



Horizon Europe: Harnessing innovation in renewables to deliver for EU citizens

Renewable energy technology has been crucial in reducing the EU's greenhouse gas emissions and delivering economic growth. But if the Paris Agreement goals are to be met, much remains to be done:

- Despite rapid growth, in 2017 solar and wind power still represented only 15.6% of total gross EU electricity generation¹ – a fraction of their full potential;
- 81% of the EU's heating and cooling is still supplied by fossil fuels²; -and-
- Future innovations in transport and heating/cooling must be powered by renewable energy, if they are to genuinely contribute to decarbonisation efforts

Improvements in mature renewable technologies and the development of new renewable technologies are fundamental in the fight against climate change.

They have also delivered immediate benefits for EU citizens. More than 1 million jobs have been created; a new multi-billion industry has been established; security of supply has been strengthened; air pollution has reduced; and power is being supplied to consumers at unprecedentedly low prices.

EU research and innovation policy is a key tool to deliver these industrial, social and climate benefits.

Horizon Europe must therefore set ambitious objectives for the progression of renewable energy technology, with corresponding budgets. The actions taken or not taken up to 2027 will determine whether the Paris Agreement targets are met.

We cannot afford for Horizon Europe to become a missed opportunity.

1. An 'area of intervention' dedicated to renewables

Renewable energy sources are the enablers of the energy transition, delivering sustainable power production, heating and cooling, transportation and industry. Sufficient focus needs to be maintained on developing and improving renewable technologies. An exclusive area of intervention for renewables within the 'Climate, Energy & Mobility' cluster will maintain this focus.

While they could help decarbonise the European industry, CCS and CCUS will not contribute to the EU's energy 'supply'. The area of intervention "Low-Carbon and Clean Industries" in the "Digital and Industry" is a more logical and consistent home for these technologies.

¹ 'Electricity generation statistics – first results', Eurostat, April 2018 – see http://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity_generation_statistics_%E2%80%93_first_results

² Eurostat, SHARES 2016

Proposition: Create a dedicated ‘area of intervention’ for renewables

Annex to Decision COM 2018/436, Pillar II

<h3>4.2.2. Energy Supply</h3> <p>The EU aims to be world leader in affordable, secure and sustainable energy technologies improving its competitiveness in global value chains and its position in growth markets. Diverse climatic, geographical, environmental and socio-economic conditions in the EU as well as the need to ensure energy security and access to raw materials, dictate a broad portfolio of energy solutions, including of non-technical nature. As regards renewable energy technologies, costs need to decrease further, performance must improve, integration into the energy system must be improved and breakthrough technologies need to be developed. As regards fossil fuels, decarbonising their usage will be essential to meet the climate objectives.</p> <p><i>Broad Lines</i></p> <ul style="list-style-type: none">– Renewable energy technologies and solutions for power generation, heating and cooling, sustainable transport fuels and intermediate carriers, at various scales and development stages, adapted to geographic conditions and markets, both within the EU and worldwide;– Disruptive renewable energy technologies for new applications and breakthrough solutions;– Technologies and solutions to reduce greenhouse gas emissions from fossil fuel-based power generation via CO2 capture, utilisation and storage (CCUS).	<h3>4.2.2. Renewable Energy Supply</h3> <p>The EU aims to be world leader in affordable, secure and sustainable energy technologies improving its competitiveness in global value chains and its position in growth markets. Diverse climatic, geographical, environmental and socio-economic conditions in the EU as well as the need to ensure energy security and access to raw materials, dictate a broad portfolio of renewable energy solutions, including of non-technical nature. As regards renewable energy technologies, Significant improvements need to be made on system integration. The energy transformation will challenge the EU to lead in developing solutions for an upgraded market design including the provision of grid and system services by renewables. The EU will also have to strive to the decarbonisation of heating and cooling, notably the supply of energy to the building stock according to Energy Performance of Buildings Directive (EU) 2018/844. This is needed to make the most of renewable energy solutions. To achieve the necessary deployment levels of clean energy technologies, costs need to decrease further and performance must improve, integration into the energy system must be improved which requires support for incremental research in advanced technologies. and In addition, new breakthrough technologies need to be developed. As regards fossil fuels, decarbonising their usage will be essential to meet the climate objectives.</p> <p><i>Broad Lines</i></p> <ul style="list-style-type: none">– Renewable energy technologies and solutions for power generation, heating and cooling, sustainable transport fuels and intermediate carriers, at various
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	<p>scales and development stages, including intermediate carriers, adapted to geographic conditions and markets, both within the EU and worldwide;</p> <ul style="list-style-type: none"> – Renewable energy technologies and solutions for shifting away from fossil fuels in the supply of energy for heating and cooling for industry, buildings and services; – Disruptive renewable energy technologies for new applications and breakthrough solutions; – Technologies and solutions to reduce greenhouse gas emissions from fossil fuel-based power generation via CO2 capture, utilisation and storage (CCUS). – Next generation technology solutions, including the development of new materials, manufacturing processes and operations methods to increase industrial competitiveness in clean energy technology.
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2. A €25bn budget for the ‘Climate, Energy & Mobility’ cluster

