



INFRASTRUCTURE

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Image
Swiss Rhine port, Basel

Switzerland is closely integrated into the European transportation infrastructure thanks to a dense network of road, rail, and air connections. Frequent and reliable connections guarantee the smooth and efficient transport of passengers and goods. The supply of energy, water, communication services and postal services is guaranteed at all times. A well-developed healthcare system ensures that the population has access to medical care without having to travel long distances.

Infrastructure Quality, 2017

1 = Underdeveloped, 7 = Extensive and efficient
(FIG. 44)

1	Switzerland	6.6
2	Singapore	6.4
3	Hong Kong SAR	6.4
4	United Arab Emirates	6.2
5	The Netherlands	6.2
6	Japan	6.2
7	Finland	6.1
8	France	6.1
9	Austria	5.9
10	USA	5.9
11	Denmark	5.8
12	Germany	5.7
16	Luxembourg	5.6
24	Norway	5.2
27	United Kingdom	5.0
46	India	4.6
47	China	4.5
52	Ireland	4.4
58	Italy	4.3

Sources: WEF, Global Competitiveness Index 2017 – 2018

11.1 TRANSPORTATION

The Swiss economy is supported by an excellent distribution infrastructure for supplying goods and services. With 1.7 kilometers (approx. 1 mile) of roads per square kilometer, Switzerland is one of the continent's most densely developed countries for motorized transport. Nevertheless, Switzerland is rightly known as a railway country, particularly as the national railway network has a length three times that of the freeway network.

The Swiss government's transport policy is primarily aimed at improving the country's attractiveness as a business location and managing increasing mobility in an environmentally compatible manner.

www.uvek.admin.ch

Swiss Federal Department of the Environment, Transport, Energy and Communications (DETEC)

Languages: German, English, French, Italian

11.1.1 Road Traffic

Switzerland's highway network is one of the densest in the world. There are currently approx. 1,840 km (1,143 miles) of national highways in operation, providing access to all parts of the country. The high proportion of tunnels is remarkable: 250 tunnels are currently in operation. When finished, the currently planned national road network should run for a total of 1,892.5 kilometers (1,175 miles) and include more than 270 tunnels with a combined length of 290 km (180 miles). At least three quarters of the Swiss highway system consist of four-lane divided freeways. The national highways are also major international transport routes. The connection between Germany and Italy through the Gotthard Tunnel is of critical importance in Europe.

In order to use Switzerland's freeways (Autobahnen), every domestic and foreign motor vehicle weighing up to 3.5 metric tons must have a special freeway sticker or "vignette" (currently 40 Swiss francs). The sticker is valid for a calendar year and can be purchased at customs and post offices, gas stations, and freeway rest stops. No special tunnel fees are charged for using the Gotthard and San Bernardino transalpine tunnels.

A performance-related vehicle fee (LSVA) is levied on domestic and foreign trucks (motorized vehicles intended for goods transportation with a total weight of more than 3.5 metric tons). In addition to the total weight, the fee depends on the relevant emission category (Euro 0 - II) and the kilometers driven in Switzerland and the Principality of Liechtenstein. For the most-used transit routes from the German to Italian border (about 300 km [186 miles] from Basel to Chiasso), 40-ton trucks pay a fee of CHF 270 - 370 depending on the emission category. In addition, a night-time (10:00 pm - 5:00 am) and Sunday driving ban applies to trucks.

www.astra.admin.ch
Federal Roads Office (FEDRO)
Languages: German, English, French, Italian

www.strassenverkehrsamt.ch
Cantonal road traffic offices
Languages: depends on canton

www.ezv.admin.ch > Information companies > Taxes and duties
Performance-related and lump-sum heavy vehicle fees
Languages: German, English, French, Italian

www.swisstunnel.ch
Specialist group for underground construction
Languages: German, English, French

11.1.2 Rail

Because of the punctuality and reliability of their public transport systems, the Swiss are the most frequent rail travelers in all of Europe. Every day, some 10,000 trains run on the 3,000-kilometer (1,865-mile) rail network operated by SBB (Swiss Federal Railways). In addition to SBB, there are a number of private railway companies in Switzerland that operate on tracks covering more than 2,000 kilometers (almost 1,250 miles). In spite of the fact that this rail network has the highest capacity utilization in Europe, the trains are very punctual. In 2015, 74% of passenger trains reached their destination within three minutes of the scheduled arrival time. In order to protect the population and the environment, more and more freight traffic will be moved from road to rail in the future.

