14.7.2015, Swiss Parliament, Chinese Students, HEIG-VD

Environment
Good policy can make the difference
Snap-shot of a work in process

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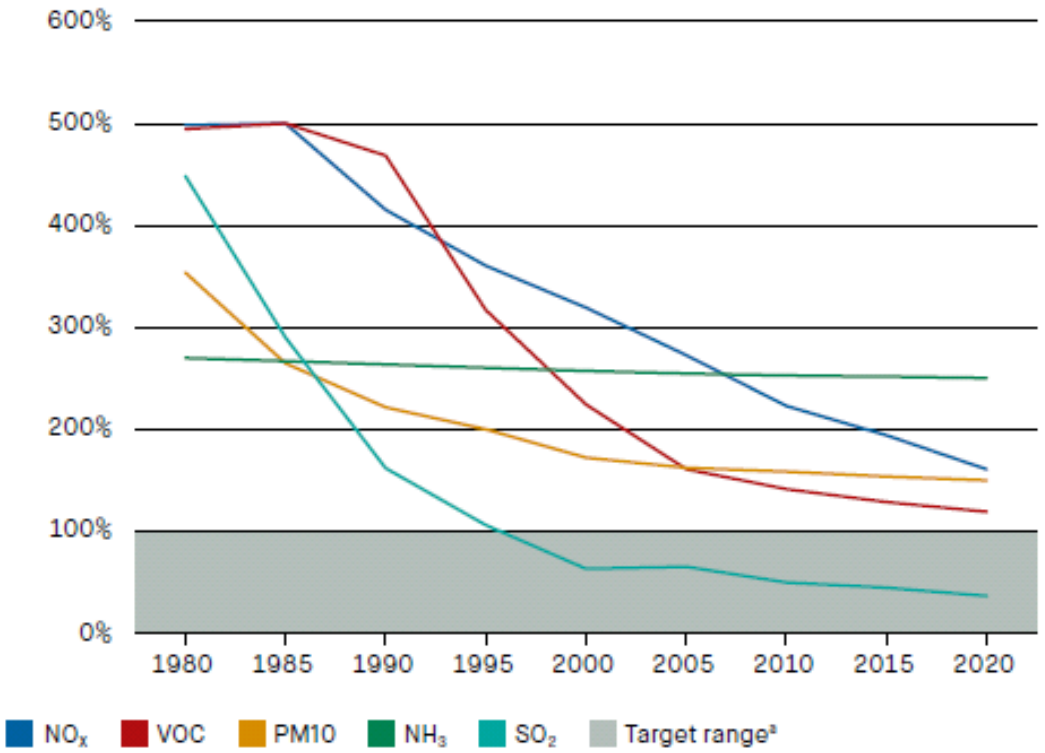
Introduction

- Preserving the environment is necessary for survival of mankind: water, air, soil, biodiversity, climate, waste, toxic etc. Degradation of them compromise our survival.
- Environment protection is a project for “real welfare for all”.
- Some problem are local (air) or regional (water), other global (climate).
- Different time horizon: water pollution disturbs us very fast. It provokes quickly a political reaction.
- Other problems appear in the long run: climate or reduction of biodiversity. Harder to organise adequate political and societal reaction.
- I will show 3 field of swiss policies: with success cases, disappointing cases and « inbeetwen’s ».
- Then: back to politics and economics.

2. Two success stories: Air and Water

Air quality

GI.4 Air pollutant emissions



* Emissions range, in which only precautionary measures are required.
Source: FOEN

