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> Impact of REACH on Switzerland

*Switzerland's Options to Act, and Consequences
for the Environment, Health and the Economy*



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English version of the German summary

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> Summary

Outset and Mandate

On 1 June 2007 the new European Union REACH regulation (Registration, Evaluation, Authorisation and Restriction of Chemicals) came into force, fundamentally changing policy on chemicals. With the enactment of the Chemicals Act and the PARCHEM Ordinances in 2005, Switzerland harmonised its legislation on chemicals with the EU legislation on chemicals that was in force at that time. Without revision of Swiss legislation on chemicals – at the levels of both laws and ordinances – there will again be fundamental differences from EU legislation.

It is now important to decide as quickly as possible whether and to what extent Swiss legislation on chemicals should be adapted to the REACH, and if so to tackle the necessary legislative projects. Switzerland has three basic options: no adaptation, partial adaptation, or full adoption.

This study was mandated by the FOEN (Federal Office for the Environment) in consultation with the Swiss Federal Office of Public Health (FOPH) and the State Secretariat for Economic Affairs (SECO) to assess the consequences of regulations. The assessment of regulatory consequences will evaluate the necessity for and possibilities of governmental action, examine the impact of regulations on groups within society, the environment and the economy as a whole, as well as to verify alternative options for action and their expedience in enforcement.

Contents of the Study

The introduction of REACH in the EU without legislative adaptation in Switzerland serves as the scenario of reference. This is designated as “PARCHEM Switzerland.” Investigation of the effects of this reference scenario is prerequisite for evaluation of possible options for action.

Alongside this reference scenario, other courses of possible action for Switzerland were examined more closely: PARCHEM Minus (partial adaptation), REACH Minus (partial adaptation) and REACH Switzerland (full harmonisation).

The effects of the reference scenario and of the three options were examined regarding:

- > industry with particular consideration of SMEs;
- > the environment and health (including health-related aspects for consumers);
- > consumers (product availability and price changes);
- > competition, trade barriers and innovation (economic considerations);
- > requirement for legislation and cost of enforcement for the state.

Various studies that have been carried out within the EU on the effects (costs and benefits) of REACH were taken into consideration. Prime focus of the present work were the specific consequences for companies in Switzerland, especially for downstream users and on SMEs. In addition to the chemical industry, industrial sectors investigated included paints and coatings, textiles, and cosmetics and detergents. Useable answers were received from a total of 93 companies.

Limitations of the Study

The study was carried out at a stage when the EU had not yet resolved essential questions about enforcement of the legislation (first quarter of 2007). Several enforcement projects are still underway (so-called REACH implementation projects – RIPs). It is particularly difficult to estimate the extent and costs of the tests that would have to be carried out. The low level of knowledge of many industrial companies about REACH (as shown by the survey) made it particularly difficult to estimate the costs due to discontinuation of a substance. The study was largely restricted to qualitative evidence due to these circumstances.

Main Features of REACH

Until now only incomplete data on the effects of existing chemicals for the environment and health are available in most cases. Due to REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) from 1 June 2008 pre-registration will be required for the production or import of one tonne per year of existing chemicals per manufacturer or importer, and ranking of these chemicals according to their risk potential (quantity and danger classification), with registration by 2018. The burden of proof for lack of risk lies with industry.

Substance Information Exchange Fora (SIEFs), and consequentially consortia, will be developed on the basis of pre-registration, with the objective of having only one registration per substance if possible. Substances not registered within the established deadlines can no longer be produced within or imported into the EU. With regard to registration, manufacturers or importers must – if possible through a substance consortium – carry out specified tests depending on the quantity involved (if these have not already been done), and prepare a risk assessment or (for ten tonnes per year or more) a substance safety report. Clients in the supply chain (downstream users) must be informed about the risks which substances present and be provided recommendations for risk management measures. In addition, producers must replace substances that give cause for concern with less dangerous substances. Certain substances will be subject to evaluation by the authorities, and substances that give particular cause for concern will be subject to authorisation. As in the past, the imposition of prohibitions and restrictions will be possible. Requirements for new substances will be lower in comparison with previous legislation in order to counteract the inhibitive effect on innovation that rules on registration of new substances have had.

REACH distinguishes between phase-in-substances (existing substances), which were already produced or on the market before REACH came into force, and non-phase-in-substances (new substances).

**Existing Substances
and new Substances**

By 2018, any chemical substance dating from the period before 1981, of which more than one tonne per year is produced within the EU or imported into the EU must be registered at the European Chemicals Agency (ECHA) in Helsinki. According to EU Commission estimates this will involve 30,000 out of > 100,000 existing substances.