Three major rail projects now underway will provide important benefits to Switzerland and Europe in the medium and long term. They will increase transport capacities, reduce passenger and freight traffic on roads and highways, and help protect and preserve the ecologically sensitive Alpine region:

- ZEB: The "Future Development of the Rail Infrastructure" (ZEB) project was approved by parliament in 2008 and is due to be completed by 2025. The more than 100 authorized projects it contains are worth a combined 5.4 billion Swiss francs and include measures to improve both the frequency and capacity of the rail network. The ZEB project is currently in its third phase, in which various rail lines, especially feeder lines for the Gotthard Base Tunnel, are being made twin-track at a cost of about 300 million Swiss francs.
- AlpTransit or NRLA Project: The new Lötschberg and Gotthard transalpine lines are designed to provide new, fast north-south connections and facilitate substantial expansion of capacity and services. Every day, 42 passenger trains pass through the 34-kilometer (21-mile) Lötschberg base tunnel, which was completed in 2007, at speeds of up to 250 km/h (155 mph). This brings both Valais as well as northern Italy closer to the center of Switzerland. You can now get to Milan from Bern in less than 2 ¾ hours. As for freight transport, the new Lötschberg base route helps meet a key goal of Swiss transport policy, which aims to transfer transalpine freight traffic from road to rail. The route enables transport capacities to be increased substantially, while the larger tunnel cross-sections enable heavier freight trains to pass through (shuttle profile). The AlpTransit or NRLA (New Rail Link through the Alps) project is being built in stages. The Gotthard Base Tunnel, which was opened on June 1, 2016, is the longest tunnel in the world, at 57 kilometers (more than 35 miles).

- Link to the European high-speed rail network: Connection to the European high-speed rail network (TGV and ICE) will make Switzerland the most important hub in Europe's future high-speed network. The Swiss government will invest a total of 992 million Swiss francs in the rail network by the end of 2020 to provide better connections with the European high-speed rail network. This will shorten travel times from Switzerland to Paris, Lyon, Munich, Ulm, and Stuttgart.

www.sbb.ch
Swiss national railway operator SBB
Languages: German, English, French, Italian

www.bav.admin.ch
Federal Office of Transport (FOT)
Languages: German, English, French, Italian

11.1.3 Shipping and Navigation

When the train and the car were invented, over a century ago, ships and boats were already navigating Swiss waters on a regular basis. Nevertheless, success of cars and trains had a negative impact on shipping and navigation, and the transportation of people and goods on Switzerland's rivers and lakes declined continuously. However, shipping and navigation remain an important part of tourism and international trade.

The River Rhine quickly developed into one of Europe's most important waterways. This was favored by the revised Rhine Navigation Treaty of October 17, 1868, also known as the Mannheim Treaty. Thanks to this agreement, Switzerland has legally guaranteed access to the North Sea. Switzerland also has a deep-sea fishing fleet as well as a (fictitious) deep-sea port in Basel. To this day, shipping is important for Switzerland's trade in goods. Every year, Switzerland's Rhine ports process about 7 million metric tons of goods and about 100,000 containers. Indeed more than 10% of all Swiss foreign trade passes along the Rhine. That is still a sizable proportion, particularly when compared to air freight, which accounts for less than 1% of foreign trade. However as a mode of transport for people, ships really only play a role in tourism and for day trips. Some 13 million passengers a year are transported along and across Switzerland's waterways.

www.port-of-switzerland.ch
Swiss Rhine port
Languages: German, English, French

11.1.4 Air Travel

Zurich Airport is one of the most important transport hubs in Europe. Passengers appreciate the excellent standard of service at this airport. This is confirmed by its high ranking in the annual airport rankings. For example, in 2017 Zurich Airport received the World Travel Award as Europe's leading airport for the 14th time for its user-friendliness and quality standards. Zurich Airport received the Eco-Innovation Award for the first time in 2011 for its extensive and systematic environmental management system. It was also the first airport to introduce emission-dependent landing fees.

Some 27.6 million passengers used the Zurich airport in 2016. The freight volume in the same period totaled 433,577 metric tons. The airport currently serves 178 destinations in 65 countries on four continents. Switzerland's two other international airports - Geneva and Euro-Airport Basel - also have many connections to key European business centers and holiday destinations and a number of direct flights to overseas destinations. Geneva handled 16.5 million passengers and 70,400 metric tons of freight in 2016. In the same year, Basel Airport processed 7.3 million passengers and 55,000 metric tons of freight.

