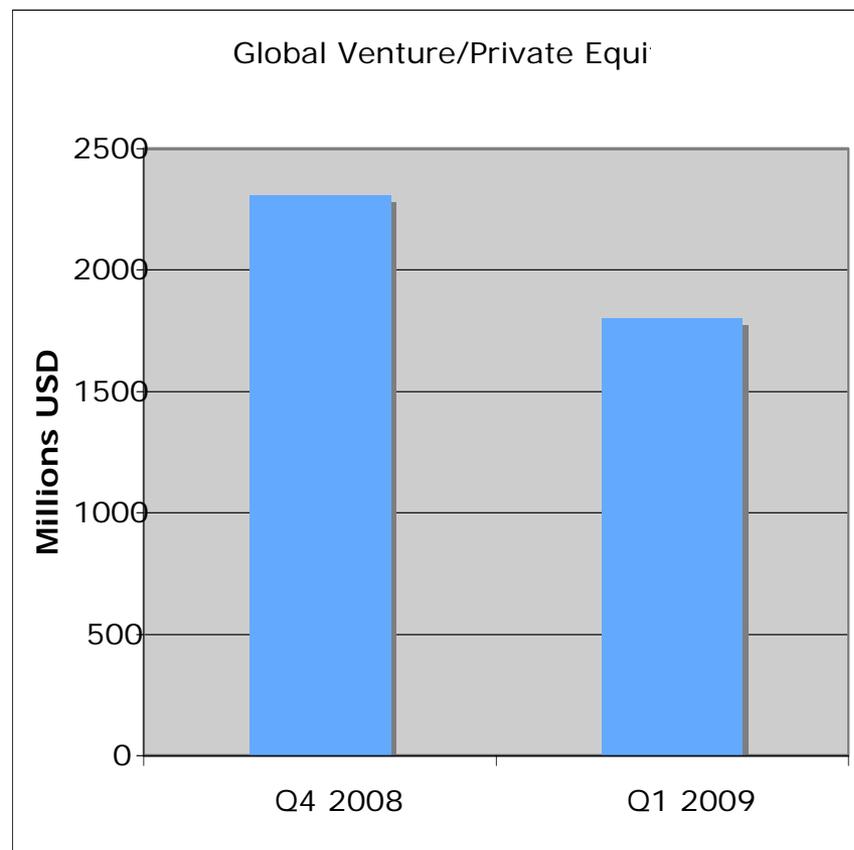
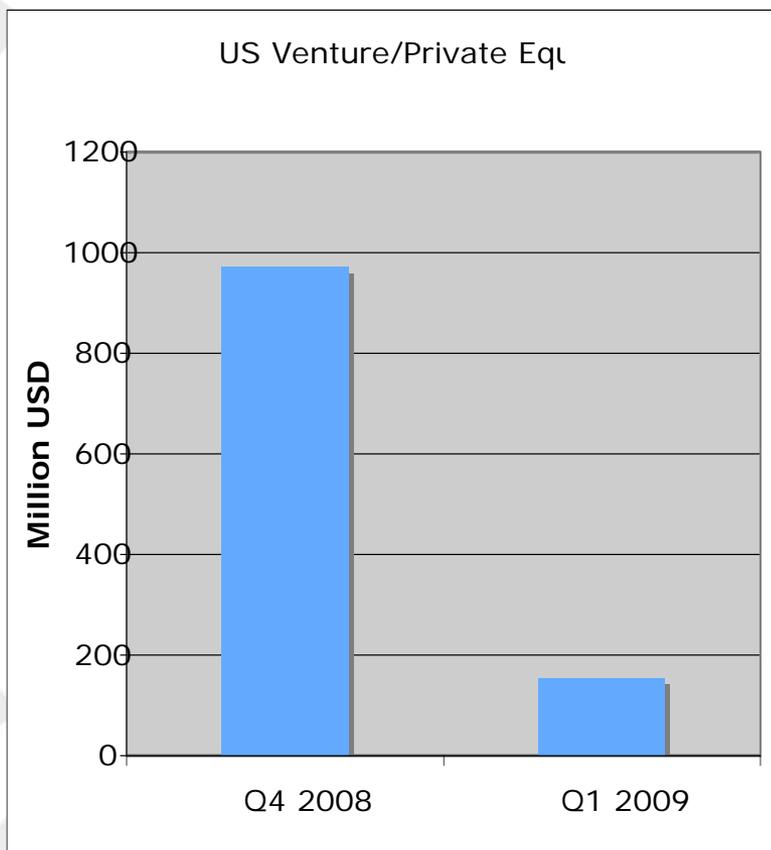
Venture Capitalists Get Nervous

