

# When Ideas Flow, Villages Grow

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## Introduction

Up to now, science has discovered plenty of miracles, while still 56 million of Pakistanis are away from basic need of electricity. From the stone age to the computer age electricity has acted as a ladder and without electricity, industries, vehicles and electric devices are impossible to operate and through electricity work can be done more accurately within short span of time.

The national power generation system is hardly and solely providing electricity to the main cities. As a result villages have only empty sets for electricity. Villages have plenty of resources such as water, solar, wind, thermal, biogas and etc. Utilization of these natural resources, which are also known as renewable energies can be used to produce electricity more easily and can be renewed from one form to another.

Due to limited supply of electricity, villages are facing a lot of challenges. Like, they are unable to utilize their resources properly. The life of villagers come to an edge by facing transport problems, cultivation problems as a result regression comes cross every place.



Street lights

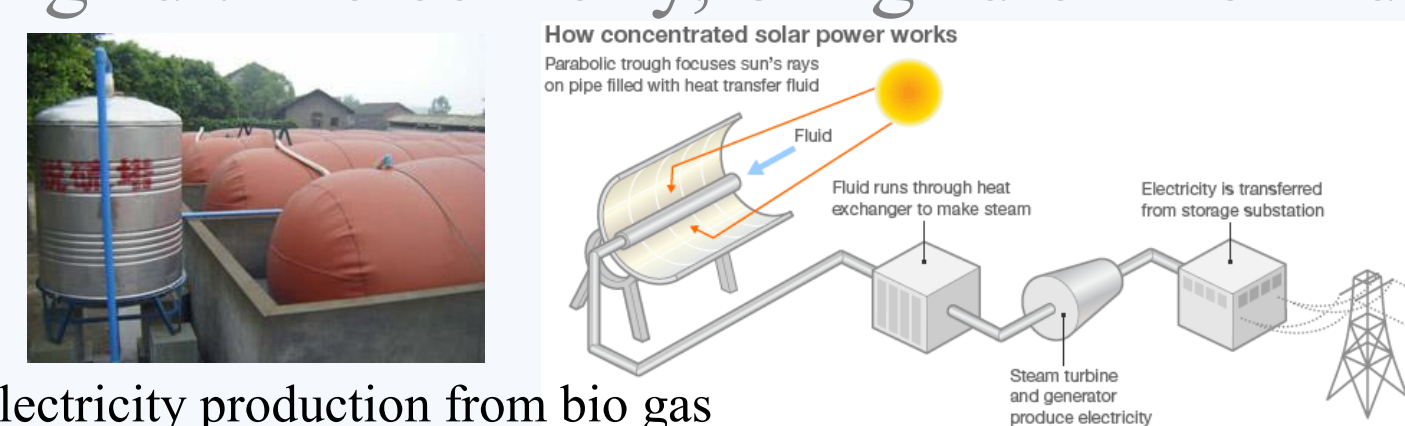


Candle light studying

## Off-grid System as an Alternate Source of Generating Electricity

The term off-grid refers to not being connected to a grid, mainly used in terms not being connected to the main or national electrical grid. In electricity, off-grid can stand alone for power system or mini-grids typically to provide electricity to a smaller communities. By remembering the electricity crises in summers and winters, it shows that Off-grid is the only way to encounter these crises and circulate the electricity, because the electricity that our national power sectors are producing is insufficient for the needs of our country. That is why government is spending a plenty of budget on it and only limited budget is allowed to the villages. As a result, Off-grid is the best remedy for this problem.

Naltar is one of the many places in Pakistan, that is enriched with natural resources. The educated inhabitants of Naltar build a hydropower plant, that efficiently produced 4.5 MW electricity with the collaboration of non-government sectors such as AKRSP, FOCUS. Also different Chinese and German NGO helped economically and provided unique machinery for making it more efficient. At last the native people modified that plant by including wind panels and got success to build 15MW plant, through which non-stop electricity is being supplied to different villages of Gilgit Biltistan.

