(3) The "Planck mass" is defined as $\sqrt{\frac{\hbar c}{G}}$. As energy, what is this worth in gallons of gasoline?

The Planck mass, $(\frac{\hbar c}{G})^{1/2}$—the mass of a particle whose Compton wavelength is equal to its Schwarzschild radius—works out at $22 \, \mu g$. That is equivalent to $2 \times 10^{16}$ erg, or $2 \times 10^9$ J. Heat of combustion for gasoline is around $10^4$ cal/g, or $4 \times 10^7$ J/kg. Thus one Planck mass is worth 50 kg of gasoline. That is 60 l, or 16 gal—about one tankful.