

Overview of Emission Pricing

Economics Society of Edmonton

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Canada's GHG 2020 & 2050 Emission Objectives

2006



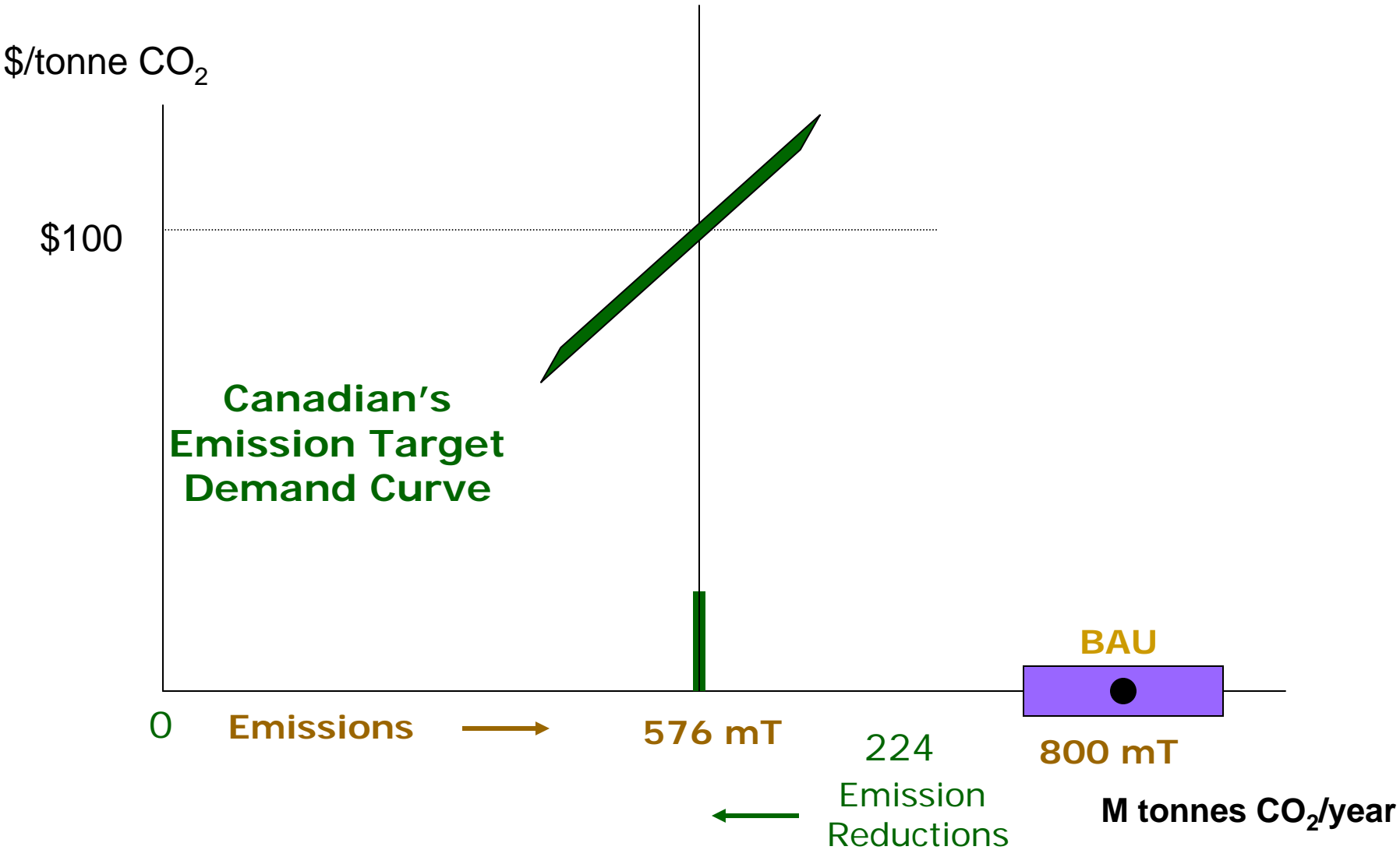
2020 Target



