

Renewable Energy Conference

Investors' View on the Renewable Sector*

080610



*connectedthinking

Öhrlings

PRICEWATERHOUSECOOPERS 

Investors' View on the Renewable Sector with Some Business Cases

- Increased interest in Cleantech
- Some experiences from Sweden
- Investment considerations
- Conclusions

Section one

- Increased interest in Cleantech
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Cleantech can be defined as any product, service or process that creates efficiency gains that has a positive environmental impact

- 1980's EnviroTech driven by regulatory decisions and "save the world" incentives
- Late 1990's Cleantech driven by economic decisions and an entrepreneurial mentality
- Cleantech: Resource management through Resource Lifecycle
- Variety of Resources:
 - Water
 - Fuels
 - Material
 - Air
 - Power
 - Commodities
 - Chemicals
 - Emissions
- Affects most Industries:
 - Utilities
 - Chemicals
 - Electronics
 - Industrials
 - Manufacturing
 - Agriculture
 - Consumer
 - Service
 - Transportation

Increased interest in Cleantech

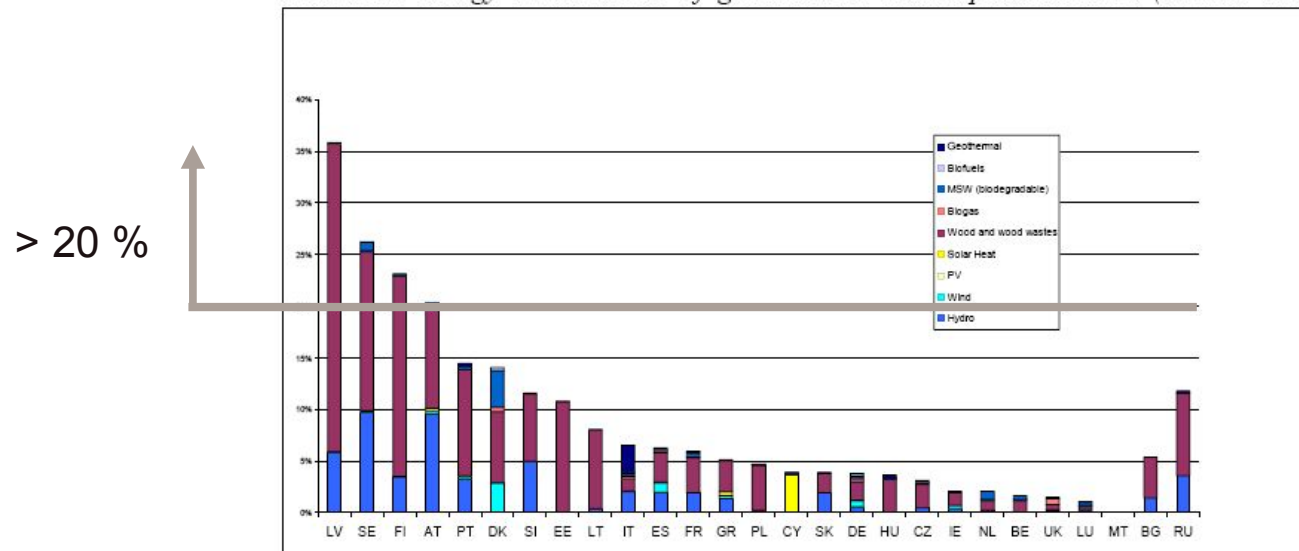
There are four major driving market forces behind the expansion in cleantech

- Resource constraints
 - Energy supply and demand imbalances
 - Shortage of clean air, water and power
 - Aging power and water delivery infrastructure
- Global competition
 - Increasing focus on resources efficiency and cost of production
 - Corporate responsibility for product life LCA
- Tightening environmental regulation
 - Acceleration of global concern and government mandates
 - Public awareness and shareholder influence
- Technological advances
 - Ability to apply advances in other fields to resource constraints problems
 - Biotech, communication, advances materials etc

