



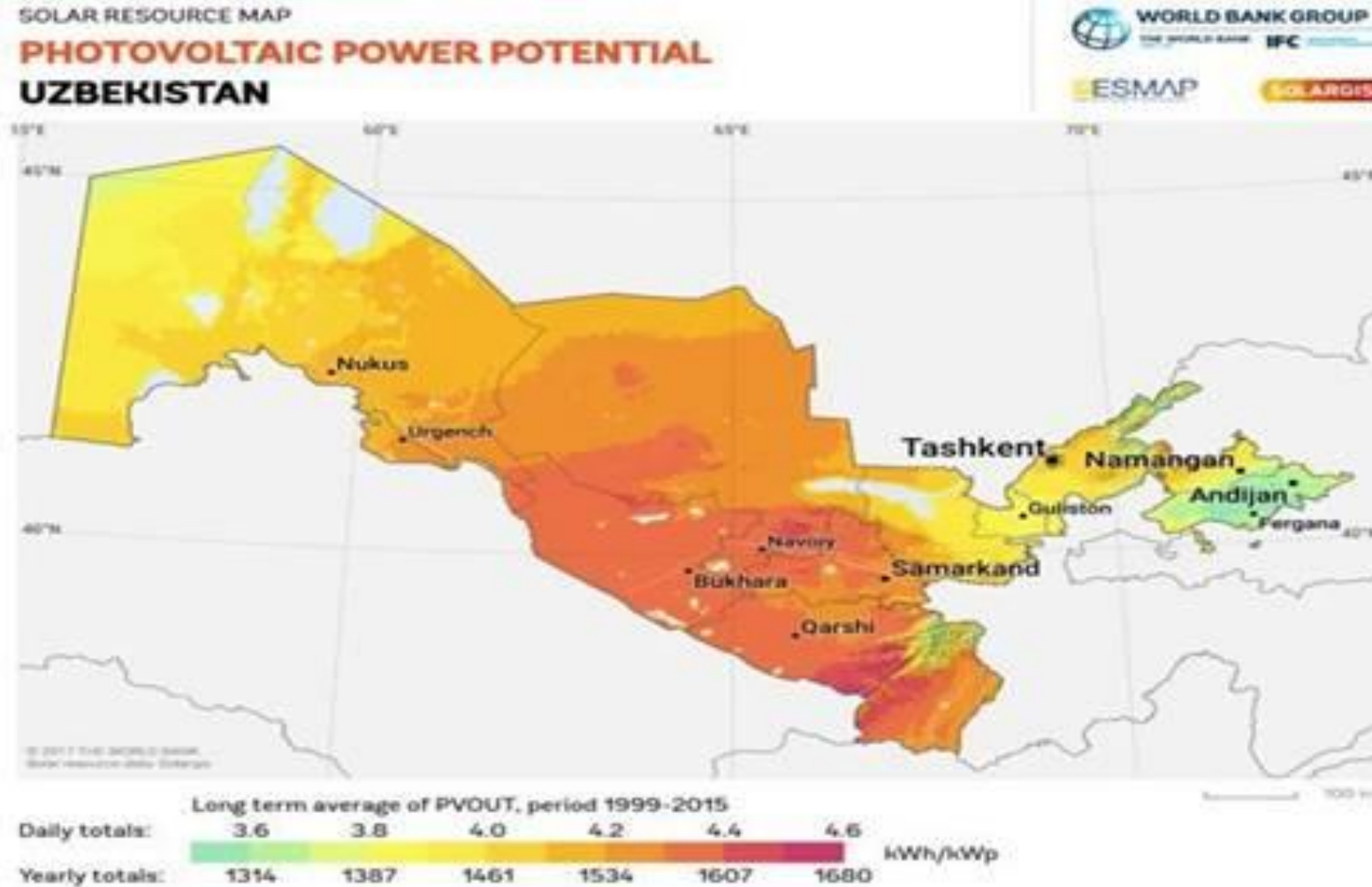
# **New technologies and materials for green energy**

