

European Institute of Innovation and Technology (EIT)

“Shaping the Knowledge and Innovation Communities (KICs) -
Climate Change Mitigation and Adaptation”

A Venture Capital Perspective

Patrick R. Burtis
Amadeus Capital Partners Ltd.
16 March 2009 - Madrid

Agenda

- Amadeus and Venture Capital Introduction
- Cleantech Investment Trends
- Engaging with Venture Capitalists
- Impact of the Financial Crisis

Amadeus Capital Partners, Ltd

- A leading European technology venture capital firm
 - Founded 1997, with offices in London and Cambridge, UK
- £460m under management
- Invest in UK, Europe, and Israel
- Have invested in ~70 companies in 11 years
- Focal sectors
 - Telecoms, ITC, Semiconductors, Med Tech, Cleantech
- Interesting 'cleantech' deals:
 - GreenRoad, Nujira, Power Paper, Power ID, Plastic Logic



What is Venture Capital? (1/2)

- VC firms raise funds from LPs (limited partners) and invest on their behalf
 - Charge a fee and share the profits
- Invest in technology-based, private start-up companies
- Varied focus: specialist vs generalist, “early” vs “late” stage, etc
- 10 year fund life typically = 3-7 year investment horizon
- High risk (technology, market, execution), but...
- High reward: potential for >10X cash returns on winners
- Significant portion of companies don't return investment