- Q4 2008 heard rumblings that the VC industry should prepare for a major downturn.
 - Sequoia's "RIP Good Times" deck is "leaked", advising startups to cut costs and get to profitability ASAP, and aspiring VCs to basically forget it.
 - "Get Real or Go Home"

- Fair advice - but with a long-run challenge driven by policy changes and nascent science, how realistic is it for CleanTech?



Q1 2009: VC in Retreat



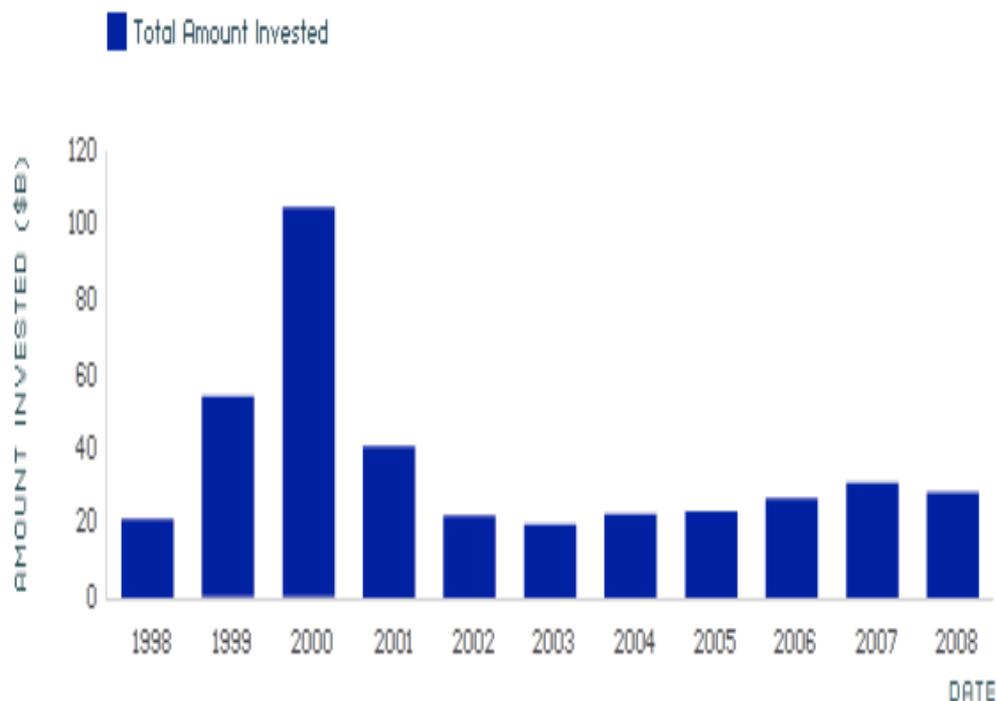
Sources: GreenTech Media (US data), New Energy Finance (Global data)

A Decade of US Venture Investing

- CleanTech has been feeling flush lately - but nothing compares to the 1999-2000 boom in IT.
- Many say we need to return to 2000-levels in VC investing to sustain the innovation we need in CleanTech.
- But is more VC what we need?

