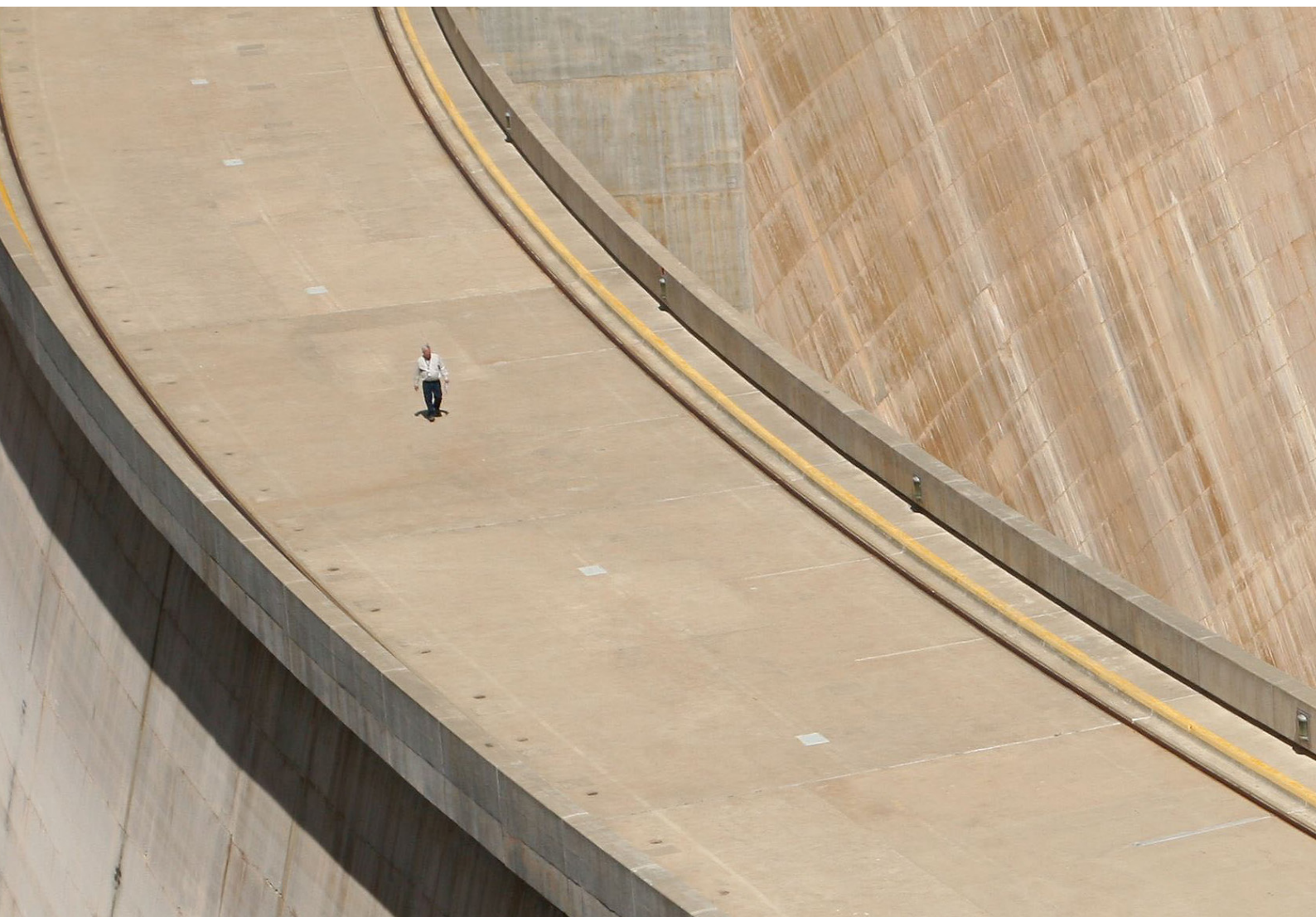


More from less — material resource efficiency in Europe
2015 overview of policies, instruments and targets in 32 countries



Switzerland 

May 2016

This country profile is based on information collected by Andreas Hauser, Swiss NRC Resource efficient economy and the environment from the Federal Office for the Environment FOEN and Simonne Rufener Swiss NRC waste from the Swiss FOEN. The response should not be seen as an official government communication and is not necessarily an exhaustive list of all national material resource efficiency policies, objectives and activities. The information is current as of November 2015.

This country profile was prepared as part of the 2015 EEA review of material resource efficiency policies, that aimed to collect, analyse and disseminate information about the development and implementation of material resource efficiency policies in EEA member and cooperating countries. The work resulted in the following outcomes:



32 short country profiles (this document) – self assessments prepared by countries, describing the current status of material resource efficiency policies including key strategies and action plans, policy objectives, instruments, targets and indicators, and the institutional setup. Countries were also invited to share reflections on the future direction of resource efficiency policies.

EEA report *More From Less – material resource efficiency in Europe* – prepared by the EEA and ETC/WMGE, the report analyses trends, similarities and differences in policy responses, showcases selected policy initiatives from the countries, and offers some considerations for the development of future policies.

The EEA report *More from less – material resource efficiency in Europe* and the 32 country profiles are available at: <http://www.eea.europa.eu/resource-efficiency>



For information about trends and policies on municipal waste management in the participating countries, please visit: <http://www.eea.europa.eu/publications/managing-municipal-solid-waste>

Information about EU Member States' waste prevention programmes can be found at: <http://www.eea.europa.eu/publications/waste-prevention-in-europe-2015>

For information on climate- and energy-related policies, including those on energy efficiency, in the participating countries, please visit: <http://www.eea.europa.eu/themes/climate/ghg-country-profiles>

