

How to Boost the EU's Economy, Energy Sovereignty, and Climate Protection through Smarter Infrastructure Spending.

September 2018

Summary

The transport sector is the EU's largest source of greenhouse gases, representing 27% of the bloc's total emissions. The EU must invest in infrastructure that reduces these emissions and sets member states on a trajectory towards achieving their binding 2030 climate targets. The European Commission presented proposals for the 2021-2027 EU budget in May and June 2018. The two main regulations relevant to transport spending are the Connecting Europe Facility (CEF) and the European Regional Development Fund (ERDF).

Investing in zero-emission transport will improve the EU's energy sovereignty, create jobs and support the development of EU industry, ensuring the EU's competitiveness internationally. Furthermore, such investment will reduce air pollution, make EU cities much better places to live and help member states meet their 2030 climate targets. This is the EU we should be building.

How the EU budget can be better spent:

1. **Prioritise zero-emission transport:** Zero-emission projects (i.e. electric and hydrogen) should be prioritised in the 2021-2027 EU spending period. Such technology sets the EU on a trajectory to meet climate goals and improves energy sovereignty. Zero-emission projects should benefit from higher co-financing rates and be considered 100% climate spending in counting their contribution to the overall climate spending objective.
2. **No support for fossil fuel transport infrastructure:** the EU should end its support for fossil fuels in transport and in particular for fossil gas. Fossil gas projects such as LNG refueling infrastructure for trucks or ships should not be eligible for EU funding, and should certainly not be considered climate spending.
3. **Prioritise zero-emission urban transport:** 75% of Europeans live in urban areas and 80% of EU GDP is created in cities. A much larger portion of the budget should be devoted – and accessible – to European cities so they can build the high quality, zero-emission transport infrastructure they need. The earmarking for urban spending in the ERDF should be increased to 15% (from the proposed 6%) and a fund should be created under CEF for zero-emission urban spending. The Wifi4EU model - with radically enhanced technical design and implementation - should be the structural basis for such a fund as it allows for municipalities to directly apply for grants (reducing the administrative burden).

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1. Context

The European Commission published legislative proposals throughout May and June 2018 on the EU budget for the period 2021 to 2027. The EU budget will play a large role in investing in future transport infrastructure, as well as directing private finance to specific types of infrastructure projects. Historically, transport has been one of the key areas of investment for the EU. Between 2014 and 2020, the EU budget has spent over €100 billion on co-financing transport infrastructure. As infrastructure is maintained once constructed, it is vital that the EU is investing in future-proof infrastructure that is helping to build a future that we want.

The transport sector is the EU's largest source of greenhouse gas emissions, representing 27% of the bloc's total emissions¹. If action is not taken to reduce these emissions then the EU will have caused irreversible damage to the planet. Furthermore, **a failure to invest in zero-emission transport infrastructure would harm the EU's economy as it would increase the EU's dependency on imported oil and gas, weakening the EU's energy sovereignty while reducing the competitiveness of EU industry abroad.**

The EU budget has several spending schemes relevant to transport: the Connecting Europe Facility (CEF), the European Regional Development Fund (ERDF), the Cohesion Fund, Horizon 2020, and InvestEU (formerly "EFSI"). This paper will outline ways in which spending should prioritise zero-emission infrastructure. The recommendations are applicable to all of the listed spending programmes of the EU.

¹ <https://www.eea.europa.eu/publications/approximated-eu-greenhouse-gas-inventory-2016>

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Natural gas vehicles: High costs, few benefits

| vs. | Natural gas emissions | | Natural gas costs | |
|--------------------|-----------------------|-----------------|-------------------|---------------|
| | CO ₂ | NO _x | Operator costs | Societal cost |
| Diesel cars | | | | |
| Petrol cars | | — | | |
| Vans | | | | |
| Small rigid trucks | | — | | |
| Articulated trucks | | — | | |
| Buses | | — | | |

Big increase
 Small increase
 Big reduction
 Small reduction
 — No change
 Big cost increase
 Small cost increase

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Source: Adapted from Ricardo Energy & Environment

1.1 The Role of Gas

Fossil gas has no meaningful - and when including methane leakage and upstream effects in almost all cases no - climate benefits compared to oil based fossil fuels. As a fossil fuel it has no future in a decarbonised transport system. This was shown in a 2016 Ricardo AEA report on the climate impacts of gas² (see graph on the left) and a soon to be published report by T&E based on the most recent testing and literature, which confirms these findings. Hence, CNG and LNG should compete on a level playing field with other fossil fuel technologies such as diesel, petrol or marine fuels and receive no additional public support.

