Welcome to the 2nd Industry Workshop for the 2022 ECB Climate Risk Stress Test

Please note the following

- There will be **2 Q&A sessions** in the workshop.
- To **ask a question**, at the time indicated by the presenter, either
  - **add your question to the "Chat"** of the meeting, **selecting** "**to all Panellists**" in the drop-down menu, or
  - select the **'raise hand icon'**  next to your name and you will be given the opportunity to speak.
- We kindly ask you to restrict questions to today's workshop content. More **technical questions** can be addressed via the CST 2022 **FAQ process**.

EUROPEAN CENTRAL BANK

BANKING SUPERVISION

2022 ECB Climate Risk Stress Test

Industry Workshop

27 January 2022

DG Horizontal Line Supervision
Stress Test Experts

Agenda of today's workshop

13:30– 13:45	Welcome remarks
13:45 – 14:15	Scenarios of 2022 ECB Climate Risk Stress Test
14:15 – 14:45	Stress Test QA processes
14:45 – 15:00	Q&A session and Break
15:00 – 15:30	Timeline and interactions between banks and ECB
15:30 – 15:45	High-level summary of key FAQs received
15:45 – 15:55	Q&A session
15:55 – 16:00	Closing remarks

Identification of climate risk vulnerabilities and the impact on SSM banks through climate stress testing

SSM Climate risk stress test key features

- **107 SSM Significant Institutions** in the sample
- **SSM-wide exercise performed by the ECB**, with NCA support
- Launch of the exercise and duration: **January 2022** to **July 2022**
- Scope: **Test banks' capabilities to assess climate risk**
  - Qualitative assessment of **climate risk stress test framework**
  - Stock-take on (i) **sustainability** of banks' **income** and (ii) **financed GHG emissions**[1)]
  - **Bottom-up** stress test loss **projections** (subset of sample)

Main goals of the Quality assurance:

- Ensure that the submitted information can form the **basis of a robust analysis.**
- **Identify challenges** banks encounter when submitting stress test information.
- Identify **strengths and vulnerabilities** in banks' **climate risk stress test practices.**
- **Proportionality** applied: all banks submit starting points but only a subset of banks submit bottom-up projections

Objectives

- Climate risk stress test is considered as a **learning exercise.**
- Provide **feedback to banks** in building their internal climate risk stress test frameworks.
- **Contribute to the overall SREP** to ensure institutions' capital and liquidity adequacy, as well as sound risk coverage and internal processes.
- Focus on **usefulness of results** for JSTs: Creating insightful output reports for supervision.

1) Greenhouse Gas emissions

Climate and environment as supervisory task

Art. 100 CRD: Need to perform a yearly Stress Test to inform the SREP

November 2020: Guide on C&E Risks, with 13 expectations

November 2021: Report on the State of C&E risk management

Supervisory Priorities 2022-2024. Key vulnerability: Exposure to climate-related and environmental risks

"Recent ECB assessment shows that banks have made some progress in adapting their practices, but at still too slow a pace."

Climate stress test (expectation #11 of the C&E Guide, on "Scenario analysis and Stress Testing")

Thematic Review to assess the progress on the rest of the expectations

Other activities such as on-site inspections or CRE deep dive.

Overview

1. **Scenarios of the 2022 ECB Climate Risk Stress Test**
2. Stress Test QA processes
3. Q&A session
4. Timeline and interactions between banks and ECB
5. High-level summary of key FAQs received
6. Q&A session

Key scenario take-aways

- Scenarios are **based on the NGFS work** published in June 2021
  - NGFS models were complemented with sectoral disaggregation and physical risk data using the models and data developed for the ECB economy-wide climate stress-test
- NGFS scenario output is a **collective achievement** of 100 central banks and supervisory institutions across the globe, **including several European NCAs**
- Written feedback was submitted by several NCAs mainly regarding requests **for clarification on the scenario dynamics and the calibration methodology**
  - The ECB used the valuable feedback received from NCAs update and improve the calibration

Drought and heat stress risk - methodology

SCENARIO

Severe drought and heat wave on a 1-year horizon

SOURCES

- Climate Analytics (NGFS consortium)
- International Labour Organization (ILO)

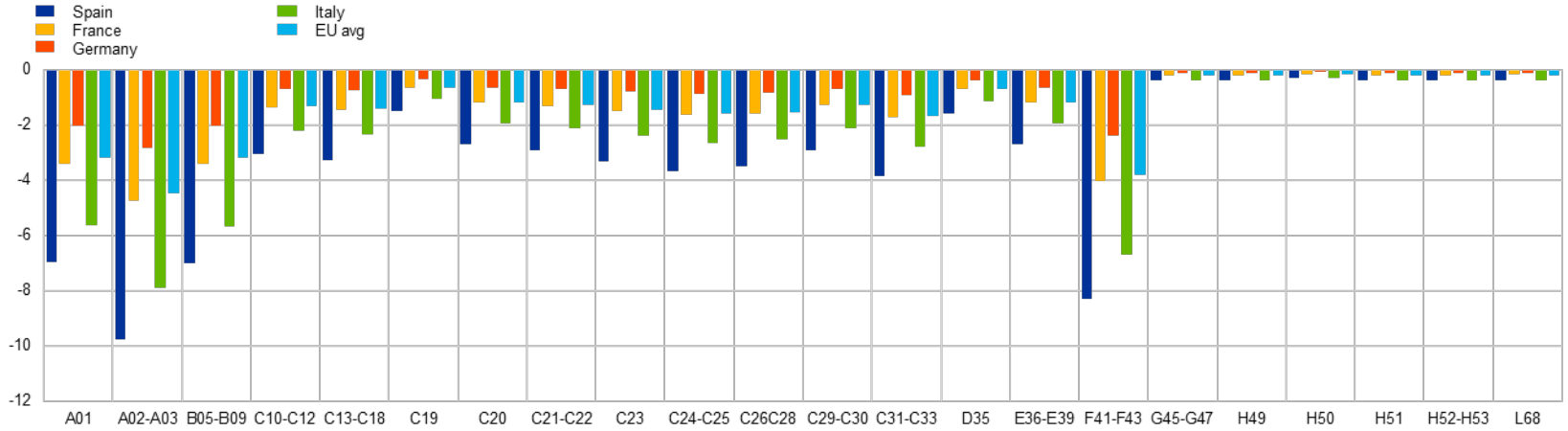
CALIBRATION

- NGFS estimates *Labour productivity shock due to heat stress* across relevant countries until 2100
- Macro sector-level impact have been determined by leveraging on research by ILO that estimates the impact of heat stress on labour productivity in 4 different sectors (agriculture, industry, construction, services) across several European countries
- Within these macro sectors, we differentiated idiosyncratic sectoral shock through a proxy for labour intensity, for each NACE sectors at country level.
- We introduced a floor for services, so as to overcome the lack of material impacts forecasted by ILO
- For a 1-year time horizon, we assume a 100% pass-through rate of labour productivity shock to GDP shock

Sectoral GVA shocks compose the drought and heat stress scenario

Shocks to baseline GVA growth

y-axis: absolute diff to baseline 2022 GVA (y-o-y % change)



- Impacts are **distributed unevenly**, with **Southern countries most affected**
- **Agricultural** and **construction** are the sectors **most affected** across all countries, sharing **similar impacts** due to common labour characteristics (high physical effort exertion, mainly outdoors)

Flood risk scenario - methodology

SCENARIO

Severe flood risk materializing over a 1-year horizon

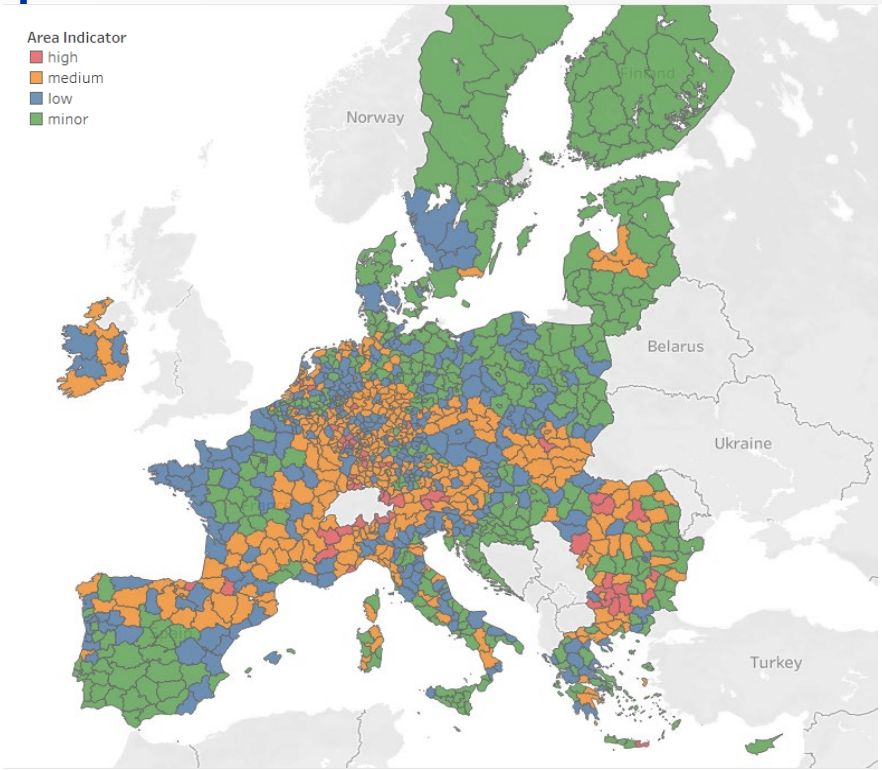
SOURCES

- Four-Twenty-Seven (427)
- Joint Research Committee, European Commission (JRC)

