

# SERBIA'S DRAFT STRATEGIC PLAN FOR THE PRODUCTION AND USE OF PHOSPHATE-FREE DETERGENTS

## Scope and Ultimate (General) Goal

Environmental pollution is a growing issue at this day and age, whose magnitude requires immediate and comprehensive action to reduce overall pollution. One of the major activities in this area is aimed to reduce the emissions of phosphates which reach surface water and groundwater via wastewater, industrial wastewater and agriculture. Investigations have shown that phosphorus is one of the drivers of uncontrolled growth of micro and macro plant species in rivers and river reservoirs.

The main phosphate polluters are agriculture, industrial wastewater, followed by phosphates originating from detergents in urban wastewater. Phosphates are used in detergents to improve washing efficiency when the water is hard. However, the removal of phosphates from wastewater is not always possible for technical and/or economic reasons, such that a reduction in phosphate emissions through a switch to phosphate-free (P-free) detergents would be highly effective and help mitigate this problem considerably.

The goal of sustainable use of natural resources in Serbia is the development of integrated management based on regulatory and institutional frameworks aimed at a gradual harmonization with EU standards, technologies and legislation. By developing and adopting this Draft Strategic Plan, the Republic of Serbia will join other European countries, particularly the Danube countries<sup>1</sup>, in implementing measures whose objective is to achieve good status of surface water and groundwater, and will thereby become actively involved in phosphorus reduction efforts.

This document emphasizes Serbia's commitment to implement the Draft Strategic Plan and contribute to environmental pollution reduction. In this regard, guidelines are provided for the production and use of laundry detergents with low phosphate content.

## Legislation

In many European countries, legislation which addresses the production, handling, marking and use of detergents and other cleaning products traces back to the year 1973. To reduce phosphates in detergents, the European Union adopted Regulation 648/2004/EEC<sup>2</sup> which regulates the free distribution of detergents and surfactants, and imposes a high level of protection of human and environmental health. In this regard, the Regulation harmonizes the biodegradability of surfactants, restricts or prohibits surfactants depending on their biodegradability, obligates

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<sup>1</sup> Numerous studies conducted in the region (ICPDR DABLAS, 2004, Danubs, 2005); Joint Action Programme (ICPDR JAP 2001-2005), which also addresses phosphorus reduction objectives; and the Danube Regional Project Recommendations for the reduction of phosphorus in detergents (UNDP-GEF, November 2006).

<sup>2</sup> Regulation (EC) No. 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents

manufacturers to include allergy warnings on product labels, and addresses coordination with government authorities and medical professionals. In addition to the requirement that detergents contain fully biodegradable components, a reduction in the overall consumption of detergents is recommended through washing efficiency improvements and lower washing temperatures to save energy.

In view of the importance of reducing phosphates in detergents, based on Article 16 of Regulation 648/2004/EEC the EC released an Impact Assessment which addresses the viability and effects of reducing phosphates in detergents on the environment<sup>3</sup>. The Impact Assessment states that a switch to phosphate-free detergents may have diverse impacts on the environment, but it recommends to EU member states to continue implementing measures aimed at reducing phosphates in detergents. Additionally, supplemental medical research is needed to study emerging substances added to detergents, as phosphate substitutes, which impact human health.

In recent years in Serbia, following the adoption of the Chemical Act (2009) and the Detergent Handbook (2010), the handling of chemicals has been regulated in the most general sense (classification, packaging, marking...). Section X of the Act defines criteria for the distribution of detergents. The Handbook addresses criteria and test methods for surfactant biodegradability, the contents of technical files for surfactants, marking, listing of product components, and information to be made available to the public.

According to statistical data, the largest quantities of detergents produced in Serbia are in the category of household washing powders, followed by dishwashing detergents, and liquid industrial detergents. The largest producers company of detergents in Serbia are Henkel-Merima, Delta IN, Albus, YUKO Hemija, Spektar, Beohemija, Hemoprodukt, SIMHEM, and Balkan.

Based on a 2006 survey, 64% of the detergents were phosphate free (i.e. the phosphate content was less than 5%). According to Serbia's National Statistical Office, the quantity of detergents produced has increased by some 37% (Figure 1).

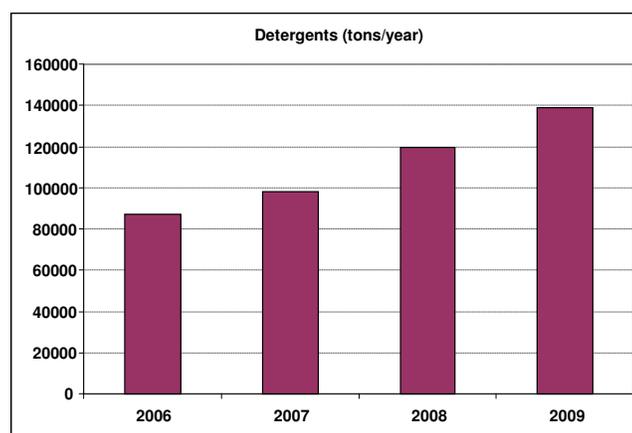


Figure 1. Detergent production in Serbia (Source: National Statistical Office).