Beginning 1 June 2008, new substances (non-phase-in-substances) must be registered with the ECHA according to regulations that are largely the same as those for existing substances. It is expected that about 500 new substances will be registered per year.

In contrast to previous EU legislation and to current Swiss legislation, the obligations of manufacturers and importers of substances will no longer take effect when these are first placed on the market, but already before they are produced. This change to the so-called pre-production approach carries the consequence that in future even substances designated exclusively for export as well as many intermediate products will be subject to obligatory registration. This includes substances generated directly in the manufacture of articles.

**Production as the Start
of Regulation**

Articles and objects containing chemicals exist in large number (motor vehicles, plastics, electronic components, household appliances, furniture, textiles etc.). Special regulations have been enacted to take the risk presented by chemical substances in articles into account. Substances in articles only have to be declared if the substances in the articles are intended to be released, and if the amount of substance exceeds the minimum of one tonne per year per manufacturer or per importer, or for substances of particular concern if their concentration in articles is 0.1% (by weight) or more. The obligation to declare is waived if potential exposure for people and the environment can be excluded.

**Substances in Products
(Articles and Objects)**

Reference Scenarios and Options for Switzerland

Eight main aspects of the REACH regulation can be seen as crucial with regard to the effects on the economy and / or protection of health and the environment.

These main aspects serve as the basis for the description and selection of Switzerland's options to act. In principle it would be possible for Switzerland to select some, not necessarily all, of these main aspects for adoption into Swiss legislation. Thus one could direct effects on the economy and on the protection of people and the environment. In so doing, numerous combinations of these aspects would be possible. Examining all options in depth would have overreached the scope of this study. It was thus decided that only the reference scenario (PARCHEM Switzerland) and three options (PARCHEM Minus, REACH Minus und REACH Switzerland) would be described and assessed in greater detail. The options to act contain stepwise additions of the main aspects of REACH.

Fig. 1 > Reference scenario and selected options for further assessment

Main aspects of REACH	Ref.	Actionable Options for Switzerland			
1. Reduced new substance registration requirements		+	+	+	
2. Admission with obligation to substitute			+	+	
3. Reappraisal of existing substances			+	+	
4. Communication to downstream users			+	+	
5. Central registration / consortia			+	+	
6. REACH registration as of production					+
7. Import of substances under REACH rules					+
8. Import and export of articles according to REACH					+
		A	B	E	G
		Parchem CH	Parchem minus	REACH minus	REACH CH

 Switzerland is adapting to REACH in this point
 Administrative duties of companies
 Adaptations of business model

The reference scenario envisages Switzerland retaining its present legislation on chemicals. This scenario became reality on 1 June 2007, but it will only be of consequence from 1 June 2008 (beginning of the pre-registration of phase-in-substances and of the registration of non-phase-in-substances). For the Swiss economy REACH becomes relevant for substances and preparations that are obtained from the EU or exported to the EU (EU market).

“PARCHEM SWITZERLAND”
Reference Scenario

The “PARCHEM MINUS” option envisages adaptation of current Swiss legislation on chemicals to REACH solely with regard to new substances. Current law demands fulfilment of stricter requirements for registration of new substances than REACH itself demands. Implementation of PARCHEM Minus would result in no competitive disadvantage for Swiss producers in comparison with producers within the REACH region.

“PARCHEM MINUS” Option

Under “REACH MINUS” Switzerland formulates its requirements for handling of chemicals such that REACH requirements are applied only for chemicals intended for trade within Switzerland or for export to the EU. However, trade with all other economic areas could be carried out without having to meet the requirements of REACH. This option envisages central registration in Helsinki and therefore presupposes an agreement between Switzerland and the EU. This option was selected for further study since it could result in an optimum balance between advantages and disadvantages for the Swiss economy.

“REACH MINUS” Option

Under “REACH SWITZERLAND” all aspects of REACH will be adopted. Switzerland is integrated into the execution of legislation on chemicals in the EU, which presupposes an agreement between Switzerland and the EU. Registration is conducted through the European Chemicals Agency. In this option, registration before production (and thus including intermediate products and the export of products to all economic

“REACH SWITZERLAND” Option

areas), import of substances from all economic areas and trade in articles with all economic areas correspond to REACH requirements. Therefore the REACH Switzerland option affects not only trade with the EU and the Swiss domestic market, but also all external trade relations with all other countries. This changes the competitive environment for many companies and will lead to adjustments in procurement and in the selection of locations for production.