CALIBRATION

- Data from 427 provides the expected flood depth at the address level, which was mapped to the flood risk of firms' facility locations for a sample of 1.5mln European firms
- JRC has estimated damage rates for commercial and residential buildings for different flood depth levels
- Combining the two datasets we obtained the average CRE and RRE price shock per NUTS3 regions
- The distribution of price shocks was used to create 4 risk buckets: minor, low, medium and high

The flood risk map determines impacts to real estate prices



Area indicator	CRE price shock	RRE price shock
Minor	- 3%	- 4%
Low	- 8%	- 10%
Medium	- 16%	- 19%
High	- 43%	- 45%

The composite model landscape determines the scenarios

NGFS Phase II

The scenarios are modelled using Phase II (June 2021) updated outputs. These include expanded set of variables and country-level disaggregation

REMIND-MAgPIE

REMIND combines macro-economic module with an energy system module. This is the source of environmental and energy variables

ECB Models

Sectoral disaggregation achieved with the models developed for the ECB economy-wide stress testing.

NiGEM

NiGEM is a leading global macroeconomic model. Macroeconomic variables are mainly sourced here.

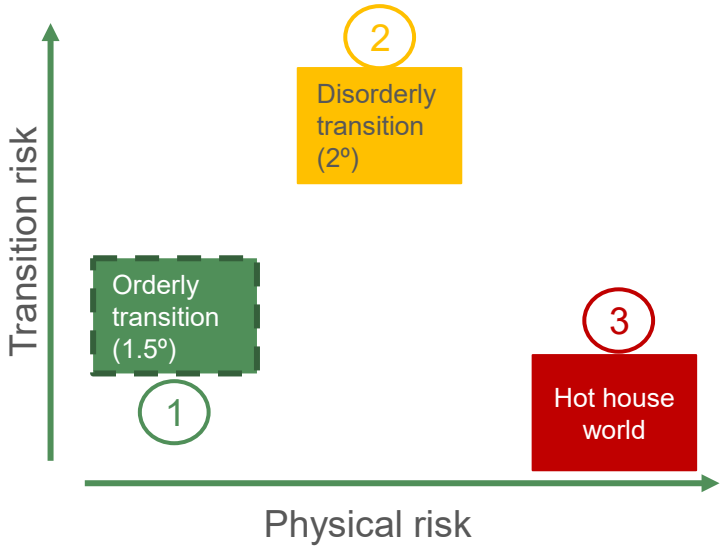
SHORT TERM

- Disorderly transition occurring in the next 3 years
- The years following 2030 of the disorderly transition are considered, against the baseline scenario and anticipated to 2022, 2023, 2024

LONG TERM

- Three scenarios are chosen:
  - Hot house world
  - Disorderly transition
  - Orderly transition
- Decade-on-decade changes are given for 2030, 2040 and 2050

Three climate scenarios that combine transition and physical risk



Expected impact

1. Orderly transition with limited physical risk
Early and effectively implemented policies
Limited costs from transition and physical risk

2. Disorderly transition with average physical risk
Delayed policies implemented
High costs from transition and average costs from physical risk

3. Hot house world with extreme physical risk
No new policies implemented (only current policies)
Very limited costs from transition but extremely high costs from physical risk

A short-term scenario focusing on transition risk

Short-term disorderly transition

The scenario captures an abrupt implementation of green transition policies. Transition risk is significant across the three years horizon.

Given the upward trend of carbon emissions, carbon prices see a significant increase and the economic outlook is impacted.

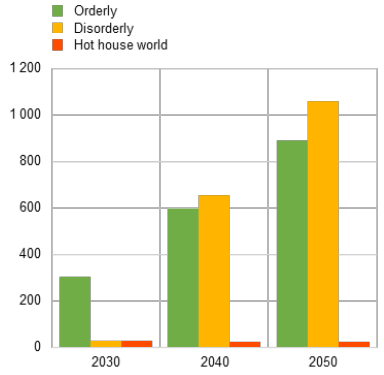
Baseline

The baseline scenario is based on Eurosystem's staff projections published in December 2021.

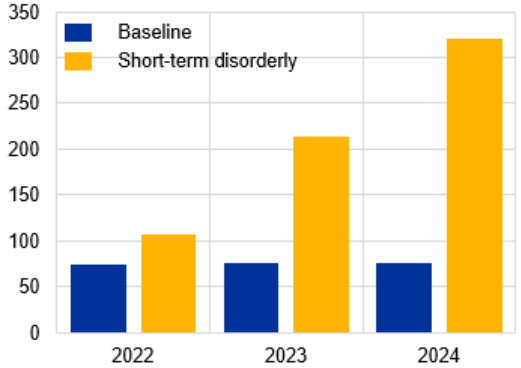
These include information on a broad set of macroeconomic variables covering the euro area and wider global economy.

Carbon price & Emissions

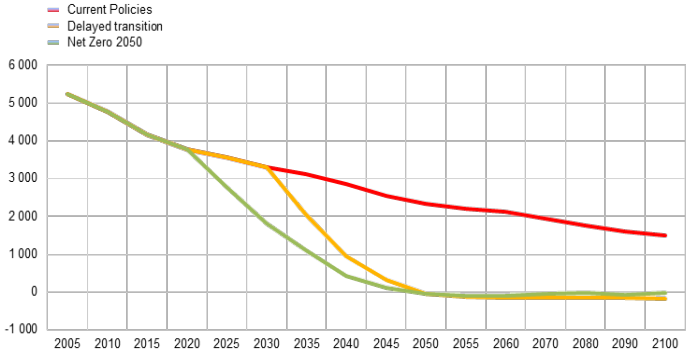
European Carbon Prices (long term)
y-axis (left-hand): USD/CO2t



European Carbon Prices (short term)
y-axis (left-hand): EUR/CO2t



European GHG emissions
y-axis (right-hand): Mt CO2-equiv/yr

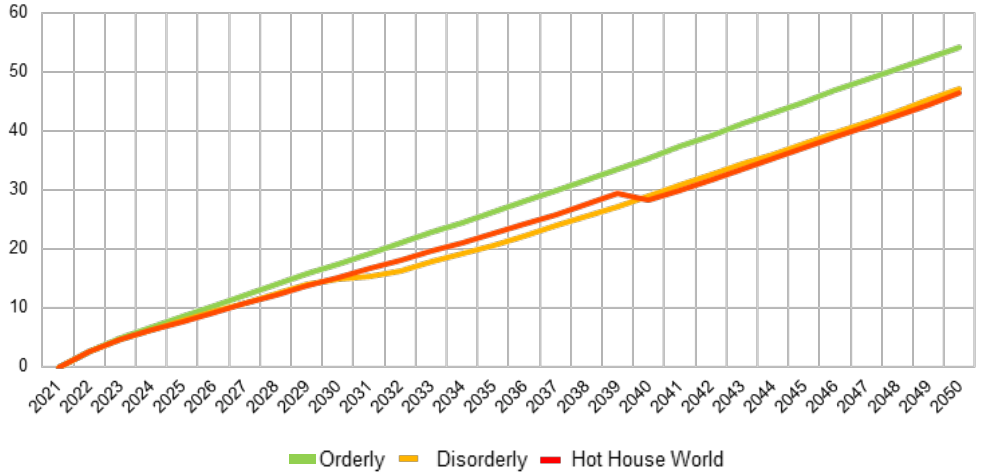


- NGFS estimates different **emission pathways** that can **meet the temperature target**
- NGFS then calibrates **carbon prices** such that the desired **emissions pathway is achieved**
- The **rise in carbon prices** subsequently impacts the **energy sector** and macroeconomic output