EU has set ambitious targets on Renewable Energy that provide investment incentives

- EU sets targets of 20 % from Renewable Energy to 2020
 - Current level 6,5 %
 - an intended increase of > 200 % in 13 years!
- and EU leads the way in Initial Public Offering - 55 % of world value
- 4 EU countries had 20 % or more Renewable energy use in 2004

Renewable energy source share of gross inland consumption in 2004 (Source: Eurostat)



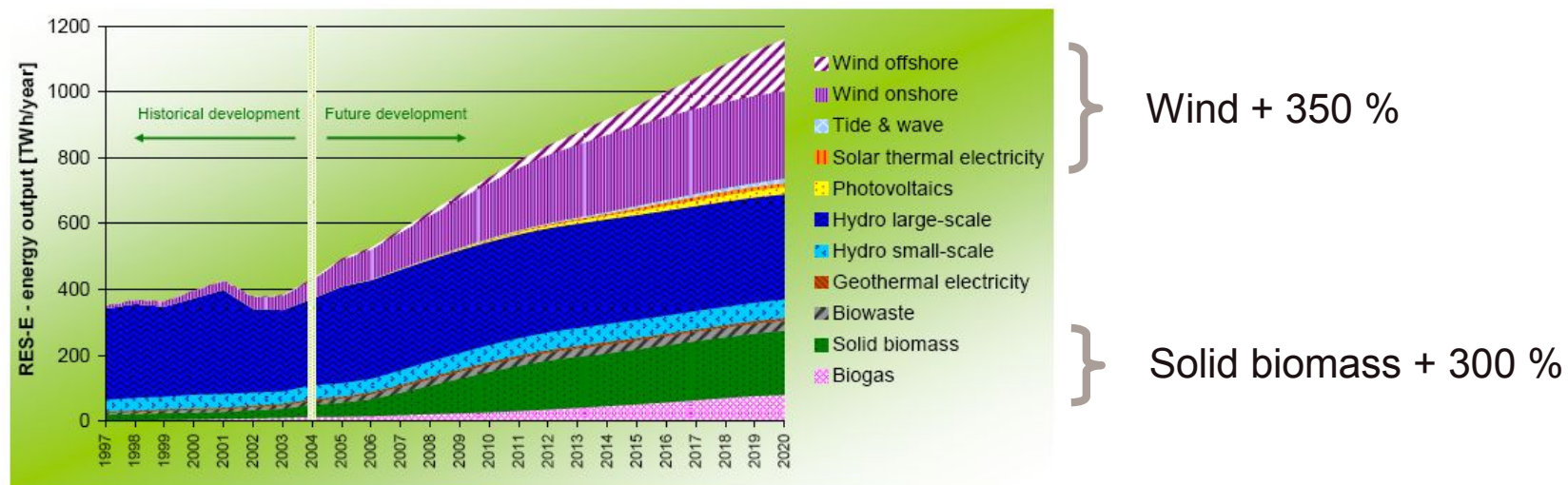
Source: EU

Increased interest in Cleantech

The projected major increase in biomass and wind are also significant drivers of cleantech investment

- 130 % increase in Renewable used in electricity production
 - Significant increase projected in wind and biomass
 - Increase also in biogas, photovoltaics
- 80 % increase in biomass in heating
- Biofuels the only large scale substitute for petrol and diesel in transport

