Policy Brief

INNOPATHS

Finance for Decarbonisation

Financing the European low-carbon energy transition requires strong, consistent policies and low interest rates

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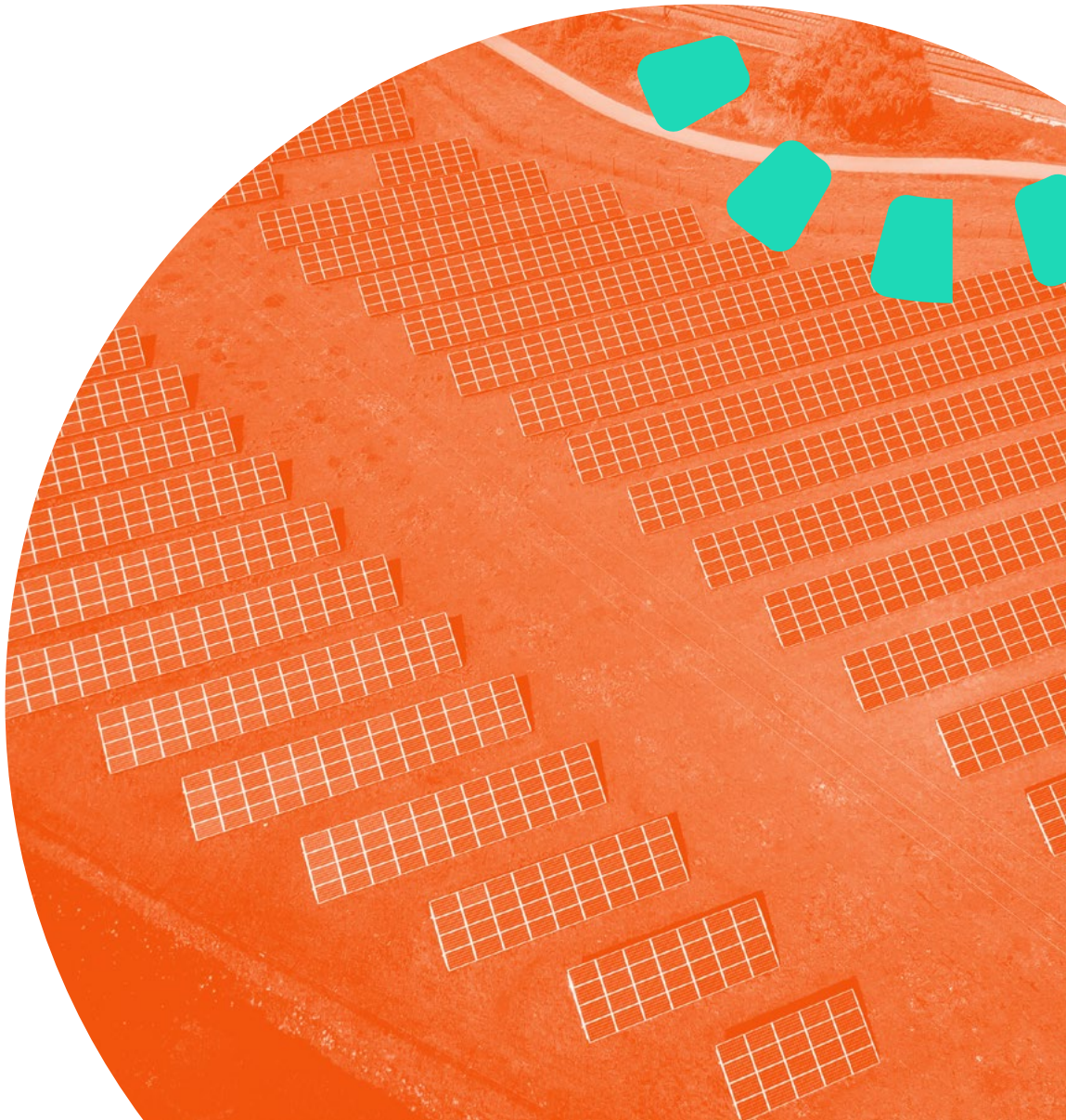
Key Messages

- Policies need to be designed and maintained that enable private capital to flow into low-cost project finance.
- Policy makers should use the window of opportunity provided by low general interest rate levels post COVID-19 to tackle the climate and the economic recovery challenges at the same time.
- Public funds and banks should be used to provide the right type of capital and enable financial mainstreaming of low-carbon assets.
- The European Green Deal provides an excellent policy framework to integrate financial and sector/ technology policy.

Background and Context

Decarbonizing the European energy sector is an investment challenge. According to estimates by integrated assessment models, reaching the two-degree target requires annual investments between 80 and 200 billion EUR in the European electricity sector alone (and even more to reach the 1.5-degree target). While the required capital is generally available from multiple sources and there is no “finance gap” per se, policy makers need to ensure, public and private investments are (re-)directed towards low-carbon energy assets. INNOPATHS’ finance research provides four key messages towards this end.



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Renewable energy assets are typically much more capital expenditure (CAPEX)-intensive than fossil fuel assets. As such, **the generation cost of renewable electricity is highly dependent on the financing conditions for the underlying assets.** Currently, these conditions are very favorable in many European countries. This is primarily driven by three factors: low general interest rates (see next message), learning in the financial sector (see last message), and policy design. Policies designed to reduce risks for investors through guaranteeing minimum revenues (e.g., via power purchase agreements at fixed tariffs or contracts for difference) are particularly effective in lowering financing costs. They are not only conducive to low risk premiums, high debt shares and long loan periods, but also enable increased use of new types of finance. Unlike conventional energy assets, low-carbon energy assets are largely financed using project finance structures, i.e. off-balance sheet. This has enabled new actors (such as project developers and banks) to drive the energy transition and lower the economic cost of the energy transition. Only relying on the EU ETS to deliver the energy transition is a risky policy strategy because it may require very high future emission prices to sustain renewable energy deployment in the presence of deteriorating financing conditions for renewables. Such deterioration may happen if interest rates rise or if renewable energy support policies are scaled back, re-introducing substantial investment risk into renewables. Hence, to continue and even expand the use of low-cost finance, policy makers should implement or – where already in place – maintain policies that enable project finance at favorable conditions for low-carbon energy assets.