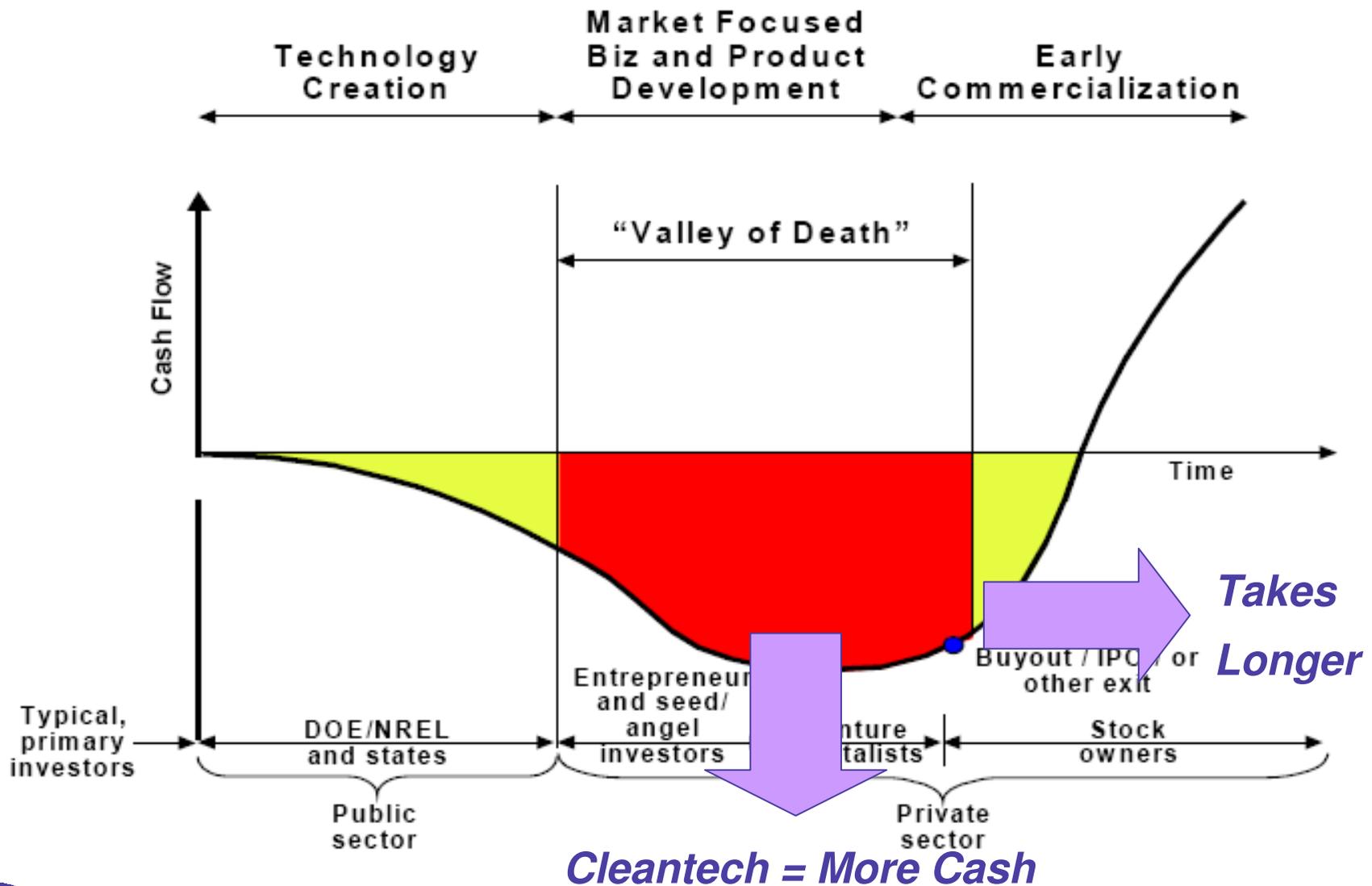


What is Venture Capital? (2/2)

- Venture Capital is different than:
 - Project finance
 - corporate venturing, corporate M&A, and corporate R&D
 - angel investors
 - government or university R&D
 - hedge funds
 - buy-out
- The goal of VC is to help build big, profitable companies and sell them, not 'flip' businesses or make money purely through financial engineering
- Most cleantech VC investors are interested in the environment, but their first priority is to generate returns for their LPs



Traditional Technology Funding Cycle



Technology Commercialization Funnel (Schematic)

Research (government, university, corporate, other)
(X000s)

Independently Commercialized
(Founders, angels, seed, university, grant)
(500-1000?)

VC candidates
(100)

VC invested (~1 in 100 for any 1 VC)
(3)

Successful exit
(1)



Agenda

- Amadeus and Venture Capital Introduction
- Cleantech Investment Trends
- Engaging with Venture Capitalists
- Impact of the Financial Crisis

