

# The UK Brewing Industry :

## Reducing Emissions



# Introduction

- **The BBPA**
- **The UK brewing industry : overview & trends**
- **Reducing energy and emissions : history**
- **Climate Change Agreement**
- **EU ETS**
- **Next Steps / challenges.**

# The BBPA

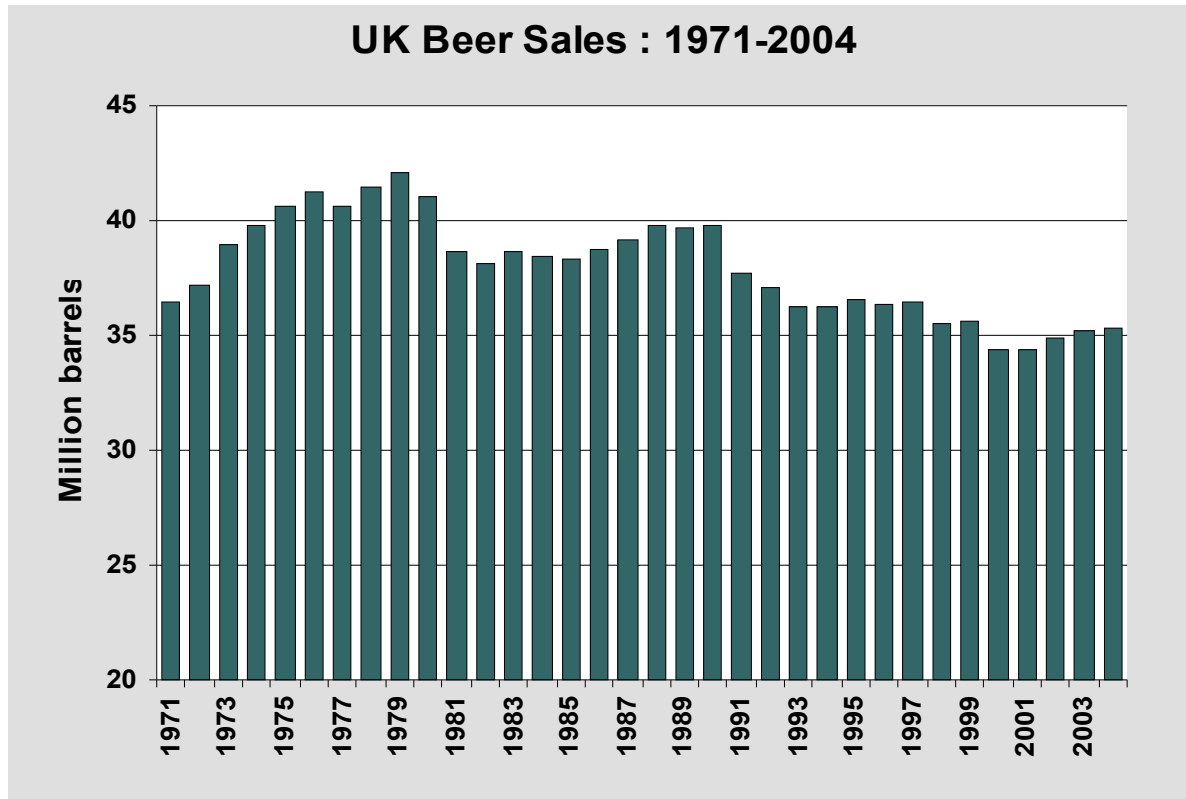
- **To represent stakeholders (Brewers and Pub Chain Operators) to Government**
- **To protect commercial freedoms of member companies and sustainability of the sector**
- **To assist companies in meeting their legal responsibilities in the most cost-effective manner**
- **Members account for over 98% of UK beer production and own over half of UK pubs**

# UK Brewing Industry: 2004

- UK beer production - 56 million hectolitres
  - Market (retail) value - £19 billion
  - Total delivered energy – 2.5 billion kwh
  - Total cost of energy - £40+ million (and rising!)
  - Total water usage - 31 million cubic metres
  - Total CO2 emissions from energy use – 0.6 Mt
- 
- UK Industry emissions ~ 150 Mt
  - UK total emissions ~ 540 Mt

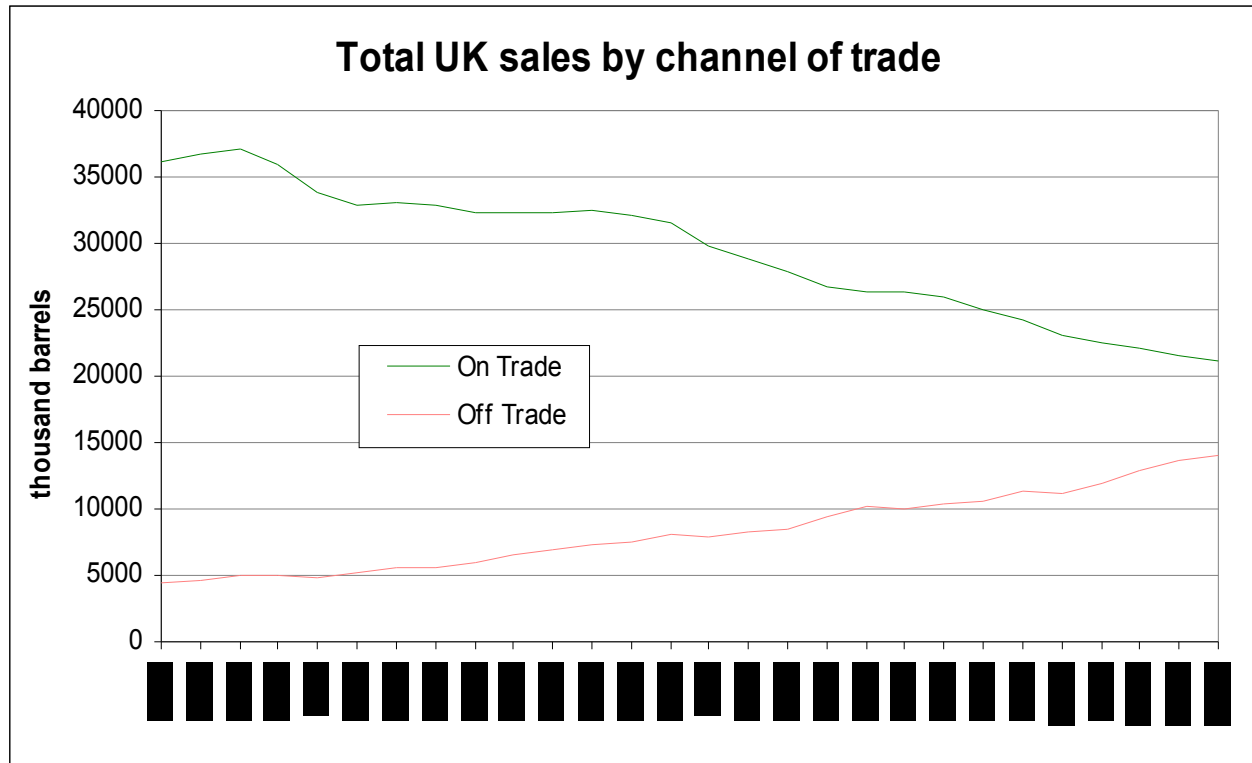
# The UK Beer Market

- UK Beer sales have fallen by over 15% since their peak in 1979 but have stabilised in recent years..