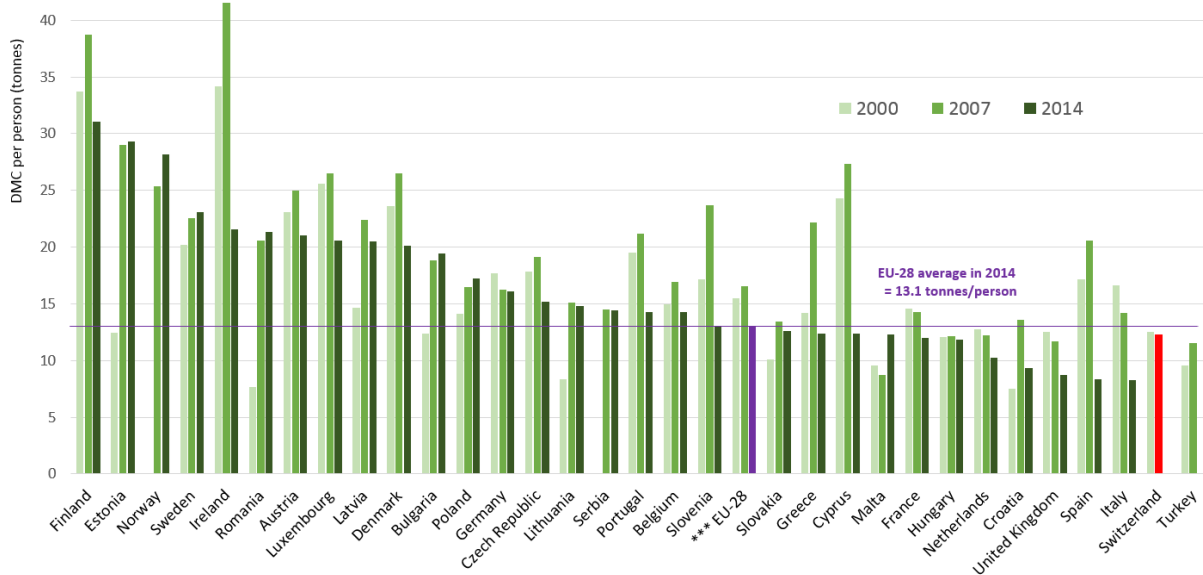
Switzerland, facts and figures

Source: Eurostat, except where indicated otherwise

| | |
|--|---|
|  | <p>GDP: EUR 529 billion (equivalent to 3.8 % of EU-28 total in 2014)</p> <p>Per person GDP: EUR 44,300 (in purchasing power standard) (162 % of EU-28 average per person in 2014)</p> <p>Use of materials*): 98 million tonnes DMC (equivalent to 1.5 % of EU-28 total in 2013) 12.1 tonnes DMC/person (93 % of EU-28 average per person in 2013) Resource productivity 7.70 EUR/kg (240 % of EU-28 average in 2013)</p> <p>Material Footprint (RMC) 17.9 tonnes RMC/person (average 2000–2012), which is equivalent to 110 % of the EU27's average over the same period (16.2 t/capita).</p> <p>Structure of the economy: agriculture: 0.8 % industry: 26.7 % services: 72.5 % (2014 est.)</p> <p>Surface area: 41,300 square kilometres (equivalent to 0.9 % of EU-28 total)</p> <p>Population: 8.2 million (equivalent to 1.6 % of EU-28 total)</p> <p><i>* figures for 2014 not available, 2013 used instead</i></p> |
|  | |

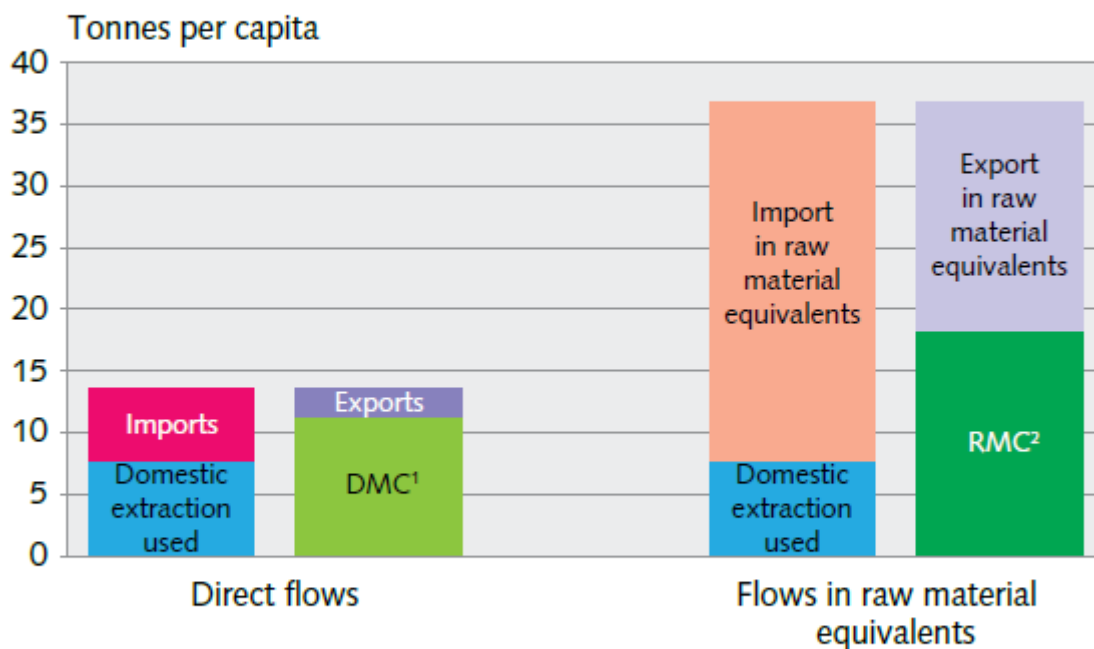
Since a great share of Switzerland's material consumption is outside its borders, standard graphs below, based on Eurostat data, are accompanied where possible by footprint-based indicators.

