



# RENEWABLE ENERGY COMMUNITIES TO DEAL WITH CLEAN ENERGY ACCESS IN THE FERGANA VALLEY

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**“To move towards inclusive energy transition, we must first build the road”**

# Infrastructure Investment Gap in Electricity

- \$338 billion in the USA by 2039
- \$140 billion in the EU by 2040
- \$33 billion annually in Central Asia

CASA-1000 brings hope, but  
challenges of access to electricity  
remain immense





# Overall Challenges

- Large population in rural areas where infra is weak
- Diminishing hydropower which is clean power

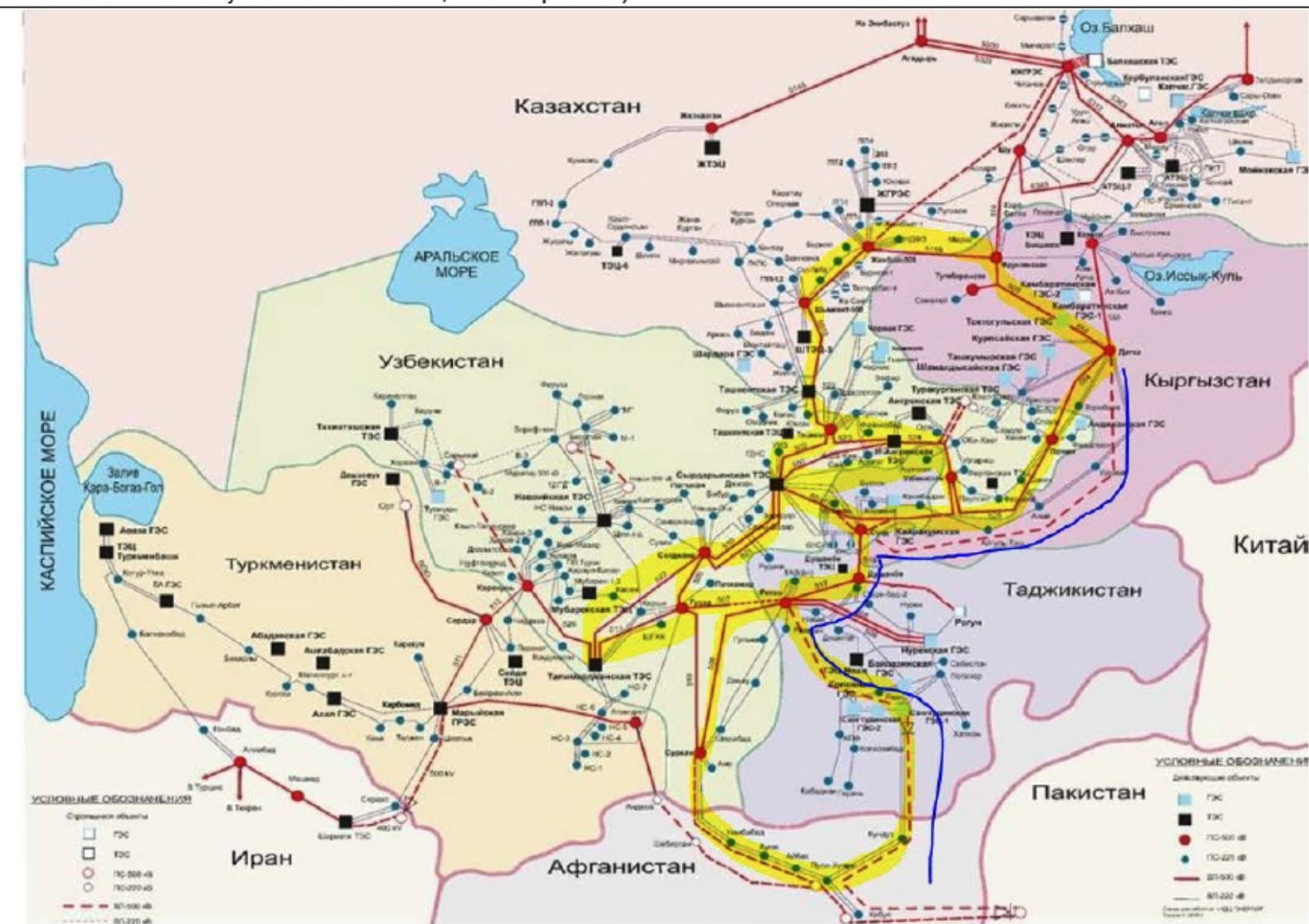
## Specific Challenges from the Project

- Heating mainly coming from non-renewable energy sources, unreliable
- Energy interruptions, power outages

