Preparing for the second European Climate Risk Assessment

ENTSO-E – RGI workshop

13 November 2025, Brussels

Dr. Hans-Martin Füssel (Scientific Lead, second European Climate Risk Assessment, EEA)

Energy Community

European Environment Agency

The European Environment Agency

Based in Copenhagen, the EEA is a decentralised, independent agency of the European Union

- We support policies with evidence-based knowledge
- We build and maintain networks and partnerships
- We inform public and policy discussions
- We collect, quality check and disseminate data on climate and environment

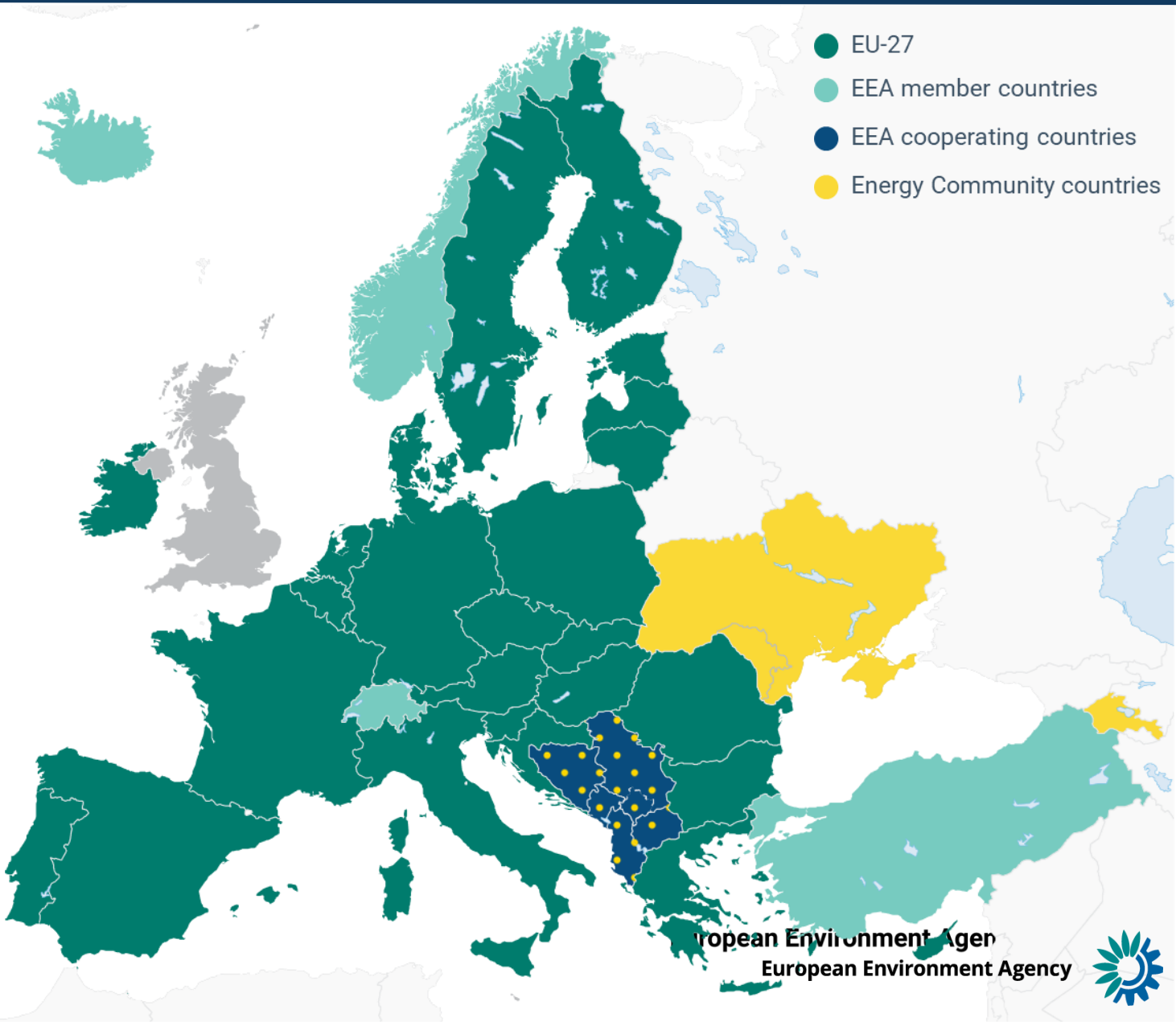
EEA cooperation

Who we are

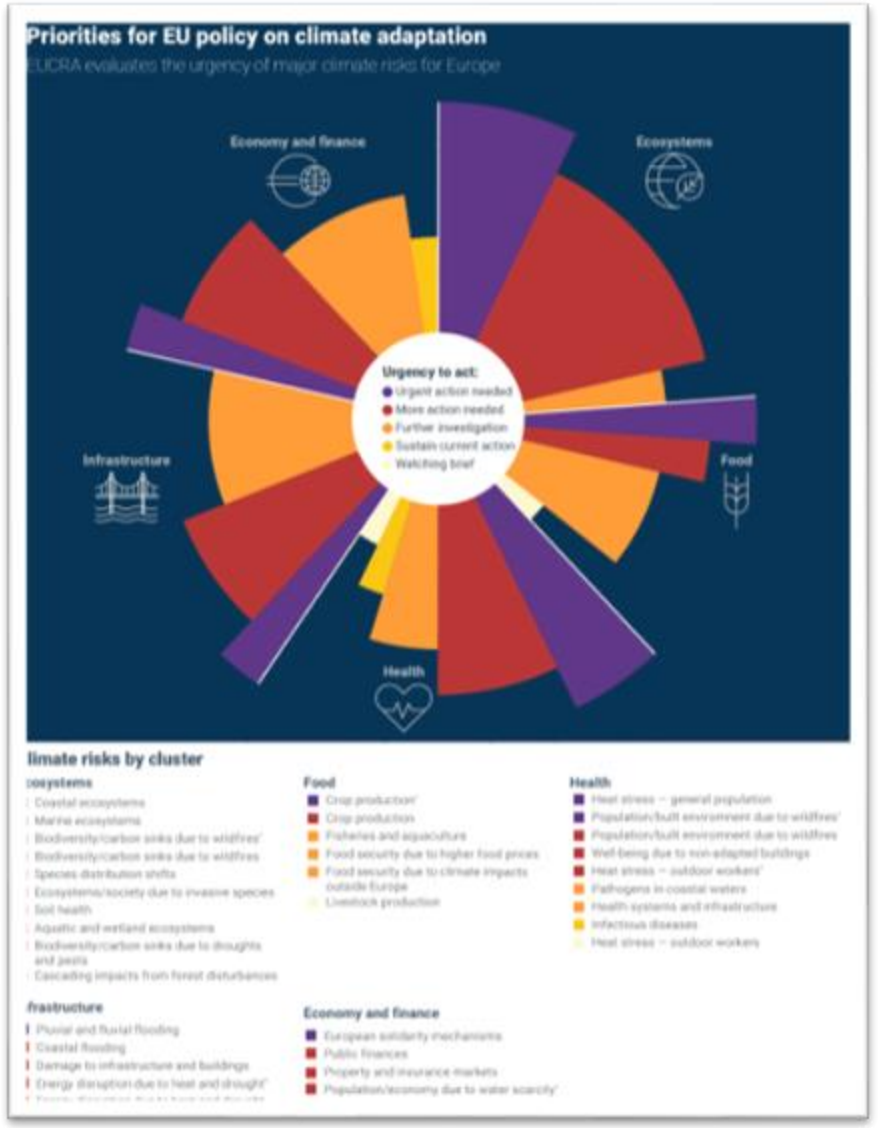
- **38 countries in Eionet**
- More than **600 institutions**
- **2500 experts**
- Organised in **12 Eionet, 16 thematic and 7 working groups**
- Supported by **1000 experts in 7 European Topic Centres**
- More than **300 employees** in Copenhagen

