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ETS – Emission Trading System
A short history and outlook

CONCAWE Symposium

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A rough history of ETS

- Phase 1: 2005 - 2007:
  - Majority free allowances for heavy industry.
  - Allocation by Member State Governments under “NAPs”.
  - No carry over of Phase 1 allowances to Phase 2.
  - Most allowances given for free by “grandfathering”.
- Phase 2: 2008-2012: As above with some learnings:
  - Commission reduced over generous Phase 1 NAPs by about 7%.
  - Allowances from Phase 3 could be carried over to Phase 3.
  - Use of CDMs, JI credits allowed (Kyoto protocol mechanisms).
- Phase 3: 2013-2020: more later………..

What was learned from Phases 1 and 2 for Phase 3?

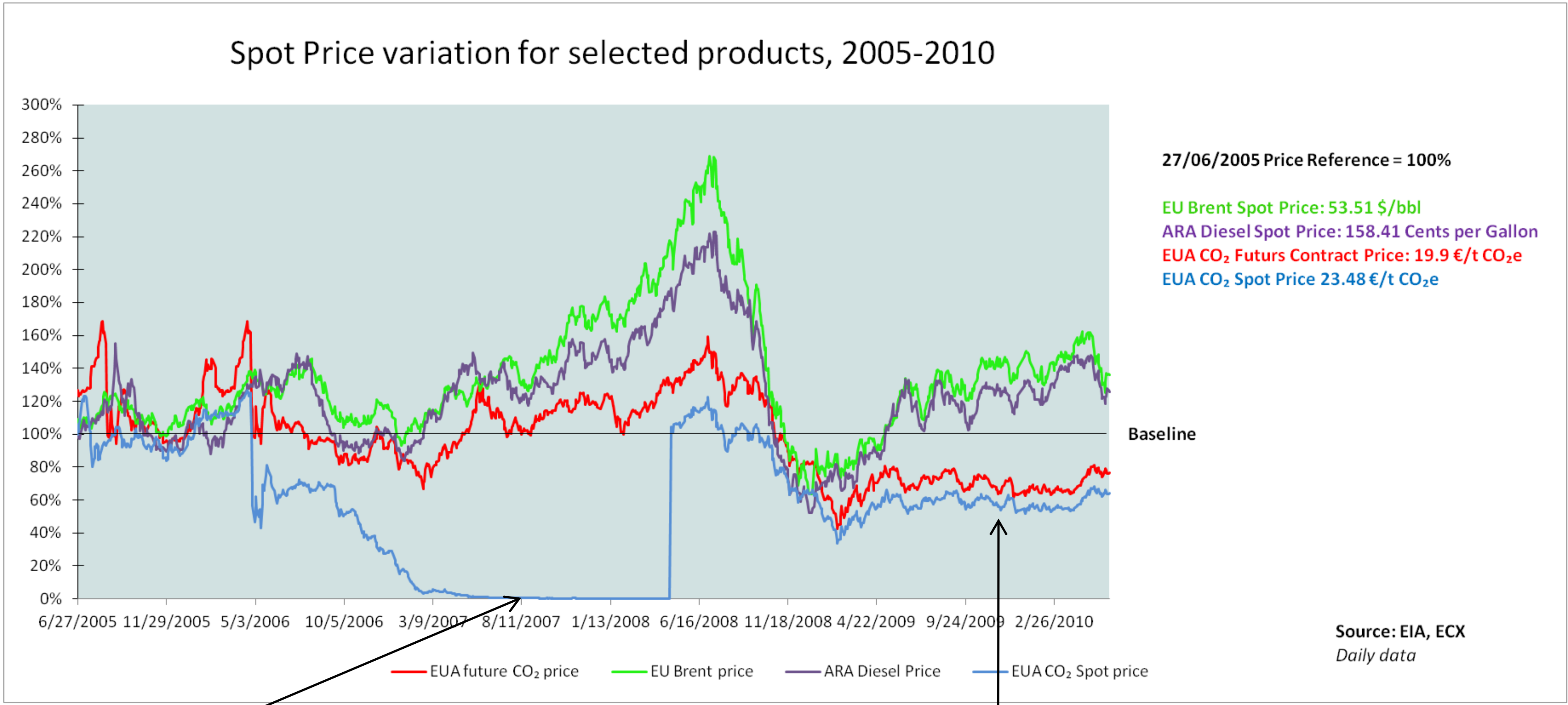
- NAPs were too soft initially in Ph 1 and different Governments protected different favourite sectors ⇨ needed cross EU targets.