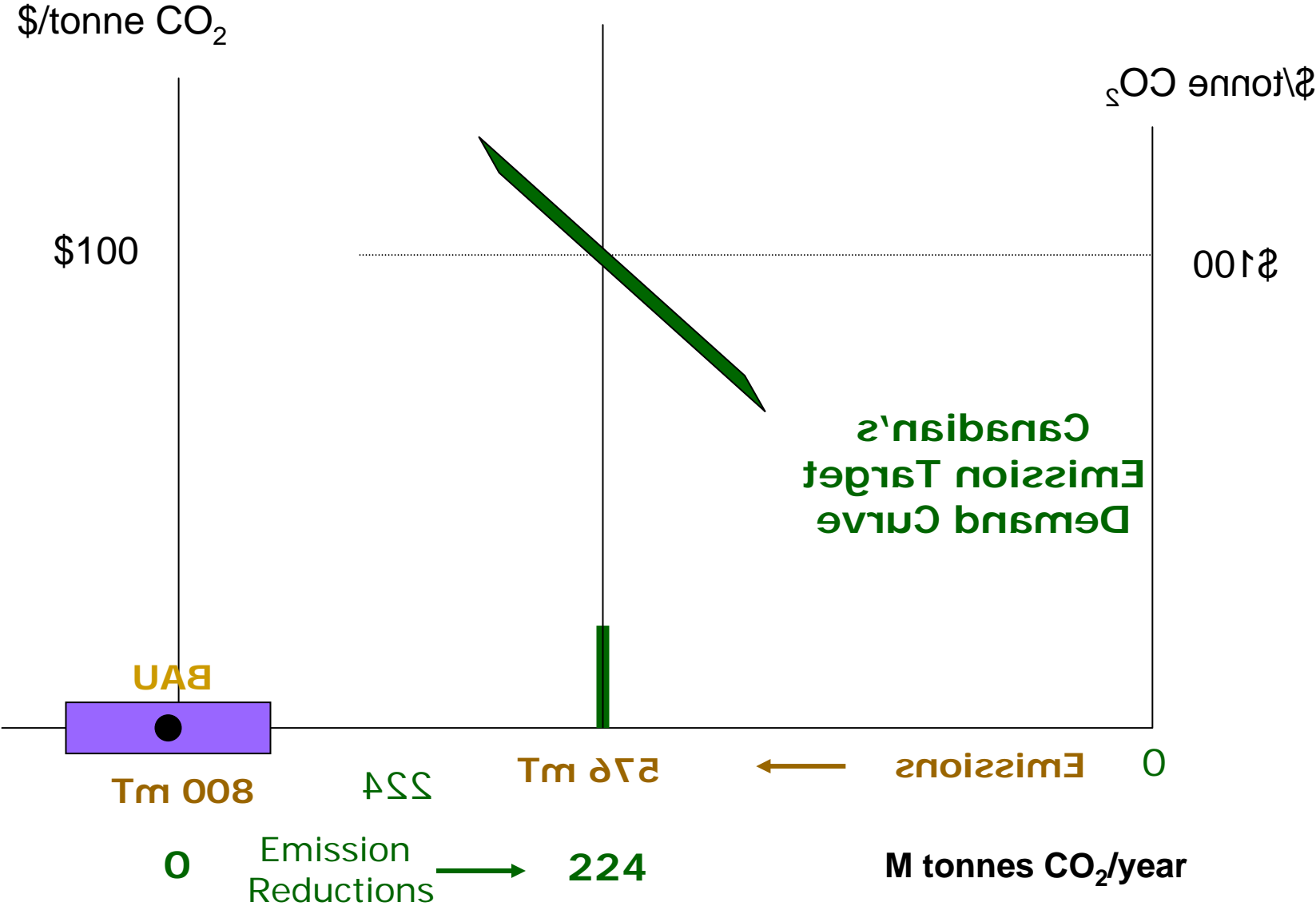
2050 Target



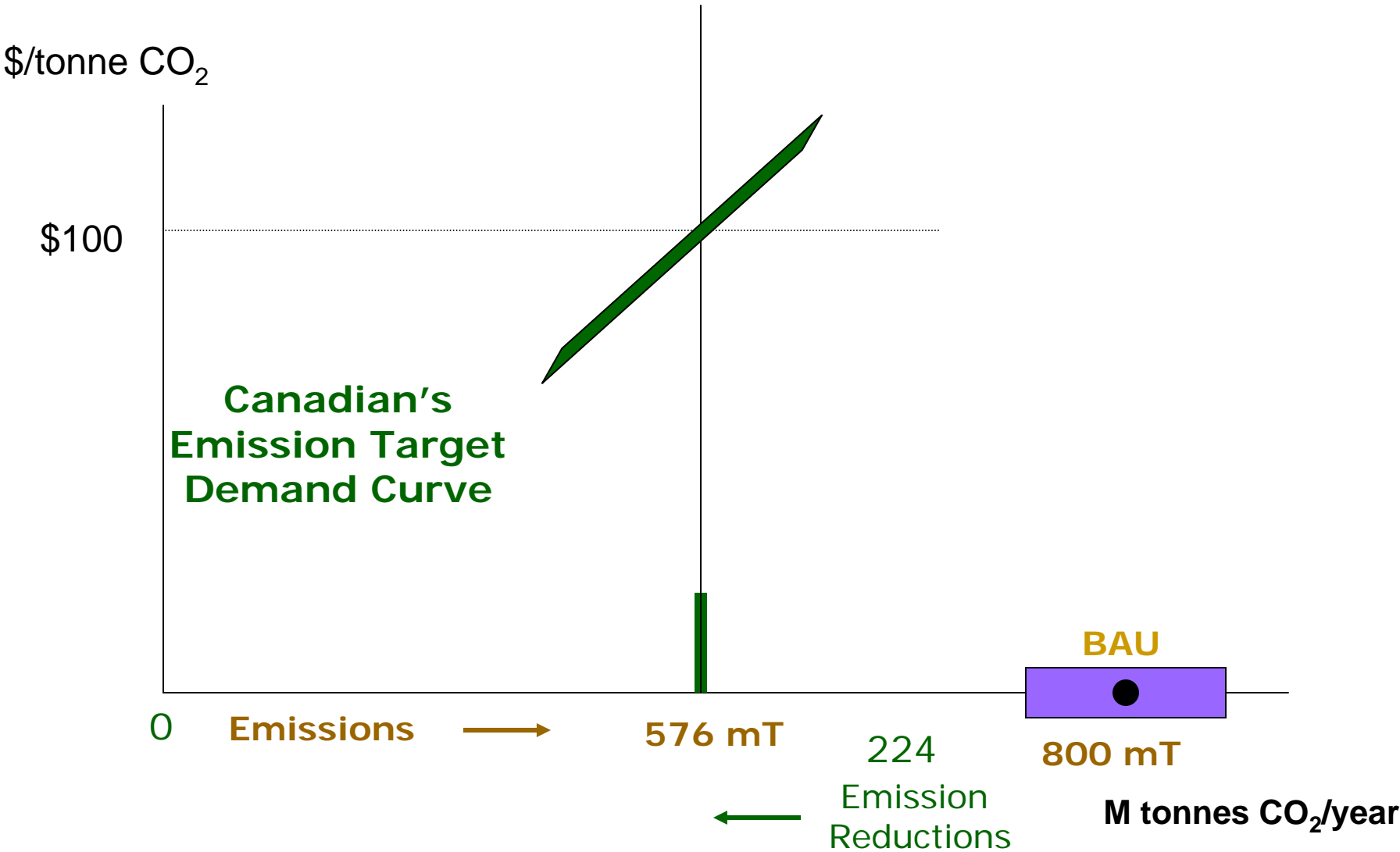
Emission targets: defined in cost and emission terms



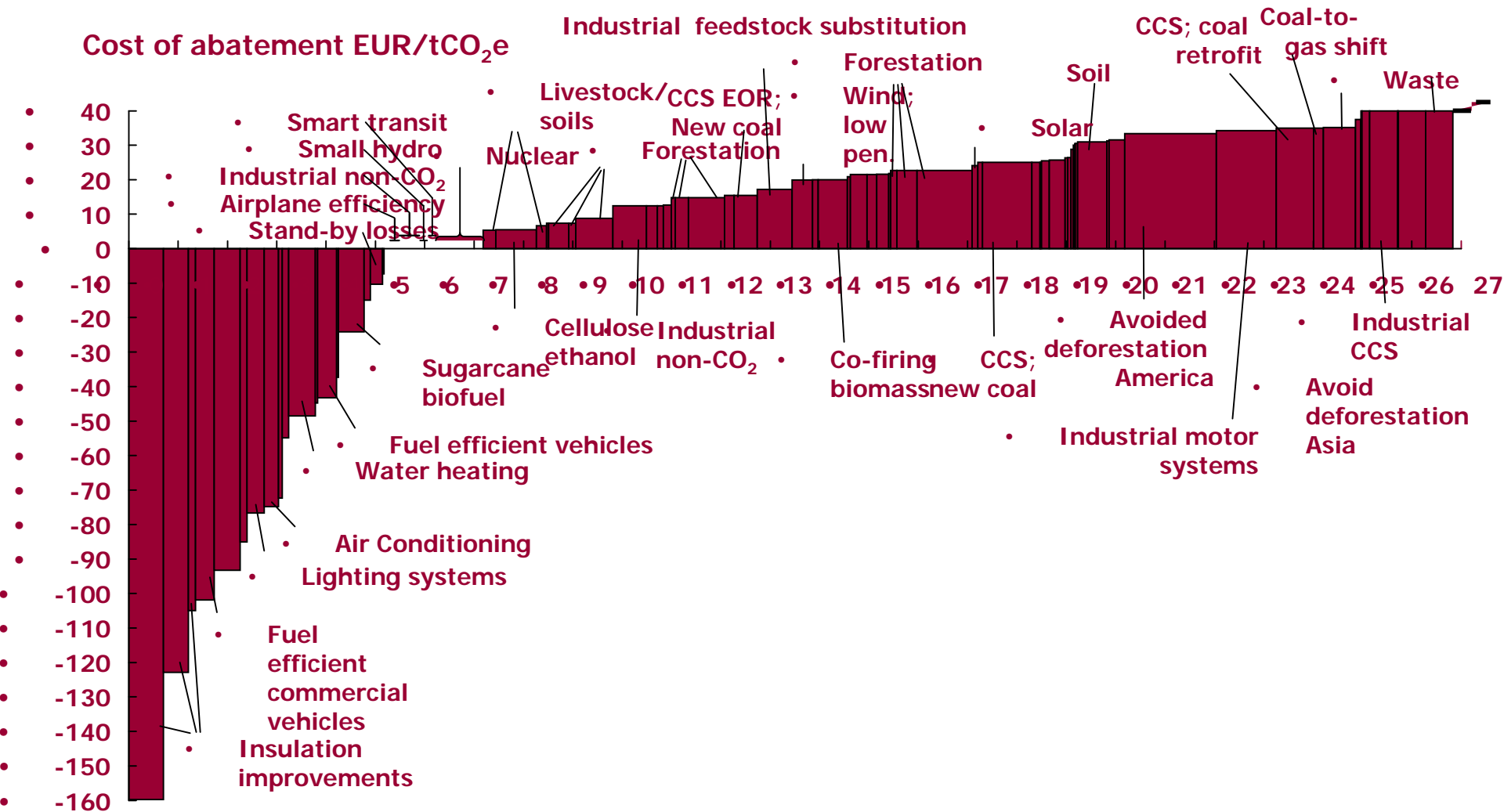
Looked at from behind: emission reduction demand curve