European GDP – long term scenarios

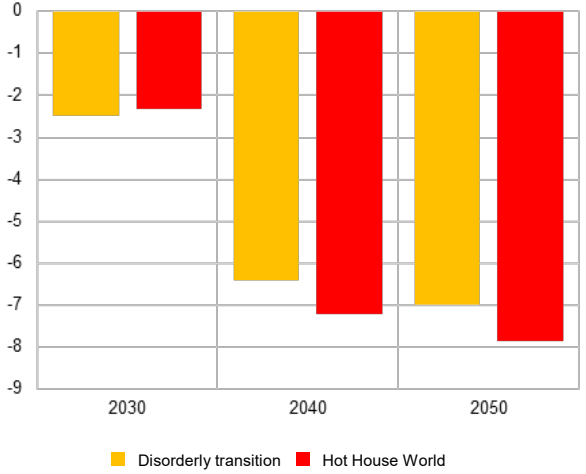
European GDP path

y-axis: %-change relative to 2021, cumulative



European GDP path*

y-axis: %-change relative to Orderly Transition scenario



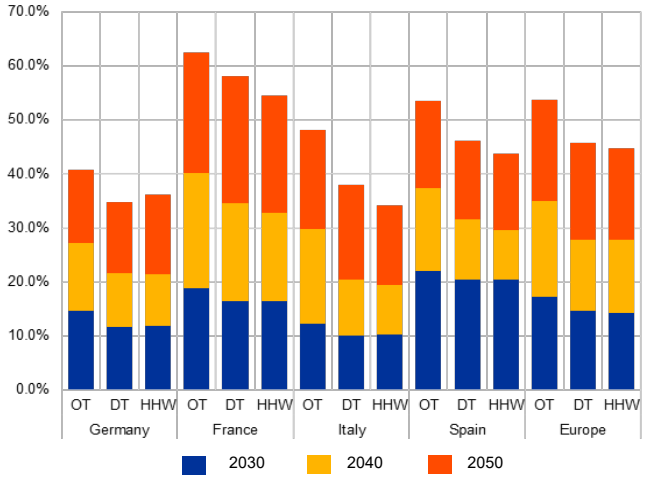
- **Orderly transition** is the **first-best** option
- Disorderly transition has limited advantages with respect to policy inaction: **costs of the transition almost compensated in 2050 due to reduced damages from physical risk in the medium-to-long run**

*Physical damages to GDP until 2080 have been anticipated to introduce severity in the macro shocks.

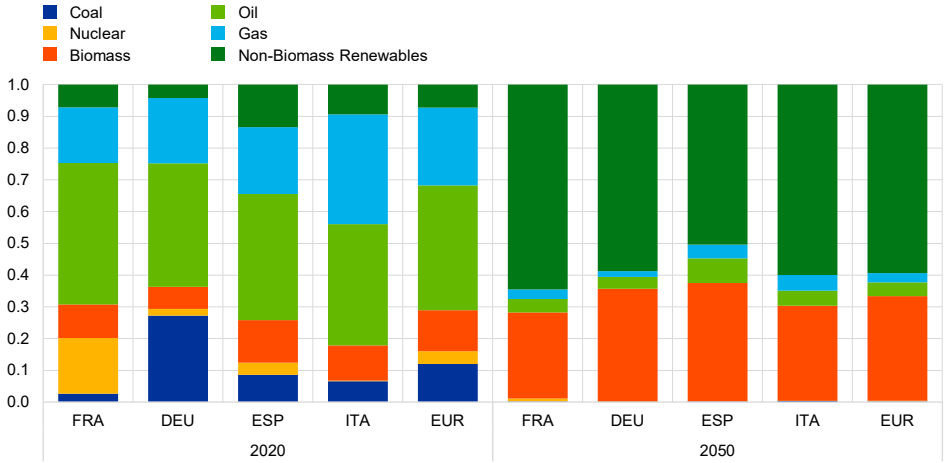
Country level GDP– long term scenarios

Country GDP

y-axis: %-change between 2021 and 2050

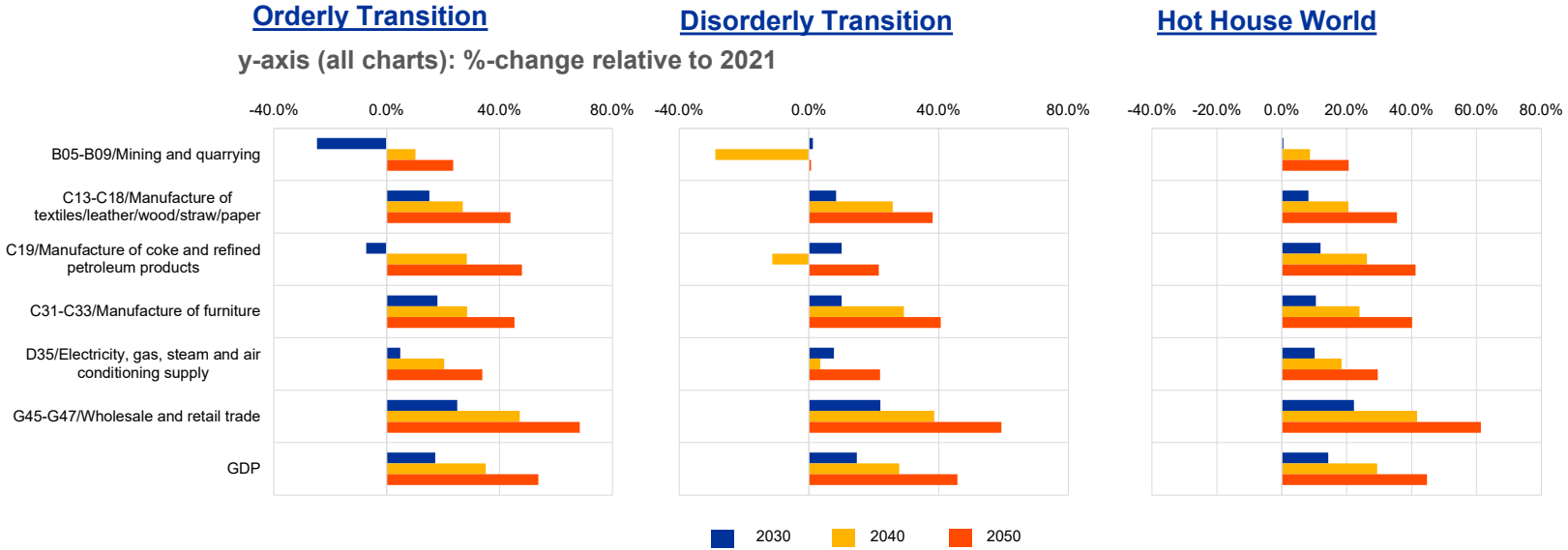


Energy mix projections – Orderly transition



- **Country GDP differences explained by current energy mix and projections**

Sectoral GVA – Europe – long term scenarios

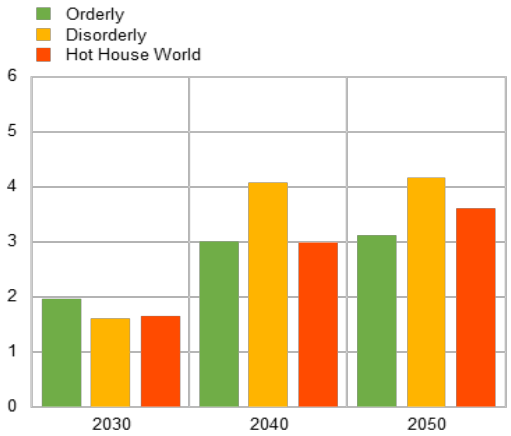


- Sectors heavily dependent on **fossil fuels** are **hit the most by the transition**; impact more significant under the DT scenario
- Sectors impacted by transition **rebound fully** in the subsequent decade
- By 2050 **costs of transition are compensated**; HHW sectoral output lower than OT and similar to DT

Long-term interest rates

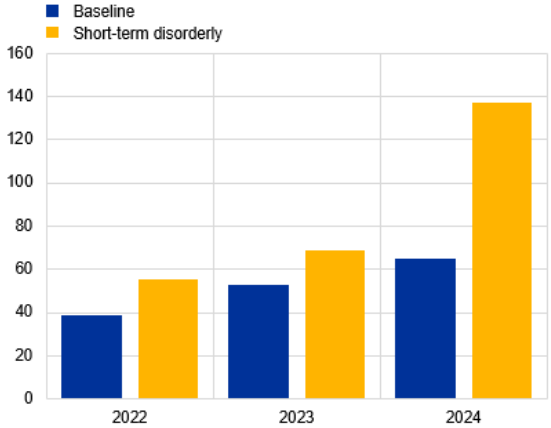
Euro Area Average – Long term scenario

y-axis (all charts): ppt-%



Euro Area Average – Short term scenario

y-axis (all charts): bps

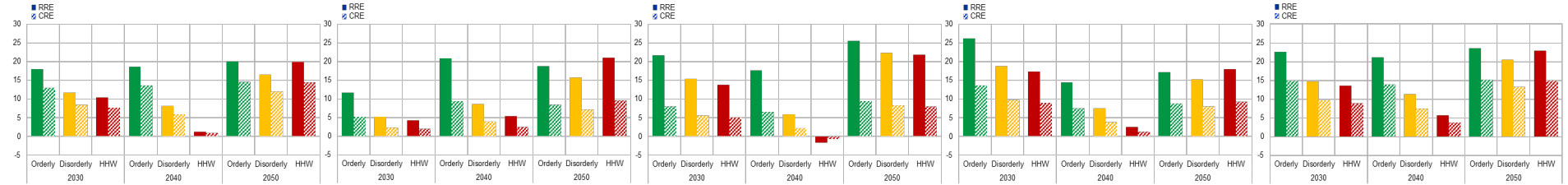


- **Interest rates rise during transition phases**
- Costs of the transition **push up inflation and short-term interest rates rise as a response** (with a slight delay – this assumption is embedded in NGFS scenarios for all geographies)
- Small **country-level heterogeneity** in the movement of long-term interest rates. Countries that experience the highest transition costs have the highest increase in long-term interest rates

