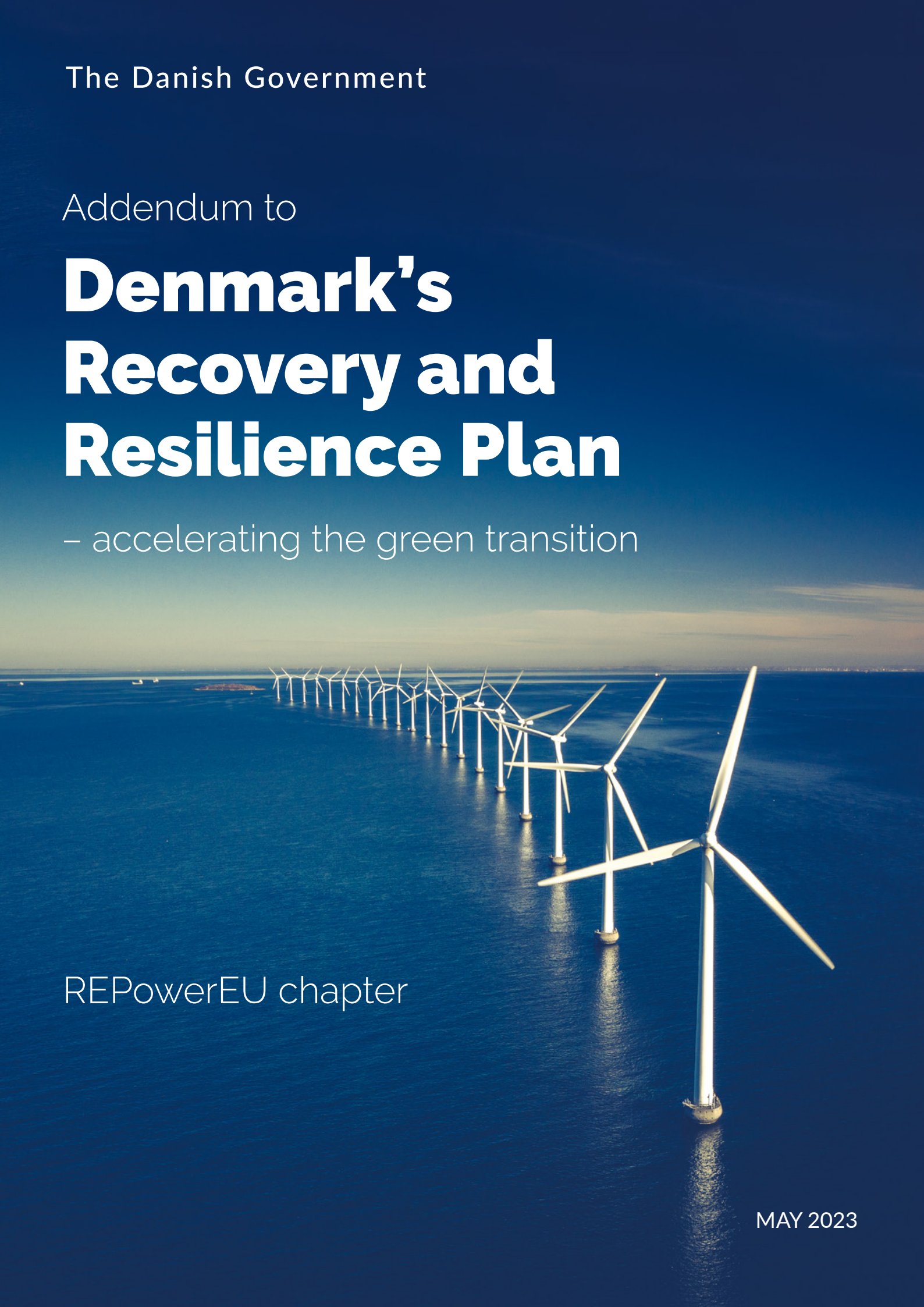
The Danish Government

Addendum to

Denmark's Recovery and Resilience Plan

– accelerating the green transition



REPowerEU chapter

MAY 2023

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Content

Part 1. Introduction to the Addendum

1.1 General objective

Since the submission of the Danish Recovery and Resilience Plan on 30 April 2021, the Russian war of aggression in Ukraine and the related energy crisis has fundamentally changed the geopolitical situation and economic outlook in Europe.

Not least due to the disruption of supplies from Ukraine and Russia, natural gas prices increased significantly, which in turn led to increased costs for businesses and households. This is particularly challenging for low-income households and small businesses.

The energy crisis demonstrated the vulnerability of Europe's energy security to geopolitical tensions and disruptions in the energy market. It highlighted the need for Europe to diversify its energy sources and become independent of Russian fossil fuel if Europe's economic recovery and resilience are to be safeguarded. This requires a range of initiatives, including simplification of regulation and administrative procedures, increased energy efficiency and a rapid and ambitious transition to renewable energy sources, such as wind power.

REPowerEU is the European Commission plan to make Europe independent from Russian fossil fuels well before 2030. This forms the background for this addendum that adds a separate REPowerEU chapter to the Danish Recovery and Resilience Plan.

In Denmark, the political response to the energy crisis was swift. A number of political agreements were concluded with the aim of addressing the challenges of the energy crisis and accelerating the transition to renewable energy sources, thereby contributing to the REPowerEU objectives. Guiding the Danish response is an ambitious national target of 70 pct. reduction of greenhouse gas emissions by 2030. The Danish government will also move forward the objective of climate neutrality to 2045.

The response was characterized by cross-party consensus and cooperation and broad recognition of the importance of reducing Denmark's reliance on fossil fuels for security, economic and climate related reasons.

The agreed initiatives form the basis for the Danish REPowerEU-chapter, which include four measures listed in Table 1.

Table 1
Overview of the REPowerEU chapter

M. DKK, 2023-prices	2023	2024	2025	2026	Total
8. REPowerEU	**482,6**	**298,1**	**458,1**	**228,2**	**1.467,0**
8.1 Renewable energy	147,6	247,9	34,3	16,6	446,4
8.2 Green upskilling	-	-	103,9	103,9	207,8
8.3 Replacing oil burners and gas furnaces (upscaling existing measure 3.1)	335,0	-	-	-	335,0
8.4 Carbon Capture and Storage (CCS) (upscaling existing measure 3.5)	-	50,2	319,9	107,7	477,8

Measures in the REPowerEU chapter
The measure on renewable energy is based on the establishment of a National Energy Crisis Staff (NEKST) tasked with driving a reform agenda to reduce administrative burdens and simplify permitting procedures in order to speed up the green transition. To complement the reform, the measure includes investments in the preparation and completion of the call for tender for 4 GW offshore wind, a screening of Denmark's offshore wind capacity and in testing of wind turbines. The measure will direct key investments towards renewable energy, but importantly also deliver reforms which will enable the transition to green energy to happen faster and more efficiently. With the combination of reform and investments, the measure increases the resilience, security and sustainability of the Union energy system through the necessary reductions in the dependence on fossil fuels and the diversification of energy supplies at Union level.

The measure on green upskilling includes a reserve for green upskilling, which involves developing new skills and knowledge related to green technologies and sustainability. This is an essential component of the green transition. The transition to renewable energy sources and sustainable practices requires a highly skilled workforce that is equipped with the knowledge and expertise to develop, implement, and maintain green technologies and practices. This measure will contribute to ensuring that Denmark will have the necessary skills to implement the ambitious targets for the green transition, thereby supporting the aim of supplying more renewable energy and diversifying the energy supply at Union level.

The REPowerEU chapter also scales up two existing measures in the Danish Recovery and Resilience Plan. The first one is the measure on replacing oil burners and gas furnaces, where additional funds are dedicated to the initiatives on district heating and decoupling from the gas network. This measure is described in section 2.3.3, page 93 of the existing plan. This scale up boosts efforts to replace fossil energy sources with green alternatives such as district heating and individual heat pumps. The measure thereby contributes to reducing the dependence on fossil fuels.

The second scale-up is the measure on Carbon Capture and Storage (CCS). The existing measure includes a feasibility study on possible storage sites for CO2 in depleted oil- and gas fields, which is described in section 2.3.6, page 104 of the existing plan. With the REPowerEU chapter, the measure is scaled up with a specific CCS-pool. The pool provides incentives for investments in infrastructure that supports a value chain aimed at achieving negative emissions by 2025, such as carbon capture and storage. The scale-up thereby increases the level of ambition for CCS in the plan, as it draws from the experience of the feasibility study, and the CCS-pool will contribute to delivering CO2e-reductions.

Apart from the new and scaled up measures mentioned above, the addendum does not include changes to existing measures in the Danish plan.

Comprehensive and adequately balanced response
With the new chapter the plan continues to represent a comprehensive and adequately balanced response to the economic and social situation, as the REPowerEU chapter reinforces existing priorities as well as addresses the specific challenges of the energy crisis that began after the submission of the existing plan.

