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Pilot in Lebanon – Byblos & Anjar

Lebanese Center for Energy Conservation (LCEC)

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INDEX

1 **National Context and Heritage Challenges**

Lebanon's energy situation, and the protected assets that shaped the siting at each pilot.

2 **Energy and Legal Framework**

The national framework for renewable energy and the legal vehicle chosen for the energy communities.

3 **Selected ESS / REC Approach**

The Byblos design and the Anjar design, and why each fits its site.

4 **Beneficiaries Engagement and Governance Structure**

Who benefits, who sits in the community, and how it is governed.

5 **Pilot Implementation**

Stakeholder engagement to date, approvals, and the road to procurement.

6 **Key Challenges and Expected Impact**

Open risks, and what the two pilots deliver for Lebanon and for replication.

Why energy communities, and why here

< 20%

of demand met by the public grid

$0.27

per kWh, up from about $0.095

2

UNESCO World Heritage towns

The grid meets a fraction of demand, so almost everyone runs a private diesel generator — costly, polluting, and a poor neighbour for a heritage site.

Public and heritage lighting is discretionary, so it is switched off first. In Anjar the lighting inside the ruins has been removed altogether.

Byblos and Anjar both live on their heritage. Unreliable power undermines the thing the towns depend on.

Byblos: one of the oldest continuously inhabited cities in the world



On the Mediterranean coast, about 37 km north of Beirut.

A town built on its own layers

- Jbeil in Arabic — inhabited without interruption for some eight thousand years.
- Neolithic, Phoenician, Roman, Crusader and Ottoman layers inside one walled site, with the Old Souk still a working market.
- Tourism is the town's economy — and unreliable power undermines it.





Byblos: solar and storage, shared across the town

133.9
kWp of solar

350
kWh of storage

206.7
MWh a year



A carport array on municipal land, feeding the museum, the cultural centre and the tourism office, the street lighting of the Public Garden, the Port and the Old Souks, and the homes and shops along the way.

The Municipality pays those lighting bills today. What it stops spending will fund maintenance — and free social and cultural activities for young people.

Design complete, site cleared, ready for procurement.

Anjar: a complete Umayyad city in the Bekaa



In the Bekaa Valley, roughly 50 km east of Beirut, close to the Syrian border.

A city built once, and left

- Where Byblos has many layers, Anjar has one: a complete Umayyad city of the early 8th century, built in a single campaign and abandoned within decades.
- Colonnaded streets, palaces, a mosque and baths on a Roman grid — a rare meeting of Roman and Islamic architecture.
- The Bekaa sees more than 300 sunny days a year — the stronger solar resource of the two pilots.





Anjar: solar and storage, and the lights back on

200

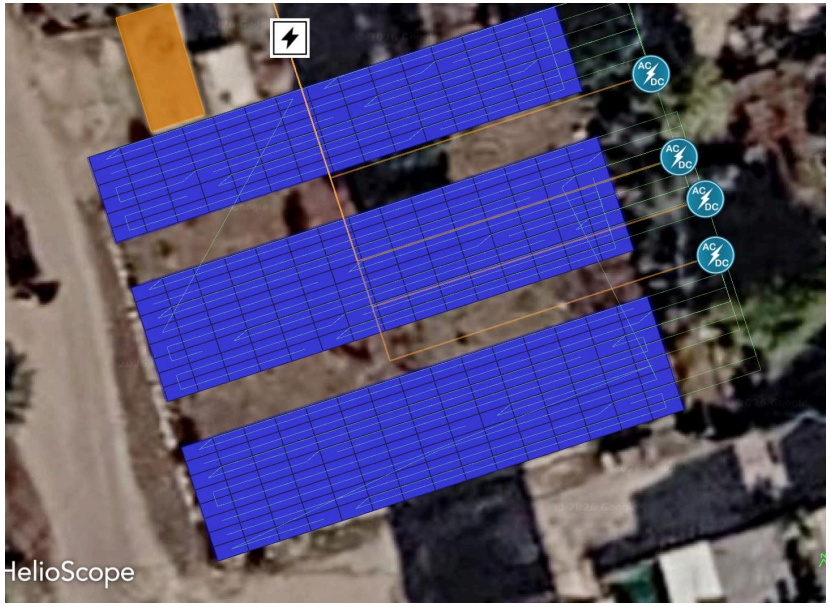
kWp of solar

400

kWh of storage

317.9

MWh a year



A renewable energy cooperative shared between the ruins, the Municipality, the schools and churches, and the surrounding homes and businesses.

New lighting inside the ruins, LED street lighting around it, and the safety and longer opening hours that come with them.

The design is under revision following changes we found on site.