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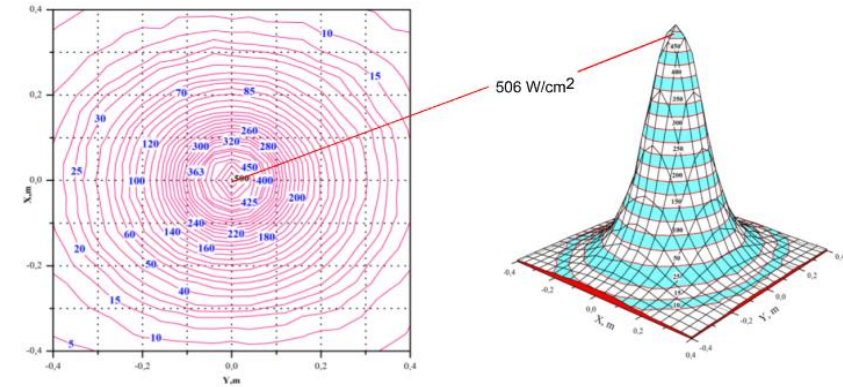
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# Way Solar Energy?



- 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)



Distribution 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:

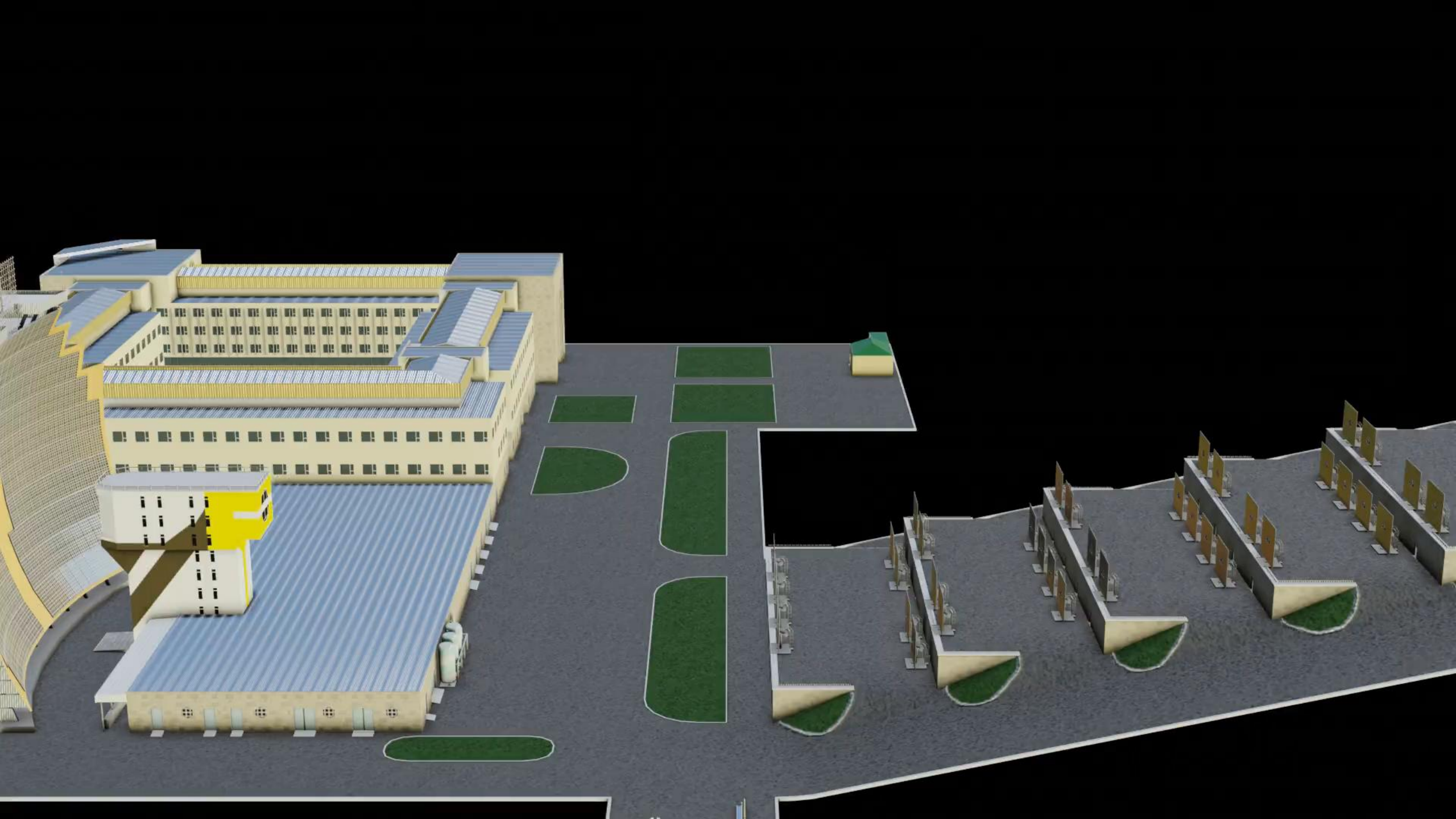
The diameter of the concentrator 3 m.

