

4. Policies and measures

4.1. Climate-related policy areas in Liechtenstein

Liechtenstein's climate policy is heavily entrenched in its other sectoral policies, with the main focus on its policies in the areas of energy, the environment, transport, agriculture and forestry. In all of these areas, measures have been taken which help to reduce the levels of GHG-emissions.

International cooperation is of great importance, given the small size of the country. Relations with Switzerland are particularly important. Liechtenstein's customs treaty with that country facilitates cross-border activities and bilateral operations in several areas, so that Liechtenstein has in many cases implementation regulations that are similar to those applicable in a Swiss canton (e.g., mineral oil taxes, regulations governing ecologically relevant substances). Accordingly, most policy areas are closely linked to Swiss policy in terms of both content and implementation.

Liechtenstein has set itself the goal of sustainability for its policies. The Government model (1995) calls for conservative use of resources, preservation of the quality of life and the introduction of sustainable policy, while affirming that the Government should contribute towards finding a solution to global environment problems. The most recent government programme makes climate a priority policy area. These fundamental issues are explored in greater depth in the new development, national and guideline planning schemes.

A proposal currently before the Parliament calls for the elaboration of CO₂ legislation. In practical terms, there is a tendency towards Swiss practice (the Swiss CO₂ Act). Because of its close economic ties with Switzerland, it is envisaged that Liechtenstein will probably introduce a CO₂ tax in 2004 similar to that planned in Switzerland.

4.1.1. Environmental policy

Liechtenstein has deliberately avoided introducing specific legislation on the environment. Appropriate provisions are to be found in the policies governing the various sectors. As regards the technical implementation of those provisions, Liechtenstein is often bound by the terms of its customs treaty with Switzerland (e.g., substances regulations, VOC taxes, SO₂ taxes – see section 4.3). Air pollution targets are also the same as in Switzerland.

Two pieces of legislation govern environmental and climate policy in Liechtenstein:

The **Air Pollution Prevention Act (1985)** regulates, inter alia, emission targets for stationary installations, maximum air pollution levels, measures to be taken if emission targets are surpassed, as well as fuel requirements. Important factors are the polluter pays principle and an obligation to create public awareness in this area. The Ordinance accompanying the Air pollution Prevention Act was amended in 1999 to establish new requirements for gasoline and diesel oil and to set a new target for fine airborne dust particles. The average annual value for sulphur dioxide (threshold value) was reduced from 30 mcg/m³ to 20 mcg/m³. Under the terms of this Ordinance, leaded gasoline is no longer permitted as of 1 January 2000, the allowable lead content for unleaded gasoline has been reduced from 0.013 g/l to 0.005 g/l, and the proportion of carcinogenic benzol in gasoline has been reduced from 5 per cent to 1 per cent. The sulphur content for diesel has been reduced from 0.5 g/kg to 0.35 g/kg.

The **Waste Prevention and Removal Act (1998)** establishes a sorting requirement for different types of waste. The Government is empowered to pass ordinances on recycling certain categories of waste if such recycling will serve to improve the ecological balance. This law is also based on the polluter pays principle. Generally, almost none of the waste generated is deposited in reactor dumps. All garbage is incinerated in the waste incineration plant in Buchs, in neighbouring Switzerland.

4.1.2. Energy policy

The legal foundation for the goal of conserving energy was laid within the energy regulations in 1993 and expanded in 1996. The following are the key elements in this area:

- 1) Guidelines for installations such as heating systems (heat insulation regulations), air conditioning systems, ventilation systems, as well as the maintenance of such systems. These measures are set out in the revised Construction Act and its Ordinances.
- 2) An energy commission advises the Government on energy policy issues, providing its opinion on all basic energy policy issues. The commission brings together experts from all relevant fields (architecture, energy management, industry, trade, government offices, environmental organizations).
- 3) An energy division has been set up at the Office of the Economy to advise the municipalities and the private sector on all aspects of energy conservation. The division also provides technical and organizational processing of subsidy applications, and develops and implements energy policy models, as well as providing public information through lectures, radio discussions and face-to-face encounters.
- 4) The promotion of energy conservation is a central pillar of Liechtenstein's energy policy. Financial support is provided to facilitate energy saving in buildings, particularly as regards the renovation of old buildings, residential technical installations, block heating plants (natural gas and wood) and solar collectors. Liechtenstein is almost at full capacity as regards wood-chip heating systems.

