

INTERNATIONAL ENERGY AGENCY (IEA)

Energy Policies of IEA Countries: Switzerland 2003 Review

Disclaimer

This report is based on the IEA review team visit to Switzerland that took place in November 2002. It was drafted prior to the results of the 18 May 2003 public vote on popular initiatives on nuclear power and the publication of the government's plans for electricity market reform.

On 18 May 2003, the general public rejected both the Moratorium Plus initiative with a 58.4% majority and the Power without Atoms initiative with a 66.3% majority. Consequently, the nuclear energy law can now be implemented, which implies further operation of existing nuclear plants as long as security allows and submits new plants to public vote if a referendum is requested.

On 7 March 2003, the government announced plans to introduce a new law to reform the electricity market. In April 2003, it established a commission with representatives from all interest groups to plan the new law. This law should enter into force by mid-2007 at the latest.

In May 2003, the government proposed a plan to reduce the federal budget deficit, which would involve cutting the total budget of SwissEnergy. The government considers that this cut could be compensated by implementing new regulations or by imposing an energy tax, the revenue of which would be earmarked for SwissEnergy.

SUMMARY

The Energy 2000 Action Programme (Energy 2000) was the core of Swiss energy policy in the 1990s. It is succeeded by the SwissEnergy Programme (SwissEnergy) for the period 2001 to 2010. Energy 2000 had concrete objectives for electricity and fossil fuel consumption, increasing the use of non-hydro renewables and hydropower as well as upgrading the capacity of nuclear power plants. The totality of the Energy 2000 objectives were not achieved principally owing to inadequate funding, lack of energy efficiency regulation, excessive reliance on voluntary measures that were inadequately taken by industry and the cantons' different degrees of implementation of federal energy efficiency recommendations. Performance and cost-benefit of the Energy 2000 policies and measures were carefully monitored and the experience gained was transferred to SwissEnergy, as demonstrated by the reallocation of certain resources. Additional reallocation may be required between renewables and energy efficiency programmes and measures. Given that the cantons have an important role in implementing SwissEnergy, particularly in the building sector, results of the cost-benefit analysis of different policies and measures as well as "best practices" should be widely shared and, where possible, harmonised between the cantons.

Security of supply is important for Switzerland, which is a landlocked country lacking fossil fuel resources. The government has a robust programme to ensure oil supply security including its full compliance with the IEA 90-day obligation of net oil imports. Natural gas supply security is enhanced through the large number of interruptible contracts and compulsory stocks of heating oil, which are additional to the international stockholding obligations.

Within the IEA's 3 Es (Energy security, Environment and Economy), environmental issues are the priority of Swiss energy policy. Switzerland principally envisages to use actions implemented in the energy sector to achieve its Kyoto target of a reduction of greenhouse gas (GHG) emissions by 8% below 1990 levels by 2008 to 2012. SwissEnergy calls for a 10% reduction in carbon dioxide (CO₂) emissions below 1990 levels through reductions of consumption of combustibles by 15% and motor fuels by 8%. A variety of measures are proposed to meet these targets, including the development of voluntary commitments (VCs) and voluntary agreements (VAs) with industry and the imposition of a CO₂ "incentive" tax should other measures fail to bring about adequate reductions. Other measures include promotional activities and information dissemination programmes for industry, as well as regulations and standards for buildings, vehicles and electrical appliances.

Despite considerable efforts, the policies and measures still do not seem to be adequate to meet the Kyoto target or the more stringent national target for CO₂ reductions; according to IEA statistics, Swiss energy-related CO₂ emissions increased by 5.6% during 1990 to 2001. This issue may be better addressed if and when the CO₂ "incentive" tax is imposed but work needs to proceed promptly if this instrument is to be available in the near-term. The government should further develop emissions trading and other flexible mechanisms given their potential economic benefits, even if these are only intended as supplementary and backstop alternatives to domestic reductions. In this context, consideration might be given to whether a portion of the tax revenues could be devoted to purchasing GHG emissions permits from the international market.

Energy pricing and taxation needs to be reviewed. Swiss heating oil prices are among the lowest in OECD Member countries, partly due to the very low share of taxes by international comparison. This encourages neither energy saving nor the use of alternative energies with lower CO₂ emissions. Gasoline prices in Switzerland are lower than in neighbouring countries, leading to some "fuel tourism". On the other hand, natural gas prices for all consumers are among the highest in IEA Member countries owing to rough topography, small market size, low connection density and the fragmented market structure. This discourages market penetration of natural gas. Electricity prices in Switzerland, particularly for small- and medium-sized enterprises, are higher than European averages. This is partly explained by the taxes and charges set by the cantons and municipalities. Concerns exist regarding the efficiency of the operation of many publicly-owned small utilities and the profits they secure for their owners. The current price-setting mechanisms lack transparency and enable cross-subsidies from one consumer group to another. Some electricity is supplied free of charge or at low charge to local authorities, therefore jeopardising energy efficiency.

In 2001, nuclear power accounted for 25% of Switzerland's energy supply and 38% of power generation. In March 2003, the Federal Parliament endorsed a new Nuclear Energy Act that updates the current law from 1959. The law will do much to clarify the future role of nuclear energy in Switzerland. For economic, energy security and climate change mitigation reasons, the nuclear option should be kept open. Switzerland has interim storage of nuclear waste from nuclear energy production in Zwiilag, with sufficient capacity for the expected lives of the current operating fleet; however

disposal options still need to be defined. In 2002, voters in Nidwalden rejected the siting of an underground laboratory for the disposal of low- and intermediate-level nuclear waste. Despite this setback the government needs to continue to develop solutions.