**Use of materials (DMC) per person, participating countries and EU-28
 (2000, 2007 and 2014)**



**Comparison between direct material flows
 and flows in raw material equivalents in 2012**

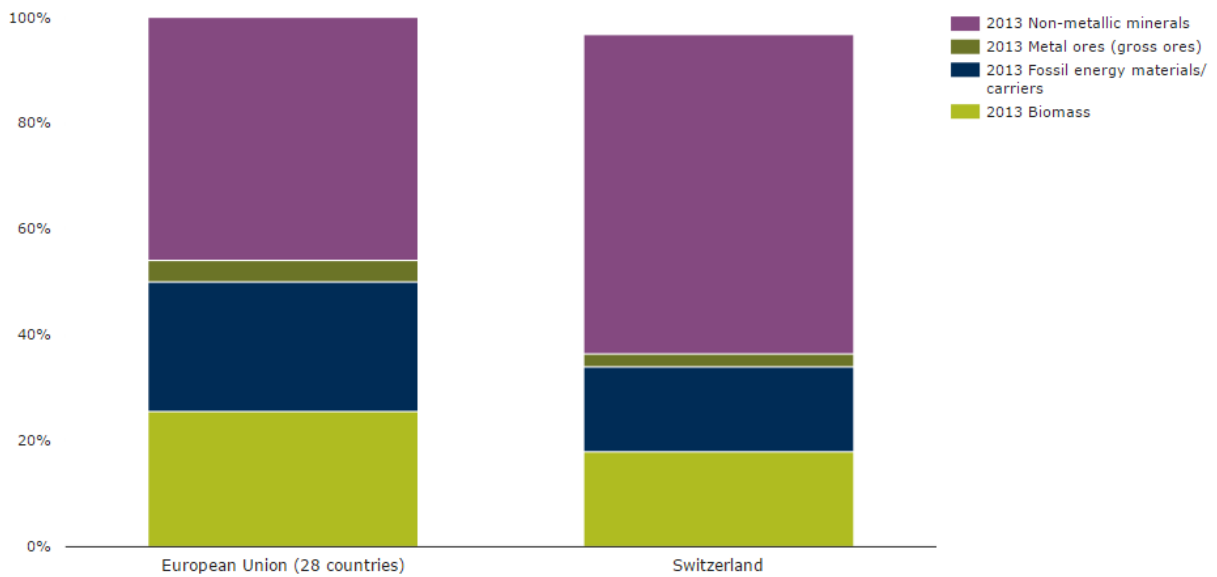
G 1



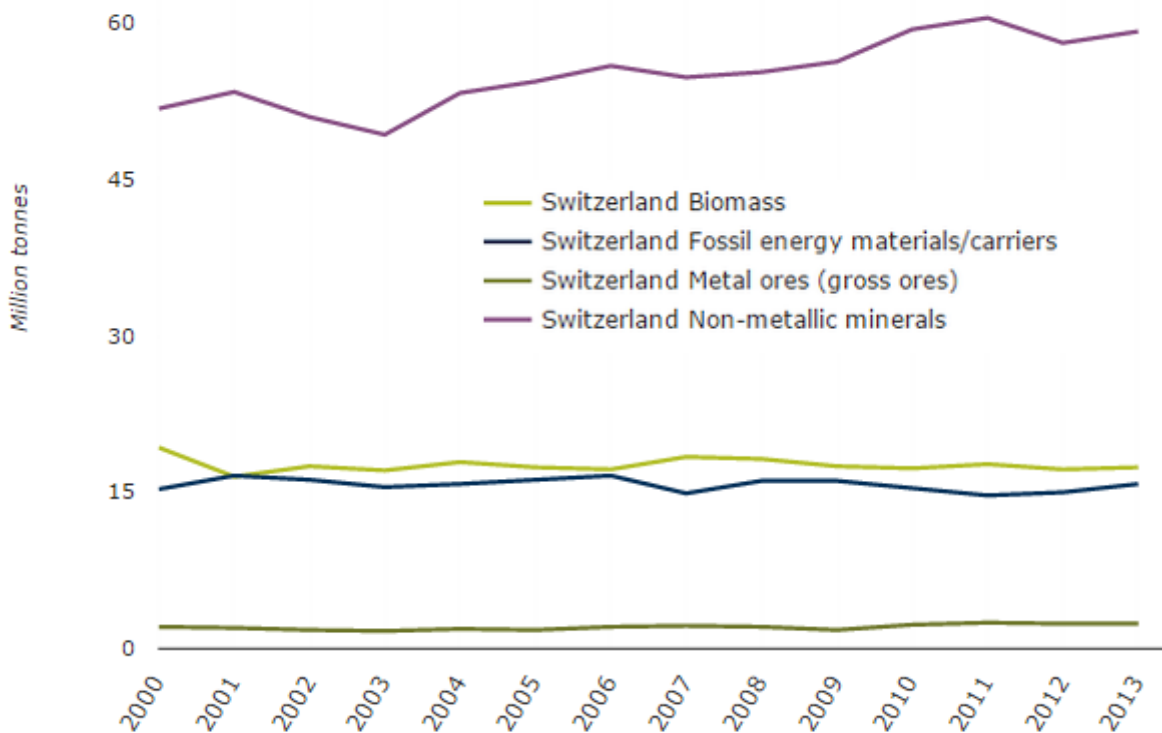
¹ DMC: Domestic material consumption

² RMC: Raw material consumption

Domestic material consumption by category, EU-28 average and Switzerland (2013)

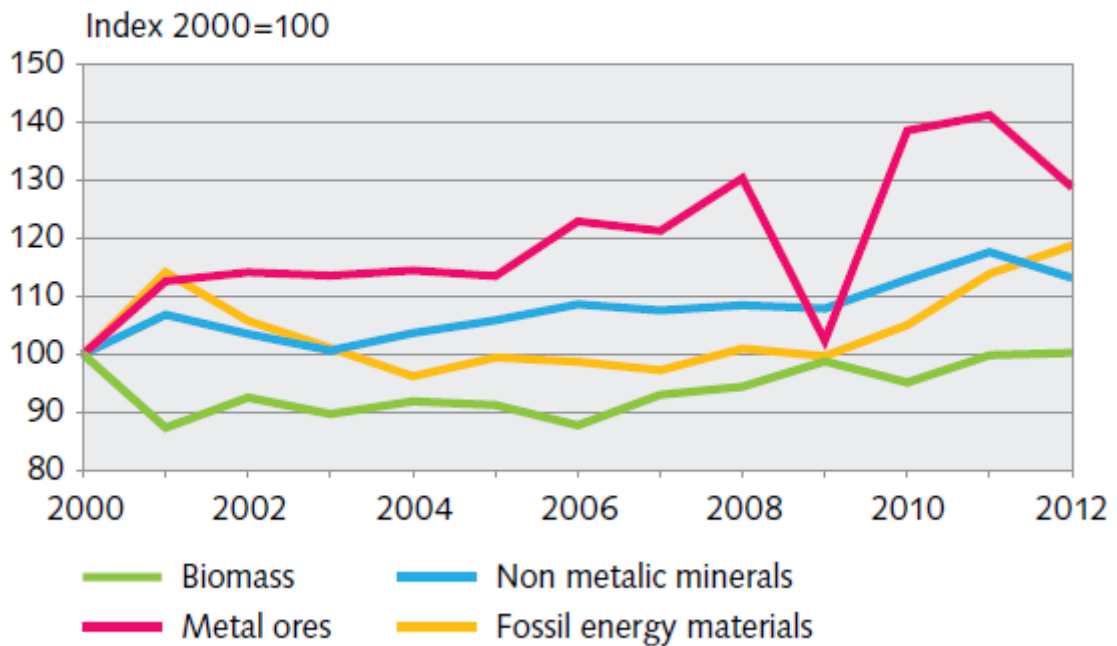


Trends in material consumption, Switzerland by category (2000–2013)