The fact that the three international airports are located in border areas only a short distance away from neighboring countries facilitates international trade to and from the EU through Switzerland. Airfreight is an important freight transport option for exporting companies in the areas around their airports. The most important export products include specialty chemical and pharmaceutical products, high-tech products, automotive components, and perishable goods.

Just over three-quarters of Swiss airfreight is processed at the cargo hub in Zurich. But the two other international airports, Geneva and EuroAirport Basel, are also becoming increasingly important freight support points, particularly for express and courier services. The volumes handled by the world's leading express, package, and courier services are growing.

The regional airports in Bern, Lugano, and St. Gallen-Altenrhein also offer attractive scheduled flights to European destinations on a daily basis. Sion and St. Moritz-Samedan have seasonal business connections that are not only important for tourism but also save time for the entire service sector.

www.flughafen-zuerich.ch
Zurich Airport
Languages: German, English, French

www.gva.ch
Geneva Airport
Languages: German, English, French

www.euroairport.com
EuroAirport Basel
Languages: German, English, French

Direct Intercontinental Flight Connections from Zurich (ZRH) and Geneva (GVA)

In parentheses: airport; duration of flight

(FIG. 45)

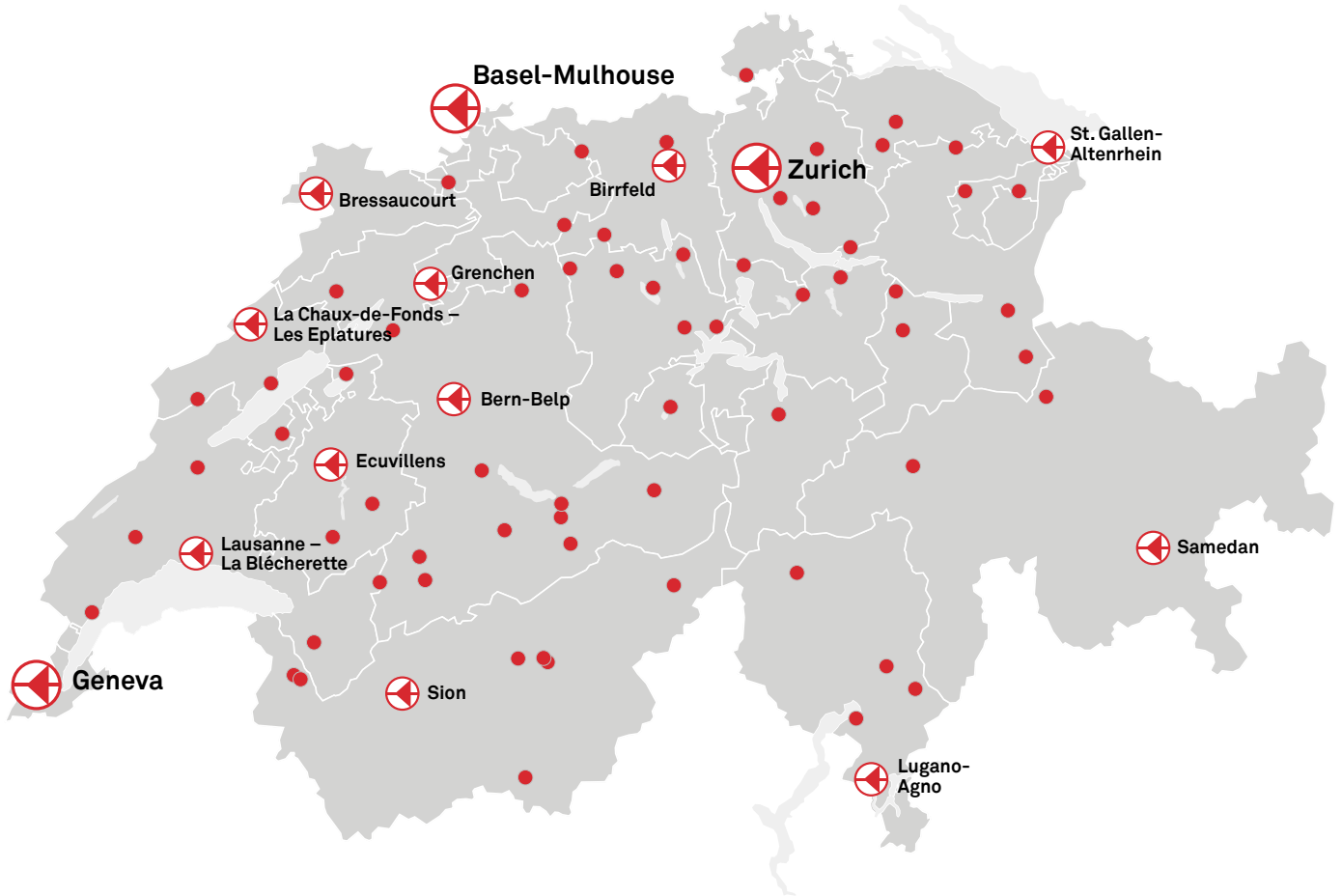





Sources: Zurich Airport, Geneva Airport; own representation of S-GE 2016

- | | | | |
|---|--|-------------------------------------|-------------------------------------|
