Assessment and recommendations

Italy's economy grew slowly for much of the 2000s, largely due to low productivity growth. In response to the 2008 economic downturn and deteriorating public finances, Italy implemented a number of measures to consolidate its fiscal position and stimulate economic growth. Some of these measures had an environmental dimension, such as increases in fuel taxes, energy efficiency incentives, and further liberalisation of energy, transport and environmental services. However, other measures could have a negative impact on the environment, such as the extension of the tax rebate on diesel for truck drivers. There is also a risk that positive steps taken to reduce administrative burdens could result in a weakening of environmental requirements. Overall, the environmental dimension of these measures was limited and lacked coherence.

Much remains to be done to mainstream environment into economic policy. The Economic and Finance Document (DEF), which is the core economic policy document endorsed each year by the Parliament, provides some indication of the government's strategic priorities in regard to the environment. However, it currently provides only a limited, short-term and unstable basis for establishing Italy's priorities for green growth. A long-term green growth strategy could provide a more stable policy framework, which is critically needed in order to spur investment in the green economy.

Revenue from environmentally related taxes accounted for 2.6% of GDP and 6.1% of total tax receipts in 2010, higher than the corresponding shares for the OECD as a whole. However, their role declined during the last decade, and the real tax burden on energy decreased. Nevertheless, the tax burden on energy, and the tax rates on petrol and diesel, are among the highest in Europe. From an environmental point of view, there is scope to

restructure these taxes to better capture environmental externalities. For example, excise duties vary greatly among fuels and users and do not provide a consistent price for carbon. The excise duty on diesel was still 23% below that on petrol in 2011, a difference that is not environmentally justified. Vehicle taxes do not take full account of CO_2 and other emissions, especially for freight vehicles.

Several partial or total exemptions apply to different uses of fuel, which lower end-use prices and reduce incentives to use energy efficiently. For example, such exemptions apply to fuels used for electricity generation, in agriculture, in industrial facilities, and for road freight transport. Special tax provisions on energy and transport were estimated to result in revenue losses of 0.2% of GDP in 2010. In a welcome move, in 2010 the Ministry of Economy and Finance launched the first comprehensive review of tax expenditure. This provides a good basis for further efforts to identify and reform tax expenditure that is inefficient economically, socially and environmentally.

The high tax-to-GDP ratio limits the possibility of further raising tax revenue in Italy. Nonetheless, expanding and restructuring environmentally related taxes and removing environmentally harmful tax concessions could help fiscal consolidation. It could also help to make the tax system more growth-friendly by reducing taxes on labour and businesses.

The comprehensive fiscal reform proposal presented by the government in April 2012 explicitly includes an environmental component for the first time. To make the best of this opportunity, the environmental component of the reform proposal could be broadened.

Public and private expenditure on waste, wastewater and water resource management has remained virtually stable at around 2.2% of GDP. Investment in the water and waste sectors has been increasingly financed by utilities providing environmental services on a commercial basis. However, the role of utilities remains limited in most southern regions. Revenue from service tariffs is often insufficient to cover the costs of these services and guarantee necessary investments. Overall, the quality of local public services such as water, waste and urban transport varies widely across regions. In several cases, contracts for the provision of these services have been awarded without public tenders, and penalties have not been consistently applied in case of inadequate service quality. Competition and regulatory oversight have also been weak and often characterised by conflicts of interest at local level.

EU funds for regional development have been a major source of finance for public environment-related investment, complementing national allocations, particularly in southern regions. About 15% of available EU funds and national matching funds in the 2007-13 programming period were allocated to renewable energy sources, energy efficiency, and environmental infrastructure. Programmes for allocating EU funds have been increasingly based on sound analysis of investment needs and progress has been monitored by indicators. Italy has also implemented innovative, results-oriented procedures to disburse funds. However, the realisation of planned investments and the achievement of intended outcomes could be improved.

Some environment-related goods and services sectors have shown positive economic and employment trends, including water and waste management, organic farming and renewables. Medium- to high-skilled employment in these sectors has increased, supported by targeted education and training programmes. An increasing number of businesses, including small and medium-sized enterprises, have invested in environmental protection, energy and resource efficiency, and have introduced environmental innovations. Whereas investment in the waste and water sectors was less than EUR 5 billion in 2010, investment in renewable energy was estimated at EUR 21 billion in 2011, a 43% increase on the previous year. Italy is reportedly among the world and European leaders in renewable energy, in terms of investment, turnover and employment. Investment in renewables has been driven by various support programmes, notably feed-in tariffs and green certificates. The White Certificate and other energy efficiency schemes have stimulated the emergence of a dynamic energy services market. Most of these incentives' costs are ultimately financed by electricity consumers. However, most of the turnover and employment in "clean energy" is in the downstream segments; e.g. installation, operation and maintenance of renewable energy equipment.

Despite some progress, Italy's performance in the more upstream segments of the environmental goods and services sector and in eco-innovation is below its potential. In part, this reflects Italy's weak innovation capacity more generally. Environment- and energy-related R&D spending grew in the 2000s. The number of patent applications for renewable energy technologies increased faster than for any other technology. However, R&D spending and patent applications remain low compared to most other large countries. Italy's eco-innovation policy mix is skewed towards the supply side. Strengthening

implementation of environmental legislation and of green public procurement would help increase demand for environmental technologies and related market opportunities. Further efforts should be made to promote co-operation between sectors, different levels of government, and the public and private sectors and academia. Consideration should also be given to how best to support eco-innovation in small and medium-sized enterprises. The multi-stakeholder dialogue on the green economy (Stati Generali della Green Economy), launched in 2012, could positively contribute to developing an eco-innovation policy framework, which is currently lacking.

At the international level, Italy has actively supported implementation of the OECD Guidelines for Multinational Enterprises, and the OECD Recommendation on Common Approaches on Environment and Officially Supported Export Credits, in some cases going beyond their requirements. Since 2007, Italy has assigned a higher priority to environmental issues in the context of its Official Development Assistance (ODA) programme. The average share of environment-focused aid was 41% of total sector allocable aid in 2009, which is high compared to many other members of the OECD Development Assistance Committee (DAC). Issues and partner countries have been prioritised. An inter-ministerial group was established to promote policy coherence for development. In 2011, guidelines for integrating environment into development co-operation were issued belatedly. However, the recent progress in integrating environment into development co-operation should be seen in the context of weak overall ODA performance: in 2011, ODA reached 0.19% of gross national income. This is well below the OECD-DAC average of 0.31% and the 2010 EU target of 0.51%, as well as far from the international commitment of 0.7% by 2015.

Recommendations

- Mandate the Inter-Ministerial Committee for Economic Planning (CIPE) to prepare a green growth strategy that provides a clear, coherent and sufficiently long-term policy framework, amongst other things, to spur investment in the green economy; monitor and report on implementation of this strategy in conjunction with the annual Economic and Finance Document.
- Implement a comprehensive environmental fiscal reform as part of the proposed reform of the tax system that: i) removes special tax provisions that are environmentally harmful and economically inefficient; ii) restructures energy and vehicle taxes so that they better reflect environmental externalities including greenhouse gas emissions; and iii) considers reforming existing, or introducing new, environmental taxes on resource use and pollution (e.g. on water abstraction, wastewater discharges, pesticides, fertilisers and packaging materials).
- Continue to regularly survey tax expenditure; introduce a mechanism to systematically screen existing and proposed direct and indirect subsidies against their potential environmental impact.
- Further promote efficiency in the provision of environment-related local public services, including waste, water and local transport services, by: ensuring a stable regulatory framework, including for the financing of these services; applying user charges that allow sustainable cost recovery; enforcing competition rules (e.g. for public tendering procedures); and ensuring systematic monitoring by independent regulatory authorities of utilities' efficiency and service quality.

- Improve the effectiveness of regional development funds for environment-related investment by tying their disbursement to the fulfillment of preliminary conditions (e.g. sound sectoral plans and regulatory frameworks, sufficient matching finance), and to the achievement of measurable quality targets for the provision of environmental services.
- Develop and implement a comprehensive framework for promoting eco-innovation that includes a balanced mix of increased public support for R&D and demand-side measures (e.g. innovation-oriented standards and economic incentives); improve co-ordination of industrial, innovation and eco-innovation policies across the government, between the central government and the regions, and between academic institutions and business sectors.
- Further strengthen environmental education and training with a view to ensuring the supply of suitably trained workers for the green economy, and facilitating the transition of workers from contracting conventional sectors to expanding "green" sectors.
- Further strengthen the environmental component of ODA in line with Italy's comparative advantages, while increasing the overall ODA budget in line with EU and international obligations.

Box 3.1. **Environmental components of the 2011-12 fiscal consolidation and growth packages**

The "Salva Italia" Decree, aimed at fiscal consolidation, included a number of fiscal measures that could be considered environment-related, such as:

- Extension to 2012 of the 55% tax deduction for energy efficiency renovations of buildings (Chapter 5). This measure is expected to improve energy efficiency, support economic growth, and reduce widespread tax evasion in the building, construction and renovation sector.
- An increase in the excise duty on transport fuels of between EUR 0.12 and 0.15 per litre (Section 2).
- Introduction of an additional tax on ownership of high-powered vehicles and privately owned boats and aircraft (Section 2), and reduction of the amount of company car costs that can be deducted from corporate income tax.
- Reintroduction of a tax on municipal waste services to replace the existing charge (Section 3).
- Assignment of oversight and tariff regulation responsibilities in the water sector to the Regulatory Authority for Electricity and Gas (Autorità per l'energia elettrica e il gas, AEEG).
- Earmarking of a share (to be determined) of revenue generated by auctioning CO_2 emission allowances for the reduction of public debt.
- Measures to simplify environment-related administrative procedures for businesses, reclamation of contaminated sites, and waste disposal.

The purpose of the "Cresci Italia" Decree was to increase competition in a number of economic sectors with a view to creating better investment conditions, reducing prices for consumers and businesses, and promoting economic growth. A number of measures were intended to further open up the energy and transport markets. These include further unbundling of the natural gas network from the incumbent gas operator, acceleration of investment in the electricity grid, establishment of a regulatory authority for transport services, and simplification of procedures for the distribution of natural gas for automotive use.

The "Semplifica Italia" Decree simplified a number of administrative procedures, including those for compliance with some environmental regulations. It introduced a single environmental license for small and medium-sized enterprises (SMEs), which previously had to obtain sector-specific permits (e.g. for waste, emissions) from different administrative bodies. According to government estimates, the previous licensing system cost SMEs over EUR 1.3 billion per year. The decree eliminated some duplication in the compliance certifications of domestic heating systems and in periodic checks of vehicles' exhaust emissions. It also foresaw preparation of a plan for the modernisation of school buildings, including improving their energy efficiency.

