



The use of cogeneration in European key industry sectors

Cefic strategy and best practice example in
the chemical sector

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Communication of Commissioner Oettinger “Energy 2020 strategy”



- A strategy for competitive, sustainable and secure energy
 - One of the five priorities
 - Achieving an energy efficient Europe
 - Reinforcing efficiency in energy supply
 - » Increase the uptake of high efficiency cogeneration





Why energy matters for us!

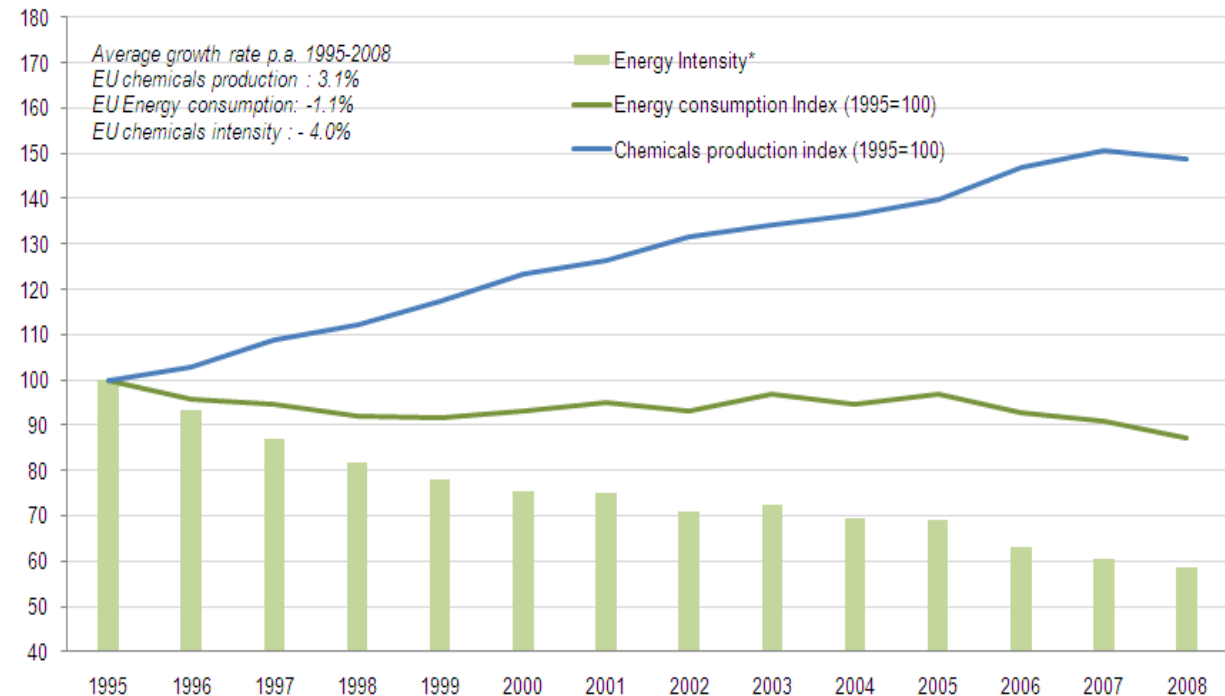
- **Energy policies matter to the EU chemicals industry:** we account for 12% of total EU energy demand and for one third of all EU industrial energy use (energy and feedstock): With base chemicals, energy and feedstock together frequently exceed 50% of total production cost.
- **Energy efficiency is a core competence:** The EU chemical industry has decreased energy intensity by 4.0% per year on average since 1995 and overall by 41% since 2003: energy efficiency is making us globally competitive.



The chemical industry has improved energy and GHG efficiency



Over the last 17 years the chemical industry has increased its output and at the same time kept energy input constant: consequently its **energy intensity decreased by 4.6% per year on average.**



*Energy intensity is measured by energy input per unit of chemicals production (including pharmaceuticals)

Source: Eurostat and Cefic Chemdata International



Energy efficiency improvements throughout society needed



- **Cefic supports initiatives towards energy efficiency improvements:**
 - Voluntary proactive industry measures in past 20 years
 - EU project under the Intelligent Energy for Europe programme (“CARE +”)
- **Energy efficiency improvements throughout society and in all sectors needed:**
 - In particular in Non-ETS sectors such as transport and building (largest increase in emissions over the last few years), e.g. through better insulation in buildings

