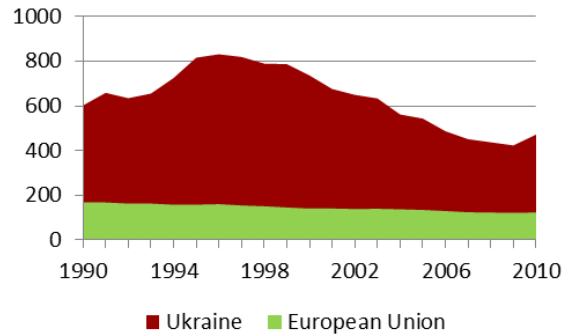




Ukraine has shown a steady decline in GDP intensity for the last decade. Yet, it is far from achieving 20% GDP intensity decrease to 2008 level, a target set by the State Economic Program for Energy Efficiency and Development of Energy Production from Renewable and Alternative Sources for 2010-2015.

The economy of Ukraine has unbalanced structure with dominating role of resource-intensive industry with high energy intensity in production. Ukraine can achieve economic growth with relatively small rise in energy consumption only by increasing share of services and science-intensive sectors coupled by reduction of energy consumption in household sector and of energy intensity of existing production.

GDP Energy Intensity (kg of oil equivalent per 2005 PPP \$1,000 of GDP)



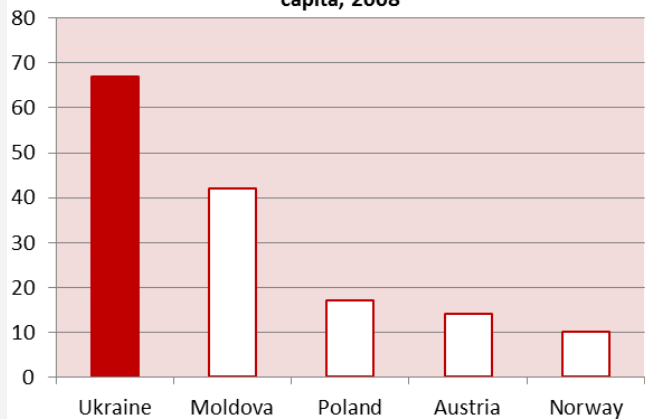
Source: World Bank.

QUALITY OF LIFE

Despite air pollution reduction in 1992-2012, Ukraine shows the highest rate of death causes by this factor in the region. Air pollution related deaths are estimated 67 per 100,000 inhabitants in Ukraine, while Europe's average is 20 per 100,000 inhabitants (ranging from 3 in Luxemburg to 56 in Bulgaria). At the same time Ukraine does not have PM10 monitoring system, one of the major air pollution indicators in European cities.

Economic development in Ukraine does not lead to improvement of the quality of life, including environmental. Negative environmental impact on human health is critically high in Ukraine and has adverse effect on human capital. This is supported by the highest in the region rates of disability-adjusted life years and death attributable to environment.

Outdoor air pollution attributable deaths per 100'000 capita, 2008



Source: WHO.

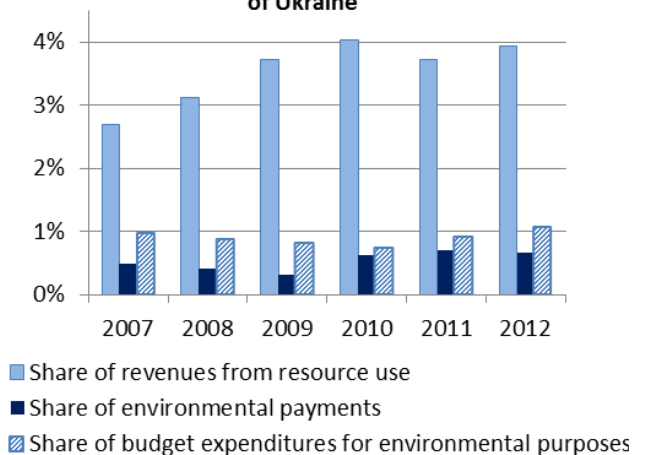
ENVIRONMENTAL PAYMENTS AND BUDGET

Payments for use of resources – unlike VAT and some other taxes - play a tiny role in the state budget revenues in Ukraine. Its share in total revenues of the state budget did not exceed 4% in 2007-2012.

European concept of environmental tax is based on polluter pays principle. Environmental taxes and payments for environmental damages in Ukraine do not fully reflect polluter pays principle.

Current environmental protection financing system is ineffective and its key elements (including environmental taxes, resource use payments and expenditures for environmental protection) remain open and require improvement.

Environmental payments in consolidated budget of Ukraine



Source: State Treasury of Ukraine.