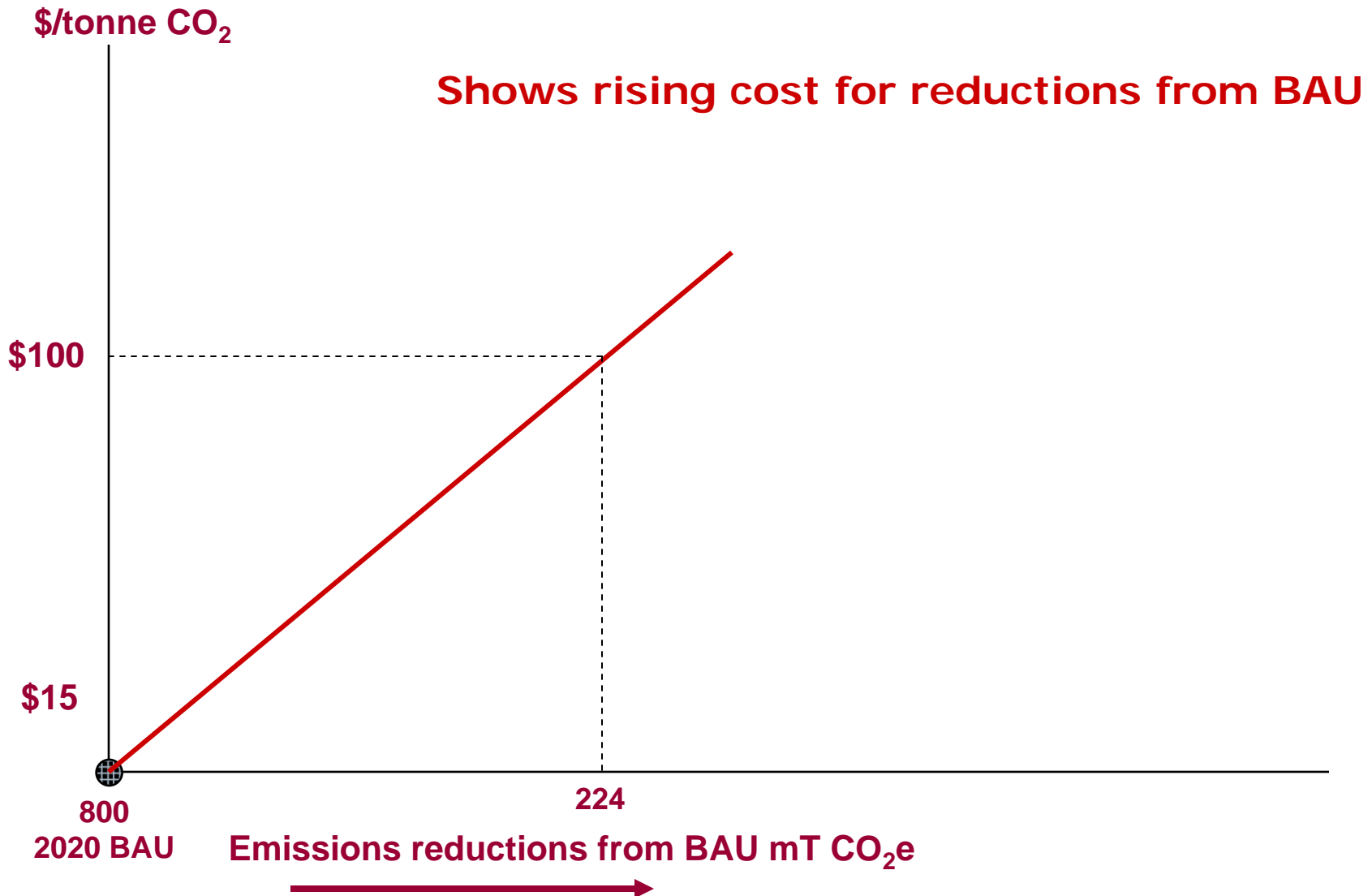
Emission targets: defined in cost and emission terms



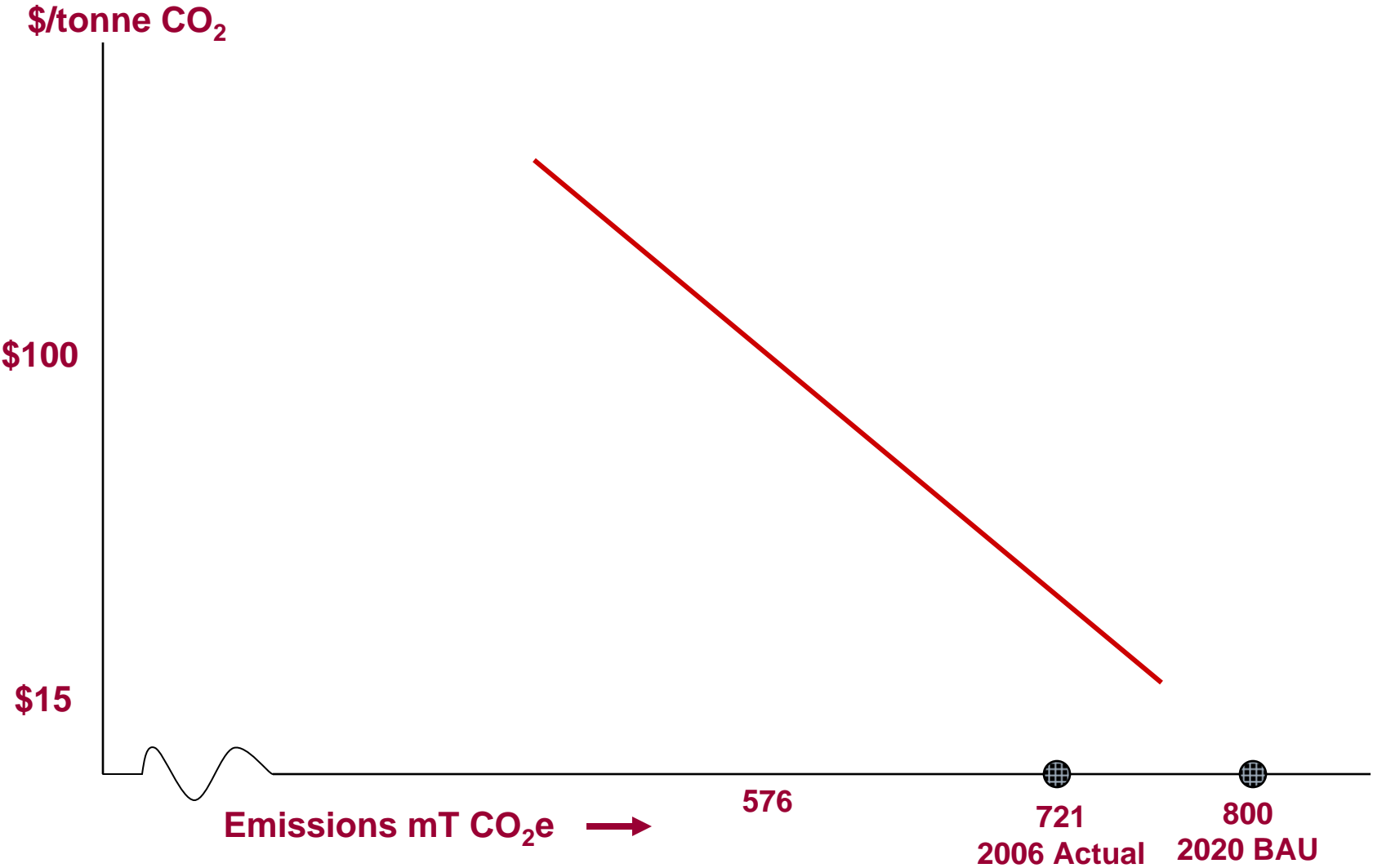
Global abatement curve of GHG abatement opportunities from BAU GtCO₂e/year in 2030