Major Cleantech Categories

Energy



Water



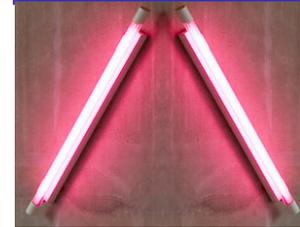
Pollution & Waste



Industrial



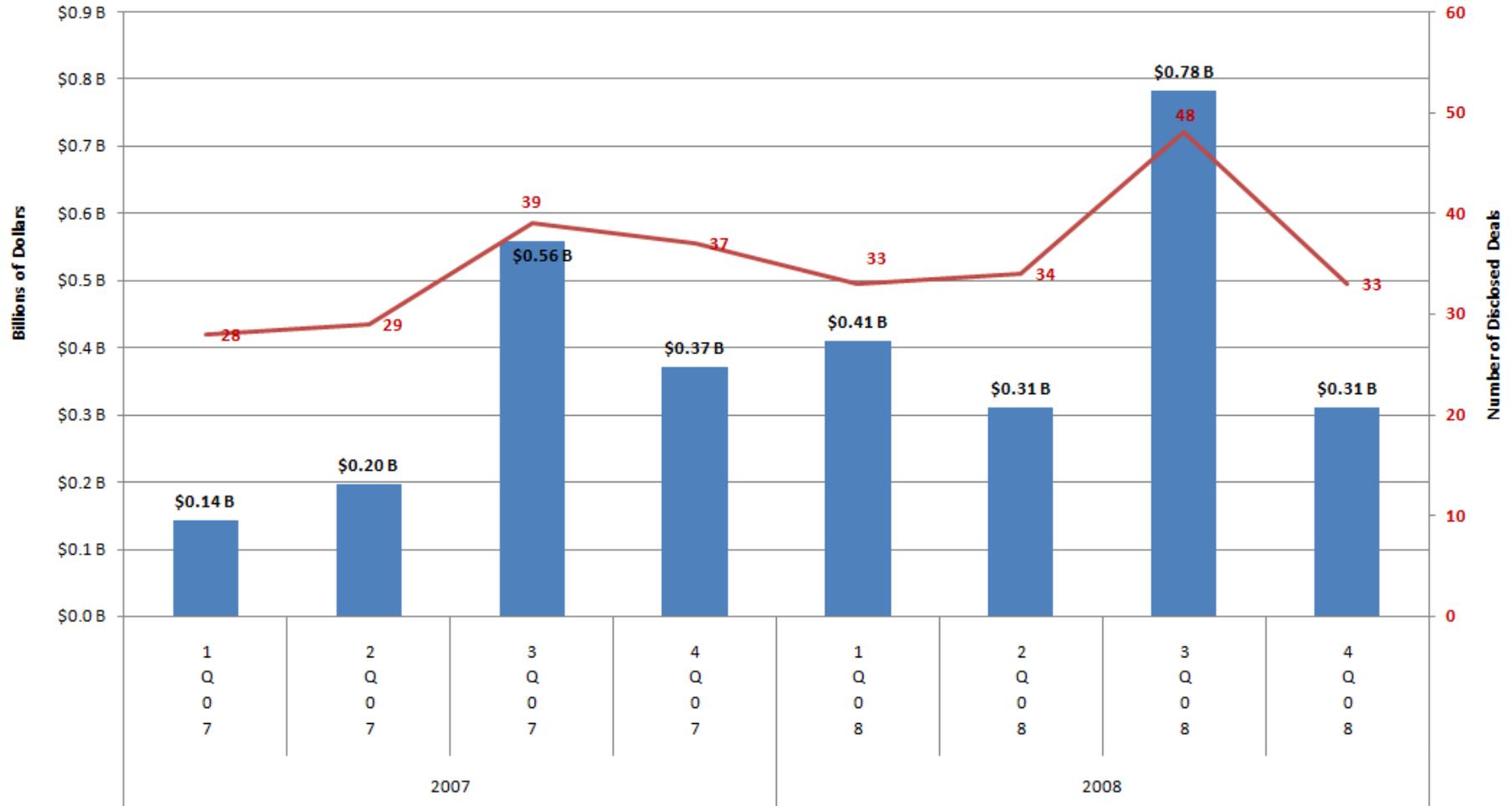
