



*advancing with ESIF financial instruments*



# Stocktaking study on financial instruments by sector

Progress to date, market needs and implications for financial instruments

**The use of financial instruments in the 'Renewable Energy' sector**

Synthesis



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The EU is close to achieving its 20% target for the share of renewable energy in the total energy consumption for 2020. To reach the target of a 32% share of renewable energy in final energy consumption at European Union (EU) level by 2030, **the EU needs to increase investment in Renewable Energy (RE)**. The objectives for renewable energy set out in the 'Clean Energy for All Europeans' package require **annual investment additional to the current trend of annually EUR 9 billion** from private and public sources from **2021 to 2030**<sup>1</sup>. This estimate takes into account the financing needs of clean energy sources and the investment associated with upgrading ageing energy infrastructure<sup>2</sup>. The investment needs for each Member State (MS) depends on the current Renewable Energy Sources (RES) share and the individual **2020 targets** set by each MS.

## 1. ESIF investments and the use of financial instruments

The largest share of ERDF and Cohesion Fund (CF) support is planned for biomass energy EUR 1.8 billion (30%), followed by other RES like hydroelectric and geothermal EUR 1.373 billion (23%), by solar energy EUR 1.2 billion (20%) and by wind energy EUR 431 million (7%); additionally EUR 1.08 billion is planned for intelligent energy distribution, which is a prerequisite for the increase of RES generation. Three MS, Poland, Hungary and Spain account for 43.8% of the ERDF/CF expenditure planned in the sector.

Almost **EUR 6 billion of ERDF/CF investments has been planned to support Renewable Energy investments** during the 2014-2020 programming period across the EU. Out of this amount, only EUR 275.9 million (12% of EUR 2.25 billion reported as eligible costs for RE) is currently allocated to financial instruments in three MSs: Poland, Hungary, and Greece. The main form of finance offered by the financial instruments are loans. The individual approaches adopted by the three MSs appear different, proving that ERDF/CF-supported financial instruments in this sector can be adapted to local/national needs and sectoral strategies. For instance:

- Poland has allocated 9% of its EUR 592 million available resources to financial instruments, whereas Hungary allocated 39% of its EUR 508 million and Greece 81.5% of EUR 32 million; while
- In Poland, the most important sector for investments in RES is in photovoltaics (PV), whereas in Hungary and Spain it is in biomass.

## 2. Market opportunities

For the 2021-2027 estimated EUR 63 billion investment in RES are needed to achieve the 2030 targets. Most of the investment is expected to be raised by the private sector and to a lesser degree from the public sector. In order to raise the necessary financing, financial instruments are needed to make the investments bankable, ESIF financial instruments can play an important role in this.

1 Estimated based on Impact Assessment for the amendment of the Energy Efficiency Directive, SWD(2016) 405.

2 Rademaekers, K. et al, 2017a. European Energy Industry Investments. Study for the European Parliament, ITRE Committee.  
Available here: [http://www.europarl.europa.eu/RegData/etudes/STUD/2017/595356/IPOL\\_STU\(2017\)595356\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2017/595356/IPOL_STU(2017)595356_EN.pdf).



**Wind energy** is the RES with the highest share in energy production in the EU. In 2017, output reached 11.2% of the total electricity generated in the EU. Investment in wind energy in 2017 amounted to almost EUR 24 billion. Most of the investments were financed with corporate finance. Project finance amounted to 23% of the investment volume in large-scale investments, especially off-shore wind installations. The investment needs in the sector at the EU-level are estimated at EUR 474 billion by 2030<sup>3</sup>.

The share of electricity generated by **PVs** in the EU represented 3.4% of the EU’s total electricity output. Total investments in PVs, both large scale installations and small installations, for example in residential and commercial buildings, totalled EUR 5.7 billion in 2017. With regard to the financing type, corporate finance dominates with around 78% of investment volume and project finance representing 21%. If the current growth continues, it is expected that by 2030 PVs will provide 7% of the total EU electricity output<sup>4</sup>. The declining cost of installations make electricity generation from PVs increasingly competitive to fossil fuels.