The "Sviluppo" Decree, approved in mid-2012, was a package of urgent measures for economic growth. It included some measures to support sectors of the green economy:

- Use of the revolving Kyoto Fund (Chapter 5) to provide low-interest loans to public agencies and businesses that employ young people for activities involving: prevention of hydrogeological risk; R&D and production of second- and third-generation biofuels; R&D, production and installation of renewables technologies; and improvement of energy efficiency in the residential and service sectors, including social housing.
- Further extension of the 55% tax break for energy efficiency renovation of buildings to mid-2013 (Chapter 5).
- Changes in some procedures concerning the production and commercialisation of biofuels, in order to increase the competitiveness of domestic biofuel production.
- Promotion of greater competitiveness and efficiency in local public services, including environment-related services (Section 3).
- Promotion of low-emission vehicles, including electric and hybrid vehicles, and adoption of a national plan for electric vehicle infrastructure.

2. Greening the tax system

The ratio of tax revenue to GDP in Italy remained high in the 2000s. It was 43% in 2010, well above the OECD average (33.7%). Compared to that of many other countries, the Italian tax mix is skewed towards labour, notably because of higher than average taxation of individual income and social security contributions. Local governments collect a fairly high share of revenue (14.5%, the fifth highest level in the EU) as a consequence of the decentralisation process that started in the late 1990s. However, local governments are still far from having effective fiscal autonomy, as they do not have full decision-making powers in regard to most local taxes (DPS, 2012).

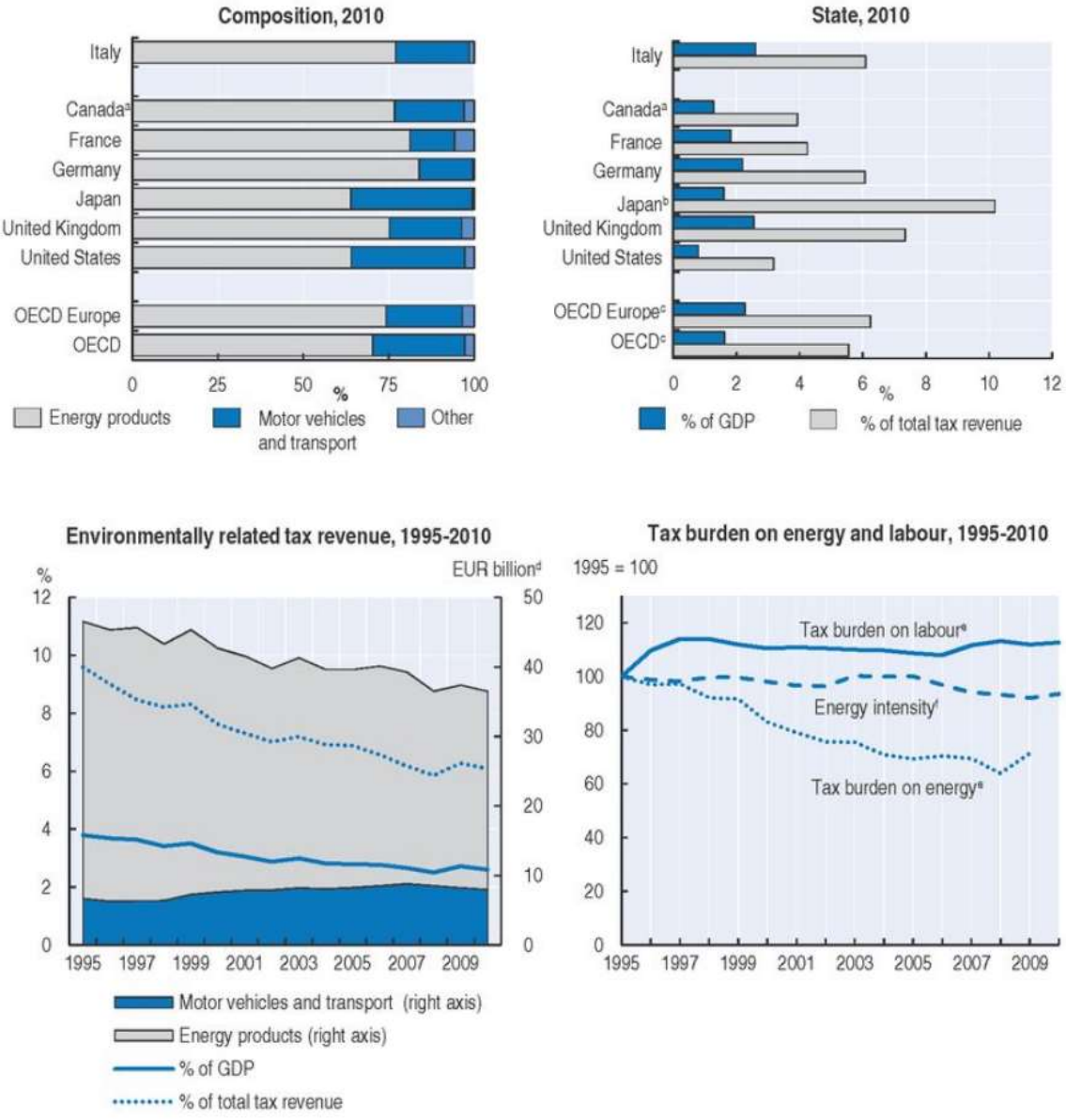
As in all other OECD countries, environmentally related taxes largely coincide with taxes on energy products and vehicles. Italy also levies taxes on air pollution (SO_2 and NO_x emissions) and landfilling of waste, partly at the local level. However, pollution taxes account for a minor share of revenue from environmentally related taxes (about 1.4% in 2010).[4] Resource taxes and charges, such as those on water abstraction and extraction of materials, are in place at regional and local levels. Environmentally related taxes have traditionally been used for revenue raising in Italy and have accounted for a relatively large share of tax receipts. A negligible share of their revenue has been earmarked for environmental purposes. Revenue from environmentally related taxes accounted for 2.6% of GDP and 6.1% of total tax receipts in 2010, higher than the corresponding shares in the OECD as a whole. However, their role has decreased since 2000: revenue from these taxes has stabilised at a level below that of the late 1990s, both in absolute terms and as a share of GDP and total tax receipts (Figure 3.1). This revenue (in real terms) declined by more than 16% between 2000 and 2010. Half of the decrease occurred in the last three years of the 2000s and was largely due to the recession's negative impact on both energy consumption and vehicle sales.

Taxes on energy products

Taxes on energy products contributed nearly 77% of the revenue from environmentally related taxes in 2010, well above the OECD average (Figure 3.1). There are duties on all fuels used for both stationary purposes (such as heating and industrial processes) and transport. Revenue from taxes on transport fuels predominate, although Italy is one of the few European countries that collect more than 0.5% of GDP from taxation of energy products used for stationary purposes. Excise rates on energy products exceed the minimum levels required under EU legislation, with the sole exception of natural gas used as transport fuel.

While nominal tax rates on the main transport fuels (petrol and diesel) were increased repeatedly in the 2000s for revenue raising purposes, they have not kept pace with

Figure 3.1. **Environmentally related taxes**



a) 2009 data.
b) Total tax revenue excludes revenue from social security contributions.
c) Weighted average.
d) At constant 2005 prices.
e) Tax burden on labour: ratio between the revenue from taxes on labour income and social contributions and overall compensation of employees; tax burden on energy: ratio between the revenue from energy taxes and final energy consumption.
f) Total primary energy supply per unit of GDP.
Source: Eurostat (2012); OECD/EEA (2012), *OECD/EEA database on instruments for environmental policy and natural resources management;* OECD (2011), *OECD Economic Outlook No. 90.*

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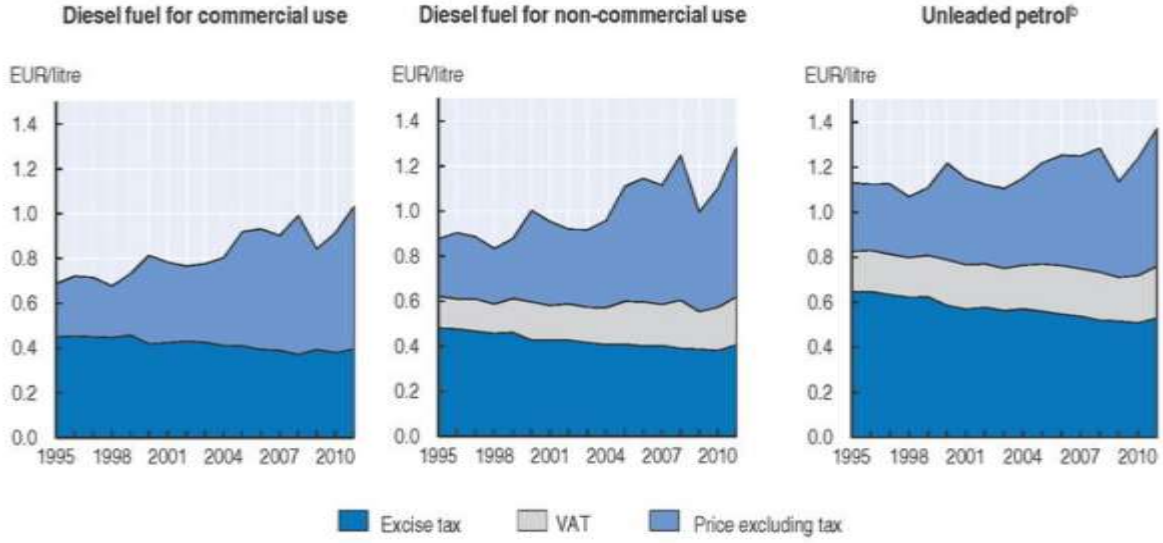
inflation. As a result, real tax rates on transport fuels have declined in the last decade (Figure 3.2). Together with the rise in world oil market prices, this has led to a decline in the share of taxes in fuel prices. In 2011, excise duties accounted for 39% of petrol prices and 32% of diesel prices. Yet tax rates on petrol and diesel, as well as fuel prices, are among the highest in Europe (Reference I.A).

Energy tax revenue fell by nearly 20% in the last decade. The contraction in energy use following the economic crisis explains most of the decline in the late 2000s. However, revenue also decreased between 2000 and 2007 when the economy was growing, although

Figure 3.2. **Road fuel prices and taxes**[a]

1995-2011



a) At constant 2005 prices.
b) Unleaded premium (95 RON).
Source: OECD-IEA (2012), *Energy Prices and Taxes*.

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this growth was moderate, and energy consumption (especially for road transport) was increasing (Figures 3.1 and 5.5). Two main factors underlie the decline in revenue during this period: the aforementioned fall of real tax rates and, to a lesser extent, the switch from oil to gas, which is taxed at lower rates.