The Danish Recovery and Resilience Plan contributes appropriately to all six pillars which include green transition; digital transformation; smart, sustainable and inclusive growth, including economic cohesion, jobs, productivity, competitiveness, research, development and innovation, and a well-functioning internal market with strong small and medium enterprises (SMEs); social and territorial cohesion; health, and economic, social and institutional resilience with the aim of, inter alia, increasing crisis preparedness and crisis response capacity; and policies for the next generation, children and the youth, such as education and skills, as explained throughout section 1 of the plan.

The REPowerEU chapter strongly enhances this contribution, especially to the green transition. It strengthens smart, sustainable and inclusive growth by investments and reforms in renewable energy and green upskilling. The chapter also enhances economic, social and institutional resilience with the aim of, inter alia, increasing crisis preparedness and crisis response capacity by increasing renewable energy, diversifying the energy supply and enhancing green skills which will contribute to making the European energy system better prepared for future energy crises. At the same time, all four measures with their strong climate focus represent policies for the next generation.

Country-specific recommendations
The Danish Recovery and Resilience Plan addresses the recommendations that Denmark had received through the European Semester at the time of submission, as explained in section 1.4.1, page 31-37 of the existing plan. After the submission Denmark has received additional Country Specific Recommendations in 2022, which are listed below in box 1.

The measures included in the REPowerEU chapter directly contributes to the recommendation regarding the energy crisis and REPowerEU, as submission of the REPowerEU expands public investment for the green transition and energy security by making use of the REPowerEU initiative and the Recovery and Resilience Facility as a whole.

The measures included in the REPowerEU chapter also contribute directly to the recommendation regarding reduction of overall reliance on fossil fuels, as the measures help further diversify energy supply and de-carbonise the economy by accelerating the deployment of renewables, particularly introducing the National Energy Crisis Staff (NEKST) reform with the aim to simplify and expedite administrative and permitting procedures.

Box 1
Country Specific Recommendations in 2022

- **Recommendation regarding the energy crisis and REPowerEU**
  In 2023, ensure that the growth of nationally financed primary current expenditure is in line with an overall neutral policy stance, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation. Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds. For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions. Implement the new property tax system in order to restore the link between market prices and taxes and ensure fairer taxation. Stimulate investment in construction of affordable housing to alleviate the most pressing needs. Increase the financial resilience of highly indebted borrowers.

- **Recommendation regarding the implementation of the recovery and resilience plan**
  Proceed with the implementation of its recovery and resilience plan, in line with the milestones and targets included in the Council Implementing Decision of 13 July 2021. Swiftly finalise the negotiations with the Commission of the 2021 to 2027 cohesion policy programmes and proceed with their implementation.

- **Recommendation regarding circular economy**
  Strengthen circular economy and waste management policies including by promoting waste prevention and reuse, increasing recycling, and gradually shifting away from incineration of municipal waste to greener sources of heat generation.

- **Recommendation regarding the reduction of overall reliance on fossil fuels**
  Reduce overall reliance on fossil fuels. Further diversify energy supply and help decarbonise the economy by accelerating the deployment of renewables, including by introducing reforms to simplify and expedite administrative and permitting procedures, upgrading energy transmission networks, increasing interconnections with neighbouring countries and improving energy efficiency.

Apart from the REPowerEU-chapter, Denmark has taken many other initiatives addressing the recommendations given in 2022. One example is a political agreement on Energy Island Bornholm that, inter alia, increases interconnections with neighboring countries, including Germany, thereby directly contributing to the recommendation for closer connections with neighboring countries.

The Danish economy quickly recovered after the pandemic, and since the summer of 2021 the Danish economy has been booming. In line with the recommendations, the Danish government's budget proposal for 2023 therefore included a

substantial fiscal tightening. The government also announced a number of initiatives to help mitigate the consequences of inflation for households. Furthermore, the Danish parliament has taken measures to ensure funding for people fleeing Ukraine. These initiatives all directly contribute to the country specific recommendations.

The recommendations underline a need for restoring the link between market prices and taxes for properties, and investment in affordable housing. A political agreement from 2021 allocated 5 billion DKK until 2031 for a number of initiatives which will help the construction of affordable housing. From 2024, a new housing taxation system will strengthen the link between market prices and taxes, thereby directly contributing to this recommendation.

Several initiatives have been undertaken in 2022 to strengthen the circular economy and waste management in Denmark. A few examples, from 2022, include a political agreement about extended producer responsibility for packing and single-use products, as well as a measure ensuring increased waste supervision.

Implementation of the Danish Recovery and Resilience Plan is progressing as planned. On 13 April 2023, the Commission issued its implementing decision authorizing the disbursement of around 300 million euros to Denmark. This was based on the completion of 25 out of 77 milestones and targets in the Danish plan. Furthermore, the Danish cohesion policy program for 2021 to 2027 has been adopted by the Commission in 2022, and is currently under implementation.

1.2 Justification for the addendum

The modification of the Danish Recovery and Resilience plan is based on the introduction of a REPowerEU chapter of 975 million DKK and the transfer of funds from the Brexit Adjustment Reserve (BAR) of 491 million DKK. Consequently, the legal base is art. 21a to benefit from the additional non-repayable financial support to contribute to the REPowerEU objectives and art. 21b(2) to benefit from voluntary transfers from the Brexit Adjustment Reserve. The reduction for the Danish plan will not entail further revision of the plan, as the reduction is funded by national funds in 2022.

Part 2. REPowerEU chapter

2.1 General objective of the chapter

The Russian war of aggression in Ukraine and the related energy crisis demonstrated the vulnerability of Europe's energy security to geopolitical tensions and disruptions in the energy market. It highlighted the need for Europe to diversify its energy sources and become independent from Russian fossil fuel.

In Denmark, the political response was swift. A number of political agreements were concluded with the aim of addressing the challenges of the energy crisis and accelerating the transition to renewable energy sources.

Four measures are included in the REPowerEU chapter:

- Renewable energy:
- Green upskilling;
- Replacing oil burners and gas furnaces (upscaling existing measure);
- Carbon Capture and Storage (CCS) (upscaling existing measure).

The four measures will contribute to fullfilling the Country Specific Recommendations for Danmark regarding the energy crisis and REPowerEU as well as the reduction of overall reliance on fossil fuels. This is done by investments in renewable energy, reforms to simplify and expedite administrative and permitting procedures and by investing in a highly skilled workforce that is equipped with the knowledge and expertise to develop, implement, and maintain green technologies and practices.

2.2 Descriptions of reforms and investments

The REPowerEU chapter includes four measures with investments and reforms, as shown in Table 2.

Table 2
Overview of the REPowerEU chapter of the Danish Recovery and Resilience Plan

M. DKK, 2023-prices	2023	2024	2025	2026	Total
8. REPowerEU	**482,6**	**298,1**	**458,1**	**228,2**	**1.467,0**
8.1 Renewable energy	147,6	247,9	34,3	16,6	446,4
8.2 Green upskilling	-	-	103,9	103,9	207,8
8.3 Replacing oil burners and gas furnaces (upscaling existing measure)	335,0	-	-	-	335,0
8.4 Carbon Capture and Storage (CCS) (upscaling existing measure)	-	50,2	319,9	107,7	477,8

Renewable energy

The measure on renewable energy is based on the establishment of a National Energy Crisis Staff (NEKST) tasked with driving a reform agenda to reduce administrative burdens and simplify permitting procedures in order to speed up the green transition. The reform will set up NEKST for the years 2023 and 2024 with an objective to speed up and coordinate 1) the expansion of district heating, 2) the electrical grid and 3) the deployment of renewable energy. NEKST will focus on mapping challenges and bottlenecks, and will have direct authority to simplify and expedite administrative and permitting procedures insofar as identified solutions brings no additional administrative costs or require legal changes. If they do, NEKST will instead recommend solutions for political decision.

To complement the reform, the measure on renewable energy also includes three investments in the roll-out of renewable energy.

The investment in preparations for 4 GW offshore wind dedicates 97,7 million DKK to cover the preparation and completion of the call for tender for 4 GW offshore wind turbines. The aim of the initiative is to expand offshore wind energy production by 4 GW by 2030.

The investment in the screening of Denmark's potential offshore wind capacity dedicates 52,0 million DKK to conducting a sensitivity mapping, a technical in-depth screening, an assessment of possible cumulative effects from large scale expansion of offshore wind energy and an assessment of barriers and potentials related to co-existence by early 2026.

The investment in the testing of wind turbines dedicates 276,7 million DKK to investment support for test of wind turbines on land and offshore in 2023 to 2024. The purpose is supporting test and demonstration of full-scale wind turbines. In line with recommendations from the Test Wind Turbine Analysis from 2021, the initiative is focused on investment support rather than operating support.

Green upskilling

The measure on green upskilling aims to ensure that businesses have access to necessary competences for the green transition by investing in a highly skilled workforce equipped with the knowledge and expertise to develop, implement, and maintain green technologies and practices.

The measure includes 103,9 million DKK in 2025 and an equal amount in 2026 in a reserve for green education and upskilling. The use of the funds will focus on enhancing competences necessary for the green transition.

Replacing oil burners and gas furnaces
The existing Recovery and Resilience Plan includes a measure on replacing oil burners and gas furnaces, described in section 2.3.3, page 93 of the plan.