| 1 San Francisco
(ZRH; 12:15h) | 15 New York JFK
(ZRH / GVA; 08:40h) | 29 Cairo
(ZRH / GVA; 03:55h) | 43 Abu Dhabi
(ZRH / GVA; 06:25h) |
| 2 Vancouver
(ZRH; 10:40h) | 16 Boston
(ZRH; 08:15h) | 30 Hurghada
(ZRH; 04:25h) | 44 Muscat
(ZRH; 07:50h) |
| 3 Los Angeles
(ZRH; 12:30h) | 17 Punta Cana
(ZRH; 10:20h) | 31 Sharm el Sheikh
(ZRH; 04:25h) | 45 Mumbai
(ZRH; 08:15h) |
| 4 Calgary
(ZRH; 12:00h) | 18 São Paulo
(ZRH; 12:00h) | 32 Marsa Alam
(ZRH; 04:45h) | 46 Maldives
(ZRH; 09:30h) |
| 5 Las Vegas
(ZRH; 11:55h) | 19 Rio de Janeiro
(ZRH; 12:00h) | 33 Nairobi
(ZRH; 07:40h) | 47 Delhi
(ZRH; 07:40h) |
| 6 Chicago
(ZRH; 09:40h) | 20 Casablanca
(ZRH / GVA; 02:50h) | 34 Tel Aviv
(ZRH / GVA; 03:50h) | 48 Phuket
(ZRH; 11:05h) |
| 7 Atlanta
(ZRH; 10:25h) | 21 Marrakesh
(ZRH / GVA; 03:15h) | 35 Beirut
(ZRH / GVA; 03:50h) | 49 Bangkok
(ZRH; 11:00h) |
| 8 Toronto
(ZRH; 08:50h) | 22 Algiers
(GVA; 01:55h) | 36 Moscow
(ZRH; 03:15h) | 50 Singapore
(ZRH; 12:05h) |
| 9 Tampa
(ZRH; 11:05h) | 23 Tunis
(ZRH / GVA; 02:00h) | 37 Amman
(ZRH / GVA; 06:25h) | 51 Hong Kong
(ZRH; 11:55h) |
| 10 Havana
(ZRH; 11:20h) | 24 Cape Town
(ZRH; 11:25h) | 38 Jeddah
(GVA; 05:20h) | 52 Beijing
(ZRH / GVA; 10:00h) |
| 11 Miami
(ZRH; 10:25h) | 25 Enfidha
(ZRH; 02:05h) | 39 Riad
(GVA; 06:00h) | 53 Shanghai
(ZRH; 11:30h) |
| 12 Washington
(ZRH; 09:10h) | 26 Djerba
(ZRH / GVA; 02:25h) | 40 Doha
(ZRH / GVA; 06:00h) | 54 Seoul
(ZRH; 10:50h) |
| 13 Montreal
(ZRH / GVA; 08:10h) | 27 Johannesburg
(ZRH; 10:25h) | 41 Mauritius
(ZRH; 11:05h) | 55 Tokyo
(ZRH; 11:50h) |
| 14 New York Newark
(ZRH / GVA; 09:05h) | 28 St Petersburg
(ZRH; 03:00h) | 42 Dubai
(ZRH / GVA; 06:05h) | |