The primary energy production from **biogas** amounts to 2% of the total energy production. Biogas is used for heat and for electricity production. In terms of electricity output, the EU biogas sector represents about 1.5% of the total electricity generation. The sub-sector has been facing a slower growth since 2011 and in 2017 only three plants were signed off worth in total EUR 95 million financed through corporate finance. The sector faces regulatory constraints regarding the use of food crops and less attractive remuneration schemes. The current output is in line with the 2020 target. As for 2030 targets, the biogas sub-sector is given high importance<sup>5</sup>. This may be attained if biogas in the future is based on the use of by-products and organic waste<sup>6</sup>.

**Biomass** from wood or straw is used for heat and for electricity generation. Installations range from stoves and ovens in households to large power plants for electricity generation. Electricity output generated by biomass in the EU amounts 2% of total electricity output. Investments in Europe decreased considerably in 2017 to EUR 679 million, down from EUR 5.1 billion in 2016 with 72% being financed through corporate finance. The growth of the sector depends on the availability of feedstock from forestry and agriculture, and on incentive schemes. Investment needs are estimated to be EUR 527 million per year until 2030 for all bio-energy sources (solid mass, biofuels, and biogas).

Less-established and less mature RES, such as geothermal, solar thermal, ocean energy, and biofuels have a significantly smaller share of the contribution into the total energy output (less than 5% for all four RES together) and for the next years very limited investment needs are expected.

**Financial instruments can help bridge the investment gap between current deployment and the EU targets for RES.** Thanks to their **leverage effect**, they can attract private financiers and participate to the annual additional EUR 9 billion RES spending needed to reach the EU’s 2030 target. During the 2021-2027 programming period, more ERDF/CF-supported financial instruments (especially providing long-term debt) would facilitate investment in RES technologies.

3 Rademaekers, K. et al 2017b. Assessing the European clean energy finance landscape, with implications for improved macro-energy modelling. Study for the European Commission, DG Energy.

4 Using PRIMES model: European Commission, the EU Reference Scenario 2016 Energy, transport and GHG emissions Trends to 2050.  
Available here: [https://ec.europa.eu/energy/sites/ener/files/documents/ref2016\\_report\\_final-web.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/ref2016_report_final-web.pdf).

5 EurObserv’ER, 2018.

6 Rademaekers, K. et al 2017b.



### 3. Barriers

Main challenges for financing RES are:

- **Competition with grants and other subsidies**, most countries provide support to RES through investment grants or through operational subsidies. On the one hand, this makes **State aid rules very complex** and, on the other hand, grants may make projects economically viable, but not yet bankable. The general trend to move away from subsidies for the competitive RES technologies, PV and wind, is increasing the opportunities for financial instruments;
- **Fragmentation of ERDF/CF resources** across different Operational Programmes (OPs) and priority axes which makes it difficult to develop financial instruments of sufficient scale and add complexity in the governance and monitoring of financial instruments;
- **Eligibility criteria that are defined too narrow**. Often eligibility is defined with grant support in mind, which can narrow the scope for financial instruments. Revolving support would allow to support a broader range of projects and make support from grants and financial instruments complementary; and
- **Cumulation of State aid**. Specific to larger projects in the RE sector is the difficulty in combining operational and investment aid. Operational aid, such as, for example, feed-in tariffs, may have a constraining effect on the potential involvement of financial support to the investment costs of a RES project. Challenges also exist in calculating the aid component of investment and of operational aid.

### 4. Potential for the use of financial instruments for Renewable Energy

The role of financial instruments depends on the maturity of the RES technology. The deployment of financial instruments can **catalyse additional private sector investments** in established RES, thus increasing the scale of investment available. The decreasing cost of wind and solar electricity generation, making them competitive with fossil fuels, may consequently shift the nature of the support needed from making projects economically viable to making them bankable, thus increasing the demand for financial instrument support. On the other hand, **financial instruments can accelerate the involvement of private funding** in the financing of less-established RES, by covering risks associated with emerging technologies and innovative business models. In that context, various financing schemes involving financial instruments are possible including:

- **Designing combined financial instruments financing both RES and energy efficiency investments**. Small scale RE investments, such as rooftop PVs, should be integrated with energy efficiency investments creating additional scale and using synergies of both types of investments. This would also allow the use of **Energy Performance Contracting (EPC)**; the Energy Service Companies (ESCOs) undertaking energy efficiency measures in combination with RES investments. Financing **EPC should take into account the specific needs of the EPC business model**, such as selling future receivables/forfeiting.
- **Financing lease instruments for RES installations**. This approach can increase the affordability of removable RES assets, for example rooftop PVs or biomass boilers that can be leased to Small and Medium-sized Enterprises (SMEs) and/or households. A financial instrument should allow the inclusion of leasing or guarantees to leasing companies in its design.



