



How Can Cyprus Become Carbon Neutral?

Description

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The European Union adopted the European Climate Law (Regulation (EU) 2021/1119) in 2021, which requires the EU to reach net zero emissions in 2050 – that is, if emissions still exist, they must be offset by carbon sinks through natural interventions or by technologies to remove carbon dioxide from the atmosphere.

To achieve net zero emissions in Cyprus, the share of petroleum products, which currently account for 85% of primary energy needs, must drop very significantly, first with the advent of natural gas for power generation and then with the electrification of all end-use energy sectors and the high penetration of renewables, and to be effectively zero by 2050.

Characteristics of a climate-neutral Cypriot economy

The key characteristics of a climate neutral Cyprus economy in the mid-21st century, are expected to be the following:

- Almost complete decoupling from fossil fuels in all energy end-uses (buildings, industry, transport, services, agriculture) and replacement by electricity and renewable sources.
- More than doubling of electricity demand in 2050 compared to today, due to the electrification of the entire economy.
- Combination of renewables and natural gas in electricity generation – to the extent

that gas-fired plants will capture the carbon dioxide produced. If carbon capture proves to be impractical or extremely expensive, all electricity generation will be covered by renewables.

- Energy recovery of organic municipal, industrial and livestock waste and the elimination of methane leakage from waste sites.
- In addition to electrification, use of renewable hydrogen in transport and industry, depending on techno-economic developments in the respective technologies.
- Use of clean fuels in shipping and aviation based on renewable hydrogen, depending on technologies that are still at an early stage of development.

Accelerating Green Investments

The transition to climate neutrality should be rapid, to help Cyprus align with EU's commitments under the Paris Agreement. We estimate that total public and private investments in 2031-2050 must exceed €80 billion (in constant prices of year 2022), or 9% of the GDP of the entire period. Of these, public investments should absorb close to 1% of GDP each year until 2050. This corresponds to twice as much as the public resources that will be allocated to climate action in the current decade.

Implementation of the climate neutrality scenario requires higher investments but yields significantly reduced fuel import costs (and operational costs in general) in the 2031-2050 period. Therefore, these investments can be beneficial for the economy and society, and due to lower operating costs in the medium term, free up resources that can be reinvested in the economy. If, in addition, side-benefits such as reduced air pollution and lower climate damages are taken into account, the economic benefits increase further by at least €1.5 billion in 2022 prices, for this period.

Benefits, but also challenges

The green transition could lead to negative fiscal consequences if timely measures are not taken to safeguard the fiscal balance. In addition to individual measures, it will be necessary to redirect public investment and grants from sectors that run counter to the green transition.

It should be noted, however, that the current situation, with its high dependence on fuel imports with large fluctuations in international prices, also creates fiscal pressure. Recent experience with the support measures implemented in 2022-24 shows that the

continuation of the current situation may lead to worse fiscal performance than the green transition.

The broader macroeconomic impact of the green transition is uncertain. There are important positive aspects. For example, the reduction of operation costs in the economy once green investments are implemented will free up resources for the state, businesses and households that can be invested and boost economic growth. Moreover, decoupling from fossil fuels reduces the uncertainty created by fluctuations in international oil and gas prices, which create inflationary pressures and act as a brake on investment and public spending. This will also have a positive effect on the Cypriot economy.

On the other hand, the transition to an economy with high initial capital investment and lower operating costs poses challenges for inflation, the trade balance and perhaps ultimately for growth. In order to avoid severe economic impact from the path towards climate neutrality, it is necessary to adapt the tax system to the specificities of the green economy in a timely manner, to strengthen domestic production so that many of the green investments create value added in the Cypriot economy, and to ensure availability of sufficient labour resources to implement these investments.

The Importance of Reliable Planning

Estimates of costs, capital investment and other impacts up to 2050 are inevitably subject to uncertainties. In this context, public authorities must define a credible policy mix that is centrally coordinated at governmental level and includes (a) support for green investments and innovation actions, (b) withdrawal of public resources from environmentally harmful investments and (c) a combination of green taxes and subsidies, applying EU sustainable finance criteria.

Although 2050 is 26 years away, all investments should be geared from today towards the goal of net-zero emissions in 2050, because delaying the green transition will cost more to society. Measures that currently seem too expensive and that a standard cost-benefit analysis would describe as unprofitable are likely to be necessary to achieve climate neutrality. Conversely, policies that currently appear to be the most cost-effective may lock the economy into a high-emissions path (carbon lock-in) for many years, prevent the green transition by 2050, and lead to stranded assets.

The jobs that can be affected from the path to net-zero emissions amount to less than 13% of total employment. Because the country has very little really energy-intensive industrial activity, most of these jobs are not substantially at risk, but retraining of part of

the workforce may be required.

Regardless of the above challenges, it is clear from the global scientific knowledge that has accumulated in recent years that the cost of the transition to climate neutrality is much lower than the cost of uncontrolled climate change, which can lead to dramatic physical and economic damage, with severe social impacts in Cyprus, Europe, and the wider Eastern Mediterranean and Middle East region. By highlighting both the benefits and the challenges and difficulties, we attempt to contribute to the preparation of governmental authorities for future developments, with the clear objective of making the green transition a success.

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