

Sunrova — Project Paper

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This paper is not an offer. No Sunrova token is being sold, and none is offered to the public. Sunrova promises its holders no profit, dividend, interest, revenue share or buy-back. This paper describes a project at pilot stage; any future public offer would be made only under the applicable rules (in the European Union, the MiCA Regulation) and with its own document.

1. The problem

South of the Sahara, around 600 million people live without electricity, in some of the sunniest places on Earth. The region accounts for most of the world's electricity-access gap, and progress has slowed.

Money is not the only thing missing. Three things go wrong again and again:

1. **The money thins out on the way.** A donation passes through several intermediaries before any of it reaches a roof.
2. **Systems stop working.** Panels and batteries are installed, and a few years later many no longer produce, because maintenance was never funded or never checked.
3. **No one can see the result.** The person who paid rarely learns whether the system works today, and the public almost never does.

2. What Sunrova does

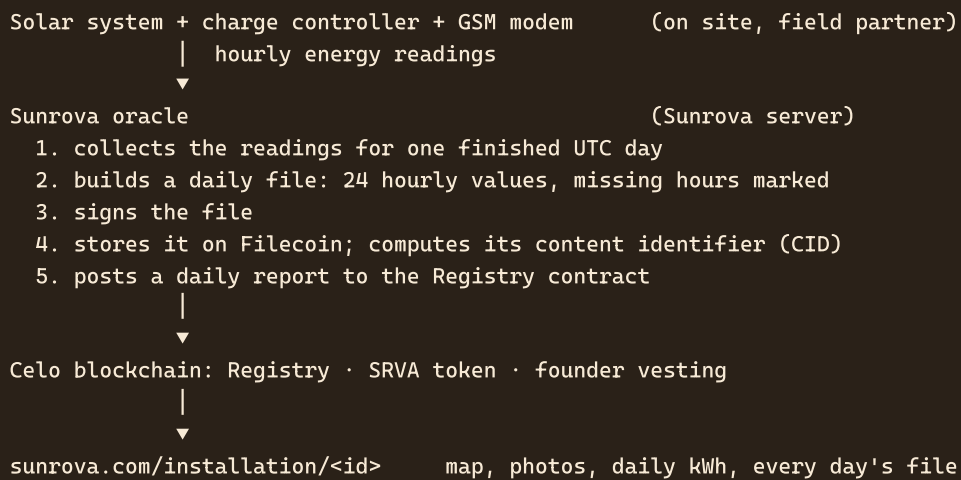
Sunrova funds off-grid solar systems for schools, health clinics and village water pumps, and makes every system's daily output public.

- **88% of every contribution goes to the installation**, through a vetted local partner that builds and maintains it. **12% is the operating fee**: fixed, public, and written into the contract that receives contributions.
- **Every system is public**: where it is, what it is (panel capacity, battery), photos, and its meter.

- **Every day of output is recorded** on a public blockchain from the system's own meter data, with the raw data file stored where anyone can download and check it.
- **A dark day is visible too.** If a system produces nothing, or its meter sends no data, that day is recorded as such, not skipped. Maintenance follows.

Sunrova does not promise returns. It promises a record: every day, anyone can see whether what was paid for turned into electricity.

3. How it works



3.1 On site

Sunrova does not build its own hardware. The field partner's charge controller and remote-monitoring service provide hourly energy data, which the oracle reads through the partner's interface.

3.2 The daily file

For each installation and each finished day (UTC), the oracle writes one file: the 24 hourly energy values in watt-hours, the number of missing hours, the total, the system's capacity, the data source, and a physical plausibility check (section 4). The file is canonical JSON, so the same data always produces the same bytes.

The oracle signs the file with its Ethereum-compatible key. The address that signs is the same address the Registry allows to post reports, so anyone can check who vouched for the numbers.

3.3 Filecoin and the CID

The file is stored on Filecoin. Its **content identifier (CID)** is a fingerprint of its bytes: change one digit in the file and the CID changes. The CID goes into the on-chain report, so a file cannot be quietly replaced later. Anyone can recompute the CID from the file and compare.

