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Renewables in the post-COVID-19 recovery package of Germany

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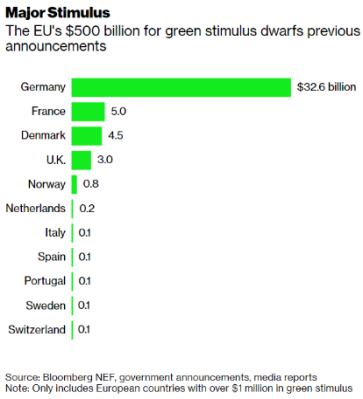
Content

THIS ANALYSIS IS PART OF A COMPILATION OF RECOVERY PACKAGE ANALYSES AND AIMS AT EXPLORING THE ROLE OF RENEWABLES IN POST-COVID19 RECOVERY SCHEMES. AS A SERIES, THIS RESEARCH IS CONDUCTED CONTINUOUSLY AND WILL BE ADDED TO, ONCE INFORMATION IS AVAILABLE.

Introduction

Shortly after the European Commission introduced the 'Next Generation EU' programme, on the 3rd of June 2020, the Federal Government of Germany adopted a 130 billion Euro stimulus package aligned with the German Climate Action Package 2030.[1] Compared to other European countries, Germany's recovery package is among the greenest so far. About one-third of the budget being allocated to investment areas that are considered as green, such as renewable energy, public transport, promotion of potentially 'green' hydrogen and, therefore, making climate action a key component of the recovery – at least on paper.[2]



The 'green' aspects of the German stimulus programme

Several measures were included in the German recovery package that aim at reducing the economy's impact on the climate and the environment and at 'greening' the energy as well as mobility and transport sector.

To reduce the burden of costs on household electricity bills and simultaneously raise the target for off-shore wind power, measures include cross-financing the guaranteed feed-in tariff and removing a cap on solar PV deployment. A cap, that has originally been set up to protect the domestic coal industry and reduce renewable electricity generation.[3] Discussions are ongoing about a profit scheme for municipalities to increase acceptance of on-shore wind energy.[4] All in all, about 11 billion Euro funded by the German recovery package are allocated for supporting green energy.[5]

An increase of 1 billion Euro will raise the funding for the CO_2 building refurbishment programme for energy efficiency in the building sector to 2.5 billion Euro in 2020 and 2021. Apart from the recovery package, a national investment strategy for hydrogen technology amounting to 7 billion

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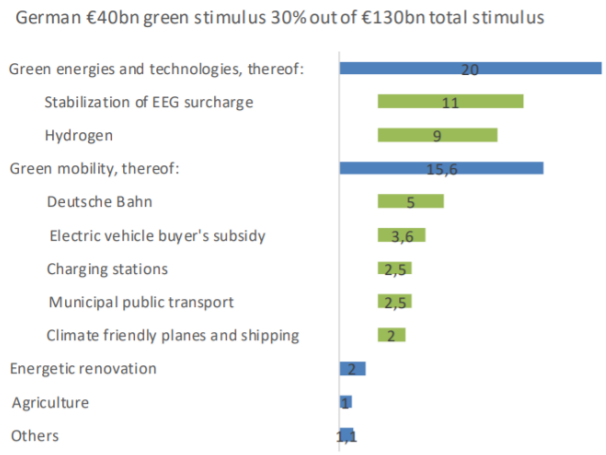
[1] https://platform2020redesign.org/countries/germany/, accessed 07 January 2021.
[2] https://www.bloomberg.com/news/articles/2020-07-21/eu-approves-biggest-green-stimulus-in-history-with-572-billion-plan, accessed 07 January 2021.
[3] https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/Public-Finances/Articles/2020-06-04-fiscal-package.html, accessed 07 January 2021.
[4] https://www.bundesfinanzministerium.de/Web/DE/Themen/Schlaglichter/Konjunkturpaket/Konjunkturprogramm-fuer-alle/zusammen-durch-starten.html, accessed 07 January 2021.
[5] https://www.allianz.com/content/dam/onemarketing/azcom/Allianz_com/economic-research/publications/specials/en/2020/september/2020_09_18_ComparisonFRDEstimulus.pdf, p. 3, accessed 07 January 2021.

