

// Mozfest, London, October 29th 2017

<http://bit.ly/2zdrfB7>

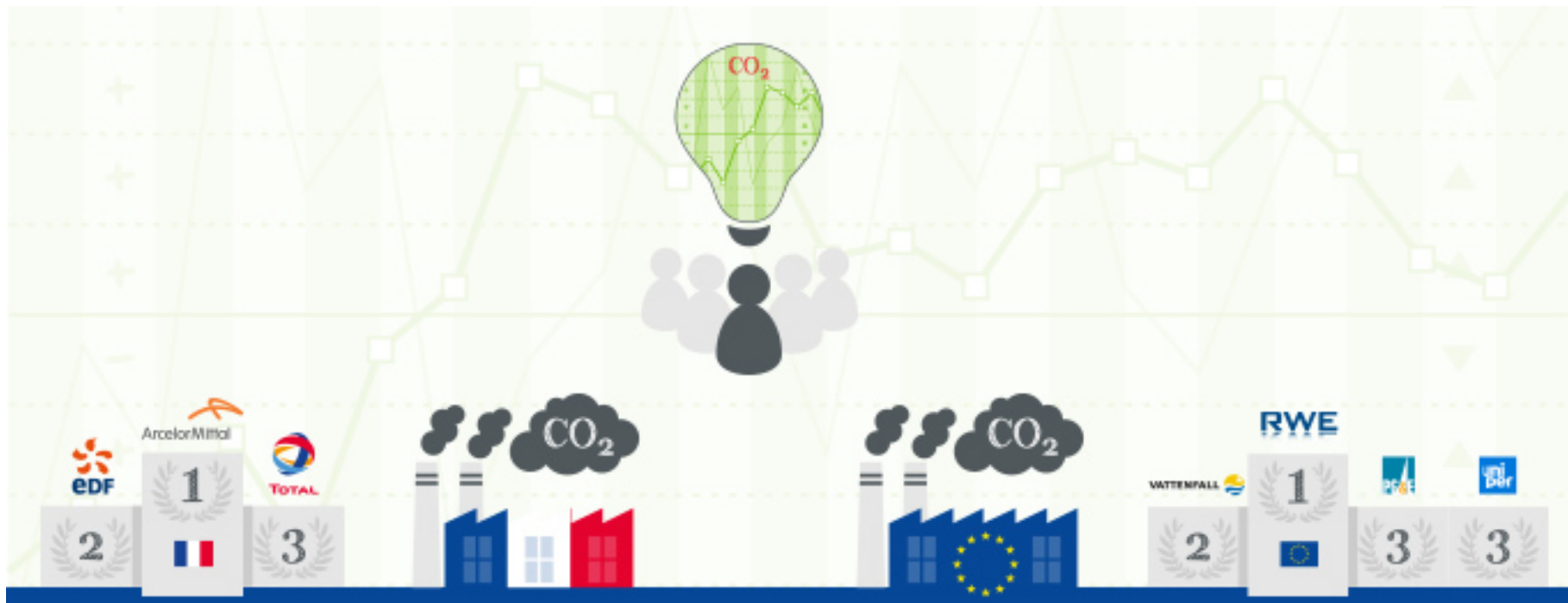
The big 40 on European CO2 market : who's really in control ?

*Ana Lutzky, journalist
@anouchka*



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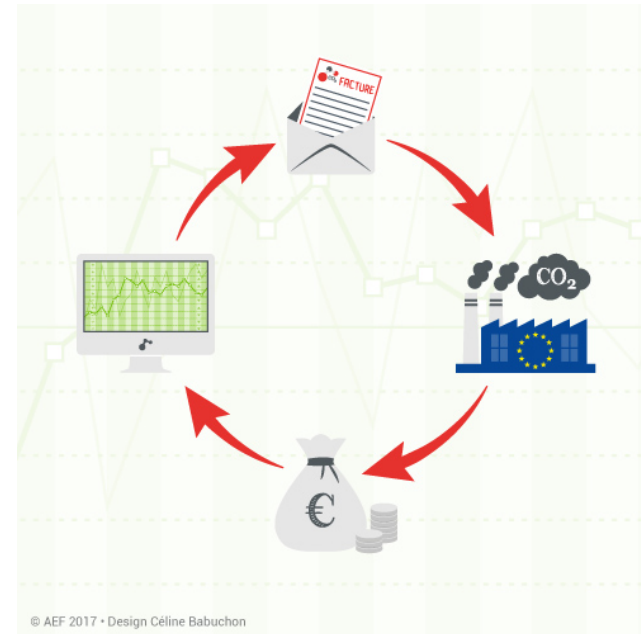
A one-year investigation
following the CO₂ upstream,
from the subsidiaries to the parent company.



moz://a festival


What is the CO2 market ?

- Focused on industrial sites $> 50.000 \text{ t CO}_2/\text{y}$
- 30 countries of Europe
- 3 phases :
 - phase I (2005-2007)
 - phase II (2008-2012)
 - phase III (2013-2020)



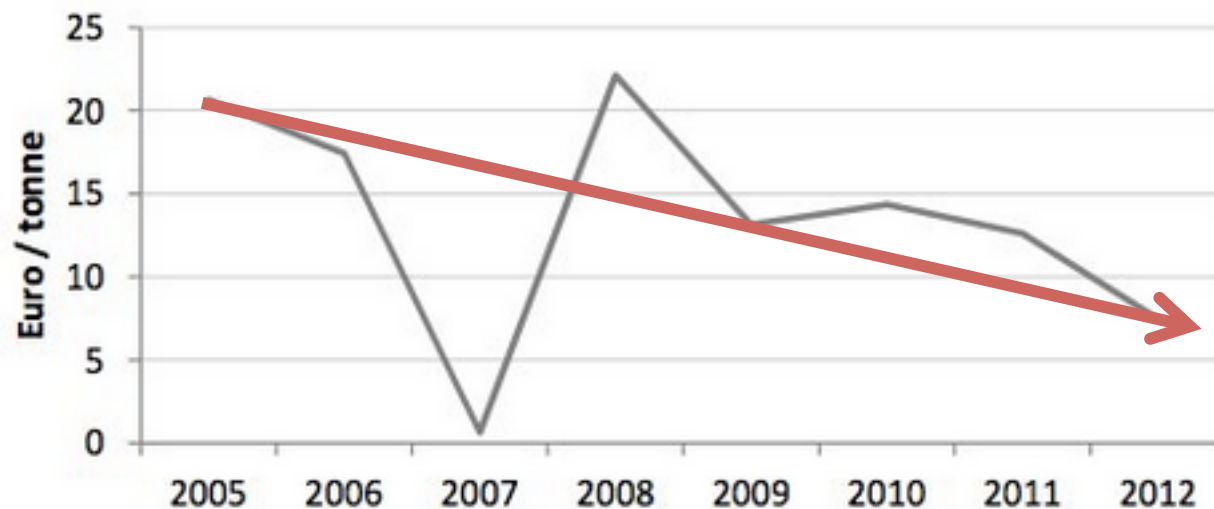
What is the CO2 market ?

An example :

- Company A | company B = 100.000 t CO2
- Gvt gives free allocations = 95.000 t CO2
- A  10.000 t.
- A sells 5.000 t to B !

It didn't work like planed

- A long-lasting failure CO2 price = 6 euros



Source : ECX et BNX, CDC Climat

How the idea was born

- A 12 years-old market with a strong failure history.