A special feature of the Swiss political system is that citizens can approve legislation through referenda. Given the far-reaching impact of the referenda, it is vital that citizens are adequately informed on policy issues and the consequences of their votes. A public referendum on the Electricity Market Law (EML) was held in September 2002. The law proposal was rejected despite a broad political consensus. The government and market players are currently debating how the electricity market could develop; at the time of the IEA review team visit no clear path had emerged. While respecting the results of the EML vote, the government should continue to incite competition in the market. An initial step could focus on allowing competition in the wholesale market by permitting the largest consumers and distribution companies to choose their suppliers. An independent regulator and an independent transmission system operator (TSO) should be established. The TSO could enable greater efficiency in the management of the transmission system and in cross-border trade and transit. Effective unbundling is necessary to ensure transparent and non-discriminatory third party access (TPA).

The government also initiated legislation for gas market reform but the project was abandoned following the results of the public referendum on the EML. The gas industry is presently defining how to enable access within the current legislation, which allows negotiated TPA to high-pressure networks. This is commendable, but the government should step-up its activities in monitoring the market and settling disputes in order to ensure transparent, fair and fast network access for both incumbents and new entrants. Routes to appeal should be defined and the decisions should come into force immediately in order to avoid incumbents delaying network access, for example, by entering into lengthy court processes.

RECOMMENDATIONS

The Government of Switzerland should:

General energy policy

- Ensure a better balance in the overall energy policy by emphasising economic efficiency.
- Optimise the overall effect of the energy programmes and the use of resources by:
 - developing programmes to assess the costs, benefits and “best practices” of energy policy implementation among and within the cantons;
 - continuing the vigorous monitoring and cost-benefit assessment activities at federal level;
 - reallocating resources to the most cost-effective policies and measures; and
 - continuing to support the harmonisation of the cantons’ energy and environmental programmes.
- Increase focus on pricing and taxation as energy policy tools in order to internalise the externalities and promote economic and energy efficiency.

- Increase public awareness of the consequences of energy-related popular initiatives and law proposals by analysing their potential impacts and communicate these to the general public.
- Develop and regularly update energy and CO₂ projections and scenarios for all sectors and fuels.

Energy and environment

- Take additional action to meet the GHG emissions reduction targets.
- Review energy-related climate change mitigation policies with a view to balancing efforts as the current focus on energy efficiency and renewables may not prove to be the most cost-effective solution.
- Develop implementation plans for the CO₂ “incentive” tax and emissions trading.
- Evaluate the effectiveness of VAs and VCs and envisage the possibility to extend them to all energy intensive sectors including oil refineries.
- Develop additional support programmes for the cantons to assist them in setting and implementing vehicle taxes that are proportional to CO₂ emissions, and federal programmes to support the innovative use of cleaner fuels in the transport sector.

Energy efficiency

- Ensure clear allocation of responsibilities between the Confederation, the cantons and the various energy agencies. Aim to harmonise policies and measures by strengthening their collaboration.
- Continue and increase work on energy efficiency in buildings through:
 - increasing energy efficiency in buildings in co-operation with the cantons;
 - developing and disseminating building sector and space heating statistics; and
 - encouraging individual metering of heating and hot water in existing buildings.
- Diversify energies for space heating.
- Intensify co-operation with consumer groups and environmental and business associations including dissemination of information activities and planning and implementing labelling schemes and performance standards for appliances.
- Work to further engage financing institutions in the development of incentives for purchases and upgrades that improve energy efficient infrastructure and equipment.

Fossil fuels

- Use taxation of heating fuels as a tool to improve energy efficiency and address climate change.
- Link proposals for tax incentives to promote diesel fuel to further reductions in non-carbon emissions.
- Encourage industry to develop a natural gas infrastructure for gas use in the transport sector.
- Monitor pricing mechanisms at the natural gas distribution level to ensure transparency, cost-reflectiveness and non-discrimination.
- Encourage competition and induce efficiency in the gas market by:
 - urging simple, fast and fair TPA to the networks as well as transparent and non-

discriminatory rules for access and tariffs;

- providing resources to monitor the gas markets and settle disputes;
- ensuring that captive consumers also benefit from efficiency gains; and
- promoting the continuing depolitisation of the management of the gas utilities.

Renewables

- Continue to assess the cost-benefit of the renewables programmes, including subsidies, R&D and external costs and ensure that the results are reflected in the allocation of financial resources. In particular, re-examine the cost-effectiveness of the solar energy programme and consider increasing resources for more cost-effective programmes, such as biomass and waste.
- Improve the framework of promoting renewables. Explore possibilities to introduce portfolio standards with tradable renewable energy certificates and review the feed-in tariff scheme.

Nuclear power

- Maintain the nuclear option.
- Ensure that the general public is fully aware of the potential impacts of the nuclear initiatives and the draft nuclear law.
- Continue to take actions to develop safe radioactive waste repositories.
- Take actions to maintain sufficient levels of technological competence.

Electricity and co-generation

- Ensure that adequate resources are devoted to price monitoring and protecting consumers from abusive electricity prices. Raise local authorities' awareness of economic, energy efficiency and environmental benefits of cost-reflective electricity pricing. Encourage them to phase out free electricity supplies to public consumers.
- Based on careful analysis of the vote on Electricity Market Law, continue efforts to introduce competition in electricity markets. Establish a national transmission system operator and a regulator, define the rules for TPA and allow market access for domestic and foreign suppliers, distribution companies and large consumers.
- Improve the possibilities for transmission network access by auctioning the capacities. Until a legal framework for market reform is in place, encourage industries to implement improvements.
- Study the economic potential for combined heat and power generation both in industry and space heating.

Research and development

- Continue planning to facilitate the integration and alignment of near-term activities and long-term R&D objectives.