【欧州】【Common】

Common - Environmental Issues: The EU's strategy to adapt to climate change and the Commission's new technical guidance on climate proofing of infrastructure in the period 2021 to 2027

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【概要：Summary】

The European Green Deal of December 2019 (COM/2019/640 final) calls for accelerating the shift to sustainable and smart mobility, as well as a reduction of the transport sector's GHG emissions by 90% by 2050. To achieve this target, the European Commission adopted a set of proposals to adjust the EU's climate, energy, transport, and taxation related legislation to reducing the GHG emissions by at least 55% by 2030, compared to 1990 levels. To achieve this emission reduction by 2030 is the precondition for Europe to become the world's first climate-neutral continent by 2050 and making the European Green Deal a reality.

As part of the measures related to European Green Deal, the EU also presented a new EU strategy on 24 February 2021 entitled "Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change" (COM/2021/82 final). This strategy aims to increase and accelerate the EU's efforts to adapt to the unavoidable impacts of climate change and become climate resilient by 2050. The EU's action on climate change adaptation involves all parts of society and all levels of governance. It will also have to include the adaptation of solutions regarding the planning of infrastructures and to adapt them to climate change.

The impacts of climate change will have an increasingly negative impact on assets and infrastructure with long lifetimes such as railways, bridges, or power stations, as the frequency and severity of climate and weather extremes will increase. Therefore, the EU must pursue measures to improve the infrastructure's climate-resilience and to invest in infrastructure that is prepared for a climate-neutral future. Therefore, the Commission's recently presented Commission notice on the technical guidance on climate proofing of infrastructure of 2021-2027 (C(2021) 5430 final) of 29 July 2021 aims to integrate climate change mitigation and adaptation measures into the development and planning of transport infrastructure projects. In the planning period of 2021 to 2027, the European Commission's new guidance on climate proofing of infrastructure considers the impacts of climate change to make decisions on future infrastructure projects.

【記事：Article】

1. Background of the technical guidance on climate proofing of infrastructure

Climate change is manifesting itself in the increased frequency and severity of climate and weather extremes at global level. The EU is aiming

at achieving net-zero GHG emissions by 2050 under its European Green Deal (COM/2019/640 final) of 11 December 2019. The European Green Deal calls for accelerating the shift to sustainable and smart mobility, and for a 90% cut of GHG emissions from the transport sector by 2050. This significant reduction of GHG emissions from the transport sector can only be achieved if the transport sector was transformed into a smart, competitive, safe, accessible, and affordable system. Accordingly, the Commission amended the proposal for a European Climate Law and increased the 2030 GHG emission reduction target to at least 55%, compared with 1990 levels, based on the proposal COM(2020)563 of 17 September 2020.

Furthermore, on 9 December 2020, the European Commission presented the "Sustainable and Smart Mobility Strategy - putting European transport on track for the future" (COM(2020) 789 final). This Sustainable and Smart Mobility Strategy intends to achieve a transformation of the EU transport system towards a green, digital, and more resilient future.

On 14 July 2021, the European Commission adopted a set of legislative proposals to make the EU's climate, energy, transport, and taxation policies fit for reducing net GHG emissions by at least 55% by 2030, compared to 1990 levels.

However, despite these efforts, at global level, the GHG emissions will continue to increase for the coming decades. Consequently, the risk of more frequent extreme weather conditions like heatwaves, droughts, or floods, will affect societies and infrastructures.

2. The EU's strategy to adapt to climate change

To prepare for the impact of climate change, the European Commission adopted its new EU strategy on adaptation to climate change on 24 February 2021 entitled "Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change" (COM/2021/82 final). The strategy is a key part of the European Green Deal and aims to increase and accelerate the EU's efforts to adapt to the impacts of climate change and become climate resilient by 2050. The adaptation to climate change is taking three different approaches in the EU's measures. The EU intends to ensure that its own policies and actions work towards increasing the EU's resilience regarding the negative impacts of climate change. The EU also supports national, regional, and local authorities as well as private partners to adapt to climate change, while at global level, the EU supports climate resilience and engagement and exchanges (European Commission 2021a).

The Strategy focuses on making the adaptation smarter, swifter and more systemic, and to step up international action on adaptation to climate change and outlines a long-term vision for the EU to become a climate-resilient society. The Strategy aims at preparing measures for building a climate resilient society by improving knowledge of climate impacts and adaptation solutions and by stepping up adaptation planning and climate risk assessments, among others. (European Commission 2021b).

The Strategy pursues three objectives and proposes a range of actions to meet them, including the smart, more systematic, and quicker adaptation. The Strategy also supports policy development in all sectors by improving adaptation strategies and plans, among others.

