Problem 2: Power line.

After the success of his past consultancy. Now they entrust their startup with another company problem.

It happens that they are building a Biogas plant on the outskirts of the city and they want to place an electric fence that allows protection from invaders and nocturnal animals.

The indicated planes are commented in figure 1.

You are asked to calculate the electric fields and determine a safe distance at which the electric field would not affect.

It is also requested to consider rethinking the system so that at a distance of 1m on the y-axis the electric field is 23KV/m.

The electric fence will consist of two metal spheres with a diameter of 55cm. and a 15m long conductor cable with $\lambda = 1\mu C/m$. The sphere can be considered solid and with a volumetric density $\rho = 0.5\ \mu C/m$

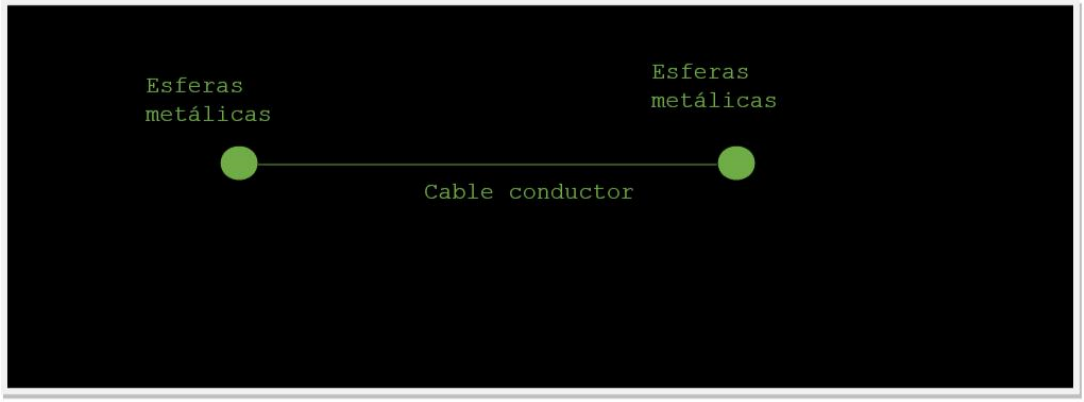

Figure 1. Scheme of the electric fence.