

Briefing Paper¹

Fiscal Policy

Key messages

- Fiscal policy provides a critical set of instruments for building green economies by pricing environmental externalities and redressing social impact. In particular, it can support the shift of investments towards clean and efficient technologies, natural capital and social infrastructure such as education, skills training, health care and social protection systems.
- The lingering fiscal crisis in some countries provides an opportunity for governments to reform their fiscal policies, while addressing environmental concerns. Past experience shows that crises often provide a catalyst for environmental policy reform.
- Environmental taxes have proven to be the most effective tool in addressing not only environmental externalities but also inducing green investment.
- Environmental tax reforms in several countries have been supported by broader fiscal reforms (i.e. tax shift) aimed at reducing overall tax burdens, increasing employment and addressing social concerns.
- Many countries employ tax breaks, or tax reliefs, to support renewable energies. Yet, such support needs to be well-targeted and closely monitored. In some cases, it is difficult to assess their overall impact. In general, taxing “bad behaviour” is preferable to subsidizing “good behaviour” but in some cases, both might be useful.
- When designing fiscal reforms, it is critical to consider its potential negative distributional impact on vulnerable groups (e.g., low-income households, pensioners, single-parent households). Unwanted social and distributional effects can usually be avoided without foregoing net environmental and fiscal benefits. However, these impacts could also be mitigated through tax exemptions, reduced tax rates or direct compensation measures.

Fiscal policy reforms for a green economy

A green economy seeks to drive growth, jobs, environmental improvement, poverty eradication and social equity by shifting investments towards clean and efficient technologies, natural capital and social infrastructure. These investments need to be catalysed and supported by targeted public expenditure and policy reforms. At Rio+20, countries adopted ‘green economy’ as a key “voluntary” tool for sustainable development and poverty eradication.

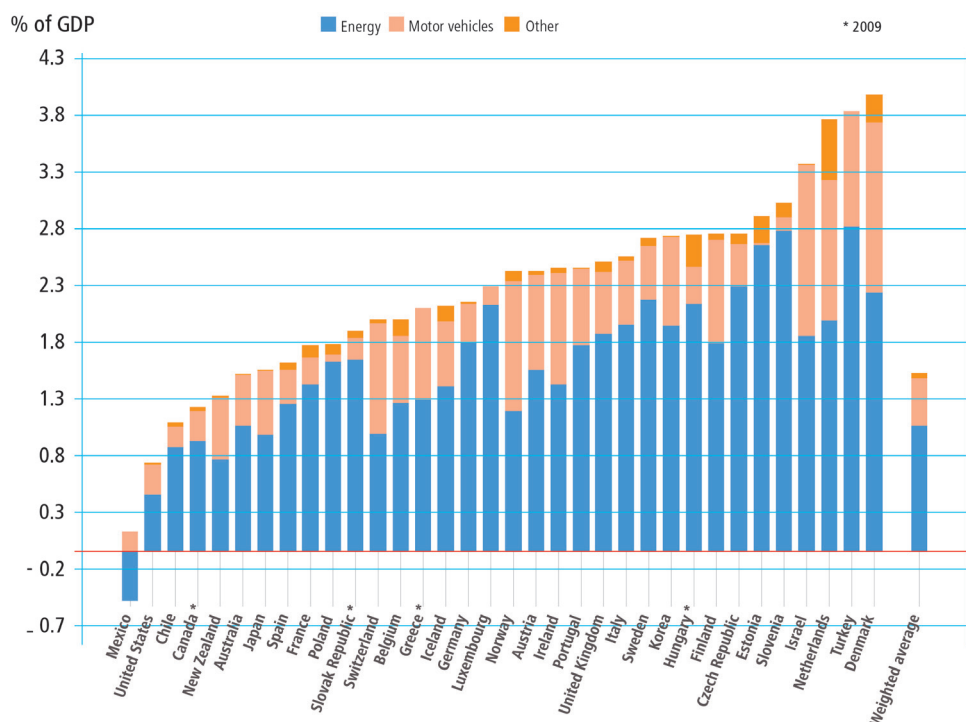
Fiscal policies are of particular importance in a green economy transition and governments have a variety of fiscal instruments at their disposal: taxing fossil fuel use or emissions in different sectors; reforming energy subsidies that promote wasteful and environmentally harmful economic activity; and supporting clean technology and sustainable production with the help of fiscal incentives. In order to promote a green and more inclusive growth, the design of fiscal policies should consider their potential social impact on, for example, low income households as well as economic and environmental impacts.