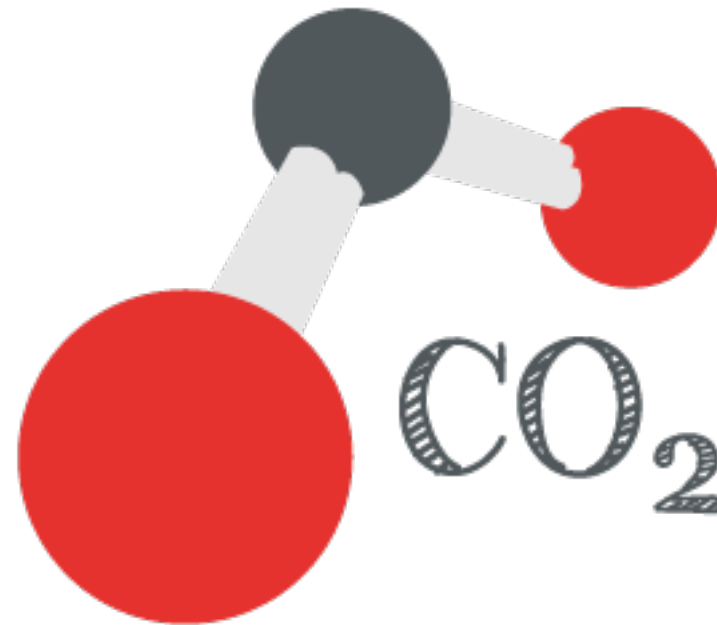
- NGOs pointing at the « fat cats »

- Investigative TV program (cash investigation) pointing at « ghost plants »



Focusing on its concentration

- Think tanks pointing at its concentration



Looking for the data

- First discovery and disappointment : the EUTL.
 - <http://bit.ly/2pnPfvc>
- Click on « **ETS** », then on « **Allocations to Stationary Installations** »

The screenshot shows the European Union Transaction Log (EUTL) website. At the top, there is a header with the European Commission logo and the text "CLIMATE ACTION" and "European Union Transaction Log". To the right of the header are links for "Contact", "Search on EUROPA", "Site Map", "Legal Notice", and a language selector set to "English (en)".

Below the header is a navigation menu on the left with the following items: "Welcome", "ETS", "Allocations to Stationary Installations", "Allocations to Aircraft Operators", "Compliance", "Accounts", "Operator Holding Accounts", "Transactions", "International Credit Entitlements".


The main content area is titled "Allocations to Stationary Installations as per National Allocation Program Table (NAPt)* / National Allocation Table (NAT)**". Below this title is a section "Allocation Table - Search Criteria". It contains a dropdown menu for "National Administrator" with a list of countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, and Estonia. To the right of this dropdown is a label "EU ETS Phase:" followed by a dropdown menu currently set to "All". Below these search criteria are two buttons: "Search" and "Export".

Below the search criteria is a section "Allocation Table - Search Result". It contains a table titled "List of Allocation Tables". The table has the following structure:

National Administrator		EU ETS Phase		Allowances		
				For issuance to not new entrants	From NER	Options

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3 loops

 **CLIMATE ACTION**
European Union Transaction Log

A > European Commission > Environment > Climate Change > European Union Transaction Log

Allocations to Stationary Installations as per National Allocation Program Table (NAPT)* / National Allocation Table (NAT)**

Allocation Table - Search Criteria

National Administrator:
EU ETS Phase:

Allocation Table - Search Result:

List of Allocation Tables

National Administrator	EU ETS Phase	For issuance to not new entrants	Allowances
Austria	Phase 1 (2005-2007)	97791309	990150
Austria	Phase 2 (2008-2012)	160218569	2000000
Austria	Phase 3 (2013-2020)	160599893	1382741

*EU ETS Phase 1&2
**EU ETS Phase 3

Allocations to Stationary Installations as per National Allocation Program Table (NAPT)* / National Allocation Table (NAT)**

Allocation Table - Search Criteria

National Administrator:
EU ETS Phase:

Allocation Table - Search Result:

List of Allocation Tables

National Administrator	EU ETS Phase	For issuance to not new entrants	Allowances	Options
Austria	Phase 1 (2005-2007)	97791309	990150	History of this Allocation Table Installations linked to this Allocation Table
Austria	Phase 2 (2008-2012)	160218569	2000000	History of this Allocation Table Installations linked to this Allocation Table
Austria	Phase 3 (2013-2020)	160599893	1382741	History of this Allocation Table Installations linked to this Allocation Table


Allocation Table Installation Information

EU ETS Phase:
National Administrator:
Allowances for operators:
Allowances for reserve:

Detailed Information on the Allocation Table Installations

Information on Installations in Allocation Table

Installation ID	Installation Name	Address City	Account Holder Name	Account Status	Permit ID	Latest Update	2005
1	Baumit Baustoffe Bad Ischl	Bad Ischl	"BAUMIT" Baustoffe Gesellschaft m.b.H.	open	IKA119	2009-05-08 09:13:58	44894
2	Breitenfelder Edelstahl Mitterdorf	Mitterdorf	Breitenfelder Edelstahl AG	open	IES069	2009-05-08 09:13:58	8492
3	Ziegelwerk Danreiter Ried im Innkreis	Ried	Ziegelwerk Danreiter GmbH & Co KG	open	IZI155	2009-05-08 09:13:58	7397
4	Wienerberger Blindenmarkt	Blindenmarkt	Wienerberger Ziegelindustrie GmbH	closed	IZI146-1		

 **CLIMATE ACTION**
European Union Transaction Log

A > European Commission > Environment > Climate Change > European Union Transaction Log

Operator Holding Account Information

General Information

National Administrator	Account Type	Account Holder Name	Installation ID	Company Registration No	Account Status
Austria	100-Holding Account	"BAUMIT" Baustoffe Gesellschaft m.b.H.	1	FN 87132 k	open

Details on Contact Information

Type	Name	Main Address Line	Secondary Address Line	Postal Code	City	Country
Account holder	"BAUMIT" Baustoffe Gesellschaft m.b.H.	Linzner Straße 8		4820	Bad Ischl	Austria

Installation Information

General Information

Installation ID	Installation Name	Permit ID	Permit Entry Date	Permit Expiry/Revocation Date	Subsidiary Company	Parent Company	E-PRTR Identification
1	Baumit Baustoffe Bad Ischl	IKA119	2005-06-01				1056110589

Address Information

Main Address Line	Secondary Address Line	Postal Code	City	Country	Latitude	Longitude	Main Activity
Rettenbach 143		4820	Bad Ischl	AT			30-Production of lime, or calcination of dolomite/magnesite

Contact Information

Name	Main Address Line	Secondary Address Line	Postal Code	City	Country

Compliance Information

EU ETS Phase	Year	Allowances in Allocation	Verified Emissions	Units Surrendered	Cumulative Surrendered Units**	Cumulative Verified Emissions***	Compliance Code	Options
2005-2007	2005	44894	41399	41399	41399	41399	A	History

What do we want ?