RMC by material categories

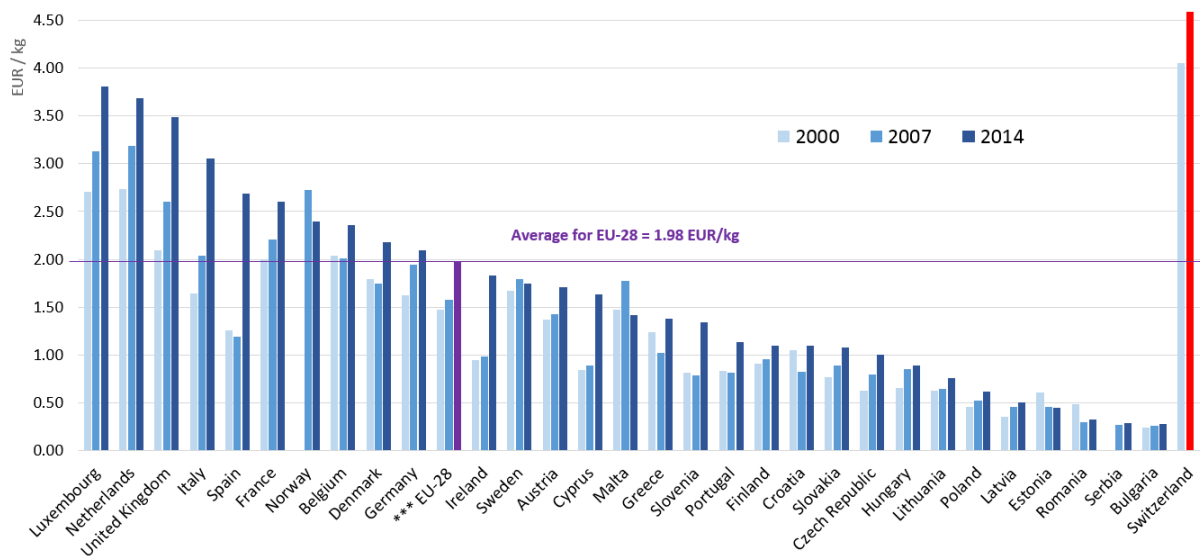
G 3



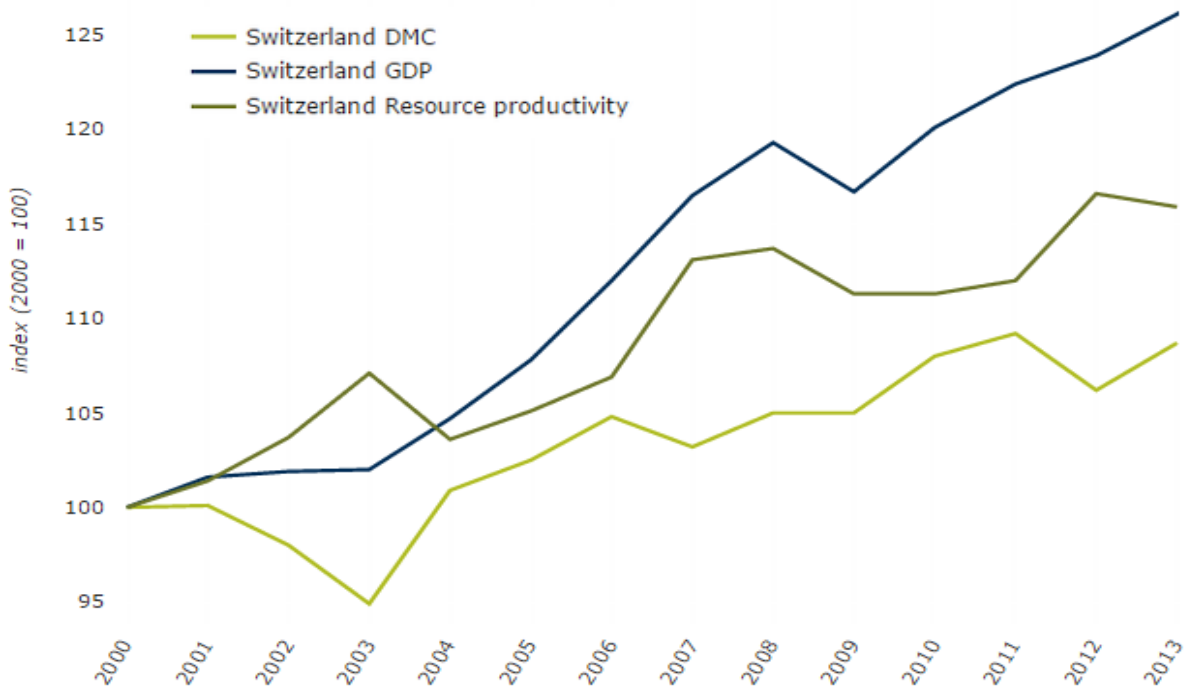
Source: FSO – Environmental accounts

© FSO, Neuchâtel 2015

Resource productivity (GDP/DMC), participating countries and EU-28 (2000, 2007 and 2014)

