Austria has often played a leading role in developing EU environmental legislation, and has a good record in implementing it. As a result, environmental quality is generally very good, and citizens are satisfied with their environmental quality of life. Water quality is among the best in the world, waste management is effective, a large part of the land area is under some form of nature protection, and the share of agricultural area under organic farming is the highest in the EU. Renewable sources of energy supply a large part of Austria’s energy needs and contribute to the low-carbon intensity of the economy.

Austria needs to make further progress to achieve some domestic and international environmental objectives. These include curbing emissions of greenhouse gases (GHGs) and nitrogen oxides (NOx), improving air quality in urban areas, enhancing the conservation status of habitats and species, and reducing the amount of grassland and arable land lost to housing and infrastructure development. Austria needs to further strengthen the coherence, efficiency and effectiveness of its environmental policies to meet challenging targets and to manage the environmental pressures that will accompany economic growth.

The third OECD Environmental Performance Review of Austria provides 27 recommendations to support the country’s further environmental progress. These include:

- Extend the use of environmentally related taxes in the framework of a comprehensive “socio-ecological tax reform”.
- Analyse the potentially negative environmental impacts of existing subsidies and reduce perverse incentives for car use.
- Systematically evaluate the cost-effectiveness of environmental support measures at the federal and subnational levels.
- Provide more targeted support to small and medium-sized enterprises to assist them to comply with EU chemicals regulations.
- Consider climate change adaptation earlier on in government policy-making processes.
- Allocate sufficient finance for climate change adaptation, and explore the possible role of private finance, insurance markets and public-private partnerships.
**Transition to a low-carbon and energy-efficient economy**

- Austria’s emissions of GHGs have declined since the mid-2000s, but are still much higher than the target agreed under the Kyoto Protocol (Figure 1).

- Transport, mainly by road, is the largest consumer of energy and the second largest source of GHG emissions. About 30% of transport-related GHG emissions are associated with fuel that is bought in Austria but consumed abroad.

- The amount of energy consumed per unit of GDP declined in the second half of the 2000s and is lower than in many other OECD countries.

- The use of renewable energy sources grew by about 23% between 2000 and 2011. Renewables (mainly biofuels, renewable waste and hydropower) contribute about 27% of primary energy supply – more than three times the OECD average – and 68% of electricity generation.

**Figure 1. GHG emissions and Kyoto target**

![Figure 1. GHG emissions and Kyoto target](image)

**Figure 2. Nutrient balances**

![Figure 2. Nutrient balances](image)

**Improving resource efficiency**

- Austria generates more economic wealth per unit of material used than the OECD Europe average. Material productivity improved by 33% between 1995 and 2010.

- In 2011, 34% of municipal waste was composted, the highest rate in the EU; 62% was sent for recovery, compared to an EU average of 40%. However, the amount of municipal waste per capita is above the OECD Europe average and decoupling it from private consumption is a challenge.

- Fertiliser use and surplus of nitrogen and phosphorus fell much faster in the 2000s than in the OECD as a whole, despite agricultural production remaining stable (Figure 2). This has helped improve water quality.

- Nearly one-fifth of the agricultural area is under organic farming, the highest share in the EU.
Managing the natural asset base

- About 28% of the land area is under some form of nature protection, among the highest levels in the OECD (Figure 3). However, other indicators such as the number of species that are highly endangered and the conservation status of key habitats suggest that biodiversity and ecosystems are under significant pressure.

- Conversion of undeveloped land for housing, transport and other infrastructure (soil sealing) has continued to increase, putting pressure on natural areas and ecosystems. Soil sealing has far outpaced population growth and the target Austria set for itself.

- Water is an abundant resource in Austria. However, extensive flood protection measures, intensive use of hydropower and conversion of wetlands into agricultural land have altered the ecological status of rivers and lakes. Restoring good ecological conditions of water flows will require massive investment.

Improving the environmental quality of life

- Austrians appear to be more satisfied with their country’s environmental quality than Europeans on average: in 2009, 72% of Austrians rated the quality of their country’s environment as rather good or very good, compared to an EU average of 44%. However, the share of unsatisfied people grew in the late 2000s.

