



3rd INTERNATIONAL CONFERENCE ON BIOMASS UTILIZATION AND SUSTAINABLE ENERGY

ICoBiomasse 2023

*A systematic approach to the use of renewable
energy in the supply of electricity*

Dr Dilshod Kodirov
e-mail: kodirov.dilshod@gmail.com

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1. Building climate-resilient agro-ecosystems and increasing the resilience of farmers and ranchers to climate change-related risks.

2. Increasing the number of jobs created on the basis of "Green Guarantee" programs and business activities based on natural resources.

Basis: In the development strategy of New Uzbekistan for 2022-2026, following tasks are included:

- increasing the share of electricity production using renewable and alternative energy sources more than 20% by 2026 [1];
- providing the country with a reliable, safe, economical and efficient source of electricity [1];
- expanding the production capacity [1];

Regulatory and legal documents on the execution of specified tasks:

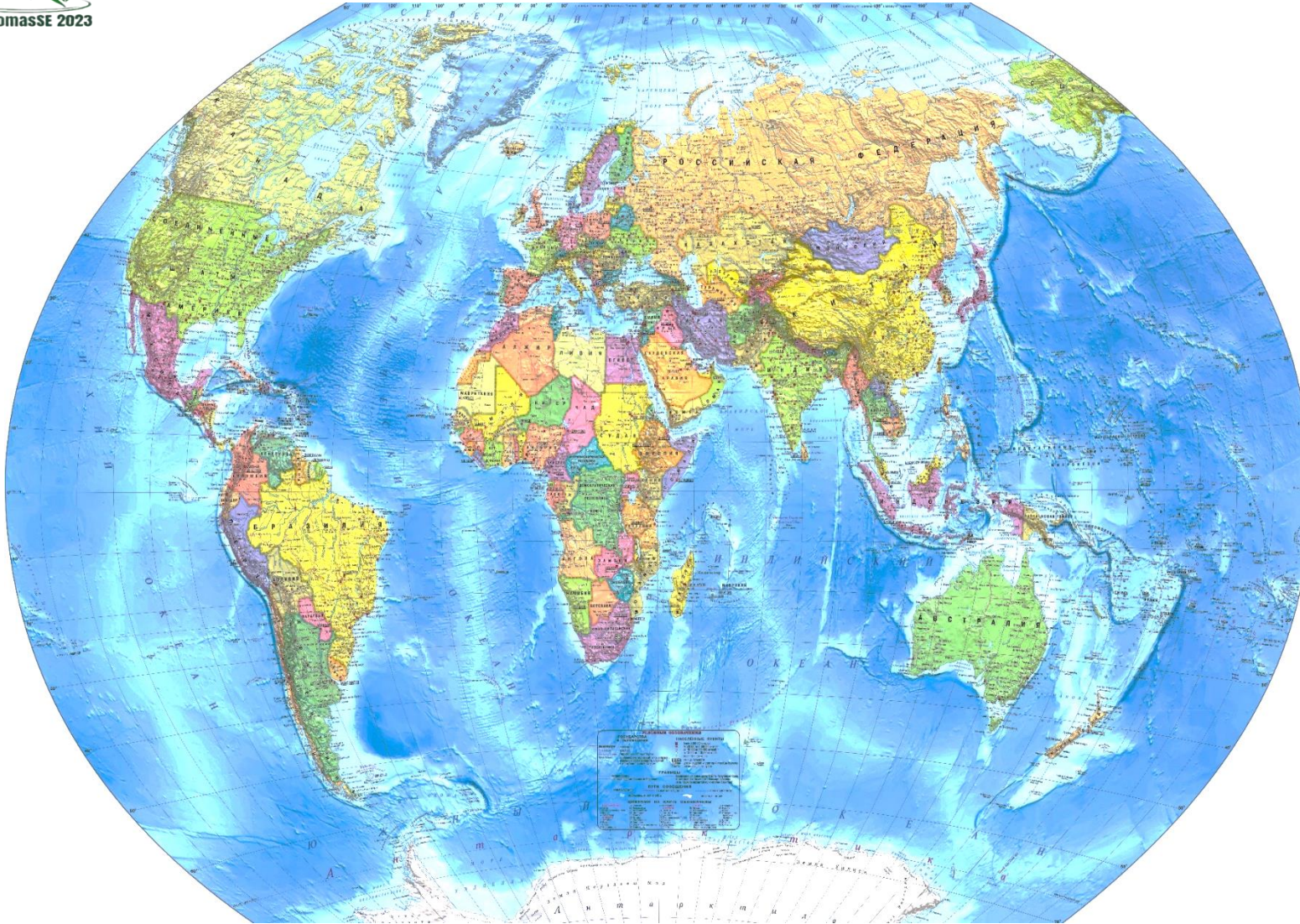
DRUz-539 dated May 21, 2019 "On the use of renewable energy sources";

PD-4477 dated October 4, 2019 "On approval of the strategy of the transition to the "green" economy of the Republic of Uzbekistan in the period 2019-2030";

PD-4422 dated August 22, 2019 "On rapid measures to increase the energy efficiency of economic sectors and the social sphere, introduce energy-saving technologies and develop renewable energy sources."

PD-436 of December 2, 2022 "On measures to increase the effectiveness of reforms aimed at the transition of the Republic of Uzbekistan to a "green" economy by 2030."

ELECTRICITY CONSUMPTION



THIS IS THE GLOBE WE LIVE ON



NATURAL RESOURCES

Natural resources - natural substances necessary by man for various needs.



**Metals and
minerals**

Water



**Coal,
oil and gas**

Forests



ENERGY RESOURCES

Natural resources such as oil, gas, coal, wood, wind, sun and water are used to produce energy.