Renewables growth: Electricity projections by 2020

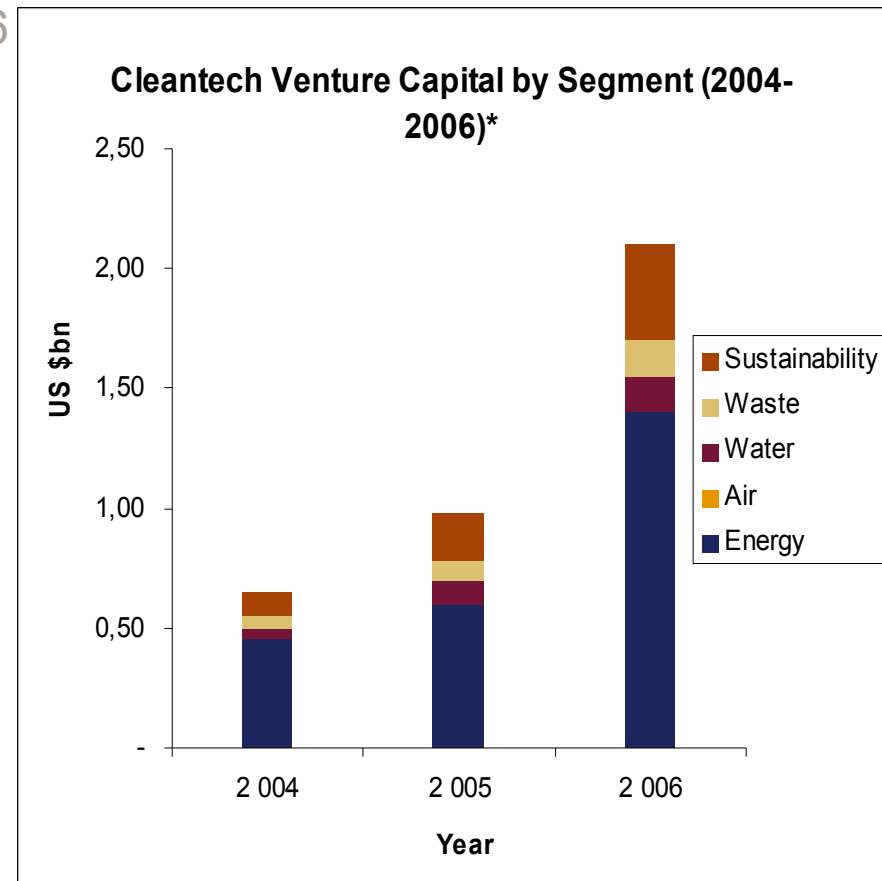


Source: EU

Increased interest in Cleantech

As a result dramatic increase in Clean-Tech investments in 2006 have been projected worldwide

- Cleantech investments exploded in 2006
 - 70 % relates to energy
 - air, water and waste still to come