Consumer



Quarterly cleantech VC investment – North America



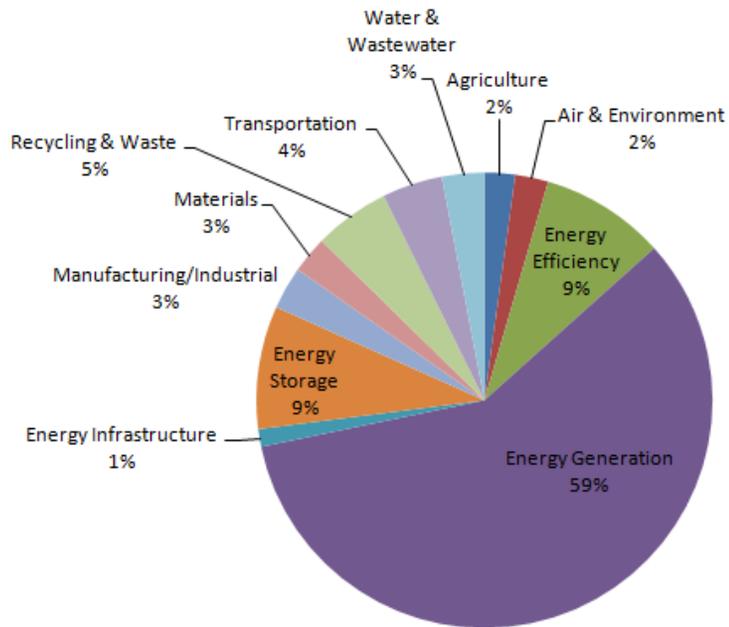
Quarterly cleantech VC investment – Europe & Israel