Oil and gas

Coal



Wood

Wind



Sun



Water

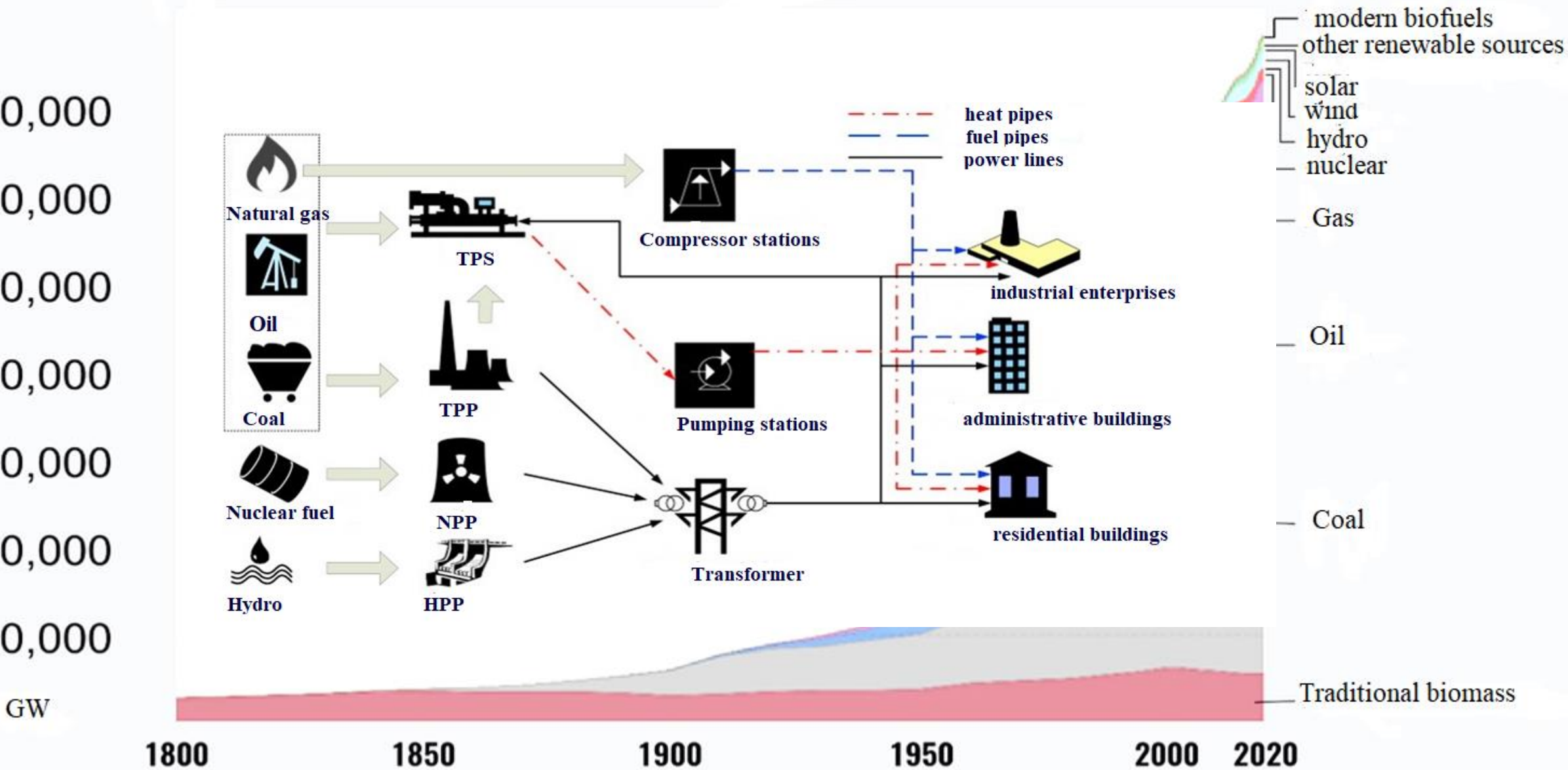


Non-renewable energy sources can not be easily restored because they took millions of years to form.

Renewable energy is energy that is naturally regenerated over a period of time.

Primary energy consumption in the world

(except for the types of fuel whose extraction is considered inefficient)



RENEWABLE ENERGY SOURCES IN THE WORLD [1]



Wind



Biomass

Million Tonnes of Oil Equivalent

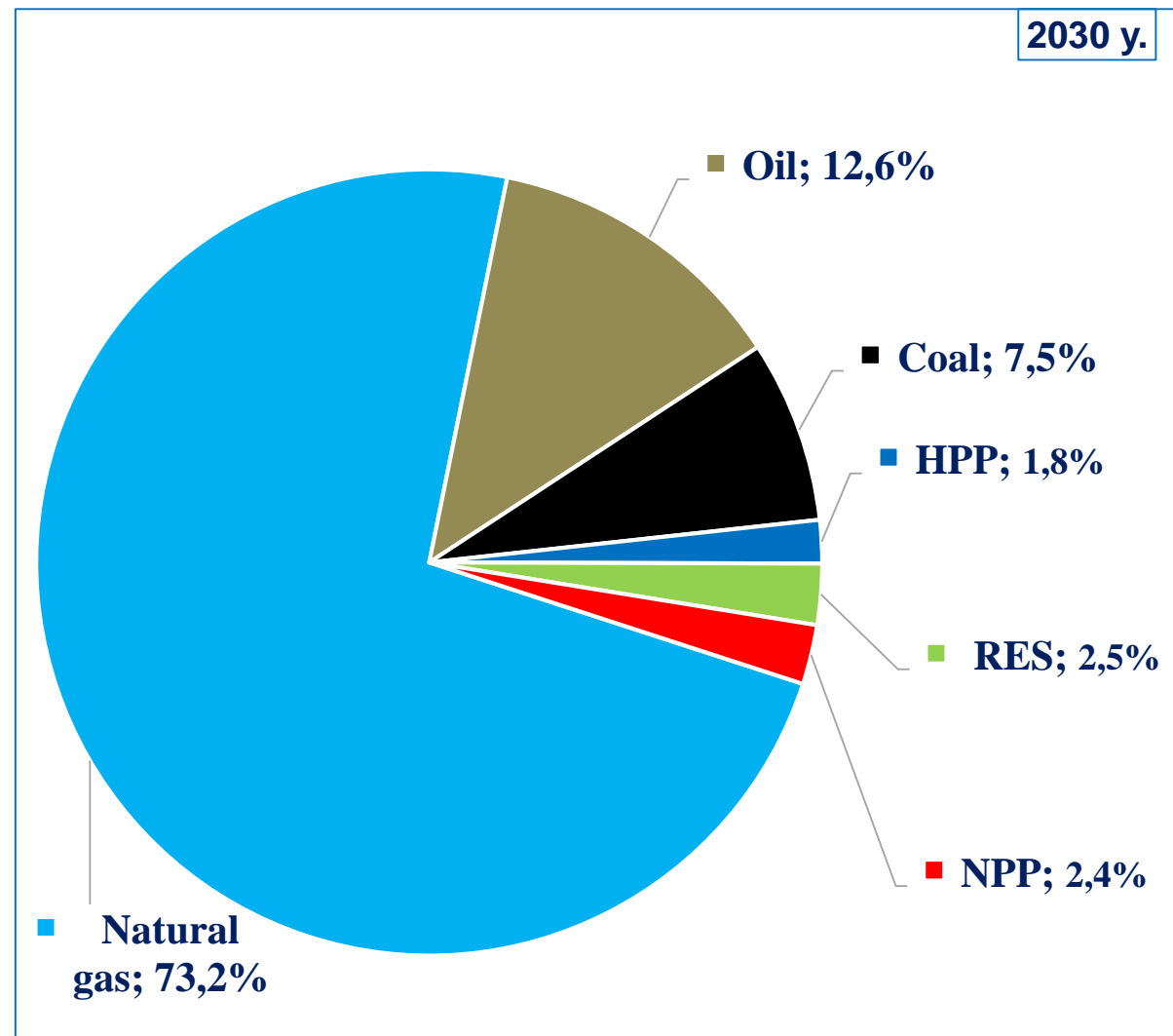
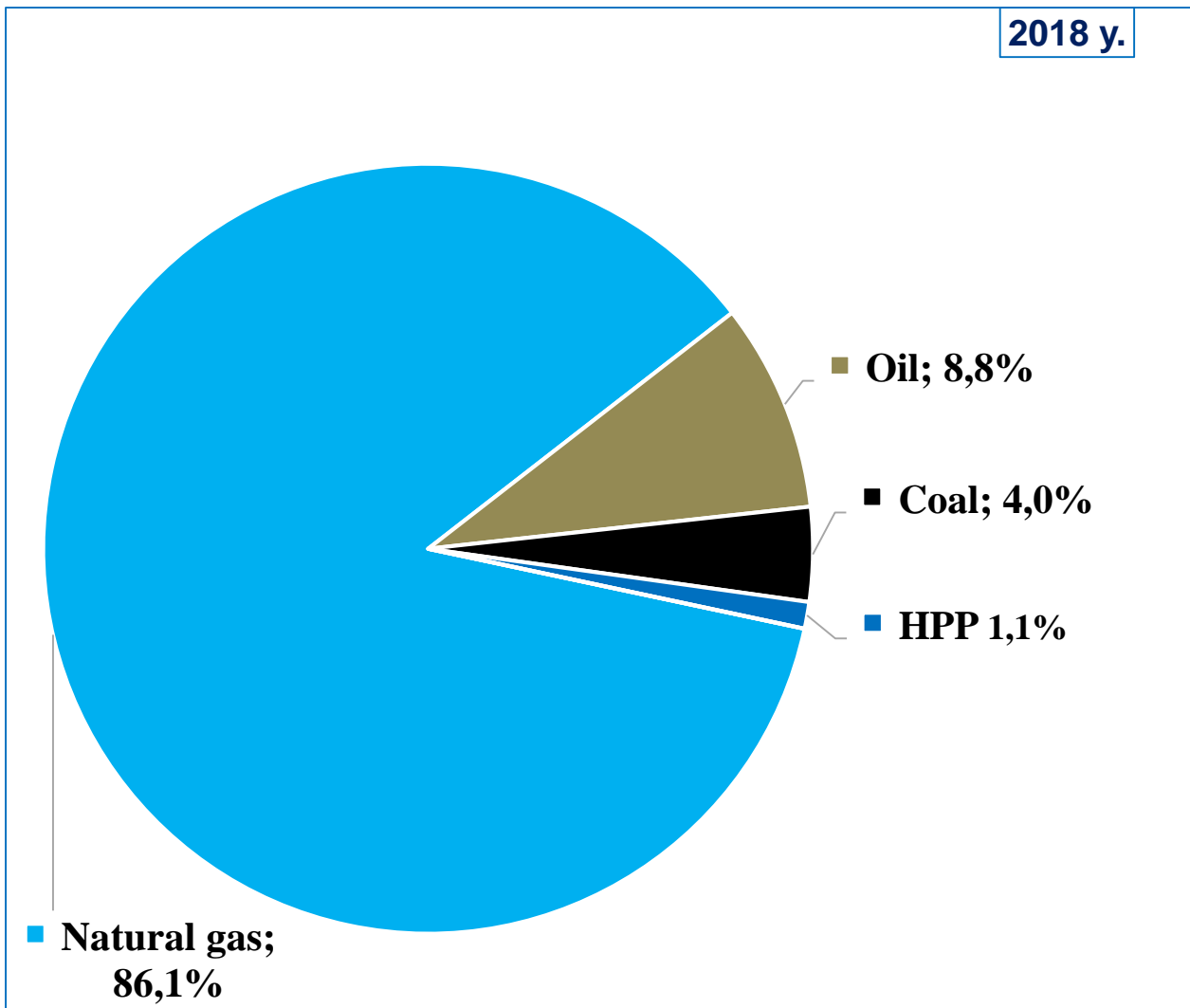