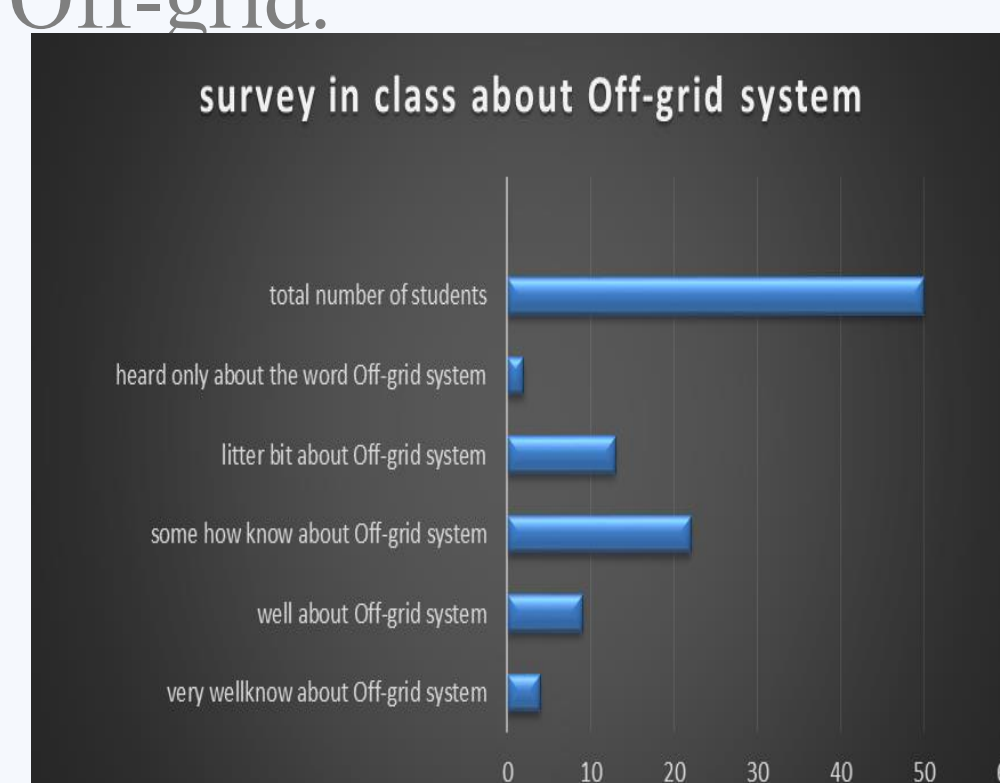
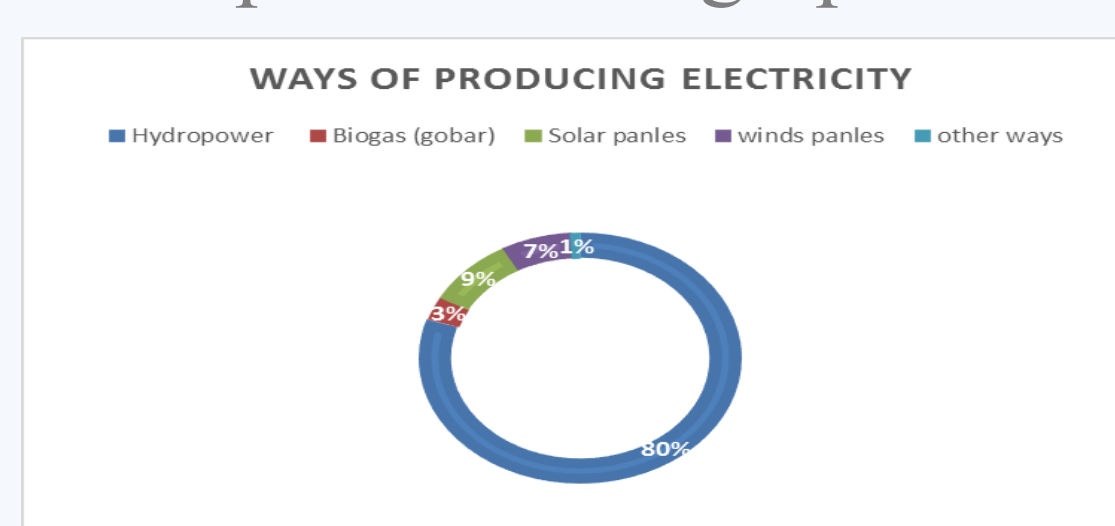
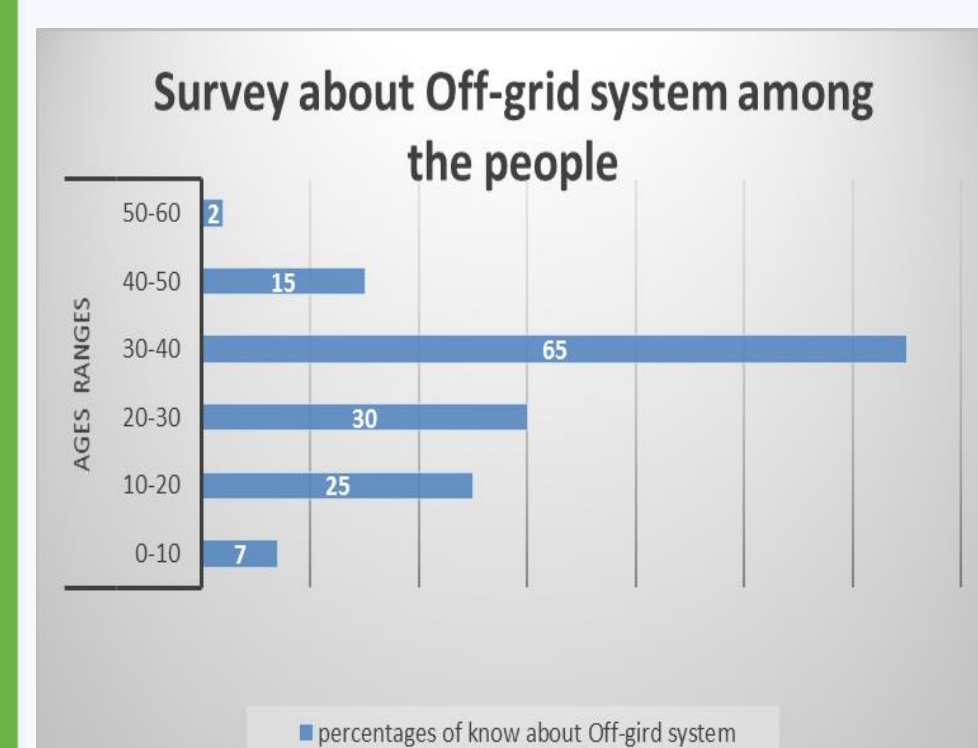