4.1.3. Transport policy

Liechtenstein's transport policy is driven by the principles of sustainability. In signing the Transport Protocol to the Alpine Convention, to be ratified in 2001, Liechtenstein has established a legally binding basis for action in this area. To reverse the trend towards increasing traffic, the Government has developed or implemented a number of projects (development of the Liechtenstein Bus Authority and the 'Liechtenstein-Takt' train service, priority for buses at traffic signals, tax exemptions for solar-, hybrid-, electric- or natural-gas-driven vehicles, safety measures at school crossings, the 'Aktion Mobilität' initiative, studies aimed at ensuring the sustainable evolution of the transport sector).

Freight transport policy has a pivotal role to play, in that Liechtenstein, following Switzerland's example, has introduced, as of 1 January 2001, a system of charges on heavy goods vehicles depending on their service category. These charges are based on the polluter pays principle and are determined by the distance travelled and the gross weight of the vehicle. This serves to increase productivity as regards road traffic and also helps to divert freight traffic from the roads to the railways, thereby easing the burden on Liechtenstein's roads.

Under the terms of the customs treaty with Switzerland, Liechtenstein also contributes to importers' efforts, in accordance with Swiss regulations, to reduce use of specific fuels, and is obligated to declare the use of such fuels under EU guidelines.

4.1.4. Agriculture

Agriculture in Liechtenstein is devoted mainly to animal husbandry (70 per cent of revenue). Liechtenstein promotes the trend towards more eco-friendly agriculture with the aim of maintaining the productive capacity of the soil, as well as keeping pollution at a minimum. Environmentally sound agriculture production systems, be they low input or organic farming, are specifically targeted and promoted. Preservation of the landscape is also considered as a responsibility of the agriculture sector which will become more and more significant in future.

The Act on direct subsidies and the Act on ecological incentives for eco- and animal-friendly agricultural production (Compensation Act) and its accompanying Ordinance provide the framework for promoting the management of nature-friendly living spaces, of fields on moors and mixed soils, and of environment- and animal-friendly industry. As regards infertile lands, which it is particularly important to preserve from the point of view of nature conservation, require even greater efforts for ecological management. Parallel to Switzerland's efforts (2002 agricultural policy), new guidelines for environmentally sound and animal-friendly industry have been introduced. About four fifths of Liechtenstein's agricultural producers follow low input or organic farming guidelines. Direct subsidies are therefore paid only when production conditions conform to animal and environmental protection provisions. The use of agricultural aids (fertilizers, pesticides) is strictly regulated; use of these substances (with the exception of manure) in forested or Alpine areas is prohibited.

A new law providing for the prevention of water pollution (comparable to Switzerland's provisions in this area) will determine threshold livestock numbers (GVE) per surface area unit when it is introduced in 2002.

4.1.5. Forestry

Liechtenstein's forested area is of great significance to the country. Forests cover 43 per cent of the country's area, and this proportion is increasing. Sustainable forest management has therefore been afforded a high level of priority since as far back as the forestry regulations of 1865. Efforts in this area are aimed at sustainable forest management, conservation of existing forest stands and the promotion of nature-friendly forest management, on the basis of the current Forests Act (1991) and international conventions, inter alia, the 1993 Ministerial Conference on the Protection of Forests in Europe. For example, felling of timber is not permitted, and, if an exception is made, an area equivalent to that cleared must be afforested in the same place. Such efforts have made it possible in recent years to improve biological diversity in forest areas. Liechtenstein has an increasingly large area of forest reserves: one quarter of all its forested areas are reserves.

In June 2001 a national forests programme was announced, which represents Liechtenstein's response to its international obligations to promote sustainable forest management. With a view to meeting Liechtenstein's sustainable development goals, the National Forests Programme provides the conceptual framework for the implementation of forest management measures. In particular, the National Forests Programme encompasses the following principles: respect for national sovereignty and responsibility for its own use of resources, compliance with domestic legislative provisions, compliance with obligations under international conventions and agreements, establishment of partnerships and participation by all interested groups, a global approach to forest conservation and management and choice of a long-term, iterative planning, implementation and monitoring process.

