SOCIO-ECONOMIC IMPACTS OF RENEWABLE ENERGY

Preview from: “Renewable Energy Market Analysis: Southeast Europe”
The energy sector reliance on fossil fuels

Total primary energy supply, 2016

Regional shares, 2016 (Mtoe)

SEE
- 0.8% Geothermal
- 0.3% Wind
- 5.4% Solar photovoltaic
- 8.3% Hydro
- 10.6% Nuclear heat
- 0.2% Oil and petroleum products
- 17.9% Natural gas
- 28.1% Solid fossil fuels
- 24.3% Non-renewable waste
- 3.9% Lignite
- 0.1% Biomass
- Total primary energy supply: 98,37 Mtoe

EU SEE
- 1.2% Geothermal
- 0.5% Wind
- 4.4% Solar photovoltaic
- 12.6% Hydro
- 11.0% Nuclear heat
- 0.3% Oil and petroleum products
- 22.4% Natural gas
- 27.9% Solid fossil fuels
- 24.3% Non-renewable waste
- 0.2% Lignite
- Total primary energy supply: 65,07 Mtoe

non-EU SEE
- 7.3% Geothermal
- <1% Wind
- 3.8% Solar photovoltaic
- 4.2% Hydro
- 9.8% Nuclear heat
- 9.1% Oil and petroleum products
- 28.6% Natural gas
- 41.0% Solid fossil fuels
- 0.3% Lignite
- Total primary energy supply: 33,3 Mtoe
Top 15 European cities per air pollution
[particulate matter $\mu g/m^3$ - annual mean]
Energy Poverty

Share of households without access to clean cooking solution 2010-2016
Energy Poverty

Arrears on utility bills ranging from 14.2% to more than 70% of the population, depending on jurisdiction.

- 10% in EU, 3.4% in Austria

- Inability to keep the whole house adequately warm

- High energy expenditure shares on total expenditure

- Large use of traditional biomass
Energy intensity levels, SEE, 1990-2015

[MJ/USD PPP GDP]
The energy transition and the socio-economic system

A complete transition includes both the energy transition and the socio-economic system transition, and their interlinkages.
Socio-economic impact: GDP

Difference in GDP from Reference case [%]

% difference in GDP from reference

-2.0  -1.0  0.0  1.0  2.0  3.0

2020  2025  2030  2035  2040  2045  2050

Changes in investment
Indirect and induced effects
Changes in consumer expenditure due to tax rate changes
Changes in trade
Aggregate consumer prices effects
Change in GDP
Brain drain

Stock of emigrants as a share of population

Stock of emigrants as share of population

Bosnia and Herzegovina: 47%
Montenegro: 45%
Albania: 41%
Kosovo*: 30%
North Macedonia: 30%
Rep. of Moldova: 24%
Bulgaria: 21%
Croatia: 21%
Serbia: 18%
Romania: 17%
Slovenia: 8%
Renewable energy employment

Share of direct and indirect jobs in the RES sector, EU-SEE, 2017

- Bioenergy: 82.5%
- Biomass: 35.9%
- Biofuels: 44.4%
- Waste: 0.4%
- Biogas: 1.8%
- Solar Thermal: 1.7%
- Solar PV: 1.7%
- Wind: 3.8%
- Hydro: 7.9%
- Heat pumps: 1.9%
- Geothermal: 0.6%
Socio-economic impact: Jobs

Difference in employment from Reference Case [%]

% difference in employment from reference

-0.2 -0.1 0.0 0.1 0.2 0.3

2020 2025 2030 2035 2040 2045 2050

Changes in trade
Changes in consumer expenditure (tax rates, indirect and induced effects) and wage effects
Changes in investment, power generation and fossil fuel extraction
Changes in Employment
Thank you for your attention