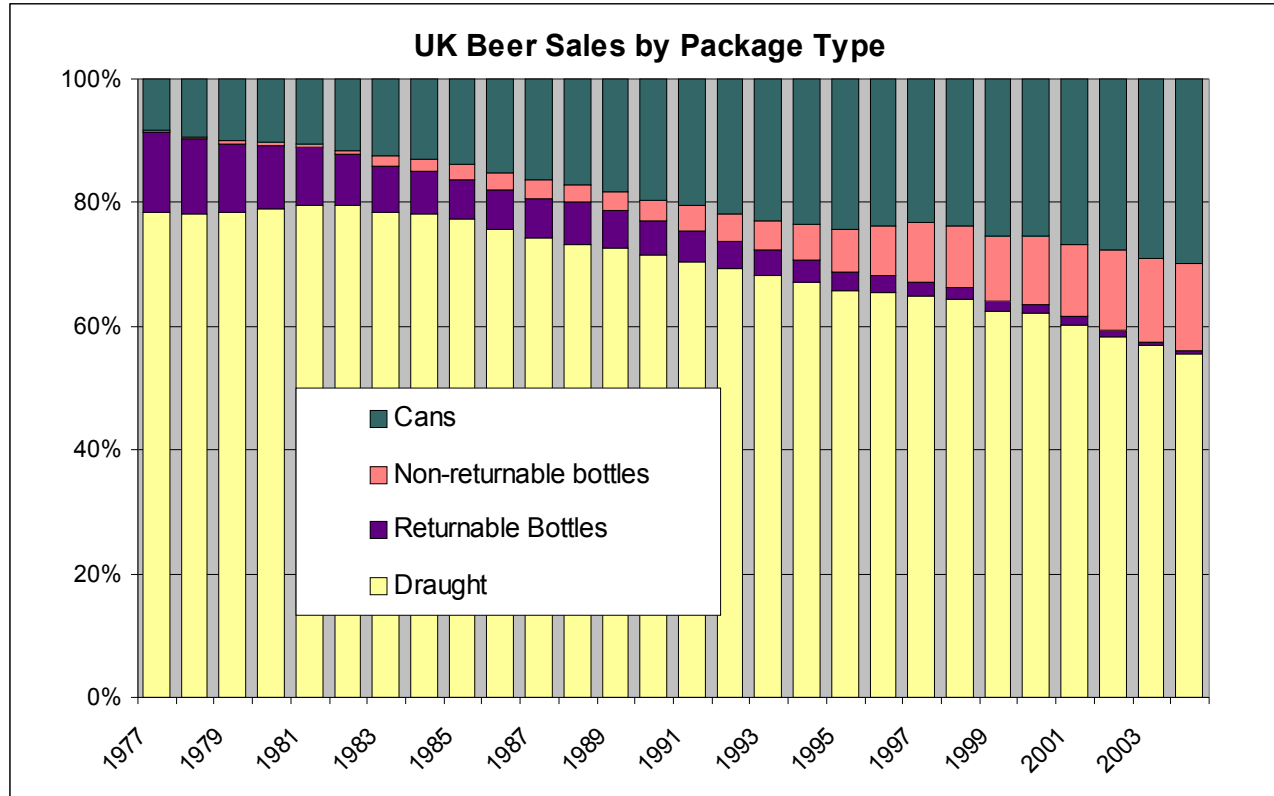
# The UK Beer Market cont:

- **On-trade sales have fallen by 42% as the switch to take-home consumption has accelerated...**



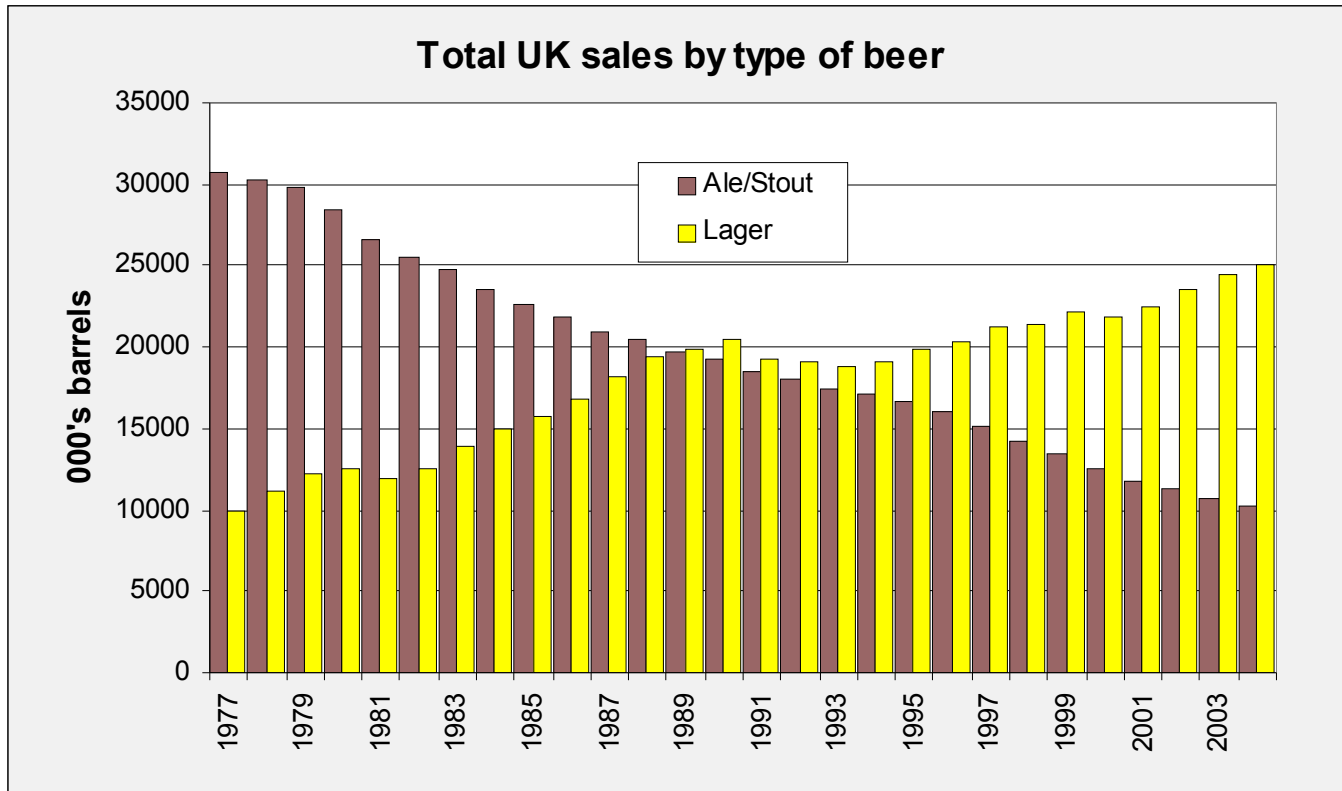
# The UK Beer Market cont:

- **Packaged sales have increased while draught sales have fallen...**



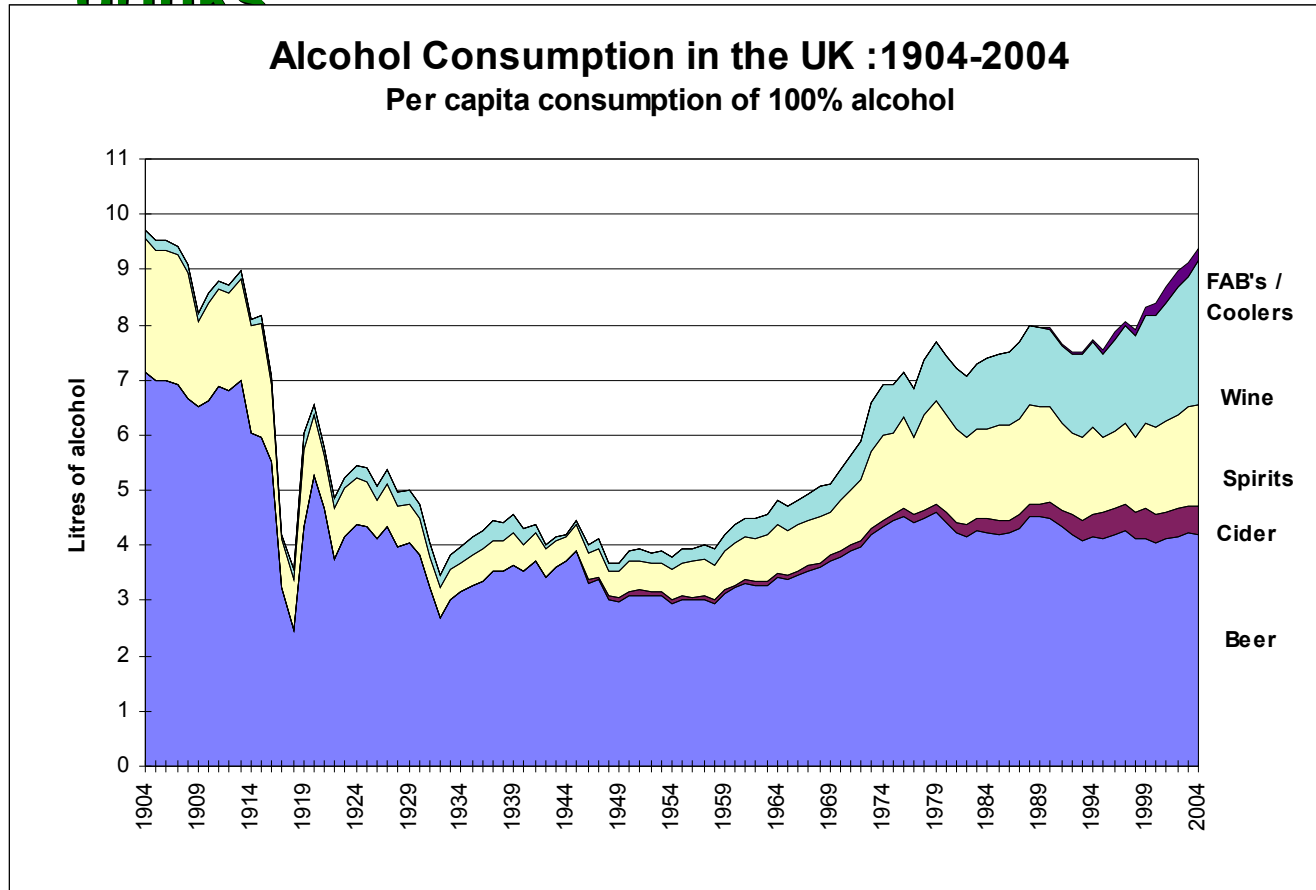
# The UK Beer Market cont:

- Lager has become the most popular beer type at the expense of ale and stout...



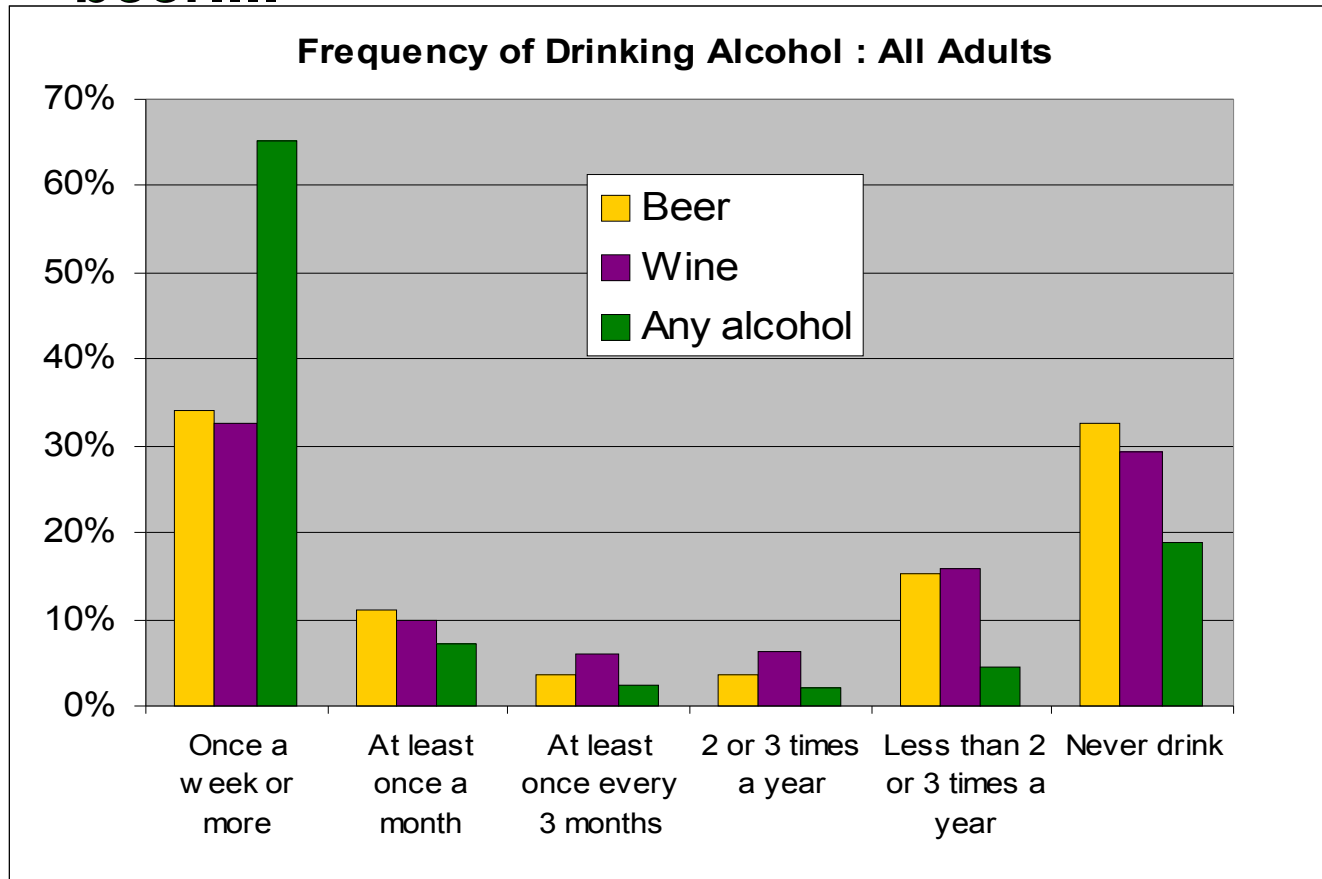
# The UK Beer Market cont:

- **Consumer preference towards other drinks**



# The UK Beer Market cont:

- **Unfortunately not everybody drinks beer....**

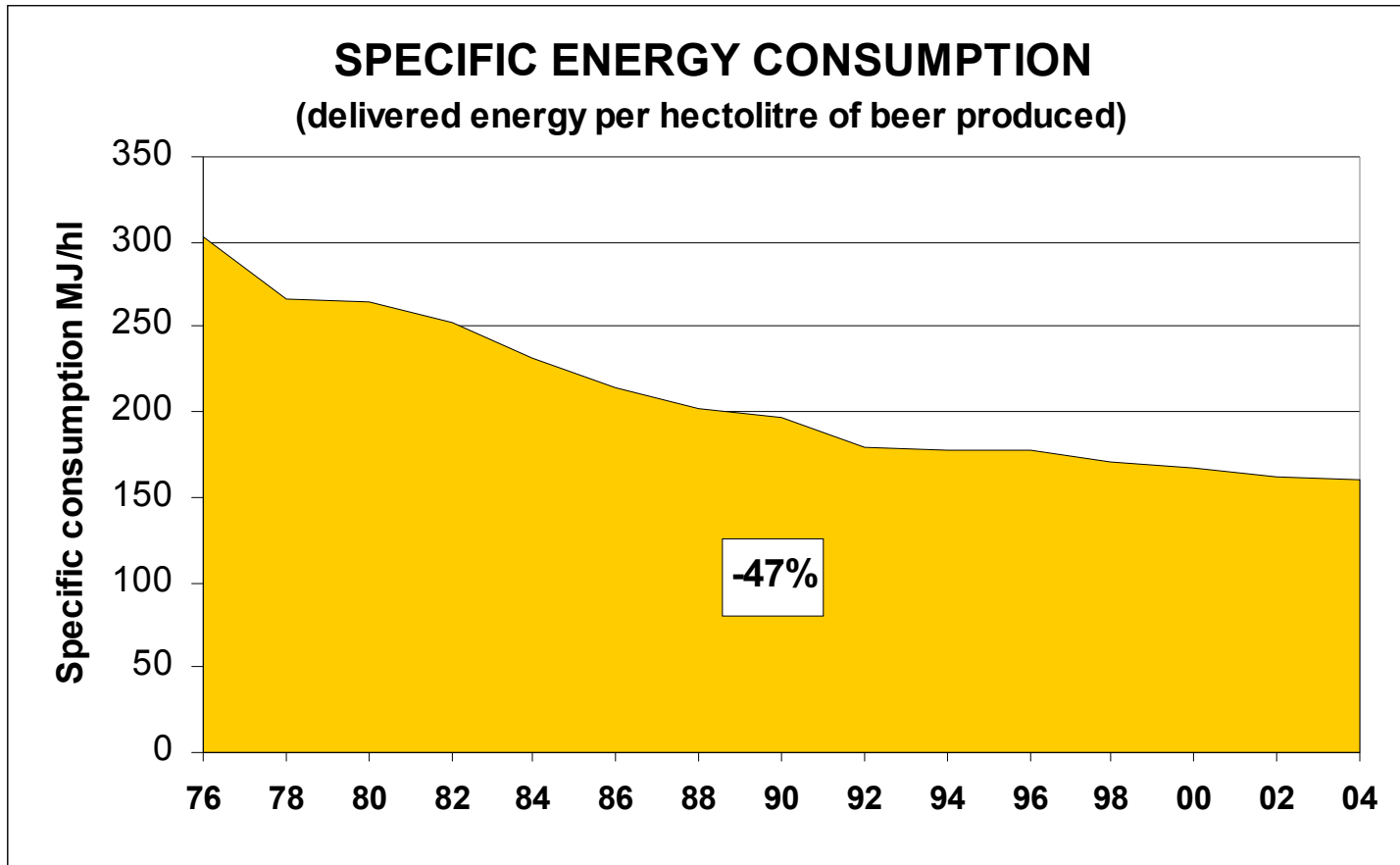


# Energy: Industry Record

- 1976 - Target Setting and Monitoring
- Benchmarking
- Proven methods of energy saving
- Demonstration projects
- 1987- Industry M&T project
- Dissemination of information
- 1999 – CCA base year

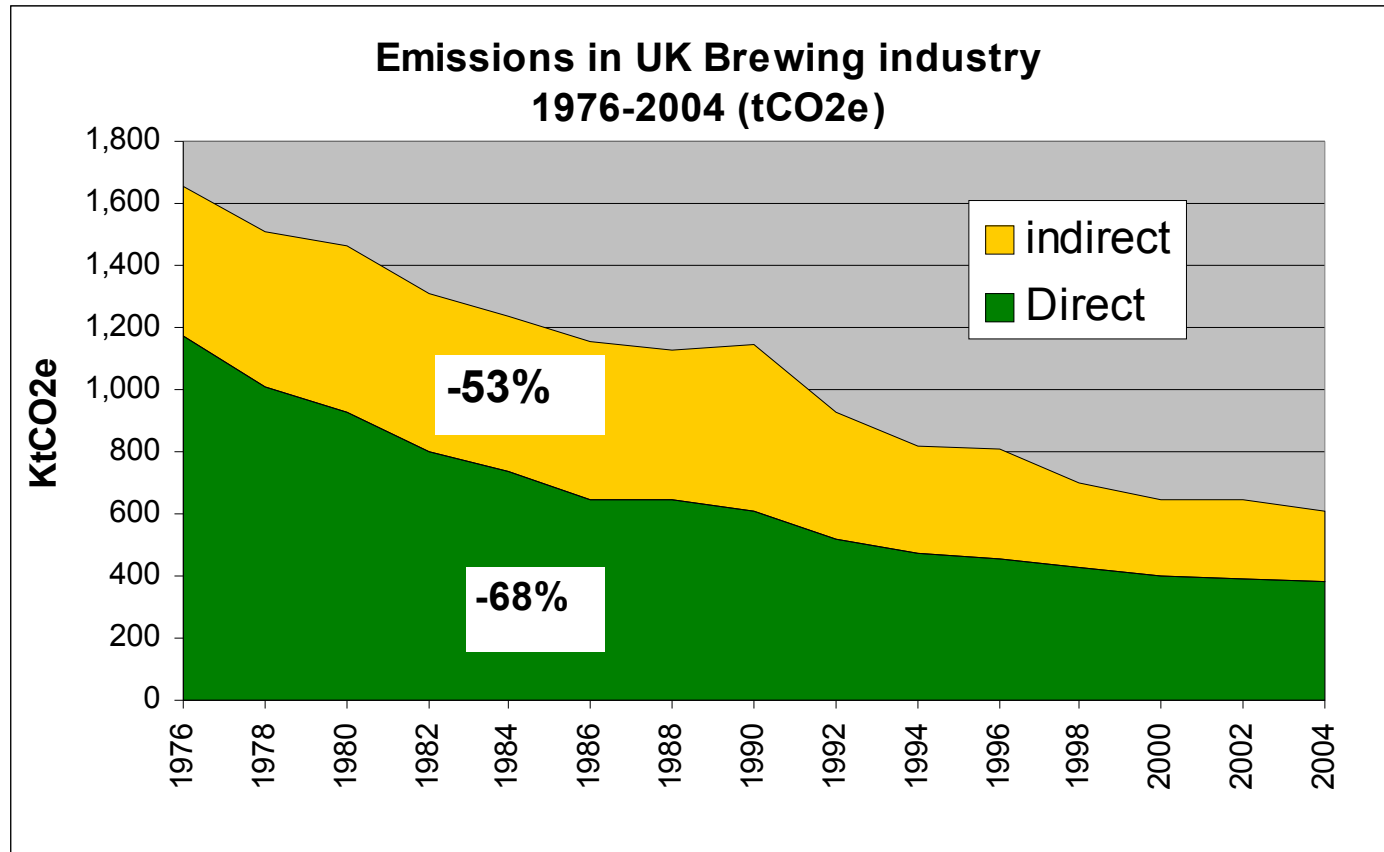
# Industry energy and emissions performance

