

MS Workshop case studies

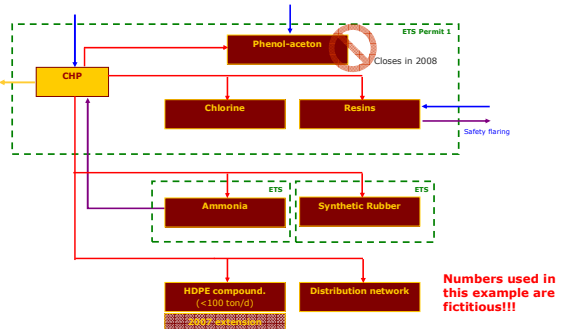
Case study: chemicals production site

2 May 2011

Disclaimer and copyright

- This workshop is conducted in the framework of a project for DG Climate Action. However, the Commission is not responsible for the correctness, completeness or quality of the information provided.
- The contents of these slides are based on the guidance documents as endorsed by the Climate Change Committee on 14 April 2011 and by no means substitute the legal text
- Any values used in examples do not necessarily reflect existing situations and are only meant for illustrative purposes.
- Ecofys makes no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability with respect to the information in this presentation. Any reliance you place on such information is therefore strictly at your own risk and Ecofys is not liable for any damage whatsoever arising from the use of this information
- The copyright of this presentation is reserved. It may therefore not be used for any purpose without the explicit permission of Ecofys

A chemical site\*



\*Throughout the presentation we take the "ETS PERMIT 1 perspective"  
 The HDPE compounding installation has a small capacity and is therefore outside EU-ETS

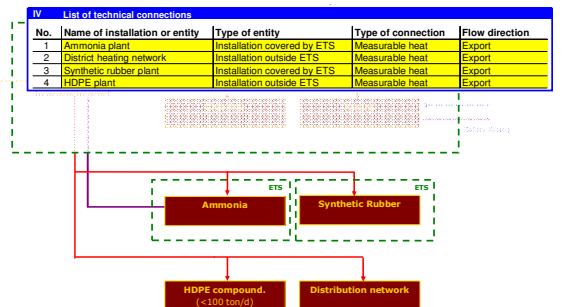
General information

- Is the installation eligible for free allocation? **Yes**
- Is the installation an electricity generator pursuant Art. 3(u)? **No**
- What is the chosen baseline period? **2005-2008**
- Did the installation operate at least one day in each calendar year in the baseline period? **Yes**
- Greenhouse Gas Emissions and Energy input from fuels

Data collection template: tab D. Emissions

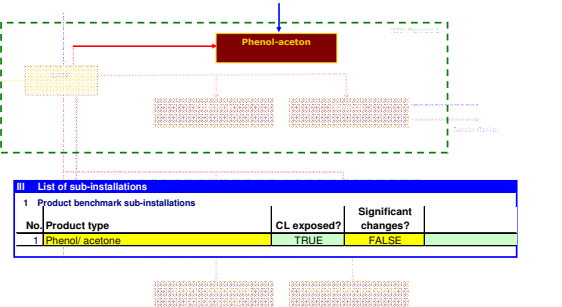
| Total Direct Greenhouse Gas Emissions and Energy Input from Fuels                          |                  |                 |                 |                 |                 |
|--|------------------|-----------------|-----------------|-----------------|-----------------|
| 3 Result of installation level data for use in sheets "D. Emissions" and "E. EnergyFlows": |                  |                 |                 |                 |                 |
| Installation level data:   | Unit             | 2005            | 2006            | 2007            | 2008            |
| Total CO2 emissions  | CO2 / year       | 195,000         | 180,000         | 176,000         | 161,000         |
| Memo-Item: Biomass emissions   | CO2 / year       | 0               | 0               | 0               | 0               |
| Total N2O emissions  | CO2e/year        | 0               | 0               | 0               | 0               |
| Total PFC emissions  | CO2e/year        | 0               | 0               | 0               | 0               |
| <b>Total direct emission of the installation</b>   | <b>CO2e/year</b> | <b>195,000</b>  | <b>180,000</b>  | <b>176,000</b>  | <b>161,000</b>  |
| <b>Total energy input from fuels</b>   | <b>TJ / year</b> | <b>3,421.05</b> | <b>3,157.69</b> | <b>3,087.72</b> | <b>2,824.55</b> |