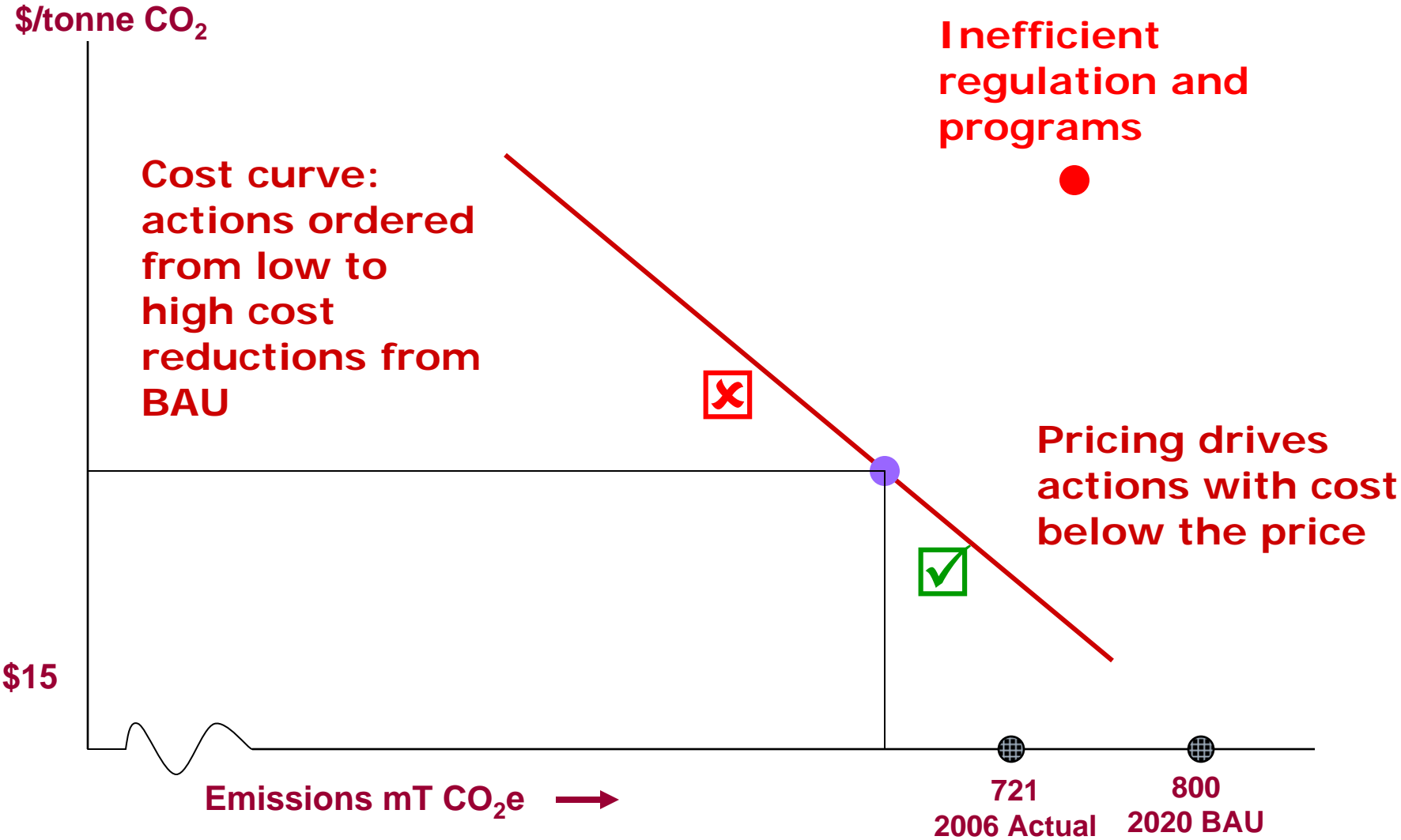
Simplified Concept of emission reduction cost curve