Euro was launched, aiming at making Germany leader in hydrogen technology, at carbon-neutrality in heavy goods vehicle traffic and building the basis for new export technologies. Through the recovery funds, an additional 2 billion Euro for the construction of German-made hydrogen production facilities abroad was added.[6] In sum, the national hydrogen strategy and related funds could support establishing a capacity of up to 15GH by 2040.[7]



1 Allianz, Composition of the German green stimulus share, Source: https://www.allianz.com/content/dam/onemarketing/azcom/Allianz_com/economic-research/publications/specials/en/2020/september/2020_09_18_ComparisonFRDEstimulus.pdf, p. 5.

The German recovery package includes several additional measures targeting the promotion of sustainable mobility:

- Investments in the modernisation of the country's fleet of busses and heavy good vehicles;
- Investments in public transportation (2.5 billion Euro)[8];
- Investments in an expansion of charging infrastructure for electric cars and funding in research and development on e-mobility and battery cell production (2.5 billion Euro);
- Investments for a bonus purchase programme and financial benefits for e-vehicle purchases and funding to promote investments of suppliers and manufacturers in the automotive industry (1 billion Euro)[9]; as well as
- Investments in solutions for modern shipping and modern aviation (1 billion Euro each)[10].

Finally, the German recovery package includes another 700 million Euro for the conservation and sustainable management of forests.[11]

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6 https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/Public-Finances/Articles/2020-06-04-fiscal-package.html, respectively https://www.iisd.org/sustainable-recovery/news/germanys-green-stimulus-for-a-sustainable-transport-sector/, accessed 07 January 2021.
7 https://www.gtai.de/gtai-en/invest/business-location-germany/the-economic-stimulus-and-crisis-management-package-258798#toc-anchor--6, accessed 07 January 2021.
8 https://www.cleanenergywire.org/news/germany-gives-energy-transition-some-extra-boost-economic-stimulus-programme, accessed 07 January 2021.
9 https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/Public-Finances/Articles/2020-06-04-fiscal-package.html, accessed 07 January 2021.
10 https://www.iisd.org/sustainable-recovery/news/germanys-green-stimulus-for-a-sustainable-transport-sector/, accessed 07 January 2021.
11 https://www.cleanenergywire.org/news/germany-gives-energy-transition-some-extra-boost-economic-stimulus-programme, accessed 07 January 2021.

Recovery packages of the German federal states

Previous to the publication of the federal COVID recovery package, state energy ministers have called for the federal government to increase investment incentives for renewables, smart grids, and 'green' hydrogen[12] infrastructure to fast-track the energy transition. To reduce the burden on electricity consumers, a reform of taxes and expenses of the electricity price was called for.[13]

To compensate for missing or insufficient measures of the recovery programme of the federal government and to account for the subsidiarity principle in Germany, some of the sixteen German federal states have developed additional recovery and investments initiatives that include steps towards a sustainable transition for the energy and transport sector.

HAMBURG

Within its recovery package, the German city-state of Hamburg prominently reiterates for investments to be in synch with its directive on sustainability and climate justice. This aims at a shift of investments towards a mobility transition and adaptation measures in infrastructure for an energy and heating/cooling transition as well as measures of improving the energy efficiency of buildings.[14] Further, the city's green hydrogen strategy should constitute a key component for an energy transition, through sector coupling and deep decarbonisation of industries and sectors renewable energy cannot sufficiently cover on its own. This includes the provision of charging infrastructure, research and innovation and cooperation with neighbouring states.[15]

SCHLESWIG-HOLSTEIN

In line with ambitions in its bordering state Hamburg, the state of Schleswig-Holstein decided pre-COVID for investments of an additional 20 million Euro in furthering hydrogen technology. Another 25 million Euro were provided for research and innovation in innovative storage technologies and smart grids.[16] Through a direct support programme for citizens in form of individual climate-related

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[12] 'Green' hydrogen is typically referred to as hydrogen produced with renewable energy as a zero-emission product, while 'blue' hydrogen is produced using natural gas and typically captures and stores carbon emissions, being a net-zero product, and finally, 'grey' hydrogen being produced from natural gas.

