

# New technologies and materials for green energy

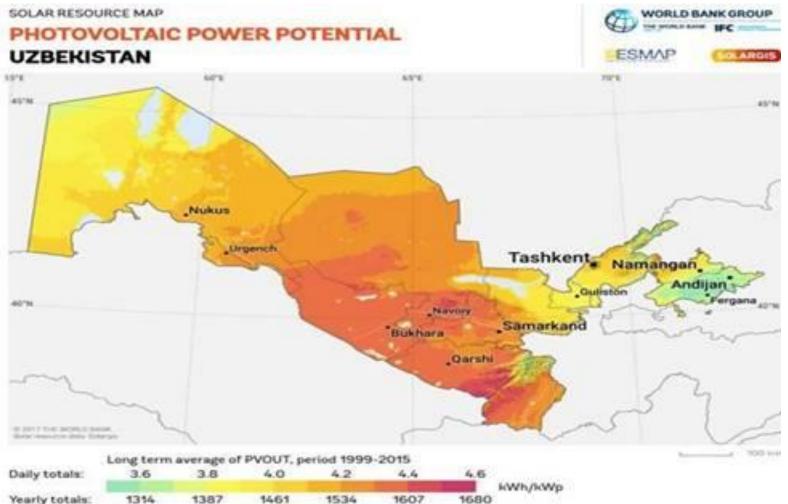
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# Way Solar Energy?



• Number of Sunny days – 280

 The gross solar energy potential of Uzbekistan is estimated at 50.9 billion tons of oil equivalent

• The only unique **Big Solar Furnace** in Asia is located here



# **Big Solar Furnace (BSF)**



# bistribution of energy density in the focal

zone of the BSF

#### Big Solar Furnace Concentrator:

Height – 42 m; Width – 54 m Reflective surface -2140 m<sup>2</sup> Temperature in focus – up to **3000 °C Heliostats field:** Number of heliostats – 62 Reflective surface 3022 m<sup>2</sup>



#### Small Solar Furnace: The diameter of the concentrator 3 m. Number of heliostats – 1 T= 2800 °C P= 200 kWt/sm<sup>2</sup> The size of the focal spot is 3 cm





## Legislative framework for the development of green energy in Uzbekistan

Presidential Decree "On measures to accelerate the introduction of renewable energy sources and energy-saving technologies in 2023"

Presidential Decree "Additional measures for the introduction of energysaving technologies and the development of low-power renewable energy sources"

Presidential Decree "Measures for the development of hydrogen energy"

Government Decree "On accounting for energy generated by renewable energy sources"

Government Decree "Measures to improve energy efficiency"

Presidential Decree "Strategy for the transition to a green economy"

Presidential Decree "On the introduction of energy-saving technologies"

The Law on Renewable Energy Sources

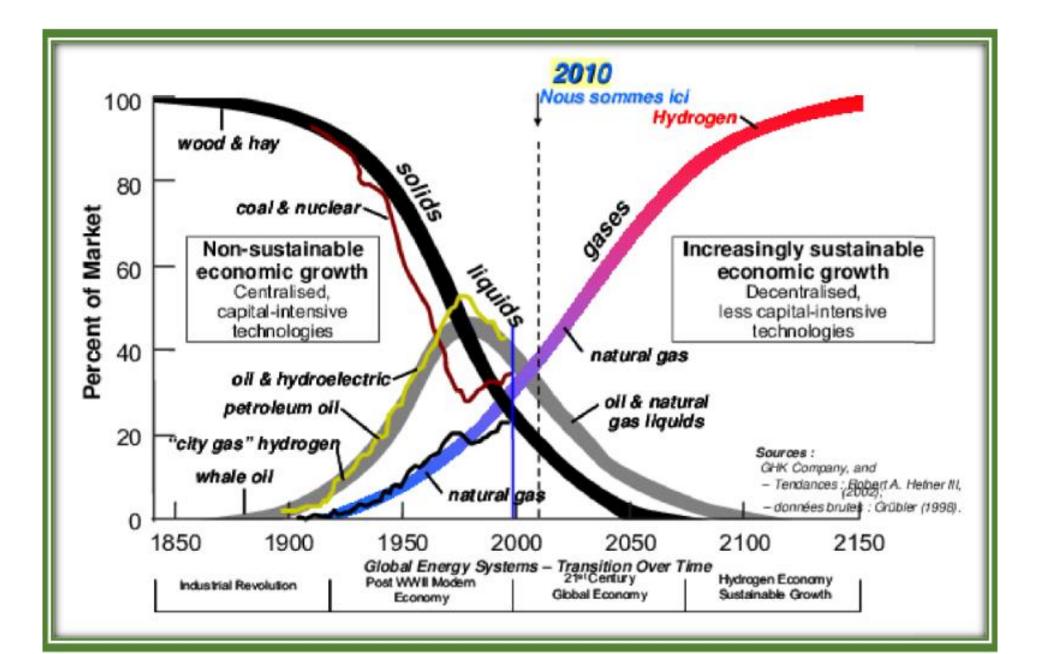
2023

2022

2021

2020







# The concept of organizing research on hydrogen energy in Uzbekistan

# The main problems of the development of hydrogen energy:

- high cost;
- difficulty of safe storage;
- difficulty of use.

# General concept of the researchs:

- the use of concentrated solar radiation for water splitting;
- the use of zinc as a catalyst;
- zinc reduction in a solar furnace;
- the use of zeolite as a hydrogen absorber;
- the development of lanthanum-based fuel cells







RAKHMAT!!!

### THANK YOU!!!