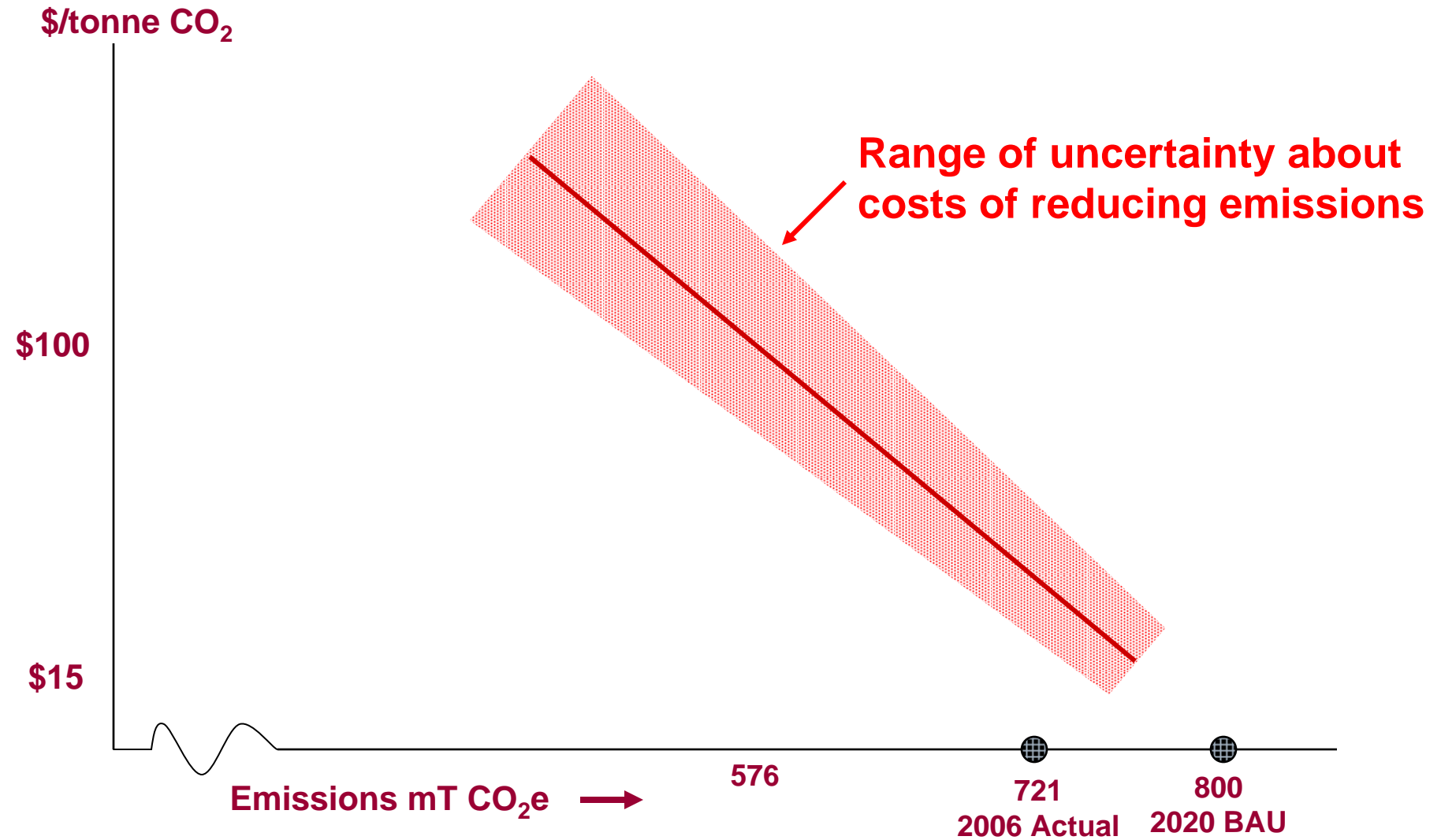
Emission cost curve



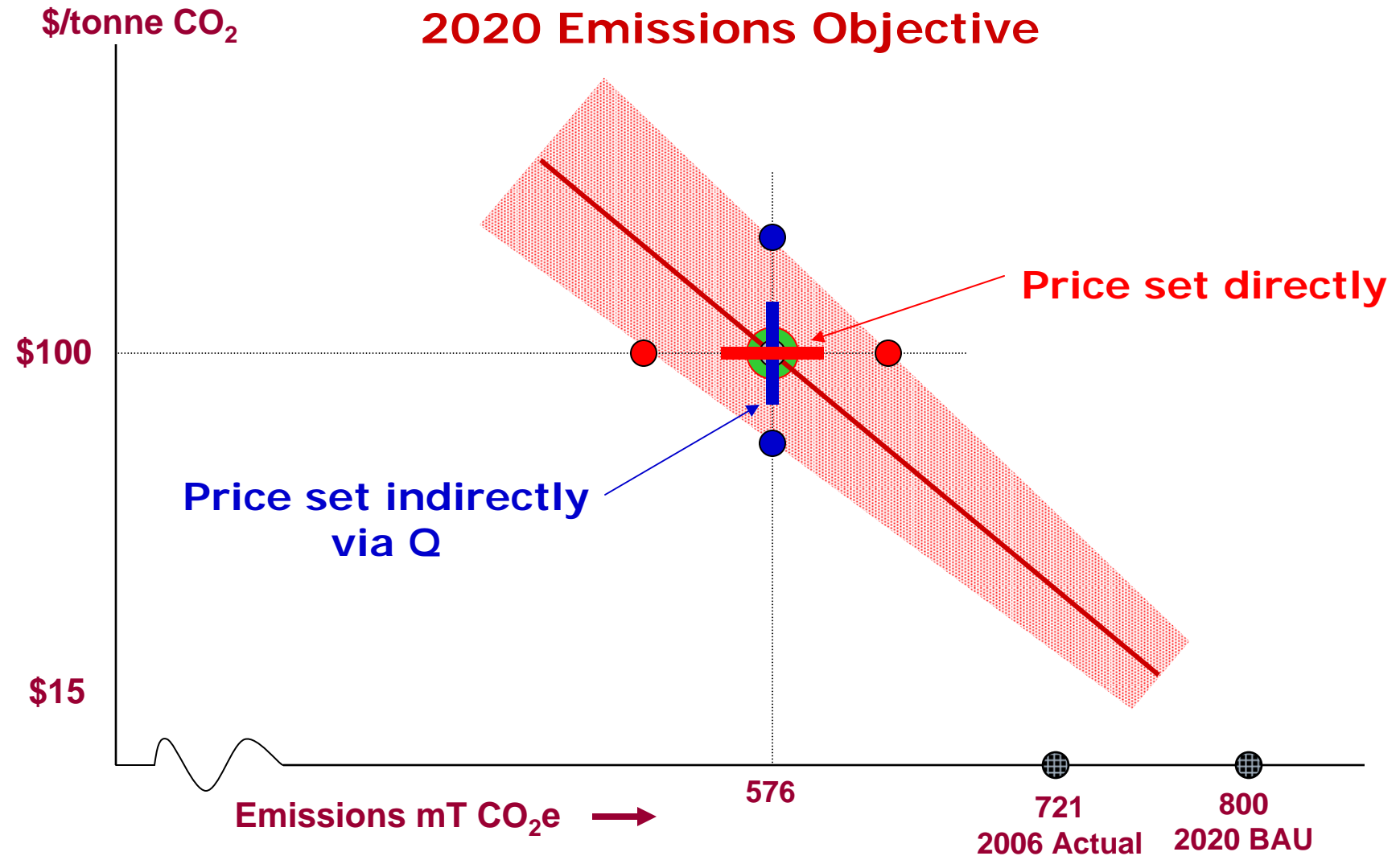
Emission cost curve & emission pricing



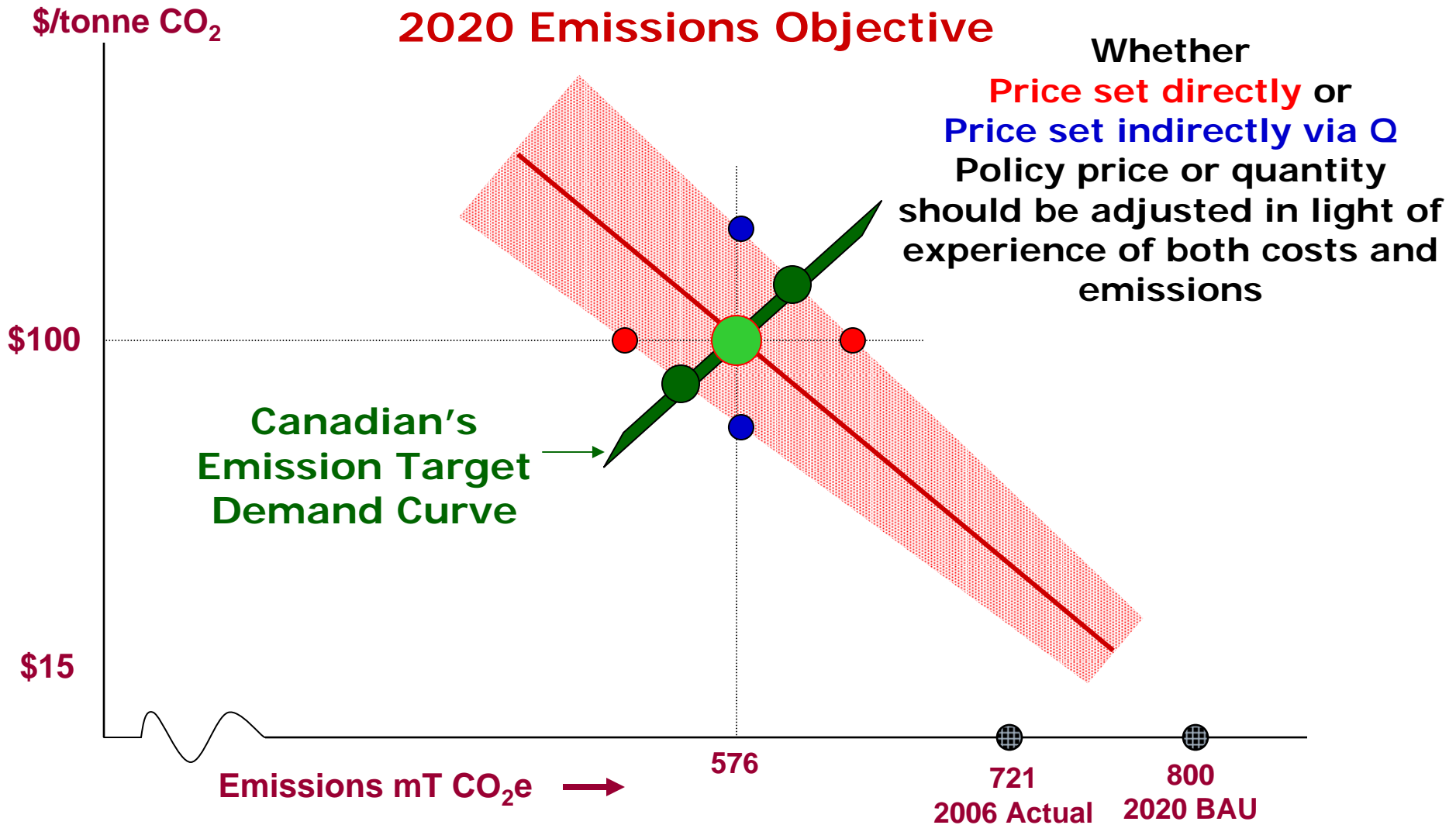
Uncertain emission cost curve



Pricing with uncertain emission cost curve



Price & quantity uncertainty with cost uncertainty and target demand curve