As part of the REPowerEU chapter, the measure is scaled up by adding funding for the decoupling scheme and district heating pool, which are both sub-schemes under the existing measure. Increasing funding for the decoupling scheme will enable more Danish households to decouple from the gas network, by covering the cost of decoupling, which is estimated to be around 8.000 DKK per household. Increasing funding for the district heating pool will help district heating roll-out to new areas where oil and gas furnaces will be replaced by district heating through subsidies to district heating companies.

The scale-up adds 335 million DDK to these measures in 2023, which will increase the existing efforts significantly.

Carbon Capture Storage (CCS)
The new chapter includes an upscaling of the measure on the potential for carbon capture and storage (CCS). The existing measure includes a feasibility study on possible storage sites for CO_2 in depleted oil- and gas fields, which is described in section 2.3.6, page 104 of the plan. In 2021, as a next step, the Danish government allocated a total of 2,6 billion DKK (current prices) to a Negative Emissions CCS-Fund (NECCS Fund), dedicated to the realization of negative emissions through capture and geological storage of biogenic CO_2. The fund provides incentives for investments in CCS technologies and infrastructure aimed at achieving negative emissions by 2025. With some uncertainty, the initiative could reduce CO_2 emissions by 0,5 million tons annually from 2025 to 2032.

As part of the REPowerEU-chapter the NECCS will be partially funded under REPowerEU. Specifically, the NECCS Fund disbursements of 50,2 million DKK in 2024, 319,9 million DKK in 2025 and 107,7 million DKK in 2026, while the rest is financed nationally.

Summary box

Table 3
Measures added/scaled up with grants (Art. 21a, 21b (2), 18(2))

Name of the measure	Existing CID reference number	Estimated cost
8.1 Renewable energy		446,4 m. DKK
8.2 Green upskilling		207,8 m. DKK
8.3 Replacing oil burners and gas furnaces (upscaling existing measure)	DK-C[C3]-I[I1]	335,0 m. DKK
8.4 Carbon Capture and Storage (upscaling existing measure)	DK-C[C3]-I[I5]	477,8 m. DKK

REPowerEU objectives

The measures in the REPowerEU chapter contribute to several of the REPowerEU objectives, as can be seen from the overview table below.

Table 4
Link between Danish REPowerEU measures and REPowerEU objecties

Name of measure	REPowerEU objectives addressed
8.1 Renewable energy	21c(3)(b) and (e)
8.2 Green upskilling	21c(3)(f)
8.3 Replacing oil burners and gas furnaces (upscaling existing measure 3.1)	21c(3)(b)
8.4 Carbon Capture and Storage (CCS) (upscaling existing measure 3.5)	21c(3)(b)

The measure on renewable energy consisting of a reform establishing a new national energy crisis staff (NEKST) tasked with speeding-up permitting procedures for renewable energy projects will accelerate the deployment of renewable energy, a central REPowerEU objective.

Likewise, the measure's complimentary investments in preparations for 4 GW offshore wind turbines, screening of Denmark's offshore wind capacity and testing of wind turbines will also increase the share and accelerate the deployment of renewable energy by increasing renewable energy generation capacity.

The measure on green upskilling supports the REPowerEU objective of accelerated requalification of the workforce towards green skills. The measure will focus on upskilling and reskilling through education, thereby contributing to a workforce with the skills and competences needed for achieving national and European energy and climate objectives.

The upscaling of the measure on replacing oil burners and gas furnaces will contribute to the de-carbonisation of heating systems by expanding highly energy efficient and renewable district heating.

The upscaling of the measure on CCS is related to the objective of decarbonising industry as CCS is set to be an important tool to lower CO2e emissions in order to reach Denmark's ambitions climate targets.

The addition of the measures in the REPowerEU chapter contributes to filling gaps in the existing Recovery and Resilience Plan. While the existing plan is among the greenest in the EU, it does not include measures directly aimed at increasing the share and accelerating the deployment of renewable energy, speeding-up permitting procedures or improving green skills.

Finally, the level of ambition in the existing measures on replacing oil burners and gas furnaces as well as CCS is increased substantially, while maintaining the focus and direction of the original measures.

With the addition of the REPowerEU chapter, the Danish Recovery and Resilience Plan represents a coherent response to the REPowerEU objectives as well as the six pillars, as explained in section 1 page 13-43 of the existing plan.

1.2.1 Renewable energy

A) National energy crisis staff (NEKST)

Addressing challenges: Accelerating the green transition requires a coordinated effort. The government coalition agreement of 14 December 2022 includes a reform establishing a national energy crisis staff (NEKST) tasked with increasing the pace of the green transition.

NEKST will be the principal reform vehicle for further speeding up permitting and reducing administrative barriers related to renewable energy.

The specific changes to be implemented are not yet known, but will depend on detailed mapping of current challenges and bottlenecks. The work will be carried out by groups focusing on specific areas of the green transition with participation of relevant government authorities and agencies, municipalities, civil society, members of academia, and private actors. As such, NEKST will be a new way of working together in the Danish public administration focusing on enhanced collaborations to support a faster expansion of renewable energy.

In order to quickly implement identified ways to speed up permitting and administrative procedures, NEKST will have direct authority to act on and resolve identified barriers, insofar as this have no judicial consequences or increased financial costs. If identified solutions are expected to have financial or judicial implications, NEKST will recommend the necessary political decisions to ensure fast progress in the green transition.

The changes resulting from NEKST are expected to have long-term effects for multiple reasons. First, the direct simplification of procedures are expected to be permanent, thus shortening procedures for roll-out of green energy going forward. Second, suggested changes to regulations would formally and permanently adapt legal procedures. Third, a faster roll-out of green energy could crowd out private investment in fossil fuel, by reducing the relative incentives for these solutions, thereby structurally reducing the share of fossil fuel.

Objectives: NEKST is tasked with 1) speeding up and coordinating the expansion of renewable energy, including the expansion of district heating and other green heating solutions such as individual heating pumps, 2) the deployment of renewable energy on land, and 3) the expansion of the electrical grid.

Initially, NEKST will focus on the following issues:

Green household heating
Danish households heated by natural gas boilers can be converted to green heating solutions, thereby reducing the demand for gas and increasing the share of renewable energy.

In Denmark, the responsibility for planning the heating supply, including approving new district heating projects, lies at municipality level. Based on a political agreement, the municipalities in 2022 sent out letters to property owners in gas heated areas with information about their future green heating options. In 2023, the municipalities and district heating companies will follow up with specific project proposals for expanding district heating areas. The objective is to establish district heating by 2028 in all areas where it is economically viable. With 98 municipalities and more than 400 district heating companies in Denmark, significant local differences exist. NEKST is tasked with mapping out geographical areas with challenges and implement initiatives to measurably shorten the preparation and approval procedure of district heating projects.

Investment risks from shortages and increasing prices of labour and materials as well as uncertainty on the number of households joining district heating projects, further hampers implementation. NEKST is tasked with mapping out challenges and solutions to measurably shorten the roll-out time in areas, where projects are economically viable.

In areas where district heating is not a viable option, households can convert to other green solutions such as individual heat pumps or collective heating solutions. NEKST is tasked with mapping out challenges and solutions for a faster expansion of other green heating solutions.

NEKST will produce a final report regarding district heating by the end of 2023.

Renewable energy on land
The expansion of renewable energy on land, including photovoltaic and wind energy, is an essential component of the green transition.

A fast scale-up of photovoltaic and wind energy risks being hampered by administrative barriers. NEKST is tasked with identifying these barriers, including the regulatory framework and the specific interpretation of EU and national rules, and present proposals on how to shorten administrative procedures. These proposals can include more efficient work procedures, making work streams work in parallel and/or reducing the number regulatory authorities involved in approval procedures.

Further, to increase the speed of renewable projects, the various strands of administrative procedures should be reviewed from the point of view of the various actors involved, e.g. project developers, citizens etc. NEKST is tasked

with mapping the potential for an adjusted division of labour and better coordination among authorities.

Local resistance to renewable energy can present a formidable barrier for efficient implementation of e.g. photovoltaic and wind energy projects. NEKST is tasked with collecting "best-practices" from across municipalities on engaging local communities and ensuring support.

NEKST will produce a final report regarding renewable energy on land by spring 2024.

Implementation: The reform takes inspiration from the existing *national operative staff* (NOST), where relevant authorities are called together in case of emergency situations in order to coordinate solutions and collaborate together to efficiently manage the emergency.

The government's Green Committee will decide which specific tasks relating to the green transition NEKST is to work on. When NEKST is tasked to work on a green transition challenge, a group is established and must deliver within a short timeframe. NEKST is led by the Danish Ministry of Climate, Energy and Utilities and will be supported by a secretariat of public officials. The only cost of the NEKST reform, covered by the REPowerEU-chapter, relates to the temporary staffing for the secretariat.

Target group: Relevant parties such as government authorities and agencies, municipalities, civil society, members of academia, and private actors are invited to contribute to NEKST, and will be asked to present proposals for solving the pressing green challenges. The involvement of different actors the necessary knowledge needed in order to enable a faster green transition.