- Water quality for human health is among Europe’s best: the levels of harmful chemicals are low in nearly all surface bodies and groundwater.

- The share of the population connected to public wastewater treatment plants reached 94% in 2010, one of the highest in Europe.

- Although emissions of major air pollutants have fallen significantly, nitrogen oxide (NOx) emissions continue to exceed the national ceiling. Road transport is the major source of NOx emissions, in part because of growing use of diesel vehicles, increased transit traffic and fuel tourism.

- Exposure to air pollution from particulates and ozone in urban areas is persistently high, especially in large urban areas. It was among the highest in the EU in 2010 (Figure 4).
Austria compares well with other countries in implementing EU and national environmental legislation. Being a federal country, major environment-related responsibilities lie with the states (Länder) and municipalities. The partial law-making and implementation autonomy of the Länder has resulted in a relatively fragmented body of environmental legislation, and inconsistencies in implementation and enforcement. Developing a national environmental inspection system could help level the environmental playing field.

During the 2000s, Austria responded to the growing demand for better co-ordination of environmental, social and economic policies at all government levels by adopting two strategies for sustainable development, one to be implemented at federal level and the other jointly by the federal and state governments. By 2012, 19% of municipalities and about half the districts had launched Local Agenda 21 processes. However, despite these efforts, the coexistence of two sustainability strategies has created uncertainty and hindered effective mainstreaming of sustainable development in policy areas other than environment.

The mechanisms and tools for measuring environmental performance and well-being, and assessing environmental and other policies, are well developed. There is, however, little evidence that they have systematically informed decision making. Austria has a long-standing policy of providing environmental information to the public, promoting environmental education and granting extensive stakeholder participation in policy making. Austria’s unique “social partnership” provides for systematic consultations of formally recognised interest groups of enterprises, employees and farmers. Environmental non-governmental organisations (NGOs) are also regularly consulted, although to a more limited extent.
Austria relies heavily on regulatory instruments and standards to achieve environmental policy objectives. Subsidies and capital transfers are also widely used, in part as a means to reach consensus within the social partnership and to provide incentives for the Länder and local authorities to take action in areas under their responsibility. In 2011, environmentally motivated subsidies accounted for more than 40% of general government expenditure on environment, more than four times the average for the countries in the euro area. Over time, the use of subsidies has shifted from supporting public infrastructure, particularly in the water sector, to leveraging business investment in sectors like renewables and energy efficiency (Figure 5 and Box 1).

While these support programmes have encouraged environment-friendly investment, many beneficiaries might have made the investment without the support and have therefore benefited from extensive windfall gains. In addition, subsidy-based measures can lock in certain technologies, because they encourage firms and consumers to adopt the subsidised solutions even when other options would be more effective. Overall, Austria’s subsidy policy is not as efficient as it could be because of fragmented responsibilities, lack of co-operation among levels of government, and potential duplication of financing mechanisms, especially at subnational level.

**Box 1. The potential employment benefits of environmental subsidies**

Environment-related support mechanisms have helped stimulate demand for, and supply of, environmental goods, services and technology. The government has increasingly provided information on the impact of these subsidies on GDP growth, exports and employment. Often, estimates indicate very positive effects. For example:

- The thermal building retrofitting initiative was launched in 2011 to support thermal building renovation projects in the residential and commercial sector. It generated more than 12 000 jobs in 2011 alone.
- The Klima:aktiv Mobil subsidy programme finances measures by local and provincial authorities, tourism operators and providers of cycling facilities to promote cycling, walking, use of public transport, renewal of vehicle fleets towards cleaner vehicles and implementation of mobility management systems. It has created 4 600 jobs since its launch in 2007.
- A feed-in tariff system, established by the 2002 Green Electricity Act, has spurred a dramatic growth in electricity generation from renewable sources. It is expected to result in net employment growth of 64 000 jobs by 2020.

However, it is not always clear how these impacts are calculated, how potential job losses are taken into account, and to what extent the various estimates are comparable.
Austria is making greater use of taxes and other economic instruments to achieve environmental objectives, although the potential synergies among these instruments have not been fully realised. Revenue from environmentally related taxes has increased significantly since 2000. It stood at 2.6% of gross domestic product (GDP) and 6.1% of total tax receipts in 2011, which is above OECD averages (Figure 6). Revenue from charges for waste collection, wastewater treatment, water supply, and road use has also grown, reaching 1.2% of GDP in 2011.