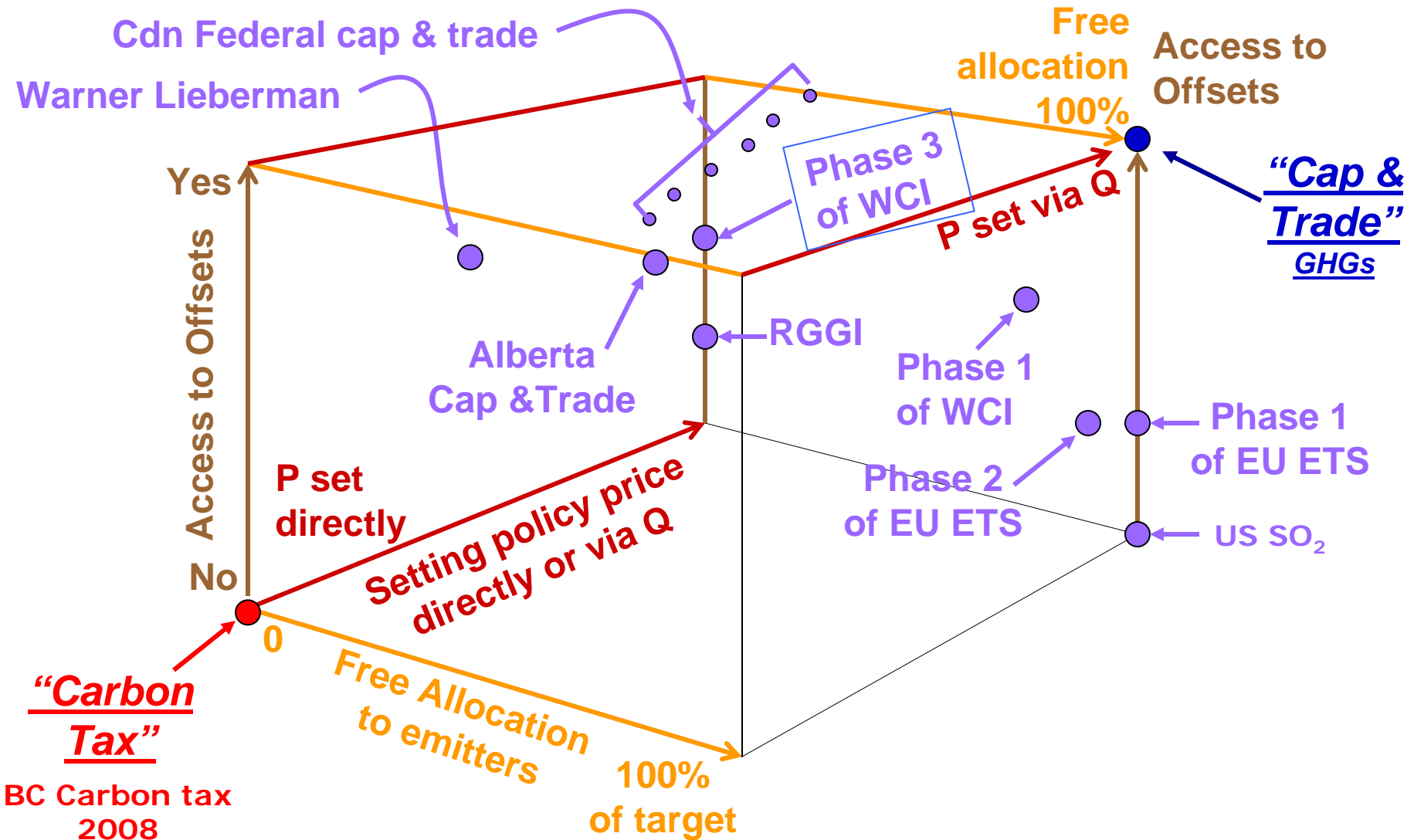


Communication in the emission pricing debate is difficult



Tower of Babel, Pieter Bruegel the Elder, 1563

Complex Issue, Confusing Labels

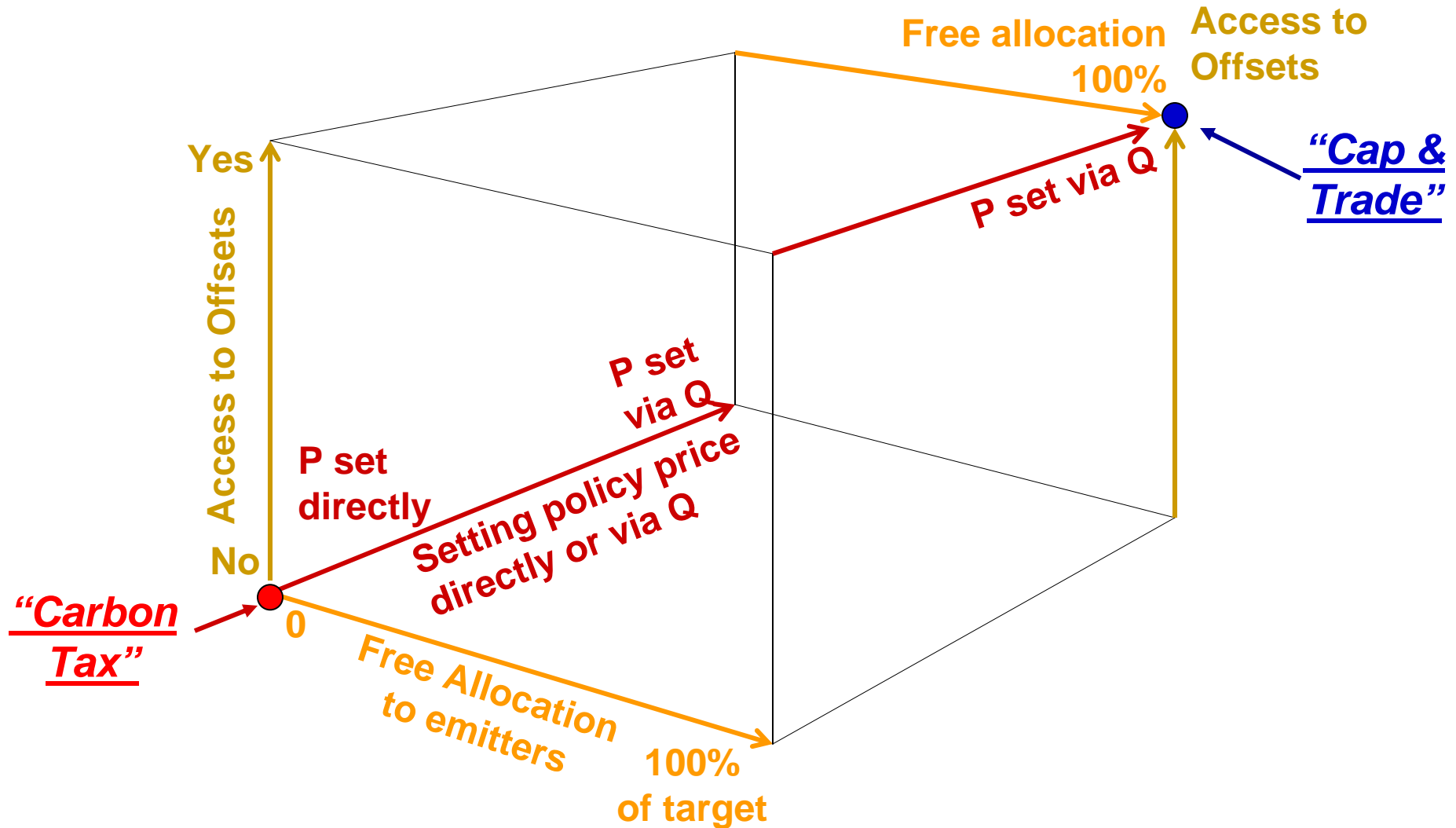


Emission Pricing design is multi-dimensional