Timeline: NEKST was presented in March 2023, and will be established with the approval of the national budget for 2023. It will be evaluated before the end of 2024.

NEKST will present two reports with proposals on how to shorten administrative procedures and permitting in district heating (winter 2023) and renewable energy on land (spring 2024).

State aid: State aid regulation is not relevant for NEKST, since NEKST has no links to state aid compliance.

'Do no significant harm'

Table 5
Substantive DNSH assessment
NEKST

DNSH objective	Yes	No	Negative significant impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	On the contrary. NEKST will enable a faster green transition which is an important driver of emission reduction. NEKST will support the expansion of district heating and greater electrification such as heat pumps, solar panels and wind turbines etc., which is considered compatible with the DNSH assessment for the environmental objective of climate change mitigation. The production of district heating in Denmark relies on a number of different forms of energy, including biomass, gas, electricity etc. It is projected that the production will rely almost entirely on renewable energy by 2030.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	On the contrary. NEKST will enable a faster green transition which is an important driver of emission reduction.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	No. NEKST has no negative implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of nonrecyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	No. NEKST has no implication for the waste handling or the circular economy. The expansion of district heating is expected to be covered by renewable energy sources such as electricity, geothermal energy, surplus heat and biomass.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	No. Pollutants are strictly regulated in Danish environmental laws and this does not change with the establishment of NEKST.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	No. NEKST has no implication for the protection and restauration of biodiversity and ecosystems.

B) Preparations for 4 GW offshore wind

Addressing challenges: In order to support the government's ambition of reaching climate neutrality already by 2045, Denmark plans to massively upscale its offshore wind capacity. The upscaling will also contribute to ensuring enough

offshore renewable energy to reach the EU's ambitious target of 300 GW offshore wind in Europe before 2050.

Objectives: The Danish government and a broad majority in Parliament signed a climate agreement in June 2022 agreeing on enabling tenders in order to expand offshore wind energy generation, including tenders of at least 4 GW offshore wind energy to be established by 2030, at the latest. The objective of the investment included in the REPowerEU chapter is to prepare and carry out the tenders for this expansion of 4 GW offshore wind energy.

Target group: The target of the investment is the energy companies that will bid on the tenders. This will indirectly target households and businesses who will benefit from an increased share of renewable energy by 2030.

Implementation: The areas which are to accommodate the 4 GW offshore wind farms are offered on the condition that the offshore wind farms do not result in net costs for public finances over the project period or overextend electrical grid capacity.

The Danish state does not guarantee realization of the 4 GW, but provides the framework for realization under market conditions, i.e. without state aid or public compensation measures.

Therefore, the Danish government only bears the costs of preparing and carry-out the tenders, which are included in the REPowerEU chapter. Consequently, the investment relates to the preparations of tenders, expenses to market dialogue, expenses in relation to the tender process – including Q&A process, public meetings, environmental assessment process, preparation of permits to TSO Energinet and concession winners etc. The costs are not recurring as they are temporary and only related to the preparation and carrying out of the tenders. The final delivery will be the call for tenders for the 4 GW offshore wind.

The investment will be implemented by the Danish Energy Authority which will be a one-stop-shop for the concession winners.

Timeline: The preparation and launch of call for tenders for 4 GW offshore wind will happen in the period 2023 to 2026.

State aid: State aid regulation is not relevant for the measures, since it has no links to state aid compliance.

C) Screening of Denmark's offshore wind capacity

Adressing challenges: In order to support the government's ambition of reaching climate neutrality already by 2045, Denmark plans to massively upscale its offshore wind capacity. The upscaling will also contribute to ensuring enough offshore renewable energy to reach the EU's ambitious target of 300 GW

offshore wind in Europe by 2050, in line with the Esbjerg, Marienborg and Ostende declarations.

Objectives: The expansion of offshore wind in the North Sea and the Baltic Sea require strategic planning, optimization of the offshore area and wind ressources, longterm consideration of aspects related to nature and environment, interplay with other offshore interests as well as multilateral dialogue.

As a first step to ensure this, a screening of Denmark's offshore wind capacity has been be intitiated. The data collected in this project will serve as a knowledge-based foundation for future decisions regarding the placement of large scale offshore wind farms in Denmark. The current project will provide a significantly improved knowledge in relation to the large-scale development of offshore wind. However, there will still be a knowledge gap as regards several environmental conditions as well as the impacts of offshore wind, which cannot be accommodated within the current financial framework of the project. The project will therefore also include areas where additional knowledge is needed in order to conclude whether the area is suitable for offshore wind farms

Target group: By collecting data on wind resources and the offshore wind capacity in Denmark, the target of the investment is renewable energy companies and other marine area stakeholders, while households and businesses will be indirectly targeted as they will benefit from an increased share of renewable energy.

Implementation: The Danish Energy Agency has initiated work to secure the necessary data, which will support future planning and deployment of offshore wind on a large scale.

Based on the data collected, The Danish Energy Agency will publish a report on the potential offshore wind capacity in Denmark by 2025/2026 which takes into consideration nature, environmental and other offshore related interests.

The project is split into four sub assignments:

1) sensitivity mapping of aspects related to nature and environment as well as other significant offshore interests of relevance to the expansion of offshore wind;

2) a technical in-depth screening and assessment of the full offshore wind potential based on the sensitivity mapping and relevant technical parameters;

3) an assessment of possible cumulative effects from large scale expansion of offshore wind in Denmark as well as in neighbouring countries;

4) an assessment of barriers and potentials related to co-existence between offshore wind and other interests.

The most substantial outputs expected are GIS maps, data and a final report on overall findings. For every subject of the task (for instance benthic fauna and flora, fish, etc.), a specific report will be made. The main points of these will be included in the final report, which will summarize and describe the most essential results of the sensitivity mapping.

The work is carried out by a working group under the Danish Energy Agency. Relevant authorities with area related interests at sea are involved, where relevant. These include the Environmental Protection Agency, the Danish Maritime Authority, the Defence Command, the Danish Fisheries Agency, the Danish Coastal Authority, etc. Furthermore, a stakeholder group made up of interest organisations will be included, where relevant, for instance in thematic discussions related to topics such as effects on birds, fishery, etc.

Timeline: The project is carried out from 2022 to 2025.

State aid: State aid regulation is not relevant for the measures, since it has no links to state aid compliance.

D) Testing of wind turbines

Adressing challenges: There is a substantial potential in improving the framework conditions for the development of future on- and offshore wind turbines, which will be central for further expansion of renewable energy, including in the North Sea and Baltic Sea. Therefore, funding has been dedicated for testing full-scale wind turbines on shore as well as offshore.

Objectives: The measure will launch two open calls for applications for investment support for the testing of wind turbines onshore and offshore. The objective is to boost research and development in the field of wind energy.

The support comes from restructuring an existing national support measure in 2022 from operational to investment support for testing wind turbines onshore and by providing investment support for offshore test wind turbines, which were not eligible for operating support under the earlier scheme.

With the revised investment support regime, the conditions for the development of future onshore and offshore wind turbines will be significantly improved for the market actors. The REPowerEU investment concerns the investment support in 2023 to 2024.

Implementation: The Climate Agreement for Energy and Industry of 2020 allocated funds to test onshore wind turbines in 2022 to 2024 to promote wind energy research and development activities.

With the Climate agreement 2022 the parties to the agreement agreed that the financial support for testing of wind turbines in 2023 to 2024 onshore should be

restructured from operational to investment support, following the recommendation in the Test Wind Turbine Analysis of 2021.

The parties to the agreement also agreed on the need to expand the legal to include offshore testing. The legal basis for government funding for this was approved by the Danish Parliament in March 2023.

Target group: The funds will be disbursed as investment support to companies for testing of wind turbines in two separate open calls. One call will be focused on testing of wind turbines onshore while the other will be focused on testing of wind turbines offshore.

Timeline: The investement support for the testing of onshore wind turbines will be budgeted in 2023 and 2024, while the funds for the testing of offshore wind turbines will be budgeted only in 2024.

State aid: State aid is compatible with the internal market and exempted from the notification requirement of art. 108(3) of the Treaty, provided that all relevant conditions laid down in the General Block Exemption Regulation (GBER) are fulfilled. Investment aid for the testing of wind turbines is covered by GBER art. 41.

Denmark will ensure that the aid granted under the scheme fulfils all relevant conditions in GBER chap. I and art. 41. Moreover, in accordance with GBER art 11(1)(a), a summary of the aid measure, including a link to the full text of the aid measure, will be submitted via the Commission's electronic notification system (SANI) within 20 working days following the measures entry into force.