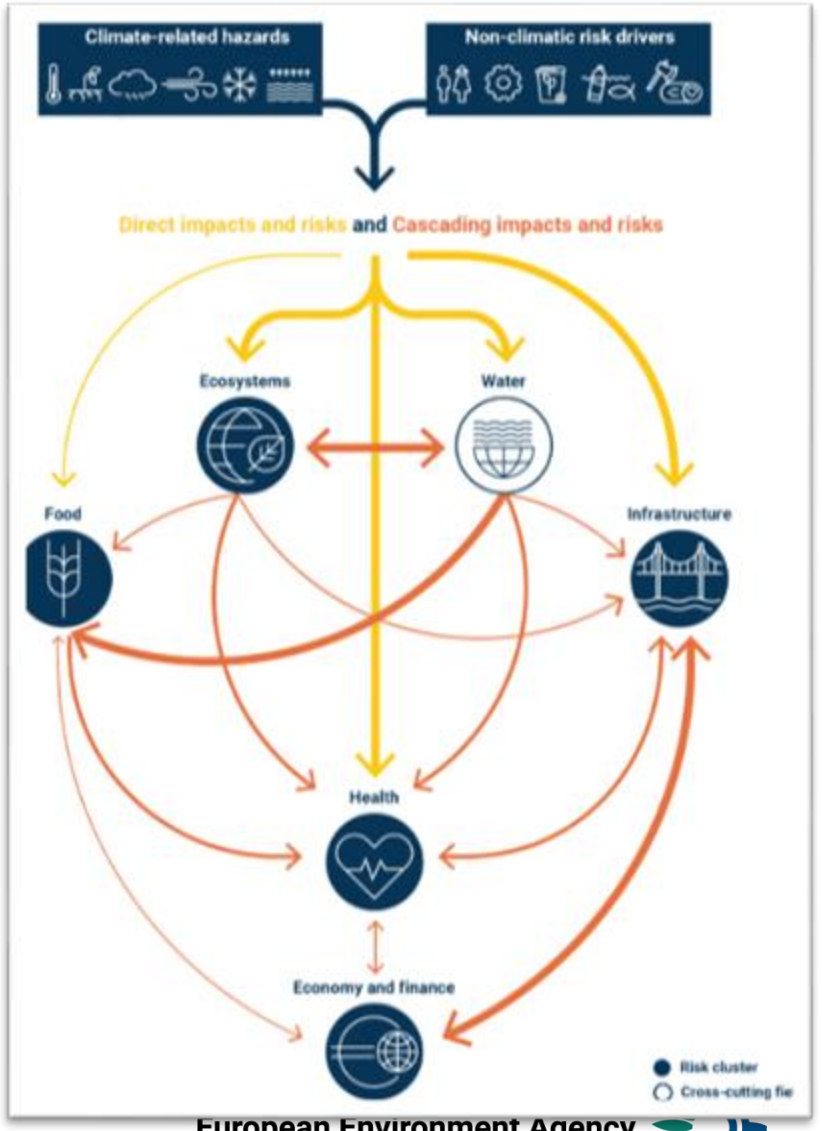
What we do

- Delivering **data, information and knowledge**
- The European environment – state and outlook
- Support for **EU and National policy**



The first European Climate Risk Assessment (EUCRA)





Infrastructure cluster

Climate risks for 'Infrastructure' cluster	Urgency to act	Risk severity			Policy characteristics		
		Current	Mid-century	Late century (low/high warming scenario)	Policy horizon	Policy readiness	Risk ownership
Pluvial and fluvial flooding		+++	+++	++	Long	Medium	Co-owned
Coastal flooding		+++	+++	+++	Long	Advanced	Co-owned
Damage to infrastructure and buildings (*)		++	++	++	Long	Medium	Co-owned