Figure 24: CAPS transmission lines in 2019

Highlighted in yellow are 500kV loops (both existing, under construction, and planned / suggested)

The blue line is a schematic CASA-1000 route – directly enhancing the existing grid only in Datka-Sugd (KG-TJ) and Regar-Sangtuda (inside of TJ) sections. At Sangtuda, there will be a converter into direct current – so to interconnect northern Afghanistan and CAPS through CASA-1000 for parallel work, and have another loop for more reliable delivery from both UZ and TJ, will be impossible).

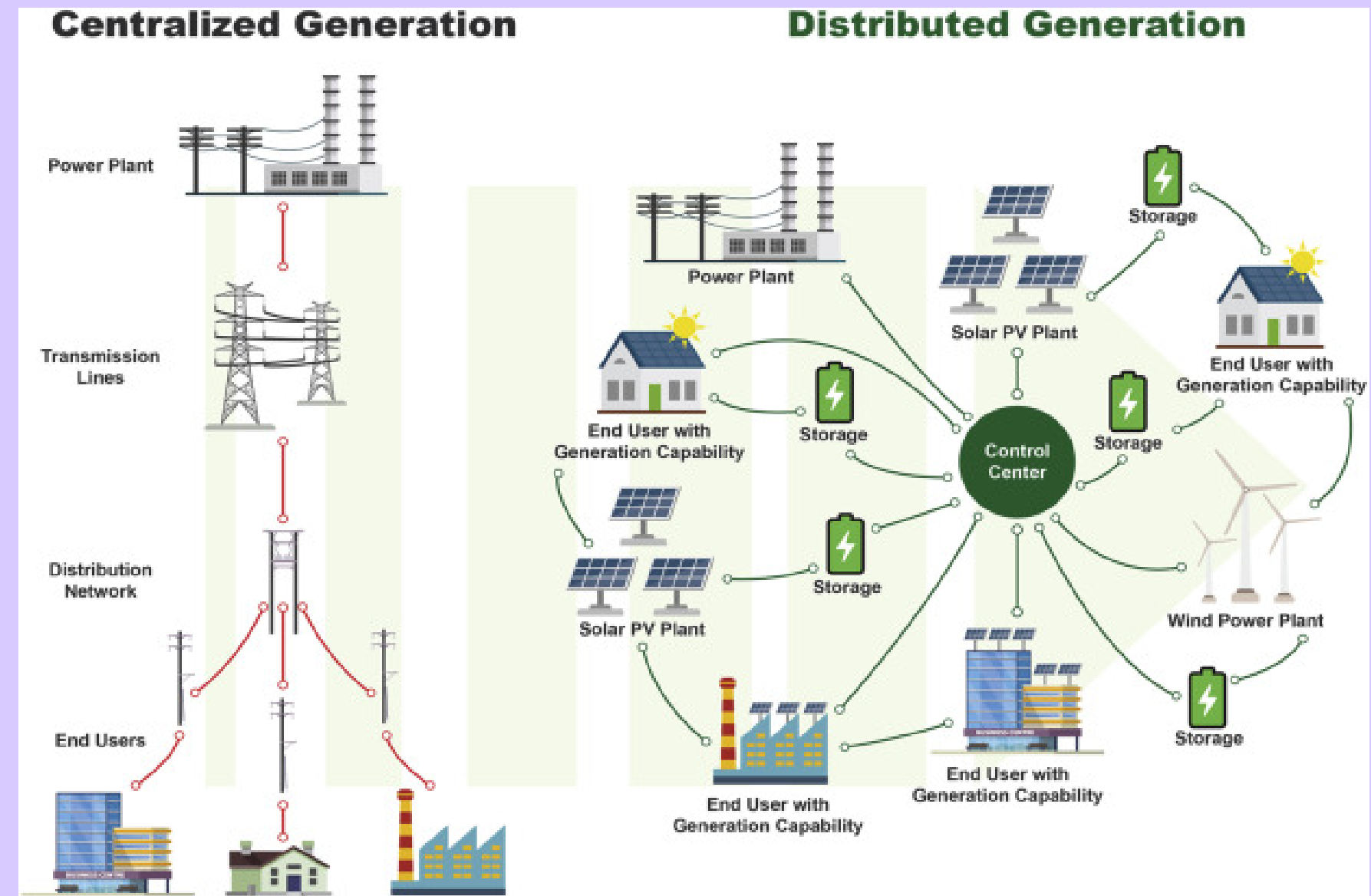


Source: KDC Energia, VTB Capital Research

**Does the only way to clean energy pass through heavy infrastructure investments?**

# No!

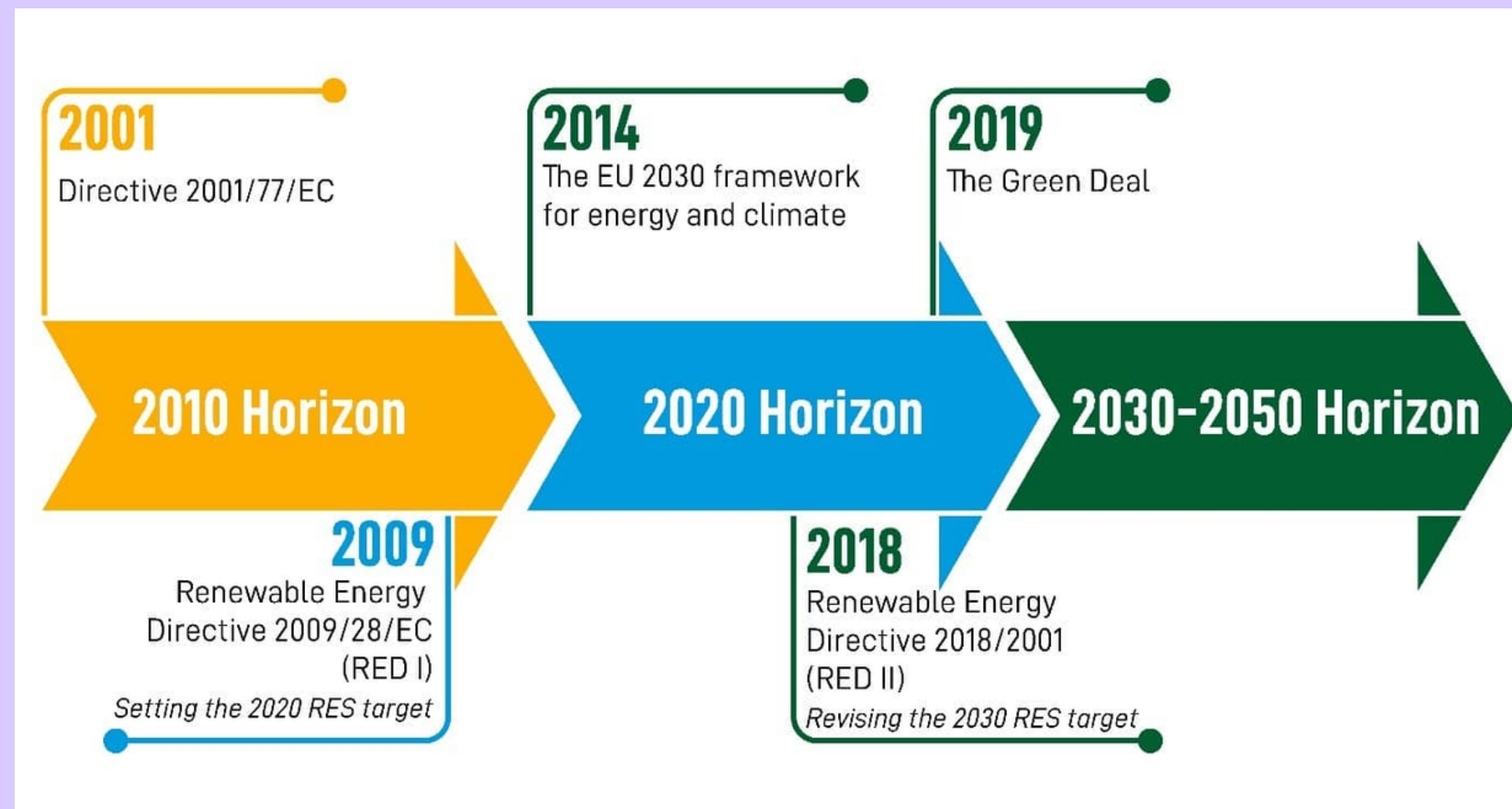
- Renewable electricity can be produced and distributed in a decentralized manner in the form of renewable energy communities (RECs)/minigrids
  - Benefits include:
    - Increasing clean electricity locally which can be used locally
    - Local ownership
    - Smaller investment needed, more flexible and attractive to smaller investors