- Price dropped at end Ph1 ⇨ needed carry over between phases.

- If there is no international competition as in electricity sector (you cannot put it on a boat), then the allowance cost paid by the marginal producer will be passed through to the customer ⇨ default should be auctioning in future.

- **But,** market was started, priced carbon, created links to other regions via Kyoto mechanisms and seems to have contributed to emissions reductions in the EU.

CO_2 price and product prices both follow global crude price



End of Phase I : ETS CO_2 spot price to zero because no carry forecast to phase II

CO_2 price follows crude up and down but DOES NOT increase as much as crude due to fear of too many phase II allowances

Phase 3 ETS as part of the 2008 Climate and Energy (CARE) Package

- 6 Directives of CARE rushed through in 2008 to allow EU to give clear signal of intentions to COP14 at Poznan.

- Addressed Phase 1 & 2 learnings and after heavy pressure from Industry and many Member States introduced protection for sectors exposed to Carbon Leakage.

- BUT, it left many major elements open to “Comitology”:
  - Which Sectors were exposed.
  - Allocation rules for free allowances.
  - Auctioning rules.
  - Monitoring rules.

- These were substantive elements and are still not all fully resolved after 2+ years of detailed work by EU, Member States, Industry and many consultants.

Refining exceeds the Carbon Leakage thresholds

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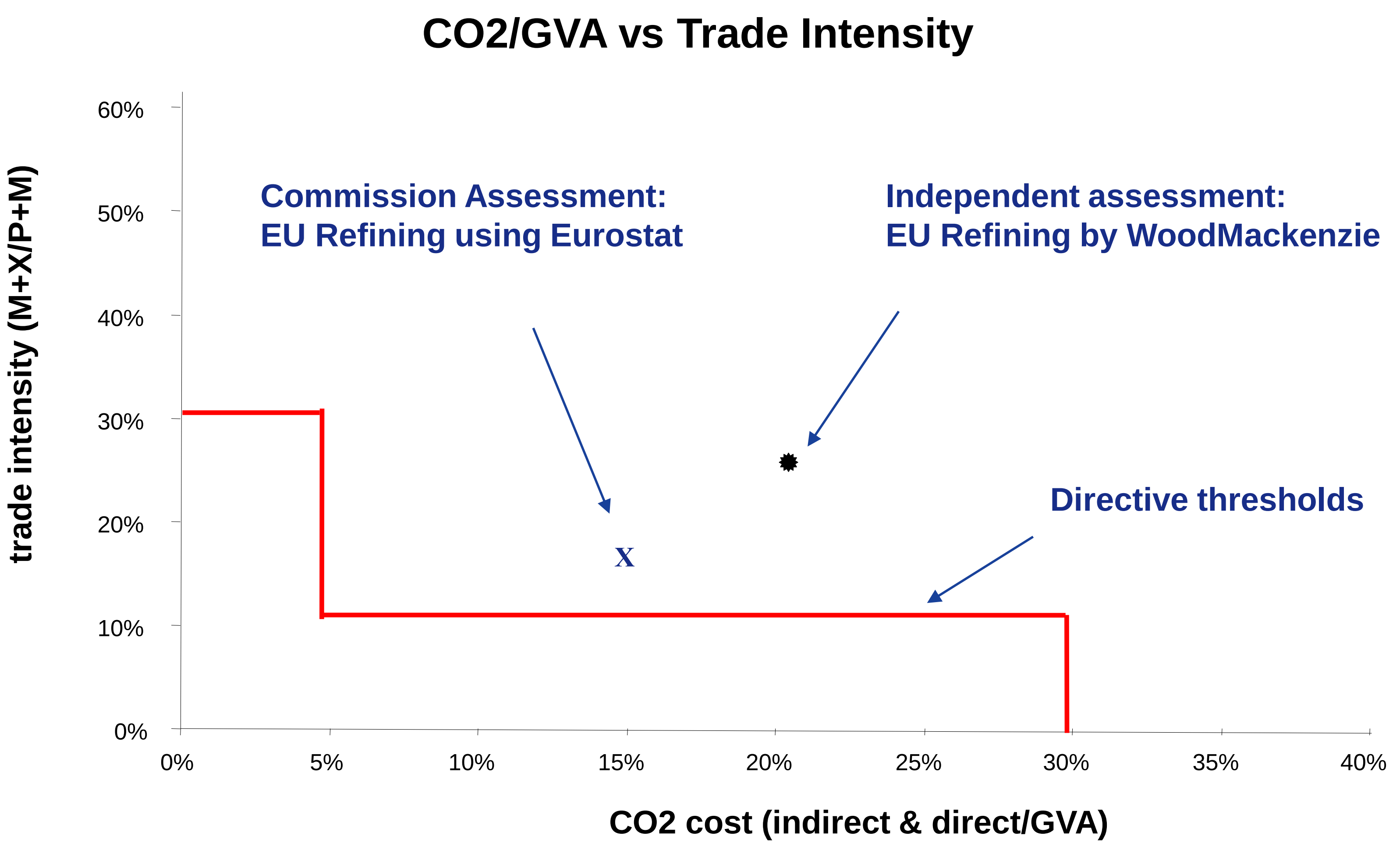