Trade Connections with the EU

The effects of REACH on Switzerland will be considerable, because of the close trade connections between the Swiss economy and the EU. There will be direct effects (observance of the REACH regulations), if substances or preparations or in certain cases even articles are exported to the EU. Effects are indirect if substances or preparations are imported from the EU into Switzerland or if certain substances and preparations disappear from the market as a result of the new, more stringent requirements.

A few figures on trade between Switzerland and the EU underline the considerable effect on the Swiss economy. In 2005, 63 percent of exports from the Swiss chemicals industry went to the EU and 85 percent of Swiss imports came from the EU. Other areas of industry are similarly closely linked to the EU.

The effect of REACH can also be seen by the large number of substances dealt with in the Swiss economy. The present survey of chemicals producing companies shows that a total of about 9,000 substances will have to be registered under REACH. In addition roughly 6,000 substances are produced in quantities less than one tonne per year. Furthermore, approximately 4,500 intermediate products were declared in this survey. Table 1 shows the number of substances in different industry sectors.

Under waiver of formation of consortia for registration and thus separate registration for all the different uses by formulators and users, some 24,000 registrations from the companies that were surveyed could be necessary in Switzerland alone. (see total number of substances > one tonne per year in table 1; this includes multiple citations).

Tab. 1 > Substances in various industries

	Chemical Industry	Paints, Coatings	Cosmetics, Detergents	Textiles finishing	Total
Total number of substances > one t/a	8,666	13,490	1,094	715	23,965
Total number of substances in all categories	14,550	18,307	3,082	3,600	39,539
• Number of isolated intermediate products	3,121		30		3,151
• Number of isolated and transported intermediate products	1,316		45		1,361
Total number of intermediate products	4,437		75		4,512

These figures show that the effects of REACH on the Swiss economy will be considerable already in the reference scenario. For textiles finishing, the numbers refer mainly to the number of formulations, and could be even higher for certain substances.

Effects of the PARCHEM Switzerland Reference Scenario

The direct costs of REACH will be incurred by the chemical industry. These costs include the administrative components of pre-registration, the carrying out of tests, and the preparation of chemical safety assessment reports and safety data sheets. Also included are direct charges for registration and authorisation. As deduced from the cost estimates in the EU and various assumptions, the PARCHEM Switzerland reference scenario will accrue direct costs for the chemical industry in Switzerland in the range of CHF 196 to 949 million over eleven years, or an average of CHF 18 to 86 million per year. The unquantifiable indirect costs of substance portfolio adjustment affect both the chemical industry and downstream users of substances.

Chemical Industry

From the survey that was carried out it can be inferred that the Swiss chemical industry will register the majority of the approximately 30,000 relevant substances (individually or through consortia) in the EU. Due to the close interdependence of substance flows with the EU, the companies surveyed assume that they will largely comply with further requirements of REACH (points 2 to 4, figure 1) for the Swiss domestic market and for export to non-EU countries, even though they will not be legally obliged to do so.

Another effect of REACH could be that due to the costs implied, companies will accelerate portfolio adjustment and thereby increase their efficiency.

Production companies do not see fundamental differences between the various options for Switzerland. On the basis of the strong trade links with the EU, producers assume that they will have to meet all the requirements of REACH, regardless of whether Switzerland adjusts its laws and ordinances or not. The companies surveyed are experienced in dealing with foreign legislation. They know the properties of the substances they manufacture and the test procedures required by REACH, so they can comply with all requirements of the new legislation.

REACH transfers a large part of the duty to inform to chemical trading companies. The coordination of communication between producers / importers and downstream users will impose much more advanced requirements on the trade than the present legal system. Price increases from producers could put pressure on profit margins at this level of value generation if they cannot be passed on. The costs of more intensive communication and the additional pressure on profit margins are likely to put some companies to the test.

From survey results it can be concluded that trading companies have either dealt with REACH only insufficiently or have not yet transferred the effects of the requirements into operative processes. In contrast to manufacturers at the time of the survey, traders possessed only limited knowledge of substance quantities and properties.

The industries studied in particular were detergents and cosmetics, paints and coatings and textiles finishing. In the detergents and cosmetics industry there is some insecurity regarding cosmetic products. Companies in the cosmetics industry are in a difficult position: on one hand cosmetic products themselves are excluded from REACH regulations as finished goods, but individual ingredients are subject to REACH. Since some of the raw materials, especially those of plant origin, are not only used for cosmetics (e.g. lipsticks) but also in foods, the legislative situation is rather complex. Therefore the effect depends on the purpose for which a substance is declared. The manufacturer would have to declare the substance of natural origin for both purposes of use. The survey has shown that both in large and small companies this specific aspect apparently leads to different interpretations of the necessity for registration.

