$$P_{out} = \eta \rho \dot{V} g h$$

η = Effeciency of generator
ρ = density of water
$\dot{V}$ = Volumetric Flow rate
g = acceleration due to gravity
h = height

P_{out} = current x Voltage $= IV$

$$IV = \eta \rho \dot{V} g h$$

Lets Solve For coulombs as a Function of time

$$I = \frac{\eta \rho \dot{V} g h}{V}$$

multiply both sides by time (t)

$$tI = \frac{\eta \rho \dot{V} g h}{V} \cdot t$$

$$tI = \not{s} \cdot \frac{C}{\not{s}} = C$$

$$C = \frac{n \rho \dot{V} g h}{V} \cdot t$$

$$\frac{Kg\,m^2}{s^2}$$

$$m^2 \cdot m\,Kg = Kg/s$$

$$m = \frac{m^2 \cdot m\ kg}{s\ m^3} = kg/s$$

$$m_{(t)} = AVPt$$

$$\frac{m^2 m\ kg}{s\ m^3}\ s = kg$$

$$P = \frac{AVPtV^2}{2t} = \frac{AV^3P}{2} = \frac{m^2 m^3\ kg}{s^3\ m^3} = \frac{m^5\ kg}{s^3 m^3}$$

$$= \frac{kg\ m^2}{s^2}$$

$$I = \frac{AV^3P}{2V}$$