What are the key points on allocation that EUROPIA makes on behalf of Refining?

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- Free allowances to Energy Intensive Industries exposed to risk of carbon leakage (including refining) will be less than 30% of total ETS:
  - Still huge market for auctioned allowances whilst partially protecting exposed sectors through free allowances mostly by benchmarks.
- Refining has one single performance based production benchmark for all 98 EU refineries:
  - Significant achievement to compare whole sector.
- Total free allocation to refining sector based on the benchmark will be 25% less than historical direct emissions (c.f. EU wide target -21%) from 2013:
  - Increases to 30% if purchased electricity is included.
  - Average sector increase in operating costs is 13% even with partial free allowances: a tough competitive challenge.
- EU refining sector was not over allocated allowances in 2008-2009:
  - Less than 0.4% over allocation in Phase 2.

At least 70% of all ETS allowances will be auctioned, the balance allocated free mostly by challenging benchmarks

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	Mte	%
Electricity (estimated)	1159	57
Other ETS activities Potentially eligibles for free allowances	877	43

Sectors > 30 MT CO_2		
Iron & Steel	253	12
Chemicals	168	8
Cement	158	8
Refineries	156	8
Pulp & Paper	38	2
Lime	32	2
	805	40%
To meet -21% reduction	**184**	**30%**

Max of free allowances

Note: Some inconsistency as sector numbers include electricity generated on site
Based on Ecofys estimated numbers from Nov 2009 report to E.Commission

Refining sector GHG emissions have a big spread The benchmark at average of top 10% means sector buys 30% of its needed allowances