- **All the countries (30)**
- **All the years (3 phases)**
- installation name and ID, account holder name, address city, an account status, a permit ID, CO2 emitted, CO2 allocated.
- Arranged in row and columns, in a unique file

Tools to build a scraper

- **Windmill** = to open a browser and click on the page
- **Mechanize** = to open url and scrape the content
- **BeautifulSoup** = after we have downloaded the content of the page, to extract information in order to store it in a new file

Starting with an installation (loop 1)

url="<http://bit.ly/2rnnlxF>"

Operator Holding Account Information

General Information

National Administrator	Account Type	Account Holder Name
France	100-Holding Account	SMURFIT KAPPA PAPIER RECYCLE FRANCE

Details on Contact Information

Type	Name	Main Address Line
Account holder	SMURFIT KAPPA PAPIER RECYCLE FRANCE	Allée des Fougères

Installation Information

General Information

Installation ID	Installation Name	Permit ID	Permit Entry Date	Permit Expiry/Revocation Date	Subsidies
1	Smurfit Papier Recyclé Fr. Papeterie d'Alaincourt	05100008	1999-03-17	2012-02-17	

Address Information

Main Address Line	Secondary Address Line	Postal Code	City	Country	Latitude	Longitude	
Rue de la Papeterie	/	02240	Alaincourt	FR	0	0	9-Industrial plants for

Contact Information

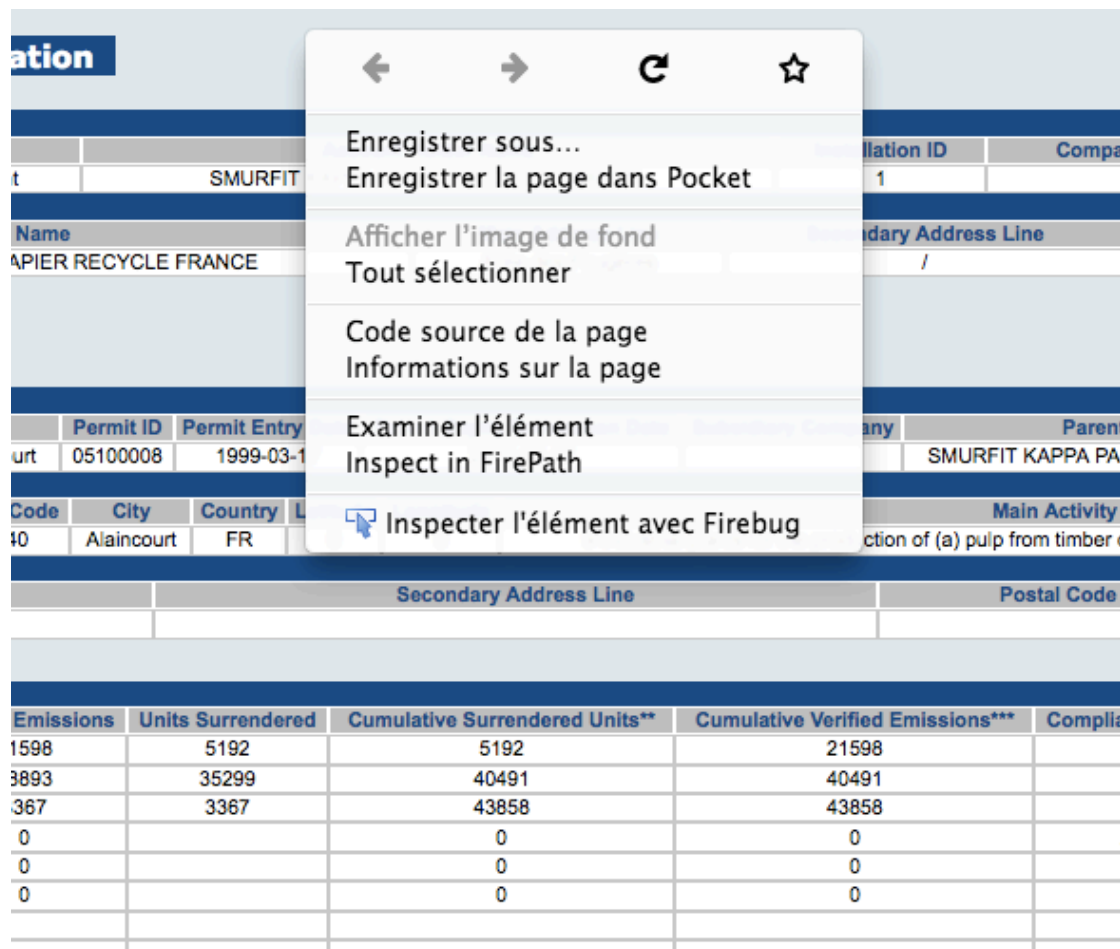
Name	Main Address Line	Secondary Address Line

Compliance Information

EU ETS Phase	Year	Allowances in Allocation	Verified Emissions	Units Surrendered	Cumulative Surrendered Units**	Cumulative
2005-2007	2005	16406	21598	5192	5192	
2005-2007	2006	16406	18893	35299	40491	
2005-2007	2007	16405	3367	3367	43858	
2008-2012	2008	14097	0		0	
2008-2012	2009	0	0		0	
2008-2012	2010	0	0		0	
2008-2012	2011	0				
2008-2012	2012	0				
2013-2020	2013					

Starting with an installation (loop 1)

- Look at the page source
- right click : « page source » / Command + U



Starting with an installation (loop 1)

- Let's find where the verified emissions are

[illegible]

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Now let's scrape it

url="<http://bit.ly/2rnnlxF>"

Let's open it with
Mechanize !

```
import mechanize
br=mechanize.Browser()
page=br.open(url=url)
```

Operator Holding Account Information

General Information

National Administrator	Account Type	Account Holder Name
France	100-Holding Account	SMURFIT KAPPA PAPIER RECYCLE FRANCE

Details on Contact Information

Type	Name	Main Address Line
Account holder	SMURFIT KAPPA PAPIER RECYCLE FRANCE	Allée des Fougères

Installation Information

General Information

Installation ID	Installation Name	Permit ID	Permit Entry Date	Permit Expiry/Revocation Date	Subsidies
1	Smurfit Papier Recyclé Fr. Papeterie d'Alaincourt	05100008	1999-03-17	2012-02-17	

Address Information

Main Address Line	Secondary Address Line	Postal Code	City	Country	Latitude	Longitude	
Rue de la Papeterie	/	02240	Alaincourt	FR	0	0	9-Industrial plants for

Contact Information

Name	Main Address Line	Secondary Address Line

Compliance Information

EU ETS Phase	Year	Allowances in Allocation	Verified Emissions	Units Surrendered	Cumulative Surrendered Units**	Cumulative
2005-2007	2005	16406	21598	5192	5192	
2005-2007	2006	16406	18893	35299	40491	
2005-2007	2007	16405	3367	3367	43858	
2008-2012	2008	14097	0		0	
2008-2012	2009	0	0		0	
2008-2012	2010	0	0		0	
2008-2012	2011	0				
2008-2012	2012	0				

Getting the content

- Let's now get the text of the page

```
html = page.read()
```

```
<table width="80%" border="0" cellspacing="0" cellpadding="0" summary="bas de page" align="center">\r\n\t <tr valign="bottom">\r\n\t\t <td align="center" class="footer">\r\n\t\t\t <span class="footer">\r\n\t\t\t\t <a href=" ../../../../contact_index.do;EUROPA_JSESSIONID=BIESyahksoWgodjHleDII0pZsMysP7Ina4BkyJHowr2clGLLFGha!-702810891" id="lnkContactIndex">Contact</a> |\r\n\t\t\t\t <a href=" ../../../../sitemap_index.do;EUROPA_JSESSIONID=BIESyahksoWgodjHleDII0pZsMysP7Ina4BkyJHowr2clGLLFGha!-702810891" id="lnkSiteMapIndex">Site Map</a> |\r\n\t\t\t\t <a href=" ../../../../FAQ_index.do;EUROPA_JSESSIONID=BIESyahksoWgodjHleDII0pZsMysP7Ina4BkyJHowr2clGLLFGha!-702810891" id="lnkFAQIndex">FAQ</a> |\r\n\t\t\t\t <a href="javascript:window.scrollTo(0,0);">Top</a>\r\n\t\t\t </span>\r\n\t\t\t </td>\r\n\t\t </tr>\r\n\t </table>\r\n\t <table width="20%" border="0" cellspacing="0" cellpadding="0" summary="bas de page" align="right">\r\n\t\t <tr valign="bottom">\r\n\t\t\t <td align="center" class="footerVersion">\r\n\t\t\t\t <span class="footerVersion">\r\n\t\t\t\t\t Version: 8.0.1 187M 01/07/2016 04:19 PM\r\n\t\t\t\t </span>\r\n\t\t\t\t </td>\r\n\t\t\t </tr>\r\n\t\t </table>\r\n\t\t <!-- BOTTOM NAVIGATION -->\r\n\t\t\t <!-- End Status Panel Information -->\r\n\t\t\t <td>\r\n\t\t\t\t </td>\r\n\t\t\t </tr>\r\n\t\t </table>\r\n\t\t <input type="hidden" name="selectedPeriods" value="">\r\n\t\t </form>\r\n\t </td>\r\n </tr>\r\n </table>\r\n </html>
```

Totally unreadable !