Switzerland's National and Regional Airports

(FIG. 46)



 national airport
  regional airport
  airfield, heliport

Sources: Swiss Federal Office for Civil Aviation (BAZL); own representation of S-GE 2016

www.bazl.admin.ch

Swiss Federal Office of Civil Aviation (FOCA)
Languages: German, English, French, Italian

www.swiss.com

Swiss International Air Lines
Languages: German, English, French, Italian, Spanish, Portuguese, Russian, Chinese, Japanese

www.flughafen-zuerich.ch

Zurich Airport
Languages: German, English, French

www.gva.ch

Geneva Airport
Languages: German, English, French

www.euroairport.com

EuroAirport Basel
Languages: German, English, French

www.aerosuisse.ch

Umbrella association of the Swiss aerospace industry
Languages: German, French

www.aopa.ch

Aircraft Owners' and Pilots' Association
Languages: German, French

For international corporations, the ability to schedule business flights at short notice is becoming more and more critical. In addition to the national airports, there are also regional airports throughout the country set up to handle business aviation, and most of them are suitable for smaller jets. The modern infrastructure of these airports is designed for business travelers, offering either customs clearance or allowing authorized cross-border travel by persons from the areas covered by the Schengen Agreement (for the Schengen Area). In Switzerland there are countless providers of business flights which have their own offices at larger airports and airfields. The offers range from charter planes to the use of pooled planes.

11.2 COMMUNICATION

Switzerland has outstanding access to ICT infrastructure. According to the latest study by the International Telecommunication Union (ITU), the country ranks second worldwide. In 2016, more than 50% of Switzerland's inhabitants were subscribed to fixed-line broadband Internet access. That puts Switzerland significantly above the average for OECD countries (30%) and among the leading nations worldwide (Fig. 47). To ensure that the further development of Internet services and applications is possible, the speed and performance of the network has to be constantly increased. Consequently, the coordinated implementation of a national optical fiber network – to which all residential and commercial buildings are connected – is being intensively promoted.

“In 2016, more than 50% of Switzerland's inhabitants were subscribed to fixed-line broadband Internet access.”

www.bakom.admin.ch

Federal Office of Communications (OFCOM)
Languages: German, English, French, Italian

www.bfs.admin.ch > Look for statistics > Culture, media, information society, sports

