Tailwynd Beta — Field Guide

A tester's manual for the wind-aware EV range predictor

Tailwynd is an iOS app that predicts how wind, terrain, and weather will affect an electric vehicle's range — before the drive, and while it's underway. It is currently in free public beta, and tester feedback feeds directly into the model.

Joining the beta: install Apple's free TestFlight app, then join at testflight.apple.com/join/KXeU5cnZ. iPhone required; iOS 18 is recommended — the live trip card needs it.

What it does

Tailwynd takes your route and runs a physical energy model over it: wind (including crosswind, which matters more on tall, boxy vehicles than most drivers expect), every climb and descent, thinner air at altitude, heating or air-conditioning load from the forecast temperature, and stop-and-go losses in town. The result is expressed in the unit that actually matters on the road: **range miles**, not energy percentages. It reads: *"This 788 mi trip will use about 828 mi of your range."* Compare that number with your dash and you know where you stand. If you have entered your current charge, it goes a step further: *"Charge reaches about 220 mi of 788 mi — plan a charging stop."*

The app also learns your vehicle. Log your battery percentage before and after drives, and it calibrates to your actual consumption — your tires, your load, your driving style. The model has been validated on multiple 900+ mile road trips; on one 157-mile leg it predicted the range cost within half a percent and the arrival time within 36 seconds. It has also missed on occasion — mostly near thunderstorms, where forecasts genuinely break down — and the trip-logging features below exist precisely to capture those cases.

Five-minute setup

1. **Install from TestFlight**, open the app, and allow location access — or don't; you can type a start address instead.

2. Tap the **vehicle capsule** — the default is Pickup. In the same menu, choose **Battery capacity** and enter your usable pack size: about **131 kWh** for the Extended Range, about **98 kWh** for the Standard Range. This single entry anchors all of the app's energy math.

3. Tap the **battery capsule** and enter the charge percentage your dash shows. Battery entry is manual by design: no vehicle account, no cloud connection to your truck. Connected-car integration was tested during development and proved unreliable; typing the two digits from the dash is faster and works identically for every EV brand.

Planning a trip

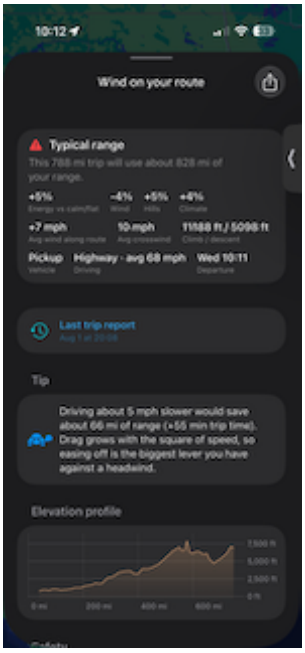
Enter a destination and the app produces:

• **The verdict banner** in plain words, plus the range-miles line. “Typical range” means conditions are ordinary; “Expect noticeably less range” means take it seriously.

• **Wind arrows on the map** at checkpoints along the route, each forecast for the hour you will *actually* pass that point. With the departure-time picker (up to 5 days out), a trip planned for the day after tomorrow is priced against that day's weather, not today's.

• **The details page** — the full elevation profile, per-checkpoint winds and temperatures, the signed push number on every row (+ helping, – opposing), and a **slow-down tip** when it is worth showing: on a Dallas→Denver test route, driving 5 mph slower saved about 66 miles of range for 45 extra minutes.

Trip verdict, range-miles banner, and wind arrows



Details page: elevation profile and checkpoint winds

• **Chargers with reach** — enable the Chargers toggle and stations appear along the route, colored by whether your *current* charge is predicted to reach them. Tapping one reroutes the trip to that charger; the ✕ button returns to the original destination.

Chargers along the route, colored by reach

Detour to a charger, with ✕ to return

• **Weather hazards flagged by mile** — official National Weather Service alerts, not generic rain chances. Flash floods, severe thunderstorms, and air-quality alerts each appear with the mile range of the route they cover.

• A **share button** that renders the trip as a clean card image — verdict, elevation profile, checkpoint winds, battery estimate — for records or for sharing.

The drive

Tap the navigate button to hand off to Apple Maps, and a **live trip card** appears on the Lock Screen, in the Dynamic Island, and on CarPlay — whole-trip estimate, miles remaining, ETA, and the current wind with an arrow (up = helping, down = opposing). The card alternates the wind line with the slow-down tip so both get screen time.

While you drive, the forecast refreshes every 15 minutes. If the wind meaningfully changes the trip, the card raises an alert and states it plainly: **“Winds save 21 mi of range”** in green, or **“Winds cost 9 mi extra range”** in red. A quiet card means a steady outlook. The card also shows a small **terrain graph of the next 30 miles**, so a long climb never arrives unannounced — and if severe weather sits on that stretch of road, it is drawn as a red mark at the exact point where you will meet it.

One deliberate behavior near thunderstorms: the card may show **“storm outflow — winds variable”** instead of a direction. A storm's outflow can swing the wind around the full compass within an hour, and no forecast tracks that reliably. The app reports the honest situation — strong and variable — rather than displaying a confident arrow that may point the wrong way.

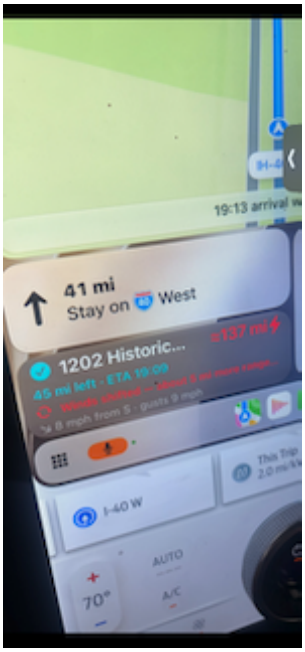
After the drive — where testers help most

Open the details page → **Last trip report** → **Log battery levels**, and enter what the dash shows. The report then presents the complete picture: charge used, kWh drawn from the battery, your measured

mi/kWh, what the uncalibrated model expected, and **“Expected with learning”** — the prediction after the app has calibrated to your vehicle. Over a few logged drives, that last number should converge toward your dash.

Then use the **share icon** on that report and email the text export to **support@tailwynd.autos**. It is about a dozen lines — distance, winds, battery, measured versus expected — and every submission improves the model. The most valuable trips: **windy-day drives, mountain routes, hot-afternoon A/C loads, towing, and any trip where the verdict felt wrong.** A one-line note of context helps (“bed loaded,” “cruise set at 75,” “hail en route”). There is also a **Forecast check** button that, roughly five days after a drive, retrieves the observed-weather archives and reports whether the forecast or the model was responsible for any miss.

Post-trip report with measured vs. expected



The live trip card on CarPlay

The fine print

No account, no sign-up, no ads, no tracking. Trips and battery logs are stored on your phone and nowhere else; weather lookups send route coordinates and nothing about you. The official alert feed is US-only (forecast-based hazard screening works worldwide). The app speaks five languages, supports miles or metric, and works with any EV — it simply happens to have been developed and validated in an F-150 Lightning.

Please read this part: everything Tailwynd shows you is a *prediction* — an additional data point for trip planning, not a fact. Especially at this stage of development, treat range and arrival estimates as an aid to your judgment, not a substitute for it: keep a conservative charging margin, and rely on your vehicle's own instrumentation and your own experience when making decisions on the road.

Beta link: testflight.apple.com/join/KXeU5cnZ
Website / privacy / support: tailwynd.autos