However, energy tax rates do not consistently reflect the environmental impacts of fuel use, notably GHG emissions. Tax rates on petrol and diesel are below the EU average, making transport fuel prices lower than in some neighbouring countries. This price differential has contributed to “fuel tourism”: the extensive purchasing in Austria of fuel that is consumed abroad, especially by freight haulers. About 30% of transport-related GHG emissions are associated with this fuel tourism. The government has cut some tax breaks for energy use, but energy-intensive industry continues to benefit from rebates, which can reduce incentives to use energy efficiently. The favourable tax treatment of company cars, subsidies for commuting to and from work and housing subsidies all can encourage private car use, long-distance commuting by car and urban sprawl. These forms of subsidy tend to favour higher income earners and contribute to increasing emissions of GHG and local air pollutants, noise, congestion and accident risks. Austria would benefit from a broad “socio-ecological tax reform” to provide a consistent carbon price signal across the economy, reform environmentally perverse subsidies and reduce the relatively high taxes on labour so as to promote growth and employment.

Figure 6. Revenue from environmentally related taxes

% total tax revenue ▲ % GDP

* 2010 figures **weighted average
The combination of a robust environmental policy framework and substantial financial assistance has helped develop a strong environmental goods and services (EGS) sector, placing Austria among the most eco-innovative countries in the OECD. The EGS sector weathered the 2008/09 recession well: its turnover declined less than GDP, and employment in the sector grew despite employment falling overall. In 2011, the EGS sector contributed nearly 11% of GDP, almost twice as much as tourism, and accounted for 4.8% of total employment (Figure 7). Austria has launched several initiatives to further promote the “green economy”, such as the “2010 Masterplan Green Jobs” to create 100 000 additional jobs in the EGS sector by 2020. Austria should take account of the structural changes involved in greening its economy; it should broaden the policy focus from promoting green jobs to enhancing labour market capacity to adapt to these changes. In part this would involve co-ordinating environmental and labour market policies so that new entrants to the labour market, and workers leaving declining industries, have the skills needed to work in a greening economy.

**Figure 7.** Environmental goods and services fuelling green growth?
Austria mainly manages the risks associated with chemicals within the framework of EU legislation and policy. Inter-institutional co-operation for designing and implementing chemicals legislation is smooth, and cooperation between industry and government is particularly strong.

Implementation of the EU Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) will be a major challenge for chemical companies in Austria and across the EU. More could be done to support small and medium sized enterprises and to further streamline administrative requirements to help them implement the REACH legislation. There is scope to strengthen Länder enforcement capacity, and enhance the efficiency and effectiveness of inspections and of chemicals management more generally.

Austria has launched some initiatives to monitor the presence of chemicals in humans and the environment, and to identify particularly hazardous chemicals that should require a marketing authorisation under REACH. However, given that human and financial resources are limited, the most potentially hazardous chemicals should be prioritised.
Austria has been active in promoting “green chemistry”: chemical products and processes that reduce the generation, use and environmental impacts of hazardous substances. The chemicals sector has also improved the environmental performance of its production processes. For example, the chemicals in plastics are increasingly recycled, and the sector’s energy intensity and GHG emissions have declined. Together with Germany and the EU, Austria has developed a portal providing a worldwide overview of safer substitutes for hazardous chemicals.

Austria has also pioneered chemicals leasing: suppliers provide chemicals for certain functions and take them back when end users no longer need them. Thus suppliers and end users have a common interest in redesigning processes to minimise losses of chemicals to the environment (Figure 8). By decoupling payment from the consumption of chemicals, chemicals leasing can encourage better chemicals management, generating both environmental and economic benefits. Studies suggest that almost 4 000 Austrian companies could benefit from chemicals leasing, cutting the annual use of chemicals by one-third and costs by 15%. However, uptake of chemicals leasing is not as good as it could be. More work is needed to understand and overcome the obstacles which are hindering uptake of this promising approach.