**Specific Energy Consumption has fallen by 47%**



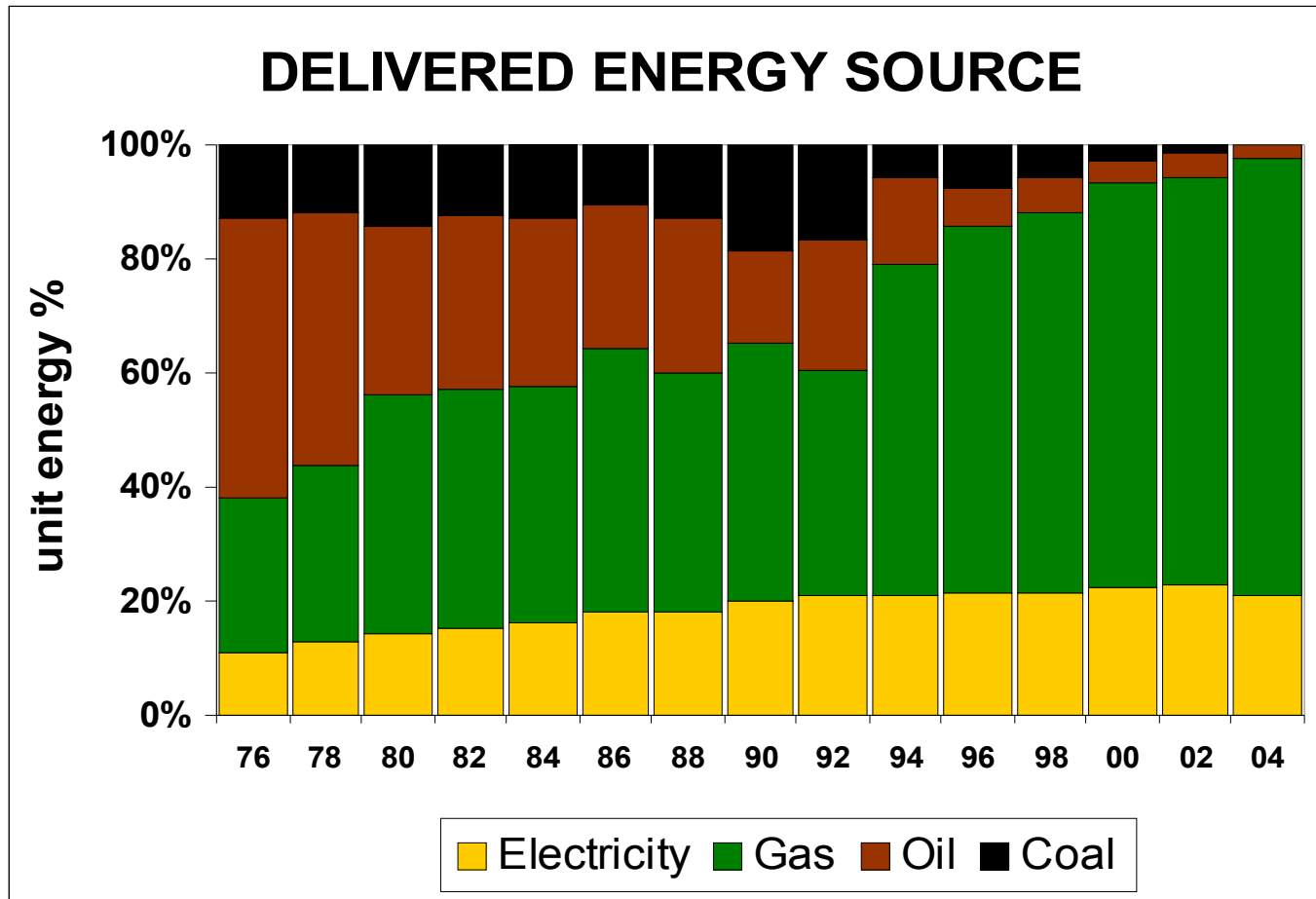
# Industry energy and emissions performance

Emissions have fallen by 63%..



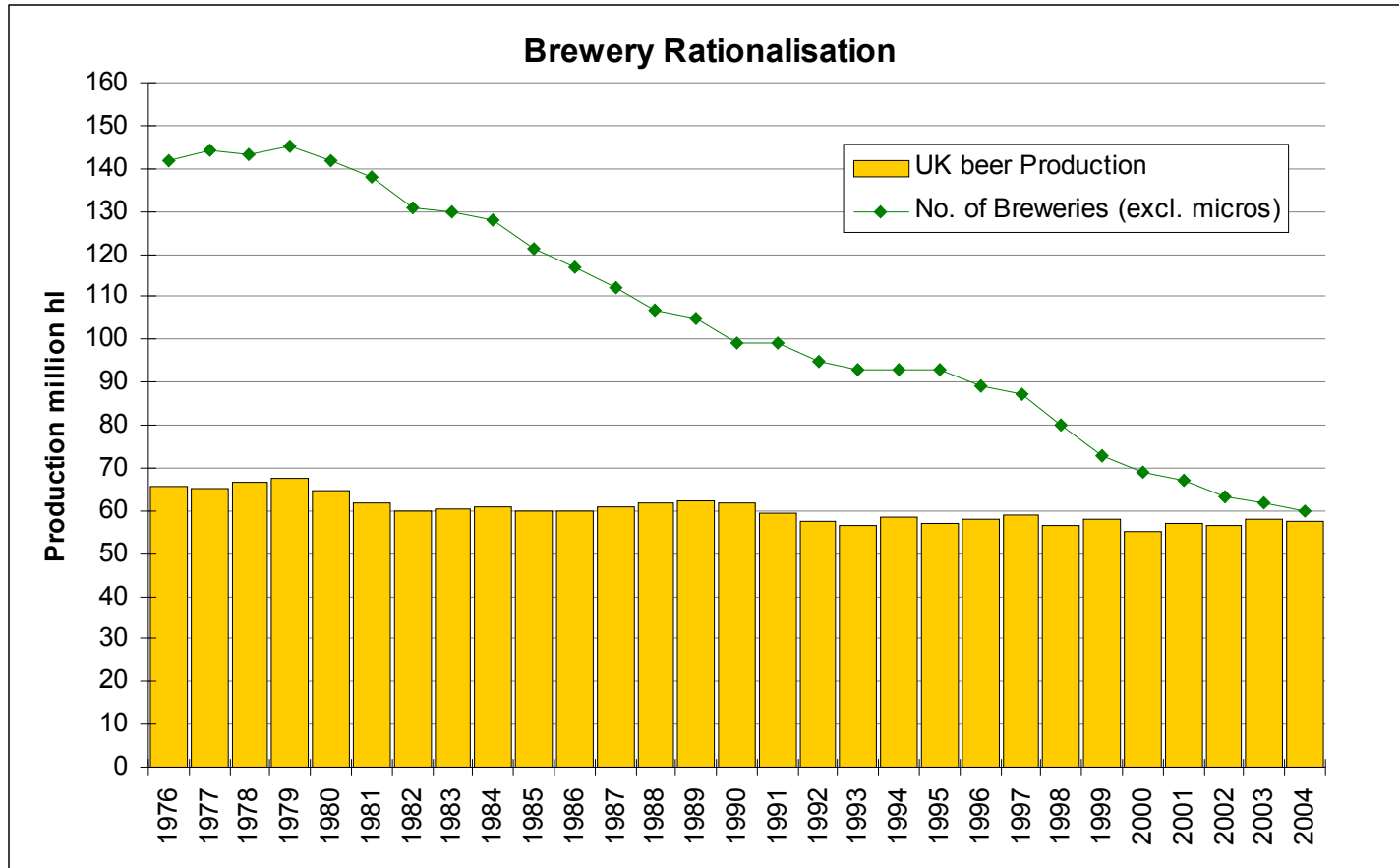
# Industry energy and emissions performance

Aided by a switch to cleaner fuels..