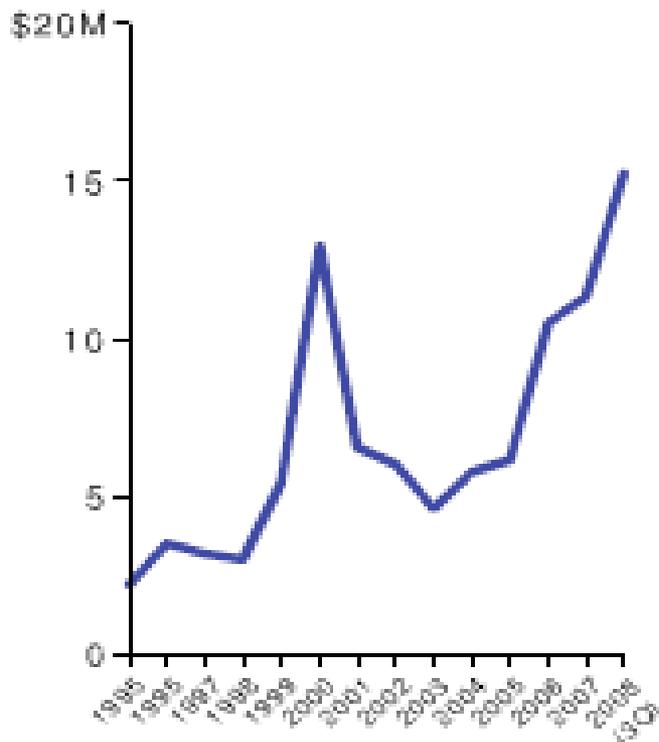
Source: NVCA

Total Venture Capital Dollars Annually



CleanTech VCs - Moving On Up

Avg. US cleantech round size
(all stages)

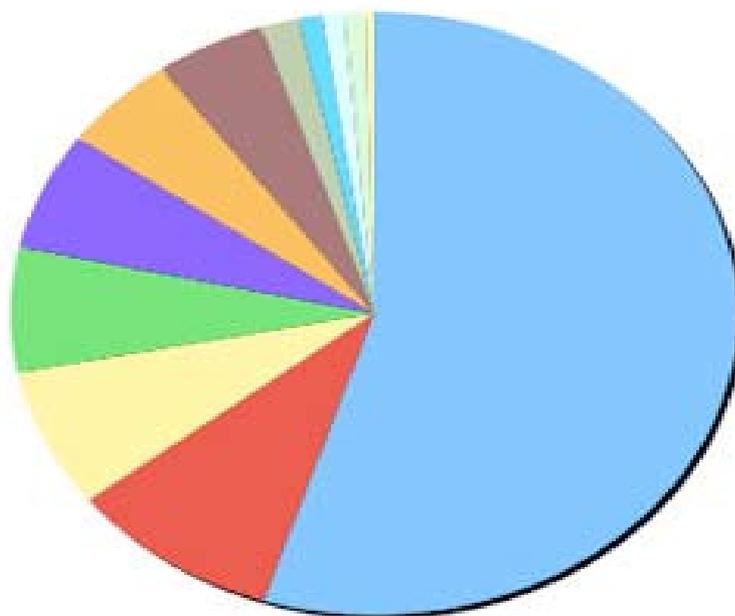


- Amounts invested in each deal have steadily increased over the past five years, even as the “imperative of innovation” has been trumpeted.
- Is this because the industry is capital-intensive, market potential huge, and companies prepared to use these funds to achieve liquidity?
- Or are VC funds too big, chasing the same deals and strategies, and leaving fundamental innovations unsupported?

Source: Rob Day/@Ventures - Money Tree

The Right Mix for Innovation?

Total 3Q VC Funding



- Solar
- Energy Efficiency and Smart Grid
- Geothermal
- Automotive, Transport
- Water Technology
- Ethanol and Biofuels
- Wind Energy
- Batteries and Fuel Cells
- Carbon and Energy Storage
- Green Building
- Green IT and Lighting
- Others

