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# Generation of Electric Power by water falling potential energy

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**Abstract**

Sufficient Quantity of water will be stored into underground water tank. This water is pumped into overhead tank and allowed to fall into the turbines thereby turbines will rotate. Turbines shaft both the side will be connected with multiple stage pulley system to increase the RPM and then with alternator. When turbine rotates automatically alternators will rotate and power generation will take place. The falling water will again will go into underground water tank through a cannel. Cannel water force also will rotate the turbines and alternators thereby power generation will take place.

**Principle:**

As we aware that falling water force can rotate the wheel. The speed of wheel rotation depends upon the amount and force of water falling on the wheel and the size of the wheel. If the wheel shaft is connected to the power generation system it will generate the power. On this method power is generated at waterfalls and dams and in this system power generation will take place in only one place.

But Peru Power Generation is creating artificial water falling system. Water is pumped from the bottom water tank to overhead tank and allowed to fall first into three turbines one by one and finally go through cannel and fall into bottom water tank. The same water is continuously pumped into overhead tank to maintain the water level. As of now Peru Power Generation is designed to generate 100kw power at six stages ( 6 x 20 kw at each stage) by just using 100 liters of falling water per second. Two 5kw pumped is used to pump the water to overhead tank.

**Requirements:**

We need the following materials and machineries' for 100 kw generation and approximate cost of the project.

| Sl no | Particulars | nos | Unit price Rs | Total in lacs |
|---|---|---|---|---|
| 1 | Alternators 10kw | 12 | 50,000 | 6.00 |
| 2 | Turbines | 6 | 50,000 | 3.00 |
| 3 | 7.5HP water pump | 2 | 50,000 | 1.00 |
| 4 | Gear system | 12 | 25,000 | 3.00 |
| 5 | Bottom water Tank 20 kl | 1 | 50,000 | 0.50 |
| 6 | Overhead water Tank 10 kl | 1 | 50,000 | 0.50 |
| 7 | 3 floor power generation building | 3 | 1,0,0000 | 3.00 |
| 8 | 3 place cannel power generation | 3 | 1,00,000 | 3.00 |
| 9. | Cannel construction | 1 | 1,00,000 | 1.00 |
| 10 | Pipe line and tools | | 50,000 | 0.50 |
| 11 | Panel Board | 1 | 1,00,000 | 1.00 |
| 12 | UPS 10 kva | 1 | 1,20,000 | 1.00 |
| 13 | Transportation Charges | | 50,000 | 0.50 |
| 14 | Installations Charges | | 2,00,000 | 2.00 |
| 15 | Grid Connection | 1 | 1,00,000 | 1.00 |
| 16 | Miscellaneous Expenses | | 1,00,000 | 1.00 |
| 17 | Required Land ( 30X20 Ft) | | | |
| 18 | | | Total | 28.00 |

The cost of the project approximately 28 lacs for 100 kw power generation.

If 100 kw power generation runs for 18 hours a day for a month power generation unit will be: 100 x 18 x 30 = 54,000 units. If we sell a unit at the rate of Rs 3.00 the monthly income will be Rs 1,62,000/-

If we construct five unit in one place we can generate 1 mw.( 1000 kw) . The construction cost will 2 crores only five to ten times less than other power generation units like Thermal, Hydro and wind power. It needs only initial investment after that no expense no raw material required, less manpower for operation and less

maintenance. It is absolutely free from any environmental effect.

Gear system:

There will be 3 stage gear system 1: 30. If turbine run one revolution alternator will run 30 times. If alternator is 1500 rpm, turbine has to run 1500/30= 50rpm.

*Turbine:*

Turbine shall be 1meter dia and 1 meter height and shall have 7 slightly curved boxes. At a time water will fall into two boxes at the rate of 100 liters per second.

*Water pumps:*

Two 7.5HP water pump will pump the water continuously from bottom water tank to overhead tank while operation.

