

Neutrinovoltaic Terminology Framework v1.0



This terminology framework establishes a structured, scientifically aligned vocabulary for describing neutrinovoltaic and related non-equilibrium solid-state energy conversion systems. Its purpose is to ensure clarity, prevent misinterpretation, and create consistent language across scientific, technical, and communication contexts.

1) Popular Expression of the Core Equation A. Critical Terms Requiring Clarification

Amplification: Should be defined as structure-induced power density aggregation, not energy creation.

Energy Harvesting: Use as utilization of persistent non-thermal momentum fluxes rather than classical RF harvesting.

Effective Cross Section: Define as device-dependent coupling coefficient (k_{eff}), not a fundamental particle physics cross section.

Resonance Amplification: Better described as frequency-selective coupling enhancement.

Nanostructure Amplification: Parallel coupling of many sub-threshold excitations.

Ambient Energy: Refer to background momentum flux from particles and fields.

Radiation Energy from Nothing: Avoid; use utilization of existing weak particle and field fluxes.

2) Core Physical Model Terms

Non-Equilibrium Drive: Persistent external momentum flux outside thermal equilibrium.

Asymmetric Potential: Directional solid-state structure enabling ratchet behavior.

Ratchet Effect: Rectification of stochastic or weak external excitations.

Multi-Channel Drive: Superposition of multiple weak external fluxes.

Resonance Selection: Q-factor dependent spectral coupling preference.

Phonon–Electron Coupling: Momentum transfer from lattice vibrations to charge carriers.

Plasmonic Coupling: Field-induced collective electron oscillations.

Non-Thermal Drive: Excitation not solely temperature driven.

Open System: Energy exchange with environment; not an isolated equilibrium system.

3) Performance & System Terms

Power Density: Measured net DC output per active area (W/m²).

Coupled Input Power (ΣP_{in}): Sum of external momentum fluxes before conversion.

Conversion Chain: Momentum flux → micro-vibration → electron flow.

Device Efficiency: Output relative to coupled input, not solar irradiance or fuel input.

Scalability: Parallel area scaling at constant power density.

Baseload Capability: Independent of day/night or weather, but not dispatch-controlled.

Continuous Energy Source: Time-stable background drive.

4) Material & Structural Terms

Nanostructure Stack: Multi-layer graphene–silicon architecture.

Active Area: Effective coupling layer surface area.

Coupling Architecture: Geometry enabling momentum transfer.

Resonance Window: Frequency range of maximal coupling.

Structure-Induced Aggregation: Parallel nanoscale energy pathways.

Layer Resonance: Eigenmodes of multilayer structure.

5) Communication Terms with Scientific Reference

Energy from Neutrinos: Use as shorthand for utilization of cosmic background momentum fluxes.

Invisible Energy: Non-visible particle and field excitations.

Energy from Ambient Radiation: Multi-channel non-thermal background drive.

Baseload without Fuel: Persistent external momentum drive.

New Energy Class: Non-equilibrium solid-state energy conversion.

6) Terms to Avoid or Replace

Energy Amplification: Replace with power density aggregation.

Free Energy: Replace with background momentum flux.

Energy from Nothing: Replace with utilization of ubiquitous particle and field fluxes.

Over-Unity: Replace with open non-equilibrium system.

Energy Generation without Input: Replace with conversion of persistent external drives.