Number of heliostats – 1

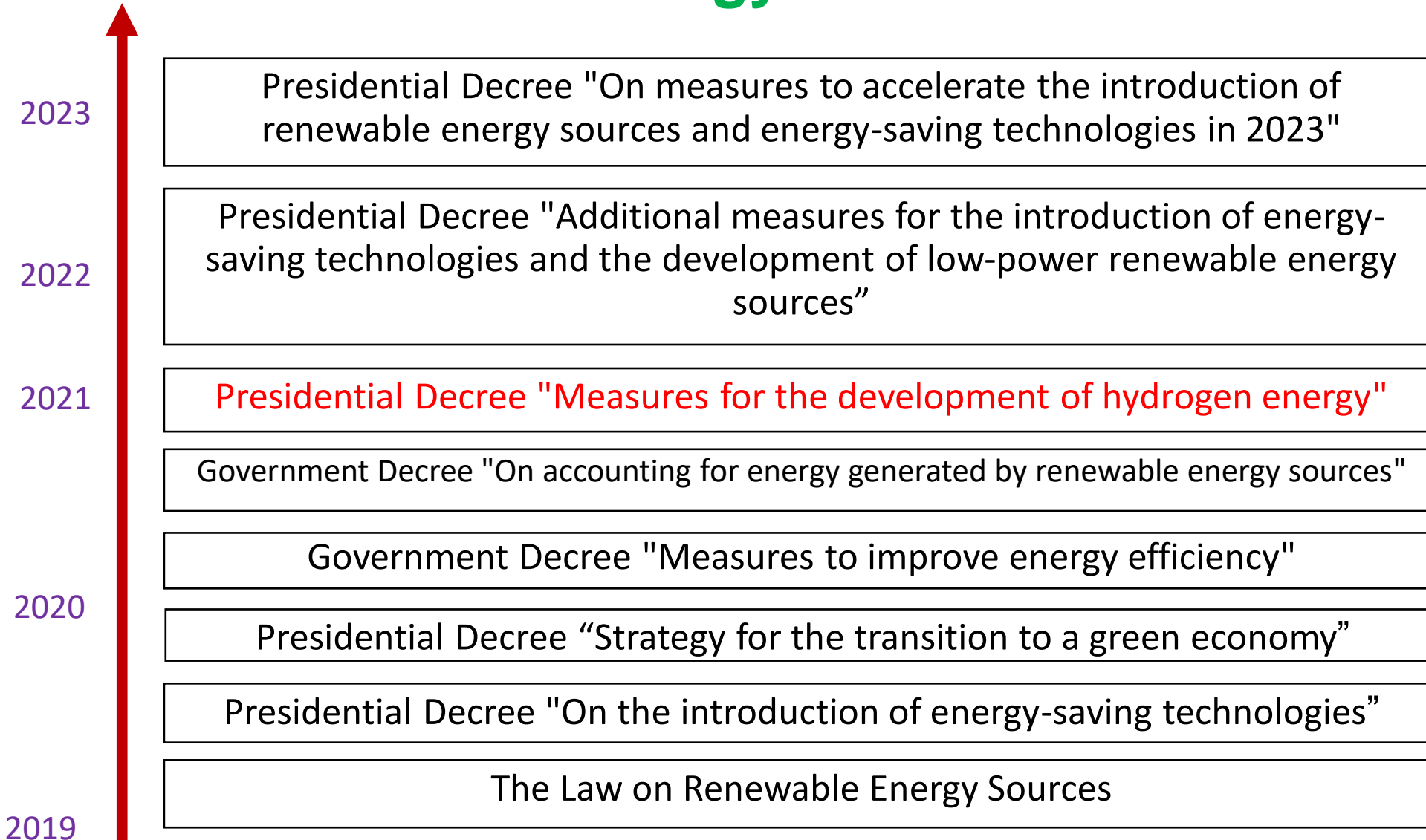
T= 2800 °C

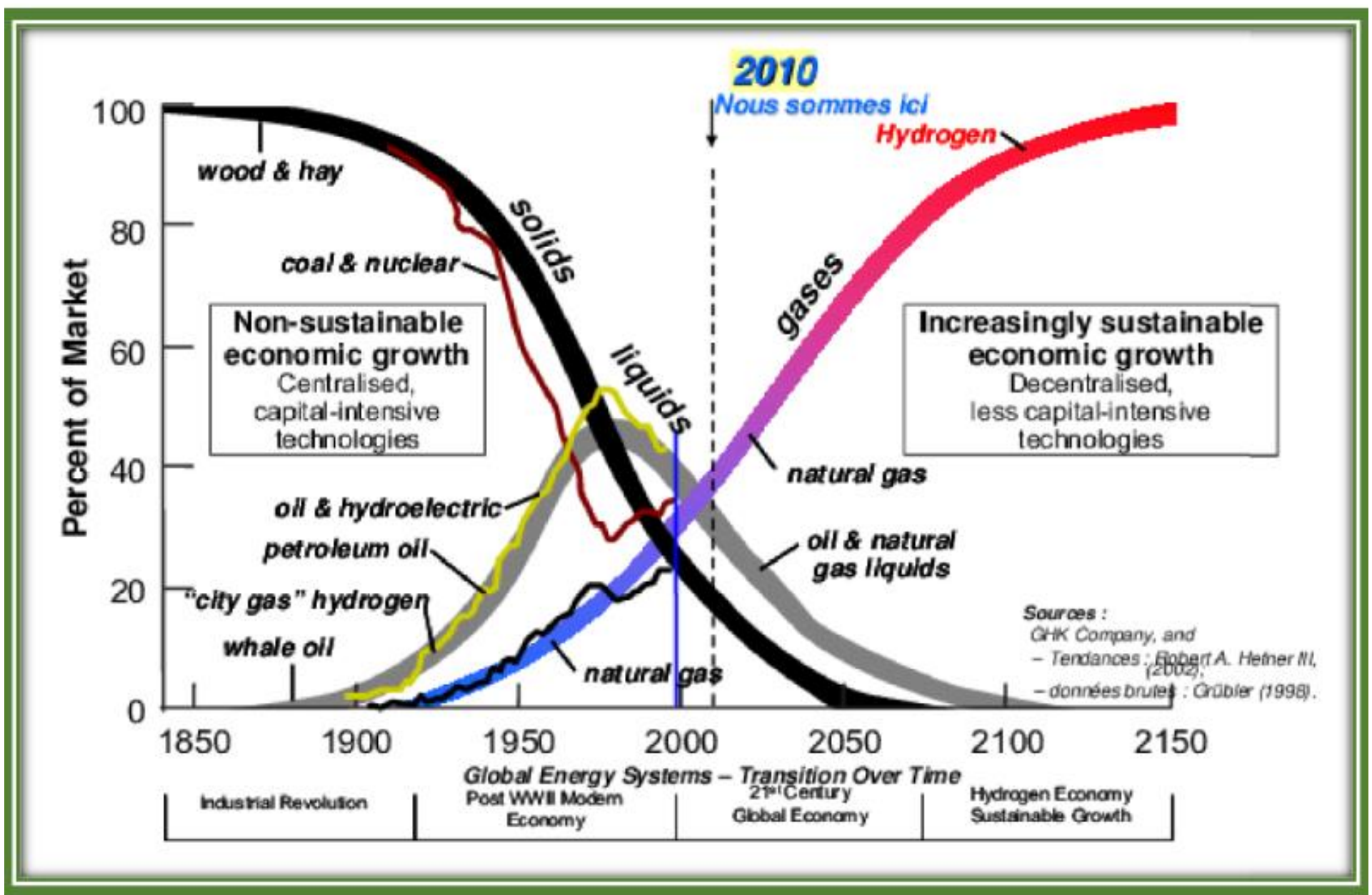
P= 200 kWt/sm<sup>2</sup>

The size of the focal spot is 3 cm



# Legislative framework for the development of green energy in Uzbekistan





# 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!!!**