Getting the content

- BeautifulSoup makes it **readable** :

```
from BeautifulSoup import BeautifulSoup
soup = BeautifulSoup(html)
```

```
<table width="20%" border="0" cellspacing="0" cellpadding="0" summary="bas de page"
align="right">
<tr valign="bottom">
<td align="center" class="footerVersion">
<span class="footerVersion">
    Version: 8.0.1 187M 01/07/2016 04:19 PM
</span>
</td>
</tr>
</table>
</td>
</tr>
</table>
```

Storing the content in a file

- Look for the **right tag** :

```
ContactInfo=soup.find('table',attrs={"id": "tblAccountContactInfo"})
```

- Store the data the **in a new file** : arranged in columns and rows

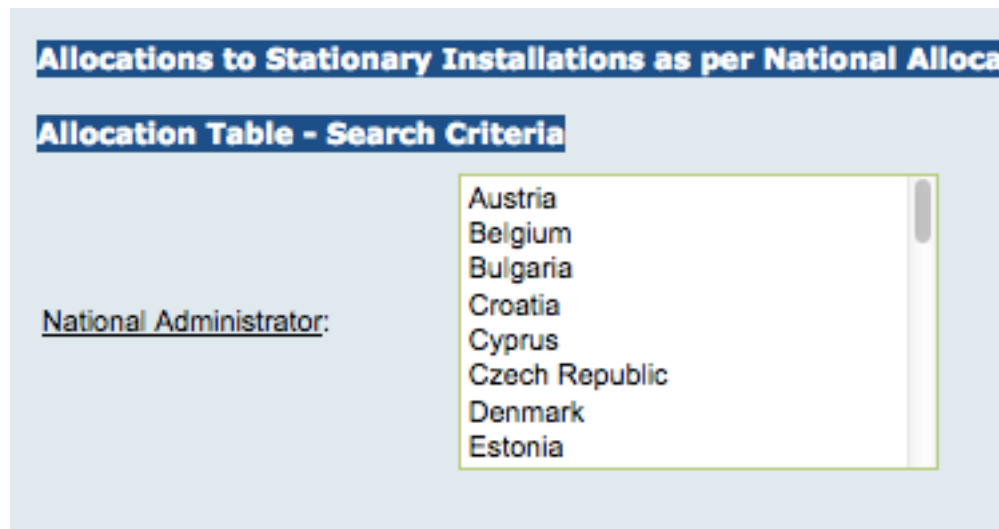
The list of installations (loop 2)

- Each installation's page can be reached from the previous country's page.
- But the country's data is divided into several pages, with at most 20 lines per page. You need to click on « next » to see all of them.

8110	Active	Installation's details History of Installation's Allocation Compliance History - All Phases
<div><Back</div> <div>Page 1</div> <div>of 11</div> <div>Next></div>		

The list of countries (lopp 3)

- Finally, first page of the EUTL
- `BASE_URL="http://ec.europa.eu/environment/ets/napMgt.do"`
- the list of countries we want to click on :

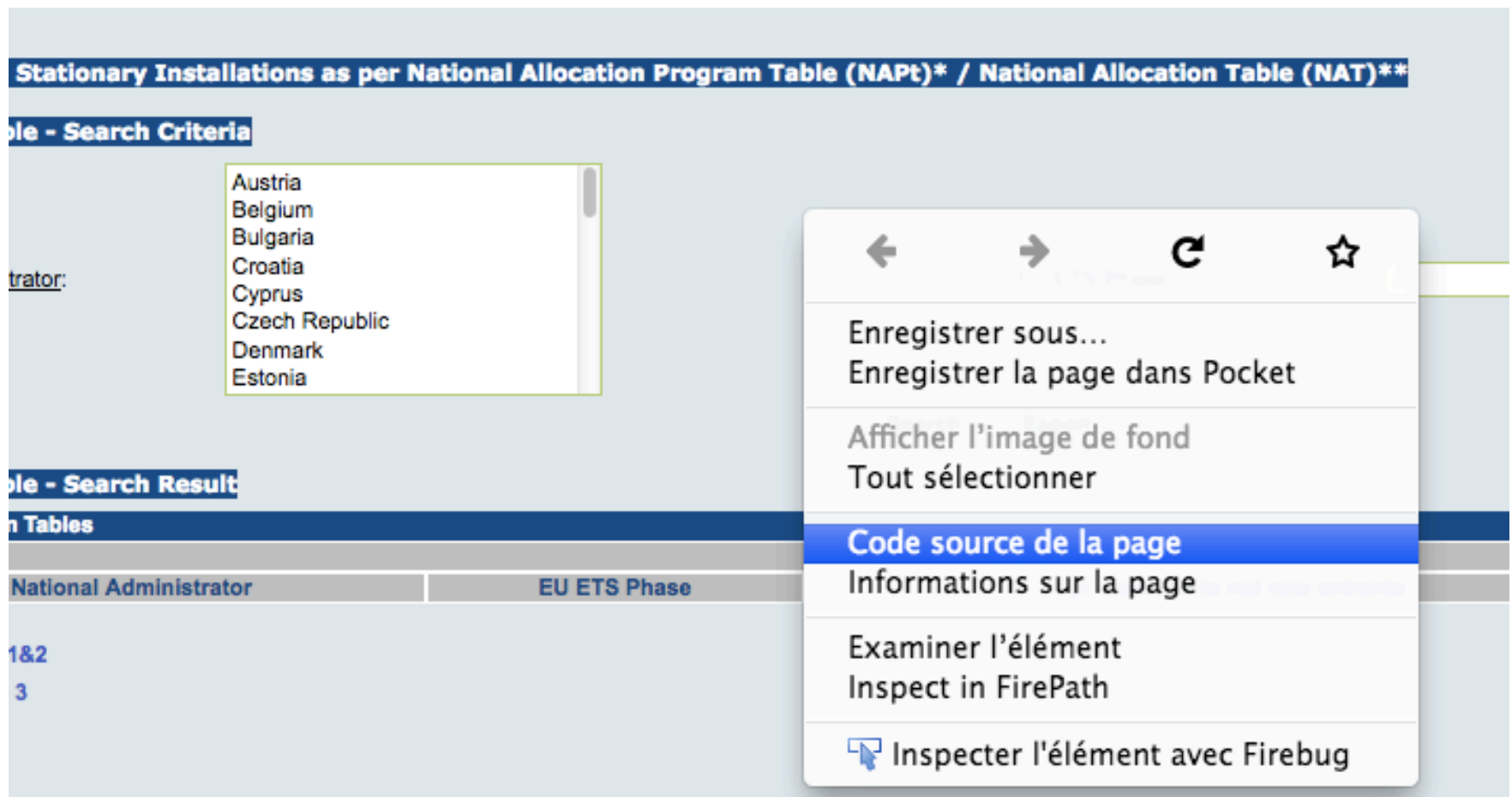


The screenshot shows a web interface for the EUTL Allocation Table. At the top, there is a blue header bar with the text "Allocations to Stationary Installations as per National Allocation". Below this, there is a section titled "Allocation Table - Search Criteria". On the left side of this section, there is a label "National Administrator:". To the right of this label is a scrollable list box containing the following countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, and Estonia.