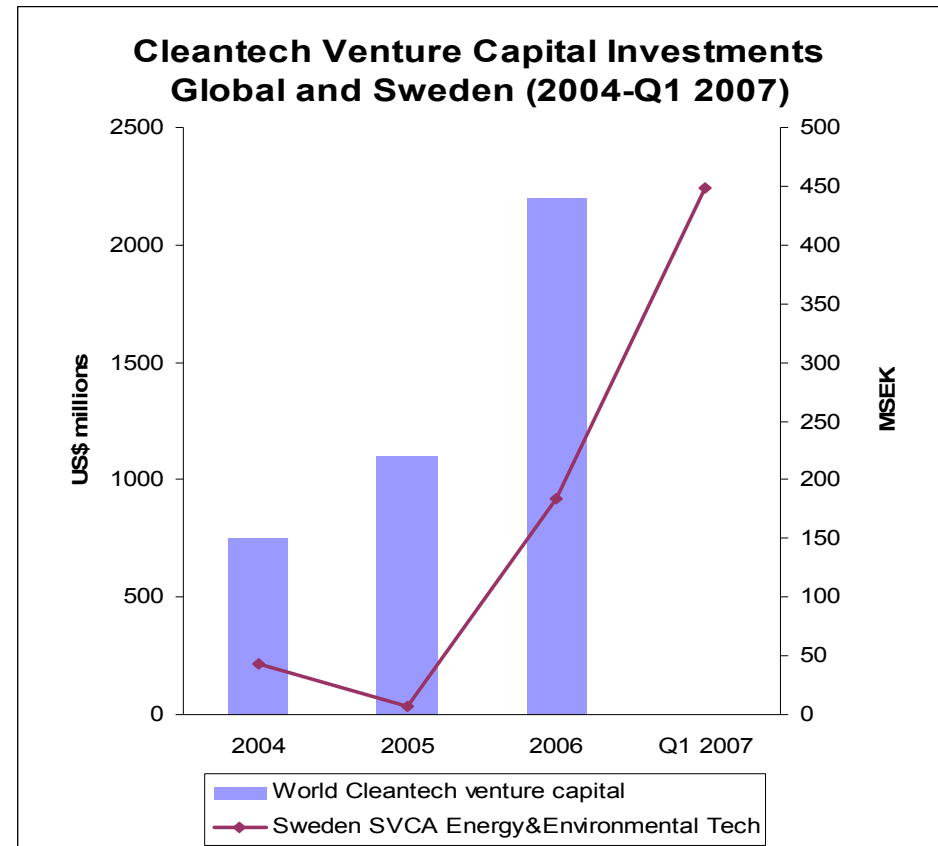


*Source: The Cleantech Report, Lux Research Inc.
www.luxresearchinc.com/cleantech

Increased interest in Cleantech

...and Sweden is no exception

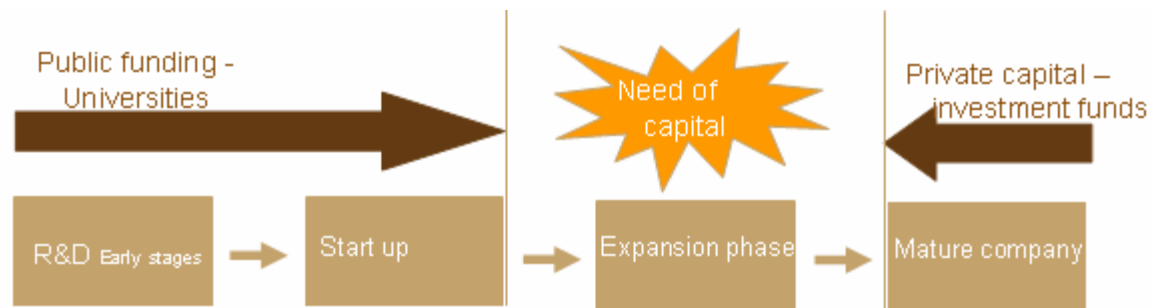
- Energy and environmental investments has increased 300 % last from Q4 2006 to Q1 2007.
 - but counts for only 4 % of total investment
- 74 % of the venture capital companies see “Cleantech” as the most interesting sector for future investments.



Increased interest in Cleantech

....but despite some increase in investments the European cleantech sector still lags internationally

