



From Problem to Progress

On the Road, Connected to What Matters

Restoring Solar Monitoring Access Anywhere



Gravel Ride



5G / LTE



Solar Monitor



Home Assistant



Tailscale



Problem Solved

Swim
Bike
Sleep



The Challenge

Lost SunPower cloud access after bankruptcy



SunPower cloud/app no longer available



Needed a reliable way to monitor solar production



Wanted to check solar data during 50-mile gravel rides (around mile 14)



Must work on 5G/LTE off home Wi-Fi



The Solution Architecture

Self-hosted, private, and accessible anywhere



SunPower PVS5

Solar Inverter
(Continue operating locally)



Home Assistant

Enhanced SunPower Integration
Solar Sentinel
(Local monitoring)



Tailscale

Secure remote access
(Private network)



iPhone (5G/LTE)

Check solar data anywhere



Windows Laptop (Tailscale)

Browser access

(<http://homeassistant-tx.tail3f76f1.ts.net>)



Why It Works

You own your data and access



No dependency on SunPower cloud



Works over 5G/LTE (away from home)



Access via Tailscale hostname (homeassistant-tx.tail3f76f1.ts.net)



Secure and private (no public exposure)



Real-time solar production on the go



Works on browser (iOS app to be resolved later)



Troubleshooting Journey

Systematic testing, step by step

1

Initial Problem



Could not access HA via Tailscale using :8123

2

Check Network



Verified HA network (192.168.1.159)
Docker network (172.30.32.0/23)

3

Test Connections



Tried ports:
• 8123 ❌
• 80 ✅

4

Found Clue



HA Core port: 80
curl to homeassistant.local returned 405 (Method Not Allowed)

5

Test Tailscale



Port 80 reachable via Tailscale (TcpTestSucceeded: True)

6

Try Hostname



Used homeassistant-tx.tail3f76f1.ts.net
✅ Works!

7

Verify on Mobile



• Accessed via iPhone 5G/LTE
• Watched solar data
Confirmed not on Wi-Fi hotspot
✅ Success!



Key Lessons Learned

Better troubleshooting for the next time



Test the simplest known-good method first (hostname vs. IP and port)



Separate layers: network → port → HTTP → authentication



Let evidence replace assumptions



A failed hypothesis is still useful information



Verify under real-world conditions (5G/LTE, on the road)



The goal wasn't just connectivity — it was restoring a meaningful part of the daily ride ritual



The Ride Ritual

Technology that fits real life



12:00 PM
Leave for 50-mile gravel ride (TX)



Around Mile 14
Stop for a break



Enjoy a Clif Bar



Open Home Assistant via Tailscale (on 5G/LTE)



Check solar production (Solar Sentinel)



Continue the ride with peace of mind



The Result

Freedom to monitor, anywhere



Solar data on your terms



Works on 5G/LTE



Accessible during rides



No cloud dependency



Secure & private



A glorious feeling!

Mile 14 and the sun is producing!
That's a win. 🚴🌞