RRE & CRE prices – long term

France **Germany** **Spain** **Italy** **EU Average**

y-axis (all charts): % change decade-on-decade



- Overall, **orderly** transition yields **highest RE prices** across all EU countries
- Across the EU, **real estate market is worse off under the HHW scenario**. However, for some countries the impact on RE prices is similar in 2050 for the DT and HHW scenario
- **Country-level differences** on RE prices are driven by the **level of transition risk.** The RE market is **growing faster** for countries that face **lower macroeconomic transition costs**

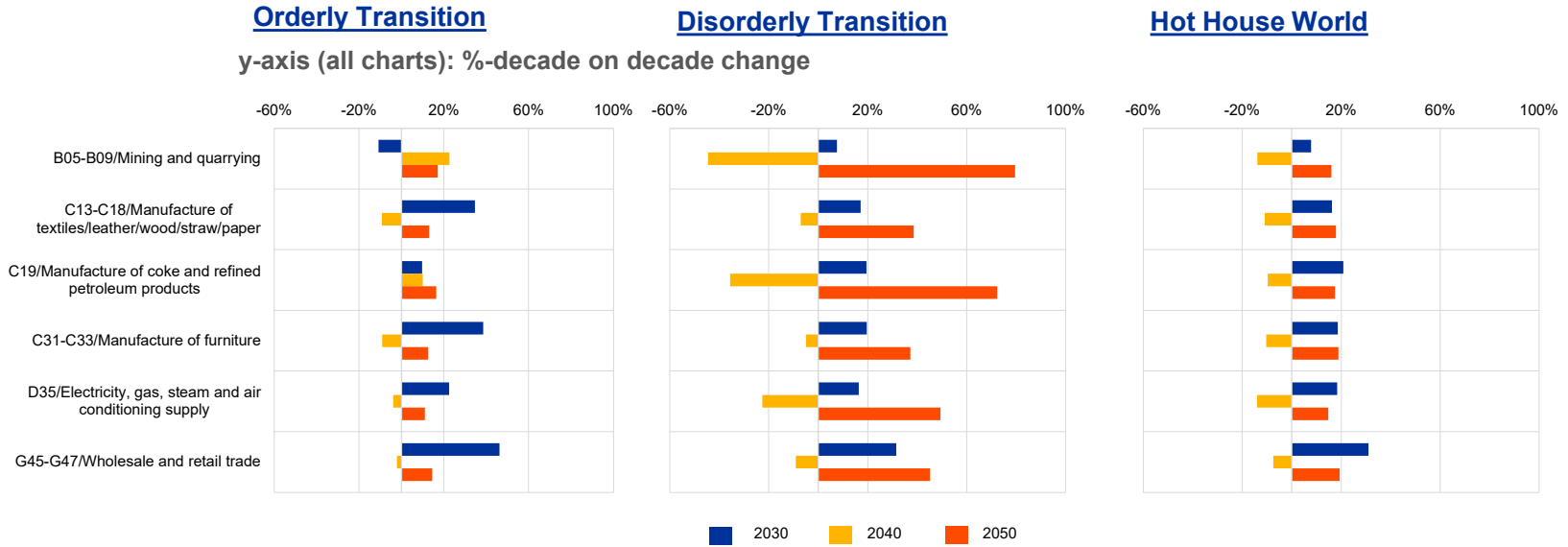
RRE & CRE prices – short term

France **Germany** **Spain** **Italy** **EU Average**

y-axis (all charts): % change y-o-y

- Impacts to RE prices in the short-term disorderly scenario are **differentiated across EPC labels**, with lower classes **facing less favourable developments**
- The price dynamics become generally **more severe year after year**
- On average, the **impact on RRE** is **more pronounced than** it is on **CRE**

Sectoral Equity prices – long term scenarios

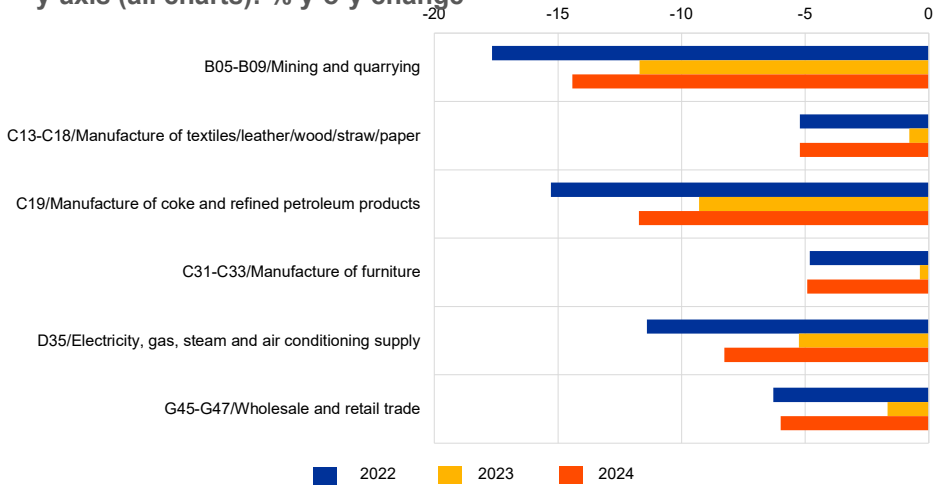


- The **most carbon intensive sectors are hit the most**, especially under the disorderly transition.
- Equity price impact is limited under the **orderly transition**.
- After the transition phase, equity markets rebound and **recuperate their losses** in the subsequent decade

Equity prices – short term

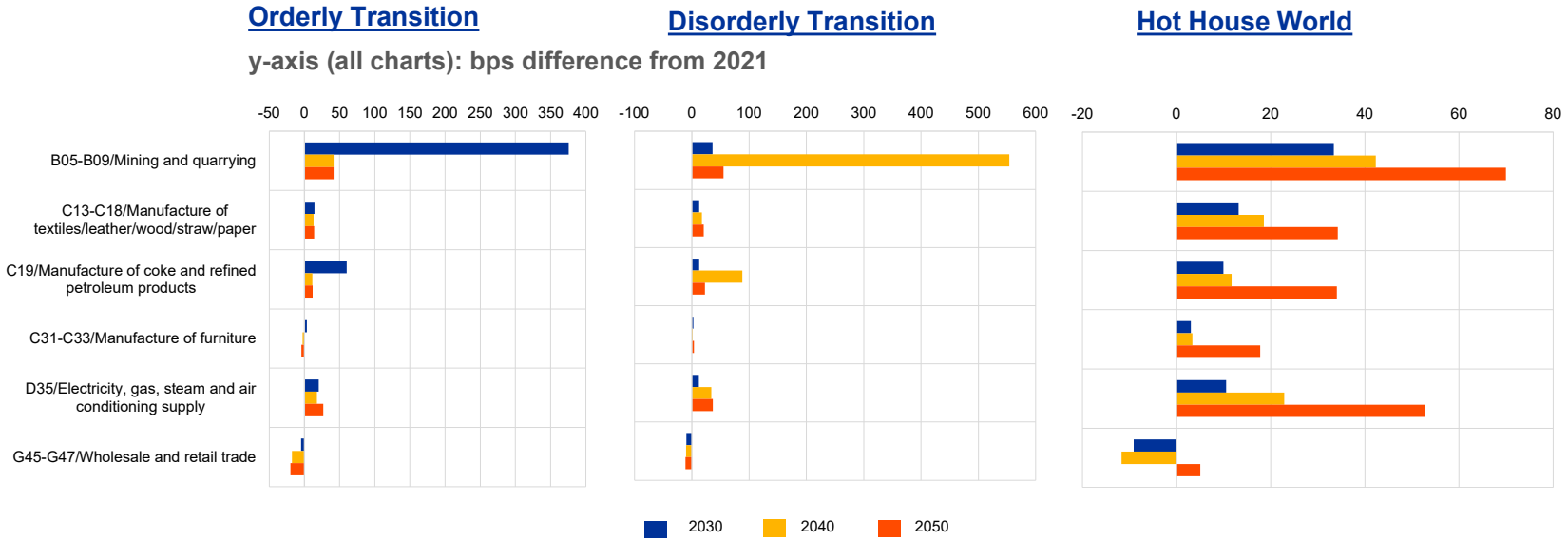
Sectoral Equity prices

y-axis (all charts): % y-o-y change



- Equity prices react strongly across sectors to a short-term disorderly transition, with **“brown” sectors being hit the most**