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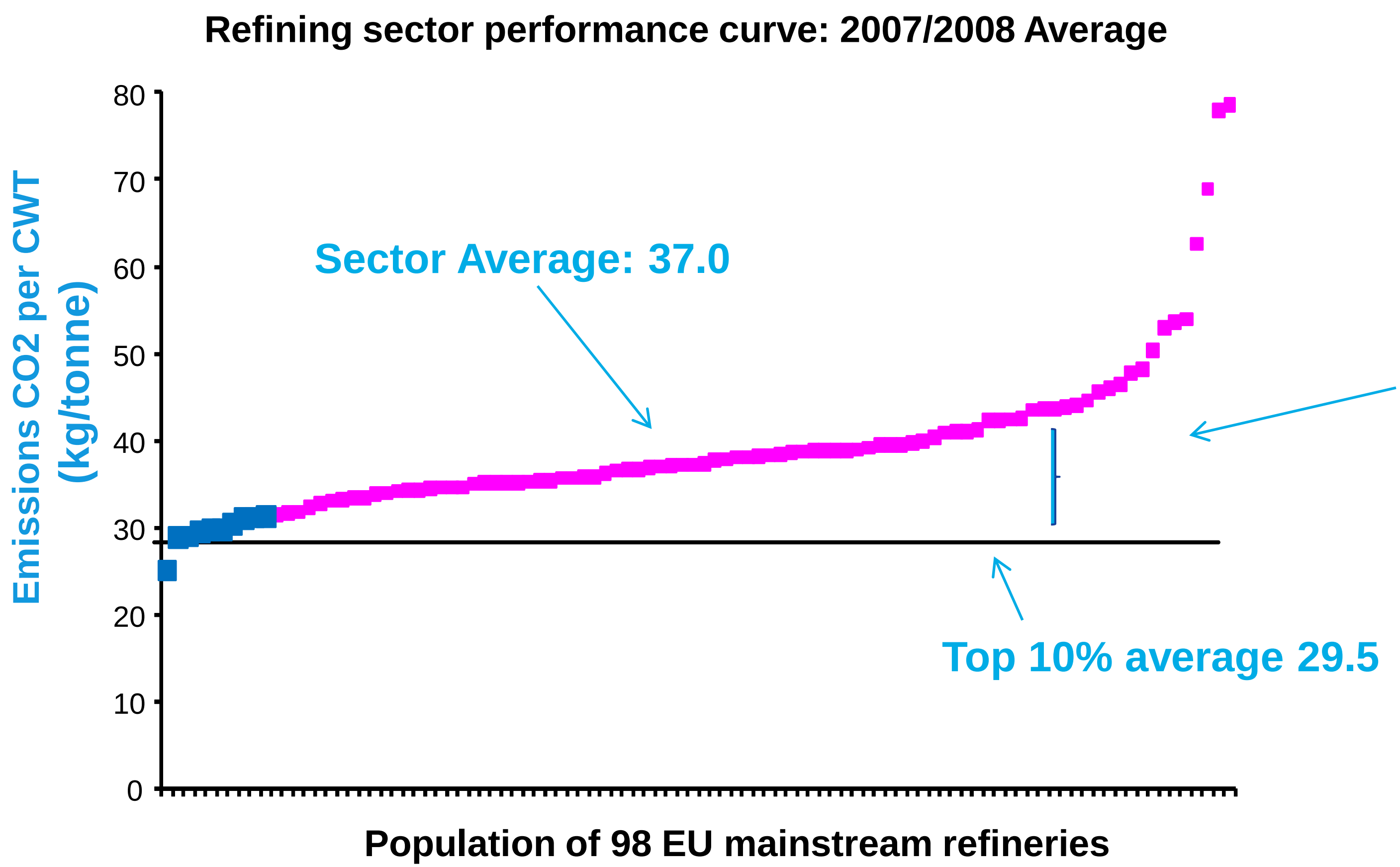
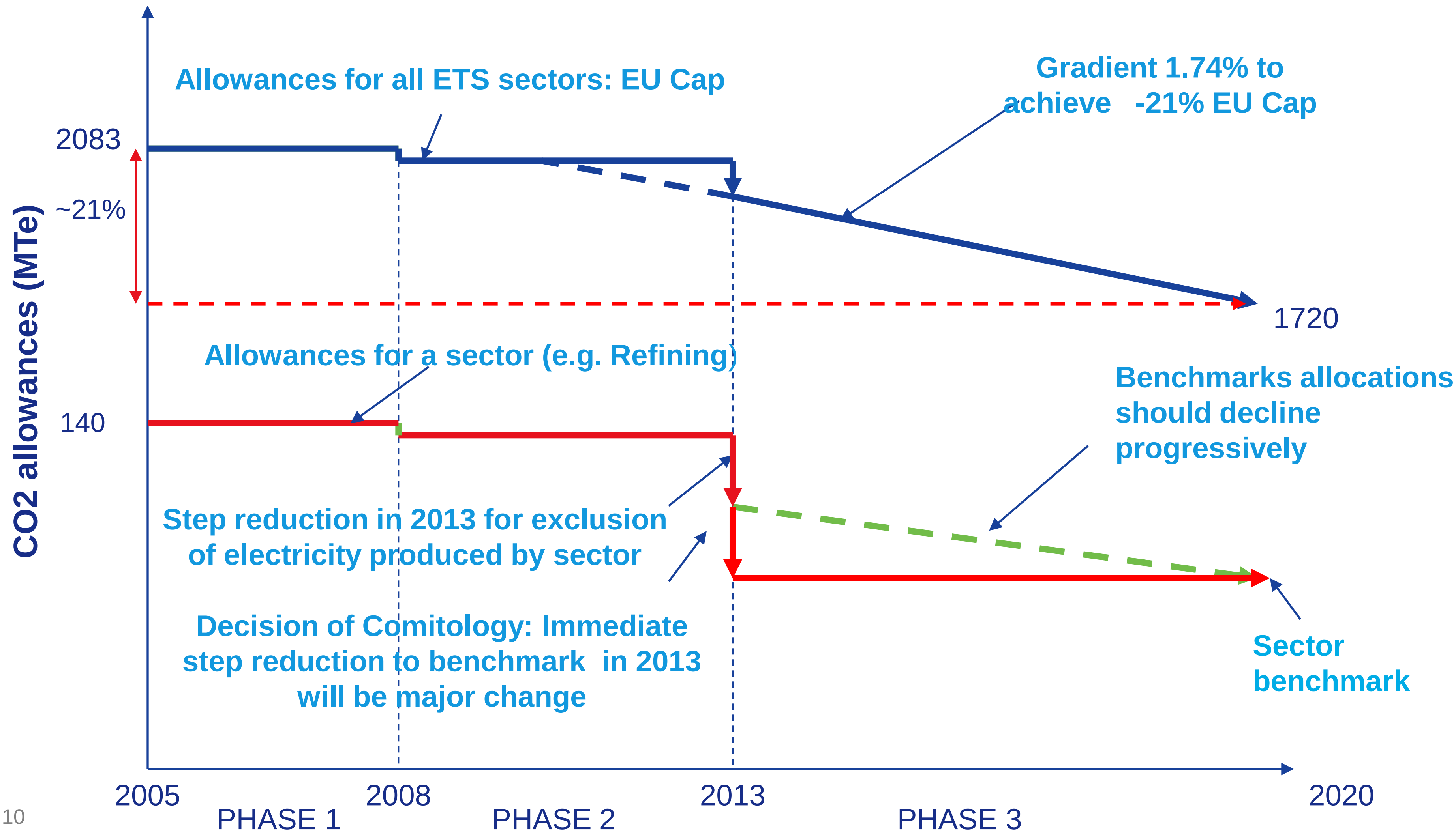


