

The European Union – Uzbekistan Sustainable Energy Days

International Conference

Energy Efficiency in Uzbekistan: prospects and challenges

Radisson Blu Hotel, Tashkent, 27 June 2023

End-use energy efficiency policy in Uzbekistan

Muzaffar Khakimov

Consultant, ASR under the President of the Republic of Uzbekistan

EU- Kazakhstan: Sustainable Energy Days

International Conference

Sustainable Energy in Kazakhstan: Prospects and Challenges

Rixos President Astana Hotel, June 2, 2023

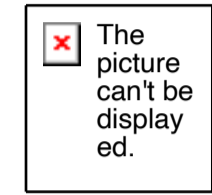
End-use Energy Efficiency in Uzbekistan: prospects and challenges

Muzaffar Khakimov

**Agency for Strategic Reforms under the President of the
Republic of Uzbekistan**

TARGETS FOR FUEL AND ENERGY SAVING IN ECONOMIC SECTORS OF UZBEKISTAN

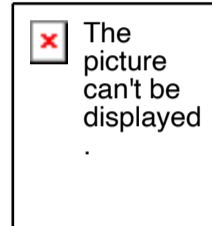
A LEGAL FRAMEWORK FOR THE DEVELOPMENT OF ENERGY EFFICIENCY AND RENEWABLE ENERGY SOURCES HAS BEEN CREATED



LAWS

Law on the use of renewable energy sources (LRU-539 dated May 21, 2019)

Law on the rational use of energy (new edition), (LRU-628 dated July 14, 2020)



DECREES AND RESOLUTIONS OF THE PRESIDENT

“On the development strategy of the new Uzbekistan for 2022-2026” Decree of the President (DP-60 dated January 28, 2022)

“On measures to accelerate the introduction of renewable energy sources and energy-saving technologies in 2023” Resolution of the President (RP-57 dated February 16, 2023)

“On additional measures for the introduction of energy-saving technologies and the development of low-capacity renewable energy sources” Decree of the President (DP-220 dated September 09, 2022)

“On additional measures to reduce the dependence of economic sectors on fuel and energy products by increasing the energy efficiency of the economy and using available resources” Resolution of the President, (RP-4779 dated July 10, 2020)



RESOLUTIONS OF THE CABINET OF MINISTERS

“On approval of the Regulations for connecting business entities producing electricity, including from renewable energy sources to the Unified Electricity System”, Resolution of the Cabinet of Ministers, (RCM-610 dated July 22, 2019)

“On approval of the Regulations on the off-budget intersectoral energy saving fund under the Ministry of Energy of the Republic of Uzbekistan” Resolution of the Cabinet of Ministers (RCM-640 dated October 09, 2020)

“On approval of the Regulations on the procedure for providing compensation at the expense of the state budget of the Republic of Uzbekistan for the purchase of energy-efficient and energy-saving devices and covering part of the interest costs on loans received for these purposes” Resolution of the Cabinet of Ministers (RCM-217 dated April 14, 2021)

EXPECTED RESULTS



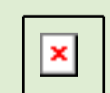
Bringing the share of alternative energy sources to **30%** in the volume of energy consumption at more than 6 thousand facilities



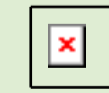
Reducing energy intensity by **1.5 times by 2030**



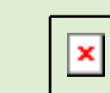
Introducing about **14 GW** of new renewable energy facilities, including solar energy - **7 GW**, wind - **7 GW by 2030**



Saving primary energy resources per year by achieving a **25%** share of renewable energy sources



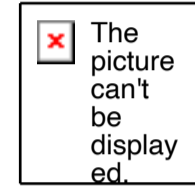
Improving energy efficiency by **at least 20% by 2026**



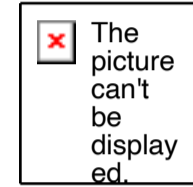
Reducing greenhouse gas emissions by **25% by 2026**

MAIN MECHANISMS TO INCREASE THE EFFICIENCY OF ENERGY RESOURCE USE

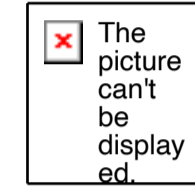
SYSTEMATIC IMPROVEMENT OF ENERGY EFFICIENCY



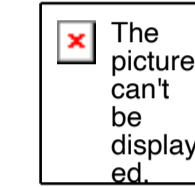
Approving the list of enterprises subject to energy audit