*Power Generation Building:*

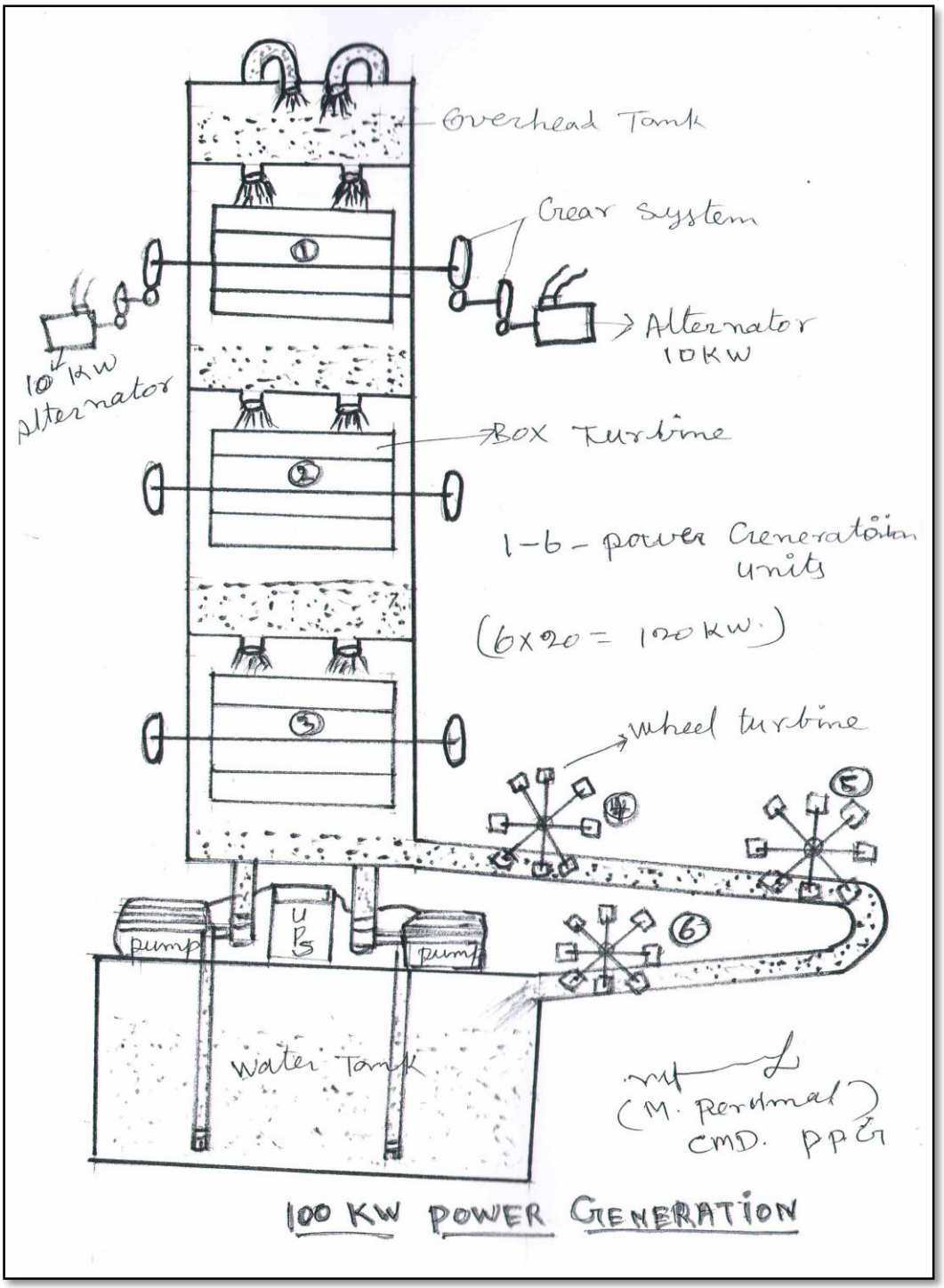
3 Stage power generation building and 3 stage cannel power Generation system as shown in the diagram.

**Project Construction and Operation:**

As per drawing construct the unit. Construct 20 kl water tank at the bottom of the project. Construct two story building and top of it construct 12 kl overhead water tank. Fix one box turbine at ground floor, one at first floor and one at second floor. Now fix gear systems at both the end of the turbine shaft and then connect alternators to the gear systems. From overhead tank connect pipe lines for water to fall into second floor box turbine. Water will fall down to first floor after rotating the second floor turbine. This water will be collected at first floor and allowed to fall down to rotate the first floor box turbine and like ground floor box turbine.

The spent water will go to the bottom water storage tank through a cannel. At the cannel fix three water wheel turbines at three places so that we can generate equal amount of power. The total power generation will be 120 kw among which 10 kw will recharge the 10 Kva UPS. 10 kw loss will be there considering power factor.

Fix 10 KVA UPS half hour back up for initial operation of the water pumps. Fix two 7.5 HP water pumps to pump the water into overhead tank.


Overhead Tank
Crear system
Alternator
10KW
10 KW
Alternator
BOX Turbine
1-6 - power Generation
units
(6×20 = 120 KW.)
wheel turbine
pump
UPS
pump
water Tank
(M. Perumal)
CMD. PPG
100 KW POWER GENERATION