Hence, unlike the average trend observed in Europe, the real tax burden on energy (as measured by the deflated implicit tax rate on energy)[5] decreased steadily in Italy during the last 15 years although from a very high level. While the tax burden on energy was declining, the energy intensity of the economy (as measured by energy supply per unit of GDP) remained nearly constant in the first half of the 2000s and has decreased since 2005. This indicates that energy taxation has not played a fundamental role in encouraging or discouraging energy conservation, while other factors have had a more important role in determining energy trends, as discussed in Chapter 5. Nonetheless, Italy still has the fourth highest tax burden on energy among the EU27 countries (Eurostat, 2012). Increases in revenue and in the tax burden are expected from the considerable hikes in transport fuel tax rates introduced as part of the 2011 fiscal consolidation package (Box 3.1). Hence, the possibility of raising energy tax rates further in the near future may be limited by social acceptability concerns.

Despite being high, however, current fuel taxation does not fully address environmental externalities, including those related to climate change and air pollution. In particular, it does not provide a consistent carbon price signal. When converted in terms of the carbon content of fuels, excise duties vary greatly among fuels and users (OECD, 2012b). Despite recent increases, the excise duty on diesel was still 23% below that on petrol in 2011, a difference that is not environmentally justified since diesel has a higher carbon content and emits more local pollutants than petrol. As in all other countries, the excise duties on petrol and diesel imply carbon prices that are significantly above those on fuels used in other sectors of the economy, and well above any CO_2 allowance price that has emerged in the EU Emissions Trading System (ETS). Nonetheless, if excise duties on transport fuels are assumed to cover other externalities too, such as air pollution, as well as costs that are not environment-related, their implied carbon component becomes more reasonable (Chapter 5). Therefore, even if there were political obstacles to increasing taxes on energy products, there seems to be scope for restructuring tax rates to better reflect the value of the environmental effects of fuel use.

Tax concessions

Several partial or total exemptions apply to fuel consumption, including fuels used for electricity generation, for powering boats, in agriculture, in industrial facilities, and for road freight transport (Table 3.1). In addition, industrial and business users of fuels generally benefit from lower rates than those applied in the residential sector in order to protect Italian competitiveness. However, these lower rates favour all businesses, not just those exposed to international competition (Andersen et al., 2011). The excise duty on electricity and natural gas for households is reduced for consumption below a certain threshold. A lower value added tax (VAT) rate applies, among others, to household consumption of natural gas and electricity. Other price rebates apply, including for low-income households and for transport fuels used by residents in areas where hydrocarbon extraction activities are located. Concerning support to fossil fuel production, a royalty relief applies to production of oil and gas below a certain threshold (OECD, 2011b).

These exemptions, price discounts and reduced VAT rates lower end-use prices and can reduce incentives to use energy efficiently. According to government estimates, special tax provisions on energy and transport cost the public budget about EUR 3.7 billion in lost revenue in 2010, the equivalent of 12% of energy tax revenue and 0.2% of GDP (Table 3.1). In a welcome move, in 2010 the Ministry of Economy and Finance launched the first comprehensive review of tax expenditure. Italy could build on this exercise and establish a process for the systematic review of tax expenditure. This would improve the transparency of the tax system and be the basis for subsequent reforms or the removal of special tax treatment that is not justified on economic, social and environmental grounds. The 2012 tax reform proposal (see below) paves the way for such a revision.

Vehicle taxation

Vehicle taxes are the other major source of environmentally related tax revenue (Figure 3.1). They are also an important source of revenue for local authorities, as they are collected by regions and provinces. However, while Italy has one of the highest motorisation rates in the OECD, its level of taxation for motor vehicles is relatively modest. The combined effect of the various taxes is about EUR 300 per vehicle per year, half the EU average (Andersen et al., 2011).

Taxes on both registration and ownership of vehicles are in place. The provincial vehicle registration tax is reduced for cars with CO_2 emissions below 120 g/km and for electric, hybrid and natural gas fuelled vehicles. The annual regional road tax (*bollo auto*) for cars and motorbikes has been differentiated by engine power and pollutant emission standards since 2007. This has contributed to encouraging purchases of lower emission cars (Table 5.7). The "Salva Italia" Decree extended and raised the surcharge on the annual road tax (*superbollo*) for high-powered vehicles.[6] However, the annual road tax does not take CO_2 emission levels into account. In addition, taxes applied to freight vehicles are not based on any environmental parameter.

Table 3.1. **Energy and transport tax expenditure**

Tax expenditure measure	Revenue loss (EUR million)
Transport	
Fuel tax exemption for commercial aviation	1 613.6
Fuel tax exemption for shipping and fisheries	575.6
Tax relief for rail transport (70% tax reduction on fuel for rail transport)	1.8
Tax relief for public passenger transport, excluding rail transport and including boat transfer in areas where road transport is not available (60% reduction)	14.2
Tax relief for road freight transport businesses: partial tax rebate and exemption from periodic increases in the excise duty	306.0
Total	2 511.2
Stationary uses	
Energy tax breaks for agriculture, horticulture, aquaculture and forestry (78% excise tax reduction on liquefied petroleum gas (LPG) and 51% reduction on petrol)	866.7
Tax relief for fuel used for power generation in manufacturing, agriculture, research on hydrocarbons, and building sites (70% tax reduction, with the exception of natural gas)	10.3
Tax relief for fossil fuels used in power generation	4.2
Tax relief for LPG used in industrial facilities and by buses for public transport (90% tax reduction)	6.3
Tax relief for large industrial users of natural gas (60% reduction of gas excise duties for industrial users consuming a minimum of 1.2 million m^3 per year)	63.0
Tax relief for users of gas oil and LPG in disadvantaged areas (e.g. mountainous areas and areas either not reached or partially reached by the gas network)	231.0
Total	1 181.5
Special provisions	
Fuel tax exemption on fuels used in flooded areas	0.5
Tax relief for ambulances (60% fuel tax reduction)	2.0
Tax relief for the national army	50.0

Tax exemption for NATO countries' national armies	. .
Tax exemption for diplomatic bodies and international organisations	. .
Total	52.5
Total	**3 745.2**

Source: Ministry of Economy and Finance.

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Italy has already reached the EU target of an average CO_2 emission level of 130 g CO_2/km by 2015 for newly registered cars (Chapter 5). Nonetheless, it could consider revising vehicle taxation to take account of CO_2 emissions, in addition to exhaust emissions, as a way to achieve the more ambitious 2020 target of 95g CO_2/km. While vehicle taxes are theoretically less efficient than fuel taxes and road charges in reducing emissions of greenhouse gases and air pollutants (OECD, 2009b), experience in many countries shows that these taxes are effective in changing the composition of the car fleet towards low-emission cars. This could contribute to further reducing emissions from transport, which may increase as the economy recovers.

Towards a green tax reform?

The high tax-to-GDP ratio limits the possibility of further raising tax revenue in Italy. Together with the high level of public expenditure (Box 1.1), this indicates that the country needs to reduce public spending and restructure its tax system to come to grips with two urgent and potentially conflicting objectives: fiscal consolidation and the promotion of economic growth.[7] The 2011 OECD Economic Survey of Italy recommended moving away from labour taxation towards less distortive taxes, such as those on consumption and property (OECD, 2011a). In this context, Italy should consider broadening the use of indirect

taxes on the consumption of goods and services that are potentially harmful to the environment, as well as phasing out inefficient and environmentally harmful tax expenditure. These measures would generate revenue that could help the government with fiscal consolidation and/or be used to partly reduce taxes on households and businesses. This would make the tax system more growth-friendly.[8] The regressive distributional impacts (e.g. on low-income households) could be addressed through targeted social benefit schemes, or through reducing income taxation for the population groups most affected. Experience in several OECD countries that included environmentally related taxes in their tax reforms in the 1990s and early 2000s shows broadly positive results (Andersen et al., 2011).

An attempt along these lines was made in the late 1990s, when a carbon tax reform was launched. By 2005, the tax rates on various energy products were set to increase to take account of the carbon content of fuels.[9] The expected additional revenue was to be used to offset labour taxes (Barde, 2004). However, implementation of this reform was first frozen and then was abandoned in 2000 out of concern for negative impacts on the economy (OECD, 2003). Contrary to the principle of a green tax reform, the tax burden on energy declined in the 2000s while that on labour (as measured by the implicit tax rate on labour)[10] decreased slightly in the first half of the 2000s but has grown markedly since 2006 (Figure 3.1).

Some estimates indicate that there is considerable potential for reviving an environmental fiscal reform in Italy. According to these estimates, environmentally related tax revenue could be raised to about 10%-11% of total tax revenue by 2015, from 6% in 2010 (Andersen et al., 2011). Cingano and Faiella (2011) estimated that a carbon tax of between EUR 17 and EUR 100 per tonne of CO_2 on transport fuels would reduce emissions from road

transport by up to 5% and generate additional tax revenue of up to EUR 10 billion in 2020 (Chapter 5). Ideally, the carbon tax should match the expected price prevailing in the EU ETS to ensure an even carbon price across the economy.

There is also scope to restructure current taxes on the basis of energy performance or other environmental parameters. For example, local property taxes could be linked to the energy efficiency grade of houses or to the installation of equipment powered by renewable energy sources. Consideration should be given to reviewing the rates of existing environmentally related taxes, so that they better reflect the value of resources and environmental degradation, as well as to introducing taxes other than those on energy products. As indicated by Andersen et al. (2011), these measures could address: water abstracted by utilities and users in all sectors, which would support demand management and help reduce water losses; wastewater discharges in water bodies, depending on the pollution load; agricultural inputs such as pesticides and fertilisers; and packaging materials, depending on the environmental impact of different materials (in addition to the current fee for covering recycling costs – see Section 3). Any new environmentally related tax should be introduced in clearly defined stages and gradually raised in line with energy and resource efficiency gains. This would allow shrinking of the tax base and rebound effects to be prevented, and would let the economy adapt to changes in relative prices.[11]

Steps in this direction were taken with the 2011 "Salva Italia" fiscal consolidation package, which raised energy and vehicle tax rates (Box 3.1). The comprehensive fiscal reform proposal (presented in April 2012 and under parliamentary discussion at the time

of finalisation of this report) explicitly includes an environmental component for the first time. The proposal foresees partial restructuring of energy taxation based on the carbon content of fuels, as indicated in the proposed EU Energy Taxation Directive. Introduction of the carbon tax would be co-ordinated with the EU ETS: the sectors participating in the system would be exempt from the carbon tax component of the energy tax to avoid double carbon pricing. Revenue from the carbon tax would be earmarked to support renewable energy sources, other low-carbon technologies and environmental protection measures. These provisions would implement the draft 2012 plan to achieve the 2020 climate and energy targets (Chapter 5). However, implementation of such tax measures is conditional on harmonisation of energy and carbon taxation within the EU. The proposed reform mentions the possibility of introducing new forms of environmentally related taxes and incentives, but it focusses on the carbon tax. Overall, the environmental component of the reform proposal could be broadened.