Electricity production from bio gas

## Data Collection

Results of survey shows that mostly youth and students are well aware of Off-grid electricity production. More than one-third of people living in villages don't know about low electrification rates in villages. And when they get to know the electrification rates in cities, they realize the significance of Off-grid.

There are some researches which are represented in graphs



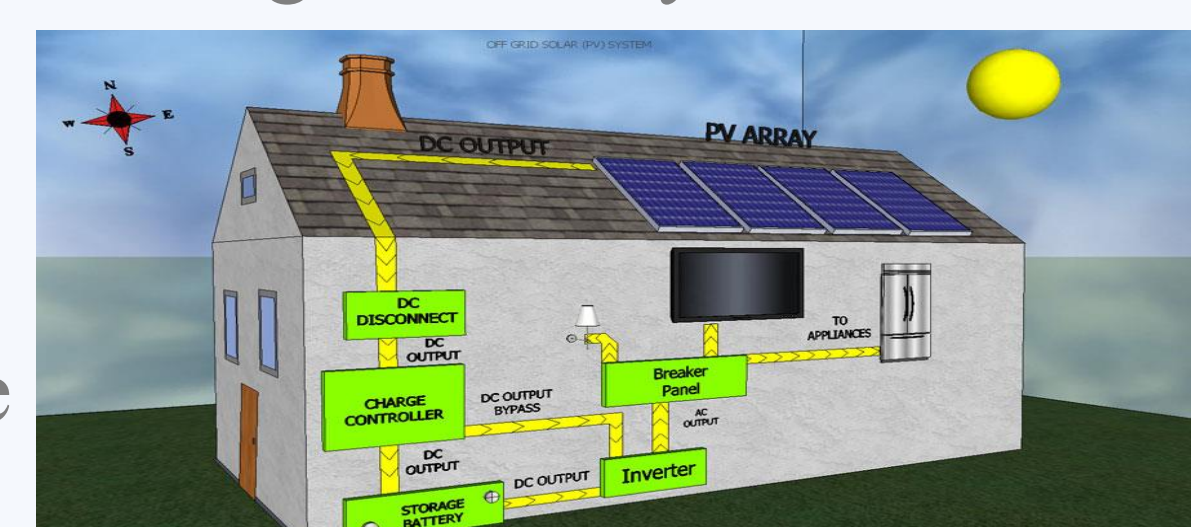
The major learning about my survey is that I got to know about meaningful opinions, comments and feedback about Off-grid system such as how to make mini Off-grid for homes. It gives me medium to get enter into deeper concept of hydropower electric generation as well as it makes my good interaction with turbines and motors.