Introducing energy audit monitoring system at enterprises

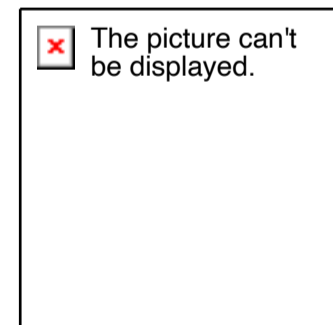


Implementing energy saving measures based on the results of an energy audit

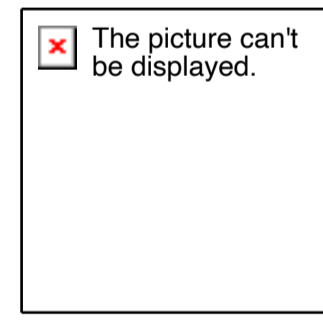


Economic incentives for enterprises that passed energy audits on time

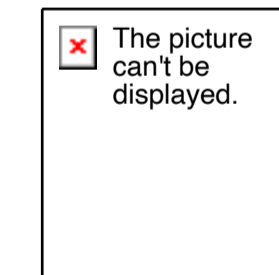
IMPLEMENTATION OF ENERGY MANAGEMENT SYSTEM



Implementation of buildings and industrial facilities



Employee training



Identifying energy efficiency criteria of production sites and facilities

ONGOING PROJECTS TO INCREASE ENERGY EFFICIENCY IN THE COUNTRY

PROJECT

"INCREASING THE ENERGY EFFICIENCY OF INDUSTRIAL ENTERPRISES"

PHASE I

In 2011-2015, together with the World Bank, the Project "Improving the Energy Efficiency of Industrial Enterprises" was implemented (**25 million USD**).

PHASE II

In 2013 - additional funding of **100.0 million USD**.

As a result, **82** investment projects were implemented, **505.1** million kWh of electricity and **187.3** million cubic meters of natural gas were saved per year

PHASE III

Additional funding of **200.0** million USD in 2018.

As a result, **118** investment projects were implemented, **548.1** million kWh of electricity and **230** million cubic meters of natural gas were saved per year.

Emission reduction per year accounts for **733.1** thousand tons

PROJECT

"CLEAN ENERGY FOR BUILDINGS IN UZBEKISTAN" SINCE 2022

Project amount is 143.0 million USD

As a result of the project implementation (until 2027), 832 buildings (535 schools, 194 orphanages, and 95 hospitals) will be modernized and reconstructed.

Energy efficiency will increase up to 86%

PROJECT

"RECONSTRUCTION OF THE DISTRICT HEAT SUPPLY SYSTEM" SINCE 2016.

Project amount is 221.0 million USD.

As a result of the project implementation (until 2024):

- Natural gas savings - **106.9** million m³;
- Energy savings - **30.4** million kWh;
- Cold water savings - **2.6** million m³;
- Emissions of carbon dioxide into the atmosphere will decrease by **42,100** tons;

Increasing energy efficiency in thermal networks **from 56.9% to 93%**;