**Figure 8. The concept of chemicals leasing**

<table>
<thead>
<tr>
<th>TRADITIONAL RELATIONSHIP (Buyer &amp; Seller)</th>
<th>SERVICE MODEL (Agreement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical company</td>
<td>Chemical service provider</td>
</tr>
<tr>
<td>Chemical user</td>
<td>Chemical user</td>
</tr>
<tr>
<td>Wants to increase</td>
<td>Wants to decrease</td>
</tr>
<tr>
<td>Material (cost, volume)</td>
<td>Total life cycle costs</td>
</tr>
<tr>
<td>Wants to decrease</td>
<td>Wants to decrease</td>
</tr>
</tbody>
</table>

Austria has been active in promoting “green chemistry”: chemical products and processes that reduce the generation, use and environmental impacts of hazardous substances. The chemicals sector has also improved the environmental performance of its production processes. For example, the chemicals in plastics are increasingly recycled, and the sector’s energy intensity and GHG emissions have declined. Together with Germany and the EU, Austria has developed a portal providing a worldwide overview of safer substitutes for hazardous chemicals.

Austria has also pioneered chemicals leasing: suppliers provide chemicals for certain functions and take them back when end users no longer need them. Thus suppliers and end users have a common interest in redesigning processes to minimise losses of chemicals to the environment (Figure 8). By decoupling payment from the consumption of chemicals, chemicals leasing can encourage better chemicals management, generating both environmental and economic benefits. Studies suggest that almost 4 000 Austrian companies could benefit from chemicals leasing, cutting the annual use of chemicals by one-third and costs by 15%. However, uptake of chemicals leasing is not as good as it could be. More work is needed to understand and overcome the obstacles which are hindering uptake of this promising approach.

**Figure 8. The concept of chemicals leasing**

<table>
<thead>
<tr>
<th>TRADITIONAL RELATIONSHIP (Buyer &amp; Seller)</th>
<th>SERVICE MODEL (Agreement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical company</td>
<td>Chemical service provider</td>
</tr>
<tr>
<td>Chemical user</td>
<td>Chemical user</td>
</tr>
<tr>
<td>Wants to increase</td>
<td>Wants to decrease</td>
</tr>
<tr>
<td>Material (cost, volume)</td>
<td>Total life cycle costs</td>
</tr>
<tr>
<td>Wants to decrease</td>
<td>Wants to decrease</td>
</tr>
</tbody>
</table>

Austria has been active in promoting “green chemistry”: chemical products and processes that reduce the generation, use and environmental impacts of hazardous substances. The chemicals sector has also improved the environmental performance of its production processes. For example, the chemicals in plastics are increasingly recycled, and the sector’s energy intensity and GHG emissions have declined. Together with Germany and the EU, Austria has developed a portal providing a worldwide overview of safer substitutes for hazardous chemicals.

Austria has also pioneered chemicals leasing: suppliers provide chemicals for certain functions and take them back when end users no longer need them. Thus suppliers and end users have a common interest in redesigning processes to minimise losses of chemicals to the environment (Figure 8). By decoupling payment from the consumption of chemicals, chemicals leasing can encourage better chemicals management, generating both environmental and economic benefits. Studies suggest that almost 4 000 Austrian companies could benefit from chemicals leasing, cutting the annual use of chemicals by one-third and costs by 15%. However, uptake of chemicals leasing is not as good as it could be. More work is needed to understand and overcome the obstacles which are hindering uptake of this promising approach.

**Figure 8. The concept of chemicals leasing**

<table>
<thead>
<tr>
<th>TRADITIONAL RELATIONSHIP (Buyer &amp; Seller)</th>
<th>SERVICE MODEL (Agreement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical company</td>
<td>Chemical service provider</td>
</tr>
<tr>
<td>Chemical user</td>
<td>Chemical user</td>
</tr>
<tr>
<td>Wants to increase</td>
<td>Wants to decrease</td>
</tr>
<tr>
<td>Material (cost, volume)</td>
<td>Total life cycle costs</td>
</tr>
<tr>
<td>Wants to decrease</td>
<td>Wants to decrease</td>
</tr>
</tbody>
</table>
Austria’s topography exposes the population to a variety of natural hazards, primarily flooding, which could be exacerbated by climate change. About 60% of Austria’s territory is mountainous and nearly half is forested. With only 38% of the land area suitable for settlement, much development is concentrated in river valleys and basins. The country experienced severe floods in 2002, 2005 and most recently in June 2013.