## Creating Awareness

Following are the ways to give awareness about the importance of Off-grid systems for generating electricity. such as.

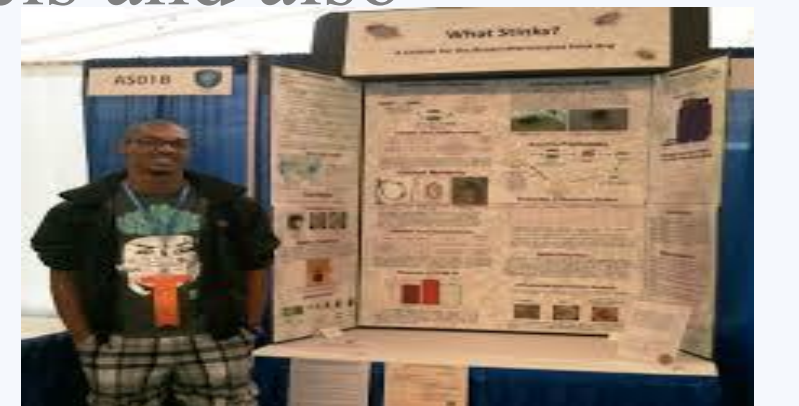
To bring in front and discuss about the Off-grid system by Including its impacts, benefits and etc. Organizing seminars and programs can fruitfully give awareness to the people. We should have to request different NGO'S and government sectors to conduct these programs. For this purpose we have to talk with ours MNA's to facilitate us.

If villagers are ready and agree to buy solar panels for the village or to buy solar panels for their houses, which can be easily done by creating a management group in a society, in which every home will contribute equally which causes no economical burden. For this purpose we have to unite the people for this management group and also have to talk with our village leaders.



Electricity production from solar panels

The another way is to aware youth by setting up different science fairs competition and exhibition in school and among the school levels and also go for study tours to power stations. For this work we have to talk with our science club and school management and also request to educational department our village to provide more Budget to create awareness among the youth.



Science fair project

## Impact

During my awareness campaign, I analyzed that almost 70% to 78% youth are agreed with my ideas regarding off-grid projects and its systems.

The people by including students and engineers who are agreed with my ideas, did also show their willingness to focus on off-grid projects by utilizing the resources which they have.

By coming across to different meaningful ideas from my research, it enhanced my knowledge regarding electricity production, through which I made a unique shoe in which electricity will produce by walking and this project is also selected for INTEL science fair. Beside this I also build up my skills such as way of intellectual abilities, speaking and much more other things.



Creative working

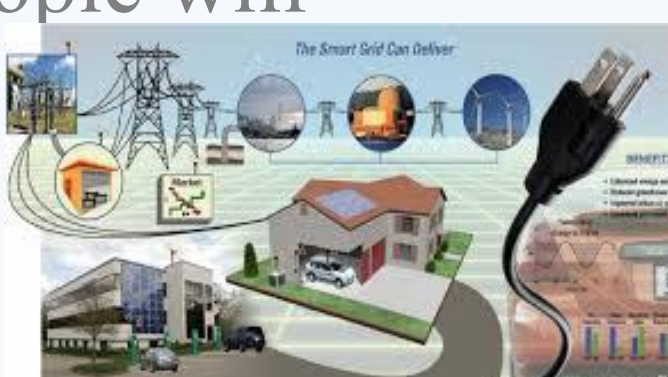


Electric shoe

## Reflection

I am optimistic regarding electricity production because in future people will adhere with different ideas and knowledge and as more and more people get to know the Off-grid. As result people will use it as their prime source and houses will have their individual off-grid systems, which will become more and more efficient as technology keeps getting better day by day.

Government and other responsible authorities will also be capable to introduce different ways of producing electricity which will easily handle the crises of electricity.



Off-grid systems



Ours lighting cities