Corporate credit spreads– long term

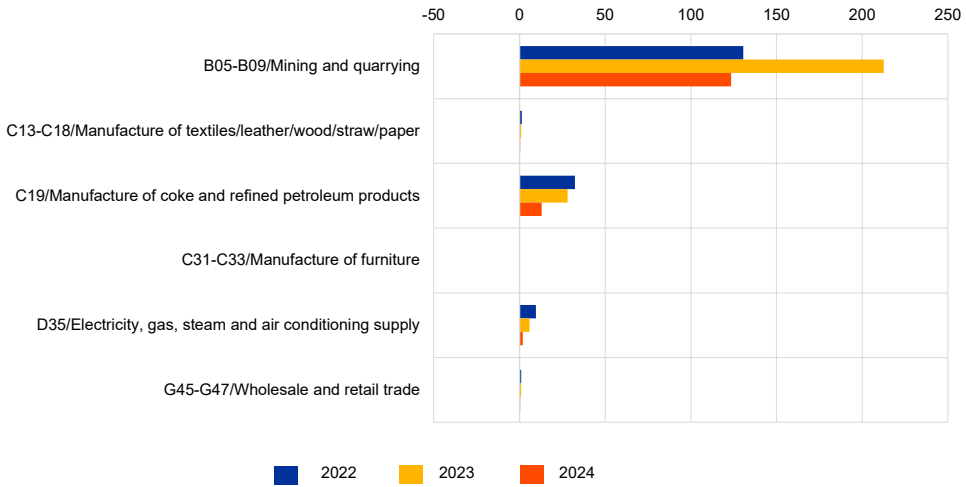


- The **most carbon intensive sectors are hit the most during the transition years**, especially under the disorderly transition.
- Corporate credit spreads impact is more contained under the **orderly transition**.
- After the transition phase, corporate credit spreads **reabsorb the spike** in the subsequent decade

Corporate credit spreads– short term

Sectoral Corporate credit spreads

y-axis: bps difference from previous year



- As well, corporate credit spreads react strongly across sectors to a short-term disorderly transition, with **“brown” sectors being hit the most**

Changes implemented in the updated scenarios

Format changes

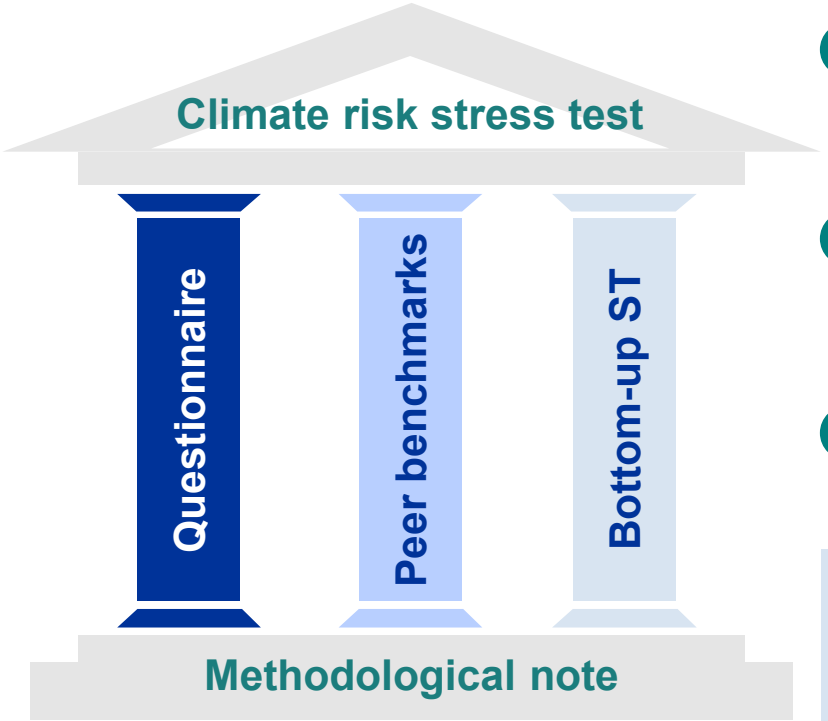
Variable	*Current format*	*Previous version's format*
Commercial, Residential real estate prices (long term scenarios)	Delta (relative to previous decade, label in %)	index
Long term interest rate (long term scenarios)	Delta in bps from previous decade	Delta (Spread to BUND relative to previous decade in bps)
Long term interest rate (short term scenarios)	Bps per annum	Bps difference of spread with BUND
GDP (drought scenario) [renamed GVA] – no actual change, just aligned across scenarios	Delta (relative to previous year in %)	% change
Exchange rate (short term scenarios)	USD/domestic (BGN, HRK, CZK, DKK, HUF, PLN, RON, SEK, GBP)	EUR/domestic

- Please note that corrections were also implemented for shocks' values in short term scenarios for GDP, GVA, RE variables, real personal disposable income, government expenditure, commodities, inflation, short term interest rate, exchange rate

Overview

1. Scenarios of the 2022 ECB Climate Risk Stress Test
2. **Stress Test QA processes**
3. Q&A session
4. Timeline and interactions between banks and ECB
5. High-level summary of key FAQs received
6. Q&A session

Climate risk stress test covers three modules with tailored data quality and quality assurance processes



1. **Questionnaire:** Uniform and standardised assessment of banks' climate risk stress testing framework.
2. **Peer benchmarks:** Uniform methodology for benchmarking banks across a common set of climate risk metrics.
3. **Bottom-up stress test:** Uniform methodology for banks' bottom-up stress test projections.[1]

Dedicated and tailored DQ / QA approaches per Module to ensure a reliable data basis and robust analysis of the submitted information.

1) Proportionality applied: all banks submit starting points but only a subset of banks bottom-up projections

Tailored DQ and QA processes were developed to fit the needs for each of the three Modules

	Data quality (DQ)	Peer benchmarking / challenger views	Quality assurance (QA)	Output report
Module 1	• Completeness checks • Field type checks	• n/a	• Mainly automated scoring with manual expert adjustments for questions	
Module 2	• Completeness checks • Field type checks • ITS checks • Custom checks	• Peer benchmarking based on peer sets and alongside multiple dimensions	• QA flags based on bank's deviations compared with peer sets • Engaging into a dialogue to understand the reason of a QA flag and potential vulnerabilities	
Module 3	• Completeness checks • Field type checks • ITS/Climate checks • Custom checks	• Peer benchmarking based on peer sets • Internal centralized calculation (CC)	• Internal challenger views with focus on relative losses and risk parameters • Flag generation based on input-oriented • Dialogue with banks focussing on explaining relative losses and inputs	

Module 1 questionnaires to be cross-checked with other ST data and existing supervisory information

Completeness checks	Verify if a bank provided **comprehensive answers to all relevant / applicable questions**.
Field type checks	Verify that a bank's answers were provided in the **correct structure / type**, e.g. if the bank's answer is in line with the pre-defined answer option from the template.

- **Banks are requested to provide self-contained answers in the free-form cells** documenting the multiple-choice response to each question
- **Cross-checks** between submitted Module 1 questionnaires and the remaining two Modules to ensure **consistency across the stress test exercise**
- Submitted Module 1 questionnaires can be **validated against already existing / available supervisory information within ECB**, e.g. from JSTs and the Thematic Review

Module 2 Climate Metrics cross-checked with supervisory information and peer benchmarked

Data quality checks

- Completeness checks verify if a bank provided **data for all required cells in the template.**
- Field type checks verify if a bank **filled in the template according to the provided instructions.**
- ITS checks based on **FINREP to avoid large data issues**
- Custom checks based on **supervisory information**

Quality assurance driven by peer benchmarking

- **QA flags are derived from peer benchmarking** the bank's results in four peer sets (full sample, business-model, geography, degree of advancement in measuring climate change-related risks)
- Bank dialogue to **follow up on the data provided** in order to clarify the institution's current situation and limitations

Module 3 Peer benchmarking to feed the calculation of the QA challenger views

Peer benchmarking (focus on risk parameters)

- **Four** different benchmarks:
  - Full sample
  - Business model
  - CO_2-intensity (based on metric 2 of Module 2)
  - Sector strategy in dynamic balance sheet adjustment (long term)[1]

Quality assurance (focus on relative losses and risk parameters)

- **Four challenger views**: **3 PBs** (full sample, business model and CO_2-intensity) and **centralized calculations**.
- Identify **banks submissions which materially deviate.**
- **Different flag indicators** per exercise (short-term transition credit and market, long-term transition, drought & heat, flood).
- **Flags prioritization** to ensure only important issues are communicated.
- **QA outcome:** flags to be communicated to the bank as a **written comment** (but without a quantitative impact), with focus on explaining the deviations triggering bank adjustments if needed.

[1] Dedicated peer set for LT: Banks indicate if they have a supporting strategy, exit strategy or passive strategy for each sector.