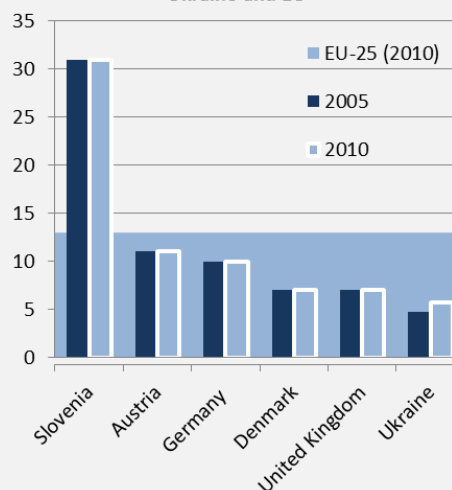
NATURE PROTECTION

Through the years since independence share of protected areas in the territory of Ukraine increased from 2,1% in 1992 to 6,05% in 2013.

The rise of protected areas did not prevent increasing load on biodiversity and risks for global ecosystems and species. One of the major problems in biodiversity protection is lack of monitoring of wild species populations. The estimations of species populations are carried out only by forestry-hunting enterprises on the territory of hunting areas.

The share of protected areas in the total area of Ukraine, while increased, is far from average in most European countries (European average is 13%) and from national targets (10,4% till 2015). Strategies and programs in environmental areas set targets for creating new protected areas, further extension of existing protected areas and objects. It is impossible to assess state of biodiversity in the context of green growth without monitoring of species of wild flora and fauna.

Protected areas share in total territory, %
Ukraine and EU



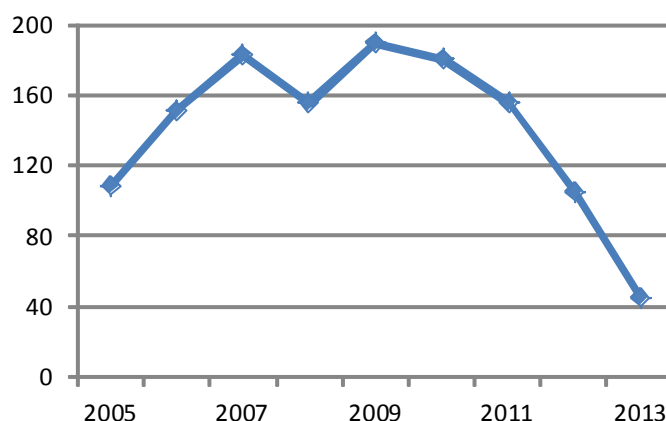
Source: Eurostat, Ministry of Environment.

INNOVATIONS

Research and technology related expenditures were declining in 2000-2012 (despite increase in absolute amounts) reaching 0,75% GDP in 2012. Trends of patents applications in areas related to green growth reveal sharp decrease by four times compared to 2009.

Research and innovation frameworks in Ukraine do not meet the needs of economic development, including green growth. Current financing amounts for science, technology, research and innovations cannot ensure innovation investment element of green growth in Ukraine.

Applications for patents in areas related to
green growth - Ukraine



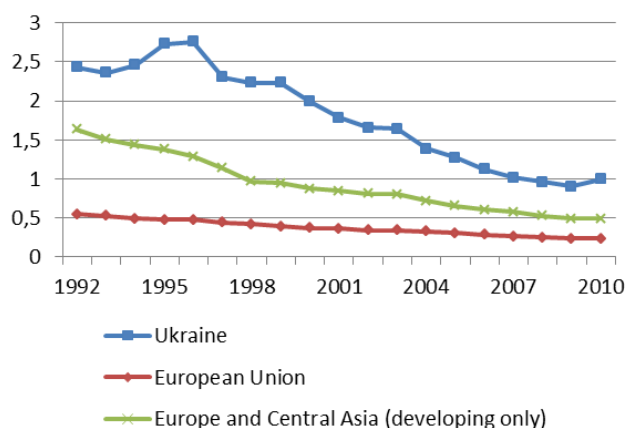
Source: State Intellectual Property Agency of Ukraine; own calculations.

CARBON PRODUCTIVITY

Carbon intensity of GDP is an important indicator of the effectiveness of state climate change policy. Yet, Ukraine has no such indicator (or any analog) as national or sectoral indicator in strategic or planning documents.

Economic growth can be achieved without substantial rise of greenhouse gases emissions subject to increase of services and science-intensive sectors coupled by reduction of energy consumption in household sector, reduction of energy intensity of existing production, promotion of renewable energy sources use and stimulating use of low carbon fuels.

CO₂ Emissions, 1992-2010
(kg CO₂ per \$ of GDP)



Source: World Bank.