Allocation Table - Search Criteria	
National Administrator:	<ul style="list-style-type: none">AustriaBelgiumBulgariaCroatiaCyprusCzech RepublicDenmarkEstonia

Looking at the page source

- right click : « page source » / Command + U



Looking for a country

```
<td width="20%" align="left">
  <select name="nap.registryCodeArray" multiple="multiple" size="8" class="formComboListMedium"><option value="AT" class="formOptionListMedi
<option value="BE" class="formOptionListMedium">Belgium</option>
<option value="BG" class="formOptionListMedium">Bulgaria</option>
<option value="HR" class="formOptionListMedium">Croatia</option>
<option value="CY" class="formOptionListMedium">Cyprus</option>
<option value="CZ" class="formOptionListMedium">Czech Republic</option>
<option value="DK" class="formOptionListMedium">Denmark</option>
<option value="EE" class="formOptionListMedium">Estonia</option>
<option value="EU" class="formOptionListMedium">European Commission</option>
<option value="FI" class="formOptionListMedium">Finland</option>
<option value="FR" class="formOptionListMedium">France </option>
<option value="DE" class="formOptionListMedium">Germany</option>
<option value="GR" class="formOptionListMedium">Greece</option>
<option value="HU" class="formOptionListMedium">Hungary</option>
<option value="IS" class="formOptionListMedium">Iceland</option>
<option value="IE" class="formOptionListMedium">Ireland </option>
<option value="IT" class="formOptionListMedium">Italy </option>
<option value="LV" class="formOptionListMedium">Latvia</option>
<option value="LI" class="formOptionListMedium">Liechtenstein</option>
<option value="LT" class="formOptionListMedium">Lithuania</option>
<option value="LU" class="formOptionListMedium">Luxembourg </option>
<option value="MT" class="formOptionListMedium">Malta</option>
<option value="NL" class="formOptionListMedium">Netherlands</option>
<option value="NO" class="formOptionListMedium">Norway</option>
<option value="PL" class="formOptionListMedium">Poland</option>
<option value="PT" class="formOptionListMedium">Portugal </option>
<option value="RO" class="formOptionListMedium">Romania</option>
<option value="SK" class="formOptionListMedium">Slovakia</option>
<option value="SI" class="formOptionListMedium">Slovenia</option>
<option value="ES" class="formOptionListMedium">Spain</option>
<option value="SE" class="formOptionListMedium">Sweden</option>
<option value="GB" class="formOptionListMedium">United Kingdom</option></select>
</td>
<td width="20%" align="left">&nbsp;</td>
<td width="20%" align="left">
```

```
<option value="AT" class="formOptionListMedium">Austria</option>
```

A list of 30 countries

- the list of countries we want to scrape :
- `cntryList=['France','Germany','Austria','Belgium','Bulgaria','Croatia','Cyprus','Czech Republic','Denmark','Estonia','Finland','Greece','Hungary','Iceland','Ireland','Italy','Latvia','Liechtenstein','Lithuania','Luxembourg','Malta','Netherlands','Norway','Poland','Portugal','Romania','Slovakia','Slovenia','Spain','Sweden','United Kingdom']`

Looking for a country

- First there is a « select » tag :

```
<select name="nap.registryCodeArray" multi
```

- Then there is an « option » tag :

```
<option value="AT" class="formOptionListMedium">Austria</option>
```

- Let's make a loop :

```
for cntry in cntryList:
```

```
    client.select(name='nap.registryCodeArray',option=cntry)
```

- Finally let's click on « search » :

```
client.click(value='Search')
```


Getting the content

- Let's now get **the text of the page**, after the click

response = client.commands.getPageText():

```
./contact_index.do" id="lnkContactIndex">Contact</a> |\n\t\t <a href="..\..\..\sitemap_index.do"
id="lnkSiteMapIndex">Site Map</a> |\n\t\t <a href="..\..\..\FAQ_index.do" id="lnkFAQIndex">FAQ</a> |
\n\t\t <a href="javascript:window.scrollTo(0,0);">Top</a>\n\t\t </span>\n\t\t </td>\n\t\t </tr>\n\t\t </
tbody></table>\n\t\t <table summary="bas de page" border="0" cellpadding="0" cellspacing="0"
width="20%" align="right">\n\t\t <tbody><tr valign="bottom">\n\t\t <td class="footerVersion"
align="center">\n\t\t <span class="footerVersion">\n\t\t Version: 8.0.1 187M 01/07/2016 04:19 PM\n\t\t
</span>\n\t\t </td>\n\t\t </tr>\n\t\t </tbody></table>\n\t\t <!-- BOTTOM NAVIGATION -->\n\t\t <!-- End
Status Panel Information -->\n\t\t <td>\n\t\t </tr>\n\t\t </tbody></table>\n\t\t </td>\n\t\t </tr>\n\t\t
\t\t </tbody></table> \t\t </td>\n\t\t </tr>\n\t\t </tbody></table>\n\t\t
\n\n\n\t\t </form>\n\t\t <script src="//europa.eu/webtools/services/piwik/piwik.js" type="text/
javascript"></script></body></html>', u'suite_name': u'__main__', u'method': u'commands.getPageText'}
```

Totally unreadable !

Getting the content

- BeautifulSoup makes it **readable** :

```
soup = BeautifulSoup(response['result'])
```

```
</tbody></table>
```

```
<!-- BOTTOM NAVIGATION -->
```

```
<!-- End Status Panel Information -->
```

```
</td>
```

```
</tr>
```

```
</tbody></table>
```

```
</td>
```

```
</tr>
```

```
</tbody></table>
```

```
</td>
```

```
</tr>
```

```
</form>
```

```
<script src="//europa.eu/webtools/services/piwik/piwik.js" type="text/javascript"></script></body></html>
```

Storing the content in a file

```
f_out=open('/Users/analutzky/  
Desktop/data/scrapping/  
list_of_tables.txt','w')  
for line in list_of_tables:  
    f_out.write('\t'.join(line)+'\n')  
  
f_out.close()
```

A unique file on my laptop : YAY !

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The scraper is on github

- https://github.com/anouchk/ETS_scraper

The screenshot shows the GitHub repository page for `anouchk / ETS_scraper`. At the top, there are buttons for 'Unwatch' (1), 'Star' (0), and 'Fork' (0). Below this is a navigation bar with links for 'Code', 'Issues' (0), 'Pull requests' (0), 'Projects' (0), 'Wiki', 'Pulse', 'Graphs', and 'Settings'. The repository description is 'A tool to scrape the data from the European emissions trading scheme (ETS)', with an 'Edit' button. Below the description, statistics show '5 commits', '1 branch', '0 releases', and '1 contributor'. A bar at the bottom contains buttons for 'Branch: master', 'New pull request', 'Create new file', 'Upload files', 'Find file', and a green 'Clone or download' button. The commit history shows two entries: 'anouchk committed on GitHub Update README.md' (latest commit 54e8cb4, a day ago) and 'scraping_ETS_Final.py' (ETS scraper, a month ago).

anouchk / ETS_scraper

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

A tool to scrape the data from the European emissions trading scheme (ETS) [Edit](#)

[Add topics](#)

5 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

anouchk committed on GitHub Update README.md Latest commit 54e8cb4 a day ago

README.md	Update README.md	a day ago
scraping_ETS_Final.py	ETS scraper	a month ago

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Now that we have a file, let's dig !