'Do no significant harm'

Table 6

Substantive DNSH assessment

4 GW off shore wind, test of wind turbines and screening on off shore wind

DNSH objective	Yes	No	Negative significant impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	No. On the contrary the measures will increase renewable energy, thereby lowering overall greenhouse gas emissions. Some greenhouse gas emissions stemming from activities related to the off shore wind-value chain are expected. However, they will not be significant in the light of the amount of additional renewable energy.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	The measures are not foreseen to lead to increased adverse impacts requiring additional climate change adaptation.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	The measures are to some degree expected to have some minor negative effects on the marine resources. These effects are however not assed to be detrimental since an environmental impact assessment is always performed before installing off shore wind turbines, and Denmark has very strict environmental requirements.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of nonrecyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	The measures are not expected to result in inefficiencies in use of material or natural resources.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	Significant emissions of pollutants into air, water or land are not foreseen by this initiative.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	The measures are not expected to be significantly detrimental to the good condition and resilience of ecosystems or detrimental to the conservation status of habitats and species, including those of Union interest

1.2.2 Green upskilling

Addressing challenges: The green transistion creates opportunities in the labour makret with new demands for green skills. In Denmark, the proportion of job postings regarding green skills has risen significantly over the past 15 years. In 2007, green skills were demanded in 4,3 pct. of job postings. In the first 7 months of 2022 this demand has increased to 8,6 pct.

There is broad policital focus on strenghtening adult education and continuous training in green skills to ensure that businesses have the skills needed for

implementing the green transition and reducing CO2-emissions. With the political agreement on Green Tax Reform for the Industry of 24 June 2022, dedicated funds are allocated to green upskilling in 2025 and 2026.

Objectives: The funds will be directed at improving skills needed for the green transition, thereby ensuring that Denmark has a highly skilled workforce with the necessary knowledge and expertise to develop, implement and maintain green technologies and practices.

This goal can be achieved by targeting the investments to i.e. investments in green equipment for providers of vocational education and training programmes, skill development of teachers, and/or developing and testing of green educational programmes.

Vocational education and training is continuously adapting to changed demand through close cooperation with social partners. The social partners have influence when it comes to adjusting educational programmes to these changed conditions on the labour market.

Implementation: With the political agreement of 24 June 2022, dedicated funds for green upskilling are allocated in the years 2025 and 2026.

The political agreement requires that the government present a model for the implementation of the funds to the parties to the agreement. Based on this proposal, the concrete model for implementation will be decided by the parties to the agreement.

The funds will be disbused to the providers of vocational education and training programmes in accordance with the decided model for implementation.

Target group: The funds will target i.e. investments in green equipment for providers of vocational education and training programmes, skill development of teachers, and/or development and tests of green educational programmes.

The funds will thereby contribute to ensuring that the vocational education and training programmes can meet a rising demand for qualified labour needed to support the green transition, including the transformation of the energy sector.

Timeline: 103,9 million DKK is allocated to this task annually in 2025 and 2026 as a reserve fund for green transition and upskilling. The concrete model for implementation will be decided by the parties to the agreement before the funds are implemented.

State aid: The measures will comply with state aid rules, and in case of open calls these will also comply with the relevant transparency requirements.

'Do no significant harm'

Table 7
Substantive DNSH assessment
Green upskilling

DNSH objective	Yes	No	Negative significant impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	The measure is a matter of investments in green upskilling in the education sector and does not lead to significant increases in greenhouse gas emissions. The funds can for example target green equipment investments among providers of vocational education, skill development of teachers and development of green educational programmes. Investments in new equipment may increase greenhouse gas emissions, but potential increases will not be significant.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	The measure is not expected to lead to an increased adverse impact of the current climate or on people, nature or assets. As mentioned above, the activity is a matter of investments in green upskilling in the education sector.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	The measure is not expected to have a direct or indirect implication for the use and protection of water services.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of nonrecyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	The measure does not affect circular economy, waste management or recycling negatively. On the contrary, the measure can indirectly improve the above as the investment will be focused on improving the skills needed for the green transition and contributing to a highly skilled workforce.
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	The measure is not expected to affect the preservation and protection of clean air, water or land negatively. As it is the case above, the measure can indirectly improve the above through a work force with updated skills needed for the green transition.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	The measure is not expected to affect the restoration of biodiversity and ecosystems negatively. Pollutants are strictly regulated in Danish environmental laws and this does not change with the investments in green upskilling.

1.2.3 Replacing oil burners and gas furnaces

Addressing challenges: Oil and natural gas are sought to be phased out of the heating system and replaced with electric heat pumps and district heating from renewable sources. To speed up the phasing out of oil burners and gas furnaces

and reduce the cost of consumers to convert to green heating, funds are allocated to subsidies for conversions to green solutions.

Objectives: The measure will scale up the existing measure in the Danish RRP on replacing oil burners and gas furnaces. The measure aims at phasing out oil and natural gas of the heating system and replace it with electric heat pumps and district heating from renewable sources This approach of up-scaling will benefit from the existing framework already in place for the implementation of the measure, ensuring fast and targeted roll out.

Implementation: The existing measure on Replacing Oil Burners and Gas Furnaces is described in section 2.3.3, page 93 of the plan. The measure is scaled up by adding funding for the decoupling scheme (sub-measure 1 of Investment 1 of component 3 (Sub-scheme for district heating 'Fjernvarmepuljen') and the district heating pool (sub-measure 2 of Investment 1 of component 3 (Sub-scheme for decoupling "Afkoblingsordningen"), which are both sub-measures under the existing measure for Replacing Oil Burners and Gas Furnaces.

The scale-up adds 335 million DDK to these measures in 2023. The funds are divided with 147 million DKK to the decoupling scheme and 188 million DKK to the district heating pool.

This scale-up will increase the ambitions in the current measure, enabling even higher targets on the number of oil burners and gas furnaces to be replaced with heat pumps or district heating.

Target group: Increasing funding for the decoupling scheme will subsidize even more Danish households to decouple from the gas network.

Increasing funding for the district heating pool will enable district heating roll-out to new areas where oil and gas furnaces will be replaced by district heating through subsidies to district heating companies.

Timeline: The scale-up adds 335 million DDK to the existing measures in 2023.

The existing two sub-measures are already described in section 2.3.3, page 93-97 of the plan. This information remains valid for the implementation, state aid compliance, target group, climate and environmental tagging, digital tagging and the do no significant harm assessment.

1.2.4 Carbon Capture and Storage

Addressing challenges: The Danish Climate Act includes a binding target of reducing Denmark's total greenhouse gas emissions by 70 pct. by 2030 compared to the 1990 level. The Danish government has announced an ambition to reach climate neutrality already by 2045 as well as reducing CO2 emissions nationally by

110 pct. by 2050, reaching a negative level. These goals complement the EU climate targets.

Negative emissions obtained through CCS (NECCS) are considered an efficient and necessary societal tool for achieving Denmark's ambitious reduction targets. The need for negative emissions achieved through CCS to mitigate climate change is well documented in reports from e.g. the Intergovernmental Panel on Climate Change and the International Energy Agency.

However, because there is currently no (commercial) market for negative emissions CCS, market operators that may be able to make use of the technology, lack a financial incentive to introduce it. As such, government support and public funding is necessary in order to make NECCS financially viable. The existing Recovery and Resilience Plan a measure of a CCS feasibility study, which would explore the potential of CCS. This measures up-scales the existing measure on feasibility study on possible storage sites for CO_2 in depleted oil- and gas fields, as it represents the next step in CCS deployment.

Objectives: In light of this, on 4 December 2021 a political majority in the Danish Parliament signed a sub-agreement under the Finance Act for 2022[1], introducing the NECCS fund of DKK 2,6 billion (current prices). The Fund will support capture and geological storage of biogenic CO_2, aiming to achieve negative emissions of 0,5 million tons per year from 2025 to 2032. The REPowerEU chapter will cover NECCS Fund disbursements of 50,2 million DKK in 2024, 319,9 million DKK in 2025 and 107,7 million DKK in 2026. The remainder will be funded nationally. The purpose is to decarbonise industrial facilities and deliver negative emissions.

Target group: The aid recipients will be emitters of biogenic CO2. The specific technologies in mind are biogas upgrading plants, industrial processes, energy and waste sectors including biomass, and, finally, CO2 captured through direct air capture and storage (DACCS). However, any source that can provide geological storage of biogenic CO2 can participate in the tender.

Implementation: The winning aid recipients will be chosen through a competitive bidding process among potential bidders, conducted following the requirements in the Danish Public Procurement act, which implements the EU's Public Procurement Directive. The aid will be granted following pay-as-bid based on the aid per unit (metric tons) of CO2-emissions reduced by capture and geological storage.

The measure is intended to grant operating aid – including depreciation costs for capture investments and the anticipated costs for transport and storage – for

[1] Agreement on investments in a continually greener Denmark, 4 December 2021 (in Danish)

negative CO2 emissions to the agent handling the full value chain. The potential bidders can be any legal entity that can assume responsibility for the full CCS value chain.

The subsidy will be paid per ton CO2 captured and stored, and will be adjusted throughout the contracting period to reflect inflation. Penalties for non-compliance will also apply.

Timeline: The total size of the NECCS-fund is DKK 2,6 billion (current prices). The fund's annual deployment profile is based on the political agreement. The REPowerEU chapter will cover NECCS Fund disbursements of 50,2 million DKK in 2024, 319,9 million DKK in 2025 and 107,7 million DKK in 2026, while the rest is financed nationally.

State aid: The NECCS scheme constitutes state aid for the reduction and removal of greenhouse gas emissions. Hence, the Danish Energy Agency (DEA) will prepare the scheme and the notification in accordance with the Commission's Guidelines on State aid for Climate, Environmental Protection and Energy ("CEEAG"), sections 3 and 4.1.