All of Liechtenstein's forested areas have met the criteria established by the Forest Stewardship Council (FSC) and have therefore received FSC certification (SGS-FM/COC-0764).

4.1.6. International cooperation

International cooperation is a key element of Liechtenstein's climate policy, since it creates synergies important for the country, given its small size and limited capabilities. Mention has already been made of Liechtenstein's commitment in the area of international climate policy and

its relations with Switzerland. As regards environmental policy, the following cooperation measures also play a crucial role:

- In 1983, Liechtenstein ratified the Convention on Long-range Transboundary Air Pollution, and between 1986 and 1998 it ratified five of the eight Protocols thereto: the Protocol on the Reduction of Sulphur Emissions or Their Transboundary Fluxes by at least 30 per cent in 1986, the Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) in 1987, the Protocol concerning the Control of Nitrogen Oxides or Their Transboundary Fluxes and the Protocol concerning the Control of Emissions of Volatile Organic Compounds or Their Transboundary Fluxes in 1994, and the Protocol on Further Reduction of Sulphur Emissions in 1997. It also signed the Protocol on Heavy Metals and the Protocol on Persistent Organic Pollutants in 1998, and the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone in 1999.
- In 1989 Liechtenstein became a party to the Vienna Convention, and also ratified the Montreal Protocol. Subsequently it ratified the London Amendment in 1994 and the Copenhagen Amendment in 1996. It also expects to ratify the Montreal Amendment and the Beijing Amendment.
- Liechtenstein is a party to the Alpine Convention, which is a framework convention for the protection and sustainable, environmentally sound development of the Alpine region. The Convention was signed in Salzburg on 7 November 1991 by the seven States in the Alpine area (Austria, France, Germany, Italy, the former Yugoslavia, Liechtenstein and Switzerland) as well as the European Community. Monaco acceded to the Convention by means of an Additional Protocol. The Alpine Convention entered into force on 9 March 1995.
- In 1998, Liechtenstein ratified the Convention on Environmental Impact Assessment in a Transboundary Context.
- In May 2001 Liechtenstein signed the convention providing for the reduction and elimination of 12 persistent organic pollutants (POPs Convention).

4.2. Summary tables of measures

The following tables provide an overview of the principal measures, implemented and planned, in Liechtenstein.

The following sections will deal in greater detail with the most important measures.

Policy/Measure	Goals/Orientation	GHG's affected	Type of Instrument	Status	Implementing Agency	Implementation Indicators
a) Energy						
Energy Conservation Act	Promotion of the renovation of old buildings, heating systems (wood, solar energy, heat pumps), renewable energies and demonstration installations	CO ₂	Fiscal measure (subsidy)	In effect since 1996	Office of the Economy	Replacement of approx. 850,000 litres of heating oil annually
Photovoltaic promotion programme	Promotion of approx. 20 photovoltaic installations - 8,500 CHF/kWh	CO ₂	Fiscal measure (subsidy)	Introduced on 1.7.2001 (for a two-year period)	Office of the Economy	Demonstration effect: approx. 55,000 kWh of electricity annually
Heating regulations	Ban on electrical heating systems and heating of outdoor areas and ramps Heating cost deductions (determined by consumption) Periodic monitoring of ventilation systems	CO ₂	Regulation	In effect since 1993 Provisions to be tightened in late 2001	Building Surveyor's Office	
Heat insulation regulations	Planning of buildings and installations must, as far as possible, aim to conserve energy (minimum insulation value) in accordance with Ordinance/SIA Norm 380/1	CO ₂	Regulation	Introduced in 1993; new provisions to be introduced in late 2001	Building Surveyor's Office	
The Minergie standard for government buildings	Obligation to undertake all future construction of government buildings in accordance with the Minergie standard	CO ₂	Regulation	Foundation in place; to be implemented in 2002	Building Surveyor's Office	Energy savings of 30% per building