# Industry energy and emissions performance

## And brewery rationalisation..



# Climate Change Agreement

- **CCL savings to sector are £4 million p.a + reduced energy cost**
- **The BBPA were one of first sectors to conclude a Model 2 agreement with government**
- **Sector Target SEC (primary) = 11% reduction from 1999**
- **Sector Target SEC (primary) = 28% reduction from 1990**
- **Target tightened by 3.5% in 2004**
- **Sector one of very few to also operates a group verification and trading scheme.**

# CCA: Site Targets

Energy consumption is mainly a function of:

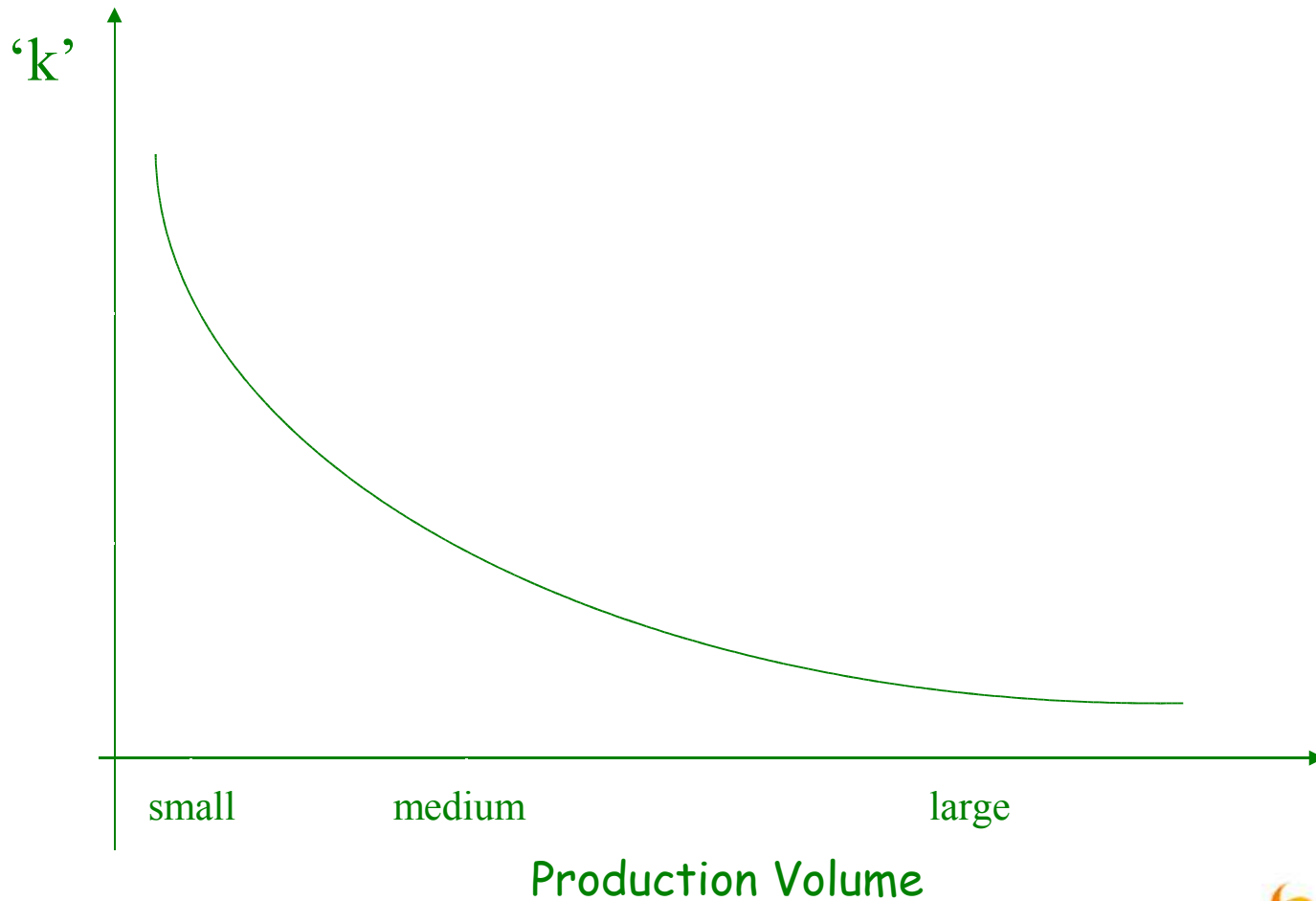
- size of production unit (brewery)
- volume production
- product mix
- package mix

# SITE TARGET ENERGY CONSUMPTION (PRIMARY ENERGY)

$$E_T = k [ 1.34 V_A + 1.41 V_L + 0.58 V_{LP} + 1.30 V_{SP} ]$$

- $E_T$  = target (primary) energy consumption (MJ)
- $k$  = factor for each size category of brewery
- $V_A$  = volume of *ale* brewed (litres)
- $V_L$  = volume of *lager* brewed (litres)
- $V_{LP}$  = volume of *large pack* produced – cask/keg/cellar tank (litres)
- $V_{SP}$  = volume of *small pack* produced – bottle/can/PET (litres)

# 'k' vs Production Volume



# Rules for sharing targets

Over the period of the agreement (to 2010):

1. Sites above target energy consumption (ET) must reduce to target

2. Every site will reduce its energy efficiency quotient (EEQ\*) by at least 2%

\*EEQ = Actual Energy Consumption ÷ (ET)