Hydro



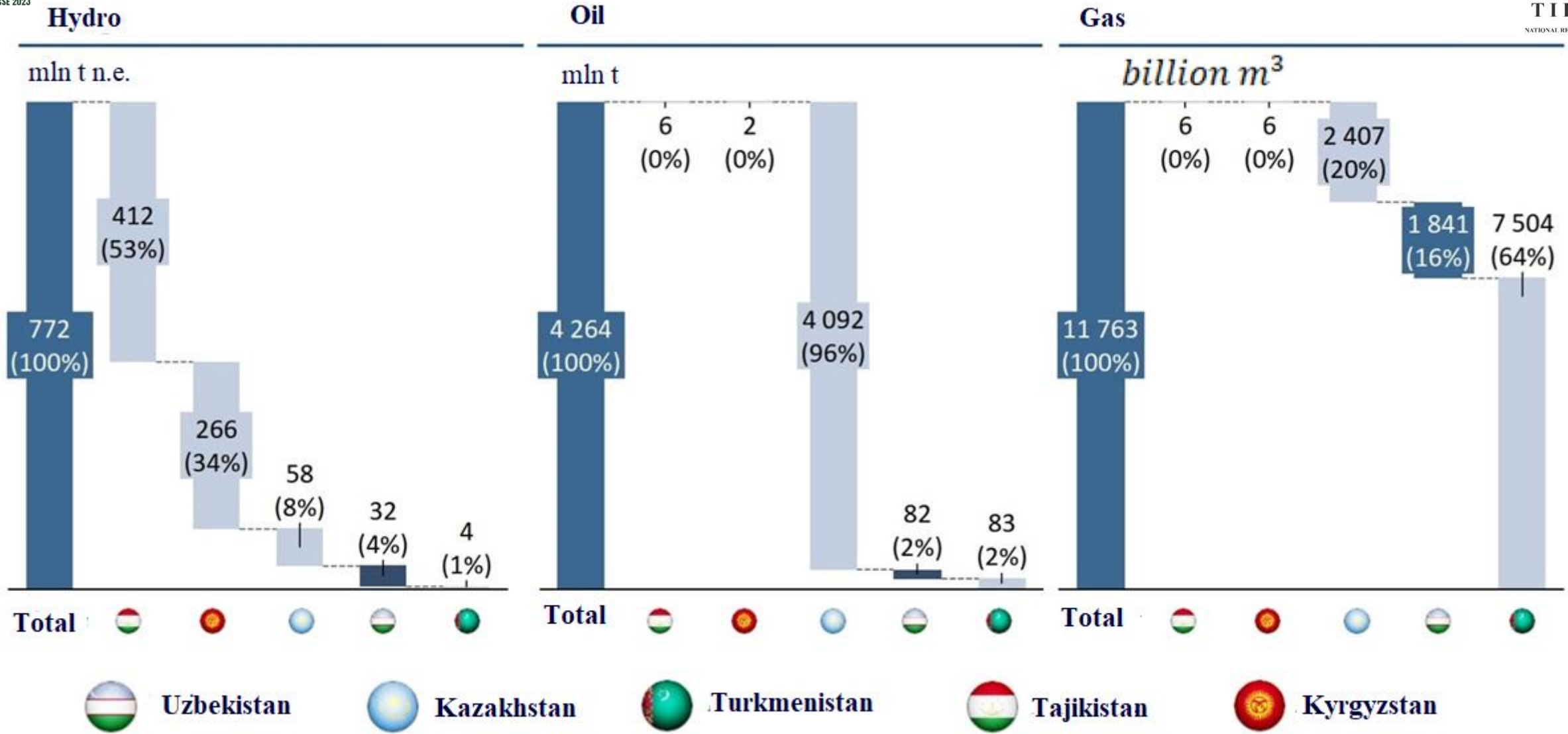
Solar

CURRENT (by 2018) AND FORECAST (by 2030) COMPOSITION OF PRIMARY ENERGY CONSUMPTION^[1]



[1] Ministry of Energy of the Republic of Uzbekistan

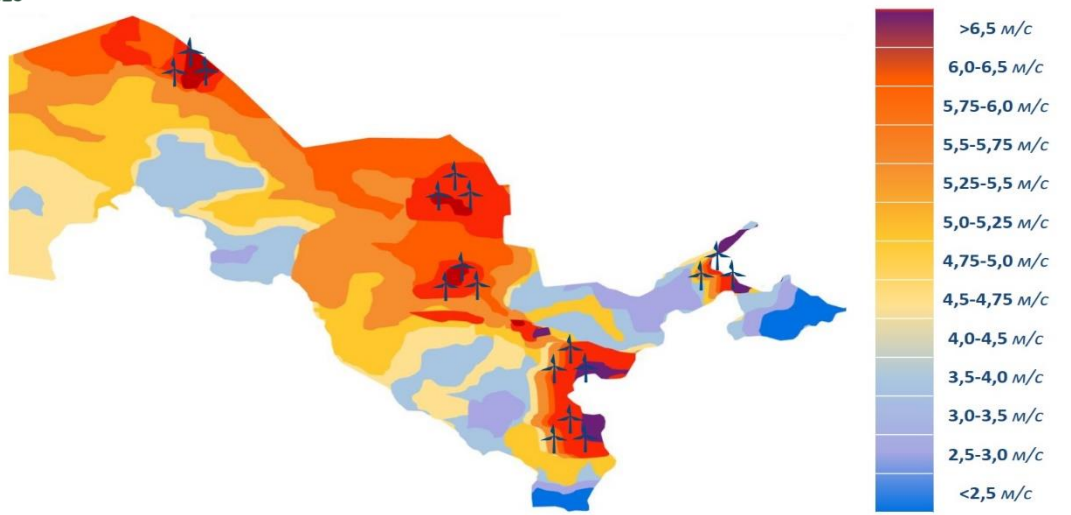
ENERGY RESOURCES POTENTIAL OF CENTRAL ASIAN COUNTRIES [1]