All sites above the line will purchase allowances. Sector average is 25% direct. Impact increases to 30% if purchased electricity added

Source: CONCAWE

Installation allocation should decline gradually to the benchmark in 2020. Comitology decision for step reduction in 2013 is a major concern



EU refineries will on average pay for 30% of their CO_2 emissions from 2013: ⇨ average 13% rise in operating costs and reduced competitiveness vs. non-EU sites

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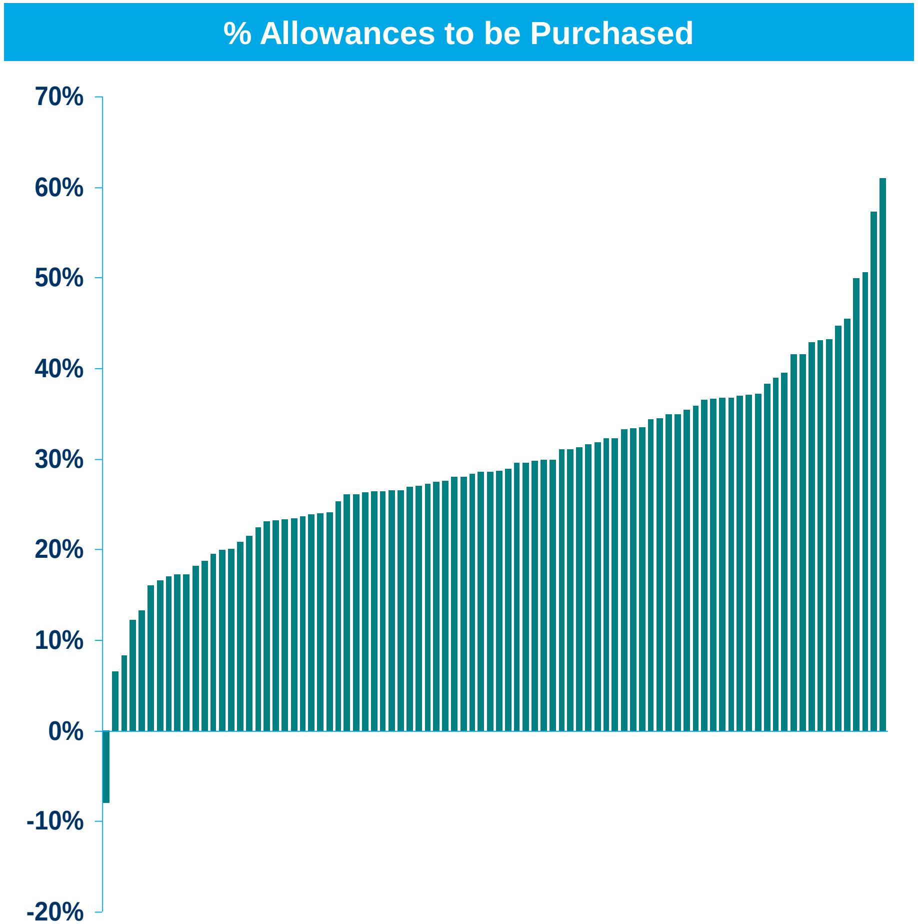