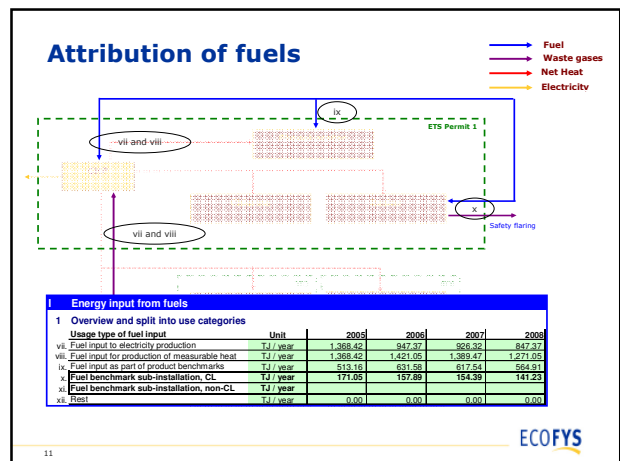
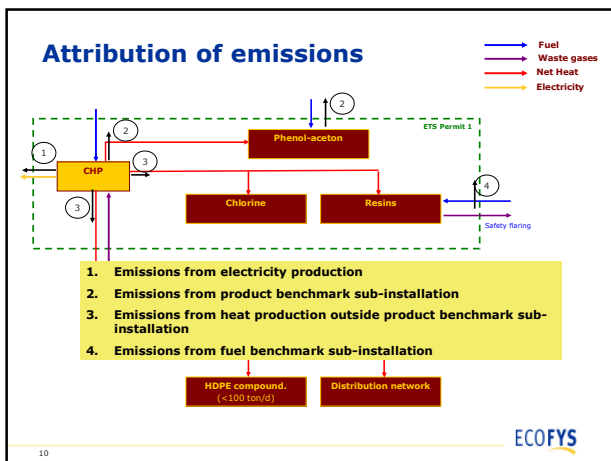
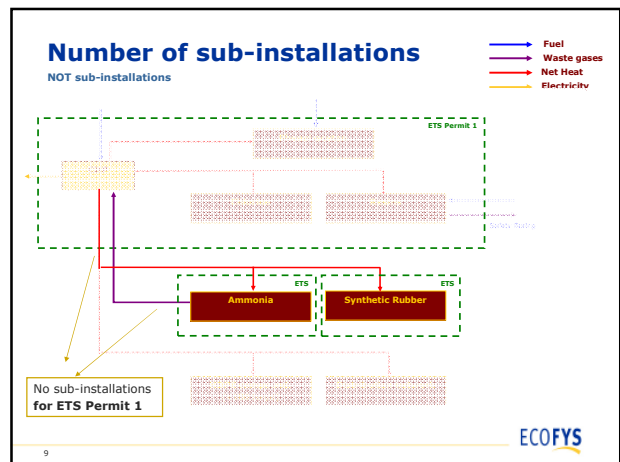
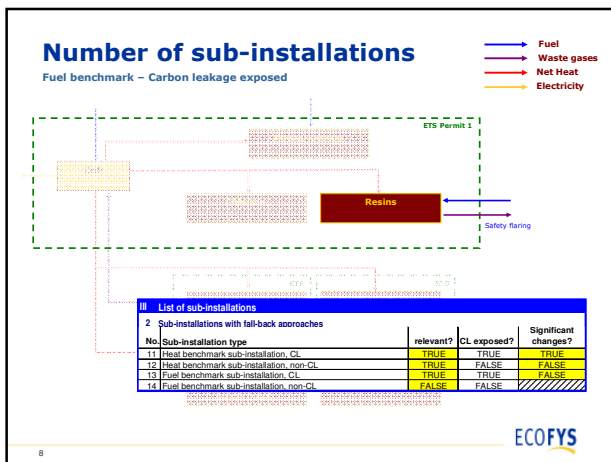
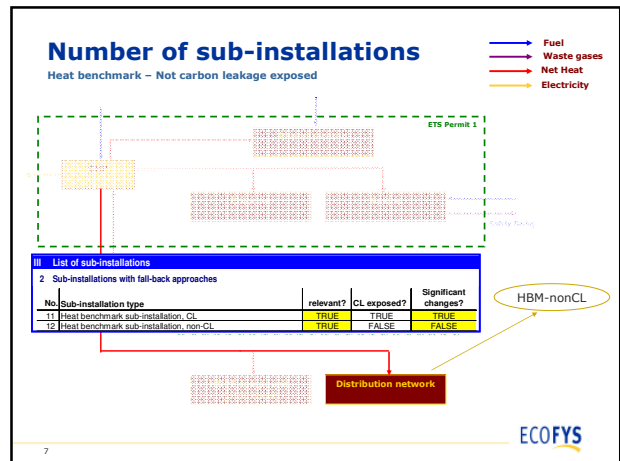
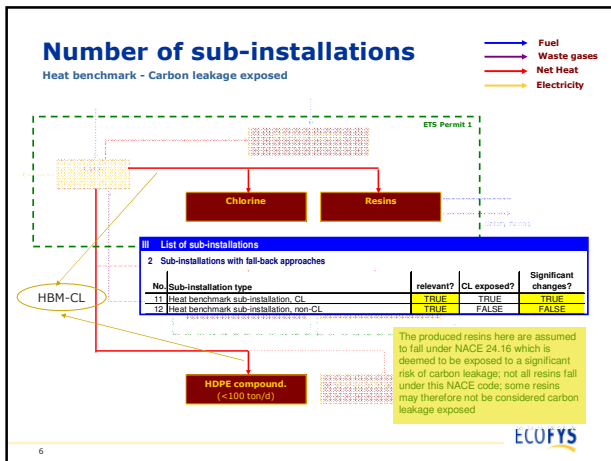
Relevant technical connections



