

TAIEX ECRAN MULTI-BENEFICIARY WORKSHOP ON CLIMATE CHANGES MODELLING LEAP - MODULE 4

TIRANA, 20-22 APRIL 2016

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Introduction:

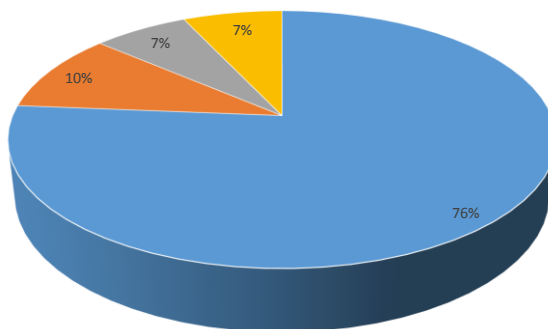
- Bosnia and Herzegovina (BiH) has a total surface area of 51 209 km², consisting of 51 197 km² of land and 12.2 km² of sea. Of total area, 5% is lowlands, 24% hills, 42% mountains and 29% karst region.
- Population according to the preliminary results of the 2013 is 3,791,622
- GDP - EUR 13,000 million; GDP per capita 3,400 EUR (2012)



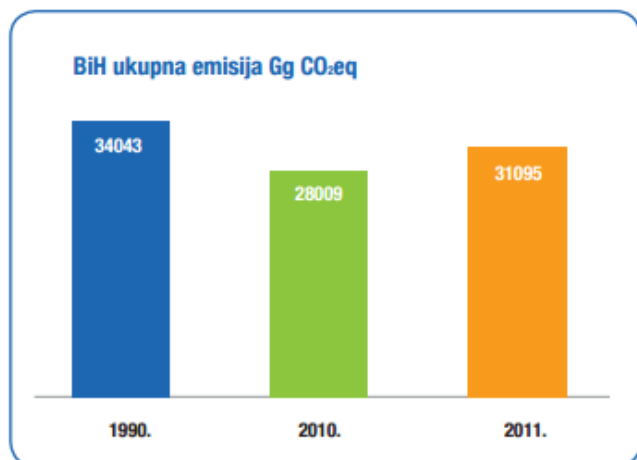
GHG emissions in BiH by sectors

Share of CO₂ eq emmissions by sectors

■ Energy sector ■ Agriculture ■ Industrial ■ Waste



Total CO2 eq. emissions in BiH



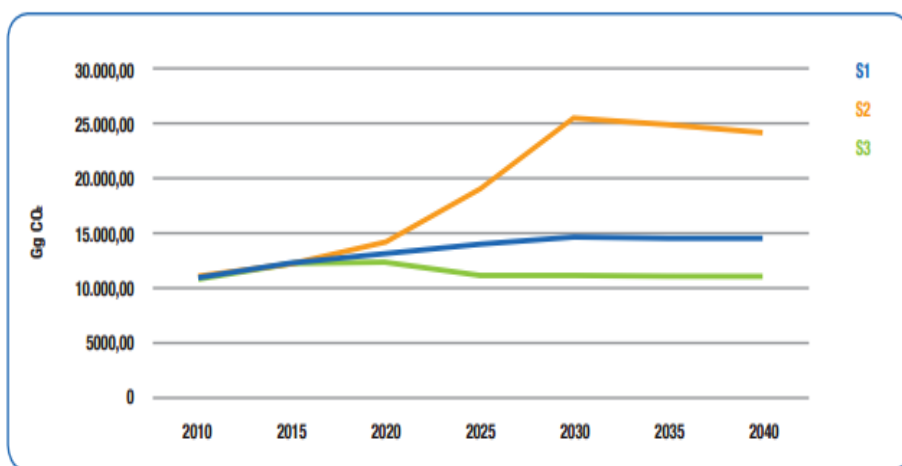
Climate change mitigation

- ▶ Scenarios modelling possible pathways of GHG emissions until 2040 were developed for each of these sectors, and the financial effects of the scenarios were analysed (without analysing measures that would lead to these results). Specific modelling involved a quantitative evaluation of time-series GHG emissions and considered three development scenarios:
- ▶ S1 - a baseline scenario ("business as usual"),
- ▶ S2 - a scenario that assumed partial implementation of mitigation actions,
- ▶ S3 - an advanced scenario that assumed the implementation of a comprehensive set of mitigation actions.
- ▶ These scenarios were modelled through 1. biannual update report for BiH under the UNFCCC