Austria has a comprehensive, effective and well-funded system for managing the consequences of natural hazards; this provides a good basis for responding to some of the effects of climate change, but there is room for better co-operation between the federal government and the Länder.

The federal government spent more than EUR 200 million a year on natural disaster management between 2008 and 2011 (Figure 9). The bulk of this funding is channelled through the Federal Disaster Fund, which receives 1.1% of federal tax revenue. About three-quarters of the funding is directly used for disaster prevention. The rest is partly used to compensate households and businesses for losses from natural disasters. At present, neither individuals nor businesses bear the full cost of their exposure to climate risk, which effectively acts as a subsidy for development in high-risk areas.
Austria’s National Adaptation Strategy (NAS) is one of the most comprehensive in the OECD. Its development built on strong domestic research capacity and extensive stakeholder engagement (Box 2). As the NAS was only approved in 2012, it is too early to assess its implementation. It provides information on likely climate changes and impacts sector-by-sector, an overview of existing adaptation initiatives, a portfolio of adaptation recommendations and guiding principles for prioritising actions. However, the NAS does not clearly assign responsibilities or indicate timescales for delivery; neither does it estimate the financing required for its implementation.

There is a need to extend and deepen political and administrative support for climate change adaptation at all levels of government, to clearly define responsibilities and arrangements for implementation, and to establish a robust monitoring and evaluation system. There is scope to strengthen the mechanisms for mainstreaming climate change adaptation in policy-making processes, such as strategic impact assessment and regulatory impact assessment. Mainstreaming efforts to date have focused on policy design, while the other areas such as budgetary allocation, procurement and project implementation have yet to be addressed. Pressures on public finances mean that securing adequate financing will be a challenge. It will be important to explore the full range of potential funding sources, including drawing more on insurance markets and public-private partnerships.

Box 2. Development of the National Adaptation Strategy

The development of the NAS involved an extensive process of consultation and engagement with a wide range of stakeholders, including around 100 institutions. The process of stakeholder engagement took place over several years, beginning in 2007 and involved Internet questionnaires for the general public and workshops for consulting with about 100 institutions and organisations, including NGOs, businesses, and public authorities. The aim was to identify the key issues and potential implementation problems, develop initial recommendations and identify further research requirements. The process was supported by expert input from the AustroClim climate research initiative, written consultations and several mini-workshops.
These Highlights present key facts, figures and policy recommendations of the 2013 OECD Environmental Performance Review of Austria. The Review examines Austria’s progress since the previous OECD Environmental Performance Review in 2003.

The Highlights are based on the report prepared by the OECD Environment Directorate, with the contribution of reviewers from two examining countries: Finland and Switzerland. The OECD Working Party on Environmental Performance discussed the report at its meeting on 3 June 2013, and approved the Assessment and Recommendations.

The policy recommendations aim to provide further support to Austria’s initiatives on:

- greening growth
- implementing environmental policies
- chemicals management
- climate change adaptation

This review is part of the OECD Environmental Performance Review Programme, which provides independent assessments of countries’ progress in achieving their domestic and international environmental policy commitments, together with policy relevant recommendations. They are conducted to promote peer learning, to enhance countries’ accountability to each other and to the public, and to improve governments’ environmental performance, individually and collectively. The Reviews are supported by a broad range of economic and environmental data.

Each cycle of the Environmental Performance Reviews covers all OECD member countries and selected partner countries. The most recent reviews include: Italy (2013), Mexico (2013), Germany (2012) and Slovenia (2012).

Further information:

OECD Environmental Performance Review of Austria

OECD Programme of Environmental Performance Reviews

Environmental Data and Indicators
www.oecd.org/env/indicators.htm

For further information on the Review, please contact ivana.capozza@oecd.org

Photo credits: © Dreamstime.com

* All figures, tables and boxes are from the OECD publication, OECD Environmental Performance Reviews: Austria 2013