[13] https://www.wirtschaft.nrw/pressemitteilung/energieministertreffen-auf-einladung-von-nordrhein-westfalen-im-zeichen-der-corona , respectively https://renewablesnow.com/news/state-energy-ministers-in-germany-call-for-investments-in-renewables-grid-and-hydrogen-as-part-of-coronavirus-recovery-698089/, accessed 07 January 2021.

[14] Only available in German, https://www.buergerschaft-hh.de/parldok/dokument/72758/hamburger_konjunktur_und_wachstumsprogramm_2020_stellungnahme_des_senats_zum_ersuchen_der_buergerschaft_vom_10_juni_2020_hamburger_handschrift_im_bund.pdf, p. 5, accessed 07 January 2021.

[15] Only available in German, https://www.buergerschaft-hh.de/parldok/dokument/72758/hamburger_konjunktur_und_wachstumsprogramm_2020_stellungnahme_des_senats_zum_ersuchen_der_buergerschaft_vom_10_juni_2020_hamburger_handschrift_im_bund.pdf, p. 13 et seq., accessed 07 January 2021.

[16] Only available in German, https://www.schleswig-holstein.de/DE/Landesregierung/I/_startseite/Artikel2020/II/200615_pk_corona_kommunalpaket.html, accessed 07 January 2021.

investments, Schleswig-Holstein provided 3.6 million Euro in its recovery package.[17] These investments included, for instance, solar PV and solar thermal energy installations on private homes the installation of private charging stations for e-vehicles and electricity storage units as well as investments in the expansion of district heating.[18]

BREMEN

Another northern states, the city-state of Bremen, set up the 1.2 billion Euro recovery package 'Bremen-Fonds' in addition to the recovery package of the federal government in Berlin. This package intends investments for digitalisation, support for sustainable technology promotion, in future-orientated research and innovation, the transformation of the transport sector, including public transportation, all under the climate targets of the Paris Agreement.[19]

LOWER SAXONY

The state of Lower Saxony introduced additional measures in reaction to the COVID-19 pandemic through 75 million Euro for research and innovation in hydrogen, energy efficiency of buildings and the deployment of renewable energies, in particular, solar PV.[20]

SAXONY

Through its state-owned development bank, Saxony supports innovative projects that strengthen the economy in the COVID-19 pandemic and simultaneously saves resources and protects the environment and the climate. These include sustainable forestry and agriculture, climate adaptation and future-proof energy supply. [21]

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[17] Only available in German, https://www.schleswig-holstein.de/DE/Landesregierung/Themen/UmweltNatur/Klimaschutz/Foerderprogramm/foerderprogramm_node.html, accessed 07 January 2021.
[18] Only available in German, https://www.schleswig-holstein.de/DE/Landesregierung/Themen/UmweltNatur/Klimaschutz/Klimaschutz_node.html, accessed 07 January 2021.
[19] Only available in German, https://www.senatspressestelle.bremen.de/sixcms/detail.php?id=334163&asl=bremen02.c.732.de, respectively https://www.bund-bremen.net/fileadmin/bremen/Paritaetischer_BUND_BremenFonds_Konjunkturpaket_sozialoekologische_Transformation_200910.pdf, accessed 07 January 2021.
[20] Only available in German, https://www.stk.niedersachsen.de/startseite/presseinformationen/landesregierung-bringt-2-nachtragshaushalt-auf-den-weg-8-4-milliarden-euro-sichern-niedersachsens-zukunft-nach-der-corona-krise-189614.html, accessed 07 January 2021.
[21] Only available in German, https://www.foerderdatenbank.de/FDB/Content/DE/Foerderprogramm/Land/Sachsen/nachhaltig-aus-der-krise.html, accessed 07 January 2021.