3. Environment-related expenditure and investment

3.1. Expenditure on environmental protection and resource use

Government expenditure on environmental protection

Government expenditure on environmental protection declined (in real terms) at both the central and local levels during the last decade, by 8% and 2%, respectively.[12] In most environmental sectors this decrease occurred in the late 2000s as a result of the government's general fiscal consolidation effort. Only expenditure on waste management grew in the second half of the 2000s (Figure 3.3), reflecting the priority given by the government to responding to recurrent waste management and disposal emergencies in some regions.

As in most other OECD countries, subnational governments account for the vast majority of government environmental expenditure (87% in 2010). Only in the area of environment-related R&D does the central government play a dominant role, although outlays remain modest. The composition of local government expenditure has remained virtually unchanged since 2000. Waste management accounts for more than half of local government expenditure, followed by biodiversity conservation. Biodiversity conservation and pollution abatement have remained the dominant expenditure items at the central level (Figure 3.3).

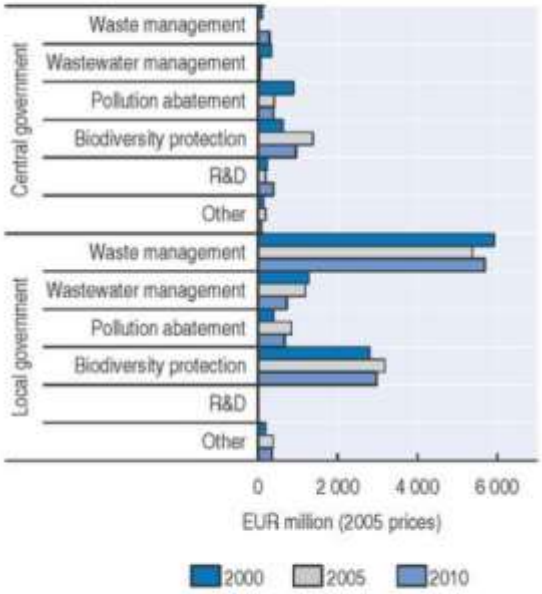
National expenditure on waste, wastewater and water resource management

Public and private expenditure on waste, wastewater and water resource management (mainly water supply) increased by about 9% in real terms between 2000 and 2010, but its share of GDP remained stable at around 2.2% (Figure 3.3). Waste management absorbed the largest share of expenditure (64% in 2010), followed by water resource management (28%) and wastewater management (8%).

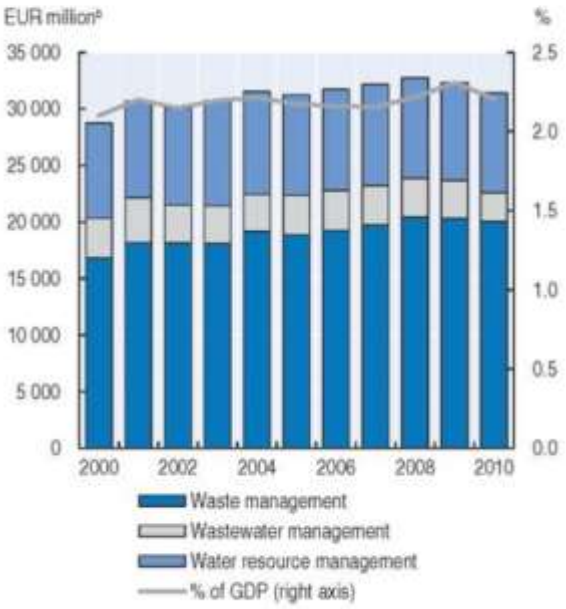
Growth in expenditure was mainly due to an increase in current expenditure, which represented the vast majority of total expenditure. As in most other developed countries, this reflects a rise in spending on operation and maintenance of infrastructure built in the past decades. Investment made by providers of environmental services in waste, wastewater and water resource management was about EUR 3.7 billion in 2010, equivalent to 11% of expenditure in these areas.[13]

Figure 3.3. **Expenditure on environmental protection and resource use**

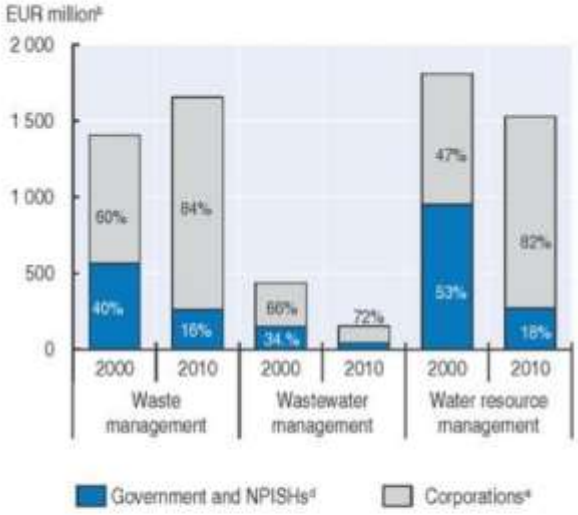
Government expenditure on environmental protection,[a] 2000, 2005 and 2010



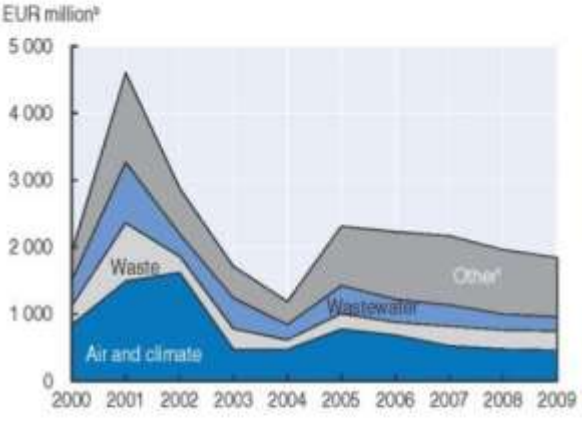
Expenditure on waste, wastewater and water resource management, 2000-10



Environment-related investments by specialised producers of environmental services, 2000 and 2010



Environmental protection investments by the business sector,[c] 2000-09



a) According to the COFOG classification.
b) At constant 2005 prices.
c) Excluding specialised producers of environmental services.
d) General government and non-profit institutions serving households.
e) Corporations that provide environmental protection services as pricipal activity (utilities).
f) Includes soil and groundwater, biodiversity and landscape, and other environmental protection activities.
Source: Eurostat (2012), *Environmental Accounts Database*; ISTAT (2012); *OECD (2011), OECD Economic Outlook No. 90.*

StatLink http://dx.doi.org/10.1787/888932772799

Investment trends differ across environmental sectors. Investment in waste management rose during the decade in order to catch up with delays in the development of waste treatment facilities. Investment in the water sector declined, especially that for wastewater infrastructure, mainly due to decreased investment by public entities specialised in the provision of environmental services (i.e. local government units and non-profit institutions) (Figure 3.3). However, the fall in investment occurred at a time when increased investment was needed to meet EU requirements and to cope with the deterioration and ageing of water supply and wastewater infrastructure (Chapter 4).

While investment by public entities decreased (in real terms) in both the water and waste sectors between 2000 and 2010, investment by corporations specialised in the provision of environmental services (utilities) grew except in the case of wastewater management. Water and waste utilities, which are mostly mixed capital companies, accounted for more than 80% of investment in waste management, water resource management and wastewater management as a whole in 2010, up from nearly 55% in 2000 (Figure 3.3). Government transfers to both types of specialised producers decreased during the 2000s. They covered 28% of expenditure by public entities and corporations in 2010, compared with 46% in 2000. This indicates a growing role for utilities in providing and financing environmental services (see also Section 4), as well as a more market-oriented and less subsidy-dependent provision of these services.

However, the role of utilities remains limited in most of the southern regions. For instance, in 2009 local governments financed half the investment in waste management in the South (Mezzogiorno), compared to 4% in the North (DPS, 2012). The quality of the services provided also varies widely across the country. In a number of cases, contracts for the provision of waste and water services have been awarded without public tenders, and penalties have not been consistently applied where service quality was inadequate. Competition and regulatory oversight has also been weak. It has often been characterised by conflicts of interest at local level, as the local regulators are often also utility shareholders (Cunha Marques, 2010; Bripi et al., 2011). The transfer of regulatory responsibilities in the water sector to the Regulatory Authority for Electricity and Gas (AEEG) in 2011 was therefore a welcome step forward (Chapter 4). The 2012 "Sviluppo" Decree (Box 3.1) introduced measures to promote competitiveness and efficiency in local public services, including incentives for providers' mergers and for greater and more transparent use of tendering procedures.

As discussed in Chapter 4, revenue from tariffs on water supply and wastewater services remains insufficient to cover the costs of these services and guarantee necessary investment. The same is true in the waste sector. The switch from the local waste tax to the waste tariff, which was expected to allow for full cost recovery and promote waste reduction, has been slow: in 2011, after more than ten years of implementation, only about one-third of Italy's population lived in municipalities that had switched to the waste tariff (ISPRA, 2012). The composition of the waste tariff varies across municipalities, and only a

few of them apply the pay-as-you-throw approach. In 2009, revenue from waste charges (in the form of taxes or tariffs) covered about 92% of the operating costs of municipal waste services, implying that investment costs need to be covered by other financial resources. To ensure uniform recovery of service costs, including investment costs, the "Salva Italia" Decree reintroduced a tax on municipal waste services as from 2013 (Box 3.1).[14] Better performance has been achieved in covering the costs of recycling packaging waste (OECD, 2011a). The producer responsibility approach applies to this waste: producers and importers of packaged goods are required to pay a fee per weight of packaging materials to the National Packaging Consortium (CONAI) (Box 3.2). In turn, CONAI finances the recycling operations and the fee is passed on to consumers.

Box 3.2. **National Packaging Consortium for collection, recovery and recycling of packaging waste**

The National Packaging Consortium (Consorzio Nazionale Imballaggi, CONAI) was created in 1997 to facilitate the recovery and recycling of packaging placed on the Italian market in order to meet the requirements of the EU Directive on packaging and packaging waste (94/62/EC).

This not-for-profit private consortium, the largest that manages packaging waste in Europe, brings together 1.4 million producers, sellers and users. To guarantee the recovery of packaging from public collection, in 1999 CONAI signed a framework agreement with the national association of Italian municipalities (Associazione Nazionale Comuni Italiani, ANCI) setting out conditions for the take-back of packaging waste collected by the municipalities. The agreement was renewed in 2004 to meet the requirements of EU Directive 2004/12/EC, which amended the 1994 Directive on packaging and packaging waste. In 2009, the agreement was extended again for a five-year period. The CONAI-ANCI agreement regulates the operations of six consortia responsible for various packaging materials: steel (CAN), aluminium (CiAl), paper (Comieco), wood (Rilegno), plastic (Corepla) and glass (CoReVe). To date, 6 800 municipalities (representing 95% of Italy's population) have signed contracts with individual consortia for the take-back of used packaging.

