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# Swiss Energy Strategy 2050 and Energy Efficiency in buildings

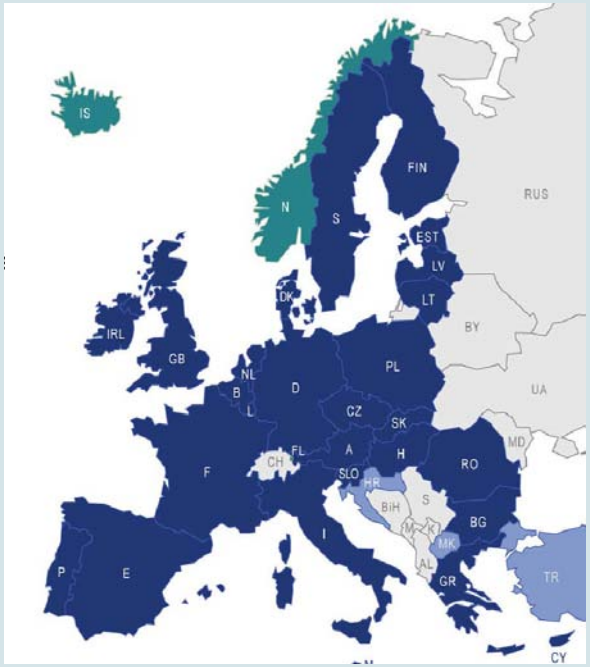
Walter Steinmann, Director Swiss Federal Office of Energy

# International and national framework conditions determine Swiss energy policy

**Framework conditions**

- **International level**
  - Global competition for resources
  - Emergence of an integrated electricity market within the EU
  - Climate change
- **National level**
  - Constantly increasing energy consumption
  - No fossil energy resources
  - More than 80% of Switzerland’s energy requirements are met through imports of mainly fossil-based energy

# Switzerland has to find its place in the integrated energy market of the EU – negotiations are ongoing in electricity field

