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# Canadian Fuel Cell Mission Financing and Venture Capital

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# Sources of Finance

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# Sources of Finance

## By stage of development

Growth Stage	Public Sector/ Grants	Equity		Debt	
		Private	Public	Private	Public
R & D	Y				
Pre-commercialisation	Y	Y			
Expansion		Y	Y	Y	
Mature			Y	Y	Y



# Canadian Public Sector Funding

Canadian governments have provided C\$150m over the last 10 years

- ❖ Funding for R&D, trials and demos
  - received by nearly every company visited
- ❖ NRC Innovation Centre
  - for research, development and promotion of fcs
  - six new fully equipped labs for research and testing
  - incubation and acceleration
- ❖ Fuel Cells Canada
  - the Canadian fuel cell industry association
- ❖ Canadian Transportation FC Alliance
  - set up to focus on the hydrogen refuelling infrastructure for FC vehicles

# Public Sector Funding

## Canada v Japan, USA and Europe

Region	Reported Spend	Average Annual Spend	Average Annual spend per capita
<b>Japan</b>	\$220m pa	\$220m	\$1.73
<b>USA</b>	\$200m pa	\$200m	\$0.71
<b>Canada</b>	\$100m over 10 years	\$10m	\$0.31
<b>Europe</b>	\$240m over 4 years	\$60m	\$0.16



# Public Sector Funding

## In Context

- ❖ Japan and USA spending more in absolute terms and on a per capita basis. On a per capita basis:
  - **Japan spending 5x Canada**
  - **USA spending 2.5x Canada**
  - **Europe spending 0.5x Canada**
- ❖ Spending by Japan has trebled since 1995
- ❖ Put into context, industry spend estimated to be \$3bn p a and automotive industry alone has spent \$4.5m to-date



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# Private Sector - Public Markets

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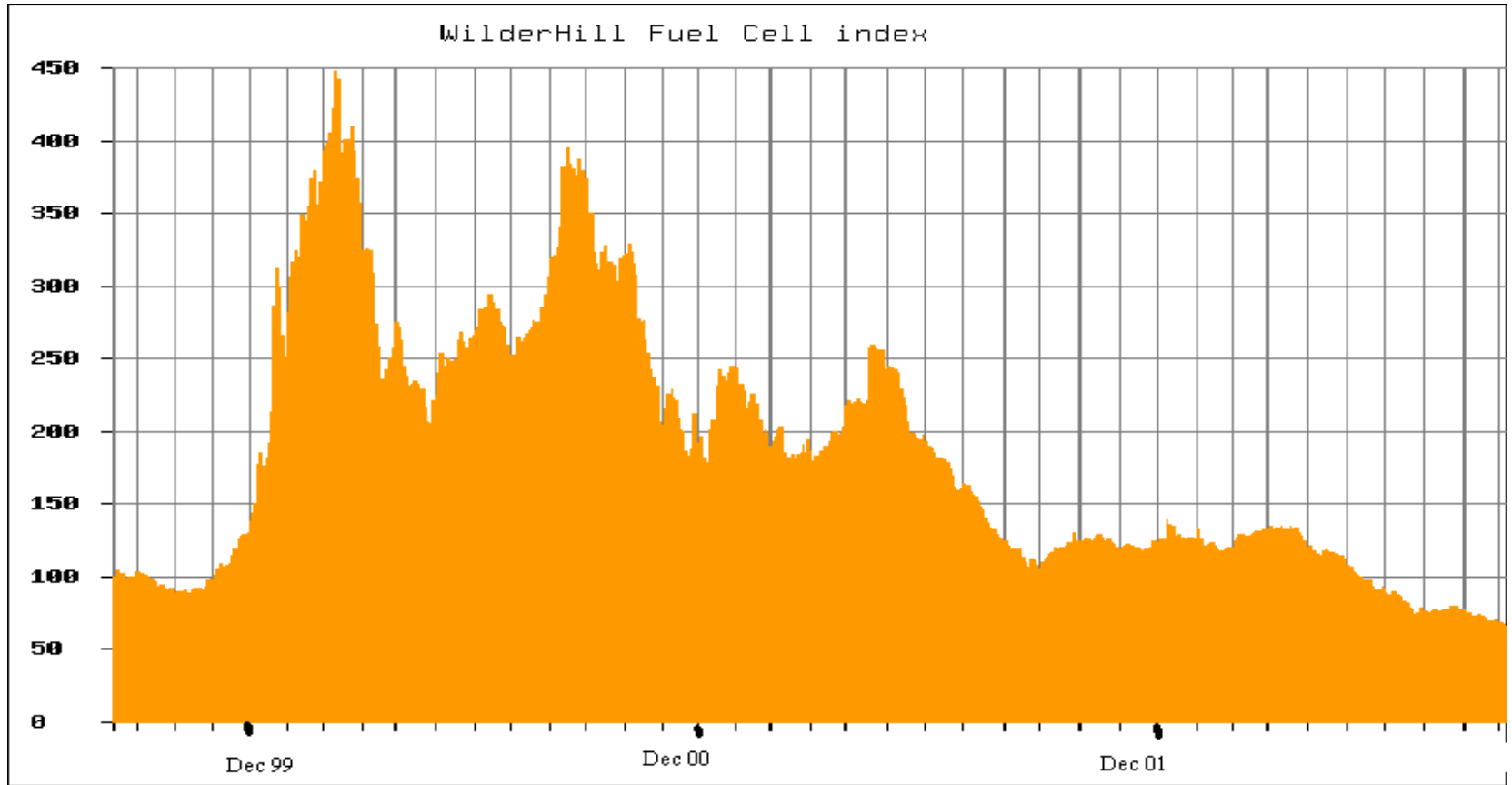
# Private Sector – Public Markets