Policy makers should use the window of opportunity provided by low general interest rate levels post COVID-19 to tackle the climate and the economic recovery challenges at the same time.

While the COVID-19 pandemic has many negative effects on the European economy and the energy transition, from a finance perspective it can provide an opportunity. To address the pandemic's economic fallout, monetary policy will very likely keep overnight interest rates at very low levels. Given the importance of a low cost of capital (see above), and the fact that most renewable energy projects lock-in financing cost for long periods at the beginning of the investment, **low general interest rates help reduce the financing and thus generation cost of low-carbon energy.** The cost of the European energy transition has already decreased due to the low general interest rates in Europe since the financial crisis in 2008/9. Electricity generation costs from renewable energy assets could increase considerably, should interest rates pick up again.

Governments throughout the EU should therefore use the next few years to accelerate the energy transition and build out large shares of the low-carbon energy assets required to decarbonize the energy sector. This would provide opportunities for productive infrastructure investments by the private sector, also generating a sustained economic recovery from the COVID-19 shock.

Public funds and banks should be used to provide the right type of capital and enable financial mainstreaming of low-carbon assets.

While renewable energy assets have become mainstream investments in most European countries, investors are wary of more novel low-carbon technologies. Therefore, public funds need to step in and provide the types of capital that the private financial sector does not provide sufficiently. For example, for early-stage low-carbon energy technologies, risk-carrying capital is lacking, due to long lead times (deterring for example classic venture capital investors). In addition, patient low-cost capital, e.g., from institutional investors (such as pension funds), is not flowing to less mature technologies or smaller projects. Public funds can help to crowd in private capital. Public "green" investment banks can help to de-risk new technologies, standardize financing structures (including green bonds) and risk assessments for new asset types, serve as intermediary between the financial and technology sectors, and allow new technologies to gain track record. As such, **public "green" investment banks can help make these new technologies more attractive for investors.** These banks can be financed through state budgets, EU ETS revenues, or via capital markets (backed by state guarantees).

Policy makers should therefore set up "green" public finance institutions or mandate existing institutions to support the low-carbon transition. They should also cease public banks' support for fossil fuel-based projects. For "green" public finance institutions to be able to mainstream new low-carbon assets, they need strong in-house expertise in these new technologies. At the EU level, the European Investment Bank should further strengthen its role in financially mainstreaming new energy assets. At the same time, there is a strong argument for "green" national public banks, which can deploy their country expertise.

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The European Green Deal provides an excellent policy framework to integrate financial and sector/ technology policy.

Given the importance of finance to realize a low-carbon energy transition in Europe, designing optimal sectoral policies no longer suffices. Instead, policymakers need to think about financial markets and low-carbon (energy) transitions holistically. The European Green Deal (EGD) can serve as a coordination framework across typically independent policy domains, such as energy, transport and finance. Our research has shown the importance of monetary policy for the financial attractiveness of renewable energy vis-à-vis fossil fuel projects. Similarly, recent financial market policies in the EU, many subsequent to the recommendations of the Action Plan on Financing Sustainable Growth published in 2018, can incentivize investment flows into decarbonization efforts. The EU Green Taxonomy will determine which investments are in line with sustainability and climate targets and which are not. These financial regulations for increased transparency on climate and sustainability impacts may help to provide the capital needed for the low-carbon transition. At the same time, technology- and sector-specific policy can spur innovation, bringing low-carbon technologies to readiness levels attractive for private investors. **Only the combination of financial policies and technology- or sector-specific policy can trigger investment flows into the real economy that, in turn, accelerate innovation and deployment of low-carbon technologies.** If either of the two policies is missing, policymakers risk merely shifting investments in secondary markets without necessarily accelerating the transition. When deciding how the EGD funds are used, policymakers could demand such policy integration. To guide energy-related EGD investments, energy system models should include different interest rate scenarios to factor in this important variable into policy analysis and deliberation. In sum, EU policymakers should use the opportunity to think holistically about energy policy, financial markets policy and fiscal policy to drive the energy transition and deliver real economy results with the EGD.

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Further Information

For further information, please consult the following publications:

- INNOPATHS Deliverable 4.3 at https://innopaths.eu/publications/#project-deliverables
- Egli, F., Steffen, B., & Schmidt, T. S. (2018). A dynamic analysis of financing conditions for renewable energy technologies. *Nature Energy*, 3(12), 1084-1092.
- Geddes, A., Schmidt, T. S., & Steffen, B. (2018). The multiple roles of state investment banks in low-carbon energy finance: An analysis of Australia, the UK and Germany. *Energy Policy*, 115, 158-170.
- Polzin, F., Egli, F., Steffen, B., & Schmidt, T. S. (2019). How do policies mobilize private finance for renewable energy? — A systematic review with an investor perspective. *Applied Energy*, 236, 1249-1268.
- Schmidt, T. S., Steffen, B., Egli, F., Pahle, M., Tietjen, O., & Edenhofer, O. (2019). Adverse effects of rising interest rates on sustainable energy transitions. *Nature Sustainability*, 2(9), 879-885.

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