To be ready to capture CO2 full-scale in 2025, market operators will likely need to make their final investment decision in 2023 at the latest. This relies on an award of contract(s) and, thus, a state aid approval by the end of November 2023.

The DEA acknowledges that this entails a compressed timeline. However, the DEA is working towards the submission of a pre-notification to the Commission by the beginning of June 2023 and a final notification by the end of September 2023.

‘Do no significant harm’

Table 8
Substantive DNSH assessment
CCS

DNSH objective	Yes	No	Negative significant impact?
Climate change mitigation: Is the measure expected to lead to significant greenhouse gas emissions?		X	The activities are not foreseen to result in significant greenhouse gas emissions as the scheme targets negative emission. Hence, the CCS initiative will reduce emissions of biogenic CO2, thereby contributing to increased up-take of CO2 from the atmosphere. Limited greenhouse gas emissions stemming from activities related to the CCS-value chain are expected. However, they will be outweighed by the negative emissions expected from the initiative.
Climate change adaptation: Is the measure expected to lead to an increased adverse impact of the current climate and the expected future climate, on the measure itself or on people, nature or assets?		X	This initiative is not foreseen to lead to increased adverse impacts requiring additional climate change adaptation.
The sustainable use and protection of water and marine resources. Is the measure expected to be detrimental: (i) to the good status or the good ecological potential of bodies of water, including surface water and groundwater; or (ii) to the good environmental status of marine waters?		X	This initiative is not foreseen to affect the ecological state of waterbodies and marine resources. • CO2-capture and transport are not expected to the ecological state of waterbodies and marine resources. Leakage is minimal and will -if it happens- end up in the atmosphere. • CO2-storage activities will take place in depleted gas and oil fields and/or aquifers in accordance with the safety requirements of the CCS Directive (Directive 2009/31/EC). Furthermore, extensive EIAs will be performed for each CO2 store.
The transition to a circular economy, including waste prevention and recycling. Is the measure expected to: (i) lead to a significant increase in the generation, incineration or disposal of waste, with the exception of the incineration of nonrecyclable hazardous waste; or (ii) lead to significant inefficiencies in the direct or indirect use of any natural resource at any stage of its life cycle which are not minimised by adequate measures; or (iii) cause significant and long-term harm to the environment in respect to the circular economy?		X	This initiative is not expected to result in inefficiencies in use of material or natural resources. CO2 storage anticipated existing structures such as for instance pipelines, oil- and gas platforms and existing wells. The scheme targets existing sources of biogenic CO_2 emissions, and as such is not foreseen to lead to significant inefficiencies in direct and indirect use of natural resources. The installations supported will need to be significantly below the applicable ETS product benchmark for free allocation
Pollution prevention and control: Is the measure expected to lead to a significant increase in the emissions of pollutants into air, water or land?		X	Significant emissions of pollutants to the environment are not foreseen by any of the initiatives or by the activities supported by the NECCS- fund.
The protection and restoration of biodiversity and ecosystems. Is the measure expected to be: (i) significantly detrimental to the good condition and resilience of ecosystems; or (ii) detrimental to the conservation status of habitats and species, including those of Union interest?		X	Activities supported by the NECCS Fund are not expected to adversely affect biodiversity and ecosystems. No effects on ambitions and national obligations of CO_2 uptake in the LULUCF sector are anticipated.

2.3 Financing and costs

Table 9 provides a detailed overview of the costs of the measures included in the REPowerEU chapter and financed from REPowerEU.

Table 9
Cost estimates of sub-measures of the REPowerEU chapter

M. DKK, 2023-prices	2023	2024	2025	2026	Total
8.1 Renewable energy	147,6	247,9	34,3	16,6	446,4
National energy crisis staff (NEKST)	*10,0*	*10,0*	-	-	*20,0*
Preparations for 4 GW offshore wind	*31,2*	*31,2*	*18,7*	*16,6*	*97,7*
Screening of Denmark's offshore wind capacity	*20,8*	*15,6*	*15,6*	-	*52,0*
Testing of wind turbines	*85,6*	*191,1*	-	-	*276,7*
8.2 Green upskilling	-	-	103,9	103,9	207,8
Green upskilling pool	-	-	*103,9*	*103,9*	*207,8*
8.3 Replacing oil burners and gas furnaces (upscaling of measure)	335,0	-	-	-	335,0
District heating pool	*188,0*	-	-	-	-
Decoupling scheme	*147,0*	-	-	-	-
8.4 Carbon Capture and Storage (CCS) (upscaling of measure)	-	50,2	319,9	107,7	477,8
NECCS Fund	-	*50,2*	*319,9*	*107,7*	*477,8*
Total, REPowerEU	**482,6**	**298,1**	**458,1**	**228,2**	**1.467,0**

Renewable energy

National energy crisis staff (NEKST)
The reform entails costs for the temporary establishment of NEKST of 10 million DKK in 2023 and 2024.

NEKST is led by the Danish Ministry of Climate, Energy and Utilities and will be supported by a secretariat of public officials. The only cost of the NEKST reform, covered by the REPowerEU-chapter, is related to the temporary staff of the secretariat, estimated at 10 million DKK in 2023 and 2024.

The rest of the staffing resources required for NEKST will be managed within existing budgets, as needed. NEKST must notify the government's Green Committee, if one of the recommended solutions to a green transition challenge is expected to carry financial costs.

Preparations for 4 GW offshore wind
The preparations and call for tenders of 4 GW of offshore wind will be financed according to *The Climate Agreement on green electricity and heat* of 25 June 2022, which allocated 114 million DKK to the investment in the period 2022 to 2026. REPowerEU is set to cover the expenditures in 2023 to 2026, which amounts to 97,7 million DKK.

The underlying cost estimates are based on earlier tenders, for the offshore wind farm Thor. The costs cover the preparations of tenders, market dialogue, and the tender procedure, including Q&A procedure, public meetings, environmental assessment and preparation of permits to Energinet, which is an independent public enterprise owned by the Danish Ministry of Climate, Energy and Utilities. Potential changes in the tender conditions as compared to a standard offshore wind farm are not included in the cost estimate.

The costs are not recurring as they are temporary in nature and linked to the duration of the preparation and carrying out of the tenders for 4 GW offshore wind.

Screening of Denmark's offshore wind capacity
For the screening of Denmark's offshore wind capacity, a total of 63 million (2022 prices) DKK has been allocated in 2022 to 2025, of which REPowerEU are to cover costs in the period 2023 to 2025, amounting to 52 million DKK. The largest share of this is for consultants, while 5,2 million DKK (2022 prices) annually is dedicated to wages.

Testing of wind turbines
In total, 276,7 million DKK is dedicated to the testing of wind turbines in 2023 and 2024.

For the testing of offshore wind turbines, 105,5 million DKK is dedicated in 2024 to improve the framework conditions for the development of future offshore wind turbines.

For the testing of onshore wind turbines, 171,2 million DKK is allocated in 2023 to 2024 to increase research and development in wind power technologies. The funds are split with 85,6 million DKK in 2023 and 85,6 million DKK in 2024.

Green upskilling
For the investment in green upskilling, 103,9 million DKK is allocated annually in 2025 and 2026. The costing is based on experiences with similar national investments in green upskilling in 2021 and 2022. The open calls in 2021 and 2022 were over-subscribed.

Based on preliminary data from disbursement of funds under these prior schemes, the 103,9 million DKK annually in 2025 and 2026 can contribute meaningfully to new equipment, developing educational material and teaching skills in the education sector with a focus on improving green skills necessary for the green transition.

Replacing Oil Burners and Gas Furnaces
The measure is scaled up by adding 147 million DKK in 2023 to the decoupling scheme (sub-measure 1 of Investment 1 of component 3 (Sub-scheme for district heating 'Fjernvarmepuljen') and 188 million DKK in 2023 to the district heating

pool (sub-measure 2 of Investment 1 of component 3 (Sub-scheme for decoupling "Afkoblingsordningen"), which are both sub-measures under the existing measure for Replacing Oil Burners and Gas Furnaces.

Carbon Capture and Storage

In 2021, the Danish government allocated a total of 2,6 billion DKK (current prices) to a Negative Emissions CCS-Fund (hereafter "NECCS Fund") over the period 2025 to 2032, dedicated to the realization of negative emissions through capture and geological storage of biogenic CO_2. The fund follows the feasibility study on possible storage sites for CO_2 in depleted oil- and gas fields as part of the measure on Carbon Capture and Storage (CCS) in the existing plan.

The allocation is based on cost estimates by the Danish Energy Agency. Negative emissions are not currently covered by any of the regulatory incentives nationally or EU-wide for reducing CO2 emissions, e.g. carbon taxes or quotas under the Emission Trading Systems. The Danish Energy Agency (DEA) assess that the market for carbon offsets through certified negative emissions is still immature and finds it unlikely that the market will mature markedly in the near future.

Thus, the DEA finds that the likely counterfactual scenario would be a situation without sufficient revenue streams that could incentivize rational agents to invest in eligible negative emissions technologies.