Downstream Users

For manufacturers of paints and coatings the greatest challenge lies in the threat to the portfolio of substances. It is estimated that price increases of up to 50 percent for critical raw materials could result. Experience with the ordinance on biocides has shown that the registration of substances leads directly to adjustment of the portfolio, reducing the number of substances on the market. Furthermore it is feared that paints and coatings will be given priority by the authorities of EU member states, because preparations are usually manufactured in large quantities with a broad set of ingredient substances and for different applications. As a result there is greater pressure on this industry (including suppliers to the chemical industry) to minimize the effective environmental exposure.

Textiles finishing companies see little danger of established textile treatment products (dyes and other textile treatment products) disappearing from the Swiss market under REACH. The industry does not see itself in the position to evaluate the situation today. It is assumed that only few substances of particular concern are in use, so that there is little worry of textiles chemical products being withdrawn from the market due to hazardousness; rather, economic considerations would lead to such withdrawal.

Should certain textiles chemicals actually be withdrawn from the market, textiles finishing companies envision considerable difficulty in procurement of alternative substances or formulations particularly in the area of specialty chemicals (i.e. pharmaceutical textiles, protective, functional, flameproof and aviation textiles). Even if alternatives are found, the financial and personnel expense would be enormous, and is compounded in certified special applications, since in this case a re-certification would be necessary. The Swiss Textiles Association assumes that a reliable estimate of costs induced by REACH within the sector will only be possible after pre-registration.

In the textile industry there is also apprehension that price increases caused by REACH will enlarge the gap between Asian and Swiss suppliers, further stimulating displacements of production sites.

REACH sets stringent requirements for the quality of information within a company, which could overstretch some SMEs due to REACH's complexity. The additional expense of tests, the management of consortia and registration / authorisation can at best be passed on to the EU market; outside the EU this would be possible only to a

SMEs

limited extent. To minimise the additional administrative effort in the reference scenario it is of central significance that information requirements be harmonised between the EU and Swiss authorities (for those areas where registration is necessary under REACH in the EU).

SMEs that export to the EU and which do not have a headquarters in the EU must appoint a third party with a domicile in the EU to carry out registration of substances. The third party must demonstrate competence in safe handling of chemicals. The necessary cooperation could become costly for SMEs.

However, the impact on SMEs is reduced by the stipulations of REACH. SMEs have clear advantages in comparison with large-scale enterprises because they normally have a higher proportion of substances that do not exceed the one t/a threshold. However, the preparation time for registration is relatively long, due to the majority of lower tonnages (until 2018 for 1–100 t/a).

The effects on consumers (prices and availability of products) would be barely noticeable.

Consumers

Positive effects of REACH can be expected in the areas of the environment and health (both public health and occupational health). Cancer, respiratory illnesses, skin anomalies, sight disturbance, asthma and other illnesses are mostly the result of a combination of different causes, but are frequently associated with chemicals as triggers or intensifiers. At present there exists only insufficient information on the properties and concentrations of chemical substances that can be obtained on the market and to which those working with them or end consumers are exposed.

Environment and Health

It can be expected that there will be a reduction in the amount of these substances in the environment, improved safety in the workplace and better public health as a result of the tests carried out for registration, more widespread knowledge and the resultant risk management measures. Through communication within the supply chain, the elimination of potentially hazardous substances and improvements in enforcement, REACH will optimize the handling of substances. Switzerland will benefit from the new findings, because the great majority of substances put on the market in Switzerland will be tested and assessed according to the stipulations of REACH. It is estimated that only about 15% of existing substances in Switzerland would not be reappraised without adaptation to REACH.

Switzerland would only partially benefit from the increased level of protection attained in the EU through the duty to communicate along the supply chain, stricter regulation of articles and the pre-production approach. Under the option PARCHEM Switzerland, i.e. maintaining the *status quo*, the legally established level of protection would remain in principle at current levels. However, since the general level of protection in the EU will be improved through REACH, the level of protection in Switzerland would eventually be lower than that in the EU. Safety data sheets improved as a result of REACH would enter circulation in Switzerland in any case.

In the area of new substances, where REACH will introduce lower requirements (higher threshold quantities, reduced testing obligations and omission of assessment by the authorities), the *status quo* signifies a higher level of protection. New substances have a considerable influence on the overall level of protection over the course of time. Within 20 years, the number of new substances requiring EU registration is expected to increase to about 10,000, and an inestimable number of new substances at quantities of less than one tonne per year could in principle be produced and marketed in the EU without sufficient testing.