Constructive fiscal measures can reflect environmental externalities through full cost pricing of energy and transportation services. They can also provide a significant source of new revenue (see Figure 1). In the United States, for instance, it is estimated that US\$ 25 per ton of CO₂ could bring in about one percent of the country’s GDP, or more than US\$ 1 trillion over a decade. In November 2010, Vietnam passed its first law on environmental taxation and it is expected to generate between US\$ 757 million and US\$ 3 billion. In Australia, between 2010 and 2011, environmental taxes amounted to AU\$ 26 billion and accounted for 2 per cent of its GDP and 7 per cent of total tax revenues.² Moreover, the country’s newly introduced carbon price is expected to generate around AU\$ 1.6 billion by 2015, which will be directed to public finance.³

Confronted by a fiscally constrained world, fiscal policy reforms might appear to be a daunting challenge to a green economy transition. Yet, it has been observed in the past that external crises – be they fiscal, economic or environmental – often served as a catalyst for (environmental) policy reform.⁵ Moreover, fiscal consolidation could put public expenditure under close scrutiny for savings and thus help build the framework for reviewing public expenditure and find a cost-effective way to achieve distributional objectives. It is also worth noting that political acceptability of green fiscal policy reforms might be higher if they are introduced as part of broader fiscal reforms.

*UNEP defines a **green economy** as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.*

Figure 1. Environmental tax revenues (% of GDP of OECD countries, 2010)⁴



Source: Upton, S. (2012). *OECD Environmental Outlook to 2050: The Consequences of Inaction*.

The role of environmental taxes in a green economy transition

Environmental taxes are an effective and, if appropriately designed, efficient tool for environmental policy.⁶ It can also leverage and generate private financing. Evidence shows that fiscal instruments have helped increase green investment. Carbon taxes, for instance, could direct investments towards cleaner technologies and encourage energy-efficiency. Based on past experience, a few general lessons could be drawn on the impact of fiscal measures on green investment: 1) the higher the GDP of a country, the higher the share of green investment in relation to GDP; 2) the lower the interest rate, the higher the green investment; 3) an increase in crude oil price positively influences investment for renewable energy; 4) carbon pricing seems to have an important implication for green investment; 5) the presence of a feed-in-tariff (not necessarily the intensity of the tariff itself) plays an important role in increasing green investment; 6) a mandate for renewable energy, particularly for biofuels, does not seem to have a significant impact on green investment; and 7) pricing and tax measures have a clear impact on renewable energy investment.⁷

Environmental taxes have also proven to be the most effective tools in addressing environmental externalities. Carbon taxes, for instance, can shift power generation sources away from coal and reduce demand for

electricity, motor fuels and heating fuels.⁸ Moreover, environmental taxes can balance benefits and costs if they fully internalize all environmental externalities, such as traffic congestion and the negative effects of greenhouse gas (GHG) emissions. While there is a strong case for using fiscal policies to address externalities, more than 90 per cent of GHG emissions are still not covered by formal pricing.⁹

In principle, fiscal restructuring is used in relation to state revenue optimization, budget deficit control and debt-to-GDP ratio reduction. Several countries are exploiting the created fiscal dividend of environmental taxes by recycling them in order to reduce price distortion while reducing overall tax burdens and addressing social concerns. Germany, for instance, uses ecotaxes to reduce labour costs. In other cases, revenues generated from environmental taxes are used to compensate low-income households and mitigate social impacts or to support clean technology (i.e. investment

for green technology). In Barbados, environmental tax revenues are used to support its poor population, which is based on the conviction that a social framework should encompass the environment. In general, restructuring taxes has proven to be more effective in reducing overall tax burden than reducing the amount of taxes.

Reforming energy subsidies

Globally, the cost of energy subsidization is high and accounts for a significant part of GDP annually. Petroleum subsidies alone, for instance, amounted to US\$ 200 billion in 2011. It is estimated that removing US\$ 500 billion of fossil fuel subsidies could boost the global economy by around 0.3 per cent. In addition to the potential fiscal benefits, the removal of fossil fuel subsidies in developing and emerging economies could reduce global GHG emissions relative to business-as-usual (BAU) by 6 per cent in 2050. When considering that out of the US\$ 409 billion spent on fossil-fuel consumption subsidies in 2010, only US\$ 35 billion, or 8 per cent, reached the poorest income quintile (the bottom 20 per cent)¹⁰, energy subsidies appear to perform poorly as a means of supporting the incomes of poor social groups.

