Albania's path to climate resilience
The National Adaptation Plan

The NAP aims to reduce climate risks across Albania by strengthening infrastructure and institutional and technical capacities for the long-term integration of Climate Change Adaptation into national planning. Covering the period 2026–2036, it focuses on five priority sectors highly vulnerable to climate change — agriculture and forestry, tourism, energy, transport, and urban development.

PRIORITY SECTORS HIGHLY VULNERABLE TO CLIMATE CHANGE

Agriculture & Forestry · Tourism · Energy · Transport · Urban Development

Albania NAP prioritizes a total of 66 adaptation measures, with an estimated implementation cost of USD 9.8 billion for the whole period (≈ EUR 8.4 billion). The cost of inaction, however, would be far greater: without adaptation, Albania could face climate-related losses exceeding USD 17 billion.

These include:

SOFT MEASURES	Soft measures, such as capacity building, planning tools, and financial incentives, which strengthen governance and adaptive capacity
GREEN MEASURES	Green measures, which use ecosystem restoration and nature-based solutions to reduce risks
GREY MEASURES	Grey measures, referring to engineered or technological solutions that protect critical infrastructure.

These interventions will enhance resilience, support sustainable growth, and align national priorities with global adaptation goals.

National climate projections

Climate projections for Albania by 2050 reveal a clear pattern of rising temperatures, declining precipitation, and increasing frequency of extreme events across all emission scenarios.

Average Annual Temperature	↑ +2.0° C
Maximum Annual Temperature	↑ +2.8° C
Annual Precipitation	↓ -5.8%
Sea Level Rise	↑ +28 cm
Extreme Precipitation	↑ 15.9 days
Heatwaves (per year)	↑ 4 events
Very Cold Days	↓ 16 days

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Learn More

Energy
in Albania's National Adaptation Plan

Building a sustainable and climate resilient sector in Albania

Energy

Energy in Albania
Opportunities and challenges

Albania has diverse energy resources, including **oil, gas, coal, hydropower, biomass, wind, and solar.** In 2022, oil dominated the supply mix with 57%, followed by hydropower (29%), fuelwood (7%), and coal (6%). Total energy production reached 1,615 kilotonnes of oil equivalent, with hydropower output rising by over 25% in 2023.

The country holds around 120 million barrels of recoverable oil, with Patos-Marinza among Europe's largest onshore oilfields. Gas is mainly used in oil production, while new links to the Trans-Adriatic Pipeline and potential liquefied natural gas facilities aim to boost security of supply. Coal reserves are spread across Tirana-Durrës, Memaliaj, Pogradec, and Korçë, while fuelwood remains important in rural households.

Electricity generation relies heavily on **hydropower, which makes up 96% of installed capacity** (2,493 MW in 2022). Large plants dominate, particularly those on the Drin River cascade. Wind and solar contribute just 1% of electricity, but Albania's potential exceeds 2,000 MW of wind and has strong solar radiation levels.

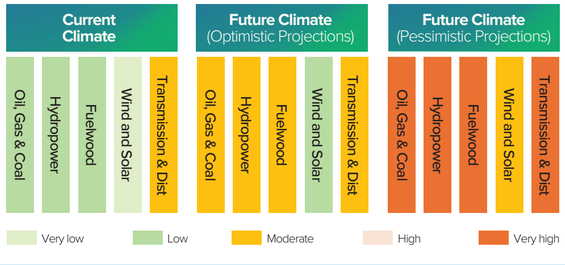
Energy demand is driven mainly by **transport (40%), residential use (24%), and industry (17%).**

While Albania's energy mix is diverse, it remains highly dependent on hydropower and imported fossil fuels, making the system vulnerable to seasonal and market fluctuations. To ensure a secure and sustainable energy future, several key challenges and priorities must be addressed:

- **Diversifying energy generation,** especially through investments in wind, solar, and biomass.
- **Enhancing energy security** by expanding gas infrastructure and regional interconnections.
- **Improving grid efficiency and reliability,** particularly in transmission and distribution systems.
- **Reducing dependence on hydropower** to minimize climate-related risks.
- **Promoting energy efficiency** and low-carbon technologies across all sectors.

How does climate change affect the Albanian Energy sector?
Risks and vulnerabilities

The assessment of climate risks and vulnerabilities in the energy sector covers its key components: **(i) oil, gas, and coal, (ii) fuelwood, (iii) hydropower (hydroelectricity), (iv) wind and solar; and (v) transmission and distribution systems.**



While current risks vary across subsectors, future projections are more concerning. In the pessimistic projections, the risks become particularly severe. Hydropower and fossil fuels are especially exposed due to their dependence on water availability, which is expected to decline. Similarly, the transmission and distribution systems face growing threats from extreme heat, rising temperatures, and intense rainfall.

Among all subsectors, hydropower, fuelwood, and transmission infrastructure are the most at risk. In contrast, wind and solar energy are less vulnerable and are expected to play a growing role in Albania's energy mix. These sources benefit from strong policy support and are well-positioned to complement hydropower, especially during dry periods.

Although the hydropower sector will likely remain central to Albania's energy system, its relative importance may decline as other sources expand. The future resilience of the sector will depend on how effectively Albania implements its energy strategies. However, not all subsectors will benefit equally—uncertainty remains around the future of fuelwood, fossil fuels, and grid infrastructure.

Energy sector
Adaptation Measures & budget overview

In the energy sector, the 8 priority measures address both supply and demand resilience, reflecting the need to safeguard critical infrastructure while advancing the energy transition. These interventions aim to strengthen hydropower and electricity systems against extreme events, promote energy efficiency and performance standards, and enhance the flexibility and reliability of Albania's energy system under changing climate conditions.

Each measure under the NAP is supported by a comprehensive implementation framework that includes:

- A defined **budget and funding sources**
- **Institutional roles and responsibilities**
- **Detailed sub-activities** for implementation
- **Monitoring indicators** to track progress and impact

Within this framework, the energy sector's priority actions include:

Climate-resilient infrastructure
Protect critical energy assets from extreme weather by rehabilitating substations, transmission lines, and hydropower structures, while improving reservoir operations for changing climate conditions.

Energy efficiency and performance
Strengthen building standards and energy performance certification systems to enhance efficiency and resilience across residential, commercial, and public facilities.

System innovation and flexibility
Promote grid modernization, demand-side management, and energy storage studies to increase flexibility and reliability under climate variability.

Heatwave resilience
Deploy efficient cooling technologies and establish climate refuges to protect vulnerable populations and maintain energy reliability during extreme heat events.

Social inclusion and capacity building
Advance gender equity in the renewable energy sector through targeted training and support programs for women in clean energy projects.

Together, these interventions represent a strategic effort to ensure that Albania's energy sector remains secure, efficient, and resilient in the face of evolving climate challenges with a total estimated cost of USD 1.96 billion (≈ 20% of the NAP's total budget).

SOFT MEASURES		
	1	Enhancing Building Efficiency: Energy Performance Certificates and Resilient Standards
	2	Exploring the Energy sector Potential: Demand-Side Management and Energy Storage Studies
	3	Protecting the energy infrastructure: Monitoring Emergency and Risk Areas
	4	Enhancing Heatwave resilience through Efficient Air Conditioning Technology Deployment and Climate Refuges
	5	Optimizing Renewable Energy for Resilient Systems: Grid Innovation and Storage Investments
	6	Advancing Gender Equity in Energy: Training and Support for Women in Renewable Energy Projects
GREY MEASURES		
	7	Protecting Energy Infrastructure against strong winds: Rehabilitating Substations and Transmission Lines
	8	Building Resilience in Hydropower: Optimized Operations and Strengthened Infrastructure