



U N
D P

TRACK 3.3 · INCLUSIVE INNOVATION AND TECHNOLOGY DEPLOYMENT

The ENHANCE Project

Enhancing Health and National Capacity with Solar Energy in Tajikistan

Yewon Kim · Former Green Energy and Livelihood Associate, UNDP Tajikistan

Asia Clean Energy Forum 2026 · 10 June 2026 · ADB Headquarters, Metro Manila, Philippines

Why I'm here today

When a maternity ward in the Pamir Mountains loses power for the third night this week, the question is not whether to deploy clean energy.

***The question is: who do we deploy it FOR
— and how do we make sure they are still standing the day the project ends?***

And how do we make sure communities don't just receive the technology — they own it?

TODAY

The crisis → the strategy → four lessons

When hospitals go dark, lives are at stake

Tajikistan: 93 % mountainous, energy-fragile, at the crossroads of Central Asia.

Issue: Health centers endure the same blackouts as households — incubators stop, vaccines spoil, surgeries halt.

—
1–4

hours of electricity per day

*in rural areas during winter
(Sep–Mar)*

—
90 %

of national energy from
hydropower

vulnerable to seasonal water decline

—
28 %

transmission and distribution
loss

from aging Soviet-era infrastructure

Why standard energy projects fail rural healthcare

Three overlapping gaps that make rural communities invisible to conventional clean-energy approaches.

01

INFRASTRUCTURE GAP

When grid power is rationed, urban areas are prioritized over rural ones.

Health centers lack 'high-priority' power status — pregnant women and newborns endure the same blackouts as households.

02

HUMAN-CAPITAL GAP

35 Adult Education Centers nationwide — none with a solar technology curriculum.

Without local technicians to install and maintain systems, the country stays dependent on imported expertise.

03

DIGITAL GAP

No real-time monitoring of energy load or system health.

Without an early-warning data system, maintenance is reactive — and even installed solar systems fall into disrepair.

ENHANCE: a dual-track strategy for resilience by design

Solarize healthcare AND build the workforce to sustain it — neither track works alone.

TRACK 1

Solar for Health (S4H)

Decentralized solar PV + battery systems

- 170 health facilities solarized
- Smart load-separation: essential loads run 24 / 7
- 1.5 MW solar capacity + 7.5 MWh battery storage
- Real-time digital monitoring at every site

TRACK 2

Capacity Development (CD4S)

Local workforce + national curriculum

- 20 Master Trainers + 1,000 certified technicians
- 3 solar training AEC centres across 3 regions
- Solar curriculum integrated into national AEC system
- 200 health-facility technicians trained for on-site upkeep

Anchored in NDS 2030, Decree No. 40 (mandatory solar for public buildings, 2024), and the Green Economy Strategy 2023–2037.

Track 1 — Smart load-separation: power what saves lives first

*Instead of replacing the grid, ENHANCE separates 'essential' loads from general loads
— balancing decarbonization with equitable access by guaranteeing what saves lives, 24 / 7.*

Solar PV + Battery (ESS)

ESSENTIAL LOADS

Powered 24 / 7

- Surgical equipment
- Test equipment
- Refrigerators
- PCs and printers
- Incubators

GENERAL LOADS

Grid-supported

- Heating equipment
- Air conditioning
- Other devices

AT SCALE

170 facilities · 3 regions

85 Maternity Health centres

78 AIDS / TB centres

7 Medical warehouses

1.5 MW solar + 7.5 MWh battery

Track 2 — Building a local workforce, not just hardware

Three solar training labs feed a national pipeline of certified technicians, with curriculum permanently embedded in Tajikistan's adult-education system.

HUB LAB

DRS (Districts under Republic Subordination)

National hub · Capital region

HUB LAB

Khatlon

Southern hub · Largest population

REGIONAL LAB

GBAO (Gorno-Badakhshan Autonomous)

*Pamir Plateau
· Most remote mountain region*

TRAINING PIPELINE

20

Master Trainers

1,000

Solar Technicians

200

Health-Facility Staff

800+

Awareness Participants

Inclusion-by-design: embedded, not added later

Inclusion is the architecture, not the decoration.

GEOGRAPHIC INCLUSION

Reach the unreachable

A dedicated lab in GBAO ensures the Pamir Plateau — the world's roof — gets the same training infrastructure as the capital area.

COMMUNITY OWNERSHIP

Build with, not for

Solar curriculum is integrated into the national AEC system — built with Tajikistan's vocational system. 200 health-facility staff are trained for on-site upkeep, alongside 1,000 local technicians and 20 master trainers.

GENDER & VULNERABILITY

Power the right rooms

85 maternity hospitals and 78 AIDS / TB centers are prioritized — anchoring access for women, infants, and high-risk patients.

POLICY & FINANCING

Use national leverage

Aligned with NDS 2030 and Green Economy Development Strategy 2023–2037.

Multi-stakeholder partnership: UNDP Tajikistan, donor, MoHSP, and MoLME.

Expected impact: a whole-system transformation

Project lifecycle 4.5 years · Implemented by UNDP Tajikistan (DIM) with MoHSP and MoLME as implementing partners

■
170,374

direct beneficiaries

rural patients across 170 facilities

■
135,977

women and infants

secured access to life-saving care

■
1,020

trained personnel

new green jobs in the local economy

■
1.5 MW

solar capacity installed

+ 7.5 MWh battery storage

■
3

Adult Education Centres

with nationally adopted curriculum

■
\$11 M

multi-stakeholder financing

*UNDP-led, donor-funded,
government-anchored*

Four lessons for replicating energy–health programs

Practical takeaways for practitioners working on energy access in fragile, mountainous, or low-grid contexts

Inclusive innovation isn't an outcome — it's an engineering choice made on day one.

01

Complement the grid — don't try to replace it.

Smart load-separation protects what saves lives — surgical equipment, refrigerators, incubators — while general loads stay grid-tied.

02

Pair every kilowatt of hardware with a kilometer of capacity.

Hardware without local technicians is a depreciating asset. Embed solar curriculum into the existing vocational system.

03

Use national legal mandates as the unlock — not as a footnote.

Tajikistan's Decree No. 40 (2024) requires solar in all public buildings. ENHANCE became fundable because it operationalizes a law already on the books.

04

Architect the partnership before the technology.

Institutional endorsement (MoHSP, MoLME) and policy alignment came BEFORE financing was finalized — donor commitments follow demonstrated mandate.



Thank you

Your questions and discussion are welcome.

YEWON KIM

Former Green Energy and Livelihood Associate · UNDP Tajikistan

Asia Clean Energy Forum 2026 · Track 3.3 · 10 June 2026