The competitive impact of REACH in the reference scenario for Swiss industry would be neutral to advantageous. Advantageous because companies could continue to produce under the existing PARCHEM legislation, sell in Switzerland and export to countries outside the EU. In addition, finished products which could no longer be manufactured in the EU could be produced in Switzerland using substances that did not comply with REACH, and be exported to the EU. Thus, where world market prices are applicable to certain articles, the costs of REACH will reduce the profit margins for producers within the REACH region. Consequently, Switzerland could benefit from a shift in production sites from within the EU to outside the EU.

Economic Considerations

It is assumed that under the REACH regulation in the EU, there will again be an increase in the development of and declaration of new substances. If these EU expectations are correct, this could be a disadvantage for Swiss industry.

In the reference scenario, technical trade barriers could be engendered by the differential in regulations between Switzerland and the EU, both for existing and for new substances. However, no additional technical trade barriers would be created with non-EU countries.

A declination on the part of Switzerland regarding adaptation to or adoption of REACH would bear no negative image consequences at least for a certain transitional period. However, long-term retention of current legislation on chemicals – should this lead to one-sided advantages for the Swiss economy – could lead to greater pressure from the EU for adaptation of Swiss legislation, including associated image consequences for Switzerland.

Even in the case of a fundamental political decision not to adapt to REACH, it would be necessary to check whether certain stipulations, which are not part of the main aspects of the REACH regulation, but are regulated in the appendixes, should nevertheless be harmonised with REACH. This could involve the regulations on safety assessments for substances and the guidelines for preparing safety data sheets. This could be enacted through adaptation of the Chemicals Ordinance (ChemV). Otherwise, undesirable new technical trade barriers could be created.

Legislation and Enforcement

The personnel requirements at the Federal level for the enforcement of chemical legislation would not change as compared with those for the current legislation, since the tasks of enforcement remain unchanged. Collaboration with the European Chemical Agency could prove difficult.

Effects of PARCHEM Minus in Comparison with the Reference Scenario

The reduced requirements for registration of new substances in comparison with current demands should make market introduction of new substances in Switzerland easier. New substances brought into circulation in quantities of ten kg to ten tonnes per year would benefit most from the relaxation of requirements. It must be considered, however, that some non-EU countries would maintain stricter testing requirements for bringing new substances into circulation, based on recommendations of the OECD.

Industry

The additional effects on other sectors and on SMEs are considered negligible. Additional costs in comparison with the reference scenario would not accrue.

For Swiss consumers, there would be no noticeable effects as compared with PARCHEM Switzerland.

Consumers

The declaration of new substances would not be replaced by registration, which in contrast to the EU would still result in an official assessment of all registrations. The reduction of requirements would result in a lowering of the level of protection in the area of new substances. Nevertheless, as long as other industrial nations maintained their requirements regarding new substances based on earlier OECD recommendations, this effect would be slight. The effects for health and the environment would otherwise be the same as in the reference scenario.

Environment and Health

Altogether, the PARCHEM Minus option would lead to a gradual reduction in the level of protection as compared with that in the PARCHEM option (*status quo*), remaining unchanged for existing substances and declining for new substances.

PARCHEM Minus would have a positive influence on competitiveness and innovation in the area of new substances, thanks to the harmonisation of testing requirements with those of the EU. The assessment of new substances by the authorities in Switzerland would remain nonetheless.

Economic Considerations

No additional technical trade barriers with non-EU countries would be created.

With PARCHEM Minus, it is likely that there would be an increase in pressure from the EU on Switzerland, if Switzerland only adopted the facilitations provided by REACH, leaving out the stricter regulations. Such a decision could damage the image of Switzerland both from the political and the economic point of view. The damage to industry would probably be greater than the advantage resulting from the simplification and harmonization of the requirements.

The differentiation between new and existing substances is fixed in the Chemicals Act (ChemG). Nonetheless it would be conceivable to adapt the requirements for declaration of new substances to those of the REACH regulation (including Chemical Safety Report) at the ordinance level (ChemV), leaving the significantly less important requirements for existing substances unchanged and without altering the Chemicals Act

Legislation and Enforcement

(ChemG). A change in an ordinance would be decided by the Federal Council and could be implemented relatively quickly.

There would be no significant change in the cost and effort involved in enforcing the declaration of new substances.

Effects of REACH Minus in Comparison with the Reference Scenario

Under REACH Minus there would be additional expense for those Swiss companies which are not already obliged to register most of their substances as a result of their relations with the EU. This applies only to the few businesses that produce mainly for the Swiss domestic market. However, through synchronisation of the legislative framework with the EU, under REACH Minus, expenditure undertaken only for Switzerland would cease. This would affect existing and new substances to the same extent. Under this option the additional cost of registration for the chemical industry, as compared with the reference scenario, would be between CHF 79 million and 167 million over eleven years, in other words between CHF 7 million and 15 million per year.