Energy disruption due to heat and drought (hotspot region: southern Europe)		++	++	++	Medium	Medium	Co-owned
Energy disruption due to heat and drought		++	++	+	Medium	Medium	Co-owned
Energy disruption due to flooding		++	++	++	Long	Advanced	Co-owned
Marine transport		++	++	++	Medium	Medium	Co-owned
Land-based transport		++	++	++	Medium	Medium	Co-owned

Legends and notes

Urgency to act
- Urgent action needed
- More action needed
- Further investigation
- Sustain current action
- Watching brief

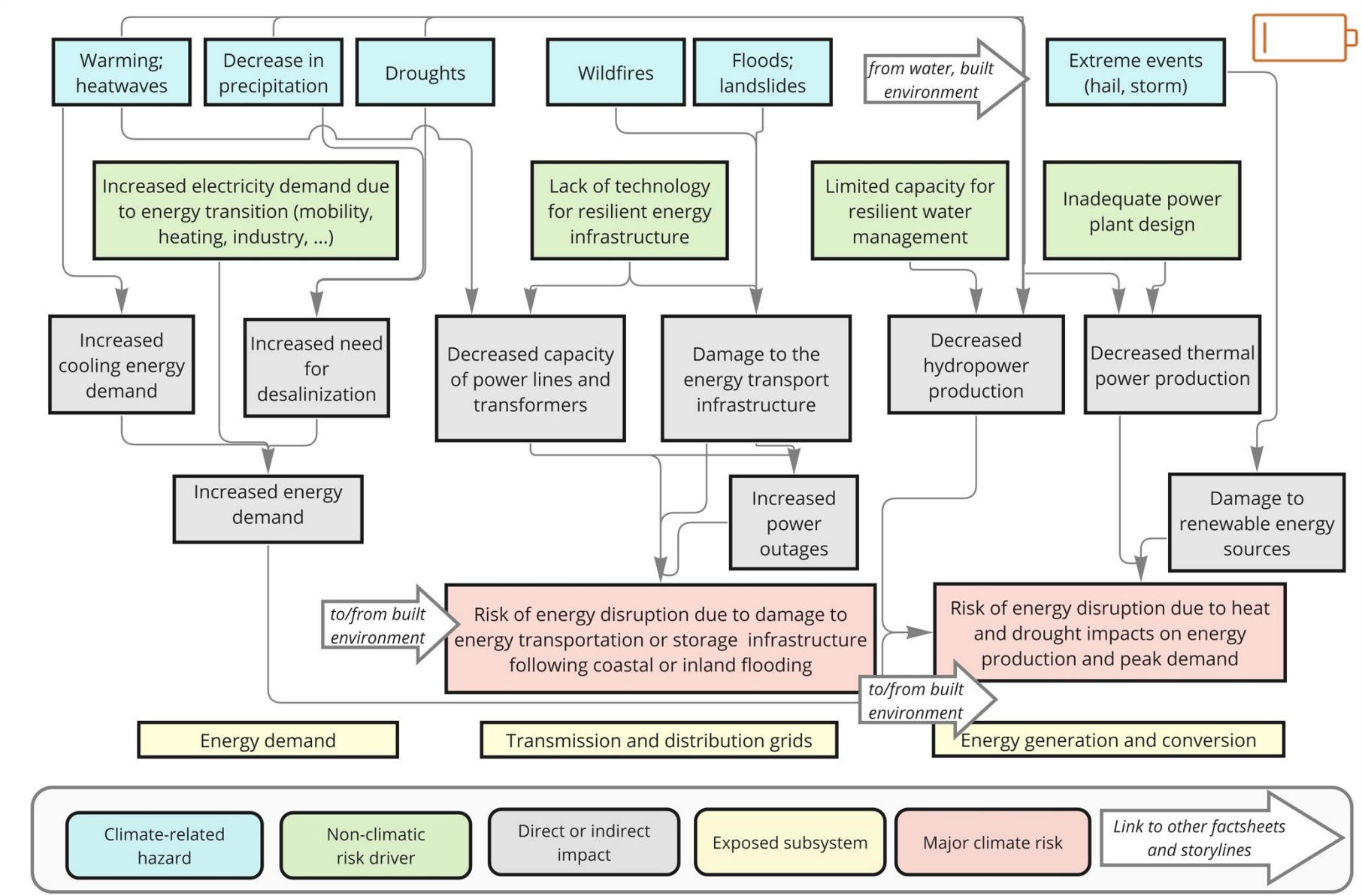
Risk severity
- Catastrophic
- Critical
- Substantial
- Limited