This means gas infrastructure should not be supported with EU funds and that gas should not be counted towards the EU's 25% climate spending target. The Commission proposals (CEF and ERDF) are vague on whether gas for transport could be supported

and counted as climate spending³ and these provision should be amended and clarified to clearly state that fossil gas, be it CNG or LNG, gets a 0% climate rating.

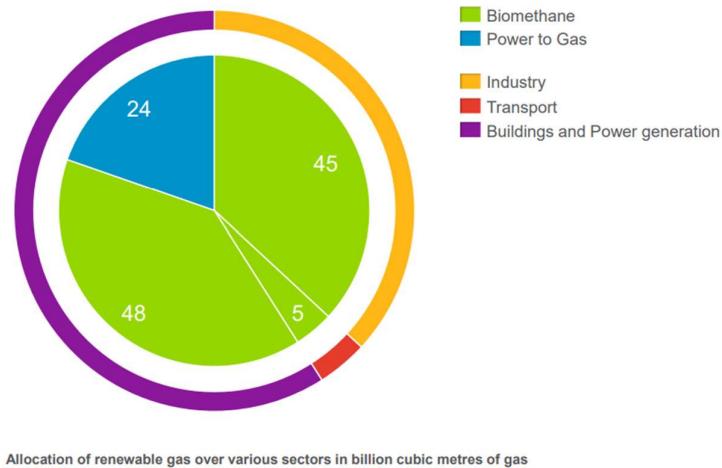
There is also biomethane, which is gas created from waste or crops (e.g. maize). Waste based biomethane has potential to reduce emissions at a small (most likely rural or urban) scale but this cannot be scaled for EU-wide

²https://www.transportenvironment.org/sites/te/files/publications/2016_02_TE_Natural_Gas_Biomethane_Study_FINAL.pdf

³ Paragraph 4 of the introduction to CEF outlines a 60% spending target on projects that help meet climate objectives. The paragraph continues to say that “alternative fuels” (as defined by Directive 2014/94/EU) would be considered 100% climate spending whereas “gas infrastructure - if enabling increased use of renewable hydrogen or bio-methane” would be 40%. Article 6 of the ERDF proposal commits to stopping investment in the “production, processing, distribution, storage of combustion of fossil fuels” but includes an exception for investment related to clean vehicles as defined in the Clean Vehicles Directive (Directive 2009/33/EC). This leaves a door open for fossil gas investment.

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use. A recent study by ECOFYS for the gas for climate consortium⁴ shows that even under very optimistic assumptions (high estimated potential, including hydrogen and crops) biomethane would not play more than a niche role in transport. This is because renewable gas will be needed to decarbonise the housing, industry and power sector that are currently relying on fossil gas.



The business model for LNG (usually shipped from Qatar or in the future USA) is such that LNG is brought ashore in ports and distributed from there. If used for trucks or ships the chance of LNG being (partially) renewable is almost non-existent. The reality is that LNG will almost certainly be fossil gas. Hence, LNG projects should not be supported or counted towards climate targets. At local or rural level biogas could play a limited role in powering 100% biomethane buses or refuse trucks from a production site nearby. Governments could consider supporting such “100% biomethane” projects under the ERDF funds - as part of the

urban earmarking - but given its inherently local and niche nature biomethane has no place under CEF. However, zero-emission infrastructure should always have priority when selecting projects. This is discussed in more detail in Section 2 of this paper.