RENEWABLE ENERGY FACILITIES TO BE LAUNCHED IN 2023

NUMBER OF PROJECTS

9

SOLAR POWER PLANTS



400 MW

Bukhara and Kashkadarya regions



100 MW

Jizzakh region



100 MW

Tashkent region



100 MW

Samarkand region



100 MW

Jizzakh region



200 MW

Surkhandarya region



30 MW

Samarkand region

200 MW

Namangan region

WIND POWER PLANTS



100 MW

Navoi region

KEY PROJECT INDICATORS

TOTAL PROJECT CAPACITY

1 230 MW

ANNUAL PRODUCTION

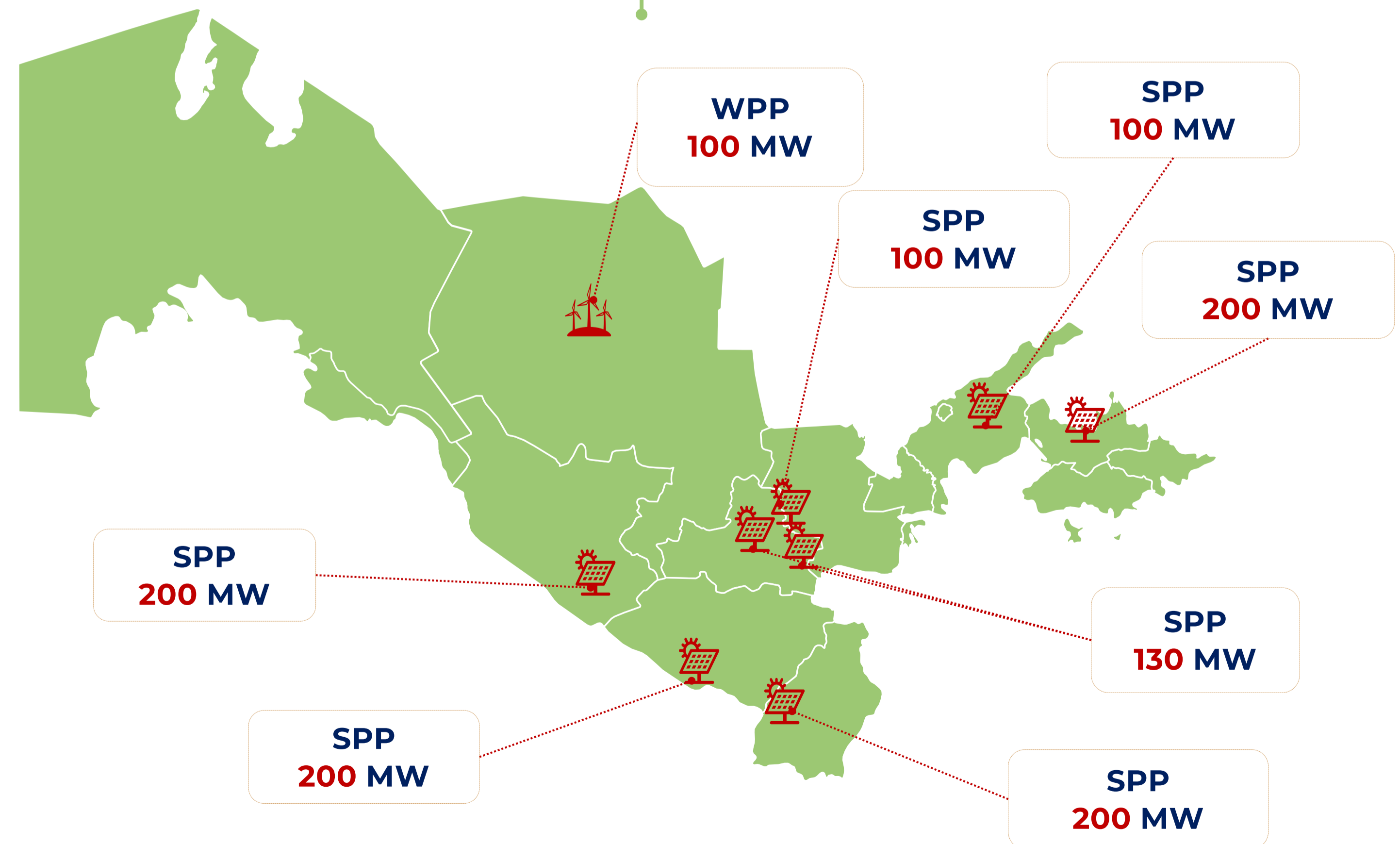
2,8 billion kWh

ANNUAL NATURAL GAS SAVINGS

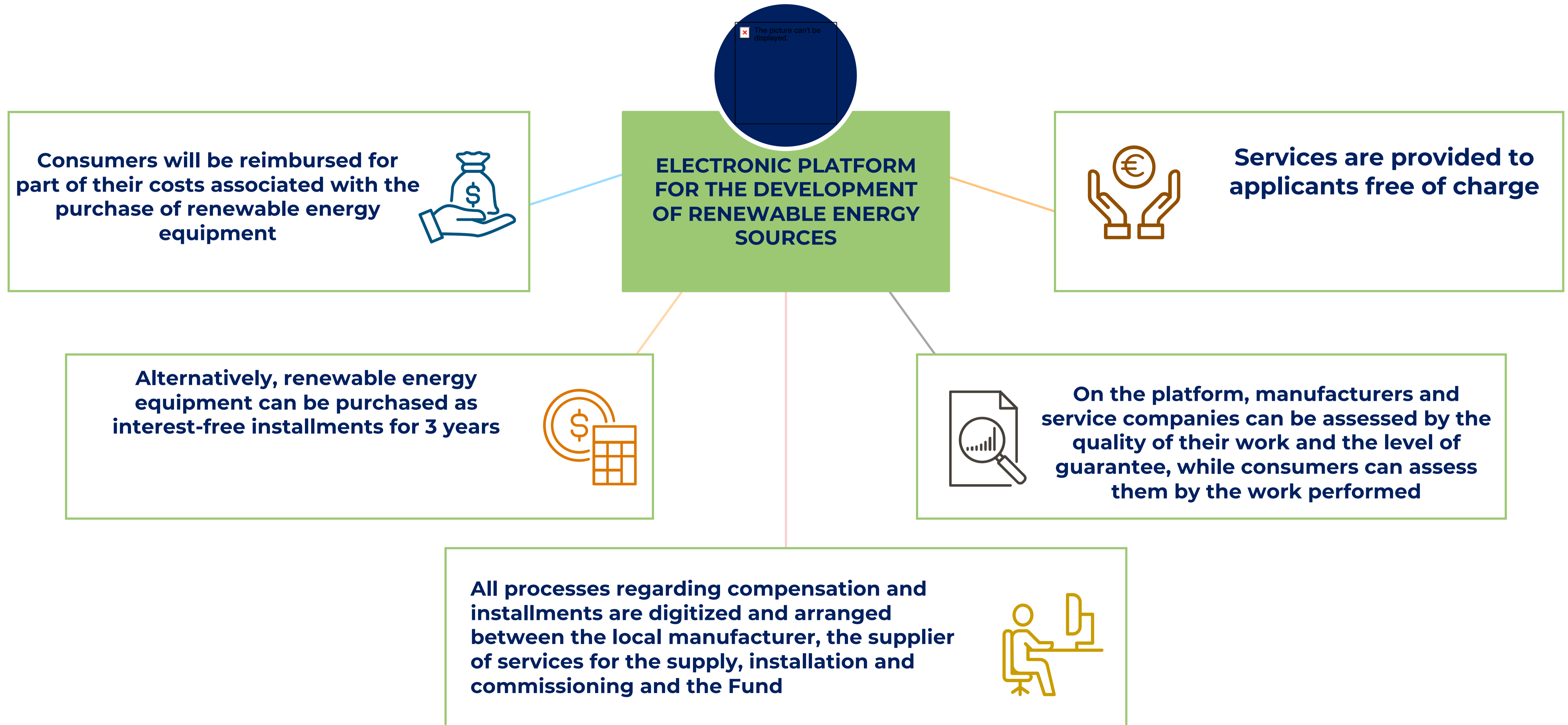
700 million cubic meters

INVESTMENT VOLUME

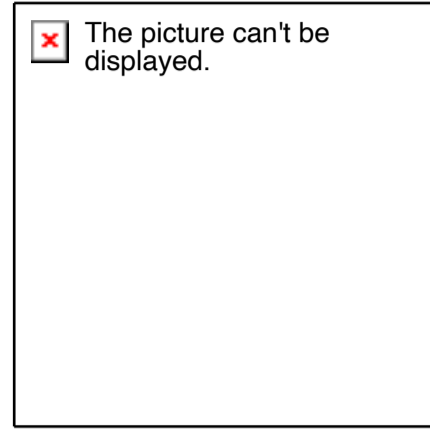
1,0 billion dollars



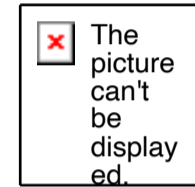
PROCEDURE FOR PROVIDING COMPENSATION AND INSTALLMENTS FOR THE PURCHASE OF RENEWABLE ENERGY EQUIPMENT



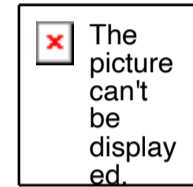
AUTOMATED ENERGY USE MANAGEMENT SYSTEM FOR INDUSTRIAL ENTERPRISES



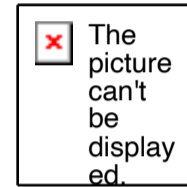
The system is designed to automate the processes of collecting, transmitting, processing, storing and presenting information on the production and consumption of energy resources, product output (services rendered) to assess and analyze energy efficiency, monitor energy intensity so as to further select facilities subject to monitoring and energy audits .