Confidence

Low: +
Medium: ++
High: +++

(*) Urgency based on high warming scenario (late century).

Impact chain for climate risks to the energy system



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Energy security: EU policy priorities

- **The transformation of the European energy system must integrate mitigation and adaptation considerations.** European and national decarbonisation strategies must consider climate change during the long lifetime of energy infrastructure.
- The **updated NECPs 2021-2030** provide a near-term opportunity for doing so.
- **Enhancing energy system resilience requires detailed risk assessments, infrastructure maintenance, and technological innovations.** Improving energy efficiency and demand-side management can further increase energy security.
- National implementation of the **Regulation on Risk-preparedness in the Electricity Sector** and the **Critical Entities Resilience Directive** needs to ensure comprehensive consideration of current and future climate risks.
- **Social justice considerations are essential in energy adaptation planning,** ensuring equitable access to resources and addressing energy poverty.

EUCRA-1: Uptake by key EU institutions and actors

European Commission

12/3/2024 Communication "Managing climate risks – protecting people and prosperity"

Mission letter for Commissioner Hoekstra

*You will lead the work on a **European Climate Adaptation Plan**. /…/ Coupled with the first **European Climate Risk Assessment**, this will help prepare future legislation on climate resilience and preparedness..*

Council of the EU

17/6/2024 Conclusions on 8EAP (11326/24)

*WELCOMES /…/ the EEA's report on **European Climate Risk Assessment (EUCRA)**; NOTES WITH CONCERN that many of the risks identified have reached critical levels and could become catastrophic unless urgent and decisive action is taken;*
*CALLS ON **the Commission to** continue regular EU-wide climate risk assessments /…/*

European Parliament

19/9/2024 Resolution on the devastating floods in central and eastern Europe (P10_TA(2024)0014)

*Calls on the Commission to /…/ **ensure regular science-based risk assessments** /…/*

European Committee of the Regions

[21/11/2024 Opinion 'The future of EU climate policy: aligning mitigation targets and adaptation challenges' (ENVE-VII/050)]

*/…/ notes – with great concern – the findings of the **scientific fact-based EUCRA report**, which highlights the broad risks of climate change that extend beyond the environment, impacting the economy, local tourism, health, infrastructure (particularly critical infrastructure) and food systems;*
/…/ stresses that the EUCRA findings underscore the urgent need for adaptation, regardless of the success of mitigation efforts;
/…/ notes that the EUCRA report shows significant imbalances and divides in climate change across European regions; calls for cohesion funds and other instruments to ensure that the EU adequately supports short-term and long-term climate-vulnerable regions;

- **European Court of Auditors** 'Climate adaptation in the EU'
- **Niinistö Report** 'Safer together: A path towards a fully prepared Union'

