$$w = \frac{10.6\times10^{-6}\,\pi r}{2\pi r} \qquad 5.3\times10^{-6}/m^2$$

$$Q = (5.3\times10^{-6})\,\pi r^2$$

$$\frac{dQ}{dr} = (10.6\times10^{-6})\,\pi r$$

$$= 5.3\times10^{-6}$$

$$dE = (9\times10^{9})\left(\frac{\cos\theta}{r^2}\right)(10.6\times10^{-6})\,\pi\,dr$$