



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Ahmed A. Mohamed	Project Number J0927
Project Title Hydroelectric Generator	
Objectives/Goals My objective is to build a hydro electric generator and test it to find out the relationship between the heights of the water and the amount of electricity generated.	
Abstract Methods/Materials A tower test rig with adjustable shelves was constructed to simulate the different water level before and after a dam. The rig is equipped with a water tank setting on the highest shelf, used turbine wheel from a turbocharger, a hose with ball valve connecting the water tank to the turbine, and water collecting tank under the wheel. The electric generator was constructed by forming four 200 rounds of copper coils, that were attached to a CD mounted on the rig, few millimeters above the coil a second CD with 4 strong magnets glued to it, and attached to the wheel shaft. To study the relation between the water height and the electricity generated the top shelf were adjusted to be to different heights above the turbine wheel ranging from 1 ft to 4 foot, in each case the water was allowed to flow down and the produced voltage and the number of LEDs lit were recorded.	
Results With 4ft of water 3LEDs were lit and around 8.7 Voltage was produced while with 2ft of water only 1LED was lit and 2.4 voltages were emitted. I found that more electric power is generated if higher water level is being used.	
Conclusions/Discussion The greatest amounts of electricity were generated from the highest water level tested. The relations of water height to the measured voltage were almost linear. Which means more water the more electricity is generated.	
Summary Statement To a hydro electric generator and to test what height will produce the greatest amount of electricity.	
Help Received my mom helped me spin the coils will my dad cut the wood.	