

# The Swiss Programme on Critical Infrastructure Protection

## The sectors and sub-sectors of Critical Infrastructure

The Basic Strategy for CIP of 2009 identified 31 sub-sectors within ten sectors that are assessed as being of critical national importance. This classification was reviewed and consists now of 28 sub-sectors.

The project developed and applied a methodology for prioritizing sub-sectors. The main thrust of this approach is an assessment of the damage to be expected from a failure of the critical sub-sectors, which is determined by the effects on other critical sub-sectors (interdependencies), on the population, and on the economy. In this way, eight sub-sectors of overriding importance in the field of CIP were identified (cf. the following table).

Sectors	Sub-sectors
Energy	Natural gas supply
	Oil supply
	Power supply
Financial services	Banks
	Insurance companies
Information- & communication technologies (ICT)	Information technologies
	Media
	Telecommunication
Industry	Chemical and Pharmaceutical Industry
	Mechanical and Electrical Engineering Industries
Public administration	Foreign representations and headquarters of international organizations
	National cultural property
	Parliament, government, justice, administration
	Research institutes
Public health	Medical care and hospitals
	Laboratories
Public safety	Armed forces
	Civil defense
	Emergency organizations (police, fire service, emergency medical service and rescue services)
Transport	Air transport
	Water transport
	Postal services
	Rail transport
	Road transport
Water and Food	Food supply
	Drinking water supply
Waste disposal	Waste
	Wastewater

Very high criticality	-> All sub-sectors are critical.
High criticality	-> Criticality refers to the importance of the sub-sector in terms of interdependency, the population, and the economy (not its general importance or its mission-criticality). Even sub-sectors whose criticality is regular may contain highly critical individual elements.
Regular criticality	-> Weighting is based on an ordinary threat level.

### Contact

Federal Office for Civil Protection FOCP  
 Monbijoustrasse 51A  
 CH-3003 Bern

www.infraprotection.ch  
 ski@babs.admin.ch  
 Pictures: FOCP, News services

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Schweizerische Eidgenossenschaft  
 Confédération suisse  
 Confederazione Svizzera  
 Confederaziun svizra

Federal Office for Civil Protection FOCP

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Switzerland is highly dependent on the continuous operation of critical infrastructures that ensure the supply of crucial goods and services. These include amongst others power supply, drinking water supply, information and communication technologies or waste disposal. Disruptions may have rapid repercussions for the population and the basis of its livelihood and can affect other critical infrastructures through domino effects: For instance, a large scale power blackout will also disrupt the water supply, telecommunications, and rail transport. The overarching goal is therefore to maintain the operability of the critical infrastructures.

In Switzerland, ten sectors such as energy, transport, or financial services are considered critical at the national level. They can be further categorized into 28 sub-sectors, such as power, oil, and gas supply within the energy sector. Advanced protection measures are already in place for some individual sub-sectors and in particular for the installations they contain (such as substations, control centres for grid management, and transformer stations). However, for a long time, cross-sectoral coordination and a consolidated approach at the national level were lacking. In June 2005, therefore, the Federal Council mandated

the Federal Office of Civil Protection (FOCP) to coordinate efforts in the area of Critical Infrastructure Protection (CIP) and to establish a CIP Working Group (CIP WG) in which all relevant authorities are represented.

The CIP WG subsequently elaborated a report in which it defined the most important terms, identified the (sub-) sectors considered to be critical for Switzerland, and determined the next steps. The Federal Council approved this report on 4 July 2007 and tasked the CIP WG with conducting a number of projects in order to achieve a more profound understanding in preparation for the elaboration of a national CIP strategy by the end of 2011. Based on the insights gained in these projects, the Working Group compiled a Basic Critical Infrastructure Protection Strategy that serves as the baseline for the national strategy. Among other things, it outlines the strategic goals as well as the relevant principles and describes the measures to be taken in the area of CIP. The Federal Council approved the Basic CIP Strategy on 5 June 2009 while simultaneously endorsing a second report that provides information on the state of work in the various projects and the achieved results. It also describes the next steps in further detail.