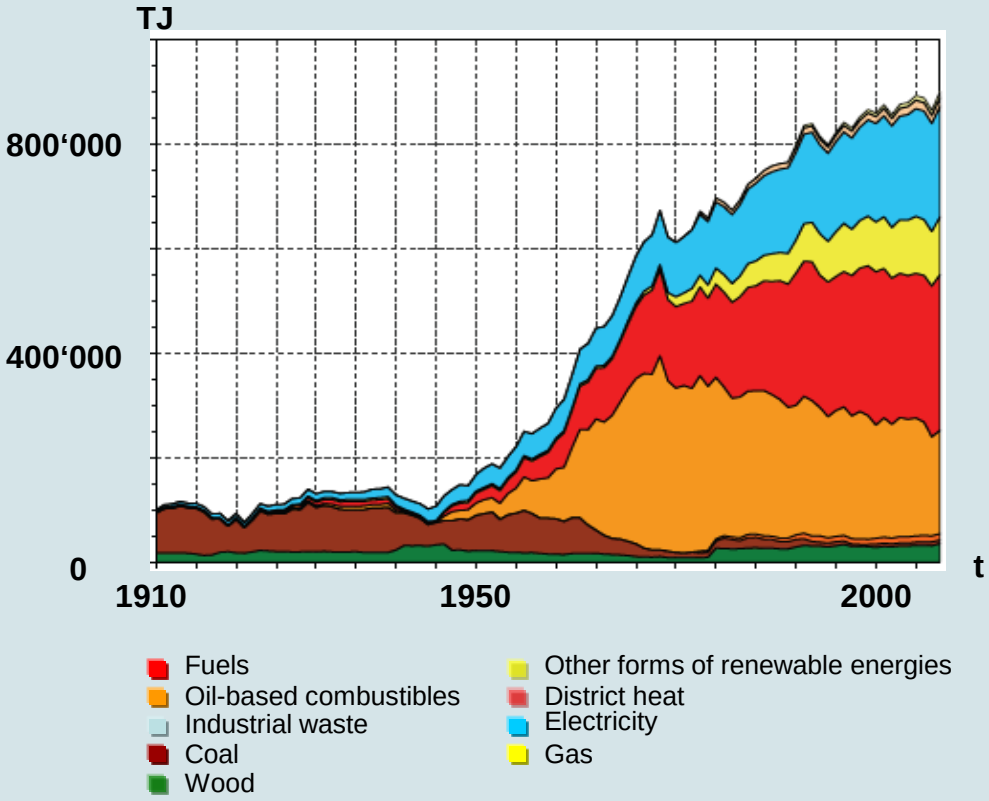



## Some important aspects for Switzerland

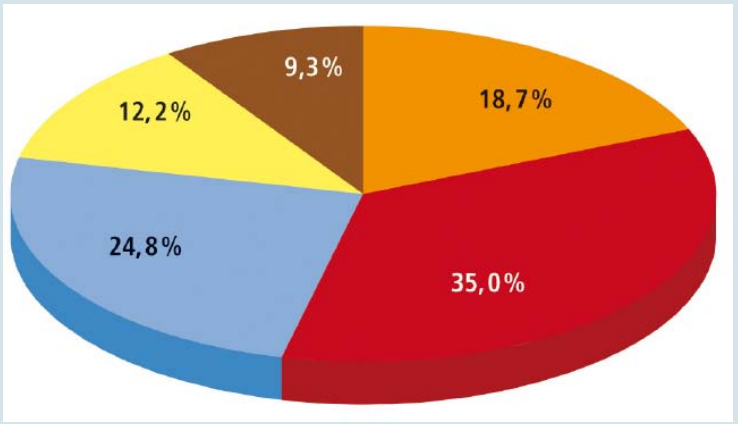
- Security of supply and standards
- Maintenance of Switzerland's position as energy hub (transit of electricity and gas)
- Co-determination in the design and conception of the future European transmission grid architecture
- Integration in energy crisis management mechanisms
- Level playing field for Swiss energy suppliers

# Domestic energy demand increases sharply – over 80% are met through imports

## Swiss energy consumption since 1910



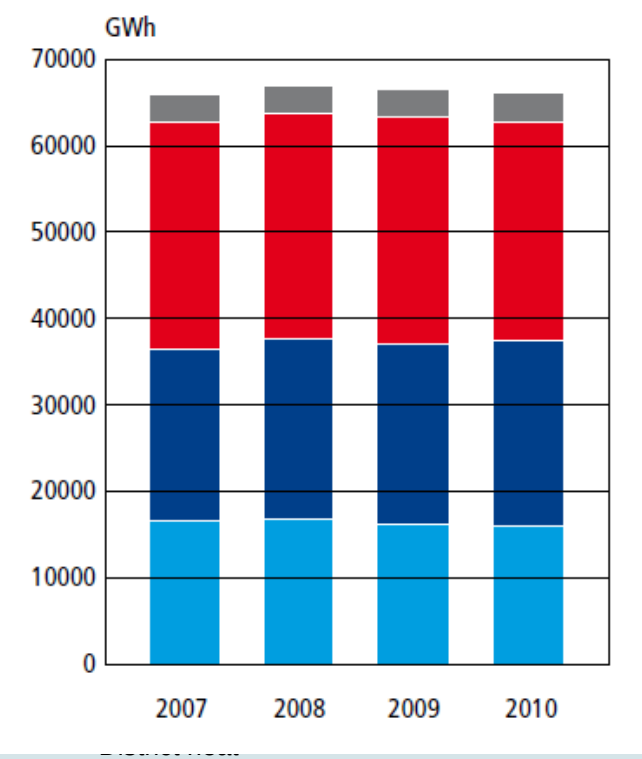

## Total Swiss energy consumption 2011




Source: Swiss Energy statistic, Federal Office of Energy

# More than 90% of Swiss electricity production stems from nuclear and hydro power plants

## Switzerland's electricity production 2011




- Conventional thermal power plants (ca. 6 %)
- Nuclear power plants (ca. 40 %)
- Pump Storage power plants (ca. 30 %)
- River power plants (ca. 24%)

Source: Swiss Energy statistic, Federal Office of Energy

# May 2011: The Federal Council decides on a new energy policy

The Washington Post

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## Swiss to decommission all nuclear power plants within decades

**By Associated Press, Published: May 25**

BERN, Switzerland — The Swiss Cabinet on Wednesday
country's five nuclear power reactors and new energy sou

The recommendation by the seven-member Federal Counc
expected to make a final decision next month. If approved
2019 and 2034 after they reach their average lifespan of 5(

Switzerland has four nuclear power plants with a total of f
entirely non-nuclear sources of power, Energy Minister D
officials said.