Industry

Through obligatory substitution, specific substances, the use of which has been restricted in the EU, could no longer be used in the manufacture of articles in Switzerland. Notwithstanding in this scenario, the export of substances, preparations and articles to countries not subject to the REACH regulation in the rest of the world remains allowed.

For SMEs the additional costs for the administrative components of REACH are considered to be low. Solely the obligation to register products designated only for the domestic market can represent a significant challenge for SMEs, because these businesses were previously not confronted with these demands.

SMEs

With partial adoption according to REACH Minus, the obligation to register existing and new substances following REACH guidelines and the obligation to communicate through the supply chain would be introduced. Thereby information about substance properties would be included in the product designation, in the safety data sheet and in the chemical safety report (> ten t/a), and appropriate risk management measures would be communicated along the supply chain. The adoption of all these elements would lead to a significant increase in the level of protection for existing substances as compared with that provided under PARCHEM Switzerland. Thanks to central registration at the European Chemicals Agency and the exchange of data with the agency the Swiss authorities would have direct access to all data recorded through REACH. These data would be of considerable value as the basis for risk management measures, and the Swiss authorities would be able to act rapidly in case of minor and major accidents.

Environment and Health

The reduced requirements for new substances brought into the market at quantities of less than ten tonnes per year would have negative effects on the protection of the environment and of health. There could also be negative effects of the replacement of

the declaration obligation by the registration obligation (no systematic assessment by authorities).

Overall, the level of protection under the REACH Minus option would gradually increase compared with that under PARCHEM Switzerland, but not as much as under the REACH Switzerland option.

For consumers in Switzerland there would be no noticeable effects compared with PARCHEM Switzerland.

Consumers

The Swiss economy would still benefit in comparison with EU producers from central facilitations (competitive advantage for Swiss industry as compared with the EU). The additional cost of the reappraisal of existing substances, the substitution of substances and the obligation to communicate should be low. Administrative costs would cease thanks to central registration. Only producers who do not export to the EU would be negatively affected by the stricter requirements.

Economic Considerations

Exports to countries outside the EU would not be materially affected, and Switzerland could produce for this market under conditions largely analogous to the present ones. If there was an influx of EU businesses into Switzerland would be smaller than under PARCHEM Switzerland.

Technical trade barriers between the EU and Switzerland would be reduced, but only partially removed. However, no new technical trade barriers with non-EU countries would be created.

As a result of the adoption of the main aspects of REACH by Switzerland, in the medium term negative impact on the image of Switzerland should be lower than in the case of the PARCHEM Minus scenario. However, some tension in the relationship with the EU cannot be excluded, as a result of the Swiss competitive advantage in trade with countries outside the REACH regime.

The REACH Minus option envisages central registration at the European Chemicals Agency, which presupposes an agreement with the EU. The agreement would have to be arranged such that Switzerland would have the freedom not to adopt certain elements of REACH into Swiss law. Concretely, realizing REACH Minus would require that exemptions from the obligation to register substances in Switzerland be negotiated and contractually agreed for the following cases:

Legislation and Enforcement

- > substances that are produced in Switzerland, but not put on the market in Switzerland;
- > substances that are imported into Switzerland, but not put on the market in Switzerland;
- > substances that in Switzerland are intended exclusively for use in articles.

Assuming that under this option the current deviations in restrictions and prohibitions are to be retained, these exemptions would also have to be negotiated.

For the purposes of legal clarity, the national legislation would also have to be aligned with guidelines in international law. This means that the Swiss law would have to be adjusted to rectify all deviations from REACH, with the exception of the points where the option REACH Minus intentionally deviates. The Chemicals Act would have to be substantially altered, the Environmental Protection Act slightly modified. The Ordinance on Chemicals would undergo a near total revision. The Ordinance on Charges would have to be adjusted, but the Ordinance on Chemical Risk Reduction would remain unaltered.

Implementing REACH Minus would result in a time-consuming project of legislative adjustment, which would be even more complex since the REACH Minus option envisages two types of legislation: stricter requirements would apply for trade in chemicals between Switzerland and the EU than between Switzerland and non-EU countries. The integration of Norway, Iceland and Liechtenstein into the REACH system is envisaged.

Based on data on the costs of enforcement in the United Kingdom, the additional costs of enforcement in Switzerland are estimated at about CHF 2 to 3 million per year. This includes the costs of 10 to 15 additional employees, the expenses for analysis and evaluation of chemicals and financial contribution to the European Chemicals Agency in Helsinki in the range of CHF 0.5 million per year.