The EU has recently pledged to achieve ambitious climate objectives under the Paris Agreement and through its own regulatory framework (2030 and 2050 targets).

To meet those commitments, the European Commission recently announced that Climate Action would represent 25% of the next European budget. 35% of Horizon Europe’s budget is ‘expected’ to contribute to climate-related objectives, but experience with Horizon 2020 has shown that such commitments have not been met in the past. The EU Court of Auditors has found that only 24% of the Horizon 2020 budget was being allocated to climate.³

The cluster ‘Climate, Energy and Mobility’ contains key levers that will deliver on climate objectives. Allocating a larger budget to this cluster is the logical, safest, and most transparent way of ensuring that this 35% spending commitment is delivered in practice.

Proposition: Increase the budget allocation to ‘Climate, Energy and Mobility’ to €25bn

Regulation 2018/0224 (COD)

<p>Article 9 budget</p> <p>2) The indicative distribution of the amount referred to in paragraph 1, first half sentence, shall be:</p>	<p>Article 9 budget</p> <p>2) The indicative distribution of the amount referred to in paragraph 1, first half sentence, shall be:</p>
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³ ‘Spending at least one euro in every five from the EU budget on climate action: ambitious work underway, but at serious risk of falling short’ European Court of Auditors, 2016 – see https://www.eca.europa.eu/Lists/ECADocuments/SR16_31/SR_CLIMATE_EN.pdf

b) (4) EUR 15 000 000 000 for cluster 'Climate, Energy and Mobility';

b) (4) EUR 25 000 000 000 for cluster 'Climate, Energy and Mobility';

3. Safeguarding of the climate mainstreaming objective

A larger budget for the 'Climate, Energy and Mobility' cluster will still not be sufficient in isolation to meet the target for 35% spending on climate-related actions.

The EU Court of Auditors has found that the same 35% commitment in Horizon 2020 was not met, with only 24% of the budget being allocated to climate.⁴ The Court made a number of recommendations to avoid the same mistakes happening again. These recommendations need to be 'hardwired' into the Horizon Europe legislation.

Regulation 2018/0225 (COD)

Recitals

5) Reflecting the importance of tackling climate change in line with the Union's commitments to implement the Paris Agreement and the United Nations Sustainable Development Goals, this Specific Programme will contribute to mainstream climate actions and to the achievement of an overall target of 25 % of the EU budget expenditures supporting climate objectives. Actions under this Specific Programme are expected to contribute 35% of the overall financial envelope of the Specific Programme to climate objectives. Relevant actions will be identified during the Specific Programme's preparation and implementation, and reassessed in the context of the relevant evaluations and review processes.

Recitals

5) Reflecting the importance of tackling climate change in line with the Union's commitments to implement the Paris Agreement and the United Nations Sustainable Development Goals, this Specific Programme will contribute to mainstream climate actions and to the achievement of an overall target of 25 % of the EU budget expenditures supporting climate objectives. ~~Actions under this Specific Programme are expected to contribute~~ At least 35% of the overall financial envelope of the Specific Programme ~~must support actions or part of actions to climate objectives that will directly help to deliver on the EU's commitments in the Paris Agreement, the 2030 energy targets of 32% renewable energy and a net-zero greenhouse gas emissions economy by 2050.~~ Relevant actions will be identified during the Specific Programme's preparation and implementation, and reassessed in the context of the relevant evaluations and review processes. ~~The Commission will set out any corrective measures to reach this 35% target or more in its State of the Energy Union report under Article 29 of Energy Union Governance Regulation.~~