The CONAI system is financed by an environmental fee (the "contributo ambientale") collected when finished packaging is transferred from the producer (or importer into Italy) to the first user. CONAI transfers these contributions to the consortia, which compensate the municipalities for costs related to the take-back of packaging waste from separate waste collection. The amount of the environmental fee, calculated according to weight and type of packaging material, ranges from EUR 8 per tonne of wood to EUR 110 per tonne of plastic packaging.

CONAI established a network of 450 packaging waste centres for the take-back of secondary and tertiary packaging from industrial and commercial activities not covered by public services. These centres process packaging material with no additional costs to companies except for transport. Since 2000, the quantity of packaging waste collected through separate collection managed by the consortium system has more than tripled. In 2010, total recovery of used packaging reached 74.9%, corresponding to 8.5 million tonnes of used packaging. Around 64% is recycled, of which half is assured by CONAI. According to a recent study, collection, recycling and reuse of recovered materials between 1997 and 2010 yielded EUR 11 billion in direct and indirect economic and environmental benefits for Italy and helped to avoid 63 million tonnes of CO_2 emissions.

Source: Althesys, 2011; CONAI, 2012.

Businesses investment in environmental protection

Investment in pollution abatement and control activities by businesses (to remediate or minimise their own environmental impacts) amounted to about EUR 2 billion in 2009 and fluctuated considerably during the 2000s.[15] To a certain extent, investment trends reflect the timing of the introduction of environmental requirements. For instance, transposition of the EU Integrated Pollution Prevention and Control (IPPC) Directive in 1999 and the launch of the EU Emissions Trading System in 2005 may have driven the investment hikes of 2001 and 2005 (Figure 3.3). Investment in environmental protection by the business sector slowed in the late 2000s during the recession.

However, environmental investment in industry has continued to grow. As a result, this type of investment accounted for 5% of total industrial investment in 2009 compared with 3.8% in the previous year. Larger industrial companies (those with more than 250 employees) accounted for nearly 85% of environmental investment in 2009. Investment in end-of-pipe technologies continued to prevail over investment in "integrated" technologies, although the latter are probably underestimated.[16] Nevertheless, industrial small and medium-sized enterprises invest more in integrated technologies than do large companies (ISTAT, 2012).[17]

Environmental investment by industrial companies is concentrated in energy intensive sectors such as refined petroleum products, iron and steel, chemicals, and non-metallic minerals. The composition of environmental investment varies across industries, depending on their specific environmental impacts (ISTAT, 2012). Overall, growing attention to air pollution and climate change has resulted in these two areas representing an increasing share of investment by industry (30% of total environmental investment), followed by wastewater (19%) and waste (12%).

3.2. Investment in "clean energy" and sustainable transport modes

Renewable energy sources and energy efficiency

As discussed in Chapter 5, Italy has invested heavily in the renewable energy sector since the mid-2000s, particularly with respect to electricity generation. Installed capacity more than doubled between 2000 and 2011, from about 18 GW to more than 40 GW. Consequently, power generation from renewable sources has also risen. Italy is reportedly the fourth largest investor in renewables (after China, the United States and Germany) and the largest investor in small-scale photovoltaic (PV) installations (Bloomberg New Energy

Finance, 2012). Investment in renewable power and fuels in Italy was USD 29 billion (EUR 20.8 billion) in 2011, a 43% increase over the previous year. This compares with a 17% rise in global investment in the same period, and was largely driven by the boom in small-scale rooftop PV installations, which attracted investment of USD 24 billion (EUR 17 billion). By comparison, Italy's investment in the waste and water sectors was less than EUR 5 billion in 2010 (Figure 3.3).

This growth was the result of generous incentive mechanisms (Box 5.4). In particular, the 2010-11 boom in PV was linked to a sharp decline in technology costs and the expectation, realised subsequently, of a dramatic cut in feed-in tariffs as from 2012 (Bloomberg New Energy Finance, 2012). The cost of these incentives has generally been passed on to end users: in mid-2012 it accounted for some 15% of the electricity bill of an average household consumer. The cost of the incentive mechanisms for renewable power has increased with the rise of installed capacity and electricity generation, reaching about EUR 7 billion in 2011. In addition, central and regional governments have made extensive use of direct financial transfers in the form of investment grants and soft loans, including through EU and national funding for regional development (Section 3.3).

Italy has also invested in further developing its electricity networks to improve service and integrate increasing electricity generation from renewable sources. However, greater investment is needed, especially to upgrade the transmission network in the southern regions and islands, which have a high renewables potential. Priority has also been given to the development of smart grids. While the rollout of smart meters has been completed, additional investment is needed to complete the more advanced phases of smart grid development.

A number of incentives that became available in the second half of the 2000s have triggered growing investment in energy efficiency in the business and household sectors (Box 5.5). For instance, the 55% tax deduction for energy efficient refurbishment of buildings mobilised the investment of more than EUR 12 billion in 2007-10 (ENEA, 2012a). Overall, increasing investment in renewable energy sources and energy efficiency has contributed to stimulating growth and employment in new economic sectors (Section 4). Italy's renewable energy and energy efficiency policies are discussed in more detail in Chapter 5.

Sustainable transport

The government has channelled funding (including national and EU funds) to the development of public transport and railway networks. In the last decade, the Italian railway system has invested about EUR 25-30 billion in high-speed rail infrastructure for both passengers and freight. The costs of high-speed rail in Italy have been much higher than in other European countries such as France, Germany and Spain. While geographical features have played a role, tendering procedures and a long lead-time have also contributed (OECD, 2011a). Further liberalisation of service and the definition of a sound and stable regulatory framework, including for financing of service, are needed (DPS, 2012). In this respect, the establishment in 2012 of a regulatory authority for transport services, whose competences are temporarily assigned to the AEEG, is an important step forward.

As discussed in Chapter 5, some progress has been made in developing integrated urban transport systems. However, in most Italian cities and metropolitan areas local public transport systems remain insufficiently developed (in terms of infrastructure and service quality) to provide an adequate alternative to the use of private vehicles. Like the water and waste services discussed in the previous section, local transport suffers from inconsistent application of competitive tendering and weak regulatory oversight (Bripi et al., 2011).

Development of urban transport systems is the responsibility of regional and local authorities, which have differentiated regulatory approaches and implementation capacities. Local governments have been facing serious financial constraints. Therefore, estimated annual transfers for public transport dropped from EUR 2 billion in 2009 to EUR 400 million in 2011 (DPS, 2012). In addition, prices paid by users of public transport are insufficient to cover the service's operational costs. Cost recovery reaches some 35% on average, while the prices paid are relatively low by international comparison.[18] Investment of more than EUR 22 billion in public transport infrastructure is planned in 2007-20. Public and private financing is available to cover slightly more than half these costs, most of which are associated with the development of metro systems (MSE, 2011). The 2012 "Sviluppo" Decree (Box 3.1) foresees the adoption of a national plan for electric vehicle infrastructure, funded by an *ad hoc* fund of EUR 70 million/year in 2013-15. It has also introduced measures to promote competitiveness and efficiency in local public services, including local transport.

3.3. National and EU funds for regional development

Italy has allocated considerable funding to regional development and cohesion policy, with the broad aim of reducing the striking economic and social disparities that persist among regions. As of the end of 2011, about EUR 100 billion had been allocated to investment in regional development for the programming period 2007-13. This included nearly EUR 60 billion in EU Structural Funds and national matching funds. While EU transfers decreased compared with the previous programming period (2000-06), Italy remains the third largest beneficiary of the EU cohesion policy after Poland and Spain.

National and EU funds earmarked for regional development have accounted for a relatively minor share of public spending at the national level, but they have made up about half of investment expenditure in the eight regions in the South (DPS, 2012).

These funds have also been an important source of financing for public environment-related investment, especially in the South (Mezzogiorno). Sustainable use and promotion of environmental and natural resources are among the key funding priorities in the 2007-13 programming period. About EUR 9 billion in EU and national matching funds was allocated to environment- and energy-related investment. This represents 15% of the total allocation of EU and national matching funds, which is higher than the share of funds earmarked for environment-related investment in the previous programming period. This reflects emerging policy priorities such as clean energy and climate change, as well as continued high investment needs for environmental infrastructure in the South. As Table 3.2 shows, the endowment of environment, energy and transport infrastructure and the quality of related services vary widely across Italy's macro-areas.

More than EUR 4 billion was earmarked for renewable energies and energy efficiency. This is one of the largest allocations in the EU, indicating Italy's objective of building industrial and innovation capacity based on the clean energy sector, as well as contributing to the reduction of GHG emissions. A specific multi-regional programme on Renewable Energy and Energy Efficiency was dedicated to achieving these objectives, in addition to allocations included in all regional programmes.[19] According to government estimates, planned projects in the energy, transport and waste management sectors would abate emissions by about 10 Mt CO_2 eq by 2020 (DPS and ENEA, 2009). About EUR 1 billion was allocated to sustainable urban transport. The remaining funds were allocated to investment in the water and waste sectors, prevention of natural risks and adaptation to

Compared to the previous programming period, there is increased emphasis on more innovative sectors such as renewables, and on more advanced solutions to traditional environmental management issues such as tertiary wastewater treatment and biological waste treatment.

Overall, the allocation of regional development funds in the 2007-13 programming period has been based on a sounder analysis of investment needs and more extensive use of statistical information and indicators than in the past. Italy has also implemented innovative, more results-oriented procedures in the disbursement of funds, including for environment-related projects. For instance, disbursement of funds has been made conditional on a number of criteria including completion of specific sectoral planning. In addition, a performance-based mechanism (the "Obiettivi di Servizio") has been implemented to provide additional funding in the southern regions as a reward for achieving pre-defined targets for urban waste and water services by 2013 (Table 3.2).