The New York Times

May 25, 2011

## Switzerland Decides on Nuclear Phase-Out

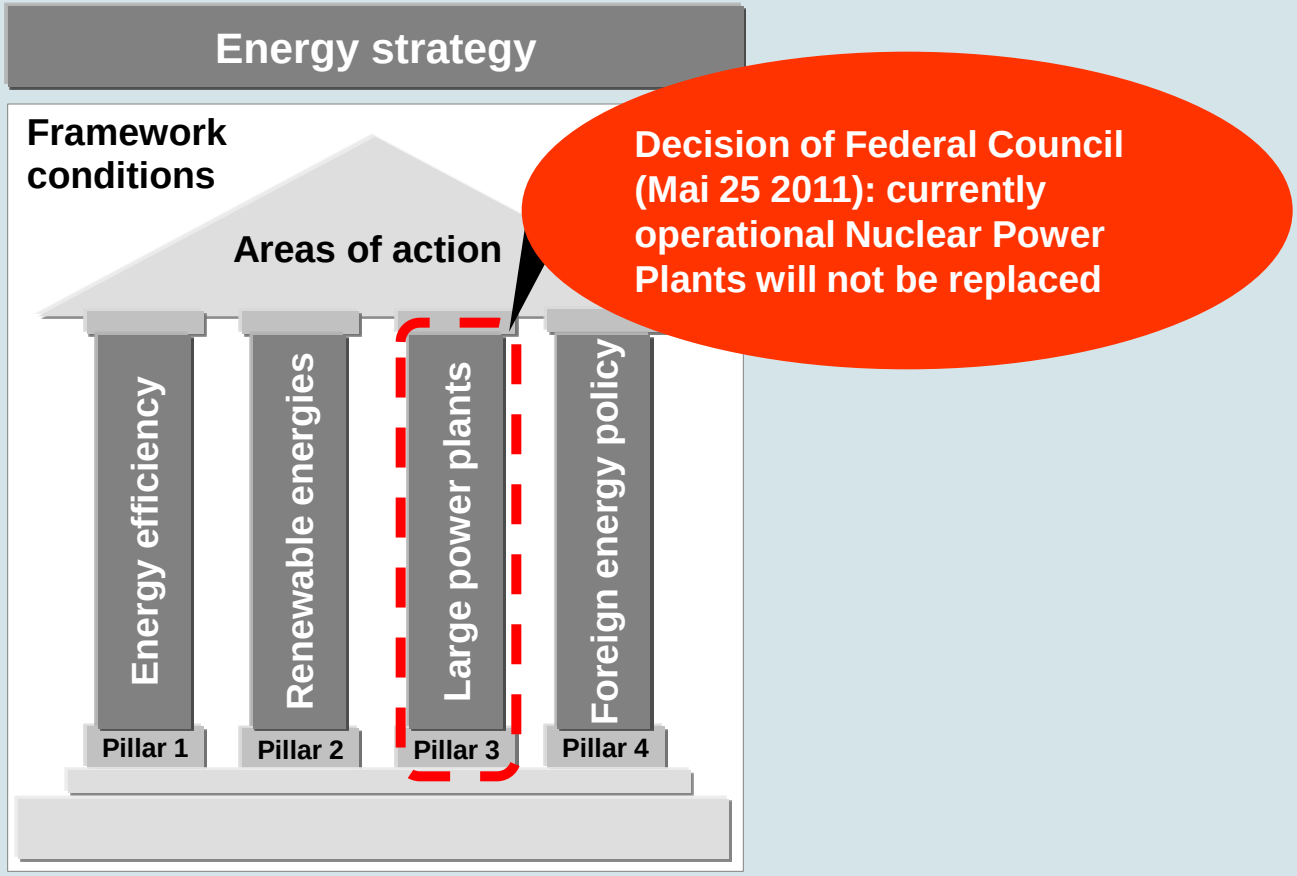
By JAMES KANTER

BRUSSELS — The Swiss government decided Wednesday to abandon plans to build new nuclear reactors, while European Union regulators agreed on a framework for stress-testing theirs, as repercussions from the disaster in Japan continue to ripple across Europe.