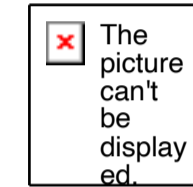
single database in the field of energy saving and energy efficiency;



analyzing the amount of energy resource consumed by consumers to further plan and take measures to improve energy efficiency;



increasing the speed, efficiency and quality of management in the field of energy saving;



increasing the quality of information and detailing statistical information by obtaining information from the original source and its further updating;

GOALS AND TASKS

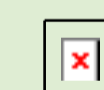
The Unified Information System (UIS) allows improving the quality of decision-making in the energy use management of an enterprise, thereby increasing the efficiency of fuel and energy use. The system has predictive capabilities (predictive analytics), can be adapted to each specific production site, taking into account technological processes, equipment features, and integrated with accounting systems available at the enterprise. UIS performs the following tasks:



Collecting, systematizing and verifying data;



Monitoring indicators of the efficiency of the fuel and energy use



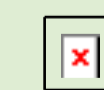
Identifying factors affecting energy consumption and the degree of their influence, as well as identifying the best / worst modes of equipment operation;



Standardizing fuel and energy consumption;

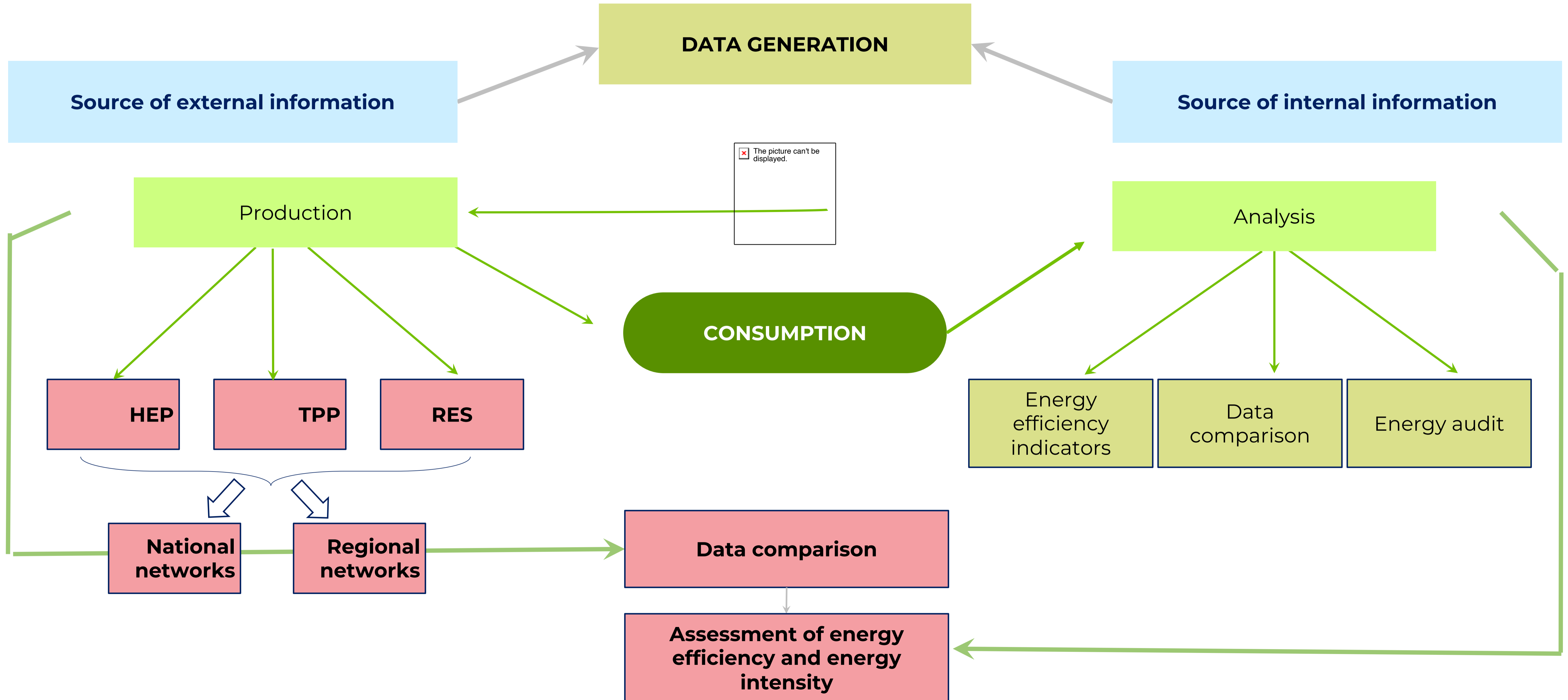


Identifying deviations in energy consumption standards and analyzing the reasons for their deviations;