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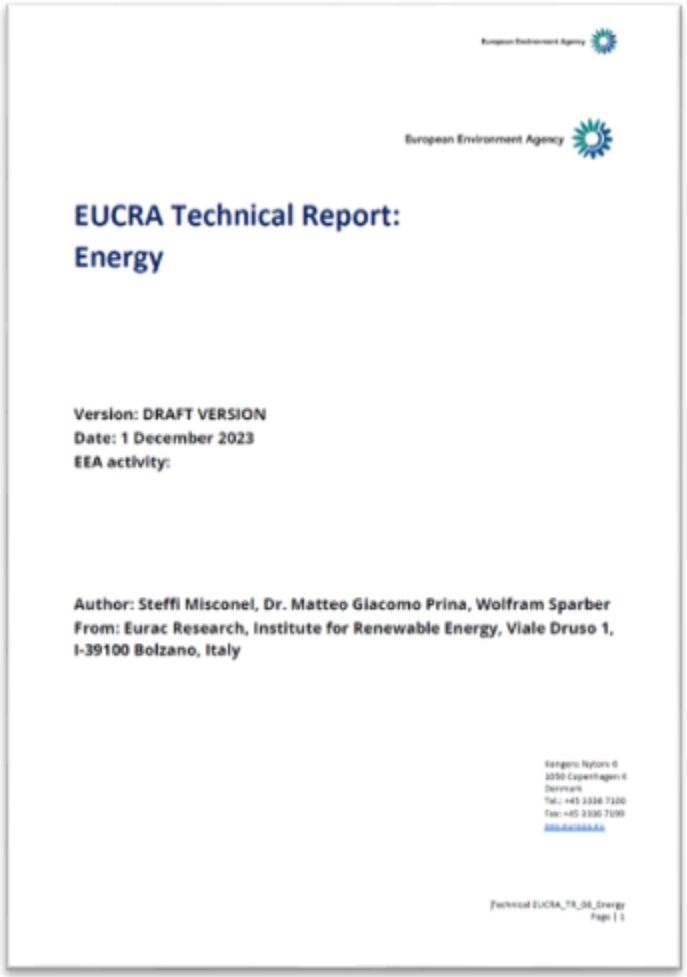
Further EEA resources on climate adaptation and energy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EUCRA Technical Report:
Energy

Version: DRAFT VERSION
Date: 1 December 2023
EEA activity:

Author: Steffi Misconel, Dr. Matteo Giacomo Prina, Wolfram Sparber
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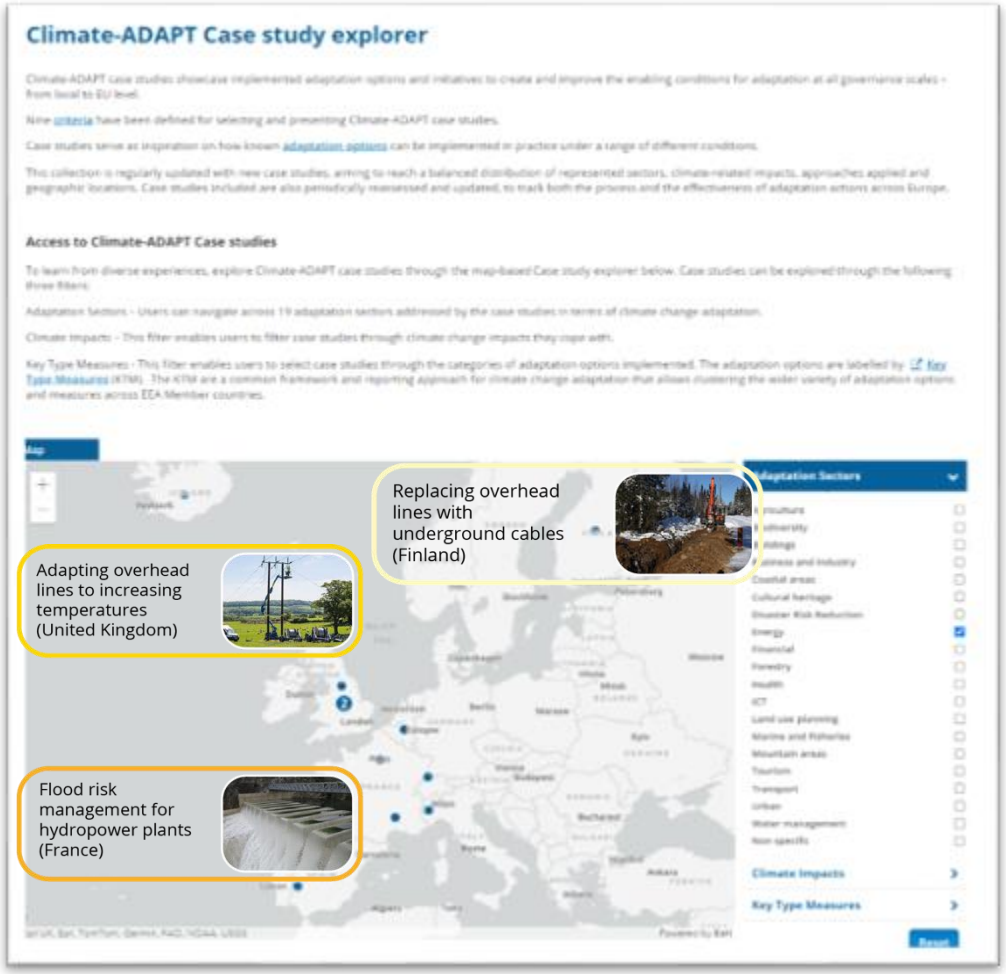
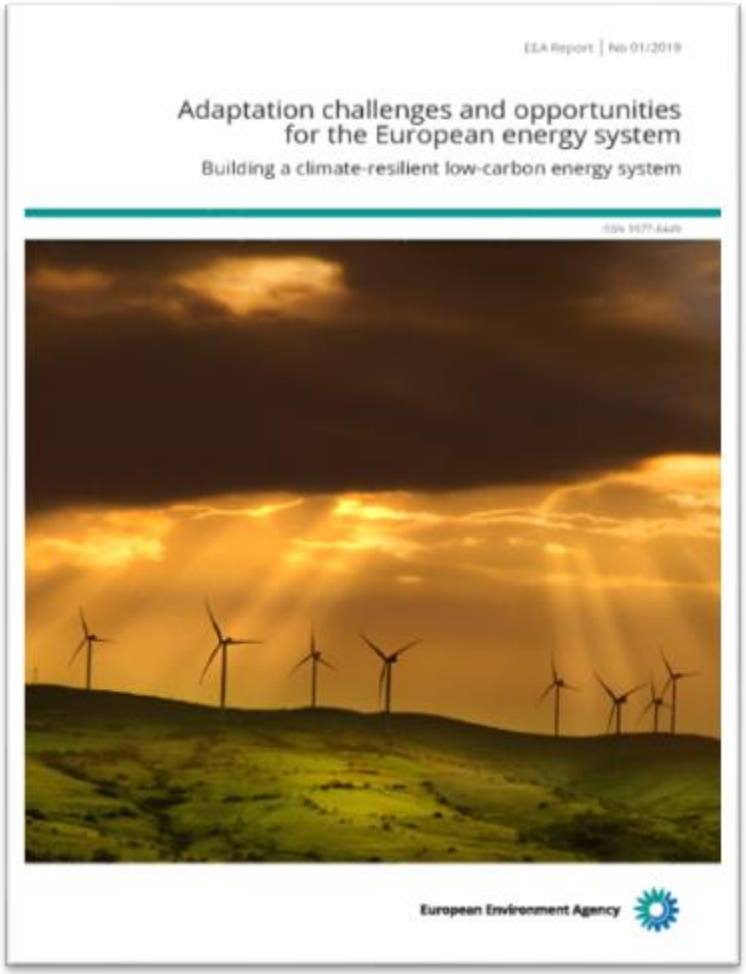
Draft (available on request)