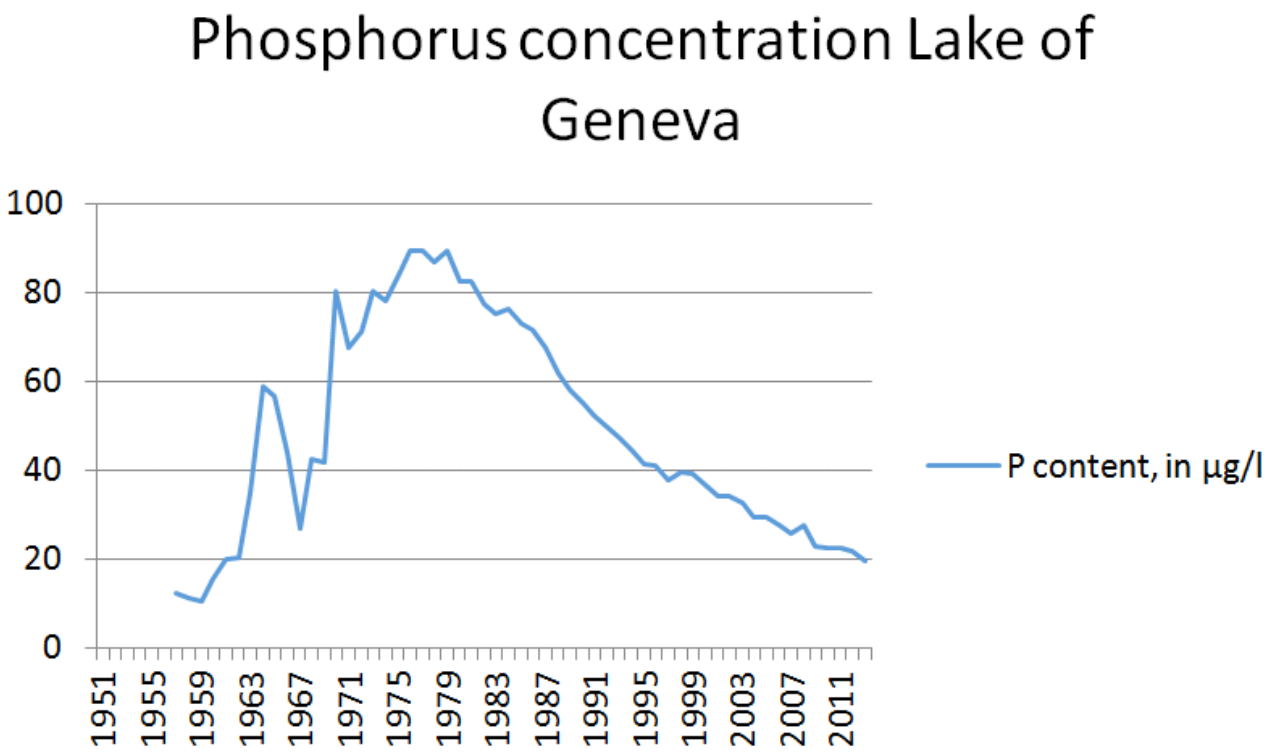
State of the Environnement, 2015, Swiss Government, s. 16
http://www.bafu.admin.ch/umwelt/05713/index.html?lang=en

Early Problem, Local

Main tools

1) Strong technical norm (road Vehicle, heating, industry)
2) Strong control
3) Energy efficiency is helping

Water quality



Data: http://www.bafu.admin.ch/umwelt/indikatoren/08605/08608/index.html?lang=en

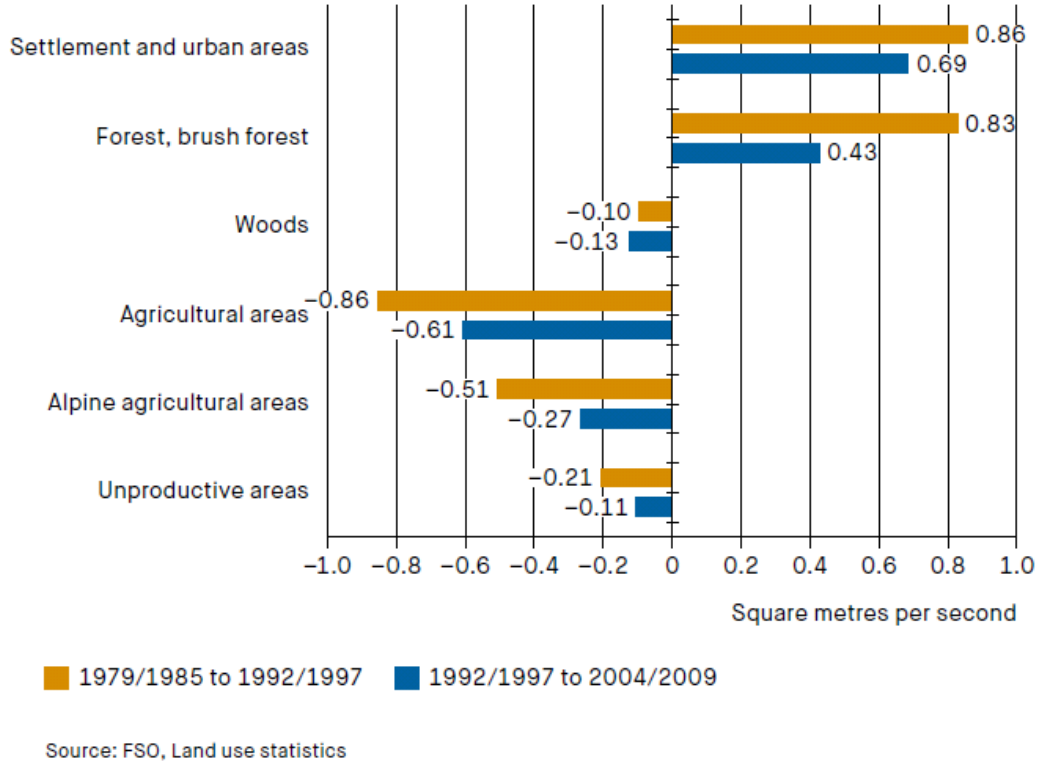
Main tools

- Generalisation waste water treatment plants
- More efficiency in use of agricultural fertilizing products
- Cleaning the industry
- Product norm (for instance : washing powder)