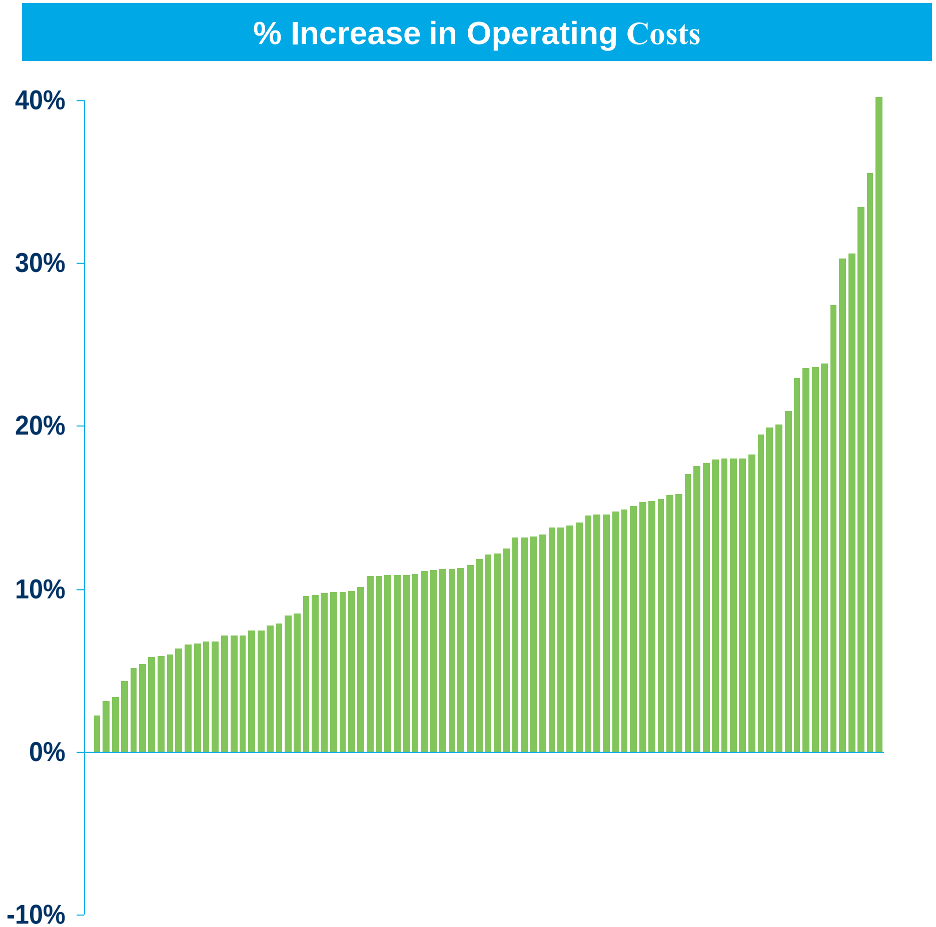

Source: Wood Mackenzie Carbon Impact on EU refining 2010
Notes: Charts presented on the basis of constant industry activity levels.
The data in each chart is presented in ascending order, and so the rank order may differ between charts.
CO2 €30/T