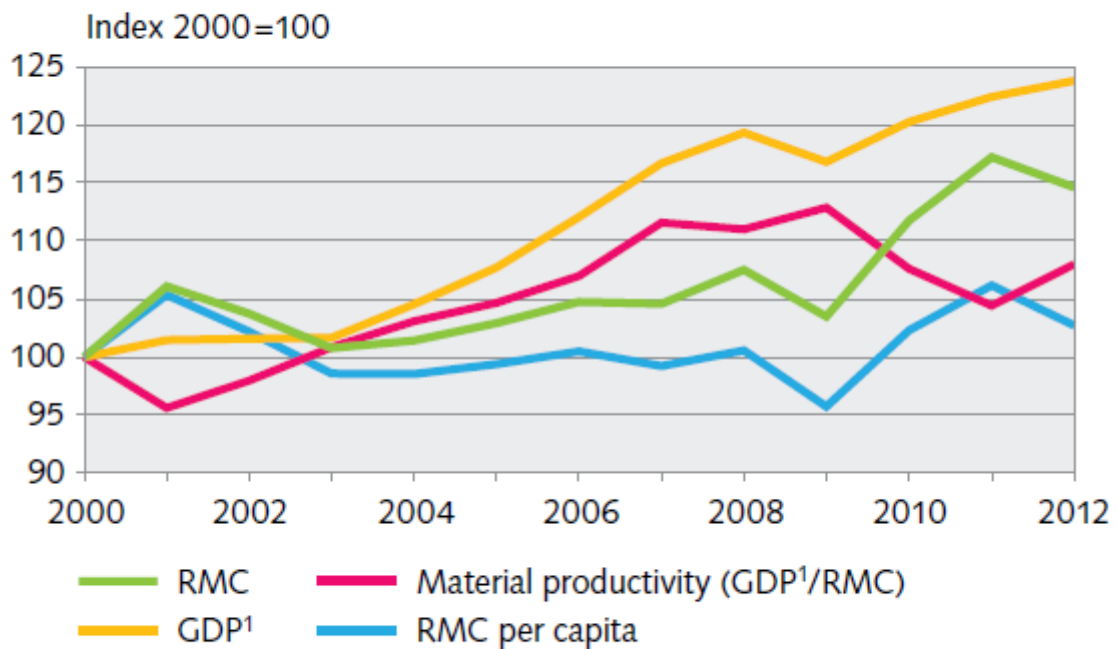


GDP, DMC and resource productivity trends, Switzerland (2000–2013)



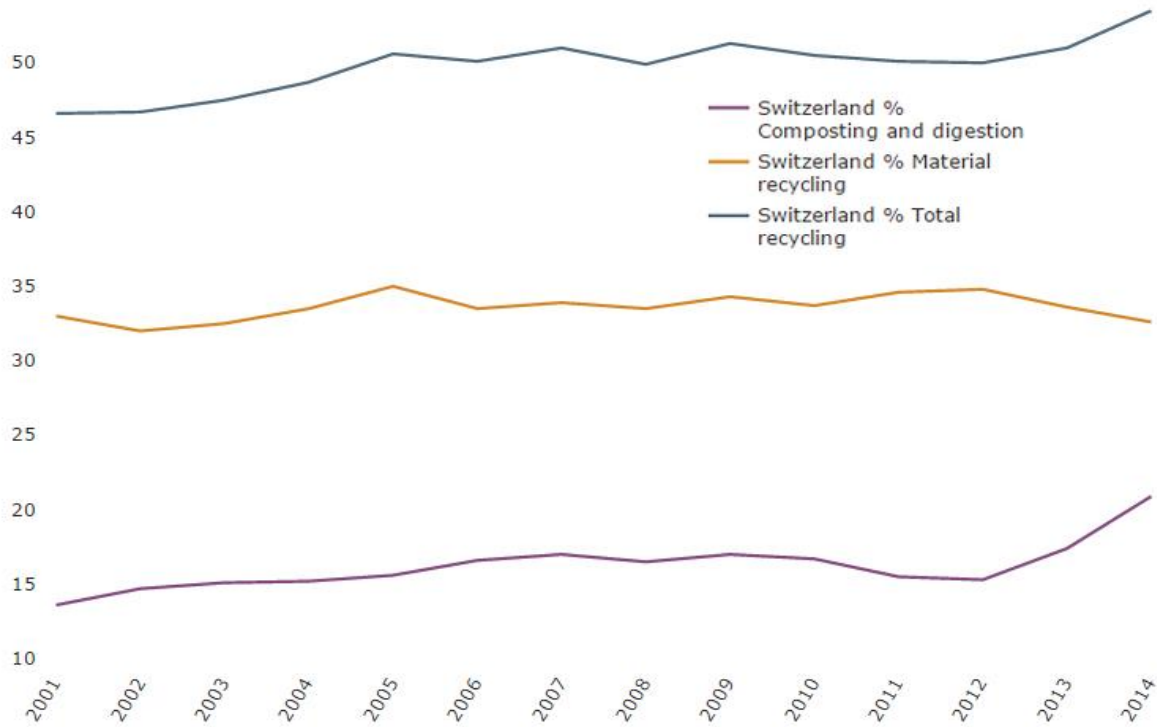
Material productivity

G 4

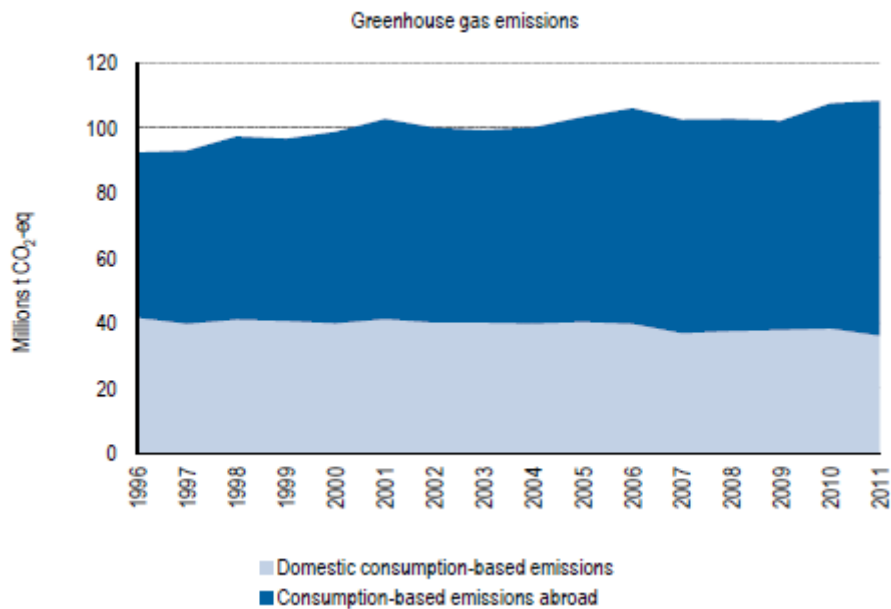


¹ GDP real (at prices for the preceding year, chain linked)

Recycling of municipal waste, Switzerland (2001–2014)



Greenhouse gas Footprint



Source: [Frischknecht et al. \(2014\)](#) Calculations treeze and Rütter Soceco AG

Introduction

Switzerland does not currently have a dedicated national resource efficiency strategy or action plan. However:

1) concerning focus on material resources: no official national strategy, but a discussion on resources has been launched by multiple stakeholders: http://kommunale-infrastruktur.ch/cmsfiles/04_rtrialog.pdf. This should result in a coherent concept.