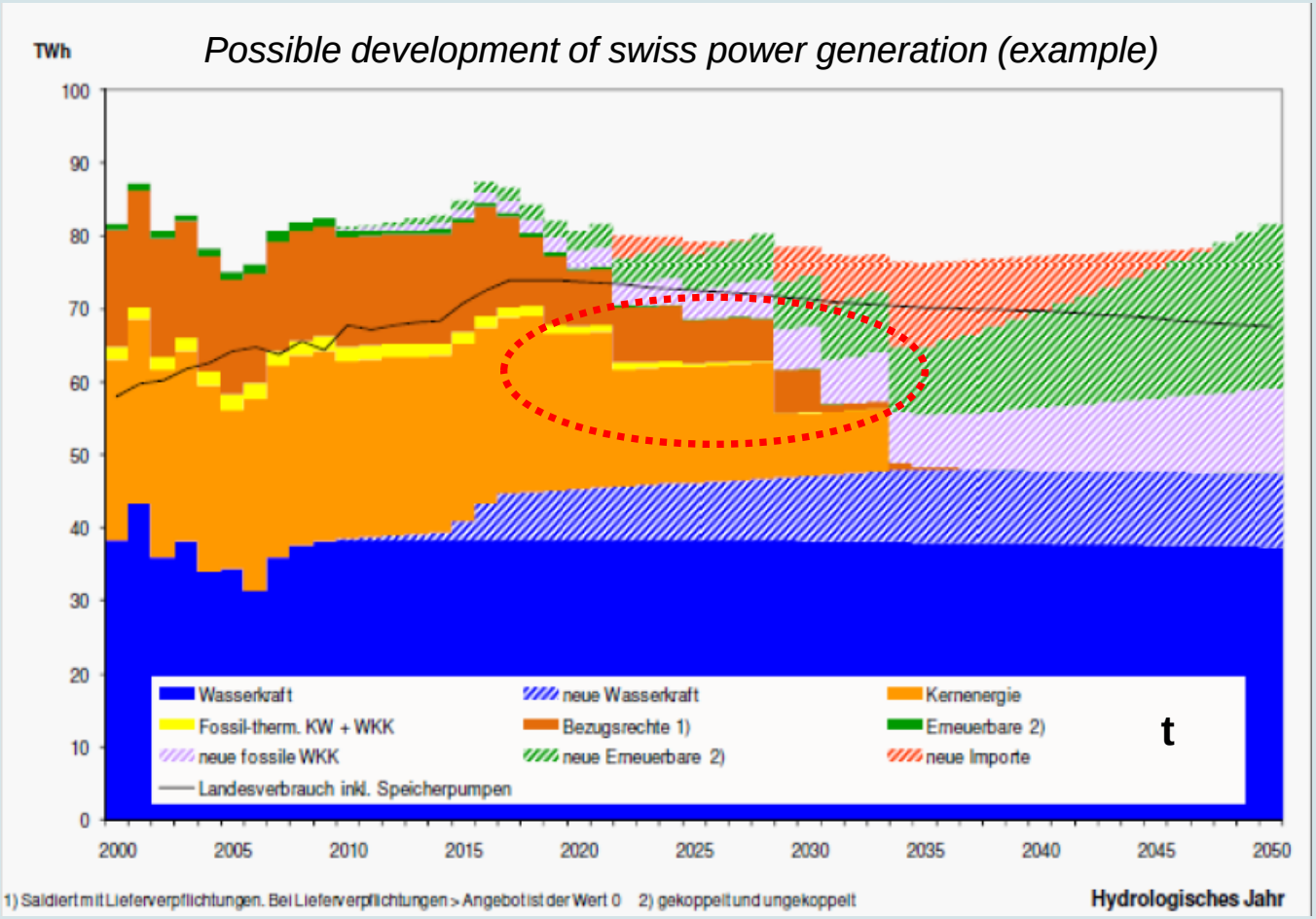
The Swiss Energy Minister Doris Leuthard had suspended the approvals process for three new reactors, pending a safety review, after the accident that struck the reactors at the Fukushima Daiichi plant in Japan after the earthquake and tsunami of March 11.

On Wednesday — days after an anti-nuclear rally in Switzerland drew a large crowd of 20,000 people — the Cabinet said it had decided to make the ban permanent.

# Switzerland‘s energy strategy 2050 is based on 4 pillars



# If nuclear power plant are not replaced, energy efficiency and contribuiton of renewable energies have to be drastically increased




Step by step phase-out from nuclear power production

Source: Prognos 2011

## Switzerland‘s energy strategy 2050 is based on 8 areas of action – reducing energy consumption ist the most important

1. Reduced energy consumption incl. in buildings
2. Broadened electricity supply
3. Maintained electricity imports
4. Expanded electricity transmission grid
5. Strengthened energy research
6. Forerunners Confederation, cantons, cities and communes
7. Beacon projects
8. Intensified international cooperation

# Energy Strategy 2050:
# Economic Impact vs Business as Usual

+ Investment into energy efficiency
+ Investment into production capacity (however less than under BaU because of reduced demand)
+ Investment into (smart) grids (not quantified yet)
– Fuel costs and imports

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= CHF 30 Billion (w/o grids)