Content of the explanatory note used to make the QA process more efficient

Banks are asked to provide an explanatory note accompanying their submissions

General principles

- Clear and succinct documents
- Possibility for banks to provide information on the adequacy of their approaches
- Focusing on main messages

Key content

- Module 2: Financing the green transition
- Module 2: Details on Metric 1 and Metric 2
- Module 3: Details on Transition risk (ST and LT), Drought and Heat, Flood and Insurance coverage and public natural disaster relief schemes

ECB will review the information submitted and assumptions used

- The ECB will use the information provided in the explanatory note to **assess the information submitted in the template** during the quality assurance process
- The assessment will be based on various criteria, e.g., main assumptions used, models used for producing the bank's stress test results and methods used to obtain the required data.

Horizontal analysis performed to support the QA process by checking consistency among modules

- During QA process bank's submission **data** and climate stress test **results** will be **reviewed from a horizontal (holistic) perspective**
  - Support and complement the QA process performed on individual bank results
  - Ensure consistency of the results among the three different modules and across banks
- **Consistency checks** of scores across the three modules **at bank level**
  - Scoring consistency among the different modules for individual bank
- **Consistency checks** of modules and global scores **across all banks**
  - Scoring consistency performed across banks across different dimensions taking into account the individual characteristics of each bank

Findings from horizontal QA checks can lead to flags to be shared with banks during the QA phase of the exercise

Main goals of the dialogue with banks[1]

Module 2

- Confirm that no **data issues** affect the interpretation of the flags if not mention in the explanatory note (IT issues, etc…).
- Help to **disentangle the different drivers** of generated flags (e.g. specific positioning in a sector, etc…).
- Own **reflexion of the banks** with respect to the risks potentially linked to the raised flags (e.g. high intensity of the portfolio in a given sector…).

Module 3

- Bank dialogue to **follow up on deficiencies** in banks' submissions and banks to provide clarifications:
  - **Data quality issues**: ECB to follow up on data provided to clarify current banks' situation and limitations.
  - **QA flags**: banks to adjust/explain material deviations
- **Opportunity for banks** to ask questions about the QA feedback, but no discussions on methodology, PBs composition and ECB calculations are foreseen.

1) Although the QA of Module 1 may be more straightforward; it might be part of the dialogue

Overview of checks and timing of reporting

Tyes of checks in ECB Stress Test QA

Types of reports shared with banks

	Data quality checks	Methodological checks	QA feedback (e.g. based on peer benchmarks)	Questions on banks ST models	Overall results & bank-specific narrative
Pre-validation report	✓	✓	✗	✗	✗
Data quality report	✓	✓	✗	✗	✗
ADC feedback	✓	✓	✗	✗	✗
FDC1 feedback	✓	✓	✓	✓	✗
Output report	✗	✗	✓	✗	✓

Bank specific report is composed of six sections

1 Global scoring	Holistic overview of an institution's ST **result across all applicable Modules**
2 Module 1 score, statistics and findings	Overall **Module 1 score** and **comparisons** with average score on block level
3 Module 2 RAG[1], statistics and findings	Scoring of institution's **results for Metric 1 and Metric 2** including complementing graphs
4 Module 3 RAG, statistics and findings	Scoring of institution's **bottom-up projections** and **qualitative inputs** including complementing graphs
5 Data Quality section	Summarizing conclusions on **data availability and quality for total exercise**
6 Concluding Remarks	**Summarizing results** and additional findings from the quality assurance process

1 RAG: A colour coding system (Red, Amber, Yellow, Green) will be used to identify the strengths and weaknesses of the banks.

Do's and don'ts for submissions, to avoid rejection of templates or multiple re-submissions

Do's

- Make good use of the ADC
- Apply the pre-validation tool and resolve identified issues before submitting
- Ensure consistency with supervisory reporting
- Ensure that submitted results reflect the severity of the scenarios and the bank's sensitivity to the respective shocks
- In case of questions, raise FAQs through External STAR Portal at an early stage
- Explain key results and main assumptions in the explanatory note in a concise way

Filling in all fields correctly and applying the methodology correctly leads to fewer questions and reduced resubmission need

Don'ts

- Do not change anything in the data template sheets structure e.g. no adding or deleting of rows and columns, formula changes, macros
- Do not insert data or comments in cells, which are not intended to be filled with data
- Respect data validation rules. Do not use free text when drop-down answers are required.
- Do not remove or alter the encryption/ the file's password protection
- Do not submit projections that are not compliant with the methodology.

ECB will automatically reject the submission or ask for re-submissions in the cases above

Overview

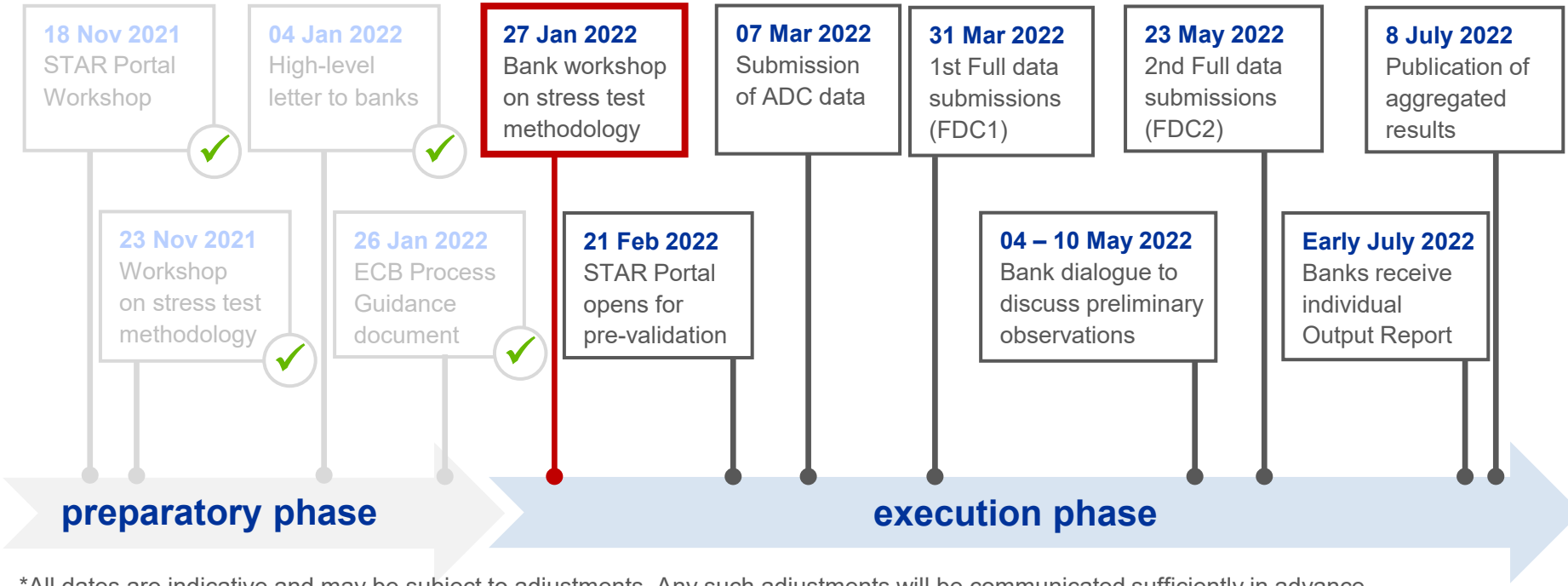
1. Scenarios of the 2022 ECB Climate Risk Stress Test
2. Stress Test QA processes
3. **Q&A session**
4. Timeline and interactions between banks and ECB
5. High-level summary of key FAQs received
6. Q&A session

Overview

1. Scenarios of the 2022 ECB Climate Risk Stress Test
2. Stress Test QA processes
3. Q&A session
4. **Timeline and interactions between banks and ECB**
5. High-level summary of key FAQs received
6. Q&A session

Key milestones of the CST 2022

The execution phase commences today and involves 3 submission cycles*



*All dates are indicative and may be subject to adjustments. Any such adjustments will be communicated sufficiently in advance.

Overview of QA interaction timeframes

Each submission cycle involves specific interactions

	Pre-validation in STAR	Data Submission	ECB Feedbacks			
			Data Quality	Resubmission	Feedback	Dialogue
Advance Data Collection	21 February	7 March	2 – 3 days	9 March - 11 March	22 March	-
Full Data Collection 1	ca. 2 weeks before submission*	31 March	2 – 3 days	4 April - 6 April	29 April (Draft) 16 May (Final)	4 May - 10 May
Full Data Collection 2	ca. 2 weeks before submission*	23 May	1 day (if any)	25 May - 31 May	6 July	-

* Exact dates will be communicated in due course.

Further details on each cycle on the following pages

ADC timeline and features

Key purpose: identify and remedy data quality issues

- Strong encouragement to **make use of the full pre-validation time window**. These results will not be monitored by the ECB.
- By 7 March, **banks are required to make complete data submissions:**
  - Module 1 information is to be submitted fully,
  - Module 2 information is to be submitted fully by the institutions eligible for Module 2,
  - Module 3 starting point information is to be submitted fully by the institutions eligible for Module 2 or for Module 3,
  - Projections are to be submitted fully by the institutions eligible for Module 3
- In case **of obvious data quality issues** (e.g. missing information, obvious flaws), **banks may be required to resubmit** by 11 March.
- On **22 March, banks will receive an ADC DQ report** providing data quality feedback to be addressed in time for the FDC1 submissions.