At the same time, the Commission will continue to provide guidelines, technical capacity, and funding opportunities to help the EU Member States, regions, and local administrations to develop and implement comprehensive adaptation strategies and actions. The Commission will also continue to mainstream adaptation by integrating climate change considerations into EU policies and programmes to make them climate resilient (European Commission (2021c)).

This approach on climate change adaptation based on the EU strategy on adaptation to climate change of 24 February 2021 (COM/2021/82 final) is the background of the European Commission's recently presented technical guidance on climate proofing of infrastructure for the period 2021-2027 to integrate climate change mitigation and adaptation measures into the development and planning of transport infrastructure projects, among others.

3. Commission's technical guidance on climate proofing of infrastructure

In the EU, many infrastructures in service today were designed and built decades ago, and most of the infrastructure funded over the period 2021-2027 will remain in service well into the second half of the century and beyond. Specifically, for infrastructure with a lifespan beyond 2050, climate resilience of new infrastructure projects should be ensured, based on a climate risk assessment. The InvestEU Regulation (EU) 2021/523 (Regulation (EU) 2021/523 of 24 March 2021 establishing the InvestEU Programme and amending Regulation (EU) 2015/1017), requires the European Commission to develop sustainability guidance (Article 8(6)) and to set out requirements on climate change mitigation and adaptation (Article 8(6) a)). Furthermore, the sustainability guidance must include guidance to implementing partners on information for the purpose of the screening of the environmental, climate or social impact of financing and investment operations.

The sustainability guidance is important as it allows to identify infrastructure projects that are inconsistent with the climate objectives. The guidance stipulates that the operation, maintenance, and final decommissioning of any project should be carried out in a climate-neutral way, which may include circular economy and recycling or repurposing of materials. Infrastructure with a lifespan beyond 2050 should also factor in operation, maintenance, and final decommissioning under conditions of climate neutrality, which may include circular economy considerations. On 29 July 2021, the European Commission presented the "Commission Notice Technical guidance on the climate proofing of infrastructure in the period 2021-2027" (C(2021) 5430 final). The new technical guidance on climate-proofing of infrastructure projects has been developed by the Commission in close cooperation with potential implementing partners for InvestEU along with the EIB Group. The purpose is to give technical guidance on the climate proofing of investments in infrastructure covering the programming period 2021-2027 (European Commission C (2021) 5430 final).

It is primarily intended for project promoters and experts involved in the preparation of infrastructure projects but may also be a useful reference for public authorities, implementing partners, investors, stakeholders, and others. The technical guidance C(2021) 5430 final climate-proofing process integrates climate change mitigation and adaptation measures into the development of infrastructure projects. It sets out common principles and practices for the identification, classification, and management of physical climate risks when planning, developing, executing, and monitoring infrastructure projects and programmes. The technical guidance integrates climate-proofing with project cycle management (PCM), environmental impact assessments (EIA), and strategic environmental assessment (SEA) processes, and it includes recommendations to support national climate-proofing processes in EU Member States (European Commission 2021d).

The process is divided into two pillars including mitigation and adaptation and two phases including screening and detailed analysis. The documentation and verification of climate-proofing forms is considered an essential part of the rationale for making investment decisions (European Commission C(2021) 5430 final).

In transport, energy, and urban development, it is mainly at the planning level of projects, when effective action must be taken into consideration to reduce GHG emissions. It is at this stage that the choice between modes to serve certain destinations or corridors is made (e.g. public transport versus private car), which is often an important factor affecting both, energy consumption and the increase or decrease of GHG emissions (European Commission C (2021) 5430 final). Similarly important are policy and 'softer' measures, like incentives to use public transport, biking and walking.

Carbon footprint methodologies can be extended to transport network planning, to give an immediate assessment of the extent to which the plan is producing the expected positive impacts on GHG emissions. This could be one of the main key performance indications for such plans. The calculations are typically based on a traffic model that reproduces the status of traffic on the network, like flows, capacity, and level of congestion (European Commission C (2021) 5430 final). A similar approach can be taken for urban development and urban planning options, when considering the impact of the location decision of certain activities on mobility and energy use, like density, location, land-use mix, and connectivity.

The two pillars of climate proofing include also network infrastructure, which is crucial for the functioning of the EU's economy and society. This includes the transport sector's fixed assets such as roads, railways, ports, airports, and inland waterways transport infrastructure, among others (European Commission C (2021) 5430 final).

While quantifying and monetising GHG emissions remain the basis for the cost-benefit and options analysis, the technical guidance includes an updated carbon footprint methodology and an assessment of the shadow cost of carbon. The climate vulnerability and risk assessment remain the basis for identifying, appraising, and implementing climate change adaptation measures. Based on the guidance (European Commission C(2021) 5430 final), the climate proofing of infrastructure projects regarding the climate neutrality and mitigation of climate change as well as the climate resilience and adaptation to climate change is applied.