The Outlook vs. The Need for CleanTech VC

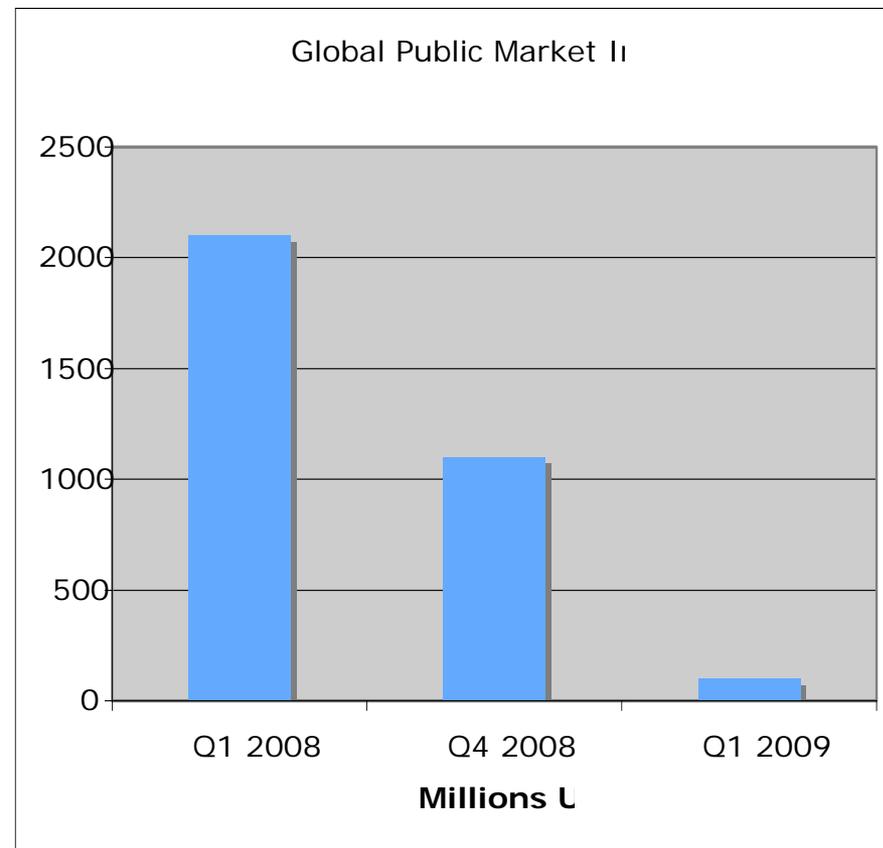
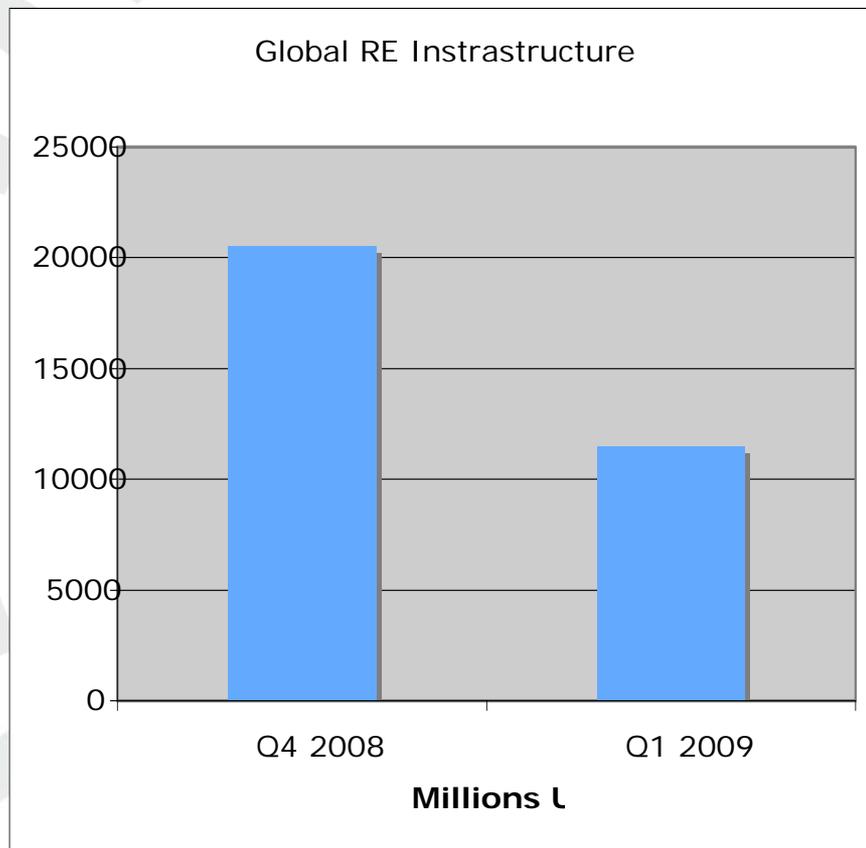
The Outlook:

- Still plenty of capital to be deployed, great teams to deploy it, and substantial innovation to invest in.
- Continuing march up-market challenges the VC model - will VCs embrace and be effective in backing large-scale manufacturing?
- New funds will struggle to get raised.
- Capital-intensive plays will be spurned.

The Need:

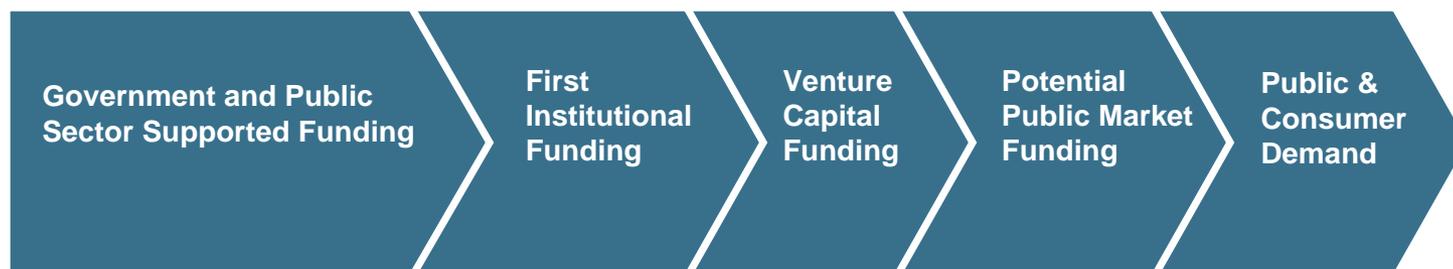
- Debt markets that work as technologies mature, encouraging risk equity.
- IPO and M&A activity that is robust and strategic, shortening paths to market.
- A different approach to deploying existing VC funds - back off the 1% chance of 20X returns model.

Other Global Indicators



Source: New Energy Finance

Stimulus Funds in Context - Targeting Key Points in the Technology Continuum



- RD&D Funds - "AARP-E": \$150b over 10 years

- Tech-Specific Grants & Tax Credits - Batteries, Smart Grid, Etc: >\$4b over 2 years

- Treasury Grants (\$32b), PTC/ITC, DoE Loan Guarantees (@\$80b)

- No Substitute...? ...policy-driven M&A?

- Direct EE spending - \$20b for federal building, low-income housing, state block grants.

- To come - RPS, ERS, LCFS

Finding the Balance

- The truth will out - certain Clean Tech VC segments were over-invested.
- The VC model plays one role in the process of technology and industrial change.
 - We should not expect everything from one type of finance.
- Policy signals *matter more than ever* -
 - The private equity world is incredibly attentive to the opportunities presented by smart, market-oriented regulations - because this is where the money is.
 - And this is where it is likely to remain, in any long-run climate and energy policy framework.
- The stimulus money, in aggregate worldwide, more than replaces the lost demand resulting from this private-sector recession.
- But it is exceedingly short-term in nature:
 - We must be good and efficient stewards of it.
 - And we must quickly produce energy and climate legislation - we have funded the program before designing it.

The Big Gap: Business Plans to Industrial Transformation

The pieces - technology, policy, finance - are in place, or starting to appear.

One version of optimization in clean energy finance:

- **Public sector:** RD&D funding is efficient and attuned to commercialization; demonstration risks are supported; infrastructure costs are socialized where appropriate
- **Angel investors:** Patient capital with deep industry experience
- **Venture funding:** Focused on sub-sectors and specific paths to market
- **Demonstration finance:** Take risks out of the equation and get to scale
- **Project funding:** Partner with public policy drivers; match long-term revenue to long-term return requirements - i.e. pensions and bonding authority.

ETAAC can and should play an active role in bringing this to pass.



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