- New Problem: chemical micro-pollutant
- Challenge: re-use the phosphorus

3. Not under control: land use, materials

GI.7 Change in land use



Source: FSO, Land use statistics

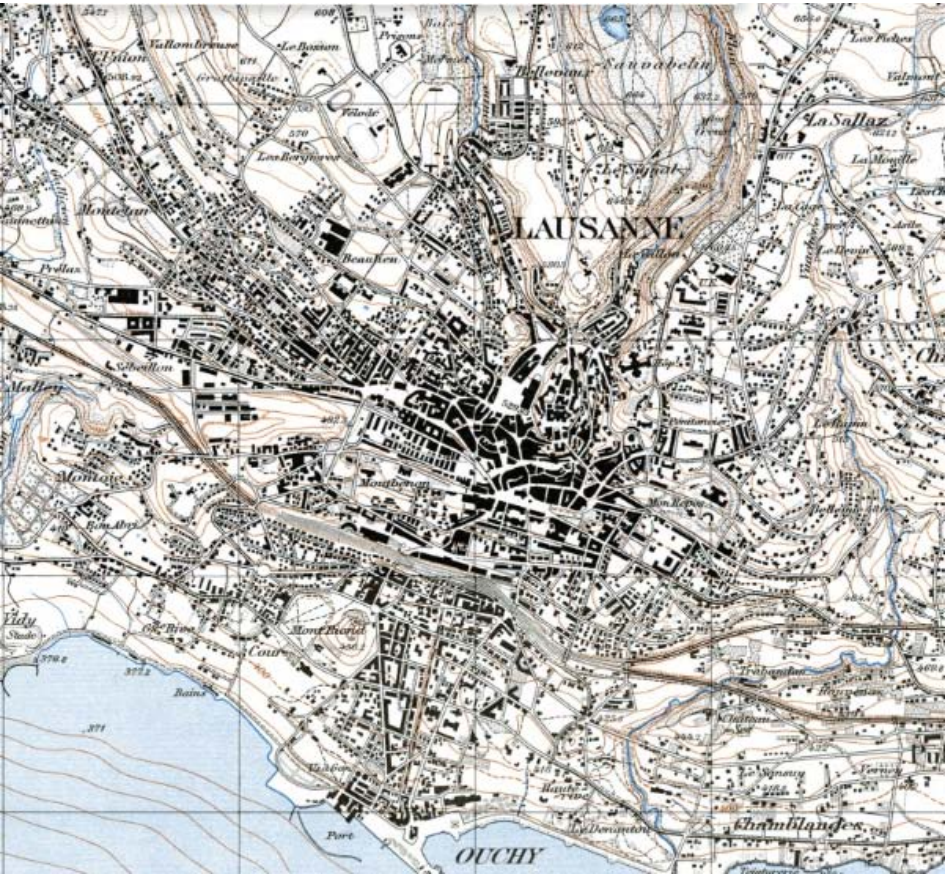
Tools:

- Hardening Spacial developpement law
- Transportation policy
- Living quality in town and cities (to break trend to country-side 1 familly house)

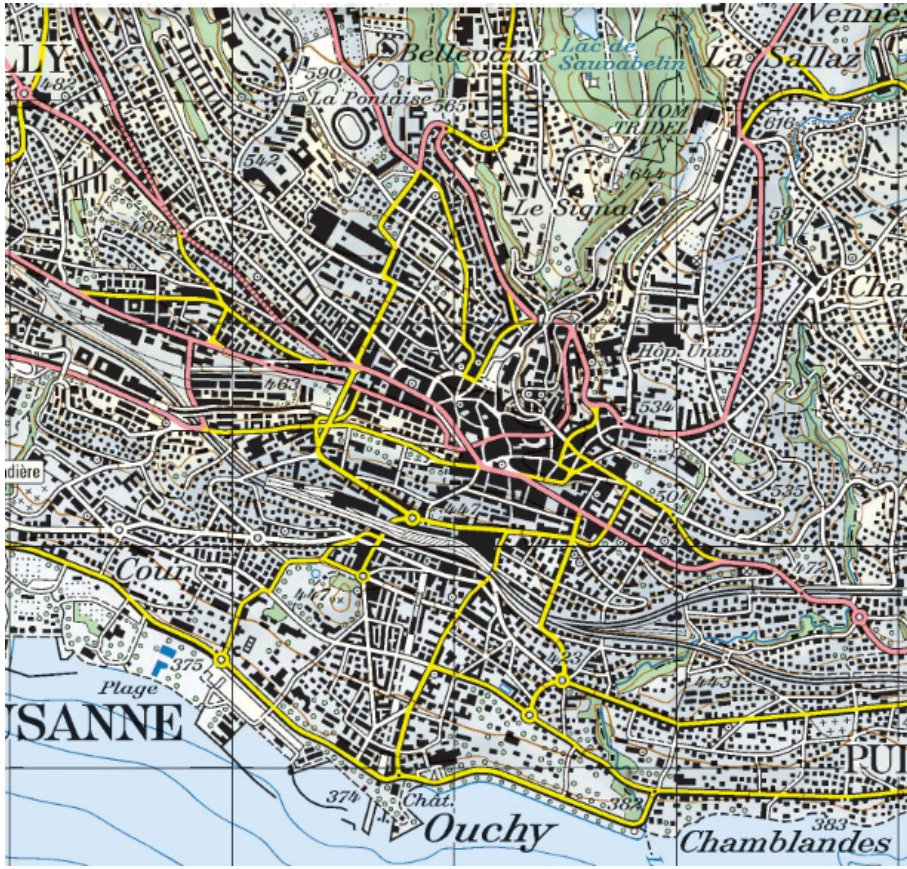
State of the Environnement, 2015, Swiss Government, s. 19
http://www.bafu.admin.ch/umwelt/05713/index.html?lang=en