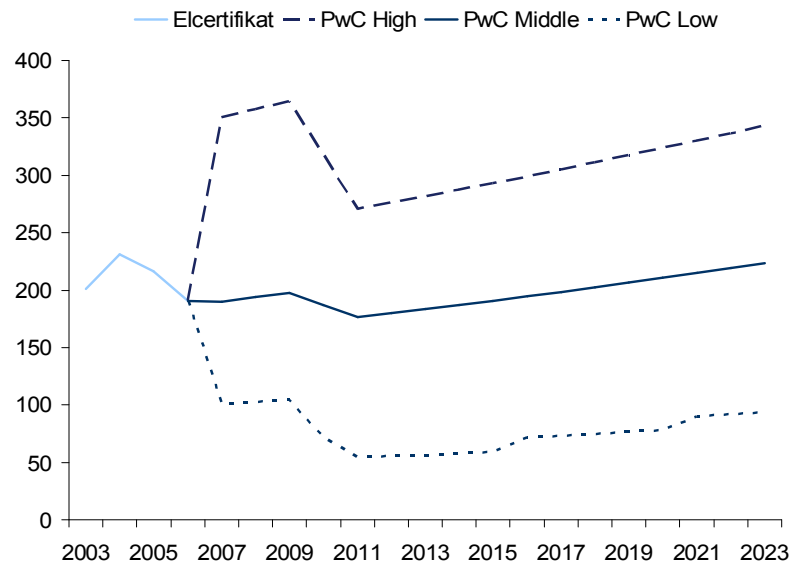
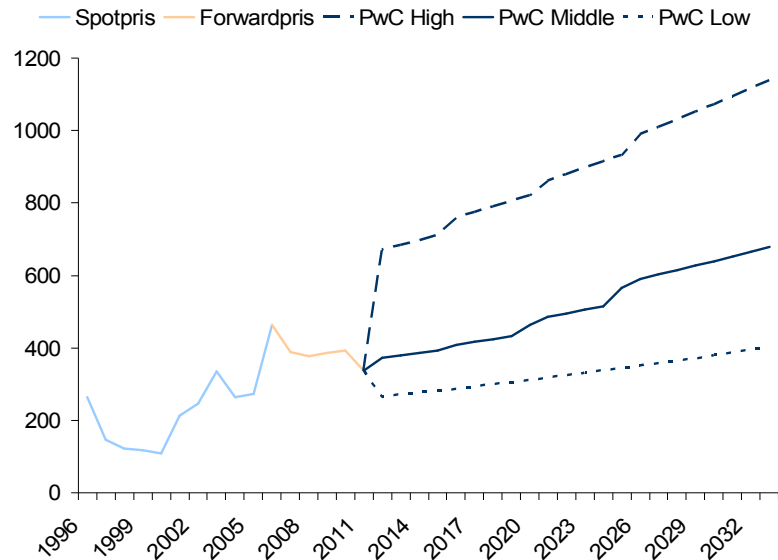
- But US leads the in venture capital – 72 % of world value
-and in patents issued – 46 %
- Where are the European Cleantech venture capital?
 - 40 % of European Cleantech investments from the UK – driven by government support
- .. or where are the European Cleantech companies?
 - Possible signs of a bubble?



Section two

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Renewable Energy Investment value drivers



- Cost of capital (WACC)
 - - Market risk premium 4,5 % according to PwC poll March 2007
 - Systematic risk, Beta 0,8 – 1,1
 - Possible size premium
- Electricity future spot price
- Green certificate future price
- Bioenergy fuel market development
- Governmental regulations

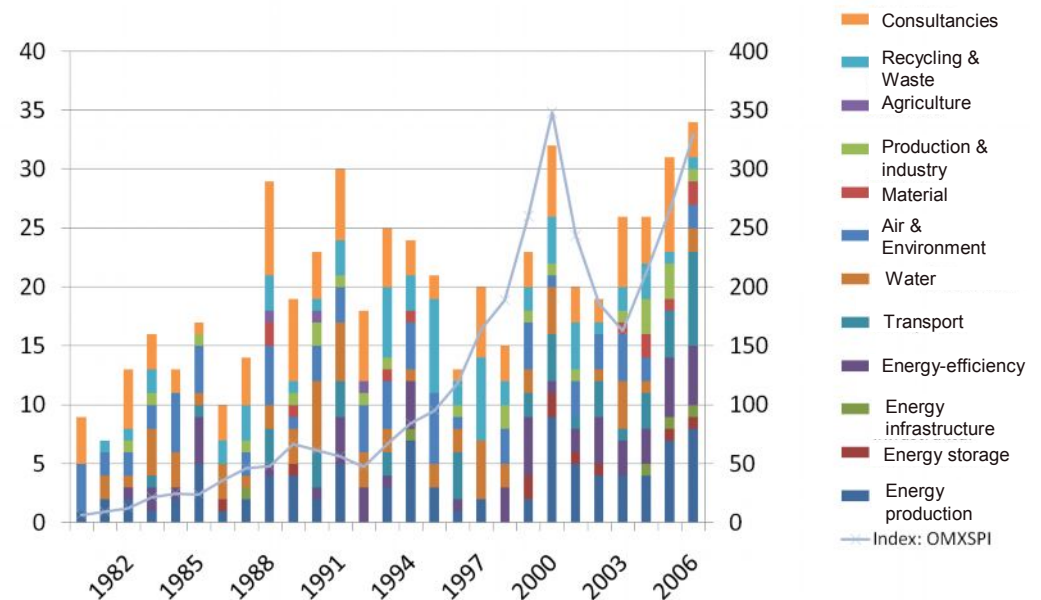
Section three

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The number of Cleantech companies have increased dramatically since the early 1980s