EU Refining had no significant over allocation of allowances in 2008-2009

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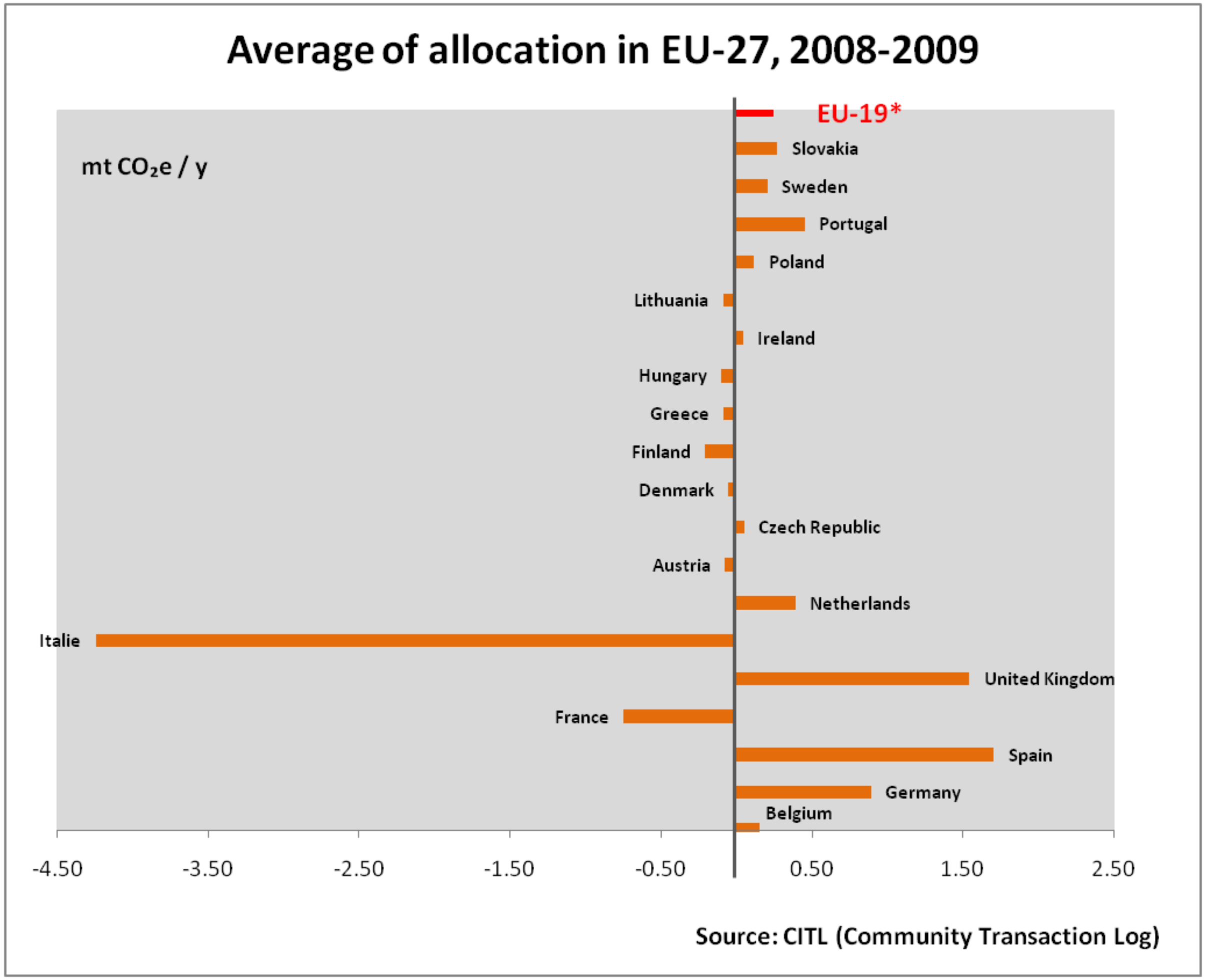
150 Mt annual allowances for refining in EU ETS equal **8%** of overall EU wide ETS allowances. Approx **3%** of EU total emissions

The Net effect in 2008-2009 for EU Refining was an over allocation of **less than 0.2%** of its emissions.



**Only 19 countries in the EU have refineries ; Bulgaria and Romania omitted as data incomplete.*

There is no evidence that Refining has gained "windfall profits" from pass through of allowance costs in Phase 2

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CE Delft concluded in May 2010 that energy intensive industry including refining, Iron and steel and chemicals passed through the prices of free allowances and gained windfall profits of $14B in Phases 1&2 of ETS.

NERA Economic Consulting examined the methodology used to reach this finding and found several serious flaws, such as:

- Authors ignore obvious impacts of product prices such as price of input materials.
- Study selects other factors in an arbitrary fashion.
- The results of the highly theoretical analysis are misinterpreted.

NERA concludes that the **CE Delft study "provides no reliable basis for claims of pass through of CO2 costs…"** and that its "**conclusions go beyond objective fact finding…….to make unsupported claims on a contentious topic".**

What next for ETS?

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- Preparations for Phase 3:
  - Phase 3 allocation of allowances to installations now with Member States……..finished by end 2011??
  - Big overhang of surplus allowances from Phase 2 keeping allowance price lowish and stable for moment.
  - No sign of other emissions markets linking up to the EU ETS.
  - Review of sectors exposed to carbon leakage in 2014.

- Discussions in EU on tightening the target:
  - Is -21% by 2020 enough with EU reduction ambitions of -80% by 2050?
  - Energy Intensive sectors strongly opposed to any EU tightening of target whilst no equivalence from competing regions.