3 initial dimensions distinguishing “carbon tax” and “cap and trade”

- Price: set directly v. set indirectly via quantity
- Free allocation to emitters: 0 to 100% of target
- Access to offsets: no, limited, unlimited

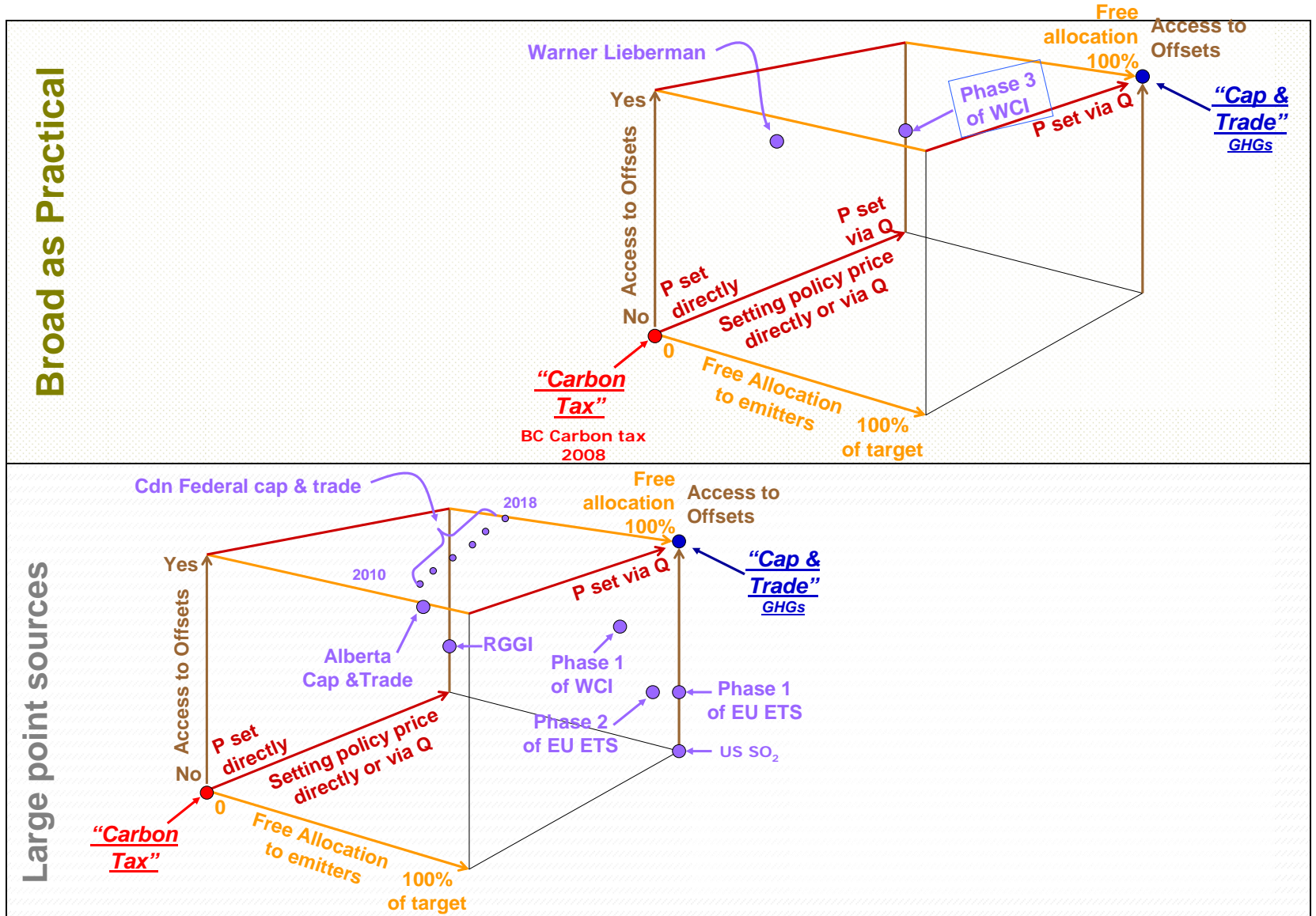
Emission pricing design is multi-dimensional: 3 initial dimensions