Account holder	NB sur Installation Name	Valeurs										A
		Allowance Allocation 2005	Verified Emission 2005	Allowance Allocation 2006	Verified Emission 2006	Allowance Allocation 2007	Verified Emission 2007	Allowance Allocation 2008	Verified Emission 2008	Allowance Allocation 2009	Verified Emission 2009	
EDF SA	31	22 108 947	21 690 299	22 108 947	18 026 300	22 108 949	19 423 437	16 583 555	17 449 595	16 583 555	18 534 702	
ARCELOMITTAL ATLANTIQUE ET LORRAINE	5	17 053 570	16 010 025	17 053 570	16 432 138	17 053 568	16 493 183	15 823 764	15 513 622	15 823 764	10 898 650	
TOTAL RAFFINAGE FRANCE	6	10 066 657	9 133 497	10 066 657	9 623 550	10 066 656	10 013 821	8 600 859	10 156 619	8 600 859	9 763 976	
BERSILLON	4	9 518 834	8 819 673	9 518 834	9 086 682	9 518 831	8 323 087	7 811 412	6 775 190	7 811 412	4 837 530	
UNIPER FRANCE POWER	6	9 065 409	8 507 961	9 065 409	8 091 141	9 065 407	7 686 737	6 387 590	8 166 930	6 387 590	6 563 442	
LAFARGE CEMENTS	11	5 377 870	5 396 788	5 377 870	5 547 662	5 377 868	5 591 308	5 878 790	5 414 187	5 878 790	4 422 223	
CIMENTS CALCIA	9	4 060 128	4 139 907	4 060 128	4 152 651	4 060 131	4 341 811	4 468 817	3 934 186	4 468 817	3 705 183	
ESSO RAFFINAGE	2	3 695 810	3 427 265	3 695 810	3 468 914	3 695 811	3 287 735	3 157 666	3 249 263	3 157 666	2 906 568	
ENGIE THERMIQUE FRANCE	5	1 773 003	1 016 461	1 773 003	661 234	1 773 003	866 791	1 243 285	996 466	1 243 285	1 844 287	
VICAT	7	2 367 987	2 375 942	2 367 987	2 496 650	2 367 987	2 580 419	2 587 615	2 351 169	2 587 615	2 024 562	
COMPAGNIE PETROCHIMIQUE DE BERRE	3	2 352 617	1 867 865	2 352 617	1 792 434	2 352 618	1 735 795	2 668 549	2 310 816	2 668 549	2 078 571	
EQJOM	4	2 019 162	1 819 217	2 019 162	1 884 274	2 019 160	1 844 866	2 030 493	1 835 393	2 030 493	1 539 785	

Grouping by account holders

Account holder	NB sur Installation Name	Allowance Allocation 2005	Verified Emission 2005	Allowance Allocation 2006	Verified Emission 2006	Account holder	% du total des émissions ETS en France Phase 1	% du total des émissions ETS en France Phase 2	% du total des émissions ETS en France Phase 3
EDF SA	31	22 108 947	21 690 299	22 108 947	18 026 300	ARCELOMITTAL	19,5	17,0	15,6
DALKIA	28	504 545	384 225	504 545	504 545	EDF	15,7	15,7	10,4
EDF (Dalkia compris)	59	22 613 492	22 074 524	22 613 492	18 420 420	TOTAL	8,3	9,2	8,1
ARCELOMITTAL ATLANTIQUE ET LORRAINE	5	17 053 570	16 010 025	17 053 570	16 432 138	UNIPER FRANCE POWER	6,3	5,3	4,3
ARCELOMITTAL CONSTRUCTION France	2					LAFARGE HOLCIM	4,5	4,3	3,8
ARCELOMITTAL GANDRANGE	1					EXXON	3,1	3,6	3,7
BERSILLON	4	9 518 834	8 819 673	9 518 834	9 086 682	CIMENTS CALCIA	3,3	3,5	3,4
ARCELOMITTAL (Bersillon compris)	12	26 572 404	24 829 698	26 572 404	25 518 820	ENGIE	1,5	2,4	4,9
						SOLVAY	1,9	1,9	2,2
						LHOIST	2,0	1,9	2,0
						VICAT	1,9	1,9	1,8
						ALBIOMA	1,4	1,9	2,1
						SAINT GOBAIN	1,6	1,6	1,4

Grouping by subsidiaires

Top emitters!

Interviewing the corporates

The figures regarding the verified CO₂ emissions of PPC for the years 2005 – 2015 are correct.

We cannot comment on the rest of your questions.

As we do not know the exact scope or methodology of your emissions fit into the overall European picture, we cannot comment on the rest of your questions.

Comme convenu par téléphone, veuillez trouver ci-joint le plan d'efficacité énergétique sur lequel nous avons travaillé.

Parimate soovidega

Eesti Energia

Täname kirja eest.

Kinnitame, et saime Teile vastust kiiresti.

The VET-data is very transparent and precise.

Thank you very much for your questions. The data has undergone many changes over the last 15 years. A lot of time might therefore lead to wrong conclusions.

Year	Portugal	Spain	Total EDP
2005	14 881 087	13 373 915	28 255 002
2006	12 700 587	11 783 198	24 483 785
2007	12 700 587	12 414 363	23 422 106
2008	11 007 744	9 673 093	19 783 586
2009	10 110 492	8 932 200	20 007 128
2010	10 110 492	7 708 381	17 818 873
2011	10 110 492	8 483 630	18 594 122