3.4 The Registry

The Registry contract on Celo holds:

- **Installations:** id, capacity in watt-peak, a hash of the published location record, and the CID of the photo set.
- **Daily reports:** installation, day, watt-hours, missing hours, CID.

Rules enforced by the contract:

- A day can be reported **only once it is over**, and **only once**.
- A day with no data is still reported (0 Wh, 24 missing hours).
- A mistake cannot be erased. A **correction** is a separate record with a written reason, and the original stays visible.
- Only the oracle address can post; the admin (a multi-signature wallet) can grant and revoke that right.

3.5 Why Celo

Celo is an Ethereum layer-2 network with very low fees and a mobile-first ecosystem in Africa, including the MiniPay wallet used in Kenya, Nigeria and Ghana. Recording a day costs a small fraction of a cent. The contracts are standard EVM code and can move to another EVM network if needed.

4. Trust: what if Sunrova is wrong, or lies?

The oracle is run by Sunrova, so it is the weakest link. The design does not ask anyone to trust it blindly:

1. **Open raw data.** Every day's file is public and fixed by its CID.
2. **Device signatures.** Where the field partner's controller can sign its own readings, that signature goes into the file; numbers invented later would not match it.
3. **Physical limits.** A system cannot produce more than its capacity times that day's sunlight (taken from satellite irradiance data). Each file carries this ceiling; a day above it is flagged on the public page.
4. **Independent visits.** Once a year, someone independent of Sunrova (a sponsor, a local NGO) visits the site and photographs the meter; its total is compared with the on-chain total.
5. **Silence is recorded.** A day without data is published as a day without data.

5. The SRVA token

Item	Detail
Name / symbol	Sunrova / SRVA
Network	Celo
Supply	100,000,000, minted once at deployment. No mint function exists.
Public	70%
Founder	15%, held by a vesting contract: nothing for the first year, then linear to year four. The schedule is fixed at deployment and visible on-chain.
Project treasury	15%, in a multi-signature wallet, used gradually for operations and growth.
Fees on transfer	None

What the token is not. SRVA pays no dividends, no interest and no revenue share, and Sunrova will not buy it back. Holding it gives no claim on Sunrova's income or assets. Its purpose is to fund installations and to let supporters follow them.

No sale during the pilot. The pilot is funded by sponsors. A token sale would come only after the pilot produces and is visible on-chain, after an independent security audit of the sale contract, and after legal review in the jurisdictions concerned.

6. How Sunrova sustains itself

- **Operating fee, 12%.** Pays for operations, monitoring and maintenance. When a sale contract exists, the 88% / 12% split will be fixed in its code: it cannot be changed, and anyone can read it.
- **Corporate sponsorship.** Companies fund named installations and receive a public meter page and an impact report for their sustainability reporting.
- **Founder allocation.** 15%, vested over four years as above.

Sunrova does not sell carbon credits or renewable-energy certificates; the systems are too small for those markets to work in their favour.

7. Roadmap

Stage	What happens
Now	Design, contracts and oracle written and tested; name and domain secured.
Testnet	Contracts on the Celo testnet; the oracle runs against recorded meter data; public page prototype.
Pilot	One real system at one school or clinic, proposed in Kenya, with a field partner; 30 days of daily reports on Celo mainnet.
Review	Data gaps, plausibility flags, cost. Then a decision on the token and any sale.
Growth	More installations, more sponsors; a second country (Malawi is a candidate).

8. Risks

Risk	Mitigation
Mobile network outage, data gaps	The controller stores data locally; gaps are recorded, never filled in.
Oracle key compromise	Key held separately; the admin multisig can revoke it.
Contract bugs	Small contracts on audited libraries (OpenZeppelin), tests, independent audit before any sale.
A system breaks	Maintenance is funded by the operating fee; downtime is public.
Regulation	No sale and no return promise; legal review before any offer; MiCA document if an EU offer is ever made.

9. Contracts

Contract addresses will be listed here when deployed (testnet first). The source code and tests are published with them.

10. Contact

hello@sunrova.com

Every sunrise counts.