climate-adapt.eea.europa.eu/en/knowledge/tools/case-study-explorer



eea.europa.eu/publications/adaptation-in-energy-system

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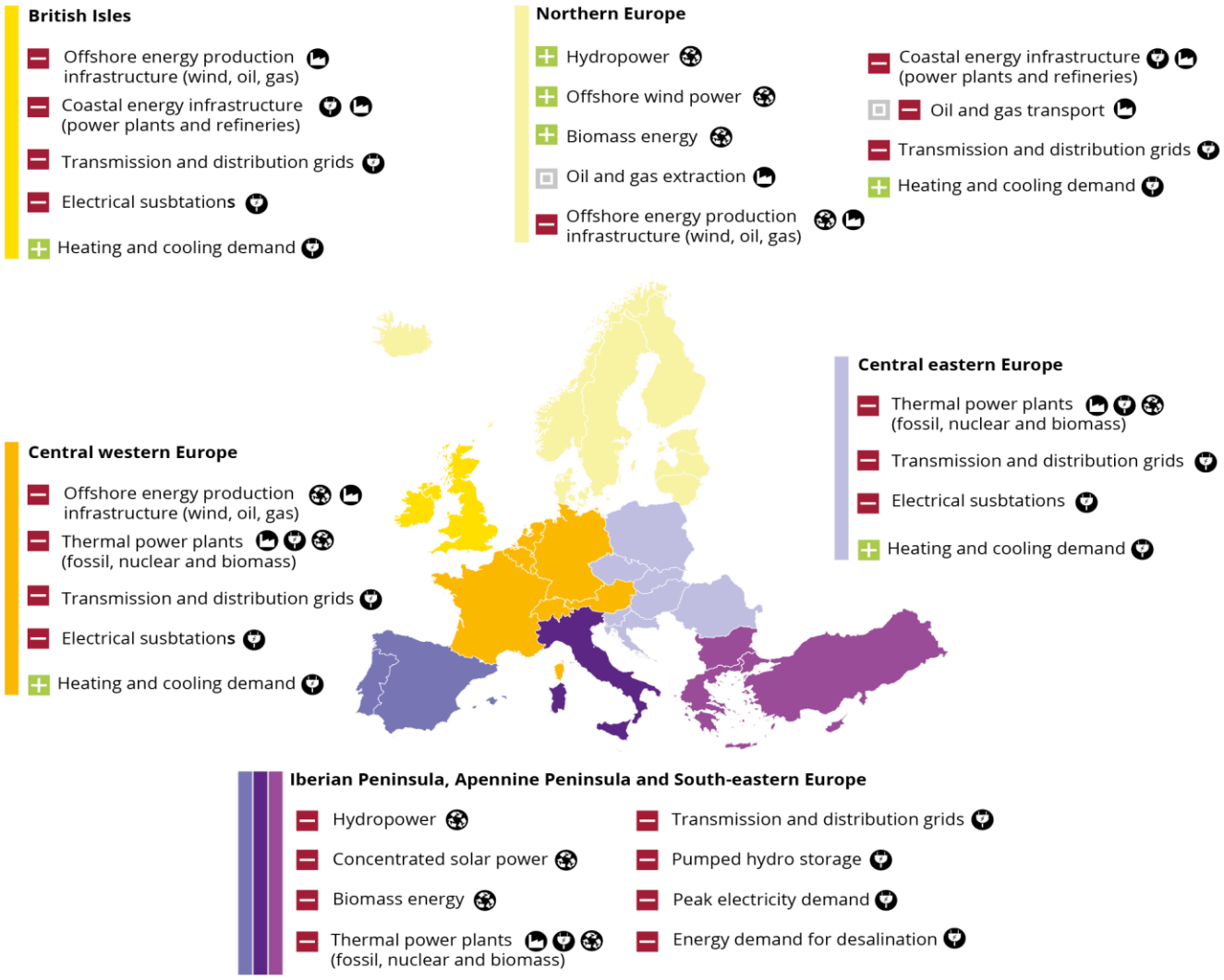
Climate change impacts on the energy system by region