Heritage sets the boundary — the PV goes outside it

Byblos — World Heritage property

Castle, Roman theatre, harbour and the town within the walls

≈ 350 m

Public Garden and the coastal road

The pilot parcel

Municipal land inland, a carport over an existing car park

Anjar — the walled Umayyad city

Ramparts, palaces, mosque, baths and colonnaded streets

protection band under expropriation

≈ 480 m

agricultural land

The generation area

Outside the walls, with lighting inside the ruins

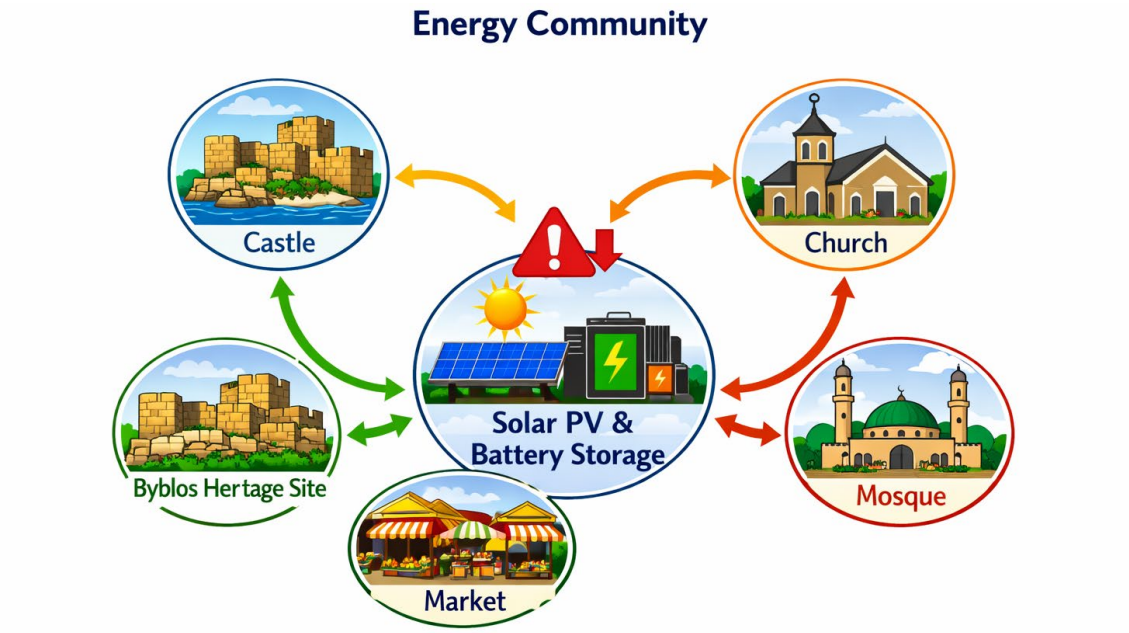
Heritage
DGA verbal approval of siting at both pilots.

Legal
No REC in Lebanese law — an association or cooperative instead.

Grid
Storage is what makes sharing work on this grid.

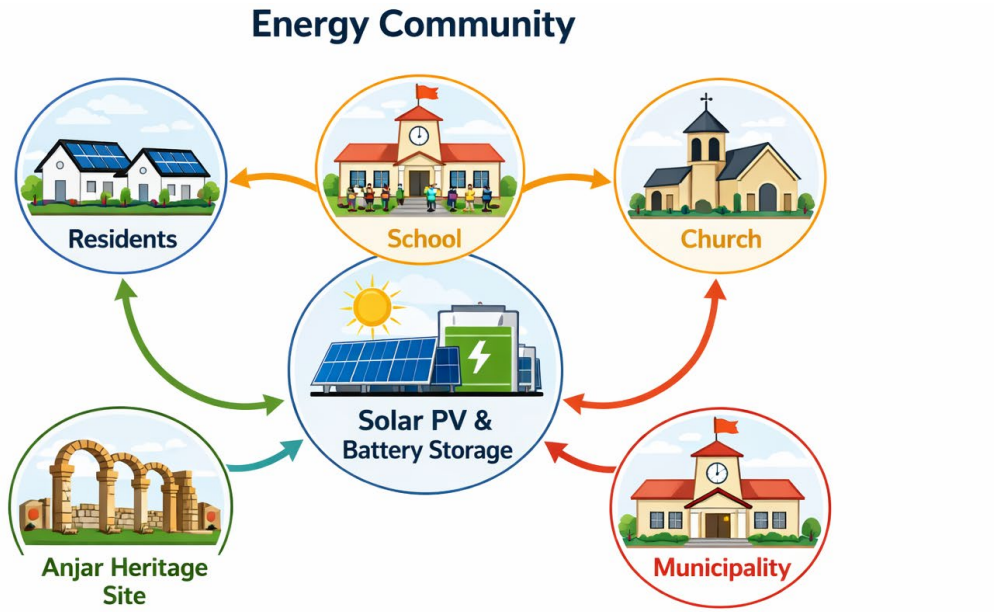
Two communities, proposed by the towns themselves

BYBLOS



Residents, the market and the souks, the castle and heritage site, the church and the mosque.

ANJAR



Residents, the school, the church, the Municipality and the heritage site.

Both memberships were proposed by the Heads of Municipality themselves — a residents' representative, the churches and the mosque or schools, the official bodies, and the Municipality.

Ten months of stakeholder engagement

21 Oct 2025 — Anjar Municipality

Project introduced; lighting in the ruins requested.

23 Oct 2025 — Byblos Municipality

Project introduced; lighting near the castle requested.

12 Dec 2025 — DGA, Ministry of Culture

Siting approved for both pilots.

15 Jul 2026 — Byblos Municipality

Solution detailed; beneficiaries identified.

23 Jul 2026 — Byblos Municipality

Pilot endorsed; community membership proposed.

27 Jul 2026 — Anjar Municipality

Site changes confirmed; design to be updated.



Anjar, October 2025



Byblos, July 2026



Byblos, July 2026



Anjar, July 2026

Next: written DGA approval on submission of the design documents · RFP for the works, timing dependent on the Anjar technical update

What the two pilots deliver

525 MWh

of clean electricity a year across the two pilots, and roughly 370 tonnes of CO_2 avoided.

Heritage off diesel

Public and heritage lighting in two World Heritage towns, supplied by solar instead of generators — safer sites, longer opening hours, more footfall for the shops around them.

A model that travels

The first municipal energy-sharing communities in Lebanon, in a legal form any other municipality can copy.

Byblos and Anjar will show how a renewable energy community can serve a historic town without touching what makes it historic.

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