Getting the work done



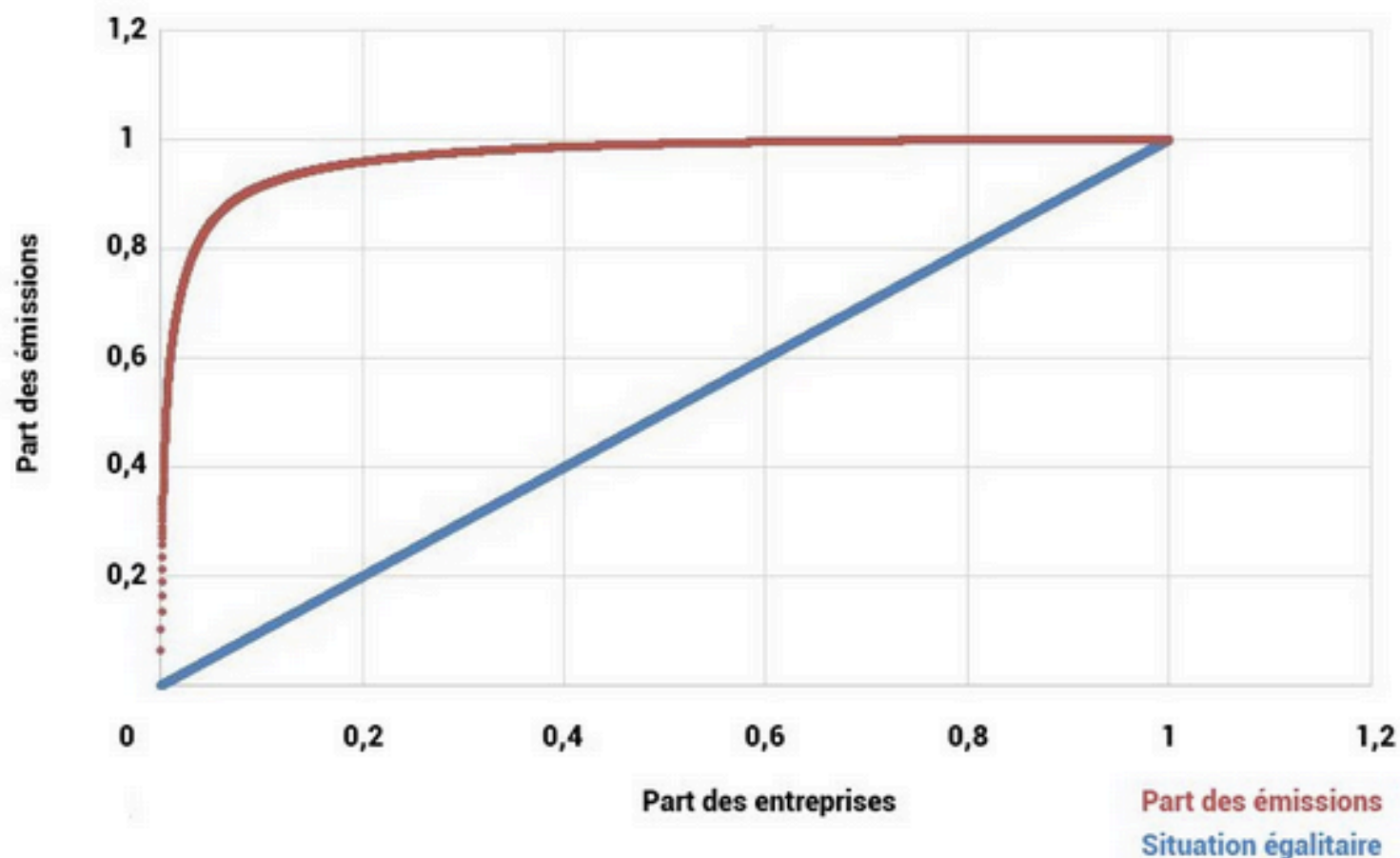
At a European level

- <http://www.aef.info/depeche/libre/557532>



At a European level

- Gini coef : 0.94 => **very concentrated** !



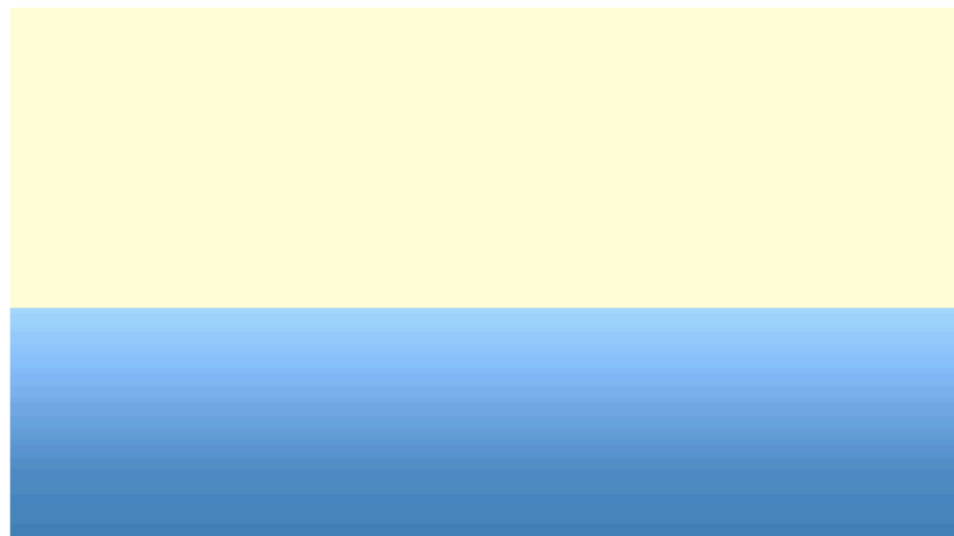
At a European level

- 40 companies represent 50% of the emissions that can be traded on the market

40 entreprises totalisent 50% des émissions du marché ETS

Entre 2013 et 2015 (phase 3), les installations assujetties au marché ETS de ces 40 entreprises ont totalisé 50% des émissions de CO2 comptabilisées sur le marché.

■ RWE ■ Vattenfall ■ PGE ■ Uniper ■ ArcelorMittal ■ EDF ■ PPC ■ Enel ■ Endesa
■ Engie ■ Maritsa Iztok ■ Lafarge Holcim ■ EDP ■ Drax ■ Steag ■ Tauron ■ Tata ■ CEZ
■ Eni ■ Iberdrola ■ Thyssenkrupp ■ ExxonMobil ■ Heidelberg ■ SSE ■ CEO ■ Shell
■ Voestalpine ■ Statoil ■ Fenosa ■ Eesti Energia ■ Enea Wytwarzanie ■ Zepak ■ EnBW
■ Hidroelectrica del Cantabrico ■ Repsol ■ Cemex ■ U. S. Steel Kosice ■ EDP
■ Hüttenwerke Krupp Mannesmann ■ Eggborough Power ■ Les autres entreprises