A good example of successful energy subsidy reform is Iran, a country with very high subsidies. Introduced in 2011, the objective of the energy subsidy reform was to raise energy prices to 95 per cent of global

UNEP launched its Green Economy Initiative in 2008, and is currently supporting over 20 countries around the world in their transition towards a green economy.

Ecological tax reform in Germany

The German Ecological Tax Reform was envisaged to shift taxes from labour towards polluting and energy intensive sectors, with a goal to reduce carbon emissions and save energy as well as create jobs.¹¹ In 1999, when the tax reform was introduced, it entailed an incremental tax rise on mineral oil for fuels, natural and liquid gas. The majority of the tax revenues generated was transferred to the country's public pension scheme in order to reduce labour costs, while a small percentage was used to promote renewable energy and energy efficiency.

According to the 2005 Ecologic report¹² commissioned by the German Environmental Agency, the tax reform created 250,000 jobs in 2003, which increased GDP by 0.5 per cent and led to significant reduction in CO₂ emissions compared to business-as-usual (BAU)¹³ and a change in behaviour resulting from the tax. The market share of environmental products and related services rose and their prices declined.

prices. A key element of Iran's national strategy to remove the subsidies was to educate the public on issues such as fiscal costs, inefficient energy use and limited distributional effects of subsidies. In addition, compensatory cash payments before the price increase, supported by extensive financial market reforms, such as the opening of bank accounts and new cash machines in remote areas, were set up. Sensitive/energy-intensive enterprises also received support. Overall, approximately 50 per cent of the US\$ 60 billion raised through Iran's subsidy reform has been expended on compensation measures and 25 per cent on affected sectors.

Globally, subsidies have also been used to stimulate investments in clean energy. In 2010, annual subsidies for large-scale renewable energy expansion amounted to around US\$ 60 billion, approximately two-thirds of which go to electricity and the remainder to biofuels). India, for instance, provides feed-in-tariff to promote wind and solar power projects. Under the Generation-based Incentives (GBI), solar power projects are provided with accelerated depreciation of 80 per cent, while in the case of wind power projects, only the windmills installed before 31 March 2012 are eligible for 80 per cent of accelerated depreciation.¹⁴ For such subsidies to be effective, however, they need to be well-targeted and closely monitored.

Several countries have also channelled their savings from subsidy removals to address other social issues. Indonesia, for instance, used the revenues from subsidy removal for poverty eradication to support marginalized populations. Jordan used the savings from the removal of subsidies in petroleum products (estimated to be 7 per cent of its GDP) to

support projects that combat unemployment and poverty, such as wage increase of state employees and food subsidies. Aid was also extended to low- and middle-income households through a cash transfer system.¹⁵

Subsidy reforms often face strong resistance from consumer groups or lobby groups that benefit from the subsidy. Other constraints, such as a lack of inter-ministerial cooperation, further challenge successful subsidies reforms. Effective communications with a wide range of stakeholders as well as technical assistance are crucial in overcoming such barriers. In particular, communicating the shortcomings of subsidies, designing a transparent programme that reallocates some budgetary savings to crucial public investments and developing well-targeted safety net measures to protect most vulnerable households could further facilitate successful subsidy reforms.

Implications of fiscal reforms and lessons learned

Green fiscal policy reforms could provide multiple benefits. In Barbados, for example, environmental taxes have contributed to the provision of solar water heaters and in Germany, it contributes to a reduction in labour costs and thus to the creation of new jobs. Nonetheless, fiscal measures and reforms can have complex implications in economic and social spheres though. In particular, fiscal reforms tend to have distributional impacts on vulnerable groups (e.g., low-income households, pensioners, single-parent households). Therefore, distributional and social objectives need to be taken into account when formulating and applying fiscal measures, such as tax exemptions, reduced tax rates or other compensation measures that could contribute to the strengthening of social safety nets would not only increase social and political acceptability of fiscal reforms but could also contribute to an equitable and fair transition to a green economy. The key to a successful green fiscal reform policy is reaching equilibrium between distributional impacts and cost-effectiveness, particularly in the prospective need for fiscal consolidation.

Lessons learned from fiscal policy reform

1. Increase transparency of fiscal reforms to build trust
2. Communicate and engage with stakeholders, including the private sector, to raise awareness of the benefits of fiscal reforms, inefficiency of current practices (e.g. subsidies), and measures to address distributional effect in order to overcome opposition
3. Reform other complementary regulatory measures in parallel
4. Gradually introduce the price increase and phasing-out of subsidies
5. Introduce targeted social programmes to mitigate negative impacts on the poor

The Green Economy Report, published by UNEP in 2011, makes a compelling economic and social case for investing two per cent of global GDP in greening 10 central sectors of the economy.