- All components of the energy system are vulnerable to climate change and/or extreme weather events
- Impacts differ across regions and energy sector components
- Southern European regions are most adversely affected

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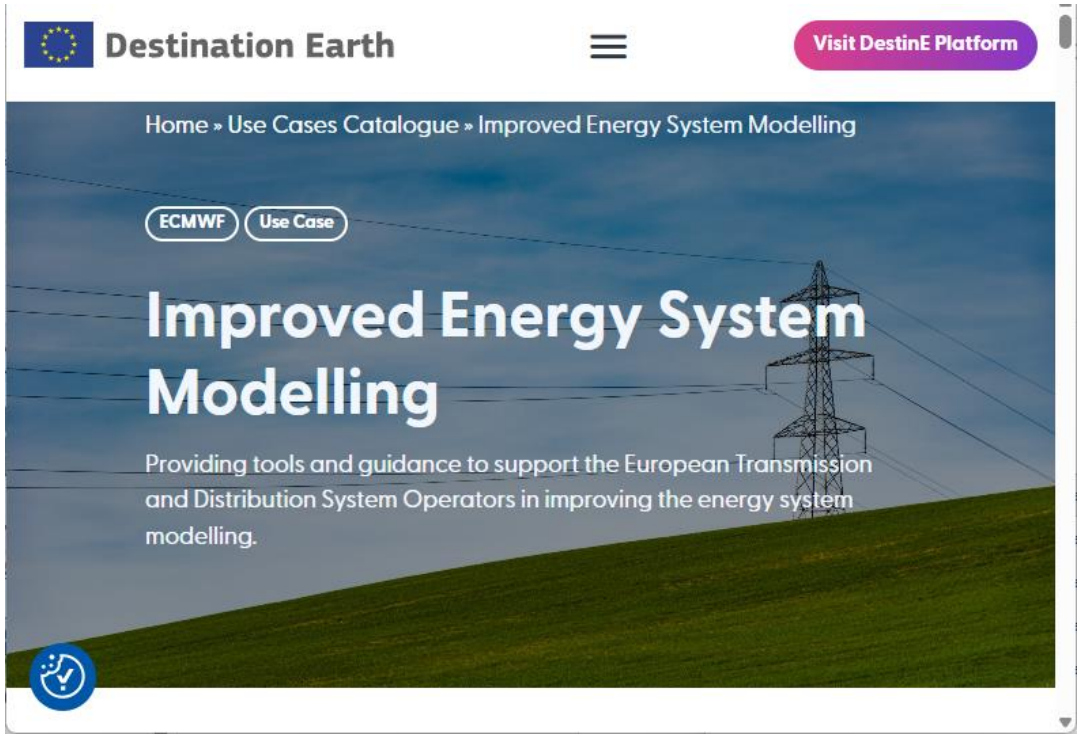
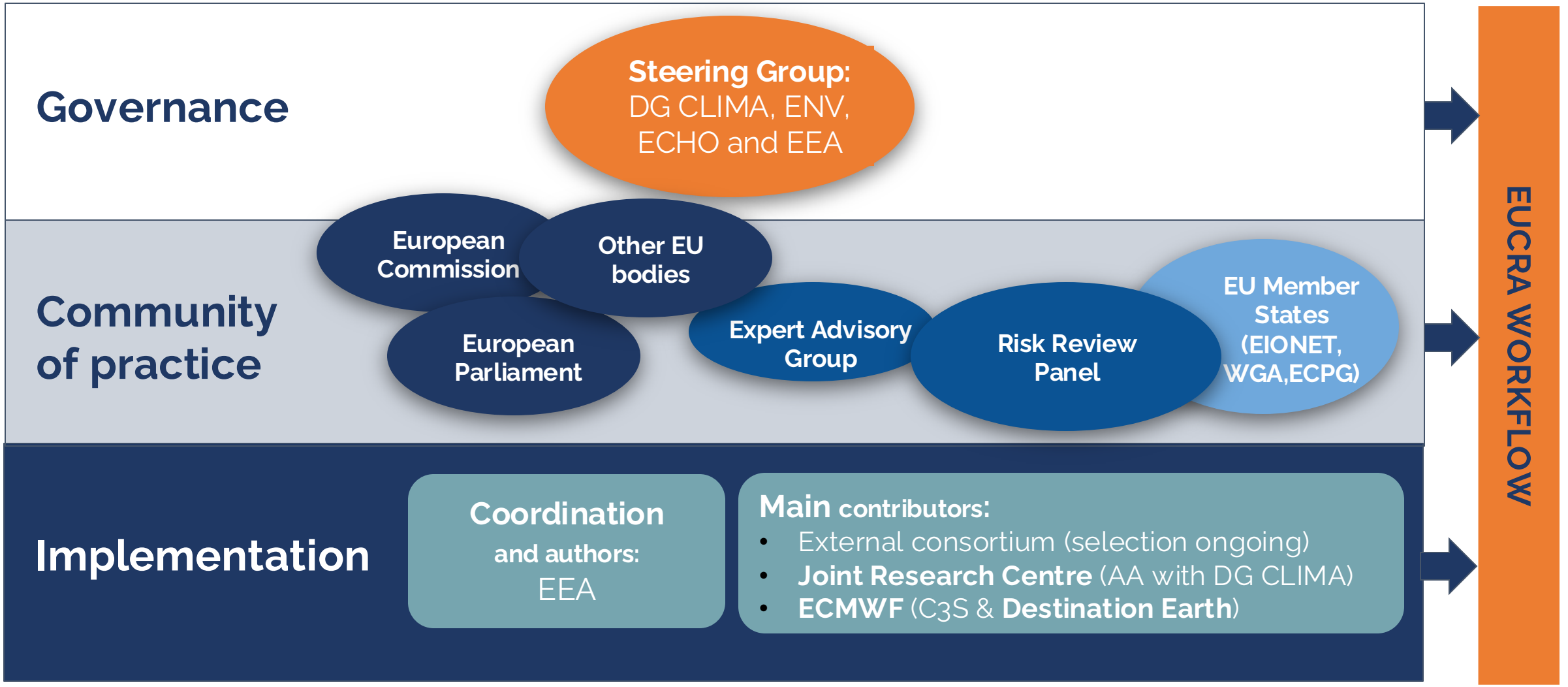
EUCRA-2: Planned improvements

