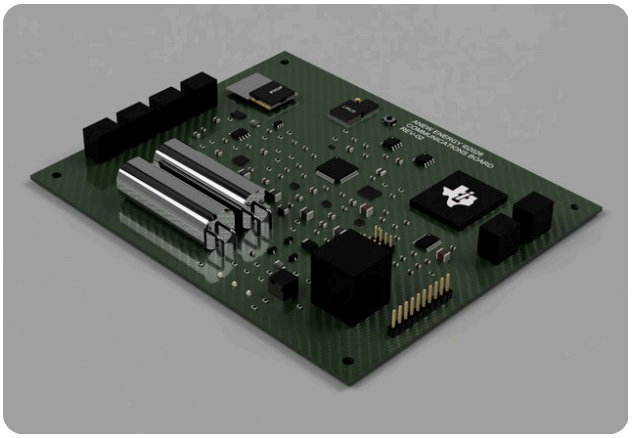
ANEW Communications Platform

◷ Available 2028



The ANEW Communications Platform — the E2X sync node. One board gives every generator, transformer and distribution point a hardware-anchored identity, a signed measurement, and one always-online record that dashboards, lenders, carbon registries and warranties all read from.

Why one node at all four points Put a different meter at each boundary and you get four datasets that argue with each other — different sample rates, different clocks, different trust. Put the same node at all four and you get one timeline you can subtract along: generated minus converted minus stored equals delivered, with every term signed by the hardware that measured it. That is the whole point of the board. It is not a radio bolted onto a product; it is the instrument that makes the products into a system. Monitoring & Market Settlement Measure. Sign. Settle. An electron is worth more when you can prove where it came from. Carbon credits, tax credits, power purchase agreements and green lending all price the same underlying question: can this number be trusted? Three steps answer it — and ANEW only performs the first two. 01 Measure at the source The board measures at the device, not at a gateway or a cloud aggregator. Nothing is inferred from a downstream total, so there is no step in the chain where a number could quietly become an estimate. 02 Sign with the silicon Each board carries a hardware-anchored, clone-resistant identity — a physically-unclonable function, derived from the microscopic manufacturing variation unique to that chip. It is never written to the board, so it cannot be copied off it. Every measurement leaves signed by that identity and stamped with a disciplined time. 03 Settle in the market Banks, carbon registries, warranty desks and grid operators read those signed records through an open, read-only data interface — and settle on them in their own systems. The record is the evidence; the market does the trade. Why a Physical Unclonable Function instead of a stored key A key written into memory is a key that can be read out, cloned onto a counterfeit board, and used to mint production that never happened. A Physical Unclonable Function is not stored anywhere — it is measured from the chip itself each time it is needed, and it disappears when the power does. ANEW's design uses two Physical Unclonable Functions — one on the measuring side and one on the communications board — and both must authenticate before any transaction is accepted. That matters most where the money is: if a lender is advancing capital against a device's future output, the device's identity is the collateral. Clone-resistant identity is what lets a signed kilowatt-hour be underwritten instead of merely reported. What ANEW does not do

ANEW produces trusted measurements. ANEW does not trade, settle, custody or move money, and the data interface is deliberately read-only and non-transactional: a consumer can verify that a device produced a given quantity with a valid signature; it cannot instruct ANEW to pay anyone. A household's production, location and usage belong to that household. Nothing leaves without consent, and the public scan-a-unit view shows lifetime clean energy and carbon status — never an owner's location or their financier. Language we hold ourselves to: device identity is "hardware-unclonable, clone-resistant" — never "hackproof." Generation is shown as a band, never a single headline number. The platform produces trusted measurements; it does not trade. Who reads the record What the trader and the grid operator take from this board. Once an electron is provable, four very different readers use the same number: the trader who sold it ahead of time, the grid operator who has to keep the local transformer inside its limits, the buyer who pays for it, and the registry that turns it into a certificate. None of them has to trust the others' spreadsheet, because there is only one record and the hardware signed it. Communications boardat the generator, the transformer,the store and the export pointone clock · signed quarter-hoursread-only interface Aggregator / traderforecast · day-ahead schedule · imbalance Grid operatortransformer loading · curtailment · connection study Off-taker and paying agentdelivered × strike = invoice · coupon release Registriesone certificate per MWh · carbon credits Wholesale market · PPAthe position is sold and settled Steady statefrequency and voltage held · sitesapproved or curtailed Cashmonthly payment → coupon →remainder to the site owner Attributescertificates and credits sold ontheir own venues ANEW measures and signs. Everyone else trades, settles and dispatches in their own systems. Signed meter dataContracts and attributesGrid operationsMoney For the traderSchedule, deliver, reconcileWholesale power is sold in quarter-hour or hourly blocks a day ahead. The aggregator forecasts the fleet from metered history, nominates a schedule to the system operator, and pays imbalance on the difference between schedule and delivery. Disciplined time-stamps and gap flags on the board are what make the delivered number defensible in that settlement. For the grid operatorLoading at the transformer, on one clockThe node at the Any Energy Transformer measures both sides of the crossing, so the distribution operator can see feeder loading, voltage and the storage dispatch profile as a trend rather than a guess. That is the evidence for a hosting-capacity study, a flexible connection agreement, and targeted rather than blanket curtailment when a substation is full. For the buyerDelivered times strike priceAn off-taker pays for metered delivery under the PPA; a distributor credits metered export at the regulated tariff. A period with lost communications is flagged, never estimated, and a unit trades only while its metering circuit carries a valid calibration record against a named standard. The paying agent releases the coupon on exactly the same record. For the specialist · settlement periods and boundaries Imbalance settlement runs on 15-minute periods across most of continental Europe, 30 minutes in Great Britain and 5 to 60 minutes across US markets; the board's quarter-hour intervals roll up to any of them. The interface is read-only and non-transactional: a grid operator can read loading and a trader can read production, but neither can instruct the board to pay, dispatch or curtail through ANEW. Dispatch