Timeline for Advance Data Collection	
Day	**Deliverable/task**
21 Feb	Opening of STAR Portal for Pre-validation
7 Mar noon	Deadline for ADC submissions by banks
7 – 9 Mar	Initial data quality (DQ) checks by ECB stress test team
9 Mar	Possible ECB request for re-submission to address major DQ issues (if applicable)
11 Mar noon	Deadline for DQ-related bank resubmissions
22 Mar	Dissemination of ECB ADC data quality feedback to banks

Note: Items marked in dark red highlight deadlines for submissions by banks

FDC1 timeline and features

This cycle will feature a bank dialogue to discuss key QA findings

- By 31 March, **all information should be submitted** (template, explanatory note, annotated ADC DQ report, any other additional information requested).
- In case of persisting major DQ issues, **banks may be asked to resubmit** by 6 April.
- As now the main **quality assurance** will be carried out, this requires institutions to provide data fully consistent with the CST methodology, including alignment with the scenario narrative.
- By end of April, **banks will receive preliminary feedback** on their FDC1 submissions covering both DQ and QA issues.
- Thereafter, the ECB will reach out in **bilateral calls ("dialogue")** to discuss the preliminary QA observations.
- Based on this, the QA will close on 16 May.

Timeline for Full Data Collection 1	
Day	**Deliverable/task**
c. Mid-March	Opening of STAR Portal for Pre-validation
31 Mar noon	Deadline for FDC1 submissions by banks
31 Mar – 4 Apr	Initial data quality (DQ) checks by ECB stress test team
4 Apr	Possible ECB request for re-submission to address major DQ issues (if applicable)
6 Apr noon	Deadline for DQ-related bank resubmissions
29 Apr	Dissemination draft FDC1 feedback to banks
4 – 10 May	Bank-dialogue to discuss key QA issues
16 May	Banks receive final FDC1 reports

Note: Items marked in dark red highlight deadlines for submissions by banks

ECB Feedback at the end of FDC1

FDC1 feedback will contain both DQ and QA matters

- At the end of FDC1, **banks will receive feedback** on both QA and, if still applicable, requests to remedy remaining DQ issues.
- In addition, banks will be asked to **address deviations** from the methodology in their submissions.
- Additionally, banks might be asked to provide **additional details** or explain how their **calculations** were derived.
- The ECB expects this feedback to be taken into consideration in **FDC2 submissions.**
- In view of the resubmission deadline for FDC2 (23 May), **banks are strongly encouraged to start preparing their FDC2 submission** immediately after receiving their draft FDC1 feedback, i.e. **by end of April.**

FDC2 to finalise submissions and close

- By 23 May, **all information** from FDC1 will need to be submitted again in final version (questionnaires in Module 1, however, will not be required, unless specifically requested).
- **ECB experts will review resubmissions** to assess whether all issues have been addressed.
- **Banks with remaining open issues will be required to re-submit** by 31 May.
- The institutions will receive an individual **Output Report**, explain-ning how ECB considers the bank's performance in climate risk.
- There will not be a separate QA report, and no further change request.
- The ECB governing bodies will then receive the results. **Publication** will be limited to aggregated results.

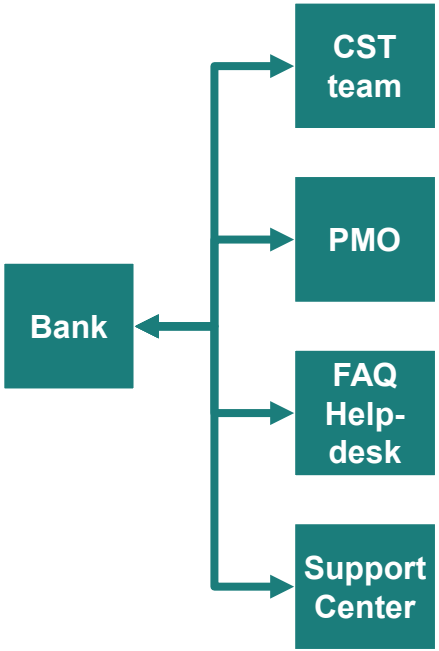
Timeline for Full Data Collection 2	
Day	**Deliverable/task**
early May	Opening of STAR Portal for Pre-validation
23 May noon	Deadline for FDC2 submissions by banks
23 - 25 May	Initial data quality (DQ) checks by ECB stress test team
25 May	Possible ECB request for re-submission to address remaining QA issues (if applicable)
31 May noon	Deadline for bank resubmissions to address outstanding QA issues
6 July	Banks receive an Output Report providing a complete overview of CST stress test findings

Note: Items marked in dark red highlight deadlines for submissions by banks

Use of CST2022 results for SREP

- The CST 2022 is **not** a pass-or-fail exercise, and will have no impact on P2G.
- Similar to previous exercises, the qualitative outcome of the 2022 climate risk stress test could, in specific cases, factor into the determination of the **Pillar 2 Requirement** (P2R).
- **Timeliness** of submissions, **accuracy** and **quality** of submissions, and overall **conduct** and **performance** in the exercise will be taken into account in the overall supervisory assessment.
- The **pre-validation reports** will not be taken into account in any part of the QA or SREP processes (they are not accessible to the ECB).

Approach for interaction with banks



Purpose	Method of communication
• **Information exchange during the QA process**, e.g. bank-specific ECB QA feedback and bank questions	• Through DQ / QA reports disseminated & (re-)submitted via STAR • Through dedicated bank dialogue in early May 2022
• **General outbound information only**, e.g. informing banks on revised version of ST templates	• By email: 2022_StressTest@ecb.europa.eu
• **For questions** on methodology or documents and ECB stress test process & guidance	• Ticket in External STAR Portal • Publication of answers in STAR
• For **technical issues** & **questions** on the External STAR Portal	• By email: SupportCenter@ecb.europa.eu • By phone: +49 69 1344 7766

Overview

1. Scenarios of the 2022 ECB Climate Risk Stress Test
2. Stress Test QA processes
3. Q&A session
4. Timeline and interactions between banks and ECB
5. **High-level summary of key FAQs received**
6. Q&A session

Module 1 – Overview of main Q&As of the first rounds of FAQs

	Topics	ECB's reply
Questionnaire structure	Request for transformation of Question 12 Block 2 to multiple answers question in order to allow banks to provide more than one answers	• acceptance of the request in order to give the banks the opportunity to provide more than on answers.
Exposures in scope	Concerns raised regarding the exposures in scope for filling in the questionnaire. Are the total exposures of the institutions or only the exposures in scope of the exercise	• ECB clarified that only exposures in scope of the exercise should be taken into account
Definitions of Market operations and public reporting	Clarifications asked regarding public reporting and market operations definitions	• Public reporting: ECB proceeded to rewording question 15 in order to facilitate the clarity of the question • Market operations: ECB provided clarifications on the positions in scope were provided to the banks, setting a minimum of required reported figures

Module 2 (Metric 1) Overview of ECB's replies in first rounds of FAQs 1/2

	Topics	ECB's reply
Selection of countries for Metric 1	The exact selection and aggregation for non-EU countries to be reported for Metric 1	• Banks shall identify the top contributing countries to total income linked to NFC. • Reported countries shall always include the home country. • Non-EU countries that are among the individual countries identified, are reported together in the country "Non-EU".
Scope of income for Metric 1	The exact inclusion of all interest income and fee and commission items in Metric 1	• All II and FCI components - which are reported in FINREP - and related to NFC counterparties shall be reported - with the exception of earned interest income on liabilities and expenses on assets, both due to negative interest rates. • This includes for instance "Corporate Finance, M&A advisory" fees. These incomes are not necessarily associated with on- or off-balance sheet items.
Underlying exposures of Metric 1	Guidance on assets which should be included in the volumes.	• All underlying exposures that generate the income (for the respective NACE sector), except i)assets under management and ii) assets under custody. Additional information to be provided in the explanatory note

Module 2 (Metric 2) – Overview of ECB's replies in first rounds of FAQs 2/2

	Topics	ECB's reply
Parent-company approach for Metric 2	The methodology foresees the possibility to use parent company emissions but needs for further guidance.	• Clarification that banks can use emissions of the next parent company to infer emissions of the counterparty. • If no reasonable inference is possible then possibility to report parent-company emissions. • See FAQ#1554 and FAQ#3037
Scope of exposure in Metric 2	The exact of scope of the exposure needs to be further detailed (instruments covered, accounting or capital framework)	• Clarification that exposures cover loans, debt securities and loan commitments (used and unused parts) reported on GCA basis and a nominal amount basis for the latter. • COREP concepts are disregarded. #FAQ97
Guidance for holding companies and head offices	Needs for precise definition and details on pro-rata allocation of income/emissions per NACE code (for income) for holding companies. NACE allocation of head office needs to be clarified.	• Clear distinction between head office (NACE code M70.20) and holding companies (NACE code K64.20) – FAQ#179. • Head offices are allocated to a single NACE code based on its main activity FAQ#3037. • Guidance on pro-rata allocation 3 main activities of income/emissions related to holding companies – FAQ#181.