⁴ Ibid

<p>Article 9 Budget</p> <p>3) In order to respond to unforeseen situations or to new developments and needs, the Commission may, within the annual budgetary procedure, deviate from the amounts referred to in paragraph 2 up to a maximum of 10%. No such deviation shall be allowed in respect of the amounts referred to in points (b) (6) of paragraph 2 of this Article and the total amount set out for Part 'Strengthening the European Research Area' of paragraph 2 of this Article.</p>	<p>Article 9 Budget</p> <p>5) In order to respond to unforeseen situations or to new developments and needs, the Commission may, within the annual budgetary procedure, deviate from the amounts referred to in paragraph 2 up to a maximum of 10%. A greater deviation in the positive direction will be possible under point (b) (4) in order to comply with any new spending target or targets agreed under the Mission Innovation initiative launched at COP21. The Programme's financial envelope may also be increased to comply with such a target or targets. No such deviation shall be allowed in respect of the amounts referred to in points (b) (6) of paragraph 2 of this Article and the total amount set out for Part 'Strengthening the European Research Area' of paragraph 2 of this Article</p>
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4. Allowing synergies and complementarity between Horizon Europe and other EU funds and programs

Renewable energy project developers usually apply to more than one EU funding programme for their demonstration projects. The later often combine grant funding (H2020, ESIF funds, national grants) with public loans (EIB InnovFin EDP). This process is long, complex and often uncertain due to the different timelines for answers and project start.

Allowing **combined and blended** calls is a good solution to strengthen synergies among EU programmes/funds.

Such calls would greatly reduce the administrative burden on businesses while increase the likeliness to see projects reach financial close.

Proposition:

- **Add the EMFF to the list of European Funds that can be combined with Horizon Europe**
- **Maintain articles 2 (24 & 25), article 6 §2 and Chapter V in Regulation 2018/0224 (COD)**

<p>Article 11 Complementary and combined funding</p>	<p>Article 11 Complementary and combined funding</p>
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<p>Actions awarded a Seal of Excellence certification, or which comply with the following cumulative, comparative, conditions:</p> <p>(a) they have been assessed in a call for proposals under the Programme;</p> <p>(b) they comply with the minimum quality requirements of that call for proposals;</p> <p>(c) they may not be financed under that call for proposals due to budgetary constraints, may receive support from the European Regional Development Fund, the Cohesion Fund, the European Social Fund+ or the European Agricultural Fund for Rural Development, in accordance with paragraph 5 of Article [67] of Regulation (EU) XX [Common Provisions Regulation] and Article [8] or Regulation (EU) XX [Financing, management and monitoring of the Common Agricultural Policy], provided that such actions are consistent with the objectives of the programme concerned. The rules of the Fund providing support shall apply.</p>	<p>Actions awarded a Seal of Excellence certification, or which comply with the following cumulative, comparative, conditions:</p> <p>(a) they have been assessed in a call for proposals under the Programme;</p> <p>(b) they comply with the minimum quality requirements of that call for proposals;</p> <p>(c) they may not be financed under that call for proposals due to budgetary constraints, may receive support from the European Regional Development Fund, the Cohesion Fund, the European Social Fund+, the European Maritime and Fisheries Fund or the European Agricultural Fund for Rural Development, in accordance with paragraph 5 of Article [67] of Regulation (EU) XX [Common Provisions Regulation] and Article [8] or Regulation (EU) XX [Financing, management and monitoring of the Common Agricultural Policy], provided that such actions are consistent with the objectives of the programme concerned. The rules of the Fund providing support shall apply.</p>
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5. Helping emerging renewable technologies cross the ‘valley of death’

The European Union has always been good at funding Research and Development but historically less so when it comes to bring new technologies to market.

Emerging renewable technologies are risky and capital intensive. Access to finance and insurance is thus a major issue.

The new European Innovation Council is a move in the right direction. Its ‘Accelerator’ component would provide the missing link in EU financing – i.e. a mix of grant funding and equity/repayable funding – while decreasing the administrative burden on companies thanks to the single decision process. The ‘Pathfinder’ will help earlier technology progress to pre-commercial stages.

The Strategic Planning exercises are opportunities to link the Accelerator and Pathfinder initiatives with other EU future programmes, such as the Innovation Fund and InvestEU. Proposition:

- **Maintain the European Innovation Council proposal and its budget**

Where?

- [Article 4, 9 Regulation 2018/0224 \(COD\)](#)
- [Annex to Regulation COM 2018/436](#)