EU and national development funds have contributed to improving the quality of life and developing environmental infrastructure and administrative capacity in the Italian regions. However, despite progress, the South continues to lag behind with respect to most environment-related indicators and is generally not on track to meet the 2013 targets for waste and water management (Table 3.2). Spending of funds and realisation of planned investment have both lagged, especially in the energy, waste and nature protection sectors. There are several contributing factors, including: lack of sound sectoral plans to guide investment; insufficient matching finance; inadequate enabling or complementary

Table 3.2. **Selected regional environment-related indicators**

	Italy		South		North and Centre		Targets for the South
	2000	2010	2000	2010	2000	2010	2013
Urban population equivalent served by wastewater treatment plants with at least secondary treatment (%)[a, b]	53.5	56.5	49.5	53.1	55.6	58.4	70
Drinking water distribution efficiency (water distributed as % of total water entering municipal water distribution systems)[a]	67.4	67.9	59.4	60.3	71.5	71.9	75
Municipal waste landfilled (kg/inhab.)[c]	310.3	248.4	395.3	327.0	263.8	206.9	230
Separate collection of municipal waste (% tot. municipal waste)	14.4	35.3	2.4	21.2	20.3	41.8	40
Composted wet waste (% of total wet municipal waste)[c, d]	20.5	38.3	2.6	14.3	29.1	51.3	20
Coastal areas under bathing prohibition (% of tot. coastal area)[e]	5.5	6.2	6.0	6.8	4.0	4.3	. .
Terrestrial protected areas (% total area)[f]	9.1	10.5	11.2	14.2	7.7	8.0	. .
Natura 2000 sites (% total area)[c]	19.1	20.6	22.3	24.1	16.8	18.2	. .
Air quality monitoring (per 100 000 inhab.)[g]	0.5	1.2	0.4	1.0	0.5	1.3	. .
Production of renewable energy (% of total production)	19.1	25.9	5.2	18.2	24.9	30.4	. .
Electrified rail network (% total railway network)[h]	63.4	. .	47.8	49.0	73.8	. .	. .
Public transport demand (passengers ‰ inhab.)[i]	203.3	228.6	90.5	84.6	254.8	291.3	. .
Public transport supply (seat-km per capita)[e, i]	4.6	5.0	2.9	3.0	5.4	5.9	. .

a) 2000 and 2010 data refer to 2005 and 2008, respectively.
b) Inhabitant equivalents served by wastewater treatment plants with secondary or tertiary treatment, as a percentage of total urban inhabitant equivalents; excludes small, medium and large industrial enterprises.
c) 2000 data refer to 2005.
d) Wet waste (organic and green material) treated in composting facilities.
e) 2010 data refer to 2009.
f) Official list of protected areas according to national legislation (Law 394/91). 2000 data refer to 2001.
g) 2000 and 2010 data refer to 2002 and 2009, respectively
h) 2000 data refer to 2004.
i) Public transport includes buses, trams, trolleybuses and metro systems; in provincial capital cities only.
Source: ISTAT (2012), *Indicatori territoriali per le politiche di sviluppo (Database)*.

infrastructure; unstable and fragmented regulatory frameworks; and still weak institutional and management capacities and inter-institutional co-operation (DPS, 2012; UVAL, 2010). There is, therefore, a need to better tie the disbursement of funds to fulfilment of the framework conditions required to ensure effective use of financial resources. Italy has strongly supported the European Commission's proposal on the definition of such "*ex ante* conditionality provisions" for the next cohesion policy period (2014-20). The government has undertaken a process to tailor these provisions to the Italian context. In 2012, the government adopted a Cohesion Action Plan aimed at re-launching regional development policy and speeding up its implementation, with a view to contributing to economic recovery.

4. Expanding environment-related markets and employment

While information is not complete and is not always consistent across different sources, there is some evidence that the environmental goods and services (EGS) sector in Italy has grown since the early 2000s in terms of output, turnover and employment.[21]

Waste, wastewater and water resource management

As part of its work on environmental protection expenditure accounts, the Italian National Institute of Statistics (ISTAT) collects information on the production of waste, wastewater and water resource management services (mainly water supply) and on

related employment. The gross value of domestic output of these three broad sectors accounted for about 1% of Italy's gross output in 2010. Waste management (collection and treatment of waste) made up two-thirds of the output (Figure 3.4) or about 0.7% of Italy's gross output. Output grew considerably in all sectors in the 2000s. Waste management was the leading sector, with 27% real growth in 2000-09, followed by wastewater (10%) and water resource management (8%).

Corporations specialising in the provision of environmental services (utilities) are the main providers of waste, wastewater and water resource management services. The role of utilities has increased since 2000 (Figure 3.4). They produced 60% of the gross value of waste management services, 55% of wastewater services and 89% of water resource management services in 2010 (ISTAT, 2012). The remaining shares are accounted for by governmental bodies and non-profit institutions serving households (NPISHs), secondary producers (mainly corporations that provide environmental services in addition to their principal activities) and ancillary producers (mainly corporations that provide environmental services for their own use). In particular, provision of environmental services by governmental bodies and NPISHs declined during the last decade. These trends reflect the expenditure and investment trends analysed in Section 3.3. They confirm progress in the liberalisation and corporatisation of the provision of basic environmental services, although reforms have not been fully implemented yet.

Output growth has resulted in increased employment in the waste, wastewater and water resource management sectors, although with some differences across types of producers and sectors. As Figure 3.4 shows, between 2000 and 2010 employment in the government sector decreased while that in utilities grew. The highest increase occurred in the waste management sector, which also accounted for 70% of employment in the basic

environmental services sectors in 2010. Employment in the waste management sector has increased more rapidly than that in the economy as a whole (ISTAT, 2012). Overall, about 168 500 people were employed in these three broad environmental sectors in 2010, representing some 0.7% of total employment in Italy.

Renewable energy sources and energy efficiency

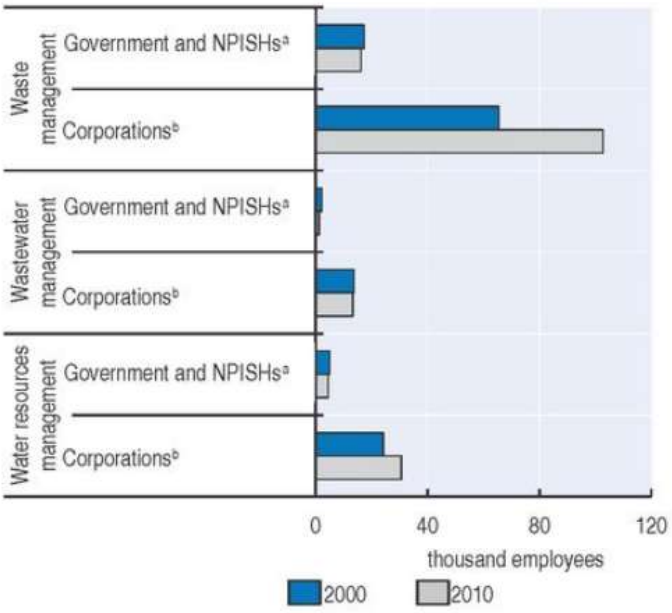
As discussed in Section 3.3, an increased policy focus on renewable energy sources and energy efficiency in the second half of the 2000s resulted in an investment boom in these sectors. This, in turn, led to growing turnover and employment in the "clean energy" sectors. According to EurObserv'ER (2011) estimates, in 2010 turnover in the renewable energy sector was 57% higher than during the previous year in Italy, compared to 15% growth in the EU.[22] This meant that Italy had the second largest renewables market in the EU after Germany. With more than EUR 16 billion, Italy accounted for 12.7% of EU sales turnover. Related direct and indirect employment increased by 38%, more than in the EU as a whole (25%).[23] In 2010, more than 108 000 people were directly or indirectly employed in the renewable energy sector, making Italy the third largest employer in the EU. Italy is among the top EU countries in all renewable energy sectors. In particular, it is the largest geothermal power market and the second largest for PV.

While market performance improved in all renewable energy sectors, PV was the main growth engine. PV turnover more than tripled and employment more than doubled. This is clearly the result of the sharp growth in PV installed capacity in 2010-11, driven by dropping technology prices and generous incentives. PV has become the dominant renewable energy sector, accounting for nearly half of turnover and more than 40% of

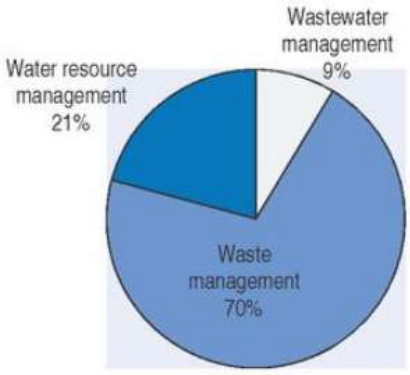
Figure 3.4. **Environmental goods and services sector**

Employment in the environmental protection service sector

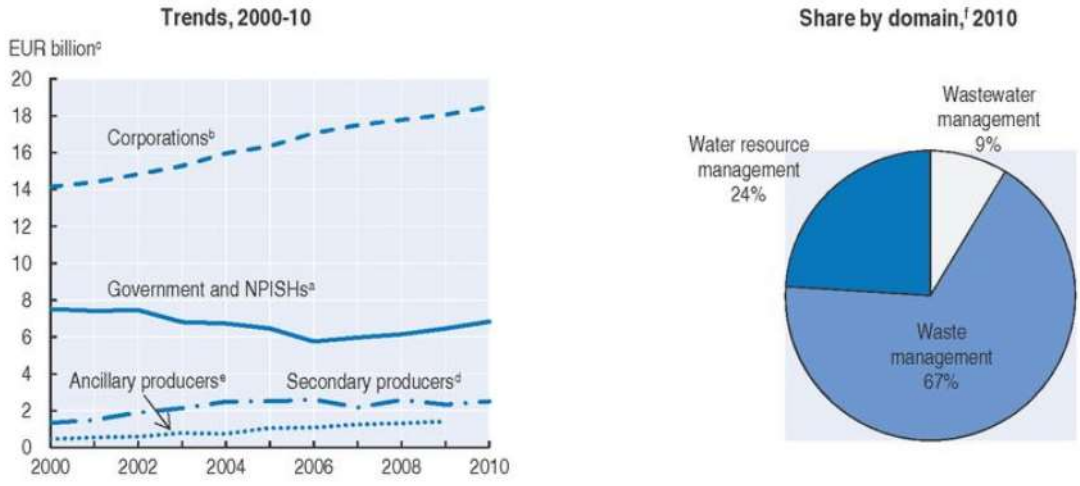
Trends, 2000 and 2010



Share by domain,[a,b] 2010



Gross output of environmental protection services



a) General government and non-profit institutions serving households.
b) Corporations that provide environmental protection services as pricipal activity (utilities).
c) At constant 2005 prices.
d) Corporations, mainly private, producing environmental services in addition to their principal activity.
e) Private corporations that produce environmental services (waste and wastewater management only) for their own uses in order to manage their own environmental pressures.
f) Excludes ancillary producers.
Source: ISTAT (2012).