Canadian FC companies raised nearly C\$1bn on stock markets in 2000

<b>Date</b>	<b>Company</b>	<b>Amount</b>	<b>Type of Issue</b>
<b>March</b>	Ballard Power Systems	C\$ 505m	Secondary
<b>August</b>	Global Thermoelectric	C\$ 95m	Secondary
<b>September</b>	Dynetek	C\$ 40m	IPO
<b>October</b>	Stuart Energy Systems	C\$ 150m	IPO
<b>November</b>	Hydrogenics	US\$ 76m	IPO

# Private Sector – Public Markets

## Index of Quoted Fuel Cell Companies



# Private Sector – Public Markets

## Current position

- ❖ The market value of quoted FC companies has fallen by 85% since 2000
  
- ❖ Big implications for FC companies:
  - new issues market currently closed
  
  - existing quoted companies may have to go back for more cash
  
  - the FC industry will need to demonstrate that it is real
  
  - likely to be consolidation

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# Private Sector – Venture Capital

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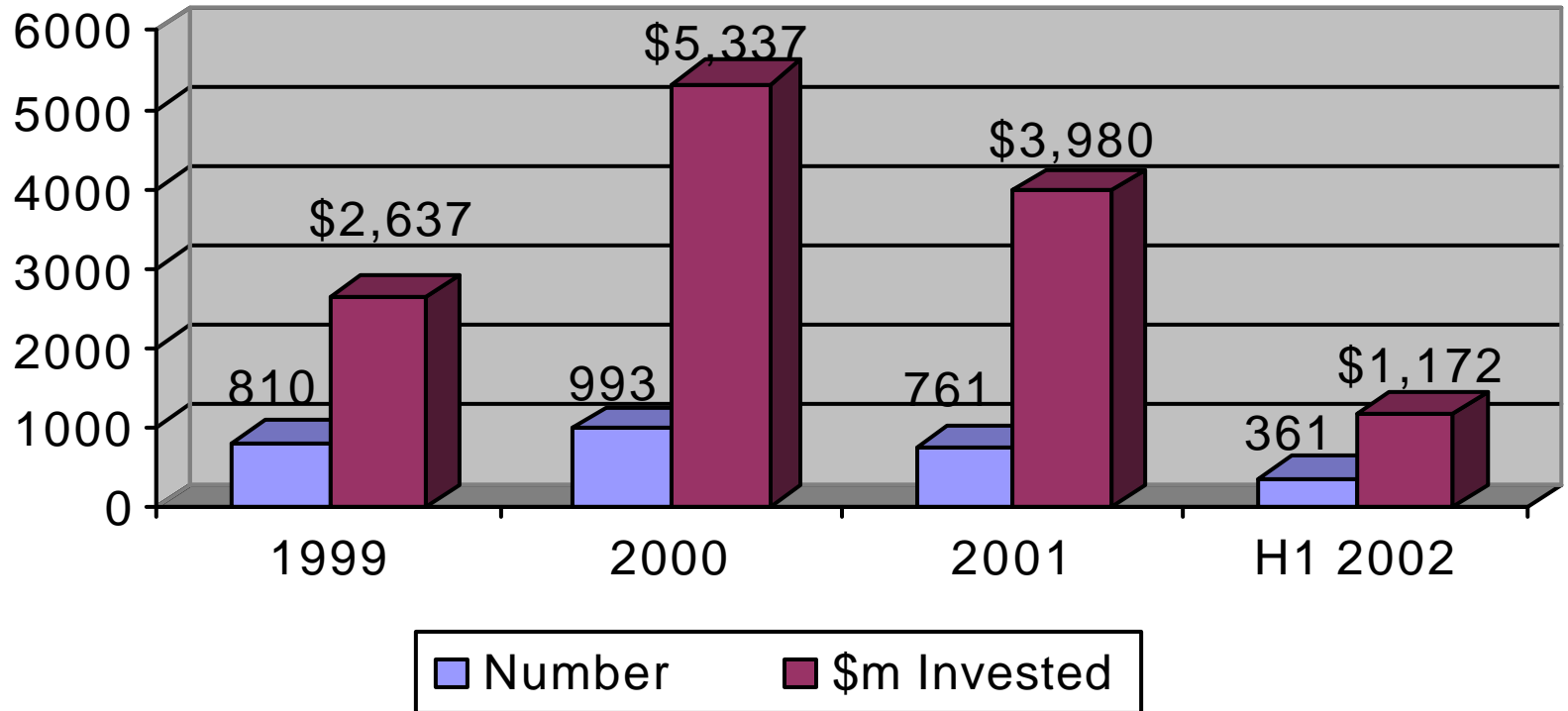
# Private Sector – Venture Capital

- ❖ Canadian VC activity peaked in 2000 and has declined to current levels, both in number and average amounts
- ❖ Investment in FC companies is only a small subset
- ❖ Only one Canadian VC focussing on FCs, five/six others with wider remit
- ❖ Surprisingly small number of specialist FC VCs given:
  - the number of FC companies in Canada
  - their growth potential
  - current depressed valuations and
  - a quoted FC sector (provides alternative exit route),