Information society indicators
Languages: German, French

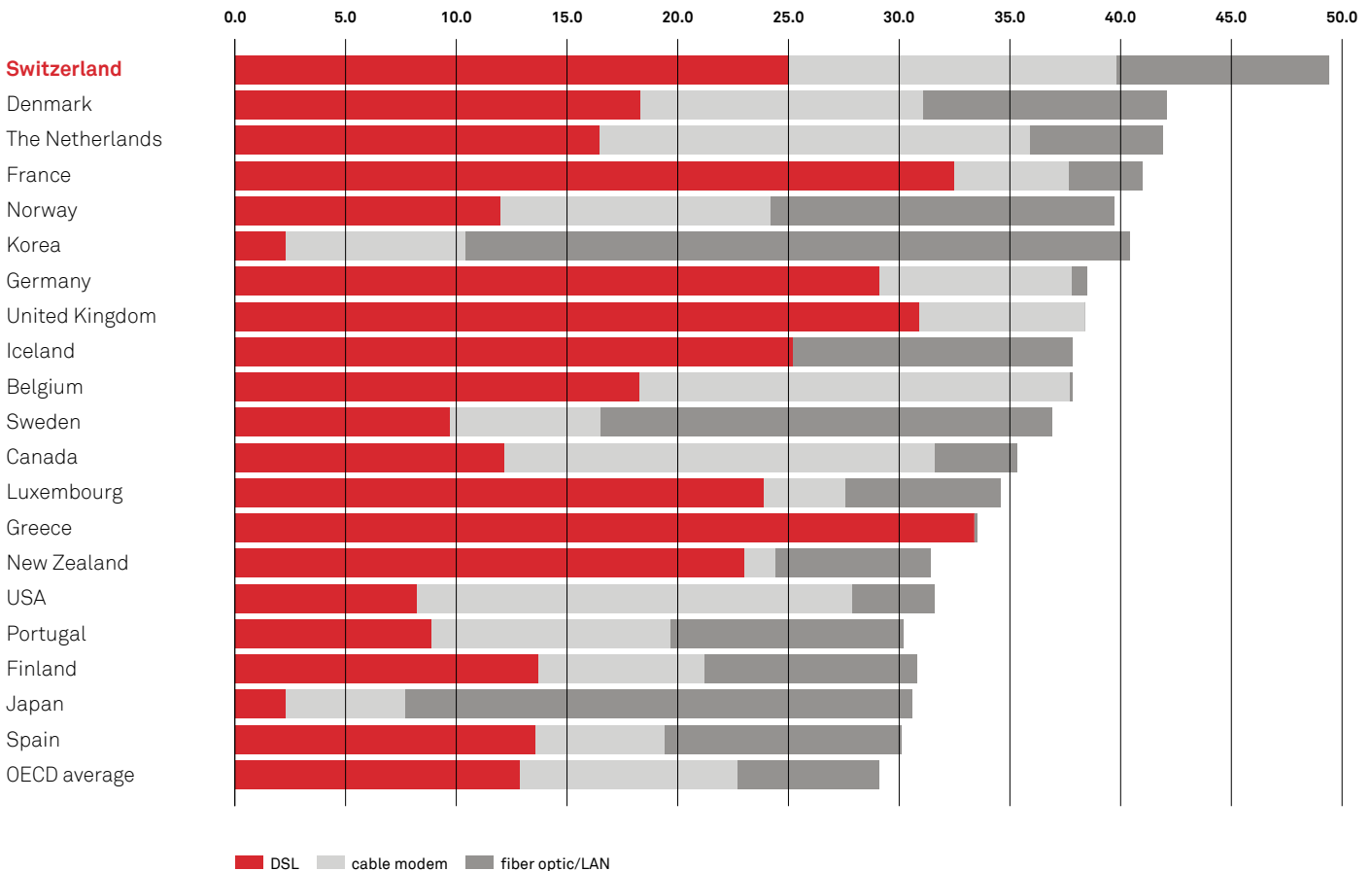
www.nic.ch

Swiss Internet domain name registry (.ch, .li)
Languages: German, English, French, Italian

Broadband Internet Access, 2016

Subscribers to high-speed Internet connections per 100 inhabitants

(FIG. 47)



Sources: OECD, December 2016

11.3 ENERGY

Switzerland has a reliable and secure nationwide energy supply system. Petroleum products accounted for 50.2% of gross energy consumption in Switzerland in 2016. Electricity accounted for 25% of final consumption and was generated for the most part in Switzerland. Compared to the neighboring countries, Switzerland has a practically CO₂-free production mix. The most important power suppliers in Switzerland are hydroelectric power plants (2016: 59%) and nuclear power plants (2016: 32.8%). Compared to other countries, Switzerland thereby has an attractive energy mix at relatively low production costs, which are not directly linked to the price of oil and natural gas. Switzerland's integration into the interconnected European energy system ensures that the entire country is supplied with electricity, even during periods of particularly high power consumption. This also applies to the other forms of energy, such as natural gas and petroleum. An extensive network of almost 3,500 gas stations provides fuel for motor vehicles. Within the scope of Swiss environmental policy, mineral oil taxes are levied on gasoline and diesel (approx. 0.75 Swiss francs per liter), revenues that are appropriated specially and mainly flow back into road-building (steering tax). To promote environmentally friendly fuels, fuels from renewable sources (such as biogas, bioethanol, biodiesel, vegetable and animal oils) are partially or fully exempt from the mineral oil tax. The taxation of natural and liquid gas used as fuels is also reduced. In addition there are voluntary private measures, such as the climate charges on fuels, with which reduction measures are financed domestically and abroad. Nevertheless, the price of gasoline (unleaded 98), which averaged 1.60 Swiss francs per liter in October 2017, is comparatively moderate.

The Swiss electric power market is highly fragmented. Approximately 700 utility companies supply the country with electricity, including eight associated companies and numerous small producers. Thanks to the partial liberalization of the market in 2009, major consumers (i.e. those requiring more than 100,000 kWh per year) can now choose their supplier. A federal statute is required to introduce the complete opening up of the market, which can then be challenged in a referendum.

www.bfe.admin.ch
Swiss Federal Office of Energy (SFOE)
Languages: German, English, French, Italian

www.stromkunden.ch
Group of major electricity consumers
Language: German

11.4 WATER

Switzerland is a water-rich country. Six percent of Europe's fresh water is stored in the Swiss Alps. The Gotthard massif in the center of the Swiss Alps forms a continental divide as far as Europe's water is concerned. From there the Rhine flows to the North Sea, the Rhone to the western Mediterranean, the Ticino (Po) to the Adriatic Sea, and the Inn (Danube) to the Black Sea.