Example of land sealing

Lausanne 1949

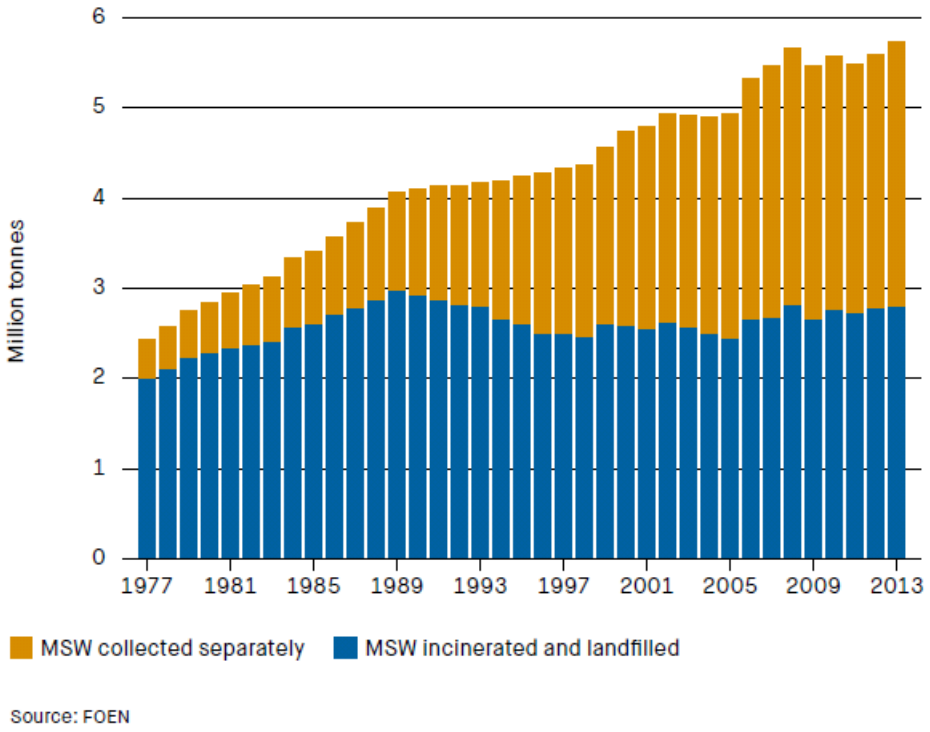


Lausanne 2013



Municipal waste

G I.12 Municipal solid waste (MSW)



Source: FOEN

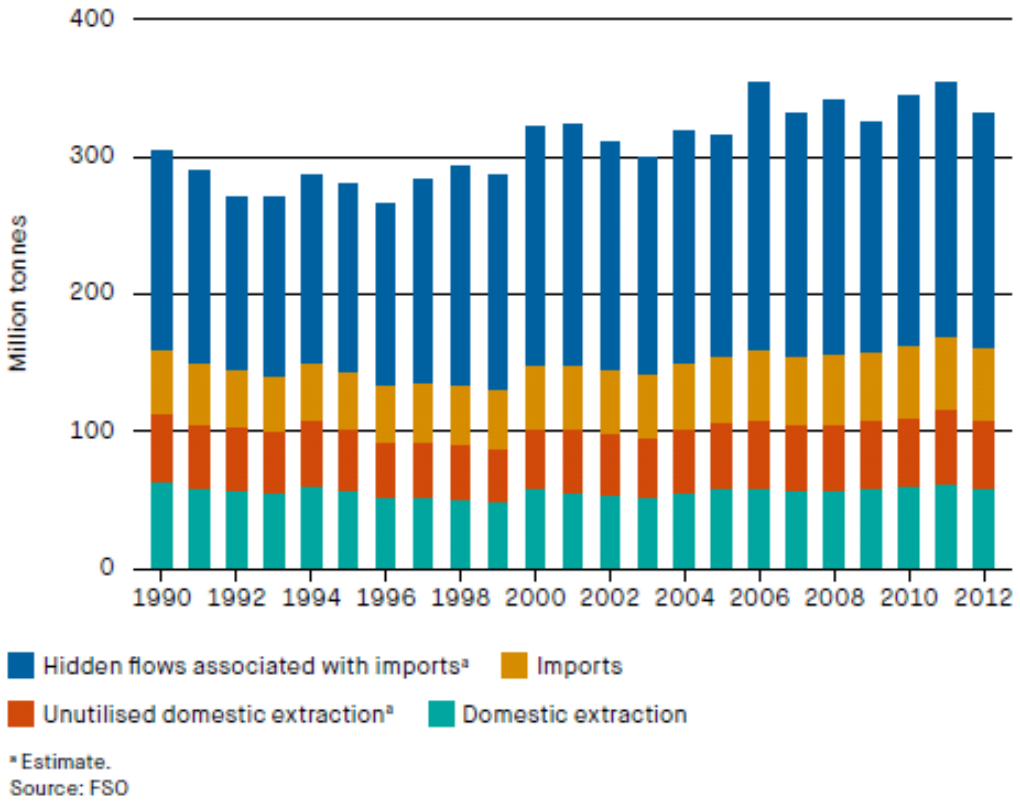
Tools:

- Recycling infrastrucure and education: Glass, Green, Paper, oil, PET, etc
- Causal taxe (garbage bag sFr 2.-)
- Incinerating plants with Energy use (thermal network and electriciy production)

State of the Environnement, 2015, Swiss Government, s. 24
http://www.bafu.admin.ch/umwelt/05713/index.html?lang=en

Total material: more from abroad

GI.1 Total Material Requirement (TMR)



Tool:

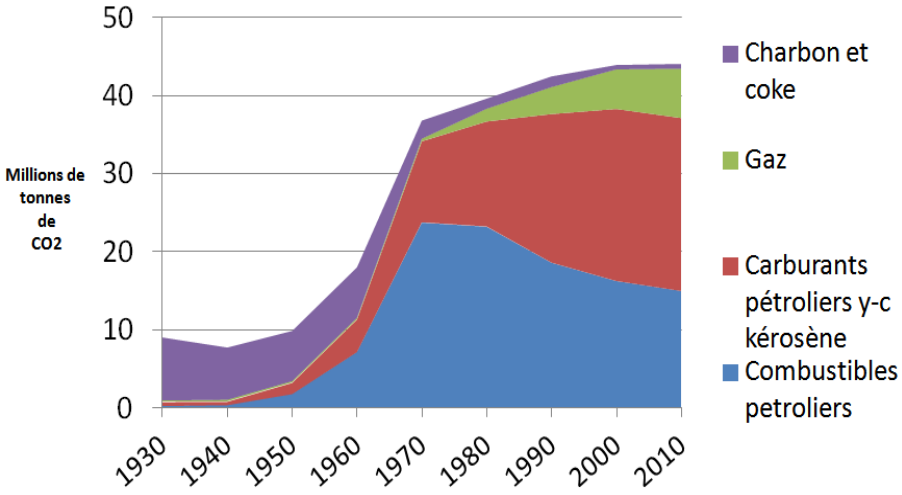
- International standard and higher pricing
- Technological progress
- Recycling (closing material loop, like metals, concrete, Phosphorus)
- The Parliament is currently working on improving aw.

Same for Hidden Energy and CO2-Emission in imported goods.

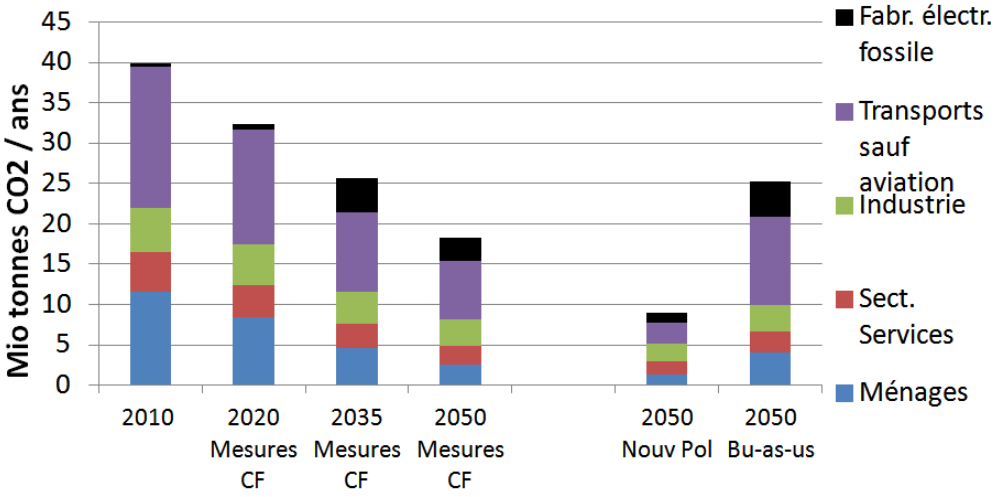
State of the Environnement, 2015, Swiss Government, s. 13
http://www.bafu.admin.ch/umwelt/05713/index.html?lang=en