# Framework in the EU

- Internal Energy Market Directive (IEMD)
  - Adds the concept of local energy communities as market players
  - Gives them a level-playing field against other players
- Renewable Energy Directive II (RED II)
  - Gives the right to citizens to prosume - consume and produce/sell
  - Provides financial and other incentives to citizens and entities to form cooperatives/RECs



**Table 4**  
The new governance model for energy communities under RED II and IEMD.

Criteria	Renewable Energy Communities pursuant to RED II	Citizen Energy Communities as defined in IEMD
Eligibility	<ul style="list-style-type: none"> <li>• natural persons,</li> <li>• Small and medium sized enterprises,</li> <li>• <u>local</u> authorities, incl. municipalities;</li> </ul>	in principle open to all types of entities;
Primary Purpose Member-ship	<p><i>“environmental, economic or social community benefits for its shareholders/members or for local areas where it operates, rather than financial profits”;</i></p> <p>voluntary participation open to all potential <u>local</u> members based on non-discriminatory criteria;</p>	<p><u>voluntary</u> participation open to all potential members based on non-discriminatory criteria;</p>
Ownership and control	<ul style="list-style-type: none"> <li>• effectively controlled by shareholders or members that are located in the <u>proximity</u> of the RE project;</li> <li>• is autonomous (no individual shareholder may own more than 33% of the stock).</li> </ul>	<ul style="list-style-type: none"> <li>• effectively controlled by shareholders or members of the project;</li> <li>• limitation for firms included in shareholders controlling entity to those of small/micro size (not medium);</li> <li>• shareholders engaged in large scale commercial activity and for which energy constitutes primary area of activity excluded from control.</li> </ul>

Source: Own elaboration.



# Success stories

Upper Austria Renewable Energy Agency

Best Practices:

- Development of a policy advocacy/project management department
- Energy Academy
- Social housing projects/passive buildings
- Innovation projects/hackathons
- Combination of need for heating, electricity and other needs/initiation of hybrid communities



# **Existing Landscape in the Fergana Valley**

# Uzbekistan

- Presidential decree for provision of financial/tax incentives towards small renewables installation
- Focus on solar

SOLAR RESOURCE MAP

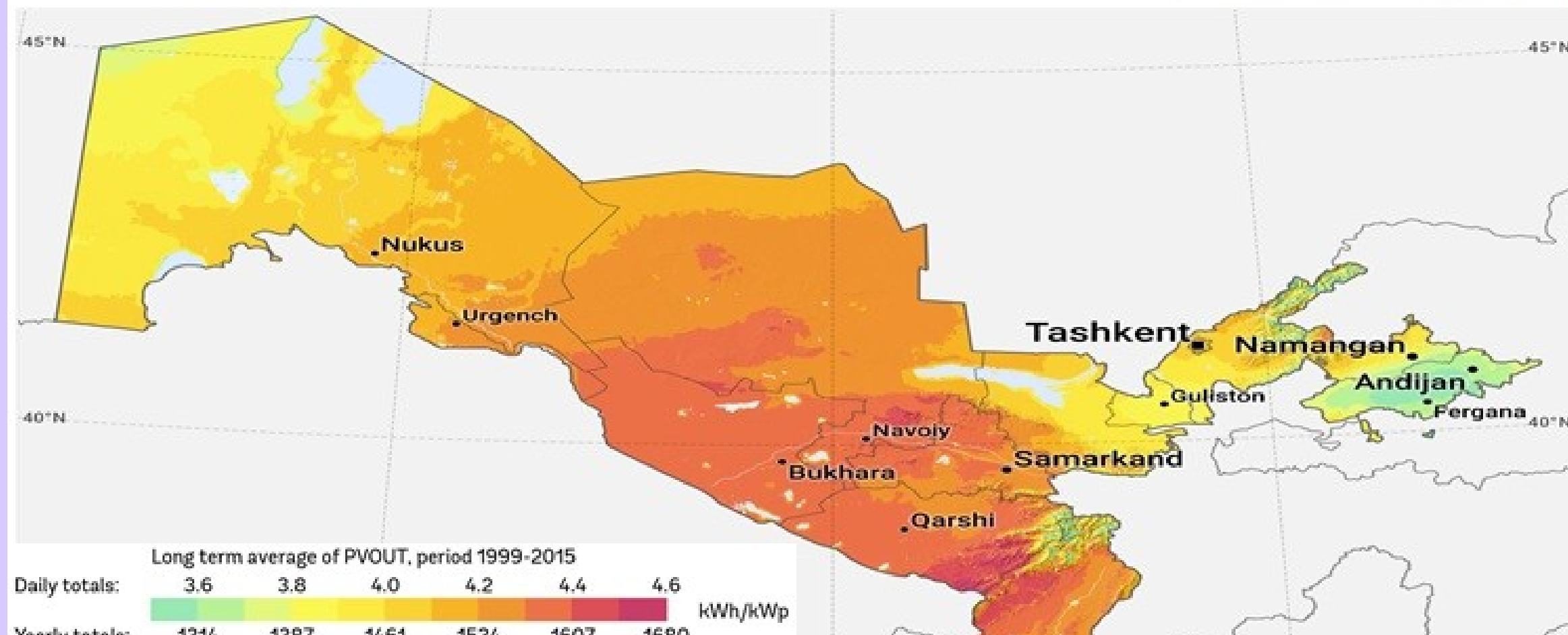
## PHOTOVOLTAIC POWER POTENTIAL UZBEKISTAN