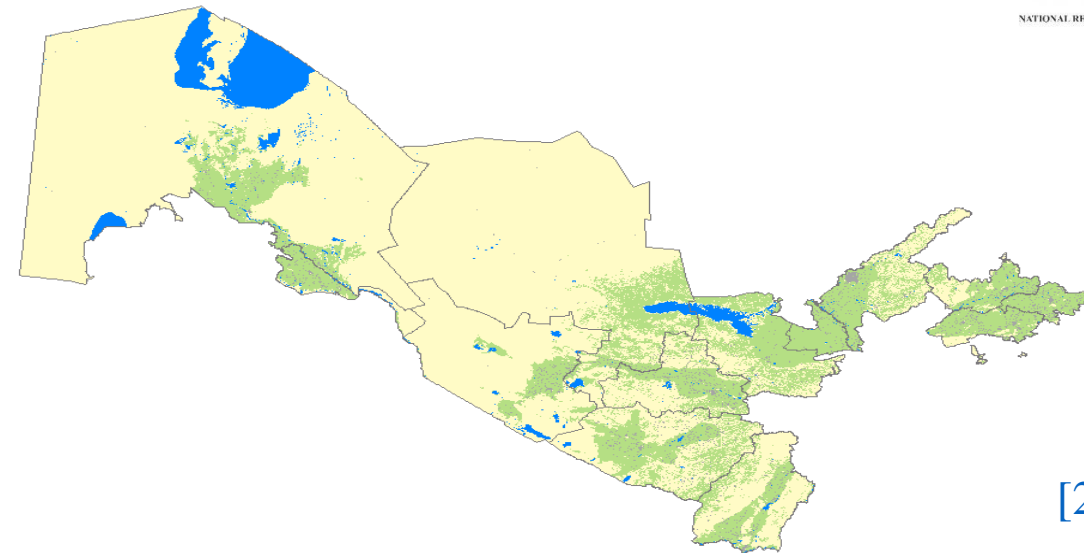
[1] https://static.norma.uz/official_texts/Концепция-Развития-Узбекистана-RUS.pdf

ENERGY RESOURCES POTENTIAL OF UZBEKISTAN

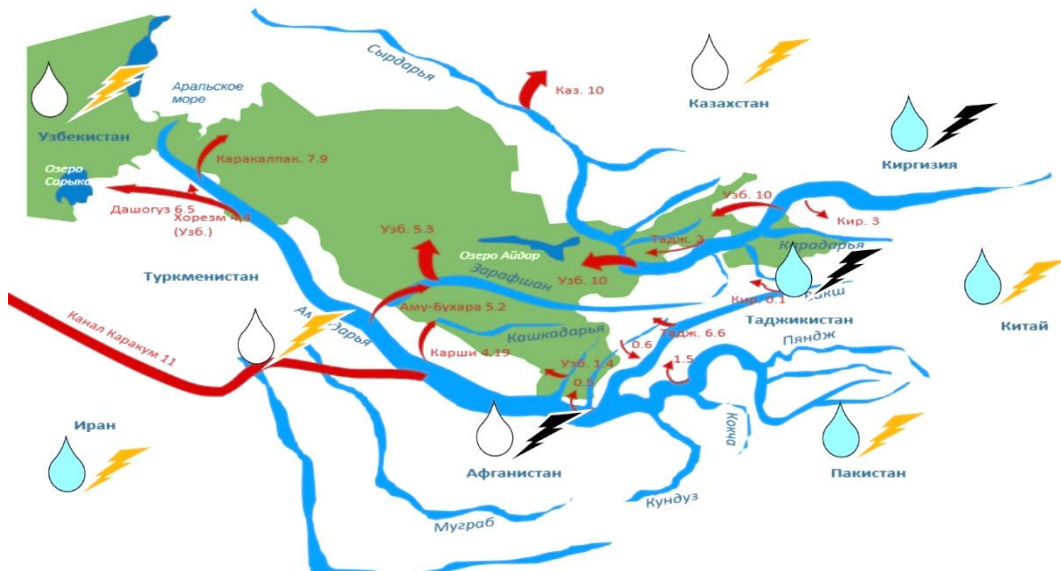
[1]



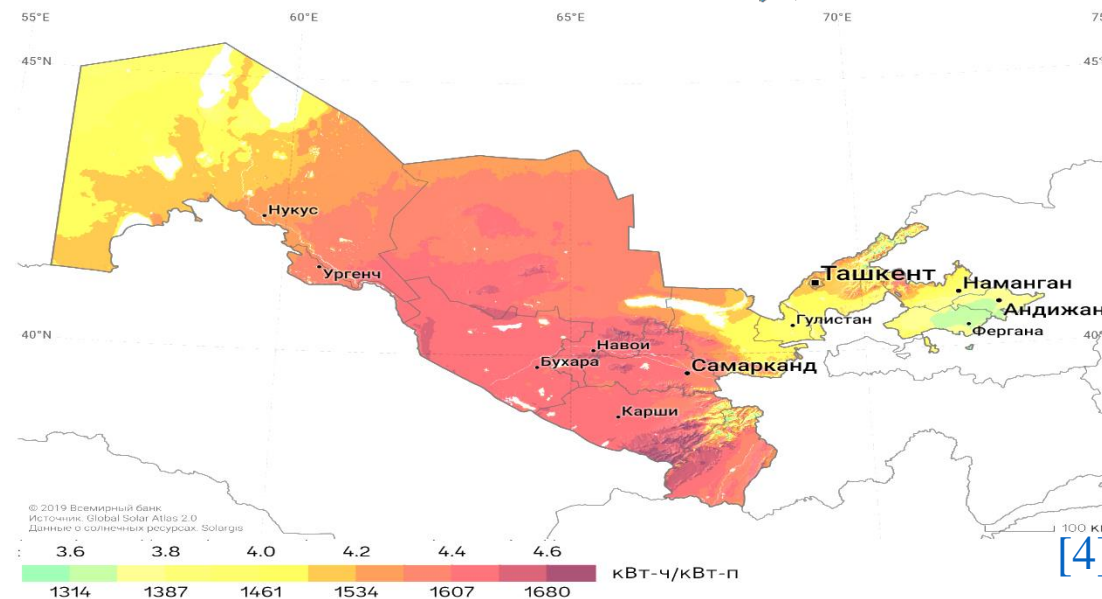
[2]



[3]



[4]