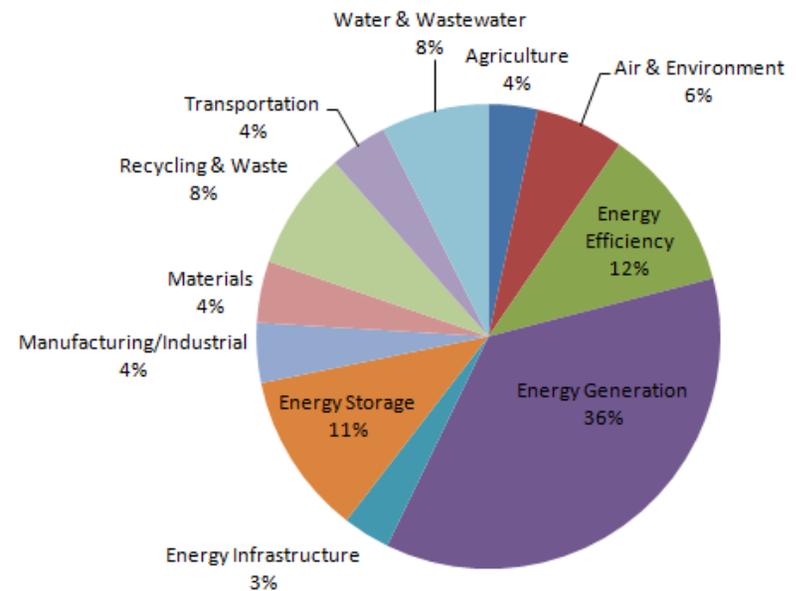
Source: Cleantech Group

Europe & Israel - Sector Distribution - H2 2008

Europe & Israel: Sector Distribution by Amount



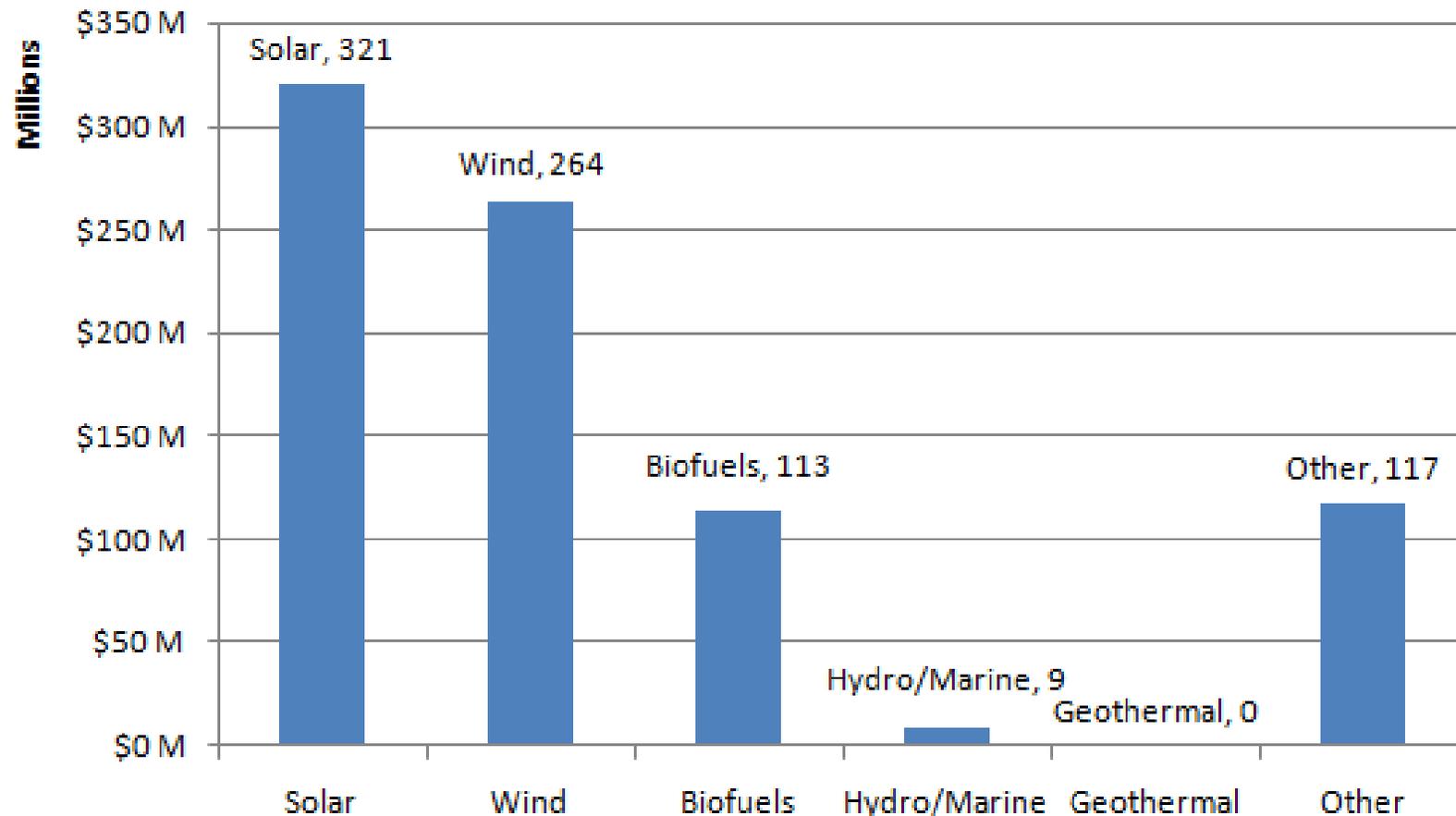
Europe & Israel: Sector Distribution by Number



Source: Cleantech Group

Europe & Israel - Energy Generation Distribution

Energy Generation Distribution by Amount - H2 2008



VC Areas of Interest (currently)