Concerning the relevant costs, the DEA has based its assessment on the counterfactual scenario of an eight-year project period.

Estimated capital expenditures for CCS in waste incineration plants and biomass-fueled combined heat and power plants (CHP plants) include CO2 capture plants, liquefaction and CO2 terminals for intermediate storage. The plants are assumed to have flue gas condensation, so as to minimize capital expenditure by excluding pre-treatment unit (coolers) while maximizing income from surplus heat. For CCS in biogas upgrading plants, estimated capital expenditure includes only liquefaction plants and CO2 terminals for intermediate storage. The depreciation period is assumed to be 15 years. Hence, the cost estimates for capital expenditure take account of the salvage value of the investments after the eight-year project period.

Estimated operating expenditure includes all relevant fixed and variable costs, for example electricity. Transportation and storage are assumed to be provided by subcontractors. Concerning direct air capture and storage (DACCS), the Danish Energy Agency assumes that the technology is even more immature than other eligible technologies. With 18 known operational plants worldwide, financial data

is scarce. The cost information is based on the Danish Energy Agency's Technology Data for Carbon Capture, Transport and Storage[2].

As part of the REPowerEU-chapter the NECCS will be partially funded under REPowerEU. Specifically, the REPowerEU chapter will cover NECCS Fund disbursements of 50,2 million DKK in 2024, 319,9 million DKK in 2025 and 107,7 million DKK in 2026, while the rest is national funding as shown in Table 10 below.

Table 10
CCS total financing and potential CO2-removals

Year	2024	2025	2026	2027	2028	2029	2030	2031	2032
NECCS-fund budget (million DKK, 2023-prices)	50,2	319,9	319,9	319,9	319,9	319,9	319,9	319,9	319,9
of which financed under REPowerEU	*50,2*	*319,9*	*107,7*	-	-	-	-	-	-
Potential CO2-removals (Mt per year)	0,1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5

Note: Based on an average bid of 650 DKK/t.

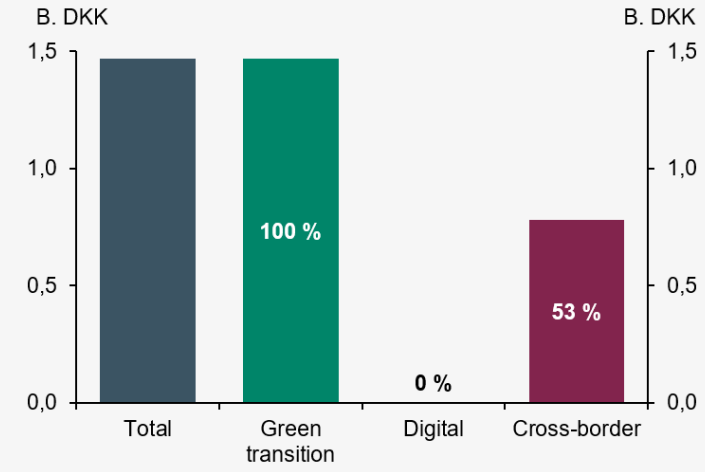
The potential carbon removals are based on the average cost assumptions for CCS from large-scale biogas upgrading plants, which are expected to have the lowest relative costs and submit the lowest bids. It is anticipated that large-scale biogas upgrading plants could bid 650 DKK per ton on average. Based on these assumptions, the budgetary allocation for the NECCS-fund was designed for a potential of 0,5 Mt CO_2-removals in 2030. Due to the undergoing implementation of the value chain, the estimates are subject to a high degree of uncertainty.

2.4 Climate tagging, digital tagging and cross-border effects

Figure 1 below shows climate tagging, digital tagging and cross-border effects of the REPowerEU chapter.

[2] The Danish Energy Agency's technology data for Carbon Capture, Transport and Storage can be accessed at https://ens.dk/en/our-services/projections-and-models/technology-data/technology-data-carbon-capture-transport-and

Figure 1
Green, digital and cross-border contribution of REPowerEU related costs



The REPowerEU chapter contains measures where 100 pct. of the chapter's total allocation contributes to the green transition and 0 pct. to the digital transition.

This assessment is based on the methodology for climate tracking set out in Annex VI and Annex VII of Regulation (EU) 2021/241.

53 pct. of the of the chapter's total allocation have a cross-border or multi-country dimension or effect, in accordance with the Commissions Guidance on Recovery and Resilience Plans in the context of REPowerEU issued on 1 February 2023. The measures on renewable energy and the scale up of replacing oil burners and gas furnaces is assessed to have cross border effects.

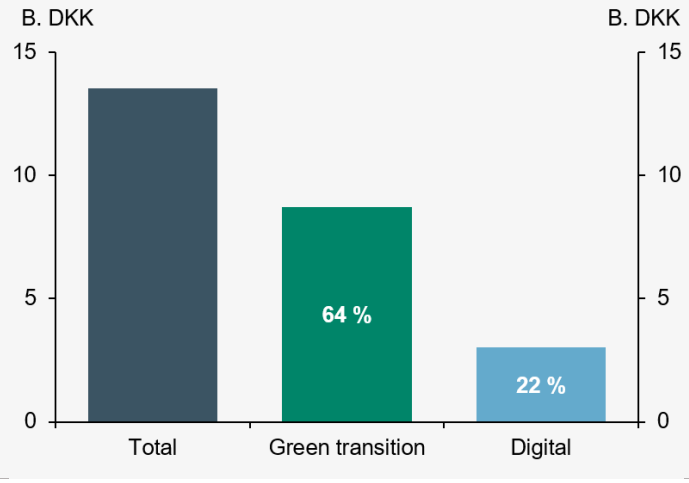
The sub-measures on NEKST, the 4 GW off shore wind, testing of wind turbines, as well as the measure on replacing of oil burners and gas furnaces will contribute to the security of energy supply of the Union by reducing the Union's dependency on fossil fuels and energy demand while also enabling new renewable energy capacity.

The sub-measure on screening of Denmark's off shore wind capacity includes an an assessment of possible cumulative effects from large scale expansion of offshore wind in Denmark as well as in neighbouring countries. Consequently, it is also related to cross border energy flows.

In addition, the measures on green upskilling and CCS could arguably also have cross border effects. However, as these cross-border effects will be more indirect, they have not been included in the tagging. Hence, the 53 pct. is a conservative estimate of the chapter's overall cross-border or multi-country effect.

Figure 2

Green and digital contribution of total RRP costs incl. the REPowerEU chapter*



Note: * The 11,6 b. DKK of the original Danish Recovery and Resilience Plan is concerted to 2023 price-level, i.e. 12,0686 b. DKK, then multiplied according to the cost shares described in Figure 1.3 in the original RRP.

Figure 2 shows the green and digital contribution of the total RRP costs including the REPowerEU chapter. The total green share of the Danish RRP including the REPowerEU chapter is increased to 64 per cent, while the total digital share is decreased to 22 pct.

Part 3: Complementarity and implementation of the plan

3.1 Consistency with other initiatives

The consistency with other initiatives is explained in section 3.2, page 225-229 of the existing plan. As the initiatives in the plan remain unchanged, the description remains valid.

The Danish RRP contributes significantly to the reduction of Denmark's greenhouse gas emissions as set out in the Danish Climate Act and the National Energy and Climate Plan by reducing greenhouse gas emissions by an estimated 2,8 Mt CO2e in 2030. The addition of the REPowerEU chapter will further increase this contribution. An example is the CCS measure which is estimated to reduce greenhouse gas emissions by 0,5 Mt CO2e in 2025 with similar reductions estimated annually afterwards.

Through tax initiatives that strengthen the green transition, the Danish RRP complements investments from the funds covered by the Danish Partnership Agreement. For instance, the green tax reform described in the RRP facilitates a more sustainable agriculture sector, while the European Regional Development Fund (ERDF) programme directs investments to business development and collaboration on green innovation between the primary sector and other sectors. The REPowerEU chapter also includes green innovative investments, namely a new CCS-pool incentivizing infrastructure investments aimed at achieving negative emissions by 2025. In addition, the REPowerEU chapter dedicates 276,7 million DKK to investment support for test wind turbines with the aim of boosting research and development in the area of wind energy.

The RRP funded Danish digitalization fund creates synergy with the European Social Fund Plus (ESF+) and the ERDF. The digitalization fund aims at keeping the position of Denmark as a digital pioneer, strengthening support for companies and jobs for a digital future. Meanwhile the ERDF programme supports the spreading and development of digital technologies and solutions, while the ESF+ programme contributes by spreading digital skills in the workforce. The REPowerEU chapter includes investments in green education and upskilling, which helps to ensure a highly skilled Danish workforce equipped with the knowledge and expertise to develop, implement, and maintain green technologies and practices. Hence, the combined efforts will help strengthen and prepare the Danish workforce for the twin transition.

3.2 Complementary of funding

The complementary of funding is explained in section 3.3, page 229-230 of the plan. For the REPowerEU chapter, the funding will be registered in the budget,

for example through a supplementary appropriation to be adopted by the Danish Parliament's Finance Committee. This ensures that it will be possible to separate funding from the Recovery and Resilience Facility from other funding sources, as it is the case in the existing plan.