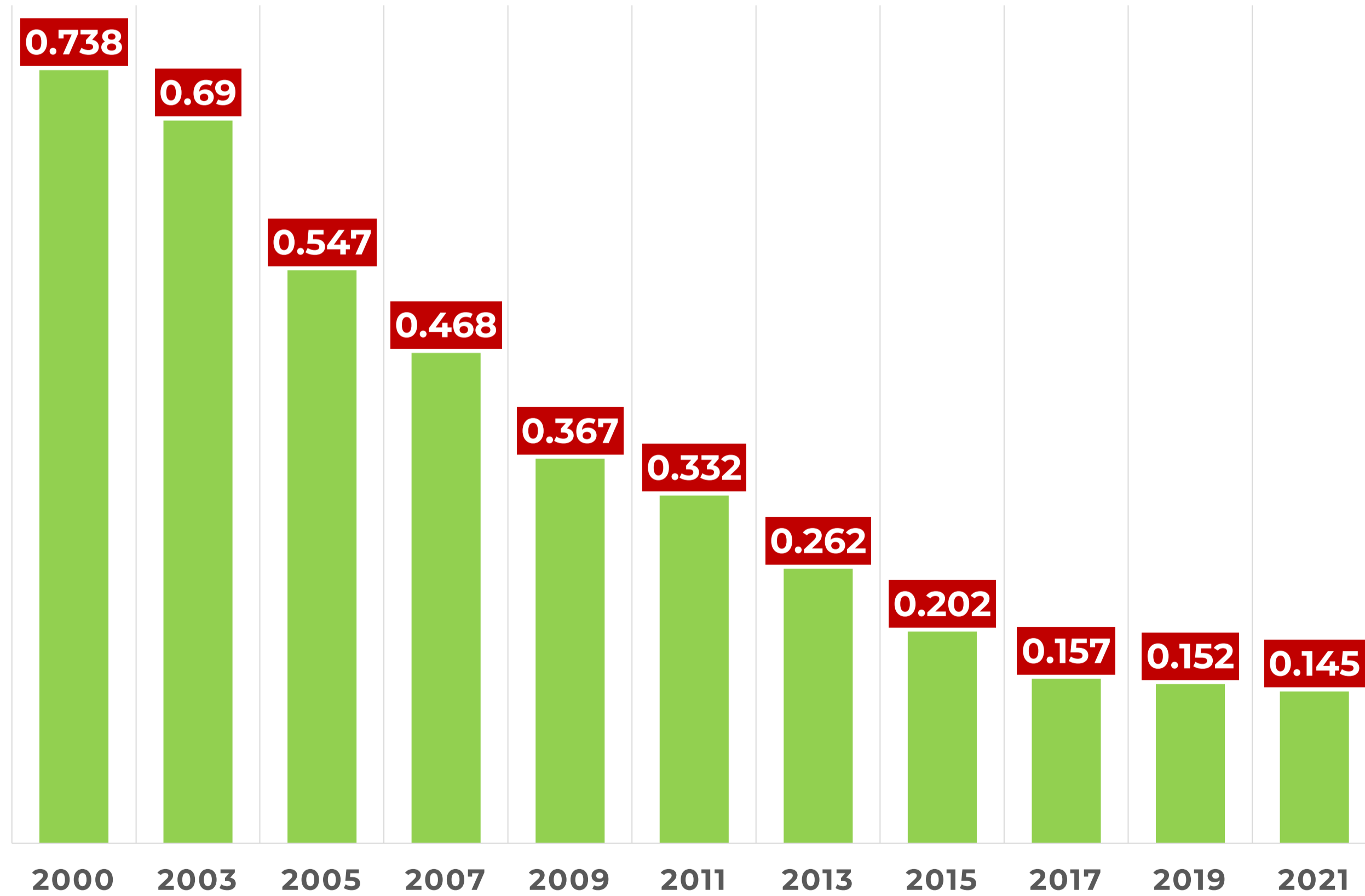
FER consumption planning.