⇨ **Competitiveness issue still a major risk for international businesses.**

Conclusion

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- Free allowances of exposed sector will not undermine the ETS:
  - But will partially mitigate the competitive impact on sectors exposed to international competition.
  - **70% of all allowances will be auctioned.**

- Application of a 10% best benchmark for Refining will still mean 25% reduction in free allowances:
  - 30% cost impact if purchased electricity included.

- If benchmark applies from 2013, this will entail a sudden and significant (13%) rise in operating costs across the sector:
  - Up to 50% for some sites.

- EU cannot afford to increase the 2020 target further unilaterally without losing more of its heavy industry.

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Thank you for your attention

BACK UP

Energy is 50% of Refining cash costs and ETS costs will add significantly to these

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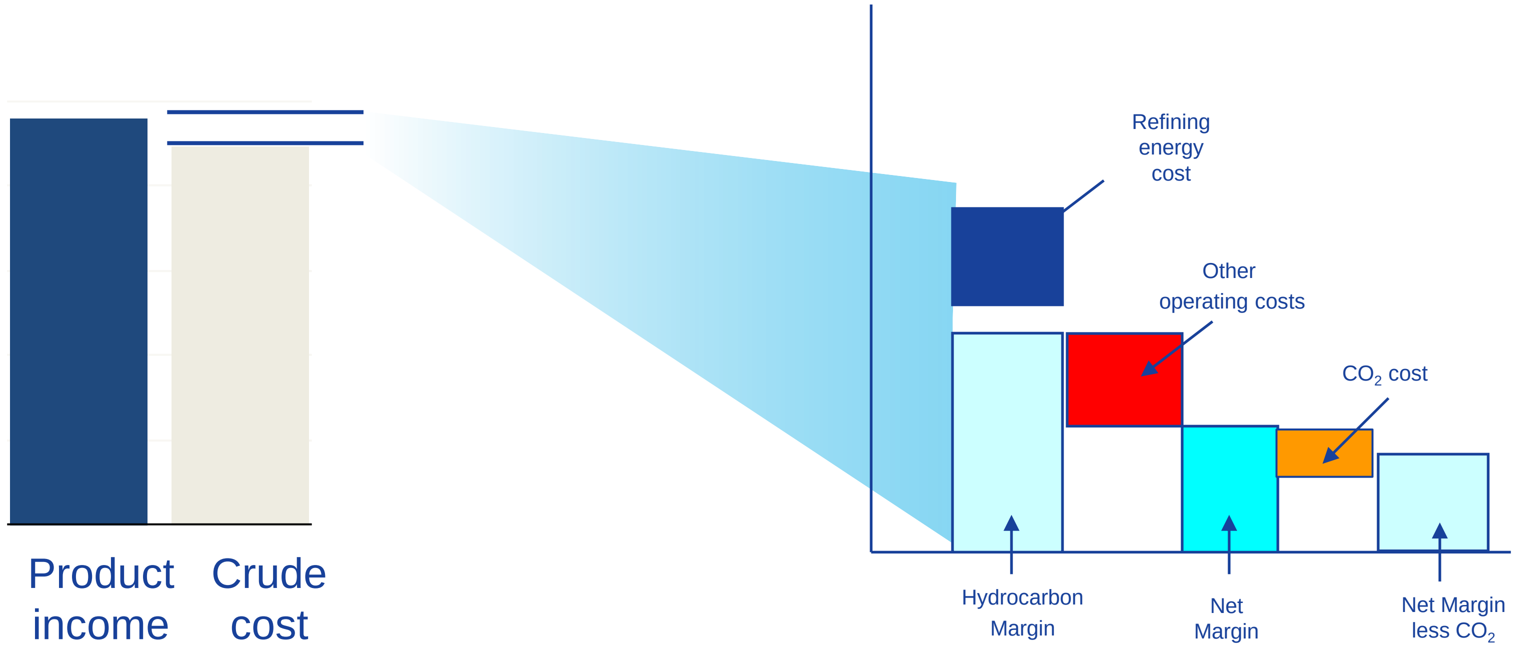
Crude cost and Income from Products

Refinery operating cost 2007



Sources:
Typical refinery yield: CONCAWE

Sources:
- Operating cost: CONCAWE

CO2 cost: average 13% increase in costs

Freight costs for importing Refined products are similar to ETS costs

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