

Chemical Product-Services in the European Union

Executive summary

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The study “Chemical Product-Services in the European Union” addresses the economic and environmental potential of Chemical Product Services (CPS) and the desirability of public intervention to improve the CPS market. Most experts, when questioned about the meaning of CPS, expressed the idea that CPS represents a restructuring of the traditional relationship between the chemicals supplier and customer: towards to “a shift in focus, from *selling/using* chemical **products**, to selling/using combinations of chemical **products and services**, that together create a win-win situation for both customer and supplier demands”. For analytical purposes, two major groups of models for CPS are distinguished. In **CPS-I** the chemicals are still sold by volume. In addition *extra* services are sold on itemized basis or incorporated in higher chemical prizes. In **CPS-II** models, suppliers are paid to meet the performance needs of the customer.

We found evidence of CPS for chemical product groups in Europe, which currently account for around €77 billion of sales (see figure 1). The chemicals involved in CPS contracts are most often “specialty chemicals” like paints and solvents. Between the 40 to 70% of painting processes in automobile industry are ‘servicized’, while 30 to 45% of the companies manufacturing aircraft and spacecraft have CPS schemes for painting in place. According to some experts CPS related to coatings are also in place in the leather industry and paper, cardboard and publishing industry. We assume the incidence of CPS in these sectors as ‘low’. CPS, related to cleaning and degreasing solvents applications, is estimated as ‘high’ in the automobile, transport equipment, and metal products industry and as ‘low to medium’ in the machine and electrical equipment industry. For chlorinated solvents applied in metal cleansing the CPS incidence is estimated ‘medium’. Other CPS related to solvents include *dry cleaning* (estimated CPS incidence ‘high’), the *dilution of printing inks* in the printing industry (no quantitative estimations of CPS possible) and *amine solvents for gas treatment* (estimated CPS incidence ‘medium’). Furthermore, CPS service contracts have entered the market of industrial *gases, adhesives, lubricants, tanners and water treatment chemicals*, but apparently to a lesser extent. Apart from the automobile industry, most CPS contracts seem to be CPS-I type contracts, in which the extra services are sold on an item basis or at a higher chemicals price.

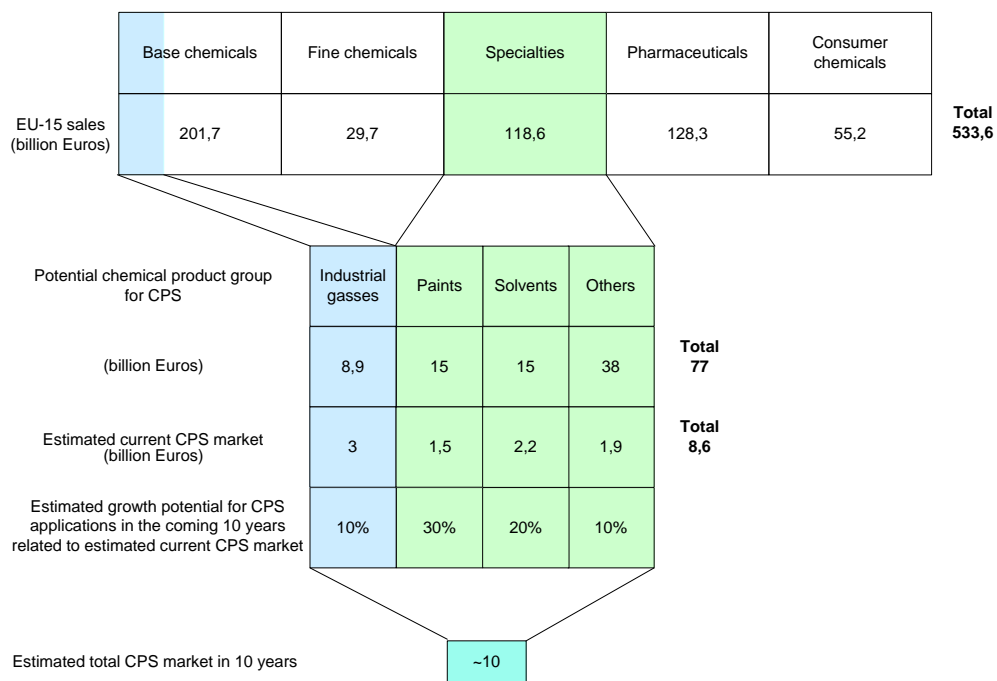
In most of the cases CPS markets are driven by a combination of three factors:

1. customers’ attempt to increase efficiency in the value chain and to reduce costs;
2. a joint attempt by suppliers to maintain or increase their markets;
3. Environmental and occupational regulations.

From the information collected, we conclude that CPS generally allows a reduction of chemical use of 5 to 30% depending on the type of chemical and industrial application. Most experts indicate that reduction of the use of chemicals often goes along with reductions in energy use and the generation of waste and emissions. These reductions differ strongly from cases to case. A screening LCA for car body painting indicates that the reduction on environmental impact categories varies from 15 to 25% (see chapter 5). In a screening LCA for metal cleaning, the reduction on environmental impact categories varies from 5 to 70%.

On the basis of the outcomes of the study we made a rough estimation of the market potential for CPS in Europe in a business-as-usual scenario (see figure 1). In this scenario we assume that public government will not implement extra measures to stimulate CPS initiatives. The total market in Europe for chemicals represents a value of 533,6 billion Euros of sales. We found evidence of CPS in the markets of specialities (paints, solvents, adhesives, lubricants, tanners and water treatment chemicals) and some markets of the base chemicals (industrial gases). These markets account for roughly 77 billion Euros or 14,4% of the total market. Per chemical product group we roughly estimated for which part of the applications CPS is

relevant. The potential market growth per application for CPS is estimated on the basis of questionnaire response and expert interviews (see figure 1). Adding these potentials to the existing markets, leads to a potential market of around 10 billion Euros of sales (roughly 8,4% of the total specialty markets) for the year 2015.



According to industry representatives, CPS is primarily a market-driven concept, in some cases strongly influenced by environmental regulations. Public organisations can give incentives to suppliers and customers focussed on fostering environmental improvements of CPS by the following options:

- Increase awareness through education and promotional activities;
- Assist small- and medium sized companies in demonstration projects;
- Assist in the development of guidelines for CPS contracts;
- Extend regulations with respect to the use of chemical products;
- Engage in green public procurement with respect to chemicals.