2) with respect to the broad definition of natural resources: on 8 March 2013, the Federal Council adopted the Green Economy Action Plan. In doing so, it intends to conserve natural resources, make consumption more environmentally friendly and strengthen the transition to a circular economy. The action plan includes 27 existing and new measures in the four priority areas of action:

- (1) consumption and production;
- (2) wastes and raw materials;
- (3) cross-cutting instruments; and
- (4) targets, monitoring, information and reporting.

http://www.bafu.admin.ch/wirtschaft/11350/12928/index.html?lang=en&download=NHZLpZeg7t,lnp6I0NTU042I2Z6ln1ad1IZn4Z2qZpnO2Yuq2Z6gpJCHdXx4gmym162epYbg2c_JjKbNoKSn6A--

Scope of material resource efficiency

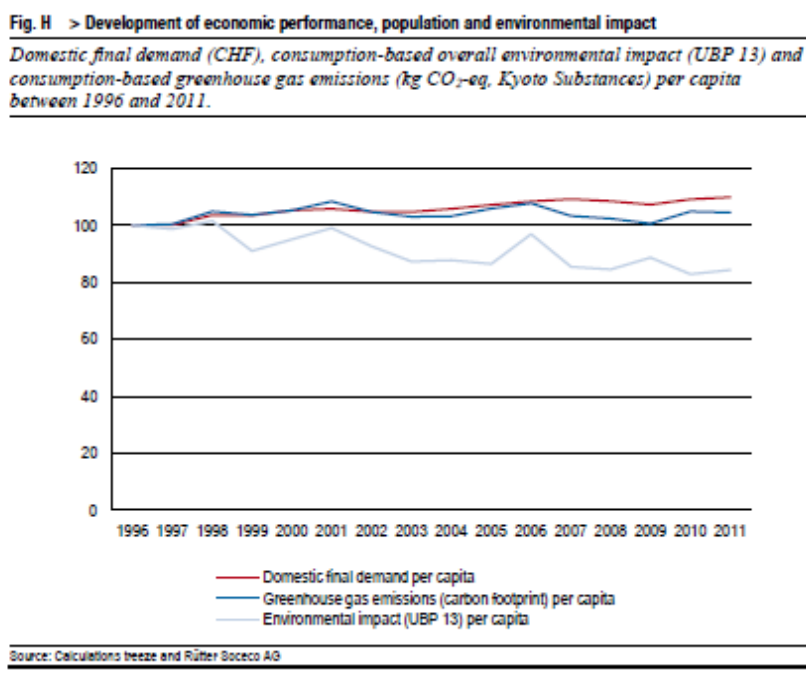
1) Material efficiency: no official definition. We consider gross domestic product (GDP)/domestic material consumption (DMC) as too narrow, because the full life cycle of products should be taken into account.

2) Resource efficiency

- In the government's Action Plan for a Green Economy, the term *resources* includes water, soil, clean air, raw materials and mineral resources such as energy raw materials and metals. This terminology

is in line with the interpretation used in EBP (2013, 3)¹ and in the Federal Agricultural Policy².

- There is no official definition of *resource efficiency*. However in Federal Office of the Environment (FOEN) 2014,12³, environmental resource efficiency is defined as “*environmental impact compared to the economic performance of the Swiss economy*”. It is operationalised as domestic final demand in monetary terms (CHF) divided by consumption-based environmental impacts. While production-based environmental impacts are usually compared to GDP, the economic factor directly comparable to environmental pollution in the consumption perspective is domestic final demand. It is the sum of the consumption expenditure of private households, of state final demand and macroeconomic investments.



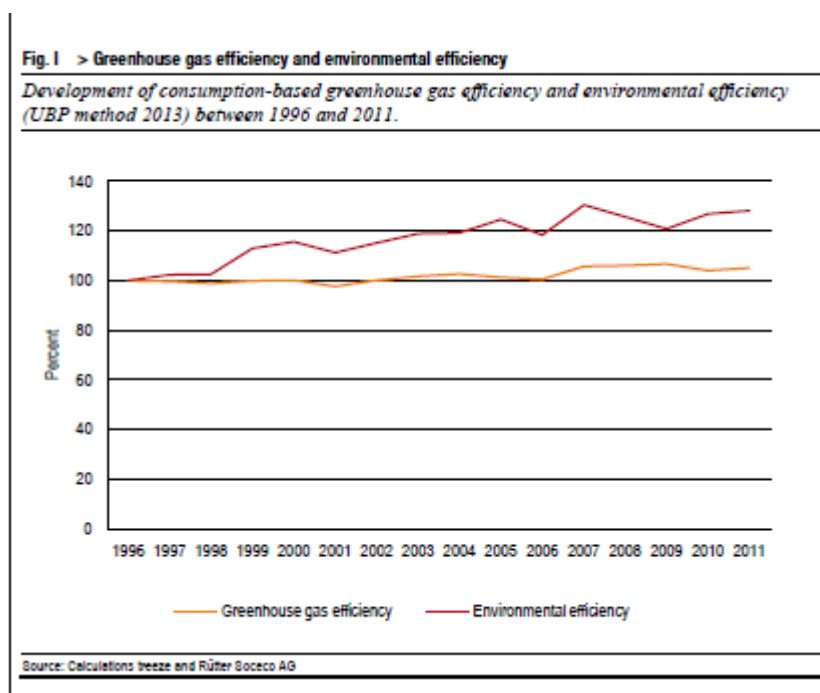
1

http://www.bafu.admin.ch/wirtschaft/11350/13309/index.html?download=NHZLpZeg7t,lnp6I0NTU042I2Z6In1acy4Zn4Z2qZpnO2Yug2Z76gpJCHdH95fmym162epYbg2c_JjKbNoKSn6A--&lang=de

2

http://www.blw.admin.ch/themen/00364/index.html?lang=fr&download=NHZLpZeg7t,lnp6I0NTU042I2Z6In1ae2Izn4Z2qZpnO2Yug2Z76gpJCDen13gGym162epYbg2c_JjKbNoKSn6A--

3 <http://www.bafu.admin.ch/publikationen/publikation/01771/index.html?lang=en>



Driving forces for material resource efficiency

In Switzerland, the drivers are a combination of comparably developed environmental concerns, the interest in resource efficiency for competitive advantage, the availability of technological know-how⁴, and the scarcity of certain raw materials in Switzerland⁵.