IFC International Finance Corporation



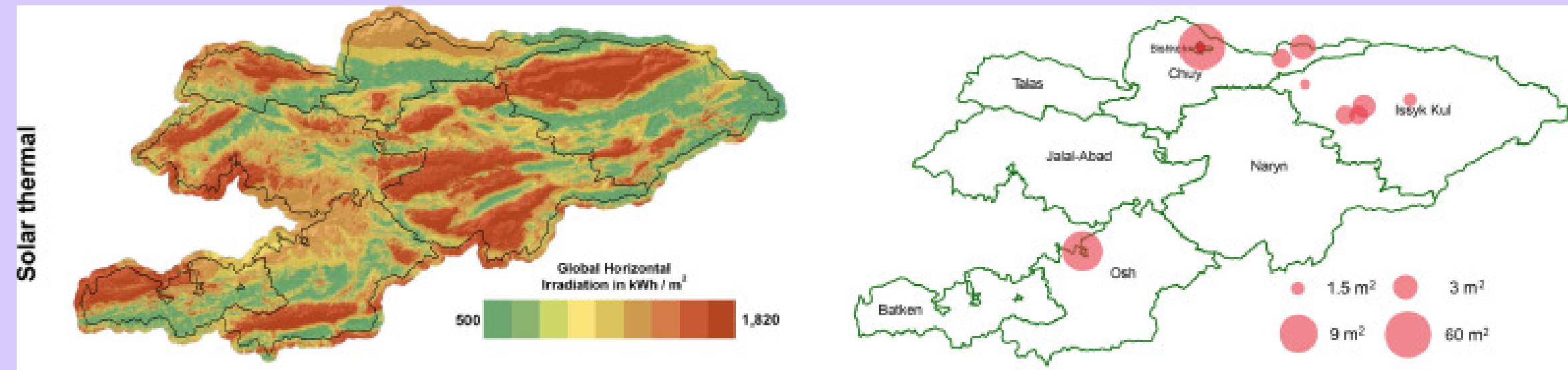
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# Kyrgyzstan

