Interference Beats

The motion of the probability density comes from the changing interference between terms in Ψ that have different energy.

The beat frequency between two terms is the frequency difference, $f_2 - f_1$.

So energy differences are important: $E_1 - E_2 = hf_1 - hf_2$, etc.

Just like in Newtonian physics: absolute energies aren't important (you can pick where to call U=0 for convenience), only energy differences.