Policy/Measure	Goals/Orientation	GHG's affected	Type of Instrument	Status	Implementing Agency	Implementation Indicators
Connection obligations	Establishment of energy supply areas with mandatory connection to a long-distance heating system	CO ₂	Planning measure	In effect since 1995 (Energy Act)	Building Surveyor's Office	
b) Transport						
Distance- and weight-dependent heavy goods vehicle fee	Transfer of freight traffic from road to rail and reduction of trans-Alpine road traffic	CO ₂ , precursor gases	Fiscal measure (Internalisation of external costs)	Introduced on 1.1.2001	Finance Division	13.6–17.2% expected reduction of truck-kilometres One third of revenue earmarked for the environment and the transport sector
Promotion of solar, electric, gas-driven and/or hybrid vehicles	Exemption of electric, gas-driven and/or hybrid vehicles from the motor vehicle tax	CO ₂ , precursor gases	Fiscal measure	In effect since 1999	Office of Motor Vehicles	
Conversion of diesel public buses to natural gas	Introduction of new, natural-gas-driven buses	Precursor gases, CO ₂	Investment measure Subsidy (funded through revenue generated through heavy vehicles fee)	Introduced in 2001	Energy Division of the Office of the Economy	Emissions generated by the fleet of buses: (in particular, NO _x , VOCs, PM ₁₀ , by approx. 40%
Promotion of the use of public transport	Establishment of the Liechtenstein Bus Authority and introduction of the 'Liechtenstein Takt' regional train service	CO ₂ , precursor gases	Institutional measure	In effect since 2000	Finance Division	
Emissions regulations	Adoption of European emissions regulations (EURO standards) Fuel regulations	Precursor substances	Regulation	In effect since 1993	Office of Motor Vehicles	Ongoing emissions reduction in road traffic

Policy/Measure	Goals/Orientation	GHG's affected	Type of Instrument	Status	Implementing Agency	Implementation Indicators
Development regulations	Cap on the number of parking places in construction planning if required from a planning perspective	CO ₂ , precursor gases	Regulation	Envisaged (beginning 2002)	Building Surveyor's Office	
c) Stationary installations and waste						
Emissions regulations	Emissions regulations for stationary installations (heating, industry)	Precursor gases, CO ₂	Regulation	In effect since 1987 Revised in 1992	Office of the Economy	
Waste disposal regulations for the construction sector	Waste: proof of recycling and waste removal plan required before beginning construction	CH ₄ , CO ₂	Regulation	Introduced in 1993 (Ordinance accompanying the Construction Act)	Building Surveyor's Office	
d) Agriculture						
Incentive payments for eco-friendly agricultural practices	Payments to producers, independent of their products, with the aim of inciting them to espouse eco-friendly management methods	CH ₄ , N ₂ O	Fiscal measure (direct payments)	In effect since 1996	Office of Agriculture	
Preservation of agricultural lands	Agriculture: long-term protection of agricultural lands from being used for other purposes	CH ₄ , N ₂ O	Regulation	In effect since 1992	Office of Agriculture	
Water Pollution Prevention Act	Establishment of maximum livestock numbers per unit of area	CH ₄ , N ₂ O	Regulation	Envisaged for 2002	Office of the Environment	
e) Planning						
Energy register	Elaboration of a country-wide energy register	CO ₂	Planning measure	Envisaged (beginning 2002)	Building Surveyor's Office	

Policy/Measure	Goals/Orientation	GHG's affected	Type of Instrument	Status	Implementing Agency	Implementation Indicators
Spatial Planning Act	Reconciliation of various user interests	All	Planning measure, regulation	Envisaged (under consideration by Parliament)	National planning	
f) Forestry						
Regulations governing forest management in the Forests Act	Sustainable forest management	CO ₂ (sinks)	Regulation	In effect since 1991	Office of Forestry, Nature and Landscape	National forest inventory, 1998
Ordinance regulating the scope and granting of compensation and financial assistance under the Forests Act	Mandated activity	CO ₂ (sinks)	Regulation	In effect since 1995	Office of Forestry, Nature and Landscape	National forest inventory, 1998
Ordinance on forest reserves and special areas	Mandated activity	CO ₂ (sinks)	Regulation	In effect since 2000	Office of Forestry, Nature and Landscape	National forest inventory, 1998
Forest inventory, 1998, and National Forest Programme (2002-2012)	Binding specifications for future forest exploitation Elaboration of a forest inventory for 2000	CO ₂ (sinks)	Planning measure, regulations	Introduced in 2001	Office of Forestry, Nature and Landscape	
FSC certification for all forest areas	Mandated activity	CO ₂ (sinks)	Industry planning	Introduced in 2001	Office of Forestry, Nature and Landscape; Forestry industry concerns	Certification report