# Rules for sharing targets

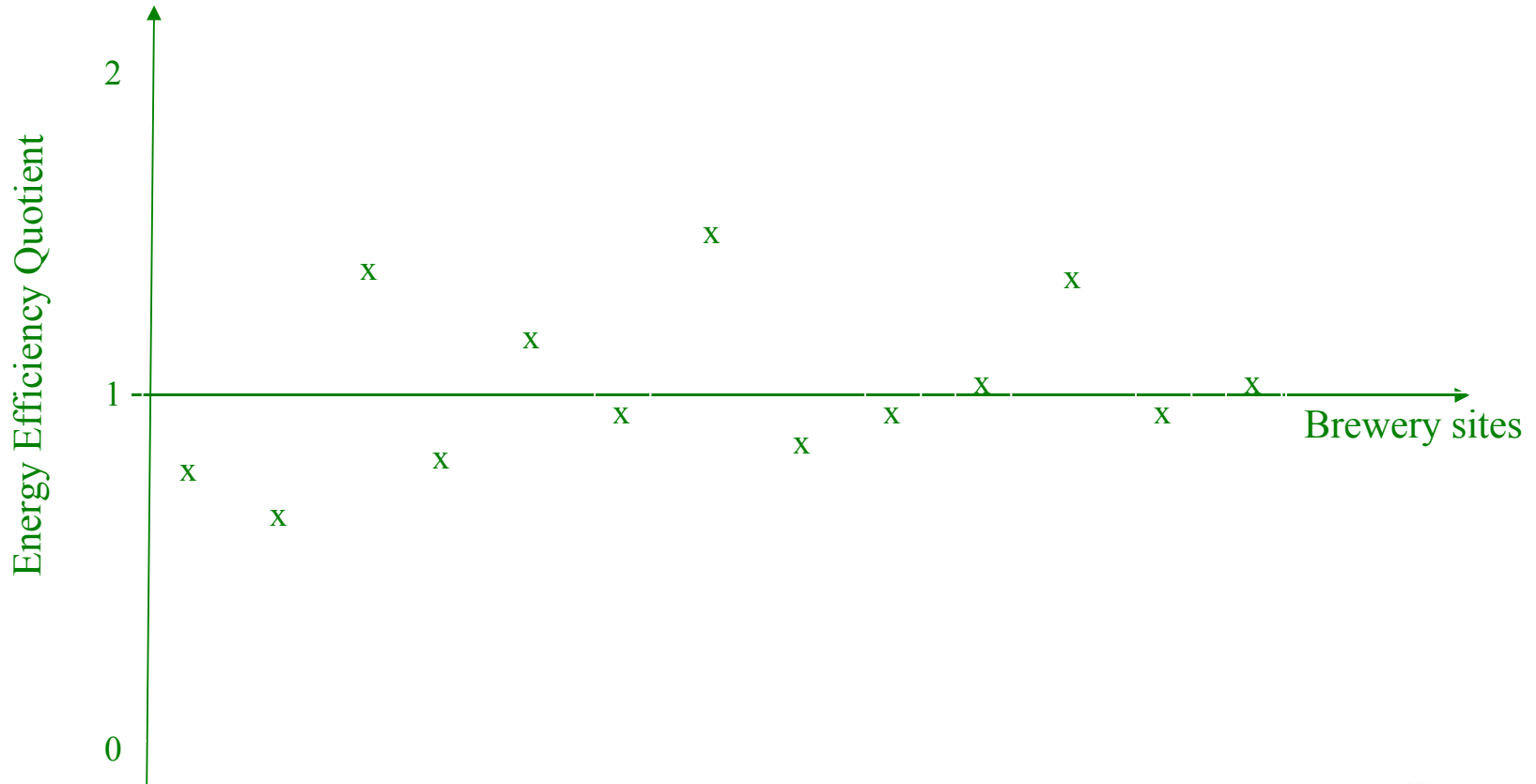
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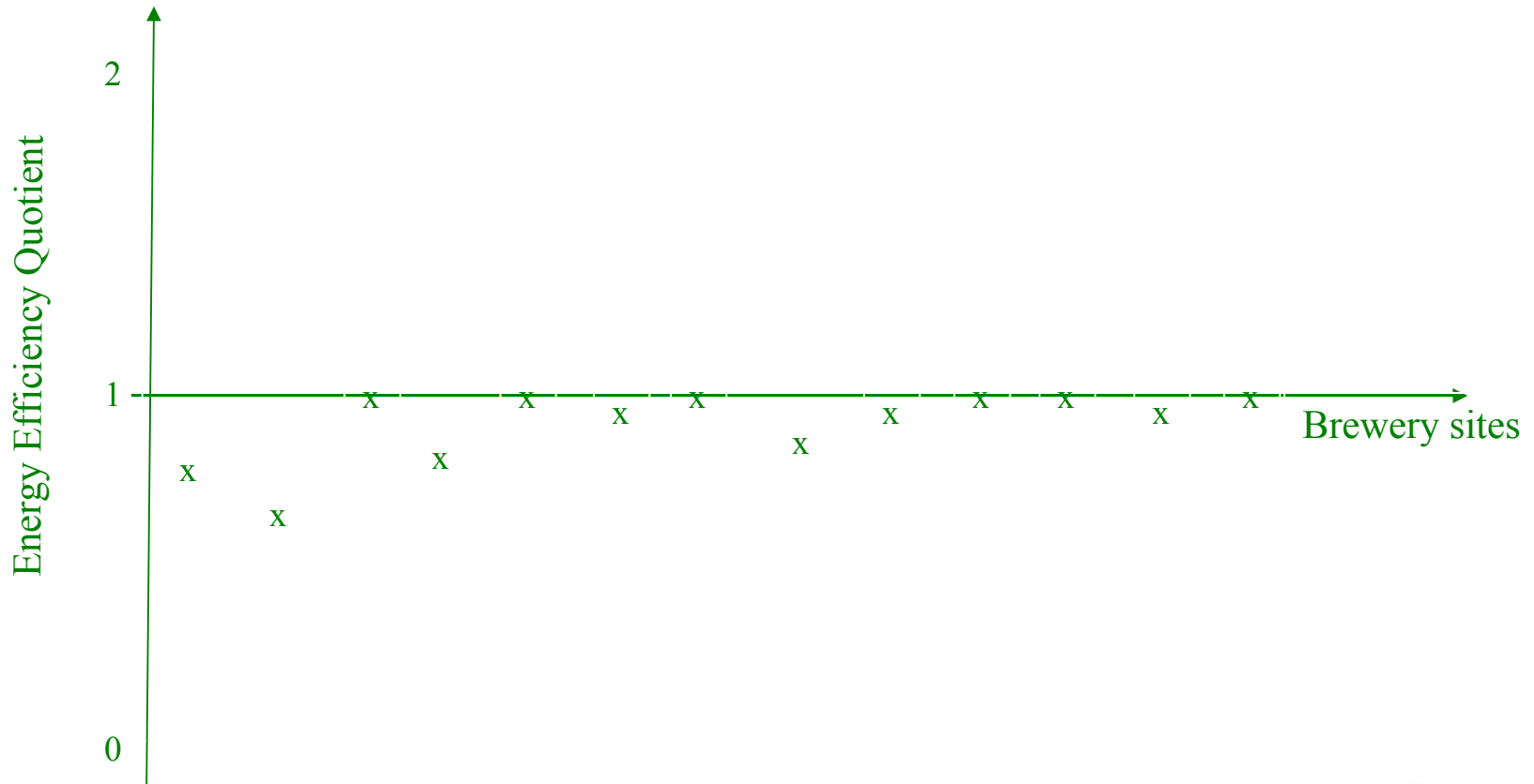
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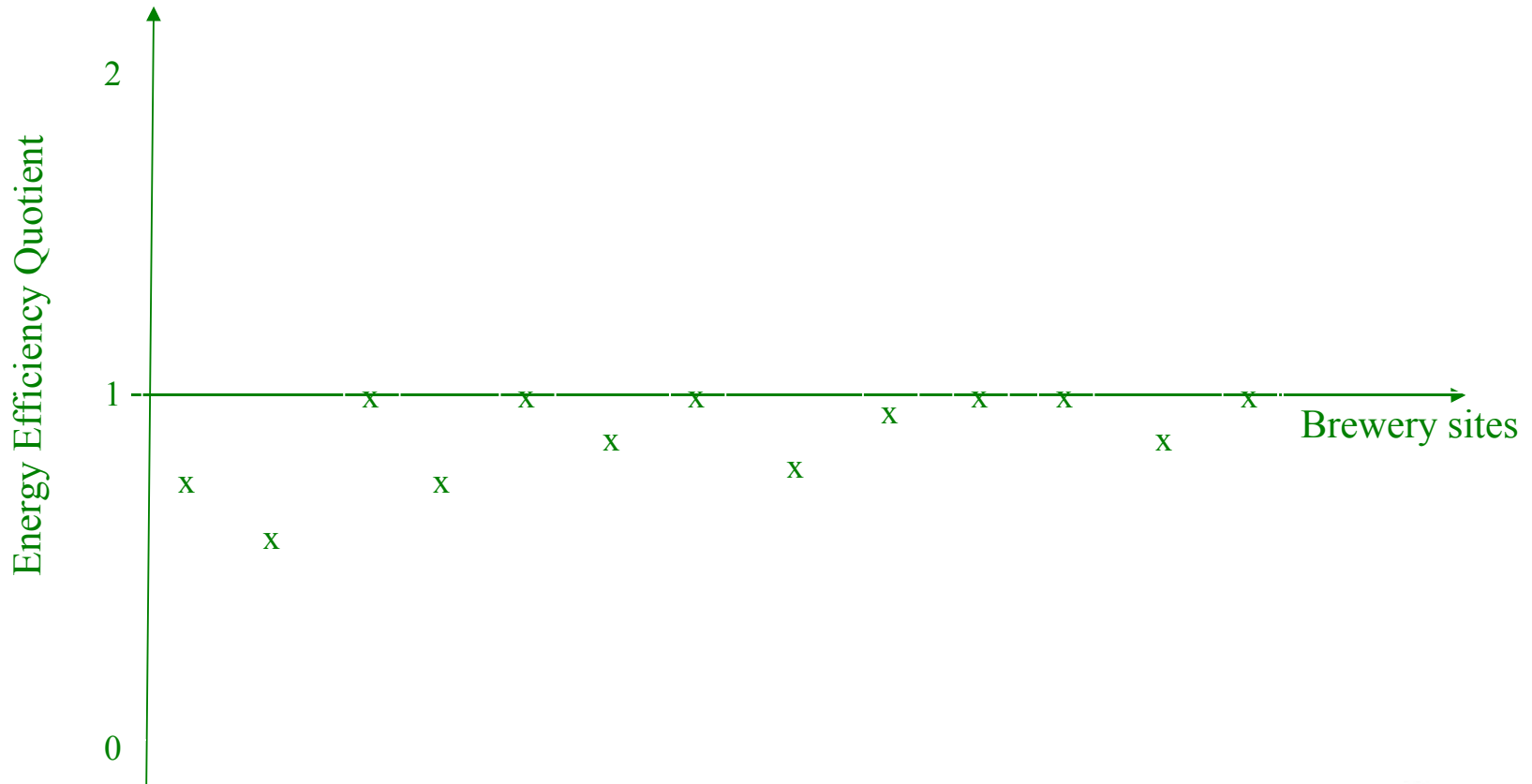
# Example - before