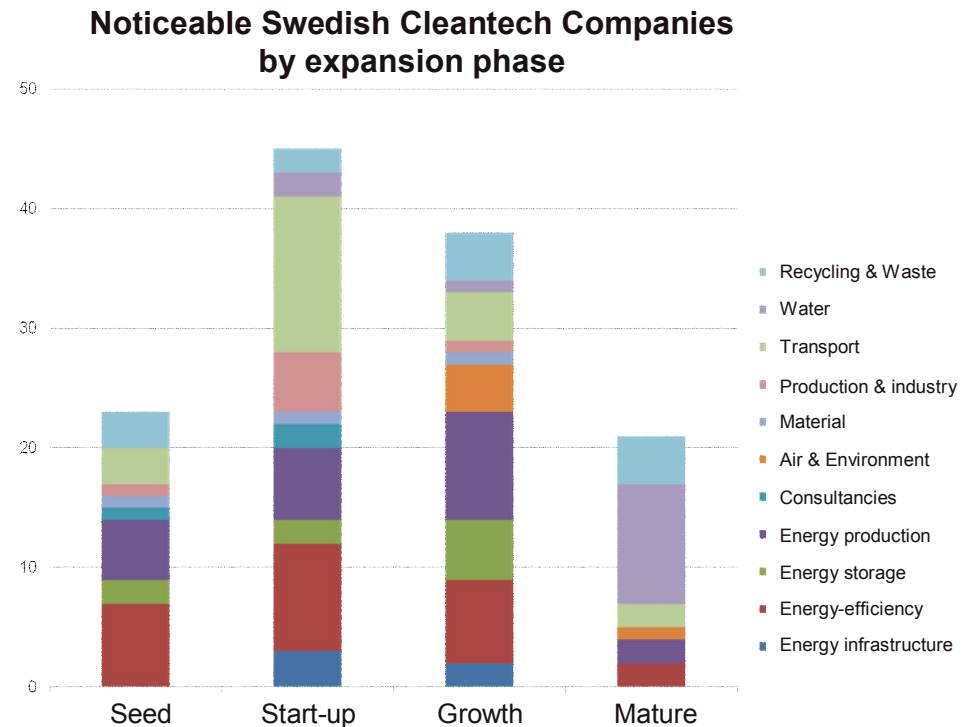
- Cleantech – broad definition that includes several types of companies
- Cleantech not a new phenomenon – companies specialising in efficiency, cleaning, waste etc have existed for a long time
- Since around 2000 correlation with OMX index noticeable indicating an increased interest from the capital markets

New Cleantech Companies by Year and Sector



CleanTech companies have now reached different levels of maturity

- Predominantly companies in energy production and efficiency, and transport in line with current prioritised areas
- Two thirds are in start-up or growth phases
- Air & Environment only in growth and mature
- Least amount of firms in mature stage