4th dimension of policy design :

Emission coverage: large point source v. broad as practical

Emission Coverage



Bottom line

Emission pricing is complex

And yet

**At its heart,
emission pricing
is
very simple**

Emission pricing is taxation and revenue recycling: it's only a question of currency

**"Carbon tax"
currency:
Canadian \$**



**"Cap & trade"
currency:
Govt- issued
emission
permits**



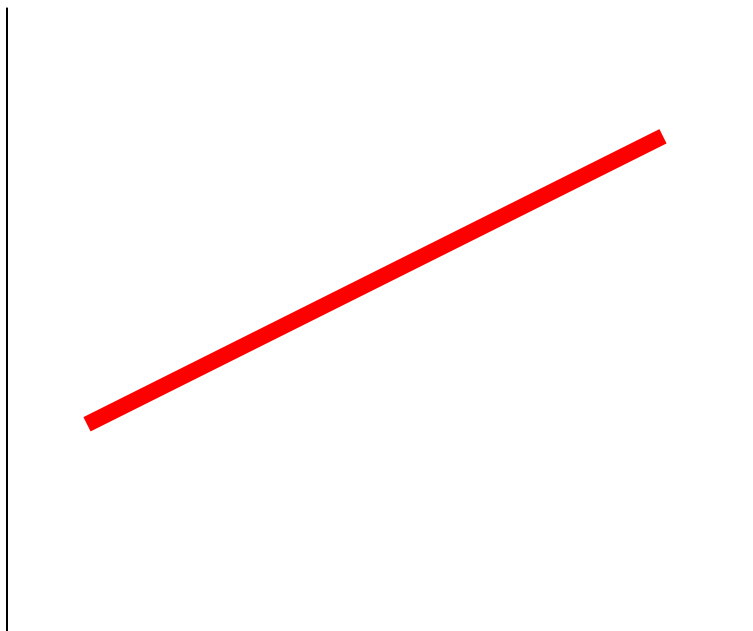
The choice is: Do we set the policy price of CO₂:

Directly

or Indirectly
Complex, costly and volatile

Simple, clear and predictable

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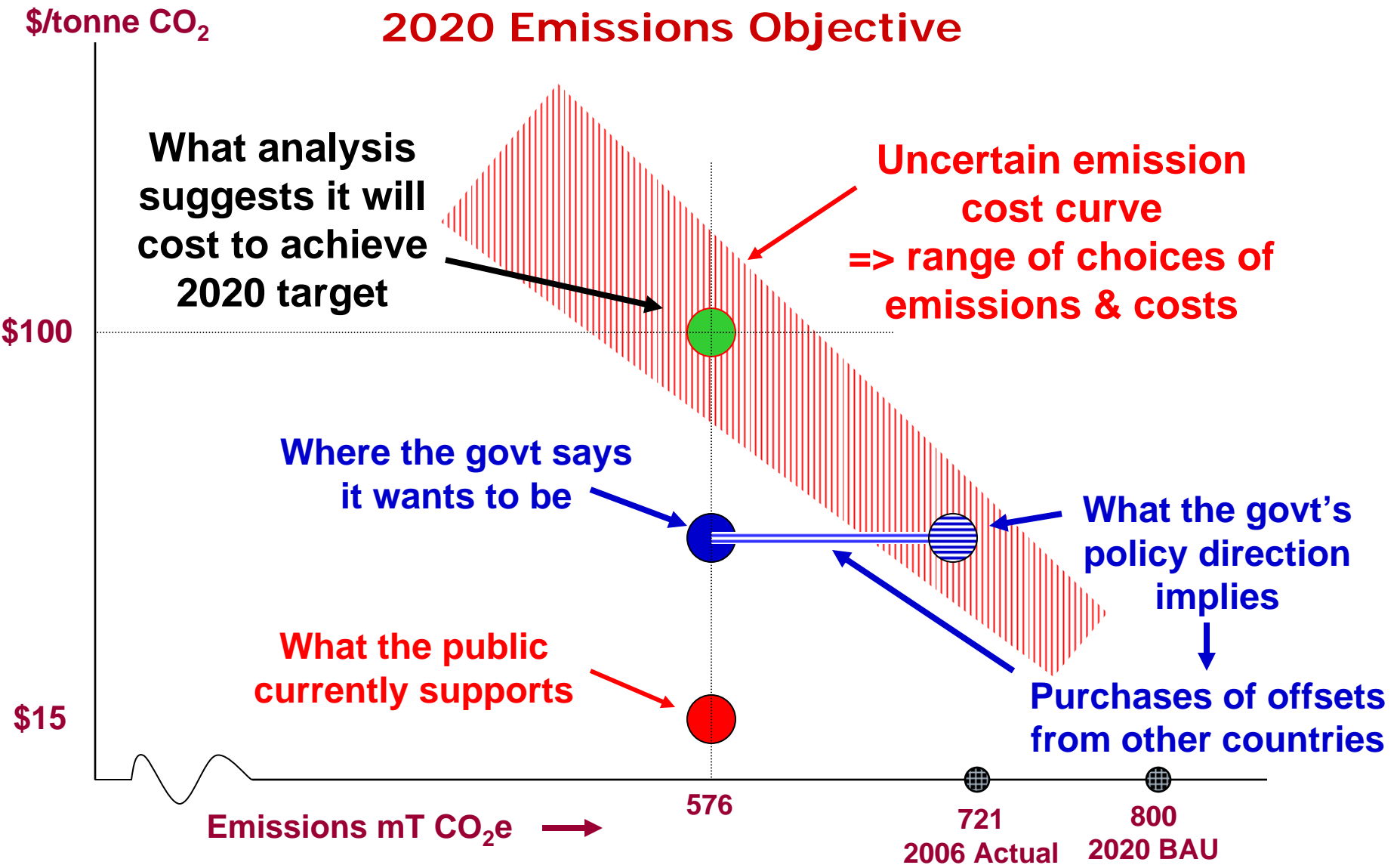
Time



Lessons from experience of policy and debate

- ❑ Form and stringency of policy have been confused
- ❑ Setting price via quantity is complex and expensive, but one person's expense is another's income
- ❑ As the issues become understood, policy moves towards hybrids
- ❑ Adopting a stringent policy is difficult
- ❑ Funding transformative technology is necessary

THE KEY POLICY & EMISSION PRICING ISSUE



What Canada's GHG objectives should be

1. Technology, especially energy supply and transportation
2. Near-term improvements in performance while technology is developed and deployed
3. Technology transfer and aid to poor countries to develop cleanly