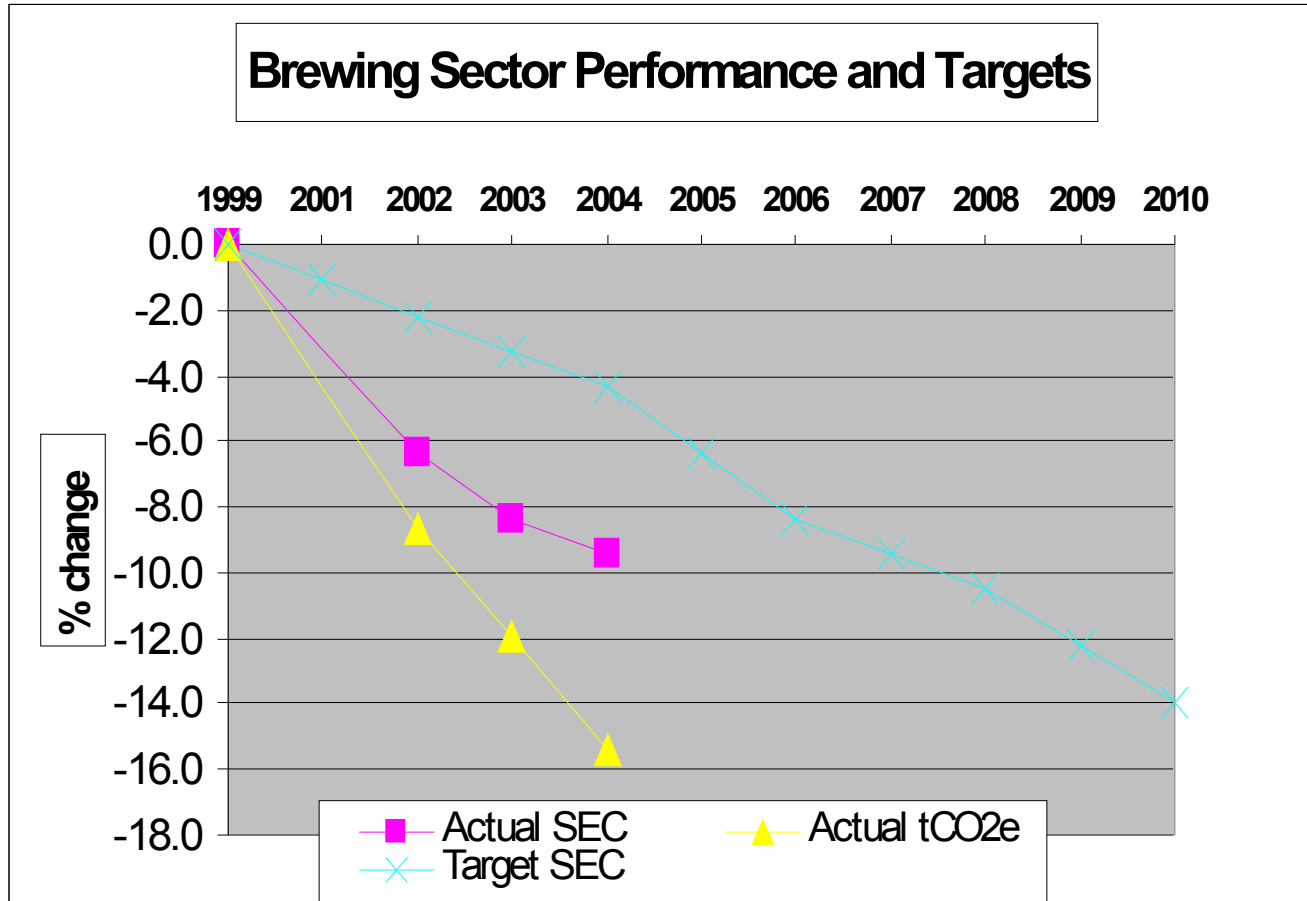
# Example – *phase 1*



# Example – *phase 2*



# CCA Performance to date..



BSI verified over-achievement of 56,000 tCO<sub>2</sub>e against 2004 milestone target.

## CCA Performance to date..

- Despite sector overall over-achievement, 23 out of 58 sites failed (before trading) to meet their targets in 2004.
- To achieve these results, CAPEX on energy saving projects reported to BBPA between 1999 and 2004 = **£60 million**
- CCA and need for energy improvement plans to meet targets has helped raised profile of energy saving to board level in companies. Energy efficiency embedded as a key part of investment decisions.
- Rationalisation has increased average volume per facility by 15% and meant increasing economies of scale

# EU ETS

- 20 brewing sites eligible for Phase 1 (2005-2007) :  
Combustion capacity >20 MW thermal input.
- Cap and trade system
- Annual reporting and verification required
- ‘Unfair’ allocation in phase I –efficient sites penalised
- Allocation to brewing sites 9% less than equivalent 2006 CCA target
- 16 sites opted-out of phase I (and will now have annual CCA targets rather than biennial)

# EU ETS : Phase II (2008-2012)

- No opt-out!
- Consultation process for allocation of allowances in phase II now complete
- BBPA in unilateral discussions with DTI regarding benchmarking proposals (using adapted CCA algorithm) for allocation among sites
- Sector allocation still unlikely to account for past achievement .
- Unlikely to be until phase III that smaller sites drop out.

# What about the Pub Sector?

- pubs offer an interesting challenge in terms of energy saving as they need to provide ambient lighting, heating, ventilation and refrigerated products all at the same time
- draught beer is unique to pubs and cellar cooling is an unavoidable cost of serving quality beer
- Hospitable Climates is a voluntary energy efficiency agreement delivered by HCIMA (Hotel & Catering International Management Association) to the hospitality industry on behalf of the Carbon Trust.
- Approximately 5,000 individual hotels, pubs, clubs and restaurants are currently in membership. Those that are effectively using the Hospitable Climates materials have reduced their energy consumption by between 10 and 15%. Some businesses have reduced consumption by as much as 40%.

# Reducing energy use in pubs

- Five pub companies (BBPA members) with managed estates will be taking part in a three month pilot trial offering free services to two of their pubs:
- The pilot programme hopes to deliver energy consumption reductions (over a similar period averaged out over the last three years) of circa 5%.
- The pilot involves pre and post-audit energy audits – outlets will be expected to adopt best practice during the period of the trial
- All companies participating will be encouraged to enrol the whole of their estates in the Hospitable Climates programme if the trial proves successful
- Difficulty in co-ordinating as over 80% of pubs are run as small businesses (leased/tenanted/free)

# Next Steps / Challenges

- Mitigating for EU ETS
- Less and less scope for significant energy saving improvements
- Little surplus capacity
- Closer alignment of environmental legislation (CCA, EU ETS, IPPC) to reduce spiralling costs
- Further sharing of best practice, investment in best available technologies.
- Brewing process essentially unchanged over years
- Responding to / influencing consumer trends ?
- BBPA will continue to promote HC programme to its pub owning members.