Priority material resources and sectors

Priority materials

Metals, particularly rare technical metals; biomass waste; phosphorus; and sand and gravel are of particular interest.

Furthermore, the FOEN has recently conducted a wide study to identify raw materials that are particularly environmentally relevant in the consumption

⁴ Excellent Technological Universities such as ETH Zurich, EPFL Lausanne, practical educational system with [apprenticeship](#) and universities of applied sciences.

⁵ Beyond water, sand & gravel and wood very few raw materials. There is a saying, that Switzerland's only raw material is technology.

sector (mainly in the food sector). For this, the FOEN analysed 14 raw materials including palm oil, sugar, tea and cotton. Results of this study will be published in December 2015.

Priority industries and economic sectors

Based on life-cycle analysis, the following sectors have been identified as environmentally relevant for Switzerland:

- construction;
- agriculture;
- manufacturing in general;
- chemical industry;
- waste disposal/recycling;
- public procurement.

For details, please see R'EFF-Report:

Full version (German):

http://www.bafu.admin.ch/abfall/10743/index.html?lang=de&download=NHzLpZeg7t,lnp6I0NTU042I2Z6ln1acy4Zn4Z2qZpnO2Yuq2Z6gpJCHdH95fmy m162epYbg2c_JjKbNoKSn6A--

Summary (English):

http://www.bafu.admin.ch/abfall/10743/index.html?lang=en&download=NHzLpZeg7t,lnp6I0NTU042I2Z6ln1ad1IZn4Z2qZpnO2Yuq2Z6gpJCHdH95fmy m162epYbg2c_JjKbNoKSn6A--

Priority consumption categories

Based on life-cycle analysis, the following consumption categories have been identified as environmentally relevant for Switzerland:

- nutrition;
- housing;
- mobility;

For more details please see R'EFF-Report:

Full version (German):

http://www.bafu.admin.ch/abfall/10743/index.html?lang=de&download=NHzLpZeg7t,lnp6I0NTU042I2Z6ln1acy4Zn4Z2qZpnO2Yuq2Z6gpJCHdH95fmy m162epYbg2c_JjKbNoKSn6A--

Summary (English):

http://www.bafu.admin.ch/abfall/10743/index.html?lang=en&download=NHZLpZeg7t,lnp6I0NTU042l2Z6ln1ad1IZn4Z2qZpnO2Yuq2Z6gpJCHdH95fmyml62epYbg2c_JjKbNoKSn6A--

Policy framework

National strategies or action plans for (material) resource efficiency

In March 2013, the Federal Council adopted the Green Economy Action Plan. In doing so, it intends to conserve natural resources, make consumption more environmentally friendly and strengthen the transition to a circular economy. The action plan includes 27 existing and new measures in the four priority areas of action:

- (1) consumption and production;
- (2) wastes and raw materials;
- (3) cross-cutting instruments; and
- (4) targets, monitoring, information and reporting

http://www.bafu.admin.ch/wirtschaft/11350/12928/index.html?lang=en&download=NHZLpZeg7t,lnp6I0NTU042l2Z6ln1ad1IZn4Z2qZpnO2Yuq2Z6gpJCHdXx4gmym162epYbg2c_JjKbNoKSn6A--

The Green Economy Action Plan contains several measures dedicated to material resource efficiency, for example, Measure 12: *“Increase efficiency of waste treatment plants and production facilities”*.

The relevant measures are described in the Action plan, p. 36.

http://www.bafu.admin.ch/wirtschaft/15556/15557/15562/index.html?lang=en&download=NHZLpZeg7t,lnp6I0NTU042l2Z6ln1ad1IZn4Z2qZpnO2Yuq2Z6gpJCHdXx4gmym162epYbg2c_JjKbNoKSn6A--

The Technical Ordinance on Waste is currently in the process of revision.

<http://www.bafu.admin.ch/abfall/02202/12658/index.html?lang=fr&msg-id=55463>

The Reffnet project (<http://www.reffnet.ch/>) offers consultancy services for small- and medium-sized enterprises in the field of material efficiency. It is co-financed by the Swiss Federal Office for the Environment⁶.

General policy objectives for material resource efficiency

The Environmental Protection Act states, “¹*this Act is intended to protect people, animals and plants, their biological communities and habitats against harmful effects or nuisances and to preserve the natural foundations of life sustainably, in particular biological diversity and the fertility of the soil*”.

² Early preventive measures must be taken in order to limit effects that could become harmful or a nuisance.

The waste hierarchy states that “*waste avoidance, reuse/recycle recover, environmentally sound disposal*” should be applied (see Art. 30 of the Environmental Protection Act).

Measure 23 of the Green Economy Action plan “Setting targets and reporting on progress” states:

“The goal is to improve resource efficiency and reduce resource consumption to naturally sustainable levels over the long term.”

Resource efficiency and the circular economy

In the context of the green economy action plan (see above), the Swiss government is accelerating the transition to a circular economy. For example the recycling of rare technical metals, the increased use of recycled raw materials such as gravel; the reduction of raw material requirements and the volume of waste generated.

⁶ see <http://www.reffnet.ch/de/Ueber-reffnetch/traegerschaft-und-partner>

Targets and indicators

Targets for material resource efficiency policies

Quantified material targets have not yet been adopted by political decision makers. However, possible targets are explored in EBP (2012):⁷

Measure 23 of the Green Economy Action plan “Setting targets and reporting on progress” states:

“The goal is to improve resource efficiency and reduce resource consumption to naturally sustainable levels over the long term.”

Indicators to monitor use of materials and resource efficiency:

The Federal Statistical Office has recently published a pilot material footprint (RMC):

<http://www.bfs.admin.ch/bfs/portal/en/index/news/publikationen.html?publicationID=6736>

The FOEN publishes the following as core indicators:

- municipal solid waste;
- hazardous wastes recovered;
- recycling rate – quantity of separately collected municipal solid waste as a percentage of total municipal solid waste.