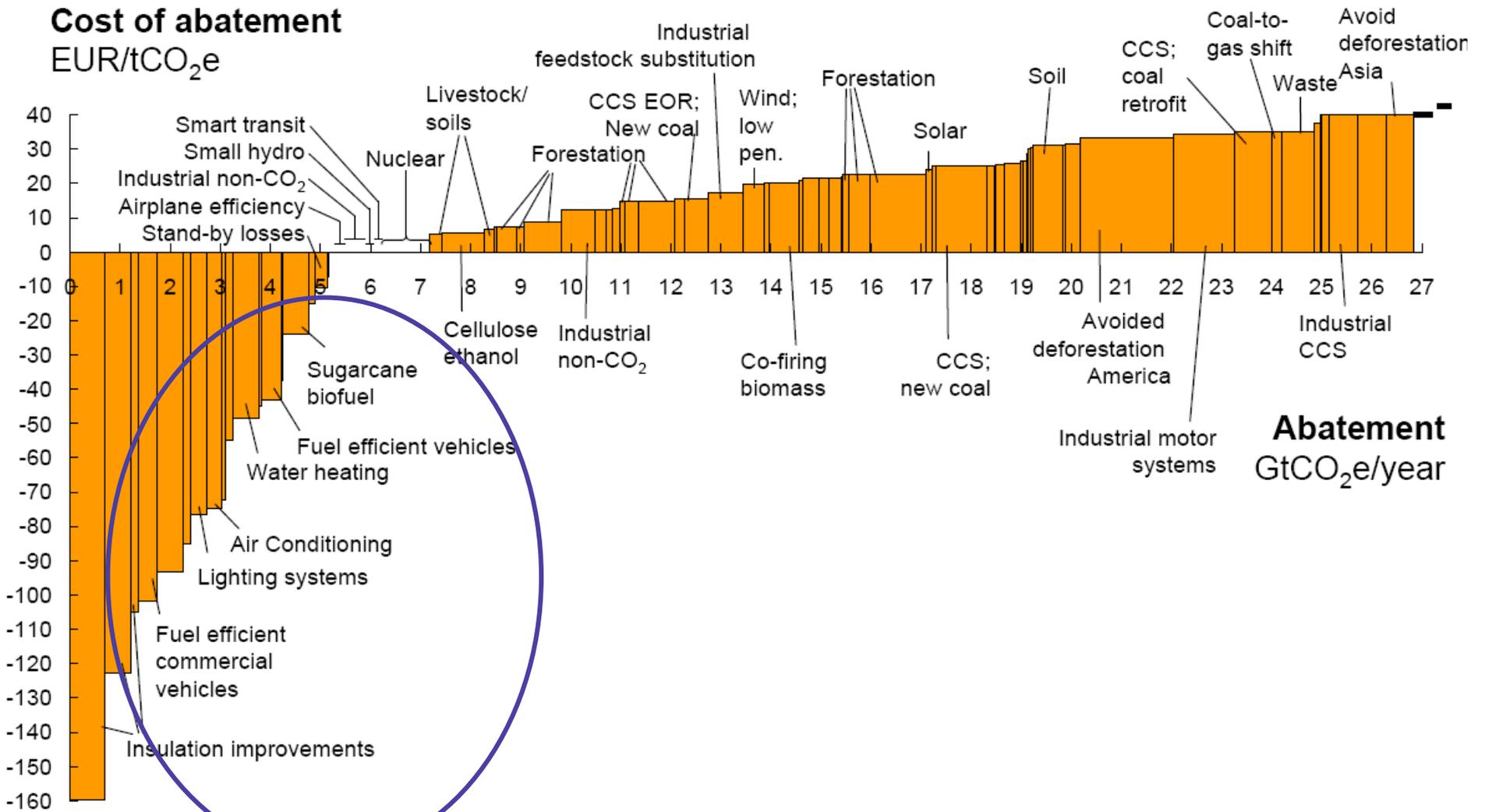
- Renewable energy generation
 - Solar, but...
 - BOS and ancillary systems for solar and wind
- Energy efficiency
- Demand response/smart grid
- Energy storage
- Waste conversion
- Lighting
- Water
- Green Buildings

Lots of differing views on this.... Which is good!



Cost of CO₂ Abatement

2030

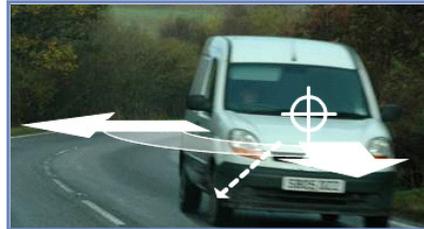


GreenRoad Technologies

1

Real time driver behavior analytics

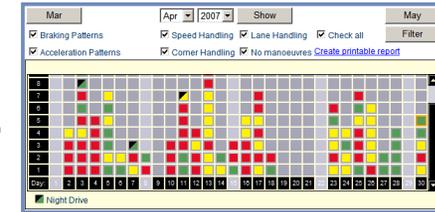
On-board sensors rate 120 driving maneuvers in real time and detect speed, time and mileage



2

Automated driver and fleet risk assessment

Driver and fleet risk scores continuously updated from maneuver data



Trip safety	4
Manoeuvres	4
Major problem	Sudden brake in turn
Duration over speed limit	0 minutes
Highest speed	No high speed manoeuvres

Time	Manoeuvres	Speed MPH	Safety level
5:00:00 PM	Trip start	-	4
5:04:51 PM	Excessive manoeuvre	Less than 18	4
5:06:57 PM	Braking	52	4
5:08:00 PM	Braking	50	4
5:11:56 PM	Sudden brake in turn	55	4
5:50:16 PM	Trip end	-	4