RHINELAND-PALATINATE

50 million Euro will be provided by the state of Rhineland-Palatinate for investments in renewable energy, climate mitigation and adaptation as well as energy infrastructure. 14 million are earmarked for the state-wide campaign on solar energy.[22]

HESSE

In its state-wide stimuli programme, the state of Hesse provides almost 30 million Euro for investments in energy efficiency and modernisation of buildings and 250 million Euro for improvements in public transportation and municipal transport infrastructure. Additional funding is intended for e-charging stations and improvements in bicycle infrastructure and safety.[23]

This brief presentation of Corona stimulus packages of the German federal states shows that nine of the sixteen federal states do not yet have plans set for economic recovery or are not considering renewable energy and investments in sustainable technology, energy, and transportation in them. Measures on renewable energy, in particular, are – if existent – rather undefined. Many of the states set a strong focus on sustainable mobility and hydrogen technologies. This is, in particular, the case of the northern states with harbours accessing the North and Baltic Sea and extensive deployment of renewable energy.

The role of renewables

While this unveils how the German government, in cooperation with sub-national governments, is taking on the challenge of 'rebuilding the economy better', it still does not meet the necessary scale to boost the energy transition.

GREEN INVESTMENTS IN RENEWABLE ENERGY

Of Germany's COVID recovery package, at this point, only investments of 1.8 billion Euro can be considered 'clean' and 'green' and, thus, promoting and accelerating an energy transition.[24] Depending on various conditions, including ensuring renewable energy to be the source of power for electric vehicles, the commitment of another 21.25 billion Euro to green energy is yet to be determined.[25] Conversely, to the relatively low unconditional investments in clean energy[26], unconditional investments in fossil-related spending currently amount to almost 13 billion Euro,

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[22] Only available in German, https://www.pv-magazine.de/2020/09/04/rheinland-pfalz-stockt-corona-konjunkturpaket-fuer-energiewende-investitionen-auf/, accessed 07 January 2021.
[23] Only available in German, https://wirtschaft.hessen.de/presse/pressemitteilung/al-wazir-stellt-hessenplan-vor-ueber-eine-mrd-euro-fuer-den-weg-aus-dem-corona-tief, accessed 07 January 2021.
[24] https://www.energypolicytracker.org/country/germany/, accessed 07 January 2021.
[25] ibid.
[26] [26] Policies are 'clean conditional' "if they are stated to support the transition away from fossil fuels, but unspecific about the implementation of appropriate environmental safeguards." 'Clean unconditional' "if they support production or consumption of energy that is both low-carbon and has negligible impacts on the environment if implemented with appropriate safeguards." Source: https://www.energypolicytracker.org/methodology/, accessed 07. December 2020.

including bailouts of the companies Lufthansa, TUI and Condor.[27] When reflecting on the rate of investments and subsidies provided for renewables in contrast to fossil fuels, at least a level playing field needs to be provided. In the sight of the impact fossil fuels have on the climate and environment, it might be advised to remove subsidies to these energy sources completely. To do justice to the high set aims of climate protection and clean energy of the German recovery package, large-scale renewable energy deployment needs to be accelerated and measures need to be taken for energy prosumers to be empowered.

HYDROGEN

When it comes to the national hydrogen strategy, it is declared that the federal government considers 'green' hydrogen to be the only sustainable option in the long term. This, however, needs to be translated into hydrogen being produced using renewable energy as the only viable option and that imports of hydrogen need to fulfil the same qualification and simultaneously ensure that social and environmental safeguards are kept.[28] In a report form 2019, the *International Renewable Energy Agency* (IRENA) warned that "hydrogen efforts should not be considered a panacea" and be considered a complementary solution for highly ambitious countries regarding their climate targets. Due to the relatively high costs of its production and logistics, IRENA projects difficulties for hydrogen to catch up to and be competitive with other strategies of sustainable and carbon-free energy production.[29]

Furthermore, when considering importing green hydrogen from abroad – in particular form Africa – it has to be reflected upon the risk of stalling the necessary transformation of the energy sector in the producing country in parallel. The joint study by the *Wuppertal Institute for Climate, Environment and Energy* and the *German Economic Research Institute* (DIW) has found that there is a high risk in producing countries for generate hydrogen destined for export with large-scale renewable energy installations while meeting the national energy needs by burning fossil fuels.[30]

All in all, hydrogen has – in particular, as a flexible energy source, as an element of sector coupling or when it comes to its role in energy storage – great potentials[31] and Germany the chance to become a frontrunner in the sector.[32] These potentials, however, have to be considered carefully and hydrogen should not be expected to be a universal remedy.