instructions travel from the operator to the aggregator to the site's own controller. ANEW produces trusted measurements; it does not trade, settle or move money. The whole chain, from meter to market → How one trade settles, step by step The Funding Side How a board gets a project funded. The hardest part of financing clean energy for people conventional lenders leave out is not the interest rate — it is proof. This board is where the proof comes from, and ANEW's software is what carries it to capital. Step 01 Born at the factory A device comes to life when its communications are validated and its calibration is stored. That birth record — signed — is the first entry in a life story that runs to retirement. Step 02 Bound to its funding Only a born device can be bound to a funding source. The dashboard and the public vitals view show that a unit is financed — never by whom. Step 03 Commissioning releases the money The signed commissioning attestation is the single seam that releases escrow and starts the warranty clock. One event, verified by the hardware, moves the project from funded to operating. Step 04 Production repays it From then on the same signed stream is the repayment record, the carbon ledger and the warranty evidence. If a unit is ever replaced, the successor inherits the binding. One record, four readers The same signed measurement is simultaneously the customer's dashboard, the financier's settlement input, the carbon or tax-credit provenance, and the warranty's evidence. Nobody has to reconcile four systems, because there is only one number and it is signed. That is the reason a community that cannot qualify for a conventional loan can still be underwritten: the asset reports on itself, continuously, in a form a lender can verify. Failing toward power If connectivity drops, power keeps flowing. A pay-as-you-go arrangement is never allowed to cut a household's electricity because a cell tower went down — the dashboard shows a graceful comms-lost state, and the records catch up when the link returns. Offline is a normal operating mode in the places this matters most, so it is designed for rather than treated as a fault. Funding structures shown are illustrative and are not an offer of securities, credit, or any financial product. Availability depends on jurisdiction, licensing and partner arrangements. Power Management A node that runs the point, not just watches it. At a generator The node reports output against the unit's own factory calibration curve, so a soft month reads as weather rather than as a fault. It carries the reset and program lines for the equipment it is mounted in — a stuck unit can be brought back over the bus instead of by driving to it. At a transformer Conversion is where losses hide. The node measures both sides of the crossing on one clock, so efficiency is observed rather than assumed, and drift shows up as a trend long before it shows up as a failure. At a store Charge, discharge, throughput and cell health ride the same CAN pair the battery management system already speaks, so storage joins the record without a second network. At a distribution point Delivered energy is metered where it is delivered — a pole, a charger, an export point. That closes the loop: a site can see generated, converted, stored and delivered as one balance, and find the gap when they do not agree. Finding the one unit that needs attention On a site with dozens of units, the problem is rarely knowing that something is wrong — it is knowing which one. A technician filters to the ticket, homes in on the faulted unit by Bluetooth signal strength, and confirms it by scanning the unit itself.

The last hundred meters are the part that usually costs a day. The Spec Sheet Built to stay connected. Communications & Trust

Wired buses	**CAN Bus + RS-485, multi-drop twisted pair**
Wide-area	**LTE Cat-M1 / NB-IoT with satellite positioning**
Local link	**Bluetooth LE, integral antenna**
Site mesh	**Long-range LoRa (fitted per site)**
Expansion	**10-pin SPI / UART / GPIO · 4-pin I²C sensor**
Umbilical	**M12 5-pos A-code shielded cordset**
Identity	**Hardware-anchored, clone-resistant (Physical Unclonable Function)**
Data out	**Signed, timestamped records · open read-only interface**

Power & Function

Inputs	**Bulk DC or 12 V-class solar panel with MPPT**
Panel class	**20 W monocrystalline typical (10 W sunny · 30 W high-latitude)**
Ride-through	**Two lithium-titanate cells — widest temperature range**
Rails	**Buck-boost system rail + independently switched radio rail**
Recovery	**Radios power-cycle without rebooting the controller**
Indicators	**Power heartbeat · network sync · bus activity**
Role	**Shared E2X sync node for every ANEW device**
Availability	**2028**

Read this. ANEW Energy products are in the concept and development stage. Figures marked as targets are design targets, not measured or certified results, and may change. Pictures are renderings. Specifications are copied from the product page at the time of download (2026-11-09) and are not a warranty, quote or offer to sell. Always check the current page: anewenergy.co/comms-board
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