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## Measures for Critical Infrastructure Protection

In the Swiss CIP Programme, the following four measures will be implemented according to the Federal Council's Basic Strategy:

### 1. Prioritizing critical infrastructures

In order to be able to use resources efficiently, critical infrastructures must be prioritized. Critical Infrastructure Protection covers ten critical sectors that are grouped into 28 sub-sectors. The 28 sub-sectors are weighted for criticality and categorized into three groups (cf. last page). Furthermore, individual critical infrastructure elements are identified based on a standardized method and uniform assessment. Those that are of national importance are inventoried and documented. The "CIP Inventory" is compiled and regularly updated in cooperation with the responsible authorities of the federal administration, the Cantons, and the operators. The inventory mainly serves as a basis for planning and decision making processes at the various levels (federal administration, Cantons, and operators).

### 2. Protection through comprehensive approaches

Critical infrastructures are protected through comprehensive concepts that include specifications as to protection goals, protective measures, and implementation plans. The actual protective measures are oriented towards a comprehensive risk spectrum and take into account various aspects of the entire risk management cycle. The protection concepts relate to critical sectors as well as the infrastructure elements of national significance that are listed in the CIP Inventory. They complement the existing protection concepts in the critical sub-sectors. Furthermore, cross-sectoral and cross-subsectoral protection concepts are elaborated. The development of protection concepts follows a standardized process. Initially,

the existing responsibilities and regulations are reviewed, and protection goals are defined. In the next step, an in-depth analysis of threats and vulnerabilities is conducted. Subsequently, the risk analysis and the existing regulations are taken as the baseline to verify whether the protection goals have been achieved. If not, appropriate measures are elaborated. Finally, political decision-makers must determine which of these measures are to be implemented. Existing regulations can be adapted for this purpose, or new instruments can be created. Once the measures have been implemented, another review is conducted to verify whether the protection goals have been met or further adjustments are required. This entire process is repeated periodically.

### 3. Establishing foundations

A number of problem areas, such as mutual dependencies and cascading effects in case of disruption, have not yet been sufficiently investigated. Additionally, comprehensive and concerted countermeasures have yet to be formulated. Therefore, basic research in the field of CIP is of great importance. In the area of basic research, close cooperation with various research institutes, such as Switzerland's universities, is important. Another significant feature is the exchange with the international research community.

### 4. Fostering risk communication

Awareness of the significance of critical infrastructures and the possible implications of failures is crucial. Therefore, the operators of critical infrastructures, corporate actors, and representatives of the federal administration as well as the general public are sensitized to possible risks and threats in connection with critical infrastructures and are informed about rules of conduct and ways of protecting themselves. This is done in various ways including handbooks, fact sheets, or on our dedicated website, which informs about current events, news in CIP and CIP relevant publications. (cf. [www.infraprotection.ch](http://www.infraprotection.ch)).

## Glossary

### Infrastructures

This is a general term which refers to facilities and organisations, which deliver goods and services to society, the economy and the state.

The infrastructures are classified according to three levels:

- **Sectors:** e.g. energy, financial services, public health
- **Sub-sectors:** e.g. power supply, oil supply, natural gas supply
- **Individual objects/elements:** e.g. pumps, pipelines, dams, high-voltage lines, control systems

### Critical infrastructures

Critical infrastructures are infrastructures whose disruption, failure or destruction would have a serious impact on the functioning of society, the economy or the state.

### Critical Infrastructure Protection

The goal of critical infrastructure protection is to reduce the likelihood of occurrence and the impact of a disruption, failure or destruction of critical infrastructure and to minimise downtime.

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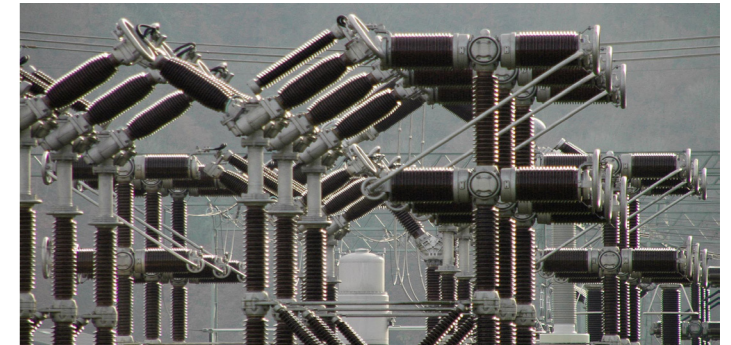
## Expanding the Basic Strategy into a national CIP strategy

The Basic Strategy will be expanded into a national CIP Strategy by the end of 2011. To this end, the definitions, principles, and measures recorded in the Basic Strategy will be reviewed and adapted where necessary.