The chemical industry is key for EU economic development and wealth, providing modern, efficient products and materials and enabling technical solutions i.e. energy efficiency in virtually all sectors of the economy



Caution with EU binding efficiency targets



- **BUT caution with EU economy-wide efficiency targets (no measuring method):**
 - Increased energy efficiency must not be confused with simply capping absolute EU energy consumption: such a cap would risk distorting prospects for EU investment in infrastructure and manufacturing plants, driving such investments outside Europe.
 - Danger of adding administrative burdens and double regulation: e.g. avoid overlap with other measures like EU ETS, which covers most of the chemical sector's emissions.
 - Instead introduction of tax incentives, combined with voluntary sector initiatives as more effective drivers of energy efficiency.



Cogeneration is essential for the chemical industry



- First objective : to produce heat
- Second objective : to improve energy efficiency
- The cogeneration benefits are :
 - Primary energy savings (5 to 20 %) compared to separate production of heat and electricity
 - Greenhouse gases emission reductions (5 to 30 %)
 - Security of energy supply for the site
 - Electrical network losses avoidance (1.5 to 7.5 %)



Industrial cogeneration specificity



- Solvay is using both gas and coal-fired cogeneration
- Solvay has built in partnership 900 MWe of gas-fired cogeneration from 1995 to 2002
- Solvay has still an untapped potential for developing cogeneration units in Europe, but no project on-going
 - Unfavourable European regulation
 - Current national support scheme not sufficient



Solvay and the use of cogeneration



- **The duality industrial/district heating cogeneration**
 - District heating
 - Heat demand mainly in winter during cold weather (heating temperature is also reduced for night)
 - High national electricity demand during cold weather (high electricity market price)
 - **Good valorisation of produced electricity when heat is produced**
 - Chemical processes
 - Continuous heat demand (all the year long)
 - No correlation between national electricity demand and industrial heat demand
 - **Low valorisation of produced electricity when heat is produced during off-peak hours**
- **Industrial cogeneration need to be competitive**
 - An additional financial support compared to district heating cogeneration
 - a Taylor made support scheme where production of heat is the main driver





European regulation: ETS

- Is the Emission Trading Scheme Directive supporting cogeneration ?
 - Unfavourable treatment for cogeneration compared to classical boiler
 - Article 10.a.4 : free allocations related to high efficiency CHP are adjusted by 1.74 % per year
 - ETS Directive should be amended?





European regulation: IED

- Is the Industrial Emission Directive supporting cogeneration ?
 - Unfavourable treatment for cogeneration compared to district heating plants
 - Article 35 : District heating plants have a longer delay (up to 2023) than cogeneration (up to 2016) for applying new Emissions Limit Values
 - Article 32 : Transitional National Plan should exempt from compliance with ELV cogeneration till 2020



European regulation: 3rd package



- Are electricity and gas market liberalisation Directives supporting cogeneration ?
 - As a stand alone electricity producer penalties in case of imbalance on electrical and natural gas networks are entirely borne by the cogeneration operator
 - Gas and power exchange accessibility costs are disproportionate for a stand alone CHP
 - Give to industrial operators the possibility to additionally subscribe long term energy contracts
 - For new project connection to the electrical grid financed by the cogeneration operator
 - Cogeneration should benefit for the grid connection from the same conditions as for renewable energy sources (e.g. windmills...)





European regulation: Taxation

- Is Energy Taxation Directive supporting cogeneration ?
 - Member states **may** apply total or partial reductions in the level of energy consumption taxation to
 - Energy products and electricity used for combined heat and power generation
 - Electricity produced from high efficiency CHP
 - **Article 15 should be amended** : “Member States shall apply...”





Conclusions

- The new European cogeneration Directive should
 - **Make sure to extend support scheme of existing cogenerations**
 - Improve the promotion of cogeneration
 - Delete the current technical and economical obstacles which prevent a smooth development of cogeneration
 - Create a stable long term promotion mechanism
 - Create a stable administrative environment in the implementation phase
 - Have a stable legal framework during the whole economical life of the units
 - Promote National Transition Plan of IE Directive to exempt from compliance with ELV cogeneration till 2020 instead of 2016

To properly address these complex challenges the new European cogeneration Directive should not be combined with the energy saving directive but remain separate