Module 3: Overview of ECB's replies in first cycles of FAQs 1/3

	Topics	ECB's reply
Exposure values	Definition of exposures follows COREP / CRR, but provisions calculated based on IFRS9. Clarification needed. (See FAQ#635)	• Banks should report exposure amounts (e.g. S1, S2, S3, performing, non-performing, provisions) in line with par. 56, 57 and 63 of the 2021 EBA ST MN, i.e. after credit risk mitigation substitution effects and accounting credit conversion factors. • The amounts should be allocated in line with the COREP exposure classes as described in the CST MN in section "Credit risk exposure classification". • REA should be computed according to COREP definitions of exposure value (i.e. Articles 111 -STA portfolios-, 166-168 CRR -IRB portfolios-).
Market risk scope	Further clarifications on the positions / portfolios in scope of the market risk. (See FAQ# 1480)	• All corporate bonds and stocks in the trading book (FVPL) and derivatives directly connected (i.e. whose value is dependent on such underlying assets); • All the associated hedging positions, independently from their classification (FVPL, FVOCI, amortised cost) and hedging relationship (i.e. hedge accounting or economic hedge). • Indirect exposures on the abovementioned positions through indices, baskets, ETF and funds are included as long as it is possible to assign them (completely or pro-rata) to one of the NACE sectors in scope of the exercise.

Module 3: Overview of ECB's replies in first cycles of FAQs 2/3

	Topics	ECB's reply
Treatment of holdings in Module 3	Further guidance on the treatment of holdings (and head offices) for the NACE sector allocation. (See FAQ#328)	Approach to be applied: 1. Banks need to identify the three main economic activities of the subsidiaries of their exposures to holding/head offices based on the NACE 2-digit sector classification. In case the holding/head office has fewer than three main activities only the first and/or second needs to be identified. Only holdings/head offices in the countries selected to meet the 80% threshold are in scope. 2. The banks total exposure towards the holding/head office needs to be allocated to the three main economic activities on a pro-rata basis by using the total assets of the subsidiaries in each of the main economic activities as weights summing to one. 3. The allocated exposure needs to be submitted in the relevant templates for those activities in scope of the climate stress test (industries in NACE codes A-H and L). Subsidiaries with main activities in other sectors are not in scope. 4. For simplicity, the country of exposure remains equal to the country of the holding/head office.

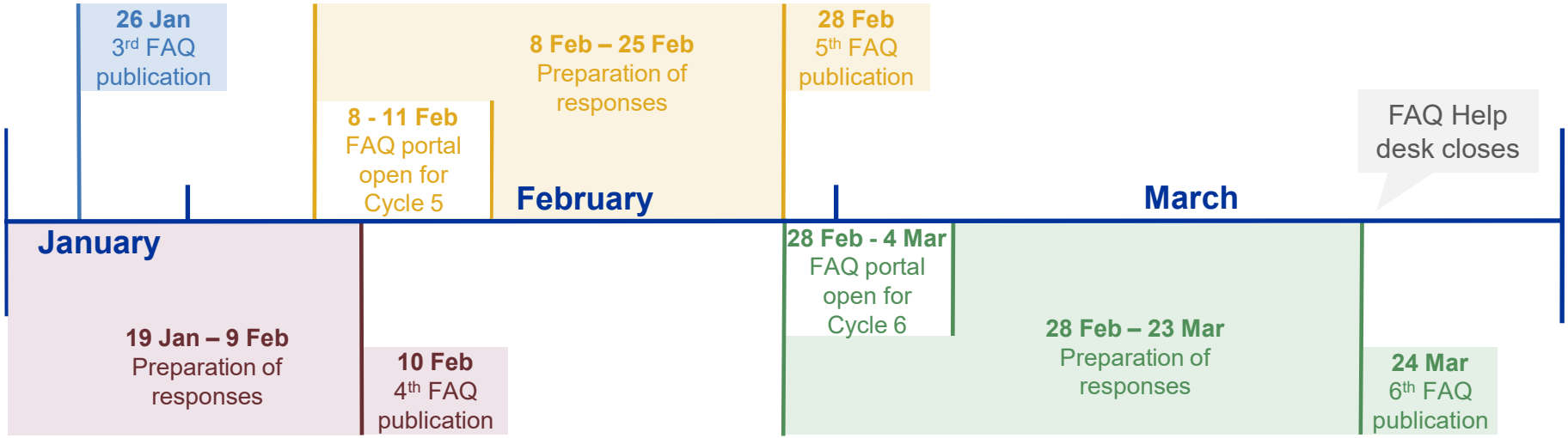
Module 3: Overview of ECB's replies in first cycles of FAQs 3/3

	Topics	ECB's reply
Trading exemption	Implications of the trading exemption and operational details (See FAQ#98)	• All banks subject to at least modules 1 and 2 of the 2022 climate stress need to provide starting point information in M3_TR_ST_MR. • It is clarified that the trading exemption refers only to the projecting values and as such applies only to Module 3 banks. • Banks do not need to proactively request the trading exemption, since those banks eligible for this exemption will be informed by the stress test PMO in due course. [Communication already sent] • Exempted banks can always volunteer to submit their projections.
Transition risk scenarios	Regarding scenario expansion banks asked for further details on how to make it (See FAQ# 123)	• Banks have the freedom to extrapolate the scenario(s) as long as these assumptions are consistent with the scenario variables and narratives provided by the ECB. • Banks can use e.g. interpolation techniques as long as this is consistent with the scenario variables and narratives. • Banks should describe briefly in the explanatory note for which variables and how the scenario has been extrapolated.

Templates – Overview of main Q&As of the first rounds of FAQs

	Topics	ECB's reply
Module 1: **Typos spotted by the banks**	Banks spotted discrepancies between Methodology Annex and Template's Module 1 questionnaire tab	• Correction of typos between the Methodology and the Module 1 Questionnaire tab of the Template
Module 3: **Formulas corrections**	Banks spotted errors in: • LRLT33 formula • Provisions for Stage 1, 2 and 3 • LTV-ratios and funded collateral	Correction made in the template in order to: • Enable banks to provide LRLT33 in baseline and scenario separately; • Ensuring provisions for Stage 1, 2 and 3 at the beginning of 2022 equal those of end-2021 and • Ensuring LTV-ratios and funded collateral at the beginning of 2022 equal those of end-2021.

Remaining FAQ cycles - overview



FAQ Process – Cycle 3
FAQ Process – Cycle 4
FAQ Process – Cycle 5
FAQ Process – Cycle 6

Overview

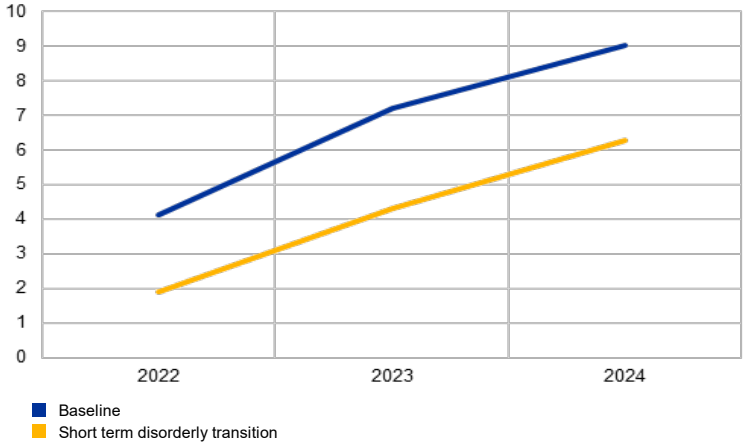
1. Scenarios of the 2022 ECB Climate Risk Stress Test
2. Stress Test QA processes
3. Q&A session
4. Timeline and interactions between banks and ECB
5. High-level summary of key FAQs received
6. **Q&A session**

Annex

European GDP – short term scenario

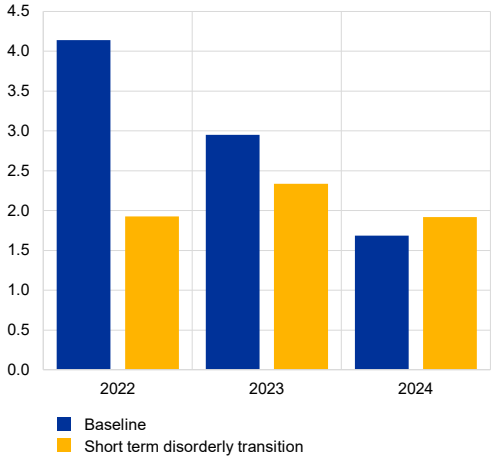
European GDP path*

y-axis: %-change relative to 2021, cumulative



European GDP path*

y-axis: %-change y-o-y



- The **disorderly transition costs are a drag on economic growth**
- GDP performance on aggregate is subdued throughout the horizon and **only recovers a little of the lost output in 2024**

*Illustrative, EU countries weighting fixed