The focus will be on the following activities:

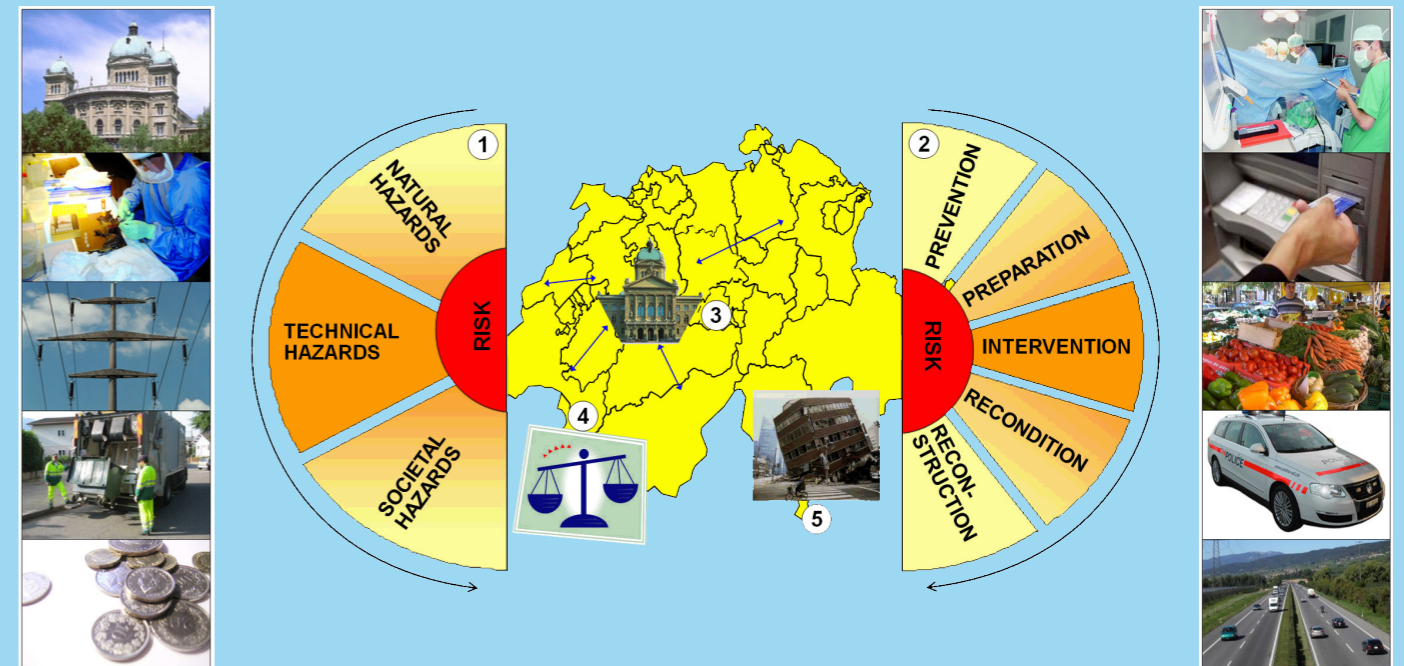
- Advancement of definitions, principles, and measures listed in the Basic Strategy
- Definition of responsibilities and organisational structure
- Arrangements for funding the implementation of measures
- Evaluation of legal foundations of the national CIP strategy
- Elaboration of instruments for evaluating the national CIP strategy

Within the implementation of the measures, the optimization of information sharing between the federal authorities, the Cantons and the operators of critical infrastructures is key. Moreover, the strategy provides inputs on how the protection of national critical objects of the CIP Inventory can be improved. Besides the development of comprehensive protection concepts, the CIP programme focuses on the optimization of processes, which will allow the prioritization of national critical infrastructures.



Various actors are involved in the elaboration of the CIP strategy. The Cantons will be represented in the CIP WG, while a CIP support group will be created as a strategic consultation and advisory body involving representatives of the public sector, the corporate sector, and the Cantons.

## Principles of Critical Infrastructure Protection



- 1) CIP is based on risk analyses that take into account a comprehensive threat spectrum.
- 2) Measures include all aspects of integral risk management.
- 3) Operators, Cantons, and Federal Authorities are responsible for the protection (subsidiarity).
- 4) Proportionality must be maintained in designing protection measures.
- 5) Protection measures aim at strengthening resilience.