4 Energy and Climate: U-turn enough fast?

History of CO2 Emissions



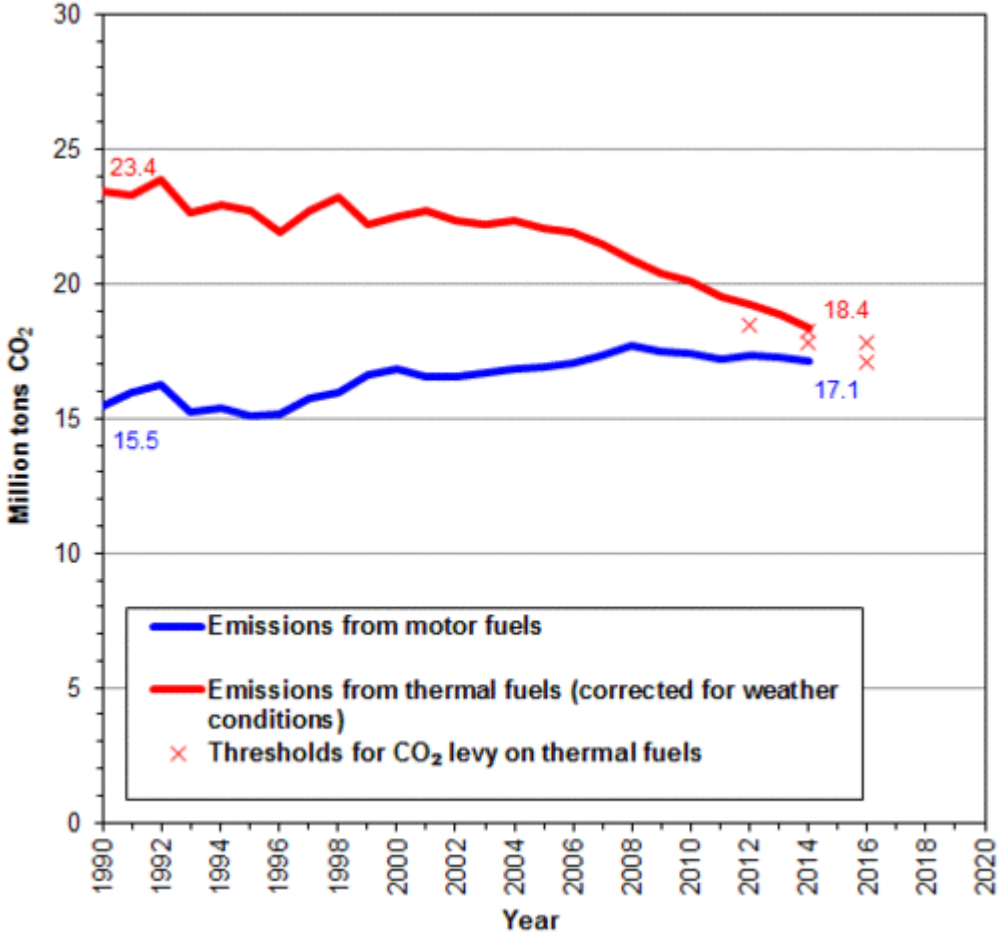
Energy strategy 2050 (currently in Parliament)



Reducing CO2 = Reducing purchase of fossil energy abroad = cost cut.

Soucre: Confédération, Émissions d'après la loi sur le CO2 et d'après le Protocole de Kyoto, 6.7.2012 (Combustibles corrigés du climat), Stat. Energie, Message de consultation/ Prognos, Stat BFE:

CO2: Recent past and mesures



Thermal fuels (Heating):
Progress by strong construction standards, CO2-taxation, fiscal incentives and subsidies for refit of old building

<u>Motorfuels:</u>
Cost of fuel and use, technical norms
moderation of road construction, congestion
Public transportation
Pedestrian and bike.

http://www.bafu.admin.ch/klima/13879/13880/14486/index.html?lang=en

New Building: toward « zero Energy ».

37 Ein Zweifamilienhaus mit positiver Energiebilanz in Riehen BS gewann 2008 den Schweizer Solarpreis[122]

Dieses Haus speist jährlich einen Stromüberschuss von 8054 kWh ins Netz ein. Es produziert insgesamt 18 500 kWh Sonnenstrom und Solarwärme, verbraucht davon aber nur 7060 kWh und stellt so ein kleines Kraftwerk dar. Die Kosten für den Bau des Hauses lagen 12 Prozent über jenen für ein konventionelles Haus dieser Grösse.