[1] <https://globalwindatlas.info/>

[2] <https://www.esa.int/>

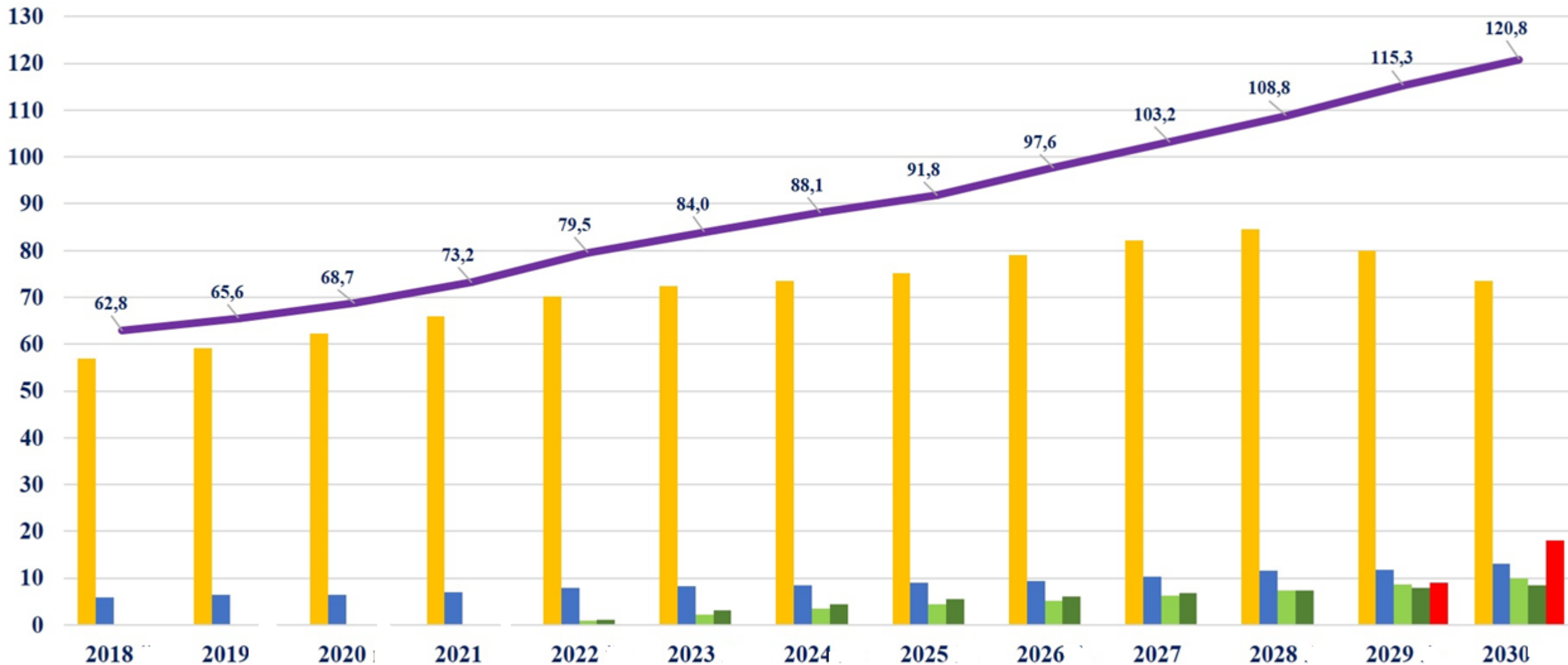
[3] https://static.norma.uz/official_texts/Концепция-Развития-Узбекистана-RUS.pdf

[4] <https://globalsolaratlas.info/>

DEVELOPMENT OF ELECTRICITY PRODUCTION^[1]

billion kW hour

- Thermal power plants
- Hydro power plants
- Solar power plants
- Wind power plants
- Nuclear power plants
- Total



[1] Ministry of Energy of the Republic of Uzbekistan

IN EVERY ENERGY REPORT, TODAY YOU CAN SEE THE GROWTH OF THE USE OF RENEWABLE ENERGY....

(But not us) 🤔

Why we are not meeting our daily energy needs with renewable energy?

Why solar energy is still not widely used, although there is a problem with energy supply in remote villages?

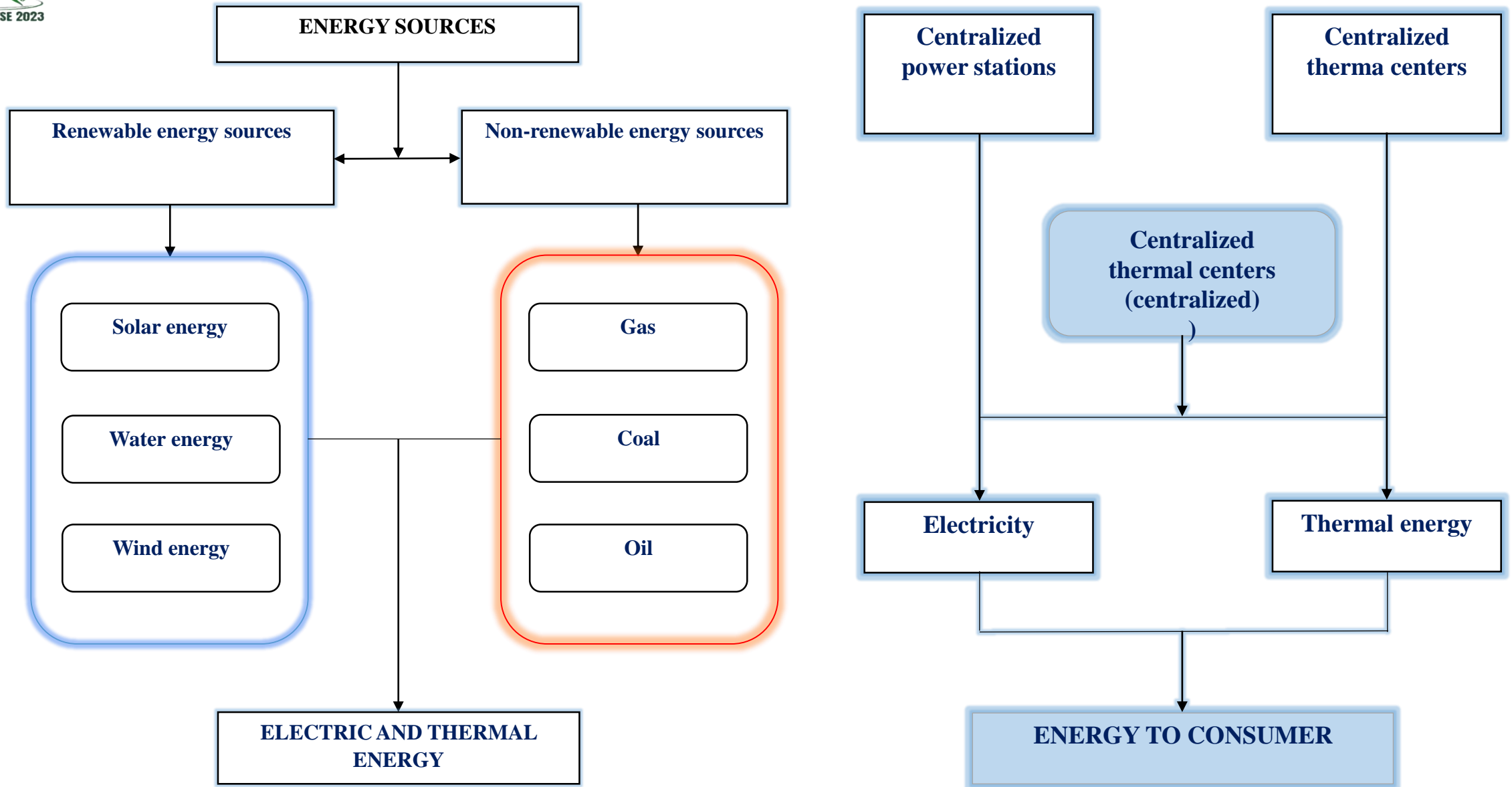
	January	February	March	April	May	June	July	August	September	October	November	December
0 - 1												
1 - 2												
2 - 3												
3 - 4												
4 - 5												
5 - 6					35	83	34	4				
6 - 7				74	211	289	251	180	69	8		
7 - 8		10	88	222	335	422	406	396	344	158	25	
8 - 9	113	167	225	321	429	528	526	527	494	334	190	108
9 - 10	236	270	310	399	504	610	616	625	589	419	285	218
10 - 11	289	319	371	450	559	667	679	689	648	485	341	272
11 - 12	320	367	408	474	583	694	713	726	684	520	369	297
12 - 13	339	406	429	481	593	699	720	733	694	551	373	313
13 - 14	336	415	433	470	568	681	709	718	680	510	351	291
14 - 15	303	351	362	426	516	645	672	680	622	436	298	256
15 - 16	242	290	302	363	462	580	608	619	552	352	212	188
16 - 17	77	212	236	293	389	494	527	524	440	191	52	40
17 - 18		31	106	204	299	398	415	393	215	18		
18 - 19				31	134	259	245	131	12			
19 - 20					2	39	22					
20 - 21												
21 - 22												
22 - 23												
23 - 24												
hour	2255	2839	3270	4208	5617	7087	7143	6943	6043	3984	2496	1983

