

Anticipated effects of climate change adaptation EU policy context

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EU Climate Change Policy

- Climate Change need a global policy
- Preventing dangerous climate change is a key priority for the European Union.
- Europe is working hard to cut its greenhouse gas emissions substantially while encouraging other nations and regions to do likewise.

Key EU targets for 2020

- 20% cut in **greenhouse gas emissions** compared with 1990
- 20% of total energy consumption from **renewable energy**
- 20% increase in **energy efficiency**

Key EU targets for 2030

- At least 40% cut in **greenhouse gas emissions** compared with 1990
- At least 27% of total energy consumption from **renewable energy**
- At least 27% increase in **energy efficiency**

Long-term goal

- By 2050, the EU aims to cut its emissions substantially – by 80-95% compared to 1990 levels as part of the efforts required by developed countries as a group.
- Turning Europe into a highly energy efficient and low-carbon economy will also boost the economy, create jobs and strengthen Europe's competitiveness

Action towards climate targets

- **Financial support**
- **Regulation**
- **Keep global warming below 2°C**
- **International action**
- **Adapting to climate change**

Financial support

- At least 20% of the EU's €960 billion budget for 2014 to 2020 should be spent on protecting the climate. This is on top of funding from individual EU countries.
- The EU finances low-carbon energy demonstration projects from the sale of emission certificates. This includes technologies to trap carbon dioxide from power stations and other industrial installations and store it in the ground, so-called carbon capture and storage (CCS)

Regulation

- The EU's Emissions Trading System is the key tool for reducing greenhouse gas emissions from industry at the lowest costs.
- EU countries are required to support renewable energy sources such as wind, solar and biomass to reach the green energy targets.
- EU countries have to reduce the energy use of their buildings and industries are required to improve the energy efficiency of a wide array of equipment and household appliances.
- Car manufacturers have to reduce CO₂ emissions from new cars and vans

Keep global warming below 2°C

- Global warming has to be **limited to below 2°C** compared to the average temperature in pre-industrial times to prevent catastrophic changes in the global environment.
- This was agreed by almost all countries worldwide in 1992 under the United Nations Framework Convention on Climate Change (UNFCCC).
- To achieve this, the world must **stop the growth in greenhouse gas emissions by 2020** and reduce them by 60% by 2050 compared with 2010.
- The latest scientific evidence suggests that, if little or no action is taken to reduce global emissions, by the end of this century global warming is likely to exceed the 2°C target and could be as much as 5°C.

International action

- **The EU was at the forefront of international negotiations for a global climate agreement** [new global climate agreement](#) which has been finalised by 2015 and implemented from 2020. The EU supported an agreement that is ambitious, comprehensive and legally binding.
- Paris Agreement with the following key elements: mitigation, transparency and global stocktake, adaptation, recognizing loss and damage, financial support

Adapting to climate change

- Adaptation means anticipating the adverse effects of climate change and taking appropriate action to prevent or minimize the damage they can cause, or taking advantage of opportunities that may arise. It has been shown that well planned, early adaptation action saves money and lives later.
- Climate change adaptation is a horizontal issue, affecting all economic sectors, environmental systems and citizens, to varying degrees
- 90% of the climate change adaptation is related to the water management
- The European Commission has adopted an EU Adaptation Strategy and wants all its Member States to adopt national plans to cope with the inevitable impacts of climate change by 2017. A number of Member States have already developed adaptation strategies

Climate change adaptation measures

- Using less water
- Adapting building regulations
- Building flood defences
- Developing crops that cope better in drought conditions

Main objectives of the EU Adaptation Strategy

- Better informed decision making
- Increasing the resilience of the EU territory
- Increasing the resilience of key vulnerable sectors

Problem	Drivers	Specific objective	Operational objective	Options		
				Providing information and guidelines	Direct intervention	Regulatory approach
Knowledge and access to information gaps	Uncoordinated research activities	Better INFORMED decision-making	By 2020, the priority KNOWLEDGE GAPS identified in 2013 have been closed	1A: Developing a common climate vulnerability assessment in the EU	1B: Developing a knowledge gap strategy	
	Incomplete instruments for knowledge dissemination		By 2020, COMMUNICATION TOOLS allow for available information on climate change adaptation to be accessible for decision-makers	1C: Improving climate-ADAPT beyond business-as-usual;	1D: Supporting exchange between science and policy in the field of adaptation	1E: Proposing the mandatory setup of national information platforms on adaptation
Gaps in adaptation action at sub-EU level	Knowledge, financial, and political reluctance barriers	Increasing the resilience of THE EU TERRITORY	By 2017, all Member STATES have adopted an Adaptation Strategy;	2A: Guidelines for developing national adaptation strategies	2B: Using Life+ funding for supporting the preparation of adaptation strategies and for lighthouse projects on adaptation	2C: Commission's proposal on the adoption of national adaptation strategies. Three sub-options: i/ non-legal; ii/ legislation later; iii/ legislation now
	Absence of considerations for cross-border impacts		By 2020, major CITIES and REGIONS have adopted an Adaptation Strategy	2D: Supporting UNISOR "Making Cities Resilient" campaign among EU cities	2E: Inclusion of adaptation into the Covenant of Mayors Framework	
Gaps in adaptation uptake in key sectors	Incomplete and inconsistent mainstreaming	Increasing the resilience of key VULNERABLE SECTORS	By 2020, a comprehensive and consistent MAINSTREAMING of adaptation in EU policies is achieved	3A: Guidelines on how to climate proof Cohesion Policy and the Common Agricultural Policy	3B: Listing mainstreaming priorities in EU policies and engaging with key stakeholders	3C: Setting new calendar for revision of key EU legislation as part of the mainstreaming exercise;
	Financial and information barriers to resilient investment and business decisions		By 2020, major INFRASTRUCTURE investments are climate-proofed	3D: Guidelines for project developers for climate proofing vulnerable investments	3E: Promote inclusion of climate change adaptation considerations in relevant infrastructure standards	3F: Proposal on mandatory requirements for climate resilience of infrastructure projects

Adaptation of water protection programs

- Tackle the issue of increased pollutant concentrations and lower dissolved oxygen levels, potentially resulting in additional water bodies not meeting water status.
- Reduce the nutrient pollution to not increase the incidence of Harmful Algal Blooms and threatening ecosystems and public health.
- Take measures to reduce erosion due to the increased intensity of rainfall events and storms which will cause increased pollutant loads in runoff.
- Re-assess the water permits to cope with periods of less precipitation, drought, lower stream flow and limited ground water recharge in order to satisfy water supplies for municipal, industrial, energy, agricultural, and ecological uses.
- Consider the ecological effects of climate change, such as shifts in aquatic species and their habitats or the quality of snowpack, which may affect the economic and cultural practices of tribal communities.

Adaptation of the water infrastructure

- Changes in the design capacity of drinking water, wastewater and stormwater infrastructure, to face the increased intensity of storms, could overwhelm and damage infrastructure.
- Sea-level rise could affect Protect the water infrastructure, including drinking water intakes and wastewater outfalls, from sea level rise and adapt the groundwater exploitation to avoid the intrusion of saline water into coastal aquifers.
- Drinking water and wastewater utilities need to take an “all hazards” approach to planning for emergencies and extreme weather events.
- Vulnerable and economically deprived communities should particularly consider the risk, both for access to clean and safe water as well as for their ability to respond to emergencies during extreme events.

Adaptation of drinking water infrastructure

- Improve the drinking water technology to deal with the increased growth of algae and microbes
- Tackle the issue of invasive species that can disrupt water and waste water systems.
- Consider additional treatment in case of increased stormwater runoff which will wash sediment and other contaminants into drinking water sources,
- Consider alternatives in case saltwater intrusion in the groundwater due to the sea level rise
- Reassess supply plans and consider alternative pricing, allocation and water conservation options for the droughts and low water periods
- Develop new plans for ensuring water supplies from reservoirs considering change in precipitation

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