- **Long-term loans for established RES.** For projects within the scope of established RES, financial instruments may offer debt with longer grace periods and long payback periods.
- **Guarantees, subordinated debt and equity for less-established RES.** The technological risk of marine RES or the drilling risk of geothermal installations can be covered by a financial instrument and thus reduce the risk premium for the debt provided (by a private market player).

## 5. Key enabling factors for the use of financial instruments

Market stakeholders reported during interviews, focus groups and a survey, that key enabling factors that may facilitate the deployment of ERDF/CF supported financial instruments in the sector include:

### 5.1 Transferring knowledge on financial instruments in the sub-sector

Experience gained from ESIF and non-ESIF financial instruments in other sectors should be transferred to RES, taking into account the sector specific needs. Knowledge transfer between managing authorities within a MS, and peer-to-peer learning between MS have been pointed out as one of the factors enabling the deployment of financial instruments. The experience from energy efficiency financial instruments is especially suitable for the set-up of financial instruments dedicated to RES.

### 5.2 Integrating RES financing into financial instruments for SMEs

Financial instruments for RES in enterprises, especially SMEs, may be integrated in existing standard SME financial instruments. The part of the financing addressing the RES component could contain additional incentives, such as a lower interest rate, longer grace period or Technical Assistance support.

### 5.3 Combining grants with financial instruments

The possibility to combine grants with financial instruments has the potential to accelerate the shift towards an increased use of financial instruments. The Common Provisions Regulation (CPR) proposal for the 2021-2027 programming period allows for **integrating grant elements, including investment grants, in financial instruments**. It is expected that this will significantly simplify the combination of different forms of support. The stakeholders' consultation showed that loans with capital rebates are considered especially attractive for final recipients in the RE sector. These new opportunities should be fully promoted.



## 5.4 Designing financial instrument-friendly Operational Programmes

It is advisable to concentrate contributions to one financial instrument within the same OP, in order to avoid multiple Funding Agreements and in order to engage with multiple managing authorities and ensure the necessary critical mass for financial instruments. Also, there should be a **differentiation between the eligibility criteria for grants, which are meant to be stricter, and those for financial instruments**, that should have a much broader eligibility. Through this, it is possible to support projects with the highest impact with grants, and other projects with repayable instruments.

## 5.5 Providing Technical Assistance

Technical support should be provided on various levels. Support to managing authorities in order for them to build financial instrument specific capacities. It is also important to provide **project development assistance** to potential final recipients to make their projects investment-ready. Additionally, **legal expertise**, particularly regarding State aid should be provided in the design phase of the financial instrument. Awareness-raising of the benefits brought by financial instruments should also be promoted.

The EU is close to achieve its 20% target for the share of renewable energy in the total energy consumption for 2020. The target to further increase the EU-level RES share to 32% for 2030 will constitute a bigger challenge for most of the MS and will thus require additional investment. Financial instruments addressing the RES investment gap can provide long-term debt and guarantee products depending on the needs of both, the targeted RES technology and of the project promoter. Barriers to RES financing in Europe exist on both demand and supply-sides. Financial instruments may be part of the solution, especially when integrating RES into energy efficiency or SME financial instruments. Barriers to the development of such ERDF / CF-supported financial instruments however also exist. In this context, key enabling factors for a better uptake of ERDF / CF-supported financial instruments in the RE sector are financial instrument friendly OPs and the combination of financial instruments with grants. Technical Assistance to managing authorities, financial intermediaries and project promoters would also facilitate the implementation and the uptake of such instruments.