www.bafu.admin.ch > Topics > Water
Federal Office for the Environment (FOEN) - Water
Languages: German, English, French, Italian

11.4.1 Drinking Water

The water that flows through all water pipes in Switzerland is so fresh and pure that it meets the purity requirements for mineral water, even though it is a thousand times cheaper. Even the water in public fountains can be drunk without concern. Only 2% of annual precipitation is utilized for the drinking water supply. The Swiss population consumes about 300 liters of water per capita per day in homes, industry, and commercial operations. On average, household consumption accounts for 142 liters of this. Drinking water from water pipes costs an average of about 2 Swiss francs per thousand liters in Switzerland. At a cost of 0.30 Swiss francs per person per day, the cost is just under 0.90 Swiss francs per day for a 3-person household. Groundwater from wells and springs accounts for 80% of consumption, and the rest comes primarily from lakes.

www.trinkwasser.ch
Drinking water
Languages: German, French, Italian

11.4.2 Waste Water Disposal and Water Pollution Control

Because of its role as the “water reservoir” of Europe, Switzerland is obliged to make special efforts in water pollution control. Purification of waste water is a necessary requirement for maintaining and preserving water ecosystems over the long term. Thanks to modern wastewater purification technology, there is no health risk associated with swimming in Switzerland’s many lakes and rivers. The waste water from households, industry, business and agriculture is piped to purification systems through sewage pipes running a total length of 40,000-50,000 kilometers (about 25,000-31,000 miles). Today, 97% of all Swiss households are connected to one of the country’s approx. 900 wastewater treatment plants.

11.5 POST

Swiss Post serves the entire country (universal nationwide service). It is a byword for reliability, breaking European records again and again.

In recent years, the postal market has undergone fundamental changes. In addition to the state-run postal system, numerous private companies are now offering postal delivery services in certain areas in which competition is allowed. The package delivery market (for packages over 1kg) was liberalized in 2004. Since April 2006, letters weighing more than 100g can be handled by private postal services, provided that they have the required license. Swiss Post has maintained its monopoly only on the delivery of domestic letters and letters from abroad weighing 50g or less. Further liberalization will not take place for the time being, although full liberalization continues to be discussed.

The postal service provides an overall dense network of access points. As of late December 2016, there were 1,323 post offices, 849 agencies, and 1,005 postomats. In an international comparison with seven other European countries, Switzerland had the highest density of post office branches per area and the smallest average distance to the nearest post office branch. In addition, Swiss Post offers total logistics solutions ranging from procurement through warehousing to information logistics, including cross-border service.

www.post.ch
Swiss Post
Languages: German, English, French, Italian

www.bakom.admin.ch
Federal Office of Communications (OFCOM)
Languages: German, English, French, Italian

11.6 HEALTHCARE

11.6.1 Medical Care

Highly trained medical professionals, famous hospitals and top medical institutions help make the Swiss healthcare system among the best in the world. By international standards, Switzerland has a cost-intensive healthcare system relative to GDP. A dense network of hospitals, pharmacies, and medical and dental practices ensures universal access to out-patient and in-patient care. Emergency medical care on the road (emergency services of hospitals) and by air (Swiss air-rescue service Rega or TCS) is well developed and functions professionally. An organization called Spitex provides medical care at home.

The life expectancy at birth has almost doubled in Switzerland since 1900. According to an OECD study, the Swiss people have the world’s third-highest life expectancy, at an average of 83 years (see fig. 48).