Number of sub-installations

Product benchmark





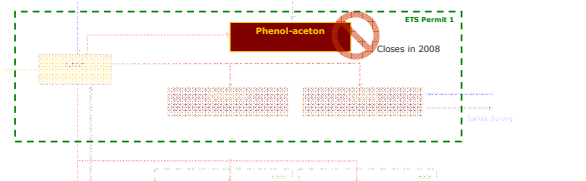
## Attribution of measurable heat

- For allocation,
  - Exact data for measurable heat consumption/export is necessary for heat benchmark sub-installation

The data collection template contains a 'simple' and a 'complex' tool to determine the balance of measurable heat flows.

## HAL

Product benchmark



| Historic Activity levels and disaggregated production details |        |         |         |         |      |
|---|--------|---------|---------|---------|------|
| 1 Sub-installation with product benchmark 1:                  |        |         |         |         |      |
| Main activity level:  | Unit   | 2005    | 2006    | 2007    | 2008 |
| Phenol/acetone  | tonnes | 200,000 | 190,000 | 190,000 | 0    |
| i. From sheet "I" SpecialBM"                                  | tonnes | 200,000 | 190,000 | 190,000 | 0    |
| ii. Values used for calculation:                              |        | 200,000 | 190,000 | 190,000 | 0    |

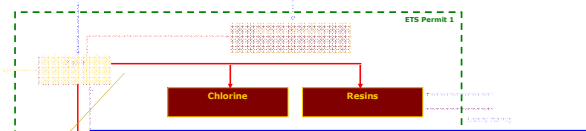
## HAL – how to establish

Product benchmark

- In this example the production stops 1<sup>st</sup> of January 2008. Significant capacity changes in the period between 1-1-2005 and 30-6-2011 impact the HAL. Is there a 'significant change in capacity' in this case?
- No. Because there **is NO physical change** in the installation and therefore the 'change in capacity rule' does NOT apply.
- However, partial cessation of operations will apply (article 23, 2.) meaning that preliminary allocation will have to be changed as of 2013.
- So still: no allocation for closed sub-installation!

## HAL

Heat benchmark – Carbon leakage exposed



| Historic Activity levels and disaggregated production details |      |      |      |      |          |
|---|------|------|------|------|----------|
| 1 Fall-Back Sub-installation 1:                               |      |      |      |      |          |
| Main activity level:  | Unit | 2005 | 2006 | 2007 | 2008     |
| Heat benchmark sub-installation, CL                           |      |      |      |      | relevant |
| Heat benchmark sub-installation, CL                           | TJ   | 1000 | 1000 | 800  | 700      |

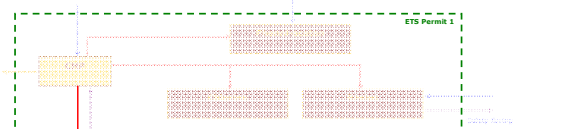
## HAL – how to establish

Heat benchmark-CL

- In this example the HDPE compounding installation (<100 t/day) significantly increases production (but still <100 t/day) and associated heat demand. Is this also regarded as a significant increase of the heat benchmark subs installation?
- See guidance document 6, section 4.2:
  - In this example, the additional amount of heat is delivered by using existing spare CHP capacity without any physical change at the CHP.
  - Due to the absence of physical change at the CHP, this significant change of HDPE heat consumption does not constitute a capacity increase of the HBM-CL sub installation.
  - Therefore, standard calculation of HAL: median values of the annual historical activity levels in the baseline period

## HAL

Heat benchmark – Not carbon leakage exposed



| Historic Activity levels and disaggregated production details |      |      |      |      |          |
|---|------|------|------|------|----------|
| 2 Fall-Back Sub-installation 2:                               |      |      |      |      |          |
| Main activity level:  | Unit | 2005 | 2006 | 2007 | 2008     |
| Heat benchmark sub-installation, non-CL                       |      |      |      |      | relevant |
| Heat benchmark sub-   | TJ   | 700  | 500  | 600  | 600      |