Normal radiation $W \cdot h/m^2$



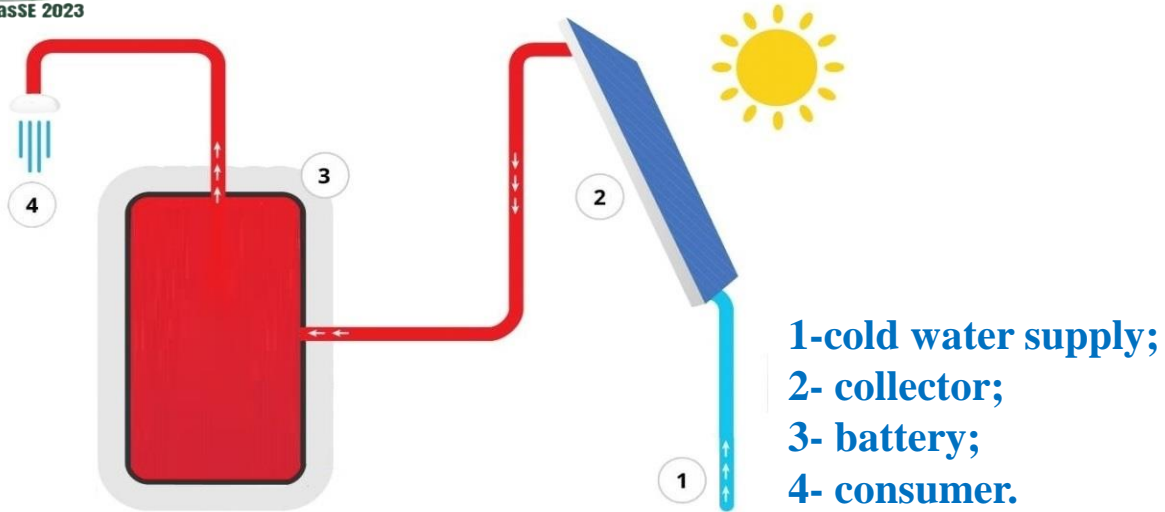
Solar Energy Usage Indicators

USE OF RENEWABLE ENERGY SOURCES IN POWER SUPPLY

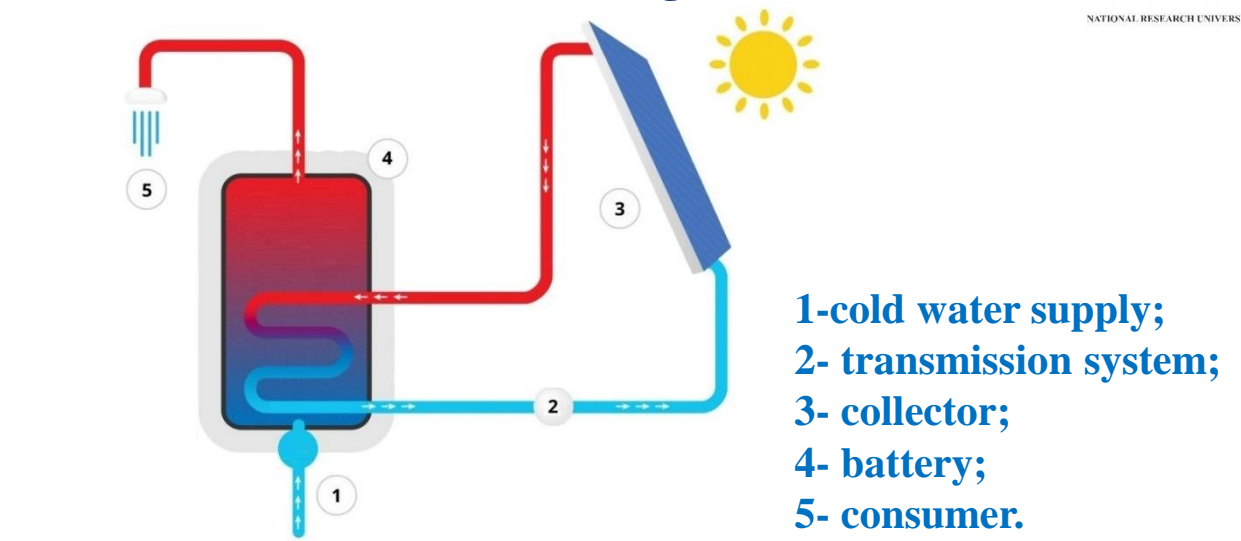


COMPLEX USE OF SOLAR ENERGY

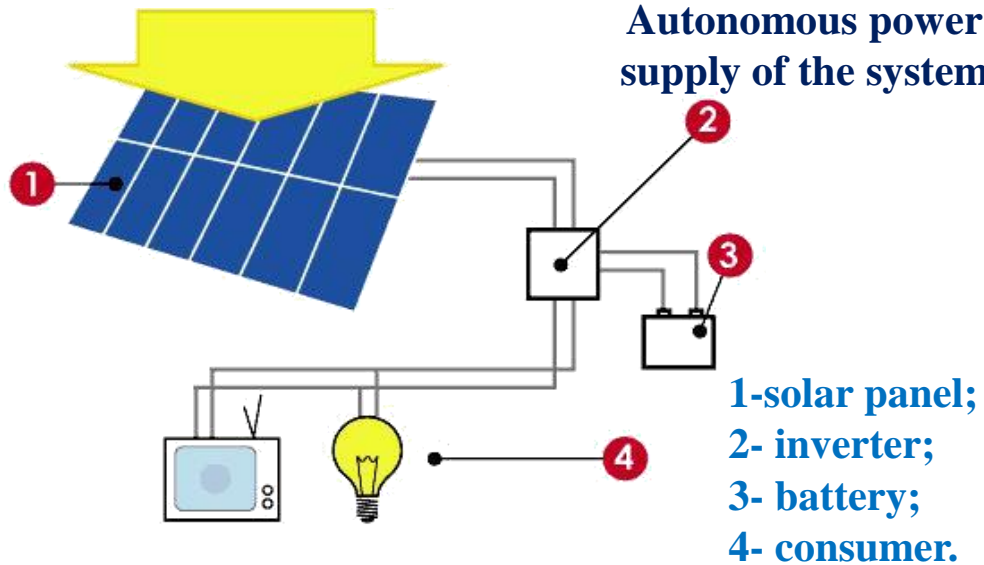
Outdoor solar heating



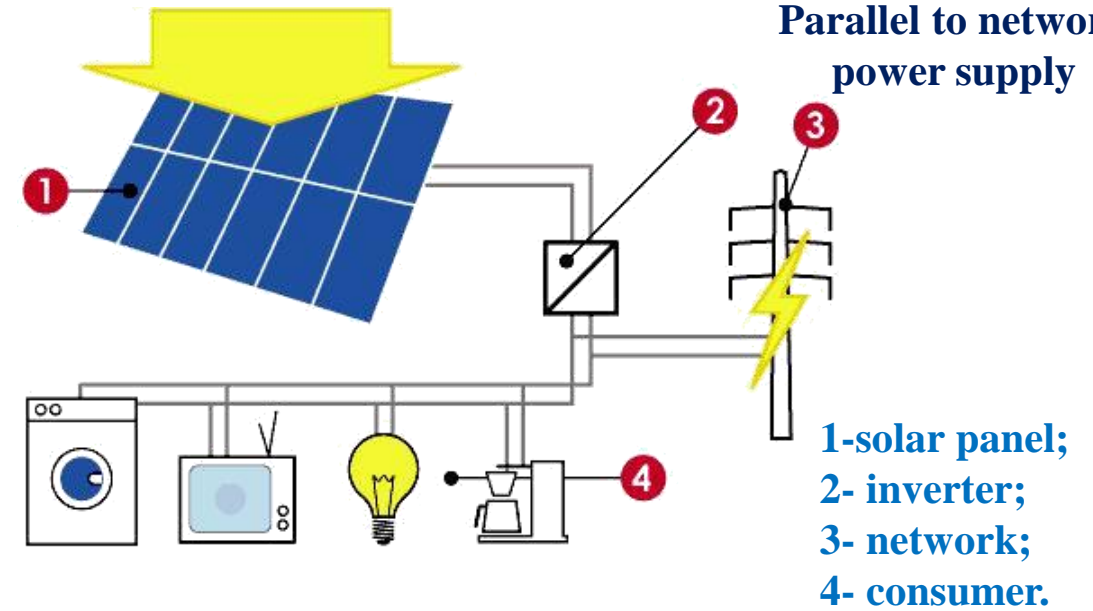
Indoor solar heating



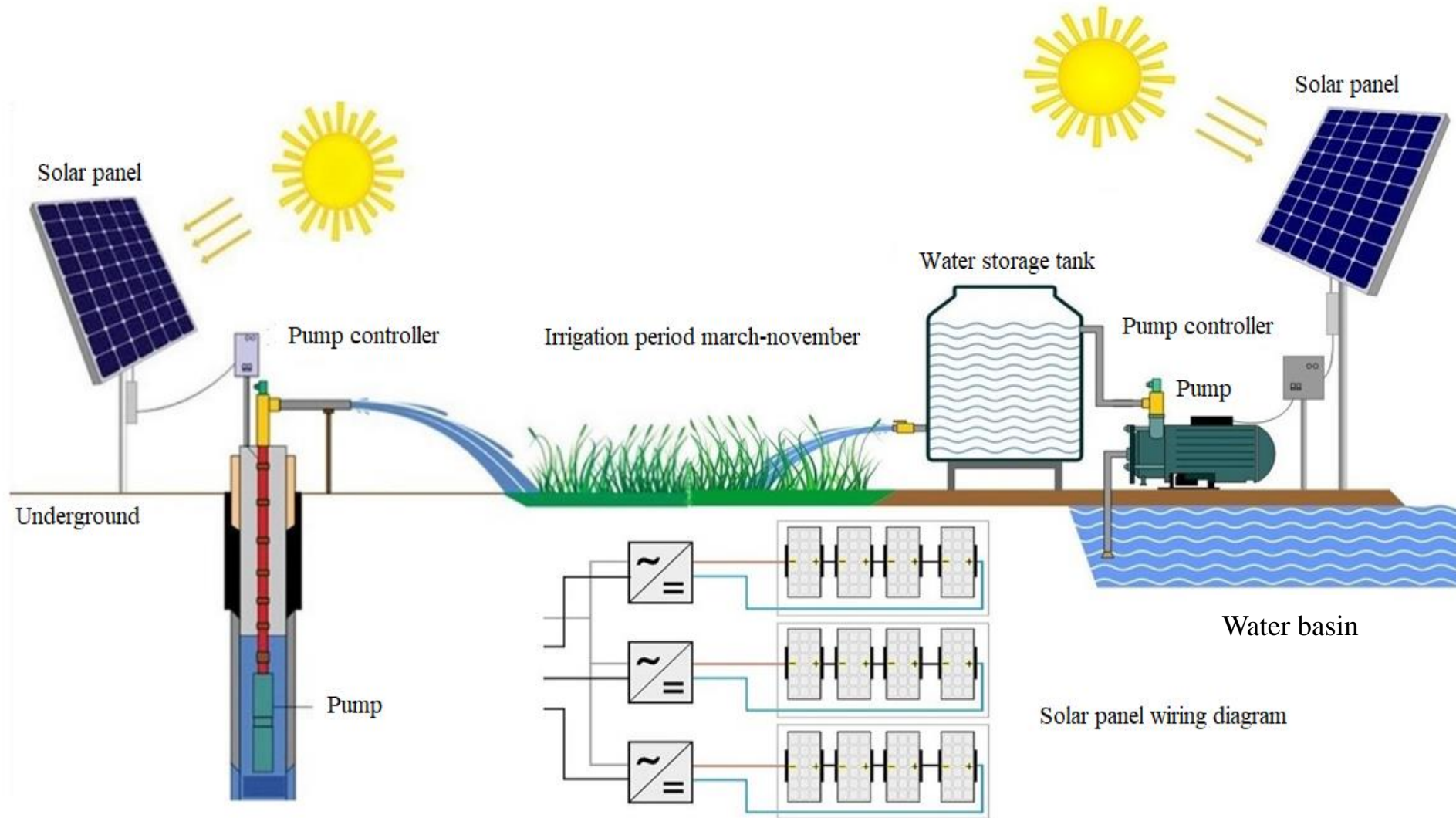
Autonomous power supply of the system



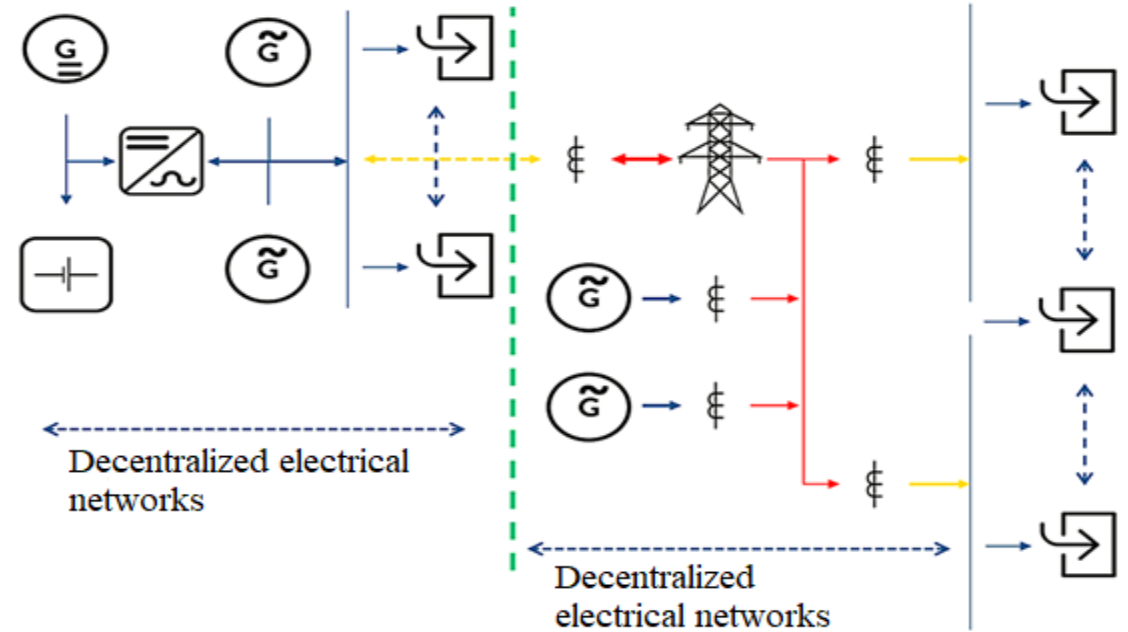
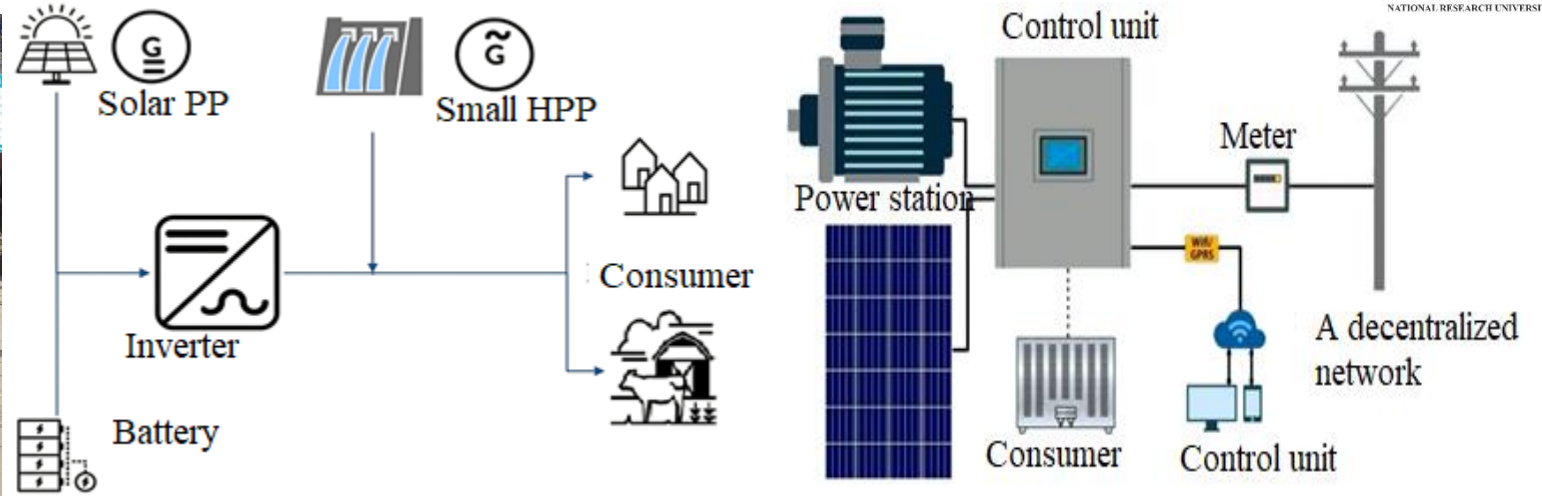
Parallel to network power supply



USE OF SOLAR ENERGY IN IRRIGATION SYSTEM



INTEGRATED USE OF SOLAR AND HYDRO ENERGY



PROJECTS TO BE IMPLEMENTED UNTIL 2025 IN UZBEKISTAN^[1]