11.6.2 Health Insurance

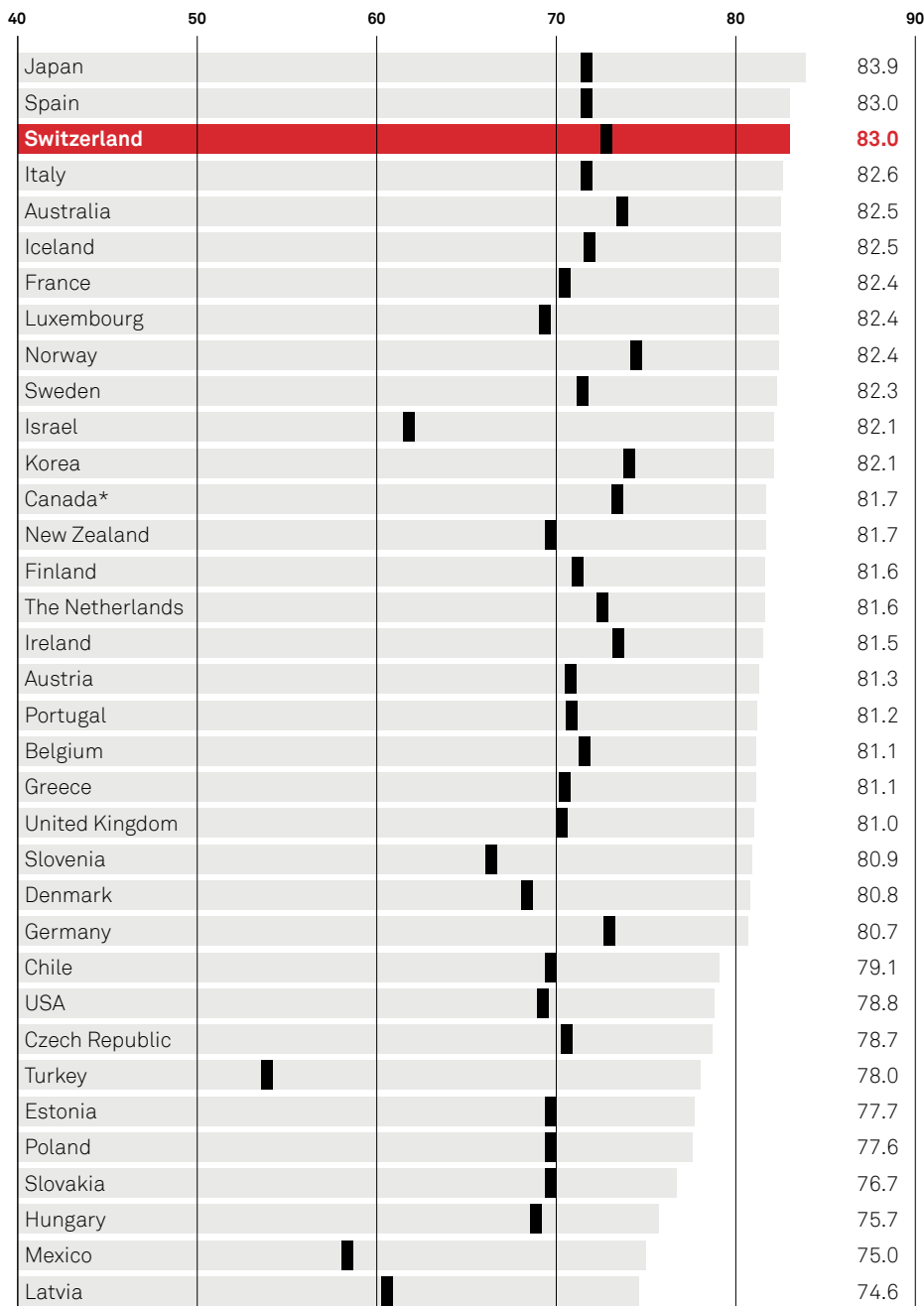
The basic health insurance that all persons residing in Switzerland are required to carry guarantees access to good medical care. This covers medical treatment in the event of illness or accidents if treatment is not covered by accident insurance (even in foreign countries in some cases). The system is not state-run, but offered through private health insurance companies. Additional insurance is optional.

www.bag.admin.ch > Topics > Insurances
Overview of health insurance
Languages: German, English, French, Italian

“At an average of 83 years, the Swiss people have the world’s third-highest life expectancy.”

Life Expectancy at Birth, 1970 and 2015

(FIG. 48)



■ 2015 (*2013) ■ 1970

Sources: OECD Health Statistics 2017

www.bag.admin.ch
Swiss Federal Office of Public Health (FOPH)
Languages: German, English, French, Italian

www.redcross.ch
Swiss Red Cross
Languages: German, French, Italian

www.hplus.ch
Hospitals in Switzerland
Languages: German, French, Italian

www.fmh.ch
Swiss Medical Association (FMH)
Languages: German, French, Italian

www.doctorfmh.ch
Swiss doctors directory
Languages: German, English, French, Italian

www.rega.ch
Swiss air rescue service (Rega)
Languages: German, English, French, Italian

www.spitex.ch
Spitex association, Switzerland
Languages: German, French