UIS STRUCTURE



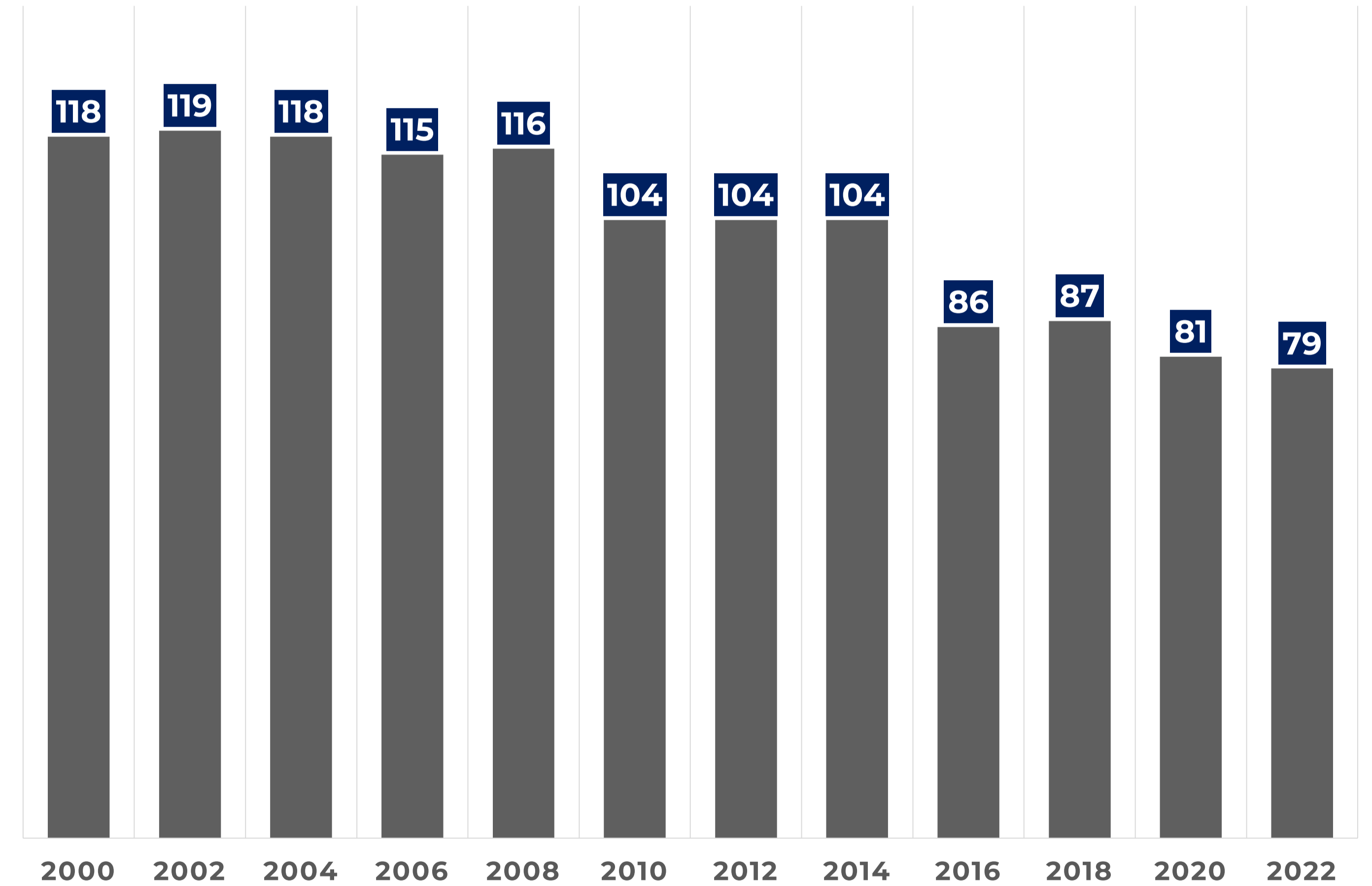
CHANGES IN ENERGY INTENSITY OF GDP IN UZBEKISTAN

KGOE./USD



GREENHOUSE GAS EMISSIONS FROM FUEL AND ENERGY COMPLEX (FEC)

MILLION TONS OF CO2





THANK YOU FOR YOUR ATTENTION!