The screening phase 1 includes the aspects of mitigation of climate change, and aspects of adaptation are considered (European Commission C (2021) 5430 final). Regarding the climate neutrality and mitigation of climate change in the Screening - Phase 1 (mitigation), the project needs to be analysed whether the project does not require a carbon footprint assessment, and the analysis is summarised in a climate neutrality screening statement, which in principle gives a conclusion on the proof of climate neutrality. In the detailed analysis - Phase 2 (mitigation) the GHG emissions in a typical year of operation using the carbon footprint method needs to be quantified and compared with the thresholds for absolute and relative GHG emissions. If the GHG emissions exceed any of the thresholds, it needs to be analysed if the "energy efficiency first" principle in the project design, options analysis, and cost-benefit analysis is applied. The project's compatibility with a credible pathway to achieve the overall 2030 and 2050 GHG emission reduction targets needs to be verified. Regarding infrastructure with a lifespan beyond 2050, the project's compatibility with operation, maintenance, and final decommissioning under conditions of climate neutrality needs to be verified (European Commission C (2021) 5430 final).

Regarding the Climate resilience and adaptation to climate change, in the Screening - Phase 1 (adaptation), a climate sensitivity, exposure and vulnerability analysis needs to be carried out. If there are no significant climate risks warranting further analysis, the analysis is

summarised in a climate resilience screening statement, which in principle gives a conclusion on climate proofing regarding the project's climate resilience. If there are significant climate risks warranting further analysis, a detailed analysis in Phase 2 (adaptation) needs to be carried out. In the Phase 2 of detailed analysis of adaptation, the climate risk assessment including the likelihood and impact analyses in line with this guidance is carried out. Significant climate risks are addressed by identifying, appraising, planning, and implementing relevant and suitable adaptation measures. Regarding future climate changes, the scope and need for regular monitoring and follow-up are assessed. The consistency with the European, national, regional, and local strategies and plans on the adaptation to climate change, and other relevant strategic and planning documents is verified (European Commission C (2021) 5430 final). The climate resilience proofing statement gives a conclusion on climate proofing regarding the climate resilience.

Thereafter, for both, climate neutrality and mitigation of climate change as well as the climate resilience and adaptation to climate change the documentation and summaries are compiled into a consolidated climate screening / proofing documentation. In most cases this will be an important part of the decision-making regarding investments. Specifically, for infrastructure with a lifespan beyond 2050, the technical guidance stipulates that the operation, maintenance, and final decommissioning of any project should be carried out in a climate-neutral way, which may include circular economy considerations, such as the recycling or repurposing of materials. The climate resilience of new infrastructure projects should be ensured through adequate adaptation measures, based on a climate risk assessment (European Commission C (2021) 5430 final).

According to the European Commission, this technical guidance should be integrated in the preparation and climate proofing of infrastructure projects for the period 2021-2027. Regarding infrastructure projects that have completed the environmental impact assessment (EIA) and received the development consent no later than by the end of 2021, that have concluded the necessary funding agreements (including for EU-funding) and that will begin the construction works not later than in 2022, are strongly encouraged by the Commission to carry out climate proofing following this technical guidance (European Commission C(2021) 5430 final).

The guidance is aligned with the GHG emission reduction pathway of -55% net emissions by 2030 and climate neutrality by 2050, while also fulfilling the requirements set out in the legislation for several EU funds such as InvestEU, Connecting Europe Facility (CEF), European Regional Development Fund (ERDF), Cohesion Fund (CF) and the Just Transition Fund (JTF).

4. Conclusion

Considering the impact of climate change and the net-zero carbon target of 2050, it is important to clearly identify and to invest in infrastructure that is prepared for a climate-neutral and climate-resilient future (European Commission 2021d). The technical guidance on climate proofing of infrastructure (European Commission C(2021) 5430 final) should be integrated in the preparation and climate proofing of infrastructure projects for the period 2021-2027. The guidance is expected to help to consider climate impacts on future investment and development of transport infrastructure projects, among others. Infrastructure projects in areas that are likely to be affected by sea level rise requires particular attention and similarly, heat tolerance for railway tracks needs to consider the projected higher maximum temperature rather than historical values.

Based on the technical guidance, by considering the aspects of climate change mitigation and adaptation during the planning period of infrastructure projects, the institutional and private European investors will be able to make informed decisions on projects deemed compatible with the Paris Agreement and the EU climate objectives and targets of the European Green Deal.

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