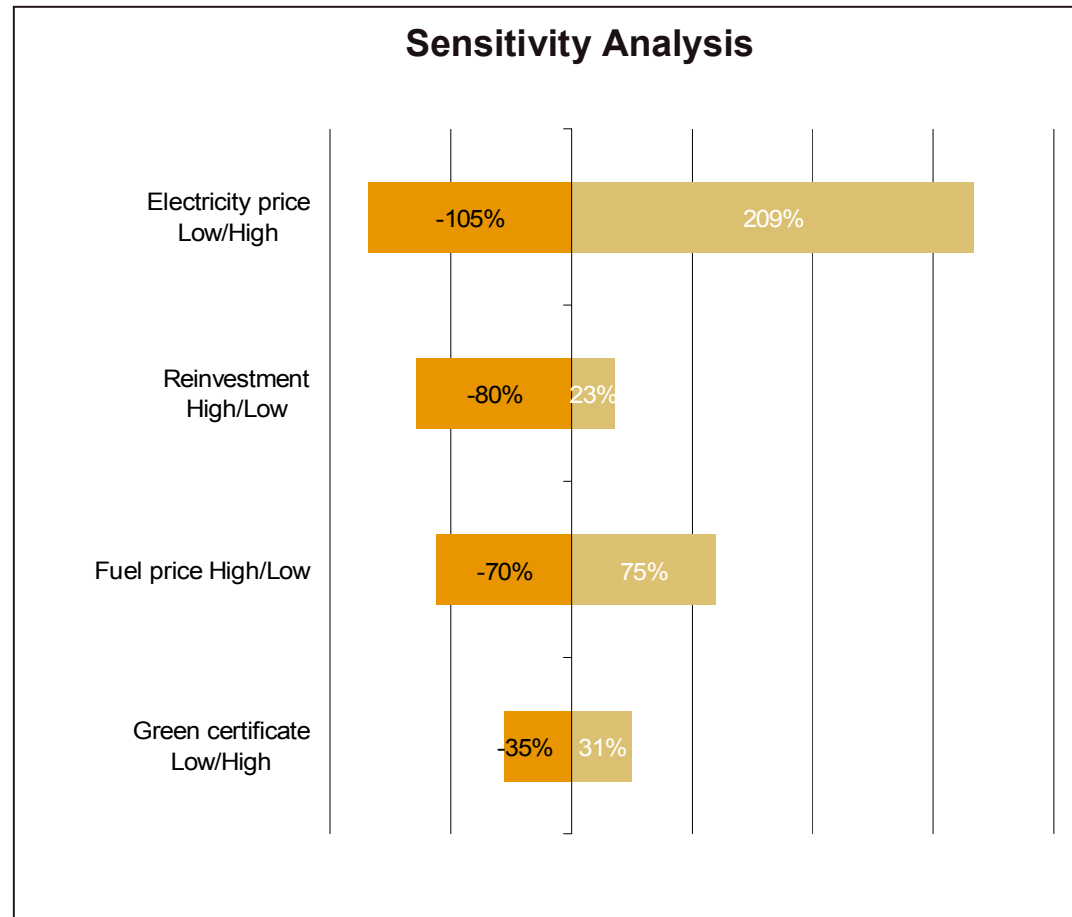


Section four

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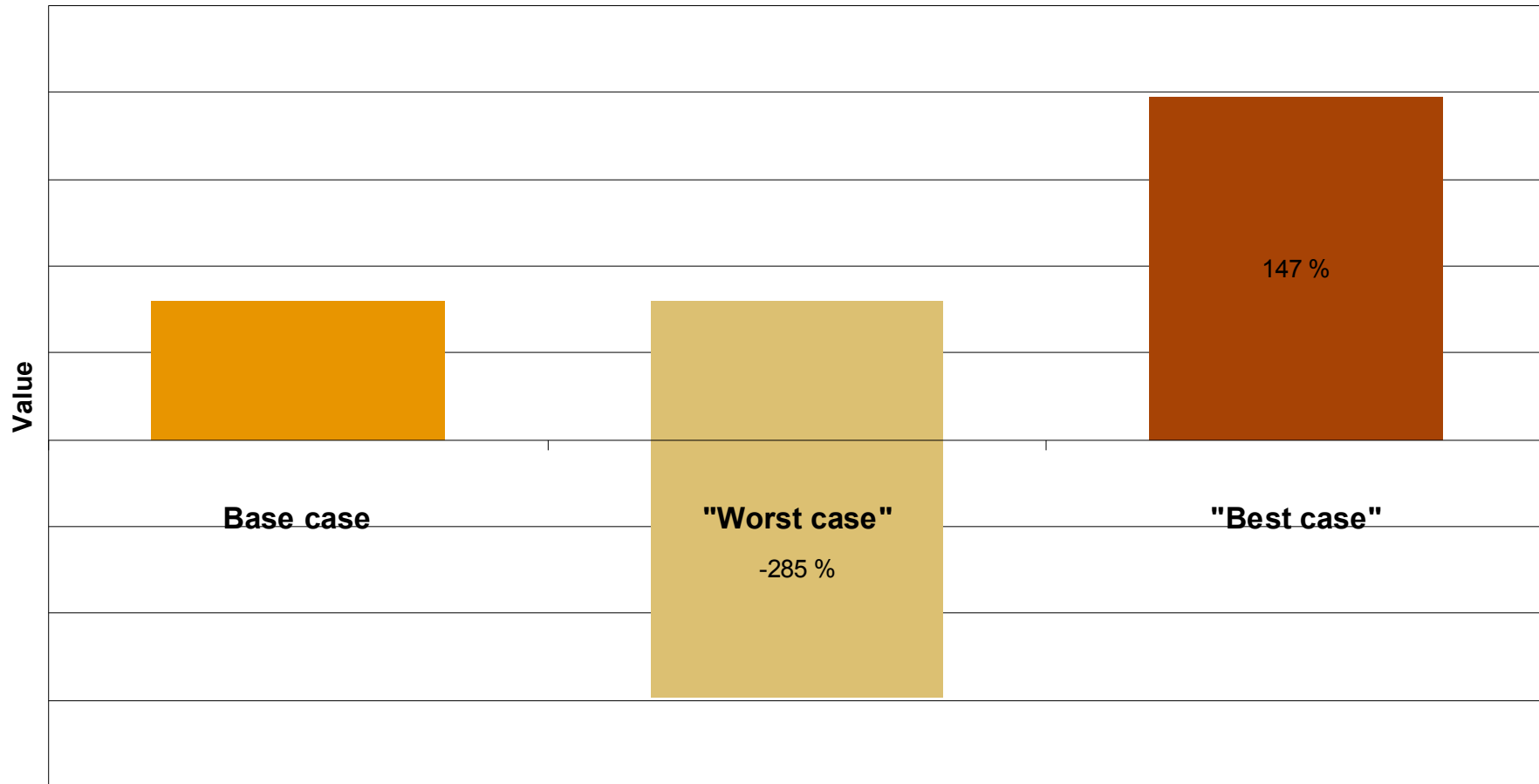
Future electricity price dominant value driver for cleantech investments

- Case study:
 - Investment in power production based on biofuels
 - Cost of equity 8 %
 - WACC 6,9 %
- Electricity price dominant value driver
- Fuel price also significant impact on value



The sector offers great potential but also high risk

Scenarioanalysis of Investment in cleantech (Example)



Section five

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Conclusions

Investments in cleantech will increase based on the strong underlying fundamentals but still some way to go

- Cleantech is today a result of economic drivers and entrepreneurship
- Strong economic fundamentals and more connected to the financial markets
- EU sets ambitious targets on Renewable Energy
- Major increase in biomass and wind are projected
- US leads the in venture capital – EU a slow-starter
- Dramatic increase in world Clean-Tech investments in 2006 where USA leads the way and Europe follower
- Possible signs of increase in investments also in Sweden



Conclusions

Investments in cleantech will increase based on the strong underlying fundamentals but still some way to go

- Great underlying market potential in cleantech
 - However, market largely determined by political decisions such as green certificates and subsidies
- Lack of seed capital during early investment stage to date
- Majority of investments in energy – waste and water undercapitalised
- Investment in power production based on bioenergy is heavily dependent on future electricity price



Thanks for Your Time!

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