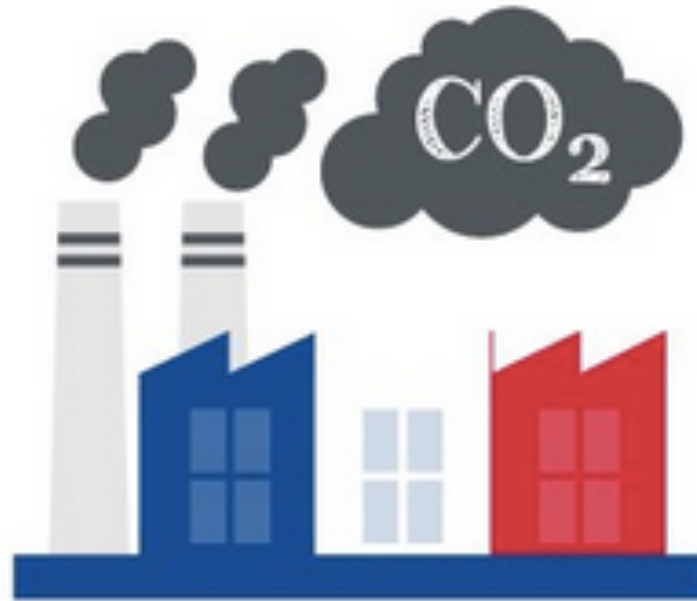
At a European level

- 3 German companies are top emitters



At a French level

- <http://www.aef.info/depeche/libre/559634>



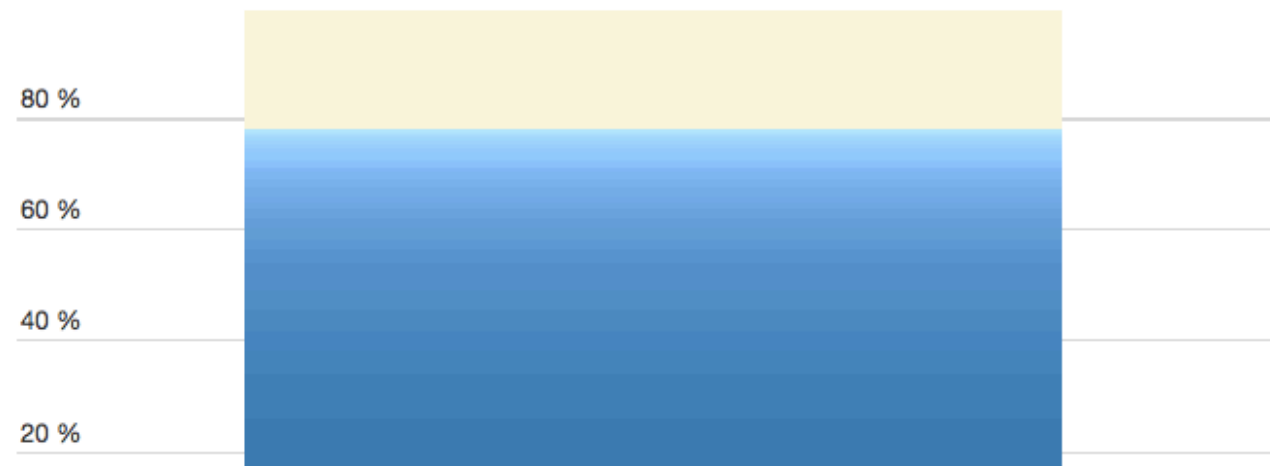
At a French level

- 31 firms = 80% of the market

31 entreprises totalisent 80% des émission ETS en France

Entre 2013 et 2015 (phase 3), les installations assujetties au marché ETS de ces 31 entreprises ont totalisé 78,2% des émissions de CO2 comptabilisées sur le marché pour la France. Elles en totalisaient 82% entre 2005 et 2007 (phase 1), et 83% entre 2008 et 2012 (phase 2).

■ ARCELORMITTAL ■ EDF ■ TOTAL ■ UNIPER ■ LAFARGE HOLCIM ■ EXXON
■ CEMENTS CALCIA ■ ENGIE ■ SOLVAY ■ LHOIST ■ VICAT ■ ALBIOMA ■ SAINT GOBAIN
■ PETROCHIMIE DE BERRE ■ EQIOM ■ TEREOS ■ INEOS ■ NAPHTACHIMIE ■ CPCU
■ PETROPLUS ■ ROQUETTE ■ O-I MANUFACTURING ■ BOREALIS ■ NOVACARB
■ VERSALIS FRANCE ■ CRISTAL UNION ■ ARKEMA FRANCE ■ SAINT LOUIS SUCRE
■ OSIRIS GIE ■ RAFFINERIE DE DUNKERQUE ■ YARA FRANCE ■ LES AUTRES ENTREPRISES



At a French level

- 3 French companies are top emitters

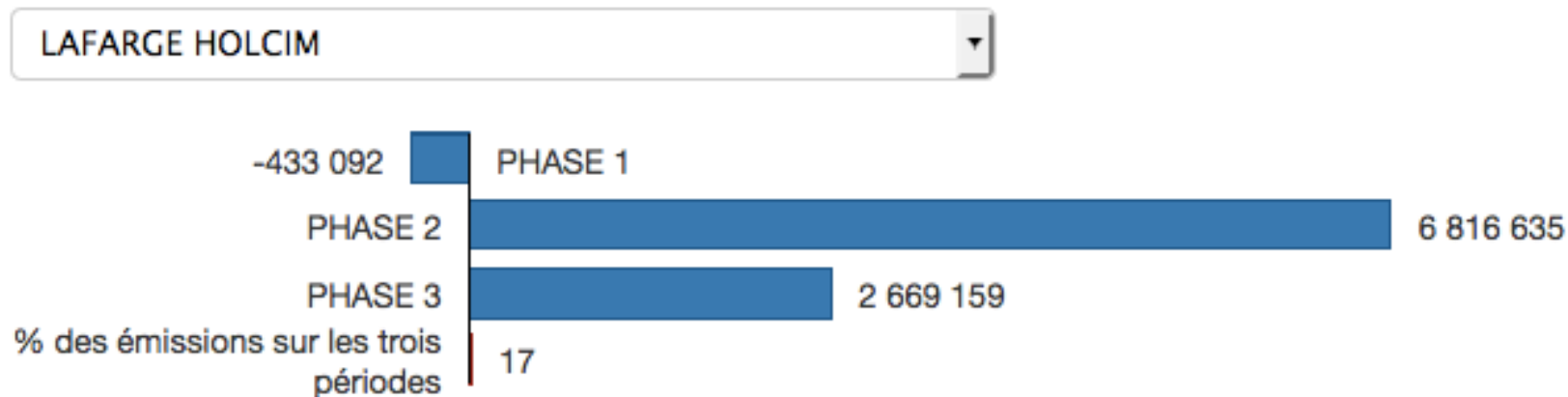


At a French level

- Tracking French fat cats

Les "gros chats" français

Surplus en tonnes de CO₂, pour la phase 1 (2005-2007), la phase 2 (2008-2012), et la phase 3 (2013-2015) du marché européen des quotas de CO₂. Ce que ces surplus cumulés représentent, en % des émissions.



Source: [EU transaction log](#). [Récupérez les données](#)

Negotiations for 2021-2030 are going on

n for phase 4 (2021-2030)

Policy

Documentation

**n Commission presented in July 2015 a legislative propos
sions trading system (EU ETS) for the period after 2020.**

st step in delivering on the EU's target to reduce greenhouse g
0% domestically by 2030 in line with the 2030 climate and e
d as part of its contribution to the Paris Agreement.

New countries to come !

- Dutch magazine [De Groene Amsterdammer](#),

Research the EU Emission Trading System

'The industrial lobby is incredibly strong'

It was intended as a financial incentive to reduce greenhouse gas emissions: the ETS. But most major industries in the Netherlands deserve to make no effort.

by Remco Roffel, Luuk Sengers and Evert de Vos
September 6, 2017



- Dutch magazine [De Groene Amsterdammer](#)

Top 20 surpluses free emission allowances

Mother company	Absolute buffer	Buffer in months	Buffer in euros
Tata Steel	43,121,733	85	226,820,316
Lyondell Chemie The Netherlands	3,019,228	242	15,881,139
ENCI	1,621,419	45	8,528,664
Akzo Nobel	1,259,211	36	6,623,450
Chemelot	1,221,560	3	6,425,406
Air Liquide Industry	1,029,443	21	5,414,870
Shell Netherlands	938,256	2	4,935,227
Yara Sluiskil	839,405	3	4,415,270
Dow Benelux	709,885	3	3,733,995
Parenco BV	665,698	121	3,501,571
Emmtec Services BV	585,086	41	3,077,552
Hexion	540,201	207	2,880,271

New countries to come !

- Maybe Dutch radio and TV ? Maybe Der Spiegel ?
- Spain, Italy, the UK... would be lovely !

New scrapers to come !

- What about looking at the transactions ?

Transaction Search Criteria*

Transaction Start Date Between:

And:

Transaction Completion Date Between:

And:

Transaction Type:

Transferring Registry:

Transferring Account Type:

Transferring Account Identifier:

Transferring Account Holder:

Transaction Status:

Transaction ID:

Supp Transaction Type:

Acquiring Registry:

Acquiring Account Type:

Acquiring Account Identifier:

Acquiring Account Holder:

Search

Export

[Transfers Overview](#)

Transaction Search Result

List of Transactions

Transaction ID	Transaction Type	Transaction Date	Transaction Status	Transferring Registry	Transferring Account Type	Transferring Account Identifier	Transferring Account Holder	Acquiring Registry	Acquiring Account Type	Acquiring Account Identifier	Acquiring Account Holder	Nb of units	Options
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*In accordance with Annex XIV (4) of Regulation 389/2013 the information for each completed transaction recorded by the EUTL shall be displayed on 1 May of the third year after the recording of the information.

// Questions ?

- THANK YOU !
- Analutzky [at] gmail.com