StatLink http://dx.doi.org/10.1787/888932772818

employment, followed by wind power (about 20%). In addition, the White Certificate mechanism and the other energy efficiency incentives (Box 5.5) have stimulated the emergence of a dynamic energy service market.[24] However, a relatively minor share of these enterprises have the technical skills and financial capacities required to qualify as energy service companies (ESCOs).[25]

Most turnover and employment is generated in the downstream segments of the "clean energy" markets, i.e. in the installation, operation and maintenance of renewable energy equipment and the provision of energy services. Domestic manufacturing and supply of renewable energy technologies has not kept pace with the increase in installed power generation (especially of PV), as well as with the strong competitive pressures by Asian countries. This has resulted in growing imports of renewable energy technologies. For instance, the trade deficit for PV technologies was above USD 11 billion in 2010, more than four times higher than in the previous year and much larger than the trade deficit at EU level. About a quarter of this deficit was due to trade with Germany (ENEA, 2012b). Italy's renewables promotion policy has mainly focused on supporting generation from renewable sources, thereby supporting technology demand. So far, this policy has been insufficient to effectively promote the development of supply chains linked to renewable energy technologies. This is

partly due to inadequate linkages among energy, industrial and innovation policies and the weaknesses of the Italian entrepreneurial system, as discussed in Section 5.

A number of studies have analysed the economic potential of the renewable energy sector in Italy.[26] While the results of these studies differ and are not fully comparable, they indicate that the growth of this sector is projected to continue, with potential net economic benefits. However, the increase in energy costs and the decline in conventional energy sectors potentially associated with the accelerated development of renewables can moderate prospective growth and employment impacts (Fraunhofer ISI et al., 2009). Improving the competitive position of national manufacturers of renewables technologies will therefore be a key factor in determining the extent to which renewables will be a source of economic growth in Italy. This would allow gradual decoupling of the development of this sector from domestic demand for installations (as well as from incentives) and make it more export-oriented (Symbola and Unioncamere, 2011).

Other green sectors and products

Other sectors associated with the environment have also shown positive trends. For example, Italy is a leader in Europe in the production of goods and services that have been awarded the EU Ecolabel, which identifies products and services that have a reduced environmental impact throughout their life cycle. The number of EU Ecolabelled products has increased exponentially in Italy since the introduction of this label. Italy has issued more than 50% of the total number of Ecolabel awards in the EU, followed by France and the United Kingdom (22% and 9%, respectively).

Another example is organic farming. Italy is one of the European leaders, with 8.6% of its total utilised agricultural area occupied by organic farming. It has the largest certified crop area and the highest number of operators in Europe. Export of organic products was estimated EUR 1 billion in 2010. However, while domestic consumption of organic products is growing, it remains relatively low. Organic products account for 3% of food expenditure by Italian households, compared with nearly 20% in countries such as Austria and Germany (Symbola and Unioncamere, 2011). The green public procurement policy has helped support demand for organic products.[27]

Promoting environmental skills

As in other advanced economies, the environment-related sectors in Italy have been increasingly characterised by medium- to high-skilled employment: 63% of employees in these sectors had completed at least secondary education in 2008, compared to 49% in 1998

(ISFOL, 2009). This goes hand in hand with the increasing weight of employment in sectors such as renewable energies and pollution control, at the expense of sectors such as waste management and forest management. Consequently, there is a need to develop new and improved skills to seize the opportunities presented by new, more technologically advanced green jobs, help workers adapt to more environmentally friendly processes in existing sectors, and facilitate adjustments in the labour market from contracting conventional sectors to expanding "green" sectors (OECD, 2011c).

Italy has increasingly invested in tertiary education and professional training programmes related to the environment. Environmental tertiary education programmes have led to positive employment outcomes.[28] Most vocational training programmes are publicly funded, including through EU funds. Unsurprisingly, the number of training programmes in renewable energy and resource management considerably increased in the 2000s to satisfy increasing demand. However, a long-term framework for environmental education and training, aimed at addressing existing and future skill needs and potential skill mismatches, seems to be lacking (Ecorys, 2010).

Funding environment- and climate-related R&D activities

The government budget for environmental R&D did not show a consistent trend in the second half of the 2000s. Overall, it increased by some 10% in real terms, although from a very small amount. This compares with a decrease in the total government R&D budget, especially in the late 2000s, due to fiscal consolidation efforts (Figure 3.5). Environment accounted for about 3% of the R&D budget in the late 2000s, a share that was more or less constant in this period. This was in line with the EU27 average and above the OECD average (OECD, 2011d).

After a decline in the first half of the 2000s, public funding for energy R&D increased, reflecting the renewed priority attached to this sector. However, funding declined again at the end of the decade due to the overall cut in public spending (Figure 3.5). The government

energy R&D budget allocated to energy efficiency and renewables technologies grew steadily during the decade, with the exception of the last few years (Figure 3.5). These have become the dominant energy research areas, accounting for about half the total government energy R&D budget in 2010 (up from 17% in 2000). This is reflected by the growing number of patent applications in these fields (Figures 3.4and 3.5). Public funding for nuclear research grew at the end of the decade, in line with the government's decision to begin using nuclear energy again, a decision which was over-ruled by a 2011 popular referendum. In 2010, nuclear research attracted one-third of government energy R&D funding.

Green public procurement

According to the 2002 Budget Law, 30% of public contracts for procurement of selected products and services must include environmental criteria and 30-40% of public contracts must reduce energy consumption. The National Action Plan for Green Public Procurement, approved in 2008, reaffirmed these requirements. Minimum environmental criteria were approved in recent years for a number of product and service categories, including paper, textiles, food, vehicles and energy supply. Public institutions have reporting obligations under the Plan, and the Authority for the Supervision of Public Contracts is in charge of monitoring compliance with green criteria in public procurement. According to a recent survey, environmental criteria have increasingly been included in public procurement contracts in Italy. In monetary terms, 51% of all contracts signed in 2009-10 included some form of green requirement. Environmental requirements are more common for the procurement of office IT equipment, furniture and paper (CEPS-CoE, 2012). Full implementation of the Plan is expected to create additional demand for greener products and services, thereby providing a stimulus for eco-innovation.

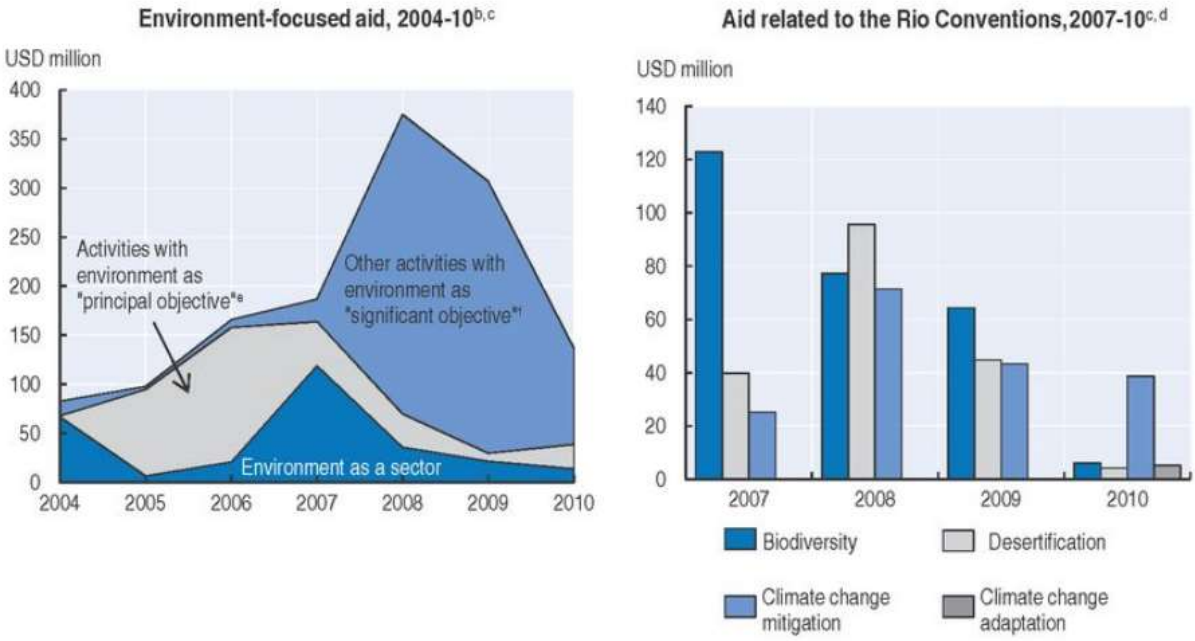
6. Environment, trade and development

6.1. *Official development assistance*

Since 2000, Italy's net official development assistance (ODA) has increased by 60% in real terms, to reach USD 3.99 billion in 2011. Despite this important increase, Italy was 12th out of 23 DAC members in terms of aid volume in 2011 (providing 3% of the total DAC members' ODA) and 20th in terms of ODA as a percentage of its gross national income (GNI). The latter fluctuated between 0.13% (2000) and 0.29% (2005) and was 0.19% in 2011, well below the DAC average of 0.31%. Italy's weak ODA performance during the last decade (and aid cuts in 2009, 2010 and 2011) means that it did not meet the EU target to provide 0.51% of GNI as ODA by 2010. It is also far from reaching the target of 0.7% ODA/GNI by 2015. To meet the 2015 target, it would need to increase its aid by USD 11 billion (or 268% of the amount in 2010).

Italy's ODA commitments for environment increased after environment was defined as a priority in the 2007-09 Ministry of Foreign Affairs (MFA) Programming Guidelines for Development Co-operation. In 2007, Italy committed USD 112 million to the environment, a significant increase compared with USD 18 million in 2006. Although resources devoted to specific environmental programmes decreased in the following years, funding for activities with environment as a significant objective[34] nearly doubled, reaching close to USD 400 million in 2008 (Figure 3.7). The priority attached to the environment was reflected in increased support for projects related to the Rio Conventions. Support for biodiversity projects increased many times between 2006 and 2007. This was followed by increased support for response to climate change and for fighting desertification in 2008 and 2009 (Figure 3.7).

Figure 3.7. **Bilateral aid in support of the environment**[a]



a) Commitments of bilateral ODA expressed at 2009 prices and exchange rates.
b) The coverage ratio for activities screened against the environment policy marker is 84% of total sector-allocable aid; before 2004, the data coverage was not sufficient to identify significative trends. Excluding activities on water supply and sanitation not targeting environment as a principal or significant objective.
c) The marker data do not allow exact quantification of amounts allocated or spent. They give an indication of such aid flows and describe the extent to which donors address the environment and the objectives of the Rio Conventions in their aid programmes.
d) Most activities targeting the objectives of the Rio Conventions fall under the definition of "environment-focused aid" but there is no exact match of the respective coverages. An activity can target the objectives of more than one of the conventions, thus respective ODA flows should not be added. The climate change adaptation marker was introduced in 2010.
e) Activities where environment is an explicit objective of the activity and fundamental in its design.
f) Activities where environment is an important, but secondary, objective of the activity.
Source: OECD (2012d).

