

A SURVEY AND CASE STUDY OF SCHEME FOR INSTALLING SOLAR POWER PLANTS INSTEAD OF WAIVING ELECTRICITY BILL FOR FARMERS

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Abstract - As we all know, in today's era all our food items produce a farmer, for this, he sustains natural loss himself and takes loans from banks and later cannot repay the loan and then expect from our government. It is to forgive our debt that the government should remove such a scheme instead of debt waiver so that the government can install solar power plant on their fields instead of the debt waiver. So that farmers do not face any problem like forgiving debt in the case of suicides and electricity bill. With the help of this survey and case study, I want farmers can understand the utility and benefits of solar energy and due to this, solar energy can gradually expand in our country. This is also increasing our economy and growth rate. This paper gives the correct facts about the uses of solar energy in some villages of Madhya Pradesh, India.

Key Words: Solar energy utility and benefits, Scheme for farmer, Plant installation, Survey, Farmers issue.

1. INTRODUCTION

The resources of our food for thousands of year, it produces farmers. The wheat, gram, millet, peanut, mustard etc. and also grow many crops by working hard day and night. For this, he relies on nature when nature does not accompany him, then he take a loan from the government and becomes as much tax as he cannot pay. The farmers who have more land, then compensate them, but the farmers who cannot compensate it either commit suicide or expect the government to forgive the debt, they think that the government waives our electricity bill do it.

Again, the government promises to this issue that if our government is formed then we will forgive the farmer's debt and after the new government comes, the government waives the debt of core rupees. There is a lot of damage to the economy of our country and we can never fulfill this.

I do not want to focus any government through this case study. Through case studies, I want to tell the governments how the government can compensate this compensation and can bring a new scheme for the farmers so that the farmers can be happy and could also increase the energy of solar energy gradually within this India.

1.1 Scenario of Farmer's Suicide within India:

The group farmer's suicides in India, also know

As the agrarian crisis, is the phenomenon of suicides among from 1990 to the present? It has been exacerbated by the inability to repