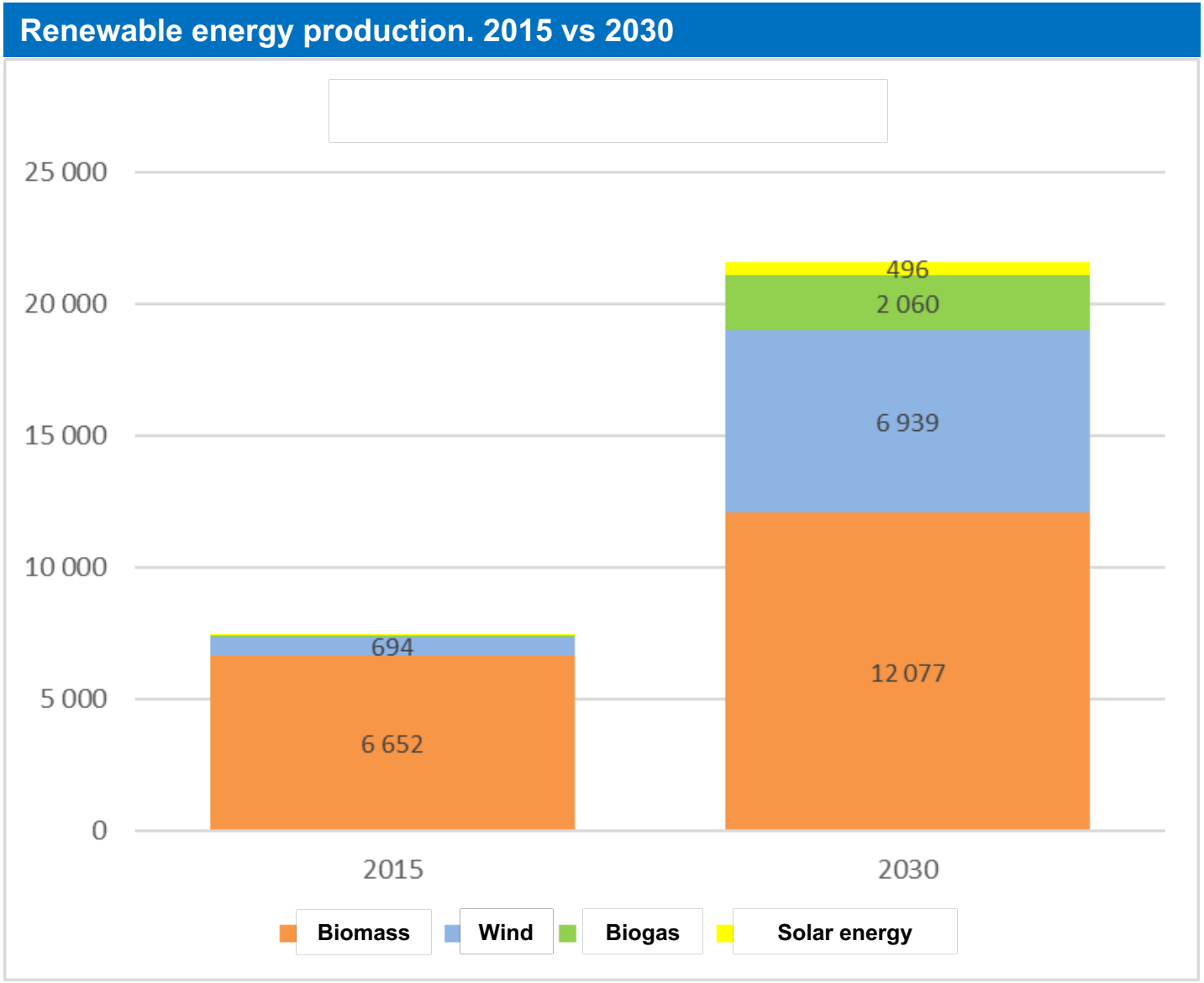
“Renewable energy 100% - transition towards clean energy”

Introduction

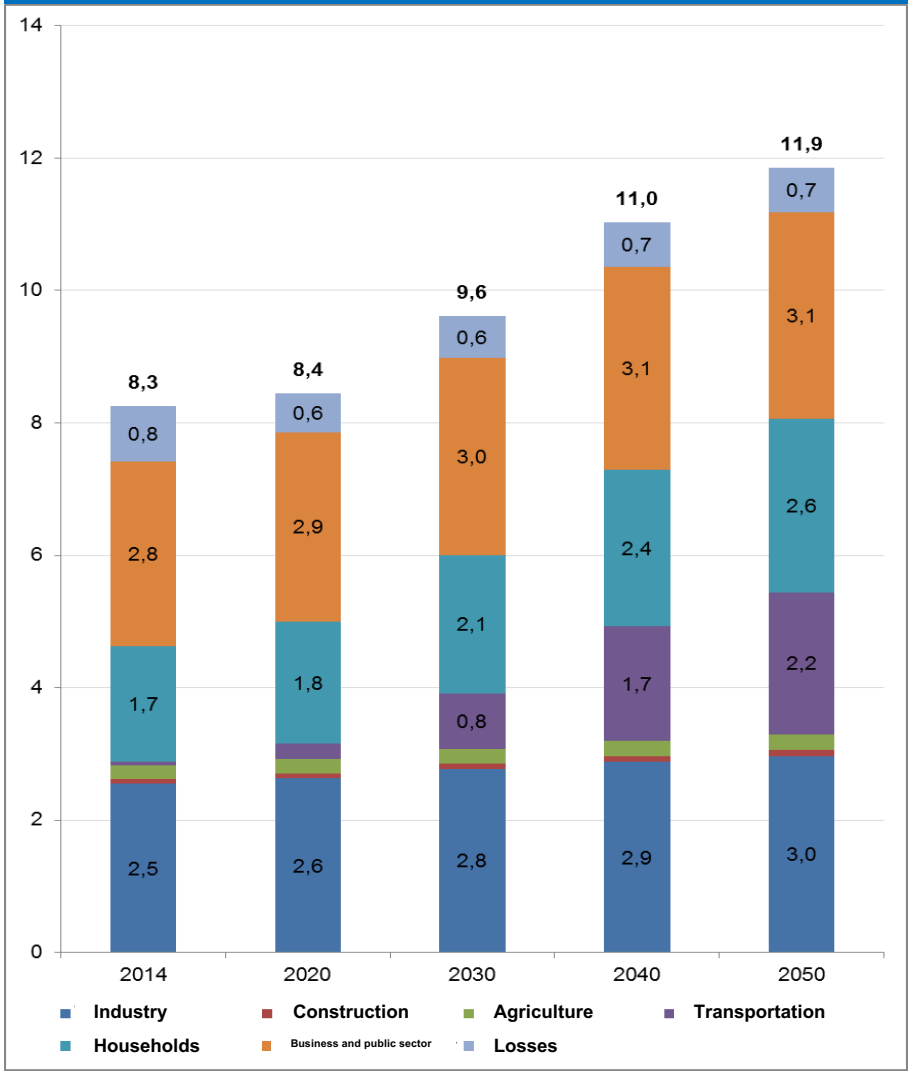
- The transition to 100% renewables in electricity and heat production (RE100) by 2030 is economically feasible and technically possible.
- RE100 production portfolio is competitive.
- The total sum of investments until 2030 would be 4 311 million Euros, that could possibly be funded from private capital, government's CO2 sales and alternative funding sources. Taking into consideration the decrease in offshore wind costs, the total sum could be 3 042 million Euros. RE100 total cost of investments has fallen 2,849 billion euros (48%) with 5 years.
- Estonian renewable energy potential is still largely unused.
- A competence center for renewable energies will be formed, which adds value to economy by increasing export and creating high-quality jobs. More possible investors and talents will be attracted by introducing a sustainable image of the country. GDP is expected to increase in 2017-2030 by 2,2% (500 million Euros) per year.

Energy production from renewable sources



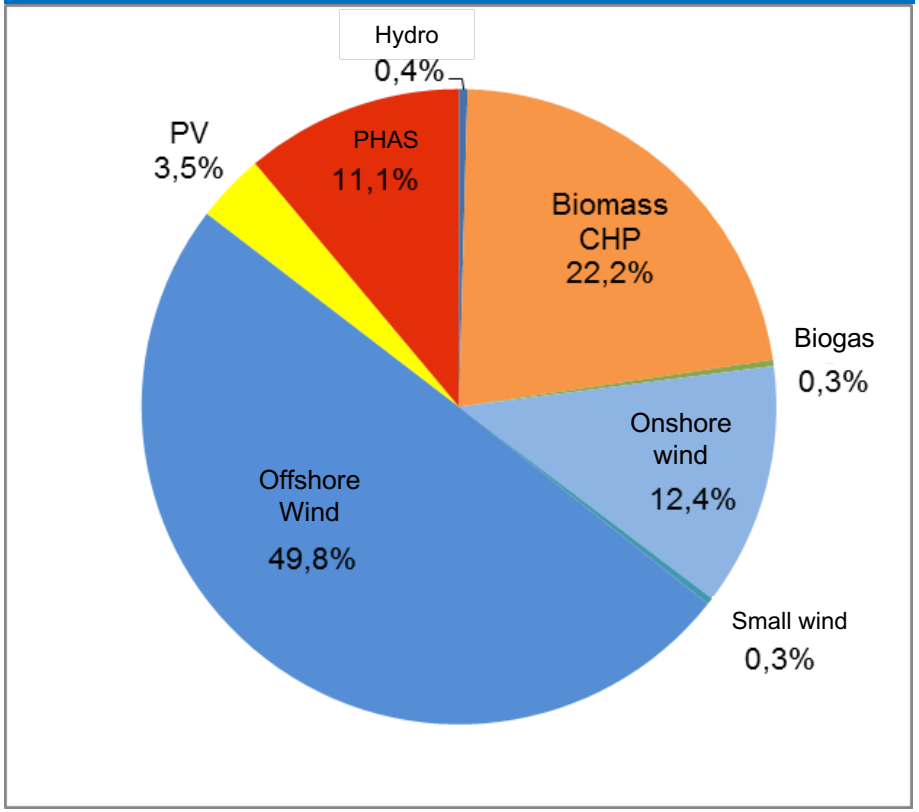
Electricity production and consumption prognosis

Consumption forecast*



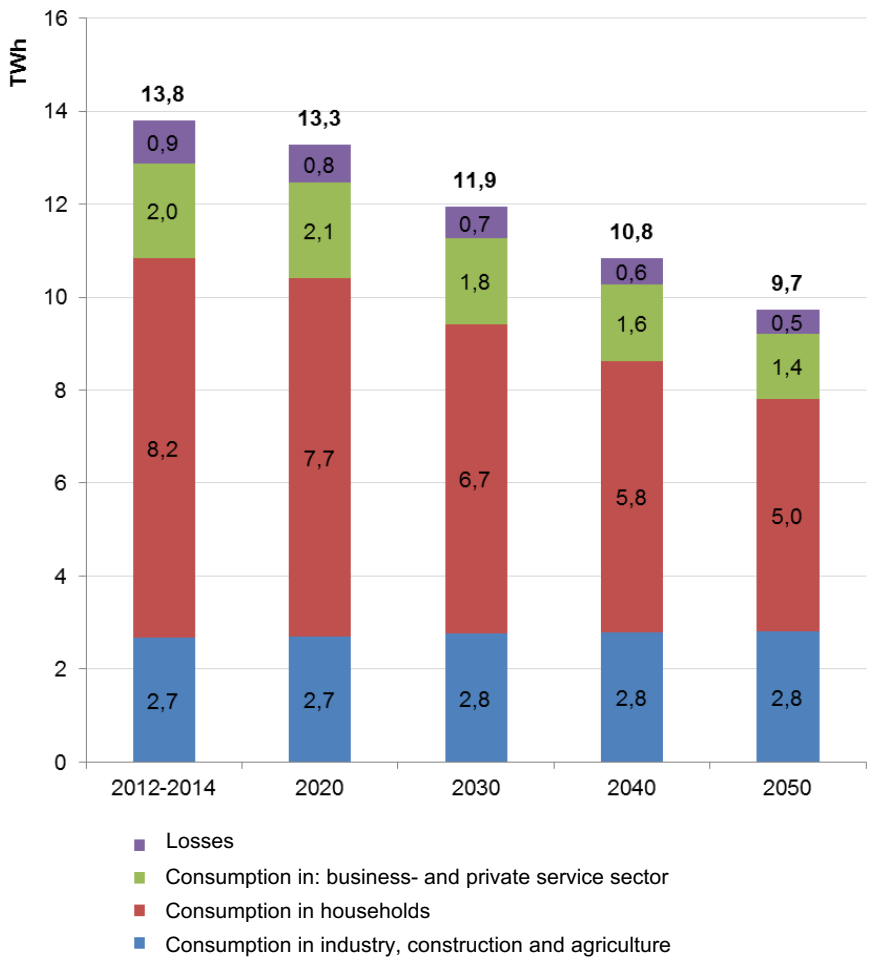
* Including consumption in transportation

Production portfolio in 2030

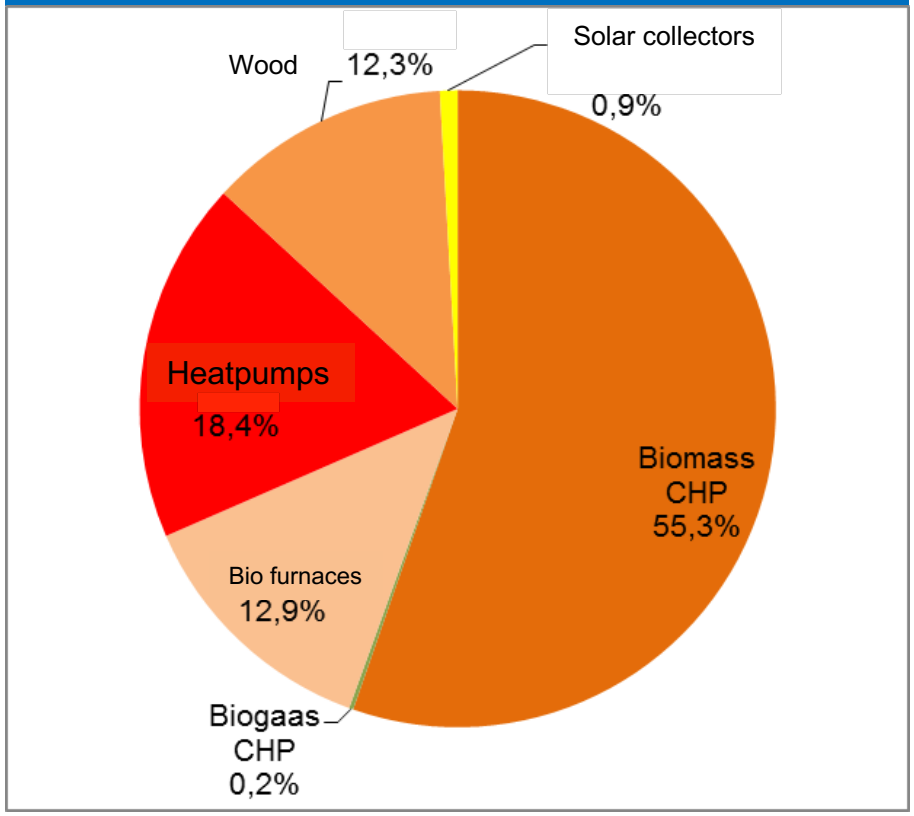


Heat production and consumption prognosis

Heat consumption forecast



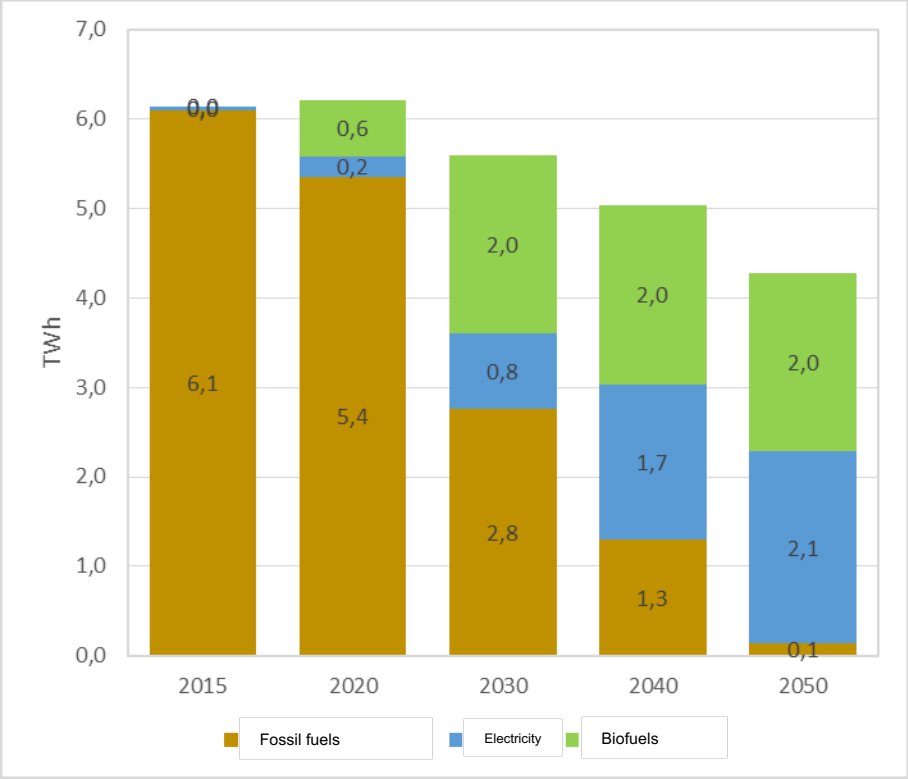
Heat energy production portfolio in 2030

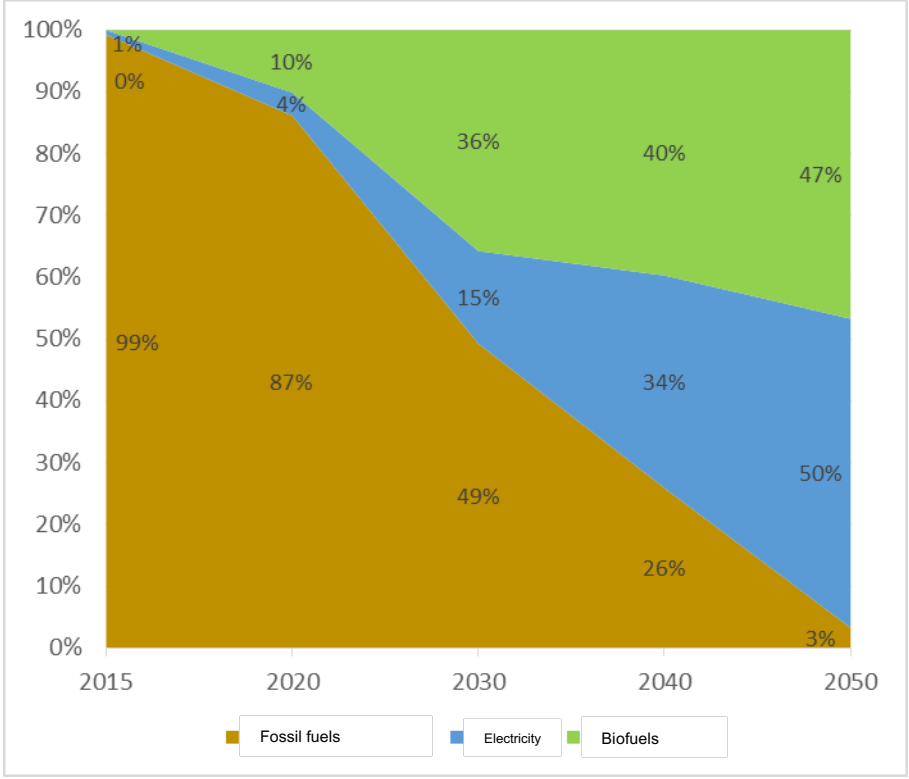


- **2/3 of the heat is consumed in district heating and industry (biomass CHP and Bio furnaces)**

Total energy consumption in transportation

Elektricity and biofuel success in transportation

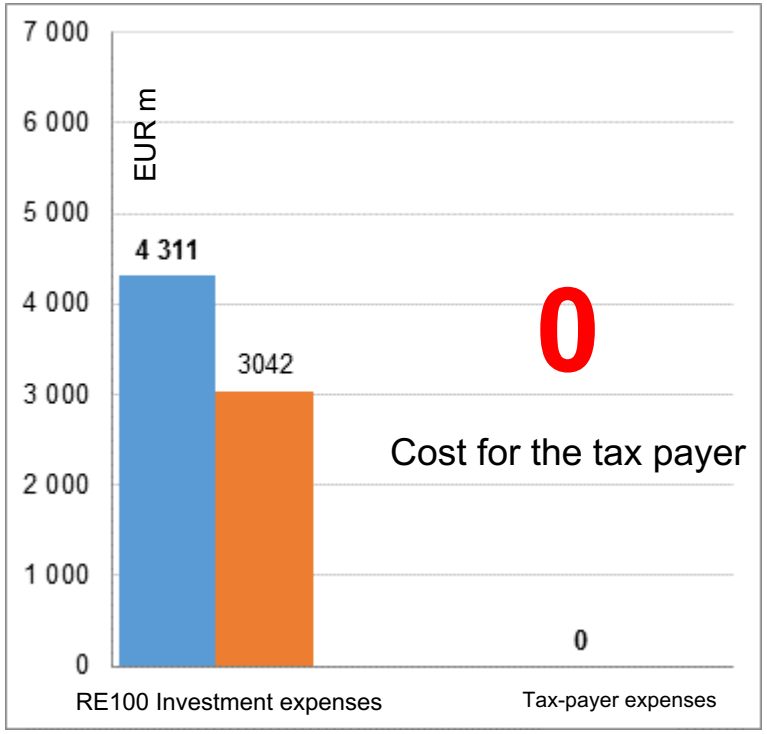




- **According to the "National Development Plan of the Energy Sector Until 2030" (ENMAK), energy usage in transportation will decrease. After 2030 no more new fossil-fuel based vehicles will be let in use.**

Cost of investment by 2030 and costs for tax payer.

RE100% scenario



The total cost of RE100 for 2030 is 3 041 million Euros.

- Revenues from emissions trading– 188 million EUA units during 2017-2030. Revenues would reach 2,4 billion Euros.
- EU structural funds - 2020-2030 magnitude of 215 million Euros
- Flexibility mechanisms of Renewable energy Directive– magnitude of 2.5 billion Euros to finance Estonia´s offshore wind projects
- Private capital – 50% of the investments

Socio-economical effect

GDP increase	▪ Increase in GDP in the period 2017-2030 on average 2,2% (500 mln Euros) per year
Diverse production portfolio	▪ RE100 scenario's diverse and disperse production portfolio is based on local resources and assures energy security of the country
Cleaner environment	▪ Wider deployment of renewable energy enables to make the environment cleaner and contributes to sustainable development and healthier population.
Increase in household's purchasing power	▪ Due to RE100 the purchasing power of households will increase by 368 mln Euros.
Reduction in CO_2 waste	▪ Emission of 15 mln tons of CO_2 will be prevented from 2030
More attractive image of the country	▪ Raises the attractiveness among green-minded investors and talents.
Decrease in fuel import	▪ Decreased import of energy in the amount of 604 mln Euros by 2030.
Government sector net income	▪ Increased net income in government sector by 139 mln Euros per year.

Policy recommendations

- Concrete goal for renewable energy transition by 2030
- Establishing investment support program

  - Draft the use of EU ETS profits in ENMAK 2030+ program and in national climate- and energy agenda in order to implement RE100 program.
  - Set up RE ‘cooperation mechanism’ transactions as the Government’s priority and stress it’s opportunities in every level of foreign communications
  - Favoring investments and developments in district heating, adoption of the draft of district heating law

- Fast deployment of smart grids
- Increasing energy storage capacities