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What UNEP is doing

UNEP, in cooperation with the International Monetary Fund (IMF) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), organized a Technical Workshop on Fiscal Policies Towards an Inclusive Green Economy in October 2012 in Geneva.¹⁶ The workshop brought together representatives from both finance and environment ministries to share and discuss their experiences and good practices for driving a green economy through fiscal policy reforms. Concluding with an interactive discussion among participants, the workshop also encouraged stronger cooperation between finance and environment ministries and identified knowledge gaps for future research. Following-up on this joint endeavour, UNEP in partnership with IMF and GIZ will be launching a web-based Fiscal Policy Network for Green Economy. The objective of this virtual network is to facilitate knowledge sharing on fiscal policy reforms and support countries' green economy transition by providing web-based resources and guidance aimed at facilitating collective learning processes around green fiscal policy reforms. Building on existing knowledge and research outcomes by key partner organizations, the website will also feature good practices

and lessons learned in various thematic areas (e.g., UNEP's country case studies on green fiscal policy) in a user-friendly manner. The scope of the thematic areas covered by the network includes the impact assessment of environmental taxes and fossil fuel subsidy reforms, environmental taxes and job creation, green procurement and reporting procedure and practices of environmental taxes at the international level.

Notes

¹ This policy brief is based on the UNEP working paper "Driving a Green Economy Through Public Finance and Fiscal Policy Reform" (http://www.unep.org/greeneconomy/Portals/88/documents/ger/GER_Working_Paper_Public_Finance.pdf) and the outcomes of the Technical Workshop on Fiscal Policies jointly organized by UNEP, IMF and GIZ in Geneva, October 2012.

² *Discussion Paper: Environmental taxes in Australia – Experimental new statistics, 2000-2011*, Australian Bureau of Statistics. Available at: www.abs.gov.au/ausstats/abs@.nsf/Products/17A6A5ACF1856FFCA257AD2000E4E30?opendocument

³ The carbon price is fixed like a tax, starting at AU\$ 23 per ton with 2.5 per cent increase per annum. After that period, the market will determine the price. For information, see: Australian Government (2011), *Securing a Clean Energy Future: The Australian Government's Climate Change Plan*, CanPrint Communications Pty Ltd, Canberra.

⁴ OECD/EEA database on instruments for environmental policy; www.oecd.org/env/policies/database.

⁵ For instance, in New Zealand, agriculture subsidy reforms were driven not by a concern for the environment but rather for the economic unsustainability of the subsidy programmes themselves, which provided the catalyst for the reform process. For more details, see Vitalis, V. (2006), "Subsidy Reform in the New Zealand Agriculture Sector", in *Subsidy Reform and Sustainable Development: Economic, Environmental and Social Aspects*, OECD.

⁶ Much work is to be done in designing and implementing effective environmental taxes: many countries still subsidize rather than tax fossil fuel energy. Even those that tax energy heavily typically do so in ways that are not very effective from an environmental perspective (e.g., taxing electricity use or vehicles rather than emissions).

⁷ An IMF study shows that a 10 per cent increase in the real oil price leads to an increase of investment in renewables by the same percentage, Eyraud and Clements (2012). *Going Green*. Finance & Development, IMF. Vol. 49, No. 2.

⁸ Currently, more than 33 countries implement carbon-pricing measures.

⁹ Mooij et al. (2012). *A fiscal policy to mitigate climate change: A guide for policy makers*, IMF.

¹⁰ Knigge, M. & Gorlach, B. (2005), *Effects of Germany's Ecological Tax Reforms on the Environment, Employment and Technological Innovation*, Ecologic.

¹¹ Idem.

¹² It should be noted that using environmental tax revenues to reduce labour costs could increase employment, but the net effect may be null as corresponding rises in energy costs to businesses could negatively affect employment.

¹³ Joint report by IEA, OPEC, OECD and World Bank on fossil-fuel and other energy subsidies: *An update of the G20 Pittsburgh and Toronto Commitments*, IEA, OECD, World Bank, OPEC. Available at: www.oecd.org/dataoecd/14/18/49006998.pdf

¹⁴ KPMG. (2012). *Tax Incentives for Renewable Energy*.

¹⁵ World Bank (2010). *Subsidies in the Energy Sector: An Overview*.

¹⁶ For more details, see: <http://www.unep.org/greeneconomy/WorkshopsConferences/FiscalPolicies/tabid/105008/language/en-US/Default.aspx>

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