Effects of REACH Switzerland in Comparison with the Reference Scenario

To introduce REACH Switzerland, extensive changes to Swiss legislation would be necessary. Theoretically REACH Switzerland could be implemented within three years, but an estimate of at least five years is more realistic. The experience of the EU with REACH could be integrated into the formulation of Swiss laws and ordinances.

In the case of complete alignment with REACH, the chemicals industry would have to register substances and intermediate products even before they are produced. For various companies this would involve considerably more work, especially for intermediate products, and would mean disclosing the intermediate stages of production. For the REACH Switzerland option the expected additional cost of registration for the chemicals industry over and above that of the reference scenario is estimated at between CHF 89 and 167 million over eleven years, in other words an average of CHF 8 to 15 million per year, concentrated however on a few firms. However, central registration and agreements between Swiss legislative rules and the requirements of the EU could reduce administrative steps for downstream industries, including SMEs.

Chemical Industry

In comparison with the reference scenario, under REACH Switzerland there would be a simplification in the declaration of new substances, the obligation to substitute substances that are subject to authorisation, the requirement to list and register existing substances and to communicate along the supply chain. These requirements, which are primarily administrative, are however already carried out by industry in the reference scenario for export to the EU. The additional burden would result from registration

before production, the import of substances and all foreign trade in articles, with the requirements of REACH. Through uniform legislation on chemicals throughout the European internal market, the REACH regulation leads to a reduction in the effort of operational and administrative processes, and to an improvement in legal certainty. This also applies for downstream users.

The synchronisation of forced substitution with the EU would also result in additional costs due to the accelerated new formulation of existing products. The resulting costs for the formulating and application industries could amount to several times the cost of registration, but these costs are difficult to assess. If a substance were withdrawn from the market, the formula would have to be changed or re-developed, and it would no longer be possible to use substances from outside the EU to circumvent this. An assumption that only one percent of substances are withdrawn means that 300 substances would have to be replaced, with consequences at each step of the value chain. Assuming complete new development, for instance for a lubricant, the cost for a single company could be at least CHF 150,000 simply for development, and several hundred thousand CHF for certification with clients for specific applications. These costs could be incurred by any one producer for different products, and for several producers in the same sector per substance, because the same raw materials are generally used in different lubricants.

Downstream Users

For downstream users, under REACH Switzerland the same rules would apply for export to non-EU countries as for export to EU countries under the reference scenario.

The additional effects of REACH Switzerland for SMEs are reduced by the REACH stipulations in that there is no charge for registration if the full data set is provided in the tonnage band below ten tonnes per year.

SMEs

In this option, all components of REACH which have positive effects on the environment and health are adopted:

Environment and Health

- > obligation to authorise and substitute substances with critical properties;
- > testing and registration of existing substances;
- > obligation to communicate along the supply chain;
- > stricter regulation of articles and production as the basis for regulation.

From the point of view of the protection of health and the environment, the REACH Switzerland option is to be preferred. In realising this option, the level of protection would successively increase in the coming years in Switzerland, as in the EU. The decrease in the level of protection with new substances under REACH as compared with PARCHEM Switzerland would be much lower than the overall benefit.

Individual products could cease to be available as a result of the REACH stipulations. Price increases for alternative products conforming to REACH might be passed on to consumers.

Consumers

Economic considerations might judge negatively that Swiss industry would no longer benefit from better conditions in the manufacture of articles for export (to the EU and to the rest of the world). A new aspect under this option is that it also deals with the export of substances, preparations and articles from Switzerland to non-EU countries. In comparison with PARCHEM Switzerland this could lead to a competitive disadvantage compared with companies competing from outside the EU. The competitive advantages compared with countries in the REACH area would disappear.

Economic Considerations

Compensating for these effects is the full innovative effect from the reduction of the requirements for the registration of new substances including the tests and requirements for the registration of existing substances and intermediate products. With the requirements imposed on communication with suppliers and customers, there is also an increase in the possibility of copying company knowledge which was not previously disclosed. Therefore the positive effect on innovation is in contrast to the possible loss of intellectual property. It is not certain which effect will be greater, and this is highly dependent on the concrete implementation of the disclosure of information through REACH.

Technical trade barriers with the EU would be entirely removed, but there would be new trade barriers between Switzerland and non-EU countries.