## Strategy for Fuel and Energy Sector Development

- Focus on small hydro
- Heat from Solar
- Biogas
- Wind

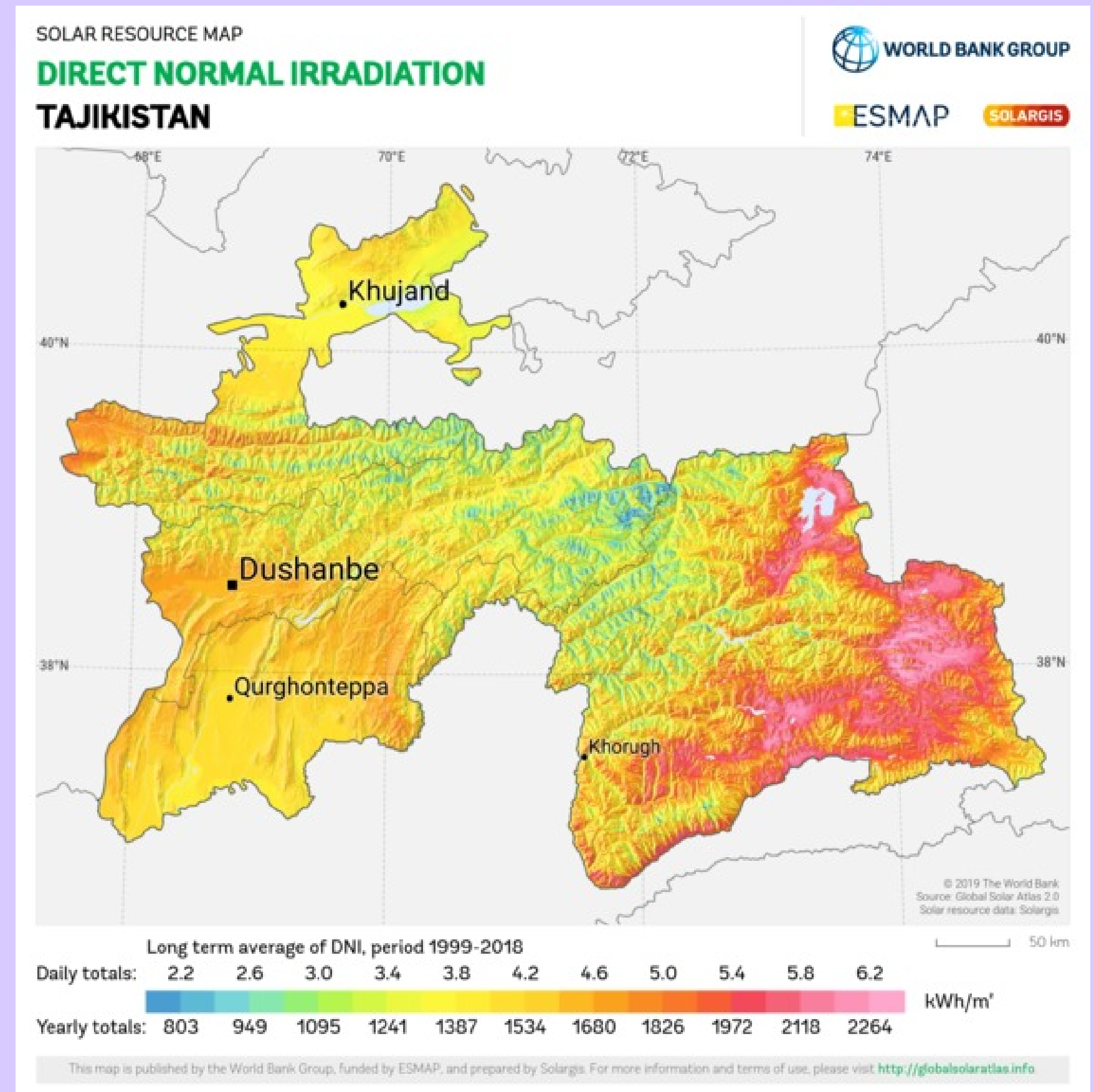




# Tajikistan

2030 strategy

- Small hydro
- Provision to support remote mountainous villages but no clear strategy apart from small hydro