There are no other additions or changes to the existing procedures and organizational set-up at national level compared to the existing plan. Consequently, the description remains valid.

3.3 Effective implementation

The administrative arrangement for the effective implementation of the Danish RRP is explained in section 3.4, page 230-231 of the plan.

The REPowerEU chapter brings no changes compared to the existing plan and the description remains valid.

3.4 Consultation process of stakeholders

The consultation of stakeholder for the initiatives included in the existing plan is explained in section 3.5 page 231-231 of the plan. This consultation process applies also to the scaled-up measures of the REPowerEU chapter, namely the measures replacing oil burners and gas furnaces as well as Carbon Capture and Storage.

As required by the REPowerEU regulation, an additional consultation process of stakeholders has taken place in relation to the new measures included in the REPowerEU chapter.

The Ministry of Finance launched an online public consultation portal on the dedicated webpage for the Danish Recovery and Resilience Plan (www.eu-genopretningsplan.dk) which was used to gather stakeholder input broadly. The portal was open from 31 March to 18 April 2023.

Before the online public consultation, on 29 March 2023, the Ministry of Finance conducted a stakeholder meeting with a broad range of civil society organizations to present the REPowerEU plan and discuss initial questions and inputs. The Ministry of Finance presented the coming public consultation portal and encouraged the civil society organization to participate. The participants in the meeting included e.g. 3F, Danish Metal, Danish Chamber of Commerce, Confederation of Danish Employers, The Danish 92-Group, Danish Agriculture & Food Council and Danish Teacher Organizations International. After the stakeholder meeting, all attendants received the public web link for the consultation portal.

Table 11 below provides an overview of the stakeholder input received in the public online consultation.

Table 11
Summary of stakeholder input

Stakeholder	Summary of main suggestions
Danish Chamber of Commerce	• Suggests that the REPowerEU funds should be used to extend the investment window of the green tax reform. • Suggests the funds should be used for energy or electricity tax deductions to support businesses' green transition • Suggests the funds should go to tax deductions and tax reductions to increase incentives for investments.
Renewable Energy	• Suggests the funds should go to the creation of local renewable energy communities. • Increase investment in energy efficiency of buildings by 200 million DKK. • Make funds available for citizens' direct application to engage citizens in the green transition
Danish Agriculture & Food Council	• Suggests increased support for pyrolysis technology projects, as pyrolysis technology projects can help advance the important development of PtX and CCS-technologies. • Accelerate the expansion of biogas production
Green Power Denmark	• In line with the focus on existing initiatives in the proposed Danish REPowerEU, Green Power Denmark suggests further investments in Danish hydrogen infrastructure.
Danish Biogas Association	• Danish Biogas Association suggests that the REPowerEU funds should be spent on an advancement of the politically decided biogas procurements.
Green Transition Denmark	• Includes a series of proposals for initiatives to ensure Denmark's phasing out of Russian gas, e.g. Denmark should have a national energy efficiency strategy and back energy renovations, construction improvements as well as establish a knowledge center for energy efficiency in production companies. • Suggests allocating funds for streamlining renewable energy expansion processes, so that can go as fast as possible as well as the open-door procedure. • Suggests ensuring a fast phasing out of gas boilers and a diversification of the energy supply.
The Confederation of Danish Industry	• Argue that the funds should be spent e.g. on full CO2 tax relief for all piped biogas and the advancement of the politically decided biogas procurements. • Curbing distortion of competition because of other countries' support schemes for energy-intensive companies. • A future Danish strategic effort for energy efficiency.
Confederation of Danish Employers	• Finds it positive that continuing education and green skills are considered as central elements in the green transition. • Points to the employment potential of thinking European policy and national reform policy together.
The Danish 92-Group	• Urge the government to spend the funds on new initiatives. Propose a series of initiatives with a total CO2e reduction sum of 8,3 million tons, including a higher tax on gas and diesel; • a 15 pct. reduction of animal population compared to the 2025 projection; and • a tax of 750 DKK per ton CO2 for agriculture from 2025.
Danish Ports	• Urge the government to take account of the infrastructure plan published by Danish Ports in January 2021, to ensure focus on industry, jobs and climate through investments in industrial ports. • Finds it important to secure the Danish position in relation to off-shore wind and the future Power-to-X technologies.
European Solar Manufacturing Council	• Introduce financing for photovoltaic (PV) manufacturing. • Support all parts of the PV manufacturing value chain. • Support all parts of CAPEX and OPE expenditures. • Dedicate support proportional to the potential support of the IRA in the US. • Notes that the financing to the PV manufacturing industry is a central part of the EU state aid revision will potentially be subject to simplified conditions or exemptions.

The input received is to a large met by the measures included in the REPowerEU chapter. The stakeholders suggest renewable energy investments, to streamline and speed up renewable energy expansion procedures, to support green upskilling, to incentivize Carbon Capture and Storage, to phase out of gas boilers and making funds available for citizens' application. The measures included in the REPowerEU chapter take account of these suggestions.

However, it has not been possible to include all the suggested measures in the new chapter since the chapter does not include e.g. measures on tax deductions or new CO2e taxes, or additional support for photovoltaic, pyrolysis or biogas. Such suggestions are to varying degrees addressed by separate initiatives financed nationally.

3.5 Control and audit

The control and audit setup is explained in section 3.6, page 232-277 of the plan. There are no changes compared to the existing plan and the description remains valid. Denmark will comply with the enhanced transparency requirements introduced with REPowerEU.

3.6 Communication

The communication effort is explained in section 3.7 page 277-278 of the plan. As indicated, this section applies to communication during the preparation of the RRP as well as during implementation. The description remains valid with the addition of the REPowerEU chapter.

Since the submission of the Danish plan, the Ministry of Finance has launched a dedicated webpage, which can be found on: www.eu-genopretningsplan.dk. The webpage was launched during the first annual event on the Danish RRP. The event was held on 20 March 2023 with attendance from Executive Vice President of the European Commission Margrethe Vestager and Danish Minister of Finance Nicolai Wammen.

For the new measures included in the REPowerEU chapter, the RRF funding will be flagged as such, taking into account the communication requirements regarding e.g. the use of logos and the dedicated website.

3.7 Pre-financing

Denmark files for 20 pct. pre-financing of the measures in the REPowerEU chapter in order to frontload investments in the years immediately following the energy crisis, in line with art. 21(d).

Part 4. Overall coherence and impact of the plan

4.1 Coherence, gender equality and equal opportunities for all, strengthening economic, social and institutional resilience, comparison with the investment baseline

Coherence
The additional measures included in the REPowerEU chapter are all closely connected to existing and planned measures. The new measures will further contribute to the green energy transition in Denmark, and the target of 70 pct. greenhouse gas emission reductions in 2030 as compared to 1990. This was also the case for the majority of measures in the existing plan where nearly 60 pct. of the plan is tagged as green. For more information, see section 1.6, page 42 or section 4, page 281 in the existing plan. As such, the new measures underpin the main focus of the Danish Recovery and Resilience Plan.

Further, the reform effort of the REPowerEU chapter, namely the National Energy Crisis Staff aiming to reduce administrative barriers for further investment in the green transition, could also speed up green investments from the green tax reform of the existing plan, thereby further strengthening the coherence between the different components of the plan.

Gender equality and equal opportunities for all
The energy crisis highlighted the need for Europe to diversify energy sources and reduce its dependence on Russian gas. High energy prices risks reducing citizens' disposable incomes, which in particular affect low-income households. The initiatives under the Renewable Energy measure, will help ensure Denmark's independence from Russian fossil fuels, and create a strong foundation for stable energy prices. This will ultimately be beneficial for all Danish households, and in particular for low income-households.

The measure on Replacing Oil Burners and Gas Furnaces is included in the existing plan and is described in section 2.3.3, page 93 of the plan. The measure is upscaled with additional funds for the decoupling scheme and district heating pool. Since the measure reduces the cost of conversion to green heating for consumers, the increased funds will contribute to helping more citizens, regardless of background and income group, to decouple from the gas network.

The measure on green upskilling enables more citizens, regardless of background, to increase their skill-set, and thereby increases their new job opportunities within the green sector. This way, the green upskilling measure contributes to creating equal access to the opportunities from the green transition.

Strengthening economic, social and institutional resilience
The existing Danish Recovery and Resilience Plan amounts to 11,6 bn. DKK, whereas the new REPowerEU chapter amounts to 1,5 bn. DKK. Thus, the new measures to less than 10 pct. of the existing plan.

Furthermore, as highlighted above, the new measures under REPowerEU are closely connected to the previous measures in the Danish RRP. This is evident by the fact that two of the measures involves scaling up of existing measures and that all measures in the REPowerEU chapter further enhances the existing green focus of the Danish plan.

Overall, this implies that the previously reported information on the macroeconomic, social and institutional impact in RRP still stands, as described in section 4, page 281 of the existing plan.

Comparison with the investment baseline
Due to the relatively small size of the REPowerEU chapter, the comparison with the investment baseline in the existing plan remains valid and can be found in the existing plan section 4.3, page 292.

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