This option envisages complete adoption of all the main aspects of REACH and central registration. The latter presupposes the conclusion of a contract with the EU. If Switzerland wants to keep the deviations in regulating prohibitions that currently exist between the Chemical Risk Reduction Ordinance and REACH, then appropriate exemptions would have to be negotiated with the EU. The national regulations would have to be adjusted to comply with international law and the prescriptions of the REACH regulation. This means:

Legislation and Enforcement

- > The Chemicals Act would have to be substantially changed and the Environmental Protection Act just slightly altered.
- > The Ordinance on Chemicals would require near to total revision.
- > For the Chemical Risk Reduction Ordinance no changes would be necessary, provided the EU agrees to and tolerates the aforementioned desired exemptions to the prohibitions, and that REACH-compatible regulations remain in the Chemical Risk Reduction Ordinance.
- > The Ordinance on Chemical Charges would have to be adjusted: in particular the current charges would have to be altered.
- > For the remaining ordinances on chemicals, only certain points would have to be altered. It would be possible to realise a revision of the Ordinance on Chemicals with changes to the existing legislation.

The costs for the enforcement under the REACH Switzerland option would be only slightly greater than those for REACH Minus, also amounting to an additional CHF 2 to 3 million per year.

Comparison of the Options

The following table compares the most important principles and measures of REACH for the reference scenario and the three options.

Principles / Measures	Reference Scenario	Options compared with the Reference Scenario		
	PARCHEM Switzerland	PARCHEM Minus	REACH Minus	REACH Switzerland
Burden of proof is transferred from the authorities to industry	In Switzerland the burden of proof remains with the authorities	In Switzerland the burden of proof remains with the authorities	Burden of proof passes to industry	Burden of proof passes to industry
Pre-marketing or pre-production	Pre-marketing	Pre-marketing	Pre-marketing	Pre-production
Equal treatment of existing substances and new substances	Only in trade with the EU	Only in trade with the EU	In trade with the EU and in the domestic market	In all trade areas
Requirements for the registration of new substances	No reduction (threshold quantity ten kg/a)	Reduction (threshold quantity one t/a)	Reduction (threshold quantity one t/a)	Reduction (threshold quantity one t/a)
Authorisation / restriction with obligation to substitute	Enforced in Switzerland with delay	Enforced in Switzerland with delay	Enforced analogous to EU	Enforced synchronous with EU

The second table summarizes the effects of the reference scenario and of the three options. For the options, merely the additional effects in comparison with the reference scenario are shown. The investigation shows that the effects of REACH are considerable already in the reference scenario.

Areas affected	Effects			
	Reference Scenario	Additional Effects under the Options compared with the Reference Scenario		
	PARCHEM Switzerland	PARCHEM Minus	REACH Minus	REACH Switzerland
Chemical industry	Strong effects	Slight	Slight	Strong (esp. for intermediate products) ¹
Direct costs over eleven years	CHF 196–949 million		+ CHF 79–167 million	+ CHF 89–167 million
Formulators / Application industries	Medium (substances available from outside the EU)	Slight	Slight	Strong (no replacement of substances from outside the EU, mainly indirect costs)
SMEs	Medium (longer preparation time as a result of lower tonnages)	Slight	Medium (additionally domestic market)	Medium
Environment and Health	Positive, but in the long term declining level of protection compared with the EU	Negative (lower level of protection for new substances)	Positive (higher level of protection through substitution, communication and exchange of data with the EChA)	Positive (identical level of increased protection as in the EU)
Consumers	Slight	Slight	Slight	Slight (probable discontinuation of certain products and probable price increases)
National economy				
• Location Switzerland	Slightly positive	Slight	Slight	Negative
• Technical trade barriers for Switzerland	Strongly increasing	Slight	Slight	Decreasing
• Image of Switzerland	Neutral in short term	Negative	Negative	Positive
Federal government (expenditure for enforcement)	Slight	Slight	+ CHF 2–3 million p.a. (agreement with the EU)	+ CHF 2–3 million p.a. (agreement with the EU)

¹ Significant is the obligation of disclosure in registration of intermediates.

Relationship between the EU and Switzerland

Until now, there has been no agreement between Switzerland and the EU to regulate or harmonise chemical policy on a common basis. Through REACH, there will again be material deviation between the EU and Switzerland as regards legislation on chemicals, whereas it is currently largely harmonised. The reaction of Switzerland to the divergence is being observed with interest in the EU. Participation of Switzerland in REACH is left explicitly open by REACH Article 120 "Participation of third-party states in REACH". Whether and how Switzerland wishes to refer to this article is a political question, and is not considered in further depth in this report.

An adaptation of Swiss legislation to REACH could take place either autonomously or based on a contract. In the case of autonomous execution parts of or the whole of Swiss legislation would be adapted to the REACH regulation, without a contractual agreement with the EU. The contractual variants encompass on one hand further development of the existing sector agreements between Switzerland and the EU, and on the other the conclusion of new contracts.