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<sup>3</sup> Regulation (EU) of the European Parliament and of the Council, amending Regulation (EC) No. 648/2004 as regards the use of phosphates and other phosphorous compounds in household laundry detergents, Impact Assessment, 4 November 2010

In addition to detergent production in Serbia, there is a significant movement of chemical products containing phosphates in the marketplace (Figure 2). For example, in 2006, some 87,000 tons of such items were produced, 67,000 tons were imported, and only about 22,000 tons were exported. Of all the detergents sold in the Serbian market, roughly 50% contain less than 5% of phosphates (mainly produced in Serbia), while the remaining 50% are imported and generally contain more than 5%.

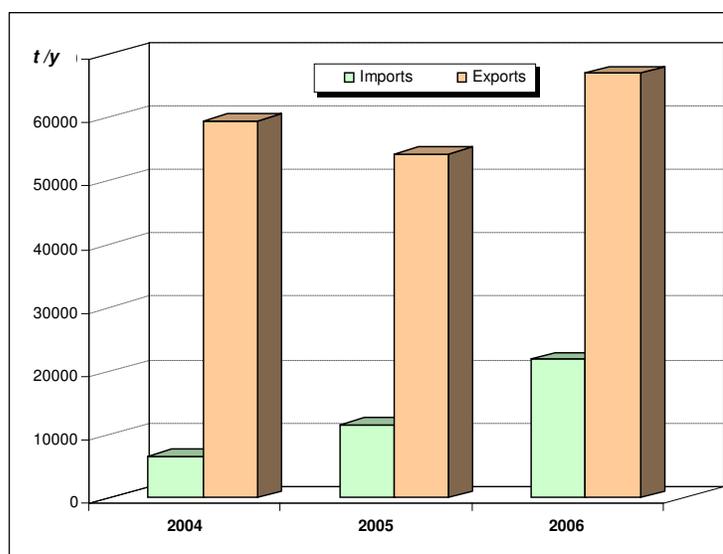


Figure 2. Distribution of phosphate-containing products in Serbia.

The only producer of STPP (sodium tripolyphosphate, a raw material used in detergent production) in Serbia is IHP Prahovo, which currently operates at reduced capacity such that detergent manufacturers are forced to import active ingredients.

Although Serbia is not an EU member state, it is making major efforts to harmonize national legislation with EU environmental legislation and standards.

The Republic of Serbia ratified the Convention on Co-operation for the Protection and Sustainable Use of the Danube River in 2003, whereby it committed itself to implement measures aimed at reducing pollution pursuant to national legislation and following the recommendations set forth in EU directives. Within the scope of activities of the International Commission for the Protection of the Danube River (ICPDR) on the development of the Danube River Basin Management Plan, phosphate emissions which reach streams via wastewater are deemed to be especially significant. It was found that most of the phosphates coming from discharges of untreated or inadequately treated urban wastewater. Phosphorus emissions in the Danube River Basin are estimated at 1775 tons per year, or 9.5% of all emissions.

### Specific Objectives of the Strategy

- To develop an initiative, including consultations with stakeholders, the Ministry of Environment, Mining and Spatial Planning, the Ministry of Agriculture, Trade, Forestry and Water Management, the Chemicals Agency, the Serbian Chamber of Commerce, and the Association of Producers and Importers of Detergents and Cosmetics (KOZMODET), aimed at advancing development and operations, introducing EU standards, and fostering a dialog between producers, importers, relevant institutions, and consumers;
- To examine the condition of existing capacities and the feasibility of applying new detergent production technologies;
- To reduce phosphates in detergents to <3% (the EU and US recommend < 0.5%);
- To phase out the use, production and distribution of detergents containing more than 3% of phosphates (exports, imports, export incentives, import taxation, and the like);
- To strengthen raw material and final product flow monitoring, as a precursor to the definition of measures;
- To raise public awareness of the sources and prevention of water pollution by phosphates, and of environmental impacts; and
- To ensure that phosphate-free detergents are available throughout the country.

### Timeframe

The Draft Strategic Plan should be implemented in such a way that detergent producers are given time to re-engineer their production processes to comply with requirements.

According to the circumstances and current situation in the field of production and use of Phosphate free detergents the timeframe to implement this Draft Strategic Plan is 10 years.