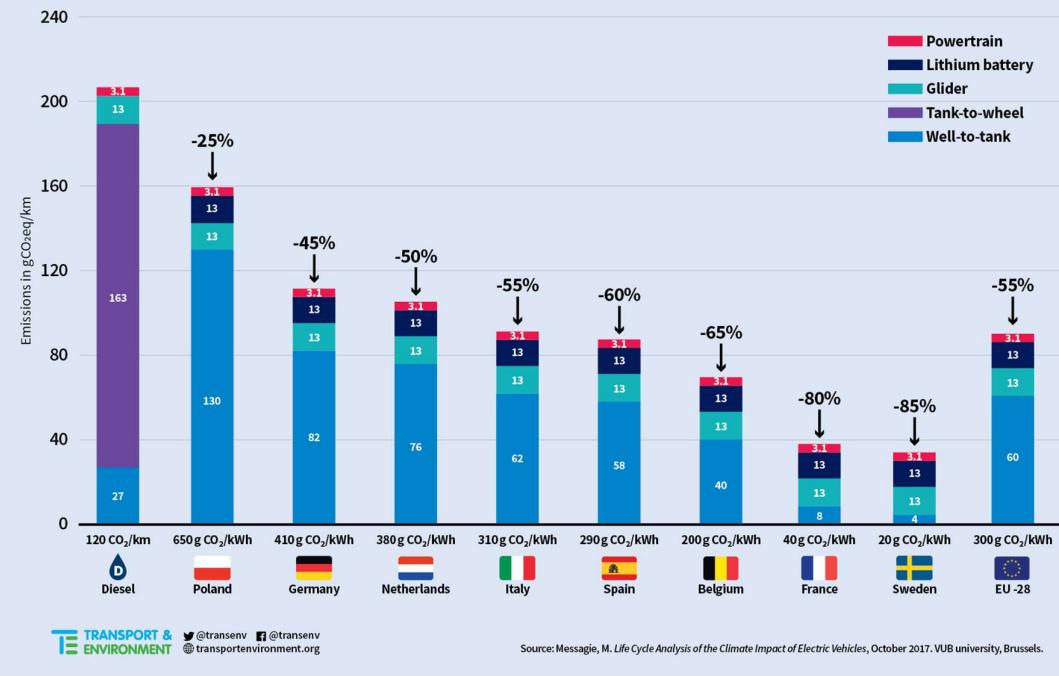
1.2 The importance of electric transport

Electric transport is the greenest form of transport. This is due to zero tailpipe emissions during the operation of the vehicle. Furthermore, even when considering a well-to-wheel analysis, electric vehicles are on average 55% cleaner than traditional vehicles if the current EU electricity grid is considered. As the EU grid becomes cleaner (with the help of CEF Energy investments), the climate benefit of electric vehicles will further improve.

⁴ https://www.gasforclimate2050.eu/files/files/Ecofys_Gas_for_Climate_Feb2018.pdf

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Electric vehicles' climate impact in different energy mixes



There are other ways to have truly zero-emission energy sources but the energy required to produce them makes electric transport (i.e. charging a battery) far more efficient. If we are to source the electricity from renewables then the path to fully zero-emission transport is most achievable if we are to invest in electric infrastructure.

The EU needs to be a leader in electric transport. There will need to be investment in improving battery storage, cleaning/improving the grid, and deploying infrastructure to charge electric vehicles. As electric transport is the greenest form of transport, it should take priority when assessing projects applying for EU funds. Furthermore, electric projects should receive a higher level of co-financing to promote investment in such technology. This is discussed in more detail in Section 2.

Investment in electric transport infrastructure aligns well with existing EU transport policy. For example, the EU is in the process of defining 2025 and 2030 CO₂ standards for cars and trucks (COM/2017/676 and COM/2018/284). Both proposals include an incentive to sell zero and low emission vehicles. An often echoed argument of the automotive industry for the lack of electric vehicles sold is an insufficiency of infrastructure. Investing in infrastructure necessary for electric transport would further encourage manufacturers to sell electric models. A recent analysis performed by T&E⁵ found that by 2030 €12 billion is needed cumulatively for the rollout of publicly accessible charging infrastructure.

The Effort Sharing Regulation (ESR) defines a 2030 target to reduce emissions by -30% compared to 2005 levels. The ESR relates exclusively to sectors outside of the ETS (meaning transport, buildings, agriculture, industry, and waste). Transport accounts for 35% of ESR greenhouse gas emissions. The -30% target is the EU-wide average, meaning member states have their own unique binding climate target (dependent on GDP). The EU budget should invest in zero-emission transport in order to help member states achieve their ESR targets.

⁵https://www.transportenvironment.org/sites/te/files/Charging%20Infrastructure%20Report_September%202018_FINAL.pdf

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2. Prioritise Zero-Emission Investment

Although there are several legislative proposals relevant to transport spending, there are some common requirements that apply to all if the EU is to invest their budget wisely in future-proof infrastructure:

- The EU should prioritise zero-emission transport projects when assessing which applications are granted financing. This should be made explicit in the legislative proposals accompanying the EU budget.
- Zero-emission projects should receive up to 50% co-financing rates under CEF (85% for Cohesion Funds) and be considered 100% climate spending when accounting for whether the overarching 25% climate target (of the EU budget) has been met.
- The EU should also spend more on electric transport synergy projects that better connect vehicles with the electricity grid (and vice-versa).
- Investment in fossil gas infrastructure must stop.

2.1 CEF

There is a mistake in the Commission's CEF proposal that must be corrected in order for the climate accounting to be credible. Paragraph 4 of the introduction to CEF outlines a 60% spending target for CEF on projects that help meet climate objectives. The paragraph continues by describing how “alternative fuels” (as defined by Directive 2014/94/EU) would be considered 100% climate spending while “gas infrastructure - if enabling increased use of renewable hydrogen or bio-methane” would be 40%. If Directive 2014/94/EU is the basis for defining “alternative fuels”, this means fossil gas could be considered 100% climate spending. Obviously, the 40% rating for biomethane is intended to show how fossil gas has no climate rating. Therefore, “alternative fuels” should be removed from the 100% climate rating so that the paragraph reads “100% for the expenditures relating to railway infrastructure, ~~alternative fuels~~, clean urban transport, electricity transmission, electricity storage, smart grids, CO₂ transportation and renewable energy”. This should be replaced with “zero-emission transport”. As discussed in Section 1 there is no role for biomethane under CEF as biomethane is a local and niche fuel, not a pan-European fuel. Biomethane should be remove from CEF so that the 40% refers only to hydrogen. Reference to biomethane could be made under the ERDF regulation.

Article 14 of the CEF proposal should be amended to grant up to 50% co-financing rates for zero-emission transport projects. Only electric and hydrogen projects should be allowed avail of such co-financing rates. For the amounts transferred from the Cohesions Fund, such zero-emission co-financing rates should be able to increase to 85%.

2.2 ERDF

There are positive measures included in the Commission ERDF proposal. For example, Article 6 of the proposal commits the EU to stop investing in airports “except for outermost regions”. It also commits to stop investment relating to the “production, processing, distribution, storage of combustion of fossil fuels” but includes an exception for investment related to clean vehicles as defined in the old Clean Vehicles Directive (Directive 2009/33/EC) which recognises CNG and LNG as alternative fuels. This leaves a door open for fossil gas investment. Article 6 should remove this exception for investment in “clean vehicles” as it essentially allows for investment in fossil gas infrastructure.

ERDF money should prioritise zero-emission transport projects applying for funding. Any investment in biogas should have a smaller co-financing rate and must be ensured to not be used for fossil gas. This is hard to enforce

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as the infrastructure is largely interoperable but there are clear projects (i.e. LNG terminals in ports, LNG refueling stations) that are not intended to be used (exclusively) for biomethane.

The ERDF needs to be modernised. The annex to the Commission's proposal still considers time saved from road construction as one means to determine whether spending has been successful or not. Induced demand is the widely accepted notion that increasing road capacity will only increase road use and, as such, does not decrease congestion. It would be better to measure the success of ERDF spending by listing things like "emissions reductions" and "the growth of zero-emission transport" as common output and result indicators in the annex to the Regulation.

3. More Investment in Cleaner Cities

Cities are responsible for more than 80% of Europe's energy use⁶. Urban movement accounts for 40% of all CO₂ emissions from road transport and up to 70% of other pollutants⁷. The recent scandal surrounding diesel cars has also lead cities to become more conscious of the health impact of such vehicles.

Almost three-quarters of EU citizens live in urban areas -41.6% in cities; 31% in towns and suburbs⁸. This is set to increase to 80% by 2050. Already today, more than half of Europe's GDP is generated in cities⁹. Therefore, it's crucial to the future of Europe that cities and metropolitan areas must become healthy and sustainable places to live.

3.1 A Fund For Zero-Emission Urban Transport Infrastructure

WIFI4EU was Juncker's idea to ensure wifi access for all Europeans. The idea was simple: create a system whereby municipalities and public buildings could apply directly for EU grants (thus removing the need to go through national ministries, which is considered to be an administrative burden) and award successful applications with a fixed amount to co-finance their wifi project. Each country is set to receive a predefined minimum amount of guaranteed grants (or "tokens") and each applicant is only entitled to one grant (to spread out the distribution of money). Although there were complications with the WIFI4EU website, the overall structure and idea is sound.

A similar method could be applied for EU investment in zero-emission "urban" mobility whereby municipalities could apply directly for EU money to help with their efforts to reduce emissions within their jurisdiction. Such grants would be given to any zero-emission transport project. This could be recharging stations for electric vehicles or it could be public bike sharing schemes, trams, or zero-emission buses.

This kind of spending scheme could be linked with the Energy Performance of Buildings Directive to help those constructing or renovating buildings with the financial means to invest in charging infrastructure. This should be done based on a financial means test to avoid the EU investing money where private investment would have made the same investment in accordance with the Directive.

CEF and ERDF should earmark money to create such a fund and make it possible for applicants to apply directly for such co-financing. Following the WIFI4EU model, each member state should have a minimum of three grants

⁶ http://ec.europa.eu/regional_policy/en/policy/themes/urban-development/

⁷ https://ec.europa.eu/transport/themes/urban/urban_mobility_en

⁸ http://ec.europa.eu/eurostat/statistics-explained/index.php?title=Urban_Europe_statistics_on_cities,_towns_and_suburbs_the_urban_paradox&oldid=302194

⁹ <http://ec.europa.eu/eurostat/documents/3217494/7596823/KS-01-16-691-EN-N.pdf>

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each that must be used annually by different municipalities. The budget of the WiFi4EU scheme is €120 million between 2017-2019. Due to the far higher costs for transport infrastructure compared to Wi-Fi, a larger budget would be needed to establish a meaningful zero-emission urban transport fund under CEF. 15% of CEF (and Cohesion Funds brought under CEF) should be allocated for such a project. This would mean €4.5 billion for the period 2021-2027.

3.2 Higher earmarking for urban spending in the ERDF

In light of recent emission scandals, there's never been a time before when the public is calling so much for zero-emission transport in order to greatly improve the health impact of transport. In Chapter II of the Commission's ERDF proposal, the 6% earmarked for "sustainable urban development" should be increased to 15% in order to provide more money for regions to invest in reducing transport emissions. Such investment would help create the sense of a "European budget for the people" as the impact of EU investment would be felt by citizens every day.

4. Conclusions

There has too often been an approach from EU policymakers to submit and say "the EU budget will be spent on whatever applicants want". This approach is no longer fit for purpose. The EU budget symbolises what future the EU wants to build. Furthermore, the EU budget co-finances projects so, therefore, leverages further public and private investment. Therefore, there's a duty to ensure that such investment is reducing transport emissions.

How the EU budget can be better spent:

1. **Prioritise zero-emission transport:** Zero-emission projects (i.e. electric and hydrogen) should be prioritised in the 2021-2027 EU spending period. Such technology sets the EU on a trajectory to meet climate goals and improves energy sovereignty. Zero-emission projects should benefit from higher co-financing rates and be considered 100% climate spending in counting their contribution to the overall climate spending objective.
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Investing in zero-emission transport will improve the energy sovereignty of the EU while promoting the development of EU industry in this field, which ensures the EU's future competitiveness internationally. Furthermore, such investment will reduce air pollution and make EU cities much healthier places to live. This is the EU we should be building.

Further information

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