The environmental priorities of Italy's ODA focus on a selected set of issues, including: biodiversity conservation; climate change mitigation and adaptation; fighting desertification; promoting sustainable development of small island states; sustainable use of water resources; and supporting sustainable development of mountain regions. Environment-focused aid plays a dominant role in ODA to several countries: e.g. in China, where it accounted for 95% (USD 64 million) of total sector-allocable aid in 2007-08, and Kenya, Lebanon, Montenegro and Mozambique where 70% of ODA was environment-related in 2008-09. In 2009-10, Iraq was the top recipient of Italy's bilateral aid and 90% (USD 70 million) of total sector-allocable aid to this country was environment-related. Overall, the average share of environment-focussed aid accounted for 41% of total sector allocable aid in 2009, which is high compared to many other DAC members. Italy also improved its reporting against the environmental markers: the percentage of activities screened increased from 47% in 2006 to 100% in subsequent years.

The Inter-Ministerial Technical Working Group on ODA, established in 2010 and co-ordinated jointly by the MFA and the Ministry of Economy and Finance (MEF), is an important forum for ensuring policy coherence for development. In 2011, Italy adopted long overdue written guidelines on the environment that are a practical and user-friendly tool for facilitating integration of the environment into development co-operation activities. The MATTM, which implements its own development co-operation projects, takes an active part in the Working Group's activities. Since 2004, a number of projects

promoting more efficient use of energy, water resources and renewable energy sources have been implemented, providing professional training and fostering the exchange of know-how as well as the application of eco-efficient technologies. The MATTM's co-operative activities have focused on China, India, the Mediterranean region, Central and Eastern European countries, Latin America, the Caribbean and the Pacific islands. A co-operative programme on the environment between Italy and China has been particularly successful. During the 12 years of its operation, this programme has generated investment and capacity building outcomes and become the longest lasting of all international environmental protection programmes in China (Box 3.4).

The environment, together with land use and natural resource management, remained a priority topic in the 2011-13 programming period. However, as the net reduction in public finance continues to affect overall development co-operation, Italian environmental initiatives will need to be even more incisive and effective, in line with the OECD Paris Declaration on Aid Effectiveness. They will also need to be well co-ordinated, carefully monitored and independently evaluated.

6.2. Export credits

The Italian Export Credit Agency (Servizi Assicurativi del Commercio Estero, SACE) has long provided companies and banks with instruments for credit insurance, investment protection, the provision of sureties, and financial guarantees for their investments abroad. In the past, some investments supported by the SACE could be seen as controversial from the environmental point of view. These included the Baku-Tbilisi-Ceyhan (BTC) oil pipeline, the Cernavoda nuclear power plant in Romania, the Iliusu Dam in Turkey, and the Bonny Island liquefied natural gas plant in Nigeria.

Growing attention to environmental issues, and Italy's active participation in negotiating the OECD Recommendation on Common Approaches on Environment and Officially Supported Export Credits, led to disengagement of the SACE from most controversial projects (the Baku-Tbilisi-Ceyhan oil pipeline, the Iliusu dam in Turkey), reconsideration of support, or the introduction of environmental safeguards (the Cernavoda nuclear power station in Romania). Since 2001, the SACE has introduced Environmental Guidelines which define detailed environmental procedures to address the potential negative environmental impacts of Italian exports that require its support. An Environment Unit, established in 2005, carries out project screening, review and monitoring, which is integrated into the due diligence and decision-making process for each transaction covered. The unit also provides professional training on environmental topics.

The SACE carries out environmental assessment reviews for all transactions whose repayment terms are equal to or greater than 24 months, using the Environmental Guidelines to classify transactions in one of three categories of potential impact.[35] To the extent feasible, reviews also go beyond the OECD Common Approaches. All relevant projects are subject to assessment, even when local legislation does not require such procedures. Information on projects classified in Categories A and B, for which a final commitment is expected, is disclosed every four months and at least 30 days prior to final committment. A project's compliance with host country standards is ensured through specific covenants in the covered loan. In 2004, 2008 and 2009, Italy was one of the top three OECD countries with regard to the number of projects with high- and medium-potential

Box 3.4. **The Sino-Italian Co-operation Programme for Environmental Protection (SICP): sharing best practices with China**

In 1999, the Italian Ministry of the Environment, Land and Sea and China's State Environmental Protection Administration (SEPA) launched the Sino-Italian Co-operation Programme for Environmental Protection (SICP) with the aim of helping China improve its environment and support sustainable development. It was also intended to boost trade relations between China and Italy. Listed as a UN partnership initiative for sustainable development at the World Summit on Sustainable Development in Johannesburg in 2002, the SICP became an important global initiative with respect to climate change, ozone layer protection, biodiversity conservation, POPs reduction and phase-out, and the prevention and control of desertification.

The SICP has provided an important channel for the introduction of environmental technologies, funds and management expertise to China. Since 2000, 85 projects have been implemented with a total value of EUR 350 million. Investment in pilot projects accounts for 75% of the SICP budget. Some projects have focussed on addressing short-term and urgent Chinese environmental problems, such as providing expertise for managing and addressing risks in the wake of a serious water pollution incident on the Songhua River in 2005, or assessing environmental damage caused by the earthquake in Sichuan in 2008. Other projects have supported development of longer-term programmes, such as the establishment of a Geographical Information System using satellite images integrated with existing data and on-site surveys, control of mercury pollution from factories using coal as fuel, and management of medical waste.

The SICP has also involved the private sector. For example, it provided the Italian energy company Enel with the opportunity to create effective networks of interested parties (local institutions and enterprises) to start investing in Clean Development Mechanism (CDM)

projects. As of 2012, Enel was participating in over 90 projects in China (of which 47 were already officially registered), ranging from hydro and wind power to abatement of industrial gases and energy efficiency in large factories. This programme has become a laboratory where Italy and China can co-operate to develop or upgrade new environmental technologies.

Although capacity building originally constituted only a small part of the SICP, it has become increasingly important. An advanced training programme for senior civil servants and experts from private Chinese companies, launched in 2003, gave more than 4 000 Chinese managers, experts and executives the opportunity to attend training classes at Venice International University and make field visits to Italian public institutions and private enterprises.

Over the years, the SICP has involved a growing number of Chinese government bodies (the National Development and Reform Commission, the Ministry of Water Resources, the State Forestry Administration and the Ministry of Science and Technology), the scientific community (the Chinese Academy of Social Sciences, Tsinghua University in Beijing, and Jiaotong University and Tongji University in Shanghai) and a number of local governments (municipal authorities of Beijing, Shanghai, Tianjin, Xi'an, Suzhou, Lanzhou and Urumqi). In Italy, the programme has involved the National Research Council, the Universities of Bologna, Pavia, Turin, Tuscia, Venice, Bocconi University, Venice International University, the Eni Mattei Foundation, and the University Consortium of Industrial and Managerial Economics.

Source: Sino-Italian Co-operation Program for Environmental Protection, *www.sinoitaenvironment.org/*.

environmental impacts, and in the period 2006-09 with regard to the funding volume. Guaranteed transactions under Category A reached over SDR 1 billion[36] in 2009 and in 2010 and focused on energy, basic metal industries and mineral resources projects.

6.3. Corporate social responsibility

Italy has actively promoted the OECD Guidelines for Multinational Enterprises[37] and has given particular importance to the 2011 update of the Guidelines. It supported the reference to small and medium-sized enterprises (SMEs), which are invited to follow the corporate social responsibility (CSR) principles according to their capacities.

Italy established a National Contact Point (NCP) in 2002 within the Ministry of Economic Development. The NCP Committee includes the Ministries of Environment, Foreign Affairs, Economy, Agriculture, Labour and Justice and members of business associations and trade unions. Recently the Committee was enlarged to increase stakeholder involvement. Since 2011, representatives of the Permanent Regions' Conference, the Association of Italian Banks (ABI), some SME associations and the Italian National Committee of Consumers take part in the Committee's work. The NCP has also signed agreements with many Italian regions in order to reach enterprises at the local level.

Since the establishment of a complaints procedure in 2001, the NCP has accepted five complaints, all of which were resolved by 2007. Two complaints were related to the environment. In 2003, a complaint was filed against Italy's involvement in the Baku-Tbilisi-Ceyhan (BTC) oil pipeline with regard to non-observance of the OECD Guidelines' recommendations on human and labour rights and the environment. The case was referred to the UK NCP, as the consortium that oversaw the construction and operation of the BTC pipeline was led by a UK company and an Italian company was a minority

shareholder.[38] The second case was brought in 2007 over non-observance of the Guidelines' recommendations on human rights and the environment on a project in India. The initial assessment led to rejection of the case; it was concluded that there had been no involvement of the Italian firm in the project where the alleged violations had taken place.

Besides its institutional task of mediating and conciliating between enterprises and stakeholders in specific cases arising from breaching of the Guidelines, the Italian NCP actively disseminates knowledge and experiences concerning CSR among national enterprises and other stakeholders and promotes CSR principles in administrative procedures.

In 2011, the Ministry of Economic Development signed an agreement with the ABI and the National Association for Industries (Confidustria) to promote the adoption of CSR key performance indicators by Italian SMEs. The agreement, which was recently renewed for another two years, fosters non-financial reporting among enterprises and promotes pilot projects, together with the Italian banks, to introduce non-financial parameters to evaluate the risk of credit while financing enterprises' projects. Italy also promotes integrated reporting, i.e. a single reporting document including all financial and non-financial information (on environmental, social and governance aspects). To date, eight Italian companies (Atlantia, CNDCEC, ENI, ENEL, Generali Group, PriceWaterHouse Coopers Advisory, SNAM and Terna) have joined the Integrated Reporting Pilot Programme of the International Integrated Reporting Council (IIRC) Business Network, working towards full adoption of integrated reporting. More recently, the NCP has developed and implemented a new procedural guide to address specific instances in order to make the process more accessible and transparent.

The OECD Guidelines are also promoted in investment guarantee programmes. Close co-operation has been established between the NCP and the Italian investment promotion and support agencies. The SACE has published the Guidelines on its website and introduced the acknowledgment declaration of companies on the Guidelines in its procedures. The national institute for the promotion of exports (Agenzia per la promozione all'estero e l'internazionalizzazione delle imprese italiane, ICE), the financial company for export support (Società Italiana per le Imprese all'Estero, SIMEST) and the Inward Investment Agency (Agenzia nazionale per l'attrazione degli investimenti e lo sviluppo d'impresa, INVITALIA) are disseminating the Guidelines to enterprises and publishing them on their websites. Together with the Guidelines, they are promoting the OECD Risk Awareness Tool for Multinational Enterprises in Weak Governance Zones. Italy uses the Risk Awareness Tool as a reference document for NCP activities related to bilateral industrial co-operation. All the agencies were invited to a special session held by the NCP Committee and encouraged to take an active role in supporting dissemination of the Guidelines.