= 0 to -0.2% annual GDP vs BaU

Conclusion: Energy Strategy is feasible

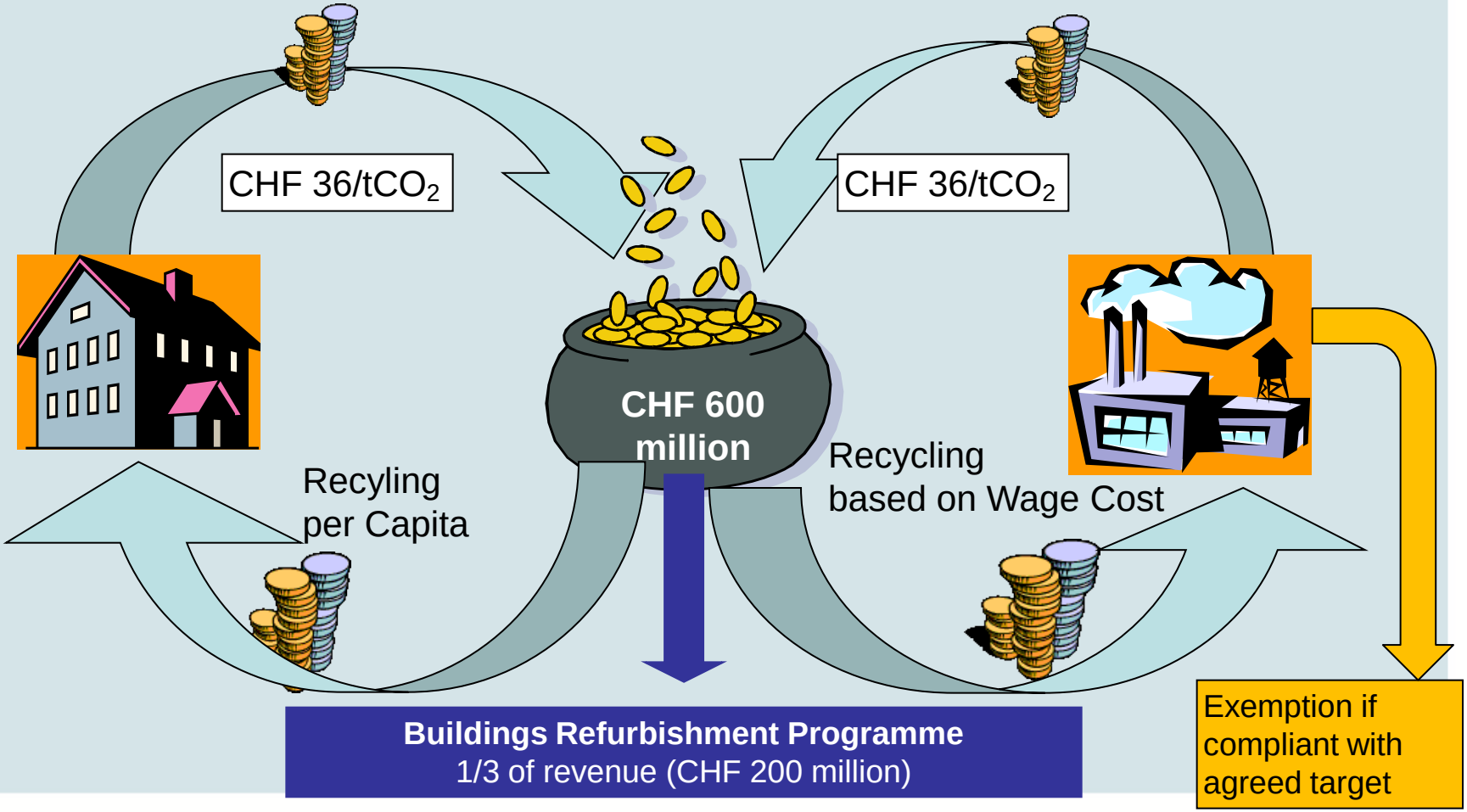
# The building sector has very high efficiency potentials

- At present, approximately 50% of Switzerland's primary energy consumption is attributable to buildings:
  - 30% for heating, air-conditioning and hot water
  - 14% for electricity
  - 6% for construction and maintenance.
- The buildings sector (construction, operation, maintenance and renovation) accounts for more than half the emissions of CO2
- Buildings are a major consumer of resources, generate high levels of waste and make a significant contribution towards the pollution of the environment.
- 1.5 million buildings need refurbishment, but annual rate only 1%

**Buildings must become more efficient**

# How do we finance the modernisation of buildings?

## The CO2 Tax on Stationary Fuels is our most efficient instrument



## How do we plan to utilize the potential in buildings?

The **Building refurbishing program is our solution:**

- Tightening the standards of building codes (new and refurbishment)
- Building labels
- Building system audits
- Incentives for replacement of fossil and electric heating/water heating

# Thank you for your attention