- **Inclusion of new policy areas:**
  - Economic and social policies
  - Domestic and international security
- **Improved information basis**
  - Quantitative modelling for selected risks, providing improved regional resolution
  - Improved traceability of risk assessment
  - High-impact low/unknown probability events
- **More focus on 'solution space'**
  - Improved policy analysis
  - Adaptation options (incl. their feasibility)
- **Expanded stakeholder involvement**
  - Learning from latest national climate risk ass.
  - Stronger involvement of sectoral stakeholders



EUCRA-2: Planned organisational setup



EUCRA-2: Indicative timeline

EUCRA-2: proposed products

Top layer: Executive Summary	
Audience	• Focus: Senior policymakers with cross-cutting responsibilities • Key source of information for journalists
Format & style	• Ca. 16 pages (A4) • Classical report with professional lay-out • Easily accessible language with minimal use of technical terms
Authorship	• EEA project team & EEA communications team

Middle layer: Main report	
Audience	• Focus: Policymakers with cross-cutting responsibilities • Additional source of information for journalists
Format & style	• Ca. 64 pages (A4) • Classical report with professional lay-out • Accessible language with limited use of technical terms
Authorship	• EEA project team, supported by EEA communications team • Contractor core team, possibly ECMWF and JRC experts

Base layer: Technical and sectoral reports	
Audience	• Focus: Topical and sectoral stakeholders • Relevant also for regulators and private sector stakeholders
Format & style	• Web report with simple lay-out • Language with suitable for specialists
Authorship	• Authored by external experts (as named authors) • Reviewed and approved by EEA project team

Support layer: Interactive viewers
• **Scenario viewer**
• **Major risks and solutions viewer**
• **Sectoral viewer(s)**

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Thank you

For more information:
climate-adapt.eea.europa.eu/en/eucra

Contact us:
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