# Venture Capital Activity in Canada

VC Investment In Canada

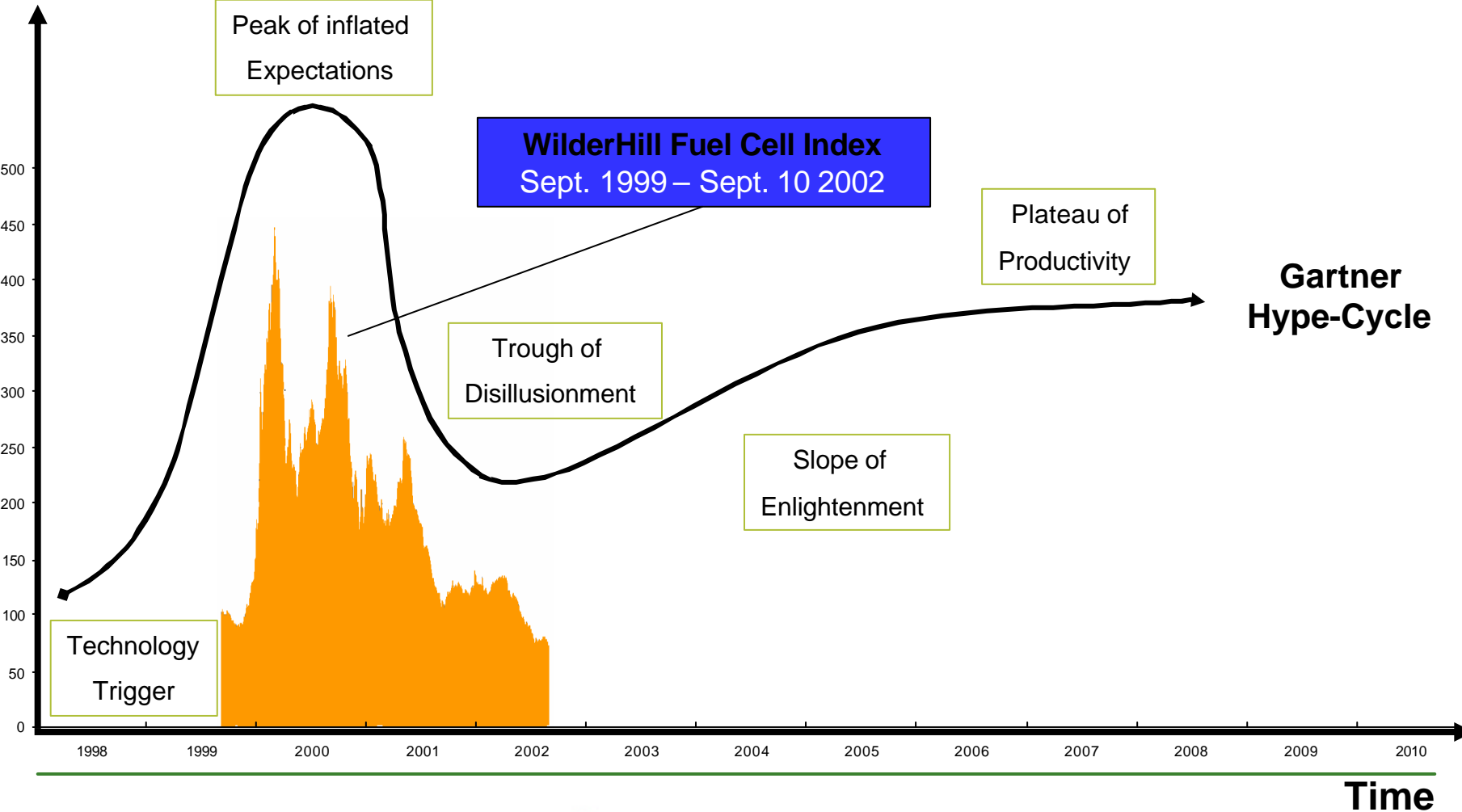


# Issues for Canadian Fuel Cell Companies

- ❖ Quoted companies have not performed, those needing more funds will need to demonstrate real progress.
- ❖ Downturn in the quoted market and slowdown in overall VC investment = slow development of specialist FC VCs.
- ❖ Companies need to demonstrate revenues so investors believe the sector is real

# The Gartner Hype-Cycle

Visibility





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# **The Future and Lessons For The UK**

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# The Future

- ❖ Availability of public and private sector funding is vital
- ❖ Fuel Cells Canada, the national fuel cells industry association, has requested C\$1bn for development from the Canadian government (US has asked for \$5.5bn)
- ❖ Canadian VCs need some high profile exits to stimulate interest in the sector
- ❖ Several quoted companies need more cash, investors will decide soon whether to support further
- ❖ Consolidation is likely

# Lessons For The UK

- ❖ Canada is a world leader in FC and governments have made funding available for years and spending is increasing
- ❖ A quoted sector exists, whilst markets are currently closed to new issues, the existence of the sector provides comfort that an alternative exit route exists
- ❖ Significant economic benefits (employment, exports) can be generated from emerging industries and Governments worldwide are setting out spending plans
- ❖ Participants and investors will choose countries with favourable regulatory and fiscal policies and funding.