# Policy Recommendations

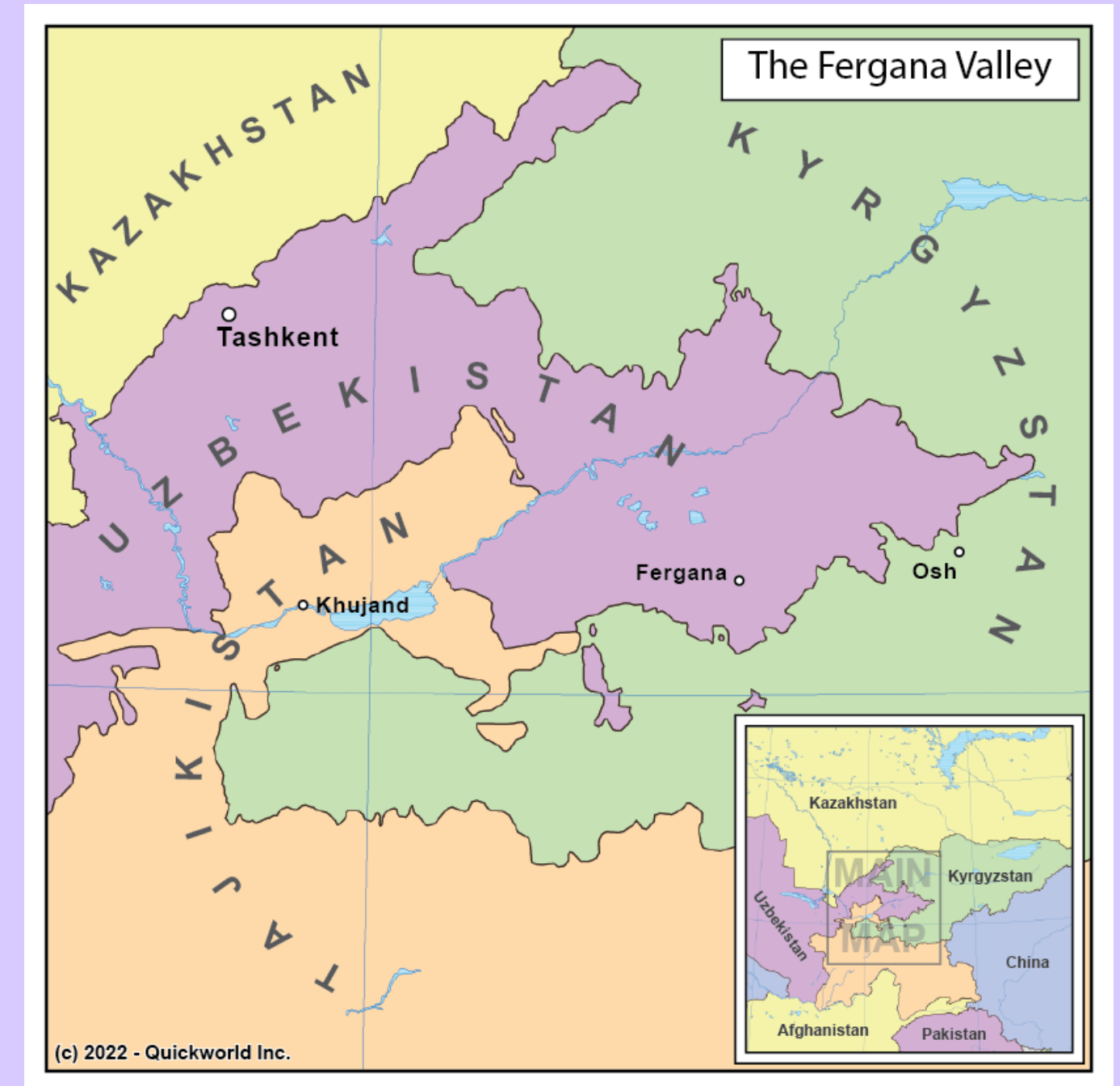
- CAREC Blueprint for RECs/CECs
- Adaptation to each context(country, region)
  - Focus on each region's strengths (e.g Tajikistan & geothermal energy)
  - This will be done after consultations, workshops, research
  - Provision for municipalities/local communities support
  - Provision for prosumership details
- National laws/Revision of Strategy

# Policy Recommendations (2)

- Sophisticated approach on incentives
  - Increasing of finance incentives
  - Expansion towards local ownership of biogas, geothermal and other high CAPEX forms
- Provision and introduction of Decentralized Finance structures
  - Fintech
  - Blockchain
  - Two main reasons:
    - Incentivize prosumership
    - Smart contracts for cross-smartgrid cooperation
- The importance of the role of training! The role of initiatives such as CAREC Bootcamp

# Prospect of a Cross-Border Fergana Valley REC

- Three minigrids connected through digital infrastructure for trade
- When one community has surplus it provides to the other
- A perfect example of environmental peacebuilding and building of trust





# Thank you!

Feel free to reach out and continue the conversation on LinkedIn, or on [dsgnpartners@gmail.com](mailto:dsgnpartners@gmail.com)