3

Performance specific feedback for drivers

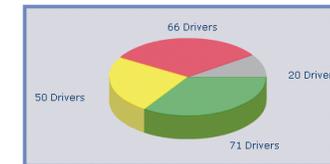
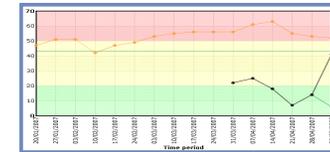
Real time in-vehicle safety feedback; SMS alerts and email reports generated from each driver profile



4

Driving behavior management applications

Web-based; Configurable business rules implement corp. policy



Acceleration Patterns	Braking Patterns	Corner Handling	Lane Handling	Speed Handling
Craig	Craig	Craig	Craig	Craig
Whites	Whites	Whites	Whites	Whites
Fleet	Fleet	Fleet	Fleet	Fleet
Manoeuvres	Manoeuvres	Manoeuvres	Manoeuvres	Manoeuvres
Accelerating	Braking	Turning	Lane Handling	Impulse Steering
	Excessive	Approach into a turn	Lane change	

~50% reduction in crash incidence (and lower severity)

5%-10% improvement in fuel efficiency = significant carbon savings



Nujira Ltd.

- Wireless network base stations consume huge amounts of power
 - Mobile network operators are major electricity consumers (top 5 In UK)
 - ~80% of the load is in the network
- Transition to 3G networks results in much lower power amplifier efficiency (eg 15%)
 - Waste heat requires air conditioning equipment and bigger base station footprint
- Nujira has developed a power modulation technology to dramatically improve the efficiency of RF amplifiers and mobile handsets
 - ~50% reduction in base station power use
 - Yields major OPEX and carbon savings



Agenda

- Amadeus and Venture Capital Introduction
- Cleantech Investment Trends
- Engaging with Venture Capitalists
- Impact of the Financial Crisis

What VCs Want to See

- Big, growing, addressable markets - \$1B+ per year ideally
- Unique and significantly advantaged technology or approach (multiples better, faster, cheaper than the competition)
- Proven or obvious customer value proposition
- Strong management team
 - Technical stars, and/or
 - Executives who have done this before
- Strong IP position
- A business model that can make money and scale up quickly
- Not too capital intensive, and 3-7 year investment period



How To Engage With VCs

- Don't spam them! Get an introduction
- Target VC firms (and individuals) who have investments (or at least interest) in your field
- Target stage-appropriate and size-appropriate VCs
- Make sure you are ready
 - Form a company, build a team, secure the IP, etc.
 - Write a thorough business plan and get outside input
 - Know the competition and industry
 - Try to tick the boxes on the previous slide
- Keep in mind how VCs operate and what their goals are
- Be candid about your strengths and weaknesses
- Be persistent and follow up...
- But be patient – VCs look at hundreds of opportunities per year and are also managing their existing portfolios
- Start early - it will take at least 6 months to get financed