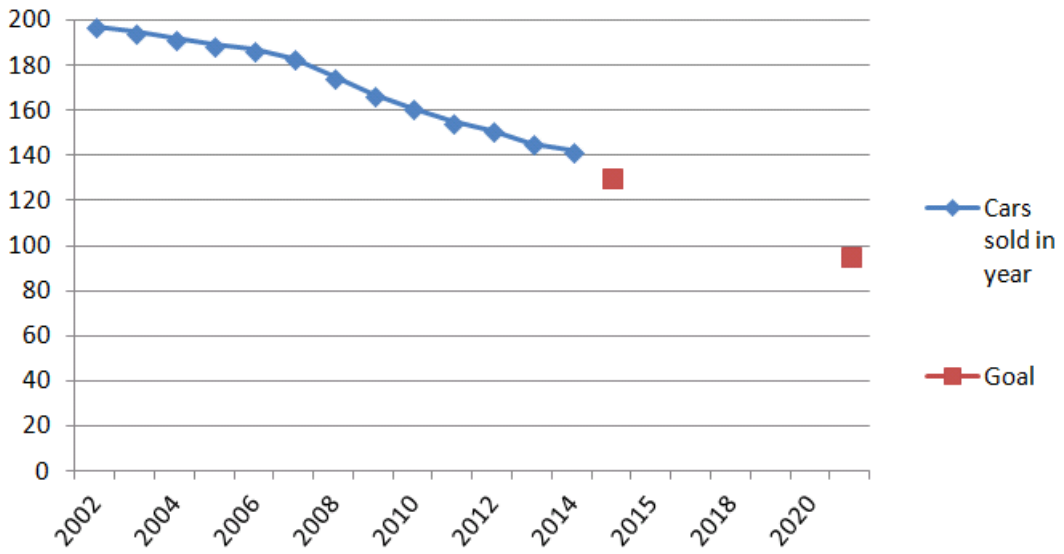
Haus Jenni, Burgdorf, 100% solar
www.jenni.ch

Retrofit old buildings, including isolating, steering technology, heat sources, etc

39 Ein bemerkenswertes Beispiel für eine Gebäudesanierung der Staufen AG – ausgezeichnet mit dem Solarpreis 2008[130]

Die CO_2-Emissionen dieses Mehrfamilienhauses mit sechs Wohnungen konnten durch eine Renovierung um 80 Prozent reduziert werden. Die Fremdenergiezufuhr sank dank Fotovoltaik um 87 Prozent. Die Kosten für die energetische Sanierung beliefen sich auf 100 000 Franken pro Wohnung.