Energy sector scenarios

- ▶ The energy sector is responsible for more than 70% of total CO₂ emissions in BiH;
- ▶ Total energy consumption in 2012 was divided among households (41.4%), industry (38.7%), and other consumers, which included the buildings sector, transport and agriculture (19.9%).
- ▶ The S1 scenario assumes a moderate increase in the share of electric power generated from RES, with the majority of power still being generated from fossil fuels;
- ▶ The S2 scenario assumes the construction of power generation plants in accordance with the relevant strategies and other data collected on planned activities;
- ▶ The S3 scenario assumes the intensive use of renewable energy sources (RES) and energy efficiency (EE) measures as a result of obligations assumed under international agreements.
- ▶ The S1 and S2 scenarios assume that CO₂ emissions from the BiH energy sector will increase in the period 2010-2040, with the increase exceeding 100% in the S2 scenario. Under the S3 scenario, however, emission in 2040 will be similar to those in 2010. In addition, financial analysis for the S3 scenario indicates a benefit that is 16% higher than in the S1 scenario.

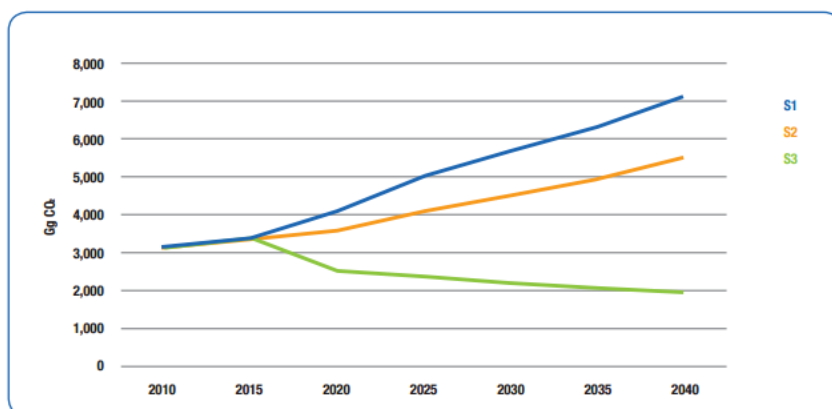
Energy sector scenario



Transport sector scenarios

- ▶ Transport sector Scenarios for the transport sector acknowledged the fact that road transport in BiH accounts for 90% of total annual energy consumption (diesel and petrol) in the sector overall:
- ▶ The S1 scenario is based on previously established trends of an increasing number of road motor vehicles at the average annual rate of approximately 5.8%, an average age of vehicles of between 12 and 15 years, no implementation of emission controls, and an average annual rate of increase in the consumption of diesel and petrol fuels of 3.7%;
- ▶ The S2 scenario assumes the introduction of additional technical measures for road motor vehicles supporting improved motor energy efficiency and reductions in fuel consumption; it also assumes the same rate of increase in the number of road motor vehicles as the S1 scenario, but with improvements in the quality of fuels and in the quality of road infrastructure;
- ▶ The S3 scenario is based on the assumption that by 2025 BiH will become an EU member state, implying the compulsory implementation of EU Directives regulating this sector.
- ▶ The S1 scenario envisages an increase in emissions from this sector of approximately 123% by 2040 compared to 2010; the S2 scenario envisages an increase of 72%; and the S3 scenario envisages a reduction in emissions of approximately 37%. This reduction would help avoid external costs totalling approximately € 1.4 billion in the period under review.

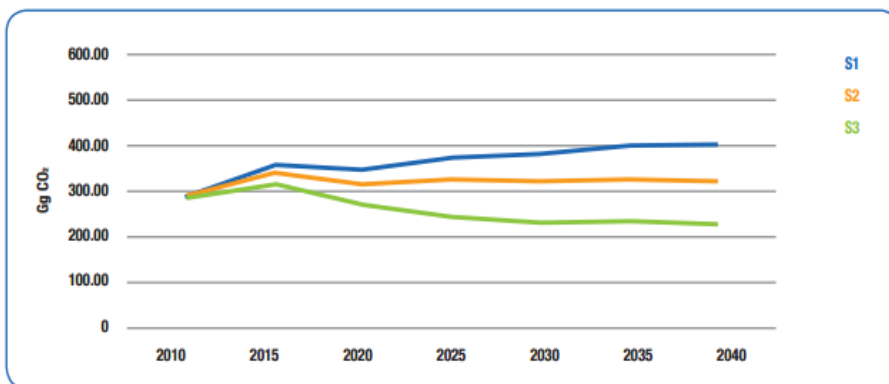
Transport sector scenario



Household sector scenario

- ▶ The three scenarios modeling the development of the district heating sector by 2040
- ▶ The S1 scenario assumes a higher economic growth rate and a corresponding increase in energy consumption for heating.
- ▶ The S2 scenario assumes a lower economic growth rate, with a lower increase in energy consumption.
- ▶ The S3 scenario envisages a higher economic growth rate, but it also assumes extensive use of energy efficiency measures, resulting in a significant reduction in energy consumption.

Household sector scenario





Thank you for your attention