Further indicators by the FOEN are:

- municipal solid waste;
- energy production during waste incineration processes;
- hazardous wastes recovered;
- quantity of waste electrical and electronic equipment (WEEE) collected per person;
- waste incineration;
- fees for waste incineration.

see: <http://www.bafu.admin.ch/umwelt/indikatoren/index.html?lang=en>

⁷ [Bernath et al. \(2012\): Umwelt & Ressourcen: Ausblick 2050](#)

Resource efficiency in a broad sense is evaluated in Frischknecht et al. (2014):

<http://www.bafu.admin.ch/publikationen/publikation/01771/index.html?lang=en>

Policy instruments

Policy instruments considered most important for material resource efficiency

A combination of all types of instruments is applied (mix of instruments). An important pillar is the active involvement of stakeholders. The principle of subsidiarity plays a major role in Swiss resource efficiency policy.

Examples of good practice

To overcome risk aversion, a culture of dialogue and consultation procedures, long-term targets and framework conditions are important in building stable expectations for investors. The same is true for intensive and early dialogues on environmental priorities.

To raise the awareness, attractive pilot projects, as well as concrete results achieved in projects like Reffnet.ch, play an important role in demonstrating the advantages of resource efficient solutions. On the other hand, the FOEN systematically analyses costs and benefits of new environmental regulation.

Initiatives to estimate the environmental impacts (footprints) associated with imports: the FOEN has published several studies on environmental footprints including a time series of carbon, land use/biodiversity and nitrogen/eutrophication footprints as well of overall environmental impacts.

See

<http://www.bafu.admin.ch/publikationen/publikation/01771/index.html?lang=en>

<http://www.bafu.admin.ch/wirtschaft/00517/11301/index.html?lang=en>

These footprints have been modelled based on emissions, trade and life-cycle assessment data.

Furthermore these footprints have been evaluated in the context of planetary boundaries: See

http://www.bafu.admin.ch/wirtschaft/15556/15610/index.html?lang=de&download=NHzLpZeg7t,lnp6I0NTU042I2Z6ln1acy4Zn4Z2qZpnO2Yuq2Z6gpJCHelJ4g2ym162epYbg2c_JjKbNoKSn6A--

Criteria to determine priority resources and targets: based on life-cycle analysis, potential to reduce impacts, as far as can be judged.

How best to promote civil society's participation in implementation of resource efficiency policies?

Public consultation processes before legislating, dialogue processes.

How do you assess the potential for resource efficiency improvements in the economy?

Mix of scientists' judgments and the outcome of stakeholder dialogues.

Institutional setup and stakeholder involvement

Institutional set up for material resource efficiency policies

The Federal Office for the Environment (FOEN) is in charge of resource efficiency policies. Energy policy is treated separately, with the Federal Office of Energy taking the lead.

Process to ensure stakeholder participation

Key stakeholders of the Confederation are the offices at the cantonal (state) level – cantons are responsible for most of the measures, others are the responsibility of offices on the communal level.

Of course, private industry associations are also key stakeholders, for example, from the manufacturing and disposal/recycling sectors. Other

important stakeholders are environmental non-governmental organisations (NGOs).

With all these stakeholders, regular contacts take place, in addition to the procedural public hearings. An example is the round table on measures in the field of plastics.

Broad support of stakeholders can be achieved if the dialogue takes place as early as possible, and if, from beginning, consideration is given to which stakeholders should be involved in discussing which aspects. A second factor of success is to base the negotiations on the principle of subsidiarity. Furthermore the relationship between costs and benefits should be taken into account.

With the new Green Economy Dialogue programme the FOEN is bringing together interested stakeholders from the private sector, organisations, NGOs, and science and academia to work together on voluntary measures that promote resource conservation and efficiency. With this targeted multi-stakeholder approach the Swiss Federal Government pursues an open and systemic approach to solving stakeholder-identified key challenges in a collaborative and effective manner. The programme, as initiated by the Swiss Federal Council in its Action Plan for a Green Economy includes first examples like the UNEP Inquiry Initiative with its Swiss stakeholder response on the design of a sustainable financial system.

Identified key elements to ensure a broadly supported stakeholder engagement include:

- a working environment in which stakeholders from all sectors can equally bring forward and work on issues, opportunities and ideas;
- the inclusion and connection of the people with responsibility and accountability for sustainability and business performance of their organisations and a will to approach the green economy agenda in a systemic way;
- a focus on issues that address sustainability priorities, for example, a materiality matrix, of organisations that participants represent;
- a process that enables open concern and issue sharing as well as focused evaluation and prioritisation to set improvement projects;
- the setting of SMART (specific, measurable, actionable, relevant and time-based) objectives and actions.

More information is available on: www.gruenewirtschaft.admin.ch

Suggestions for international support mechanism to exchange experience and share lessons from the implementation of material resource efficiency policies

The Green Growth Knowledge Platform (GGKP) collects, manages and makes easily available theoretical and practical knowledge on green economy/green growth policies. It allows different actors to access and exchange experience in this field. Information can be accessed by themes, sectors, countries or institutions. The GGKP has research committees on technology and innovation and metrics and indicators among others. We would suggest using this established platform for the exchange of experience on material efficiency: www.ggkp.org

Optional questions

Recent policy developments regarding natural resources in the broader sense of the term.

In 2016 there will probably be a referendum (vote) on the popular initiative “Green Economy”:

http://www.gruene.ch/gruene/fr/campagnes/economie_verte/initiative.html

Which way should resource efficiency go in the future?

It is important to address environmental impacts along the whole value-chain of products. Therefore, a recent FOEN research project (Dao et al. 2015) evaluated to which degree Swiss footprints are consistent with planetary boundaries.

http://www.bafu.admin.ch/wirtschaft/15556/15557/15561/index.html?lang=de&download=NHZLpZeg7t,lnp6I0NTU042l2Z6ln1acy4Zn4Z2qZpnO2Yuq2Z6gpJCHelJ4g2ym162epYbg2c_JjKbNoKSn6A--

Our novel methodological approach builds on others, including a similar study for Sweden (Nykqvist *et al.* 2013)⁸, and may contribute to the European vision of “*living well, within the limits of our planet*”.

An interesting scientific contribution, which should be discussed in policy formulation, is also *Possible Target Corridor for Sustainable Use of Global Material Resources*⁹ (Bringezu 2015).

8

<http://www.stockholmresilience.org/download/18.416c425f13e06f977b118b5/1381790806088/National+Environmental+Performance+on+Planetary+Boundaries+Rapport+6576+NV+2013.pdf>

⁹ Resources 2015, 4, 25-54; [doi:10.3390/resources4010025](https://doi.org/10.3390/resources4010025)