European Car efficency standard in Switzerland

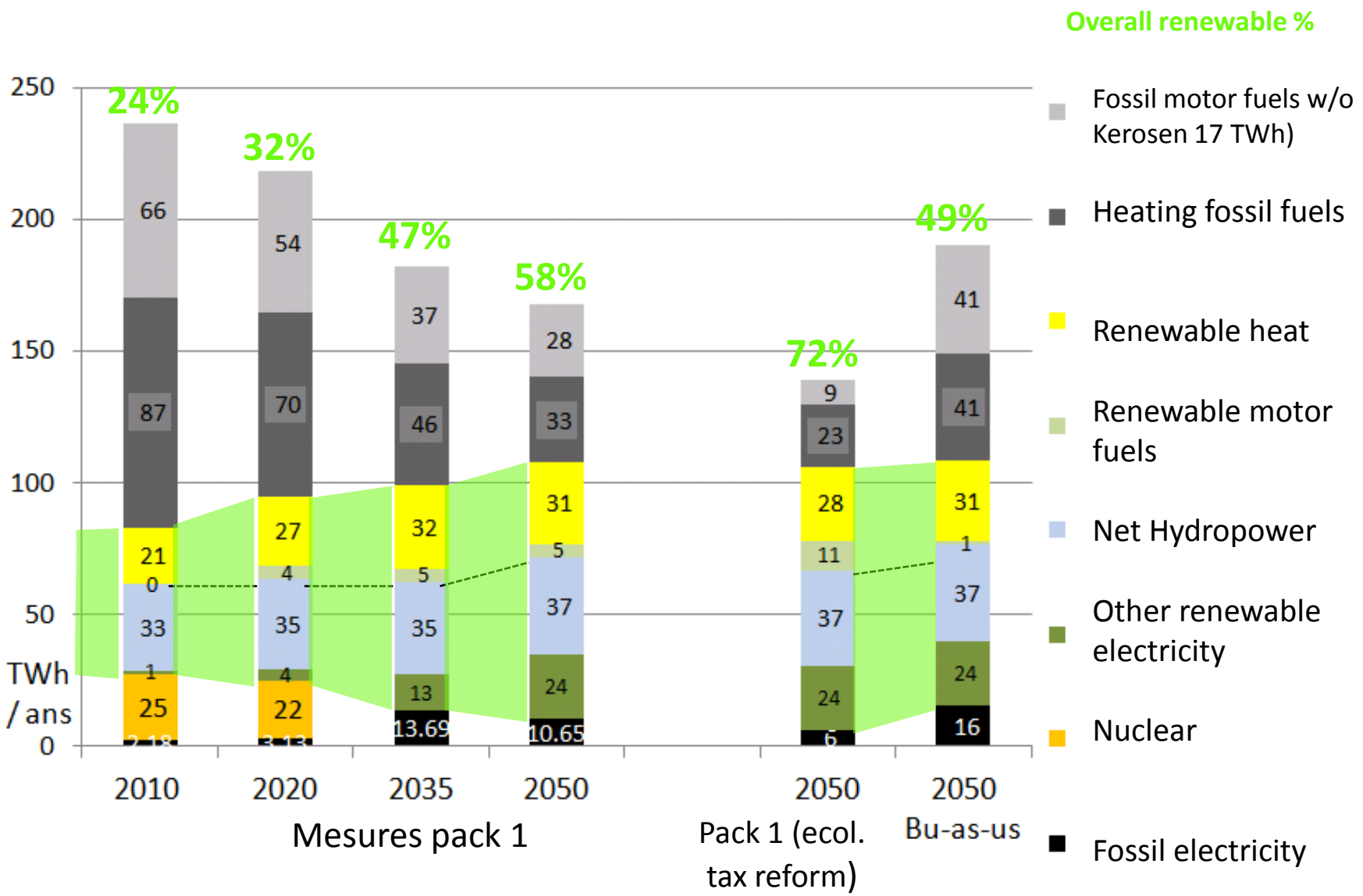


Peugeot 208 BlueDHi 100: 3 L diesel /100 KM

http://www.bfe.admin.ch/energieetikette/00886/index.html?lang=de&dossier_id=00959

Jeep, 14 L /100 KM

Overview of the new energy policy (currently in Parliament)



Source chiffres: message / Prognos

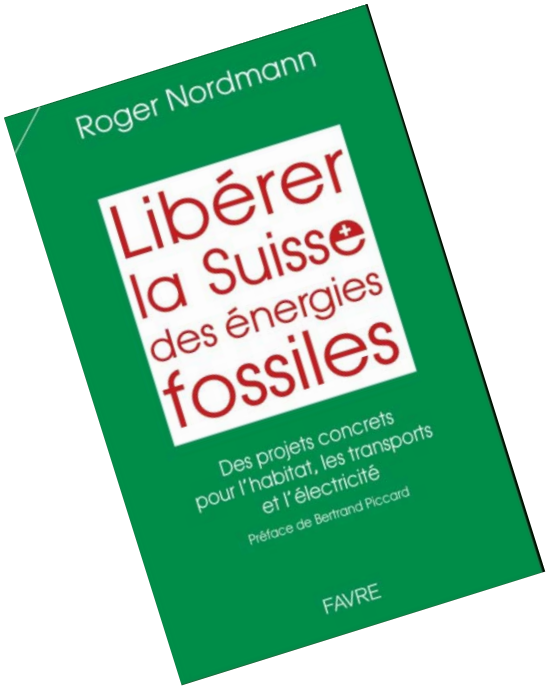
5 Some political considerations

- Basic Problem: **negatives externalities of human actions**. Example: *In the short run, your company earn more by throwing chemicals in the river instead of collecting them. But all inhabitants and animals on the river downward your factory suffer the inconvenient of dirty water. It is perhaps rational for you, but not for the collectivity. Other example: overusing a resource, like water, oil or metal.*
- Missing coincidence between the circle of benefiter and the circle of people who suffer the consequences.
- Problem always when « commoms »: publics resources, who belongs to all, like air, water, landscape. (if you destroy your ouwn private goods, it is your problem. But you mostly avoid such an irrational behaviour).
- Environmental policy is all about this: find rules that secure overall long run responsibility vs short term privates profits.
- Not only local of regional, but also global.
- Political system has to deal with those problems and solve them, at national and international level. Protest of the group directly suffering a problem is the classical beginning of the political treatment. But not enough because of geographical distance, time lag and hidden complexity. We need responsible overall policy. Switzerland has also to reduce CO2 emissions even if not directly concerned be elevation of sea level.

Economics and environment

- Sometimes, you have synergy: if you improve your process, you save money (for instance less material or energy to buy, less cleaning cost). Public action: stimulate now-how and private investment.
- But sometimes, you need rules (f. ex. quicksilver ban, standards for CO2-Emission), incitation taxes (oil) or collective action (public transportation, waste water treatment plants).
- Enforcement of rules is very important, to avoid disloyal competition (classical free-rider problem)
- But: clean technology are a fast growing market. Key for long-run entrepreneurial success in a world with critical ecological situation.
- World-wide standard are coming, because otherwise competition is not fair, and therefore not accepted.

thanks



www.roger-nordmann.ch

www.swissolar.ch