



# Climate proofing of infrastructure projects 2021-2027: **JASPERS** support on implementation at National or regional level and capacity building activities

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**18 June 2024**

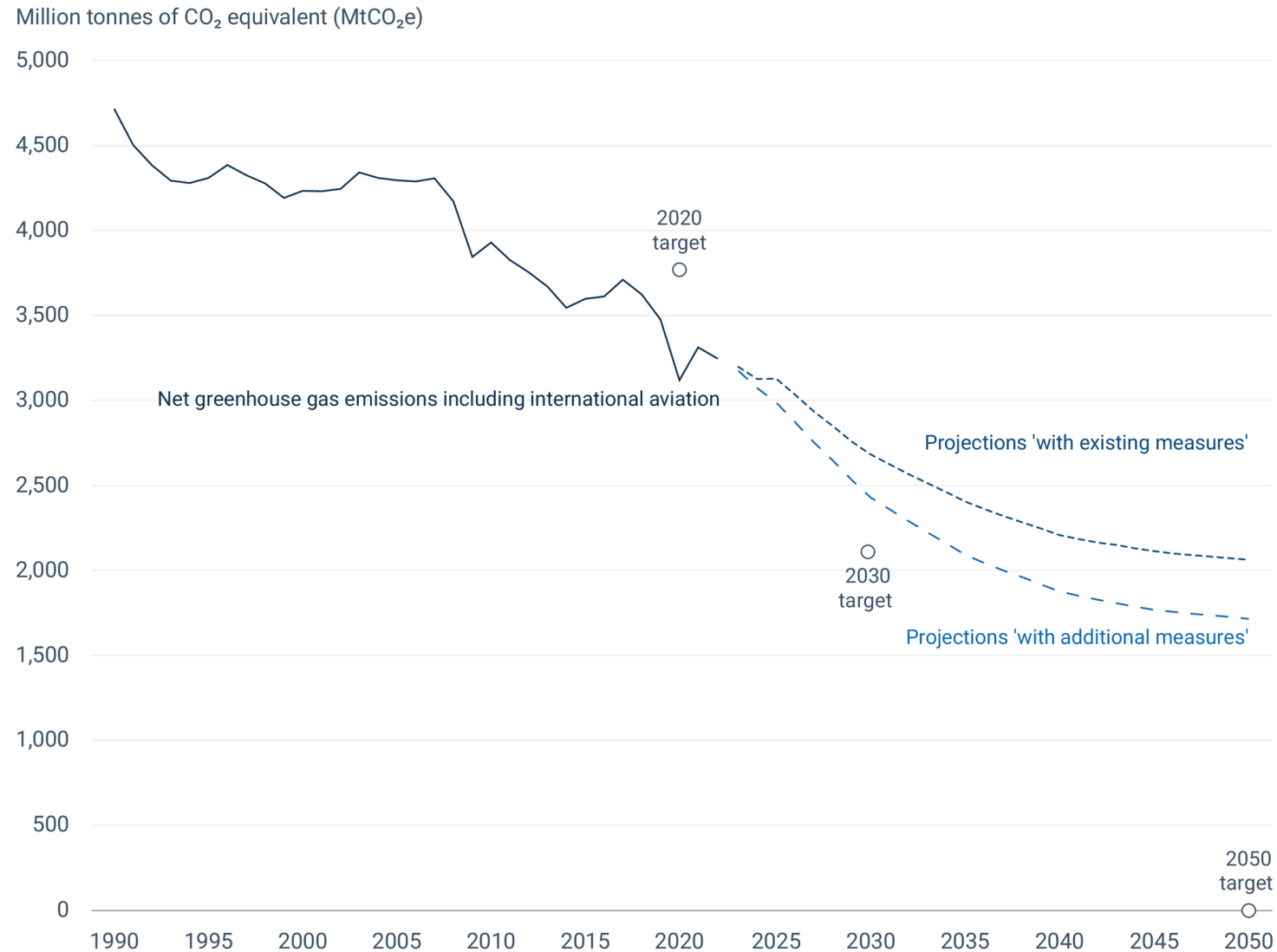


# Climate proofing considerations in 2021-2027

**Climate Proofing:** Process to *prevent infrastructure from being vulnerable to potential long-term climate impacts* whilst ensuring that the '*energy efficiency first*' principle is respected and that the level of *GHG emissions* arising from the project is *consistent with the climate neutrality objective in 2050*

- **CPR Recital 10** – “Adequate mechanisms to ensure the climate proofing of supported investment in infrastructure should be an integral part of programming and implementation of the Funds.”
- **CPR Art. 73 (Selection of operations by the MA), point J:** (The MA shall) “ensure the climate proofing of investments in infrastructure which have an expected lifespan of at least 5 years”
- ***Not a new requirement*** – Climate change considerations were required for Major Projects in 2014-2020 but now it applies to all projects with a lifetime of at least 5 years

# Progress towards achieving the EU climate targets



Source: [European Environment Agency](https://www.eea.europa.eu/)

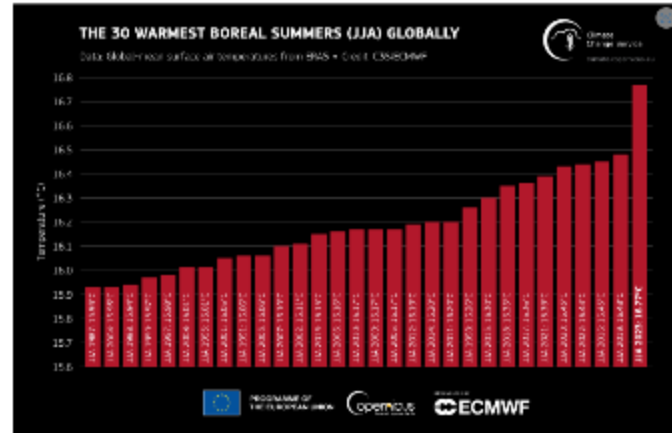
# Summer 2023: the hottest on record

26 September 2023



2023 JUNE-JULY-AUGUST SEASON HIGHLIGHTS | AUGUST 2023 - SUMMER AIR TEMPERATURE HIGHLIGHTS | AUGUST 2023 - SEA SURFACE TEMPERATURE HIGHLIGHTS | AUGUST 2023 - SEA ICE HIGHLIGHTS | AUGUST 2023 - HYDROLOGICAL VARIABLES HIGHLIGHTS | ABOUT COPERNICUS AND CMWF

Born, 06/09/2023



Global mean surface air temperature for the 30 warmest boreal summers (June-July-August) in the ERA5 data record, ranked from lower to higher temperature - Data: ERA5, Credit: Copernicus ECMWF

The Copernicus Climate Change Service (C3S), implemented by the European Centre for Medium-Range Weather Forecasts on behalf of the European Commission with funding from the EU, routinely publishes monthly climate bulletins reporting on the changes observed in global surface air temperature, sea ice cover and hydrological variables. This month, highlights on the boreal summer 2023 and sea surface temperature are also included in this press release. All the reported findings are based on computer-generated analyses using millions of measurements from satellite, ships, aircraft and weather stations around the world.

### Affected Areas

#### Slovenia | Floods

IFRC

Key Figures

- 6 Dead
- 18,000 Evacuated
- ~750 ha Flood extent
- ~30 km Roads with cracks or total damage
- 30 Bridges with total or heavy damage
- Over 500M Euro Estimated Damage (July 7)

The map shows the geographical distribution of flood-affected areas and evacuation zones across Slovenia. The flood extent is highlighted in red, while evacuation zones are shown in orange. The map includes a key for evacuation zones (Evacuation zones, Evacuation zones, Evacuation zones) and a legend for flood-affected areas (Flood-affected areas, Flood-affected areas, Flood-affected areas).

## October heatwave expected in parts of Europe after countries record hottest ever September



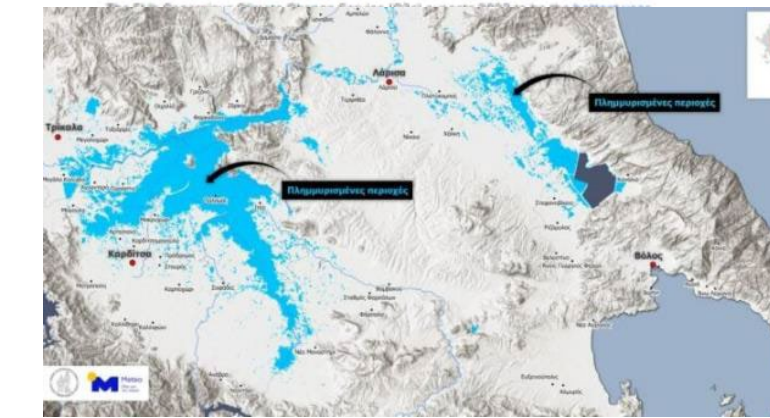
By Euronews Green  
Published on 09/10/2023 - 17:11 - Updated 10/10/2023 - 10:01

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France, Germany and the UK all recorded their hottest ever September last month.

Countries across Europe experienced their hottest September on record with unseasonably warm weather expected to continue into October.

Austria, Belgium, France, Germany, Poland, Switzerland and the UK all saw record-high temperatures last month, upwards of 3.6°C above seasonal norms.



Wildfires in Greece  
\* Η Ελλάδα είχε την υψηλότερή του Εβρος αριθμό πυρκαγιών που καταγράφησαν παγκοσμίως στην Ελλάδα και στην Ευρώπη

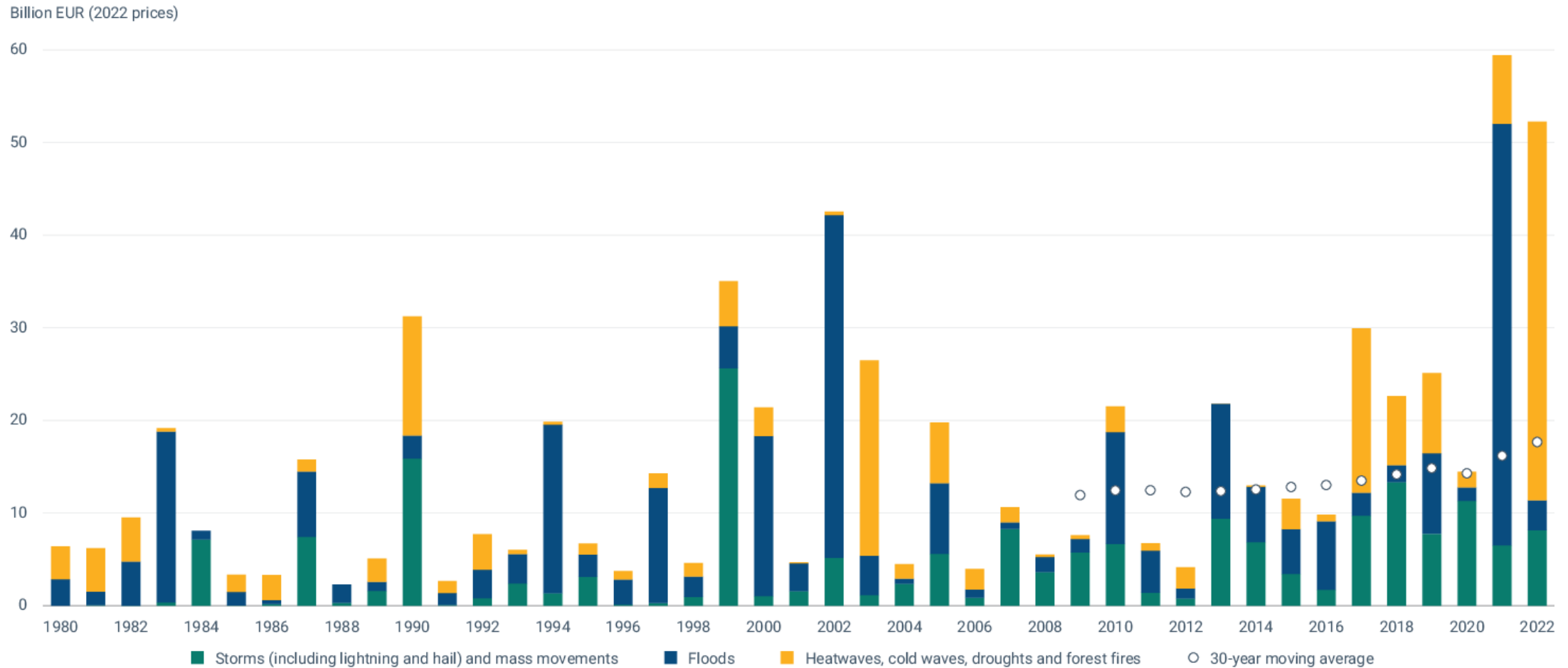
## As it happened: Malta bakes in heatwave on the fourth day of power cuts

Record energy demand reported amid temperatures above 40°C



Thousands of beachgoers and swimmers in Maltese coastal towns as the heatwave continues. The weather is expected to persist for several more days. The power cuts have caused significant inconvenience for many residents. The government is working to manage the situation and ensure the safety of the public.

# Annual economic losses caused by weather – and climate-related extreme events in the EU Member States



Source: [European Environment Agency](https://www.eea.europa.eu/en/press/2023/04/01)

# Economic losses and fatalities caused by weather - and climate related extreme events (1980-2022) per country

Country	Total losses (Million EURO)	Losses per sq.km (EURO)	Losses per capita (EURO)	Insured losses (Million EURO)	Insured losses (%)	Fatalities
Austria	13216	157566	1626	2333	18	755
Belgium	16208	528524	1543	6310	39	4690
Bulgaria	4741	42715	594	86	2	256
Croatia	3667	64802	830	92	3	906
Cyprus	423	45701	597	7	2	67
Czechia	16274	206334	1567	1896	12	715
Denmark	8881	206896	1646	5459	61	532
Estonia	306	6750	217	44	14	5
Finland	2286	6755	440	70	3	7
France	120613	188907	1947	41727	35	45260
Germany	167299	467879	2065	50391	30	101334
Greece	11934	90622	1129	401	3	4643
Hungary	8919	95894	875	479	5	874
Ireland	3537	50568	869	519	15	68
Italy	111110	367817	1918	5081	5	21758
Latvia	1182	18295	513	64	5	87
Lithuania	1695	25968	511	9	1	102
Luxembourg	1252	482413	2700	622	50	170
Malta	47	148848	118			5
Netherlands	9996	267420	629	3865	39	4315
Poland	18166	58237	480	1214	7	2551
Portugal	15042	163099	1470	535	4	10339
Romania	17525	73513	816	178	1	1438
Slovakia	1773	36159	333	73	4	119
Slovenia	6934	342051	3452	276	4	315
Spain	83782	165582	1977	3990	5	18954
Sweden	3658	8175	402	969	26	43
Total EU-27	650467			126690		220308

Source: [European Environment Agency](https://www.eea.europa.eu/en/press-releases/2023/04)

# European Climate Risk Assessment (EUCRA) report

## Infrastructure:

- More frequent and extreme weather events increase the risks to Europe's built environment and critical services, including *energy, water and transport*.
- Coastal flood risks have been managed relatively well in Europe
- Rising sea levels and changes in storm patterns can cause devastating impacts on people, infrastructure and economic activities
- In *southern Europe*:
  - ✓ Heat and droughts cause substantial risks to *energy production, transmission and demand*.
  - ✓ Residential buildings also need to be adapted to increasing heat.

# Climate risks for infrastructure

**Table ES.4 Assessment of major risks**

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	Urgent action needed	High	Critical	Substantial	Long	Medium	Co-owned
Coastal flooding	More action needed	High	Critical	Catastrophic	Long	Advanced	Co-owned
Damage to infrastructure and buildings (*)	More action needed	Medium	Substantial	Substantial	Long	Medium	Co-owned
Energy disruption due to heat and drought (hotspot region: southern Europe)	More action needed	Medium	Substantial	Critical	Medium	Medium	Co-owned
Energy disruption due to heat and drought	Further investigation	Medium	Substantial	Substantial	Medium	Medium	Co-owned
Energy disruption due to flooding	Further investigation	Medium	Substantial	Critical	Long	Advanced	Co-owned
Marine transport	Further investigation	Medium	Substantial	Substantial	Medium	Medium	Co-owned
Land-based transport	Further investigation	Medium	Substantial	Substantial	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).



# JASPERS climate proofing support

**Aim:** Provide methodological and practical support and capacity building for implementation of climate proofing at National or Regional level

▪ **8 on-going assignments:**

- ✓ Poland
- ✓ Slovenia
- ✓ Greece
- ✓ Croatia
- ✓ Italy (National and Region of Puglia)
- ✓ Malta
- ✓ Spain

▪ **Related on-going multi-country assignments:**

- ✓ Climate Adaptation in Cities – [1st Conference](#) took place in Florence in November 2023
- ✓ Climate change measures for hospitals/ health infrastructures – Webinar 2<sup>nd</sup> July 2024
- ✓ Good practices for climate proofing of infrastructure in 2021-27 (Current webinar)

▪ **Possible new assignments under discussion in other MSs and regions**

**Collaborative work between JASPERS and the National/Regional authorities**

# Elements of JASPERS climate proofing work

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1. ***Operationalisation of the climate proofing*** at national or regional level in line with the EC guidance and reflecting national/regional priorities and specificities:
  - Development of national guidelines for climate proofing of investments in 2021-2027
  - Identify climate proofing requirements at programme level
  - Support MAs and IBs in the incorporation of climate considerations in calls and specific projects
  - Clarifying linkages with environmental permitting and DNSH assessment
2. ***Dissemination events/information sessions*** on climate proofing and National guidelines
3. ***Capacity building*** in form of training for the MAs and relevant stakeholders:
  - Train-the-trainer programmes (Slovenia and Malta)
  - Carbon footprint assessment for various sectors
  - Climate resilience assessment – How to prepare and how to appraise
4. ***Support the appraisal*** of climate proofing assessments by the MAs – Guidance, checklists, support the review of climate proofing documentation, ToR for external consultants supporting MAs etc.
5. ***Support the climate proofing exercise for specific projects***

# Guidance and tools developed by JASPERS to support the climate proofing work

## 1. Excel scoping tool for preliminary analysis of the climate proofing requirement per intervention code

- To support MAs and IBs in:
- ✓ easy identification of calls that will need climate proofing;
  - ✓ what analysis is expected to be required (mitigation and/or adaptation); and
  - ✓ what level of analysis (only screening or detailed analysis will be required)

Code	Intervention field	Climate proofing required?	MITIGATION screening (from Technical Guidance table)?	MITIGATION Detailed analysis?	ADAPTATION Screening Analysis?	ADAPTATION Detailed analysis?	Comments
Policy objective 1: A more competitive and smarter Europe by promoting innovative and smart economic transformation and regional ICT connectivity							
1	Investment in fixed assets, including research infrastructure, in micro enterprises directly linked to research and innovation activities	IN SOME CASES	NO	NO	IN SOME CASES	IF NECESSARY FROM SCREENING RESULTS	Adaptation Screening Analysis Adaptation required if the project involves: 1) interventions in buildings, 2) other infrastructure. Detailed analysis on Adaptation required if the screening phase identifies medium-high vulnerability.
2	Investment in fixed assets, including research infrastructure, in small and medium-sized enterprises (including private research centres) directly linked to research and innovation activities	IN SOME CASES	NO	NO	IN SOME CASES	IF NECESSARY FROM SCREENING RESULTS	Adaptation Screening Analysis Adaptation required if the project involves: 1) interventions in buildings, 2) other infrastructure. Detailed analysis on Adaptation required if the screening phase identifies medium-high vulnerability.
3	Investment in fixed assets, including research infrastructure, in large enterprises (4) directly linked to research and innovation activities	IN SOME CASES	NO	NO	IN SOME CASES	IF NECESSARY FROM SCREENING RESULTS	Adaptation Screening Analysis Adaptation required if the project involves: 1) interventions in buildings, 2) other infrastructure. Detailed analysis on Adaptation required if the screening phase identifies medium-high vulnerability.

# Guidance and tools developed by JASPERS to support the climate proofing work

## 2. Sectoral adaptation guidance - Sensitivity tables and indicative adaptation measures

### Sensitivity tables

- Buildings
- **Urban regeneration projects**
- Energy
- Transport

Climate hazards	Sensitivities
Drought	<p>Urban regeneration projects can be vulnerable to public water supply/demand deficits. Higher temperatures can increase demand for water while dry periods can affect regional supply.</p> <p>Water shortages will affect the maintenance of public spaces, including landscape management, irrigation of planted areas, periodic cleaning, operation of public fountains or lakes.</p> <p>Droughts may degrade the quality of parks and public squares (e.g., due to weakening and destruction of trees and planted areas, drying out of water ponds or waterfalls) thereby limiting their attractiveness to the public and increasing the demand for operation and maintenance funding, including replacement of plants and redesign of facilities.</p>
Extreme heat	<p>Extreme heat in public spaces can be discomforting to visitors in case there is lack of shady areas and the air quality degrades. Materials such as marbles, concrete, steel (e.g., used for benches, paving, etc) can become very hot and reflect heat augmenting the heat island effect.</p> <p>Some tree species may be attacked by insects or fungi while harmful algal blooms may be created in the water bodies located within parks.</p> <p>Solar radiation could cause deterioration of materials.</p> <p>Fire risk increases e.g., due to sparks (originating from power lines' overheating) being transmitted to dried tree branches.</p> <p>Parks and squares may have to restrict visitor access during extreme heat waves to protect visitors' health and reduce the number of days during which specific recreational facilities (e.g., playgrounds, public markets, open-air expositions) are available to the public.</p>

# Guidance and tools developed by JASPERS to support the climate proofing work

## 2. Sectoral adaptation guidance - Sensitivity tables and indicative adaptation measures

### Tables with indicative adaptation measures per sector and per climate hazard

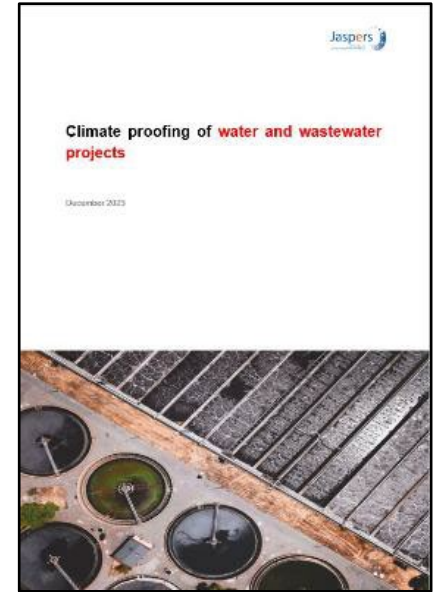
- Buildings
- Urban regeneration projects
- Energy
- Transport

Climate hazards	Indicative Adaptation Measures
Drought	<p><b>Planning and Design</b></p> <p>In coastal areas, consider using plants that are resistant to drought to avoid reliance on municipal water supply shortages.</p> <p>Use efficient irrigation systems (e.g., drip irrigation) to minimize water needs and reduce evaporation losses.</p> <p>Install water tanks (ideally underlying squares or open spaces) to maintain water reserves, (including collection of rainwater through appropriate drainage design) and connect it to irrigation piping.</p> <p><b>Construction and O&amp;M</b></p> <p>Use drought-tolerant native plants.</p> <p>Use smooth-surface materials for ground surface covering so that routine cleaning can be performed consuming less water.</p> <p>Where possible, prefer using permeable/porous materials that do not require frequent cleaning.</p> <p>Consider re-using water for non-drinking purposes (e.g. irrigation)</p>
Extreme heat	<p><b>Planning and Design</b></p> <p>Design landscaping for solar radiation protection.</p> <p>Install renewables (e.g for night lights) to minimize grid dependence (i.e. avoid impacts of potential power failures) and increase energy efficiency.</p> <p>Prefer cool pavements or cool-coloured coatings for asphalt mixes that could reflect up to 50% of light.</p> <p>Provide incentives for the construction of cool/green roofs and green facades in surrounding buildings to improve the microclimate conditions and reverse the heat island effect.</p> <p>Convert grass-dominated parks to tree-dominated to maintain cooler temperatures.</p> <p>Apply high albedo (i.e. reflective) coating for paving and surfacing</p> <p>Install shading frames and kiosks made of -reflective materials.</p> <p>Use thermoelectric cooling for outdoor kiosks.</p> <p>Investigate using porous materials such as stabilized soil or dirt/earth mixes for pathways within the urban regeneration facility.</p> <p>Install blue-green spaces to increase humidification and air purification and enhance park cooling effects.</p>

# Guidance and tools developed by JASPERS to support the climate proofing work

Public

3. ***New JASPERS sectoral adaptation guidance*** - Practical guidance to help beneficiaries perform the climate resilience assessment for Energy, Waste Management and Transport sectors (presentation in the afternoon session)
4. ***Excel tools for climate resilience assessment of small projects*** (presentation in the afternoon session)
5. ***Guidance related to carbon footprint assessment*** – Table with the main types of infrastructure projects included in a programme and indication if carbon footprint assessment will be required or not
6. ***Published climate proofing guidance and case studies for Water/Wastewater & Flood/Disaster Risk Management***
7. ***Country-specific case studies on climate neutrality (carbon footprint) and climate resilience/adaptation assessment***



# Future climate proofing work and relevant activities

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- **Technical Guidance and tools:**

- ✓ Pilot the Excel tools for climate resilience assessment of small projects to get feedback
- ✓ Develop further targeted guidance and tools for mitigation and adaptation according to needs

- **Capacity building and dissemination events:**

- ✓ Overall climate proofing assessment
- ✓ Specific topics e.g. carbon footprint, climate resilience assessment
- ✓ Specific sectors - How the climate proofing assessment should be performed for specific sectors
- ✓ Train-the trainer activities

- **Appraisal of climate proofing documentation:** Guidance and capacity building activities on the verification of the submitted climate proofing documentation according to needs

- **Support the assessment of DNSH compliance:** Clarify the linkages between the two requirements and develop practical methods to support the various MAs in ensuring compliance to both requirements

# Thank you

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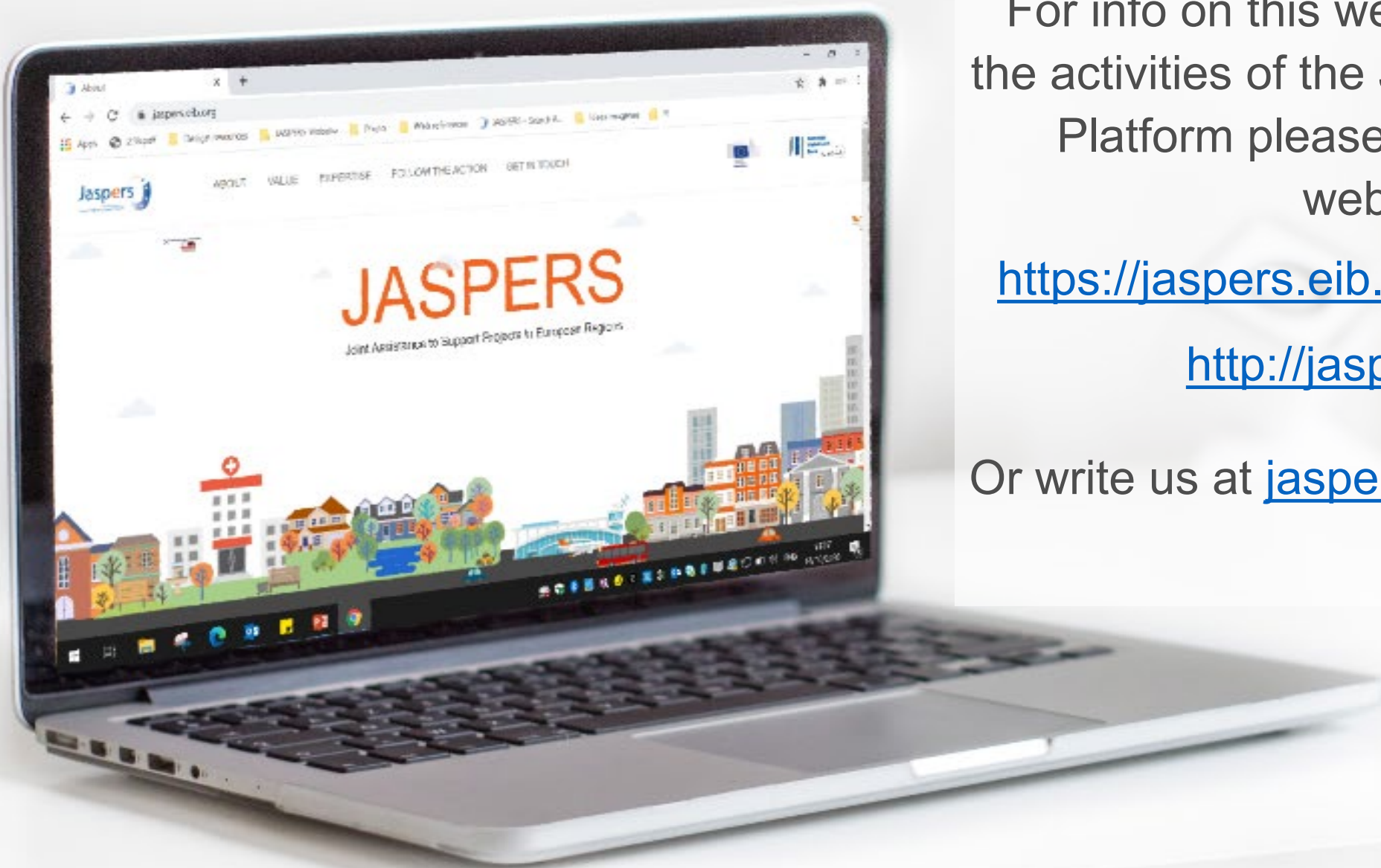
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