Agenda

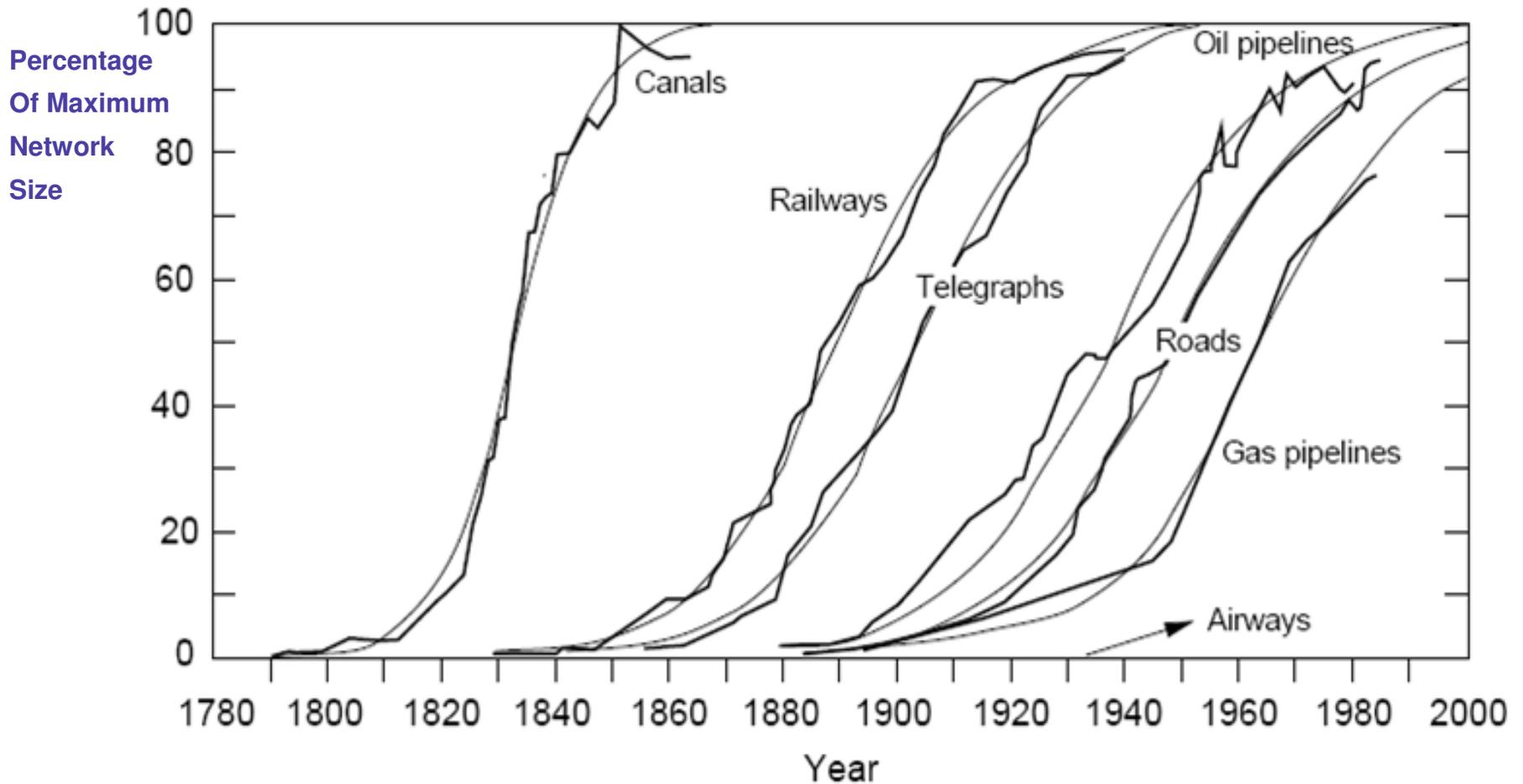
- Amadeus and Venture Capital Introduction
- Cleantech Investment Trends
- Engaging with Venture Capitalists
- Impact of the Financial Crisis

Global Financial Crisis: Effects on Cleantech and VC-backed Companies

- **Systemic shock to cleantech finance ecosystem**
 - Debt (eg project finance) is scarcer, more risk averse, and more expensive
 - VCs having a harder time raising money
 - The ‘tourists’ have gone home – no more easy money
- **VCs ‘circling the wagons and counting the bullets’**
 - Supporting existing portfolio first – can’t assume external financeability
 - Portfolio culls and radical restructurings of companies
 - Rush to late stage
 - Some good companies will go bust
- **Commodities prices are down and may go down further**
- **Valuations depressed - and in some cases unknowable**
 - Public comparables are way down - translates to startups as well
- **Exit timing unknown**
 - IPO market is dead (for now)
 - M&A proceeding cautiously, taking longer, and at much reduced valuations



The Long View



Year 5 of a 40-80 year mega-trend

Thank you

Patrick Burtis
Amadeus Capital Partners Ltd
pburtis@amadeuscapital.com