[1] [https://kz.kursiv.media/sites/default/files/users/user29/energiya-vie-k-2030-godu-dolzha-zakryt-okolo-15%25-energobalansa-uzbekistana%20%20\(2\).jpg](https://kz.kursiv.media/sites/default/files/users/user29/energiya-vie-k-2030-godu-dolzha-zakryt-okolo-15%25-energobalansa-uzbekistana%20%20(2).jpg)

USE OF SOLAR ENERGY IN THE WORLD



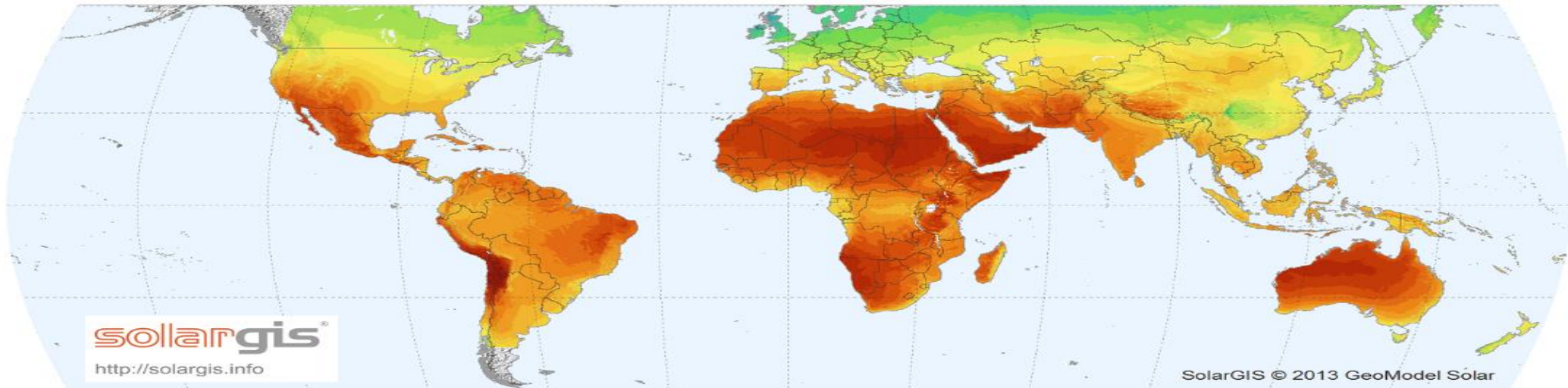
Solar panels installed in Japan



Solar panels installed in California



Solar panels installed in Japan



MAIN FACTORS OF USING RENEWABLE ENERGY SOURCES

Basics of use

1. Preservation of the environment in its original state and ensuring environmental safety;

2. Solving social problems, improving the lifestyle of the population;

3. Ensuring energy security;

4. Saving energy reserves for future generations.

Usage options

• The Law on the Use of Renewable Energy Sources dated May 3, 2019 (No. 539) came into force;

• Specific targeted state programs have been developed;

• Investment subsidies are allocated;

• Customs privileges are provided, credits, taxes and privileges for sale are provided.

CONCLUSION

We will only have one Earth until humanity conquers space. It is true that there are many sources of energy that can be obtained from the earth. However, after the terrestrial energy sources are exhausted, we will have to look for an alternative. If no alternative is found, life on Earth will become miserable. We hope that the use of renewable energy sources will make our lives more prosperous.

**THANKS FOR YOUR
ATTENTION!**

Speaker: Dr Kadirov Dilshod

E-mail: kodirov.dilshod@gmail.com