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[27] https://www.greeneuropeanjournal.eu/fast-tracking-europes-energy-transition/, accessed 07 January 2021.
[28] https://www.bmwi.de/Redaktion/EN/Publikationen/Energie/the-national-hydrogen-strategy.pdf?__blob=publicationFile&v=6, p. 3, accessed 07 January 2021.
[29] https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Sep/IRENA_Hydrogen_2019.pdf, p. 6, accessed 07 January 2021.
[30] Only available in German, https://www.wupperinst.org/fa/redaktion/downloads/projects/LEE-H2-Studie.pdf, p. 11, respectively https://www.wupperinst.org/en/p/wi/p/s/pd/932/, accessed 07 January 2021.
[31] Only available in German, https://www.umweltgutachter.de/blog/nachhaltigkeit-und-corona-konjunkturpaket-passt-das-zusammen, accessed 07 January 2021.
[32] https://www.cleanenergywire.org/news/domestic-green-hydrogen-production-offers-huge-economic-potential-germany-study, accessed 07 January 2021.

SUSTAINABLE MOBILITY

Germany's focus on e-mobility and sustainable transport needs to be reflected upon in commitments to clean, renewable energy supply. Otherwise, due to a lack of available clean energy, e-vehicles must be fuelled by fossil-based electricity. To avoid a further national lock-in in electricity as the only viable alternative to combustion engines, research and innovation must consider alternative drive systems and be financially encouraged.[33]

MEASURES OF THE EU

Finally, in the light of the European COVID-19 recovery measures, the Next Generation EU scheme and the National Recovery and Resilience Plans that member states are obligated to provide between October 2020 and April 2021 to access funds, Germany – as one of the main recipients of the funds[34] – must improve its climate-related. The set minimum of 37% of expenditure each National Recovery and Resilience Plan must include environmental and climate measures in line with the European Green Deal.[35] To further its reputed pioneering role in the clean energy transition, Germany should go beyond the minimum target of 37% and strive for even higher ambitions to do its supposed role justice and lead as a good example that the energy transition is possible, even in highly developed industrialised states like Germany.

RE-EVALUATION

The *Steering Committee of the German Science Platform Climate Protection* presented the German government with a statement on climate policy requirements and the request to the German recovery package and all its instruments must be subjected to a climate impact assessment. Being one of the "most important set of measures in terms of climate policy for this legislative period", the German recovery package is evaluated by the experts as falling short of its potential due to its lack of consistent evaluation of all measures along with their consistency with German and European climate targets. As a consequence, conflicts between different sets of investments and long-term goals will arise. As a solution, the committee suggests a three-step examination of the package and its compatibility as a whole, all individual measures before their implementation and, lastly, long-term monitoring of all measures individually in an institutionalised manner.[36]

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33 https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/201008_Recovery_and_resilience_Policy_Brief_FINAL.pdf, p. 5 and https://www.transportenvironment.org/sites/te/files/publications/RRF%20and%20InvestEU%20-%20T%26E%20Position%20Paper%20%284%29.pdf, accessed 07 January 2021.

34 https://www.iea.org/reports/renewables-2020/key-trends-to-watch, accessed 07 January 2021.

35 https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en, accessed 07 January 2021.

36 https://www.pik-potsdam.de/en/news/latest-news/science-platform-climate-protection-the-german-governments-corona-economic-stimulus-package-needs-a-climate-impact-assessment?set_language=en, accessed 07 January 2021.

Conclusion

To realise the set aim to prioritise sustainable mobility, the energy transition, and compliance with climate targets, Germany must show a stronger commitment to renewable energies. Only when minimising regulatory hurdles to the expansion of renewables – in particular, solar PV and onshore wind – a growing energy demand through e-mobility, increased cross-sectoral electrification and deep decarbonisation can be met. This needs to be backed by sufficient funding through the COVID stimulus package.

By supporting community energy projects, by reflecting the need for research in storage technologies, heating and cooling and alternative fuels into funding decisions of yet undefined concrete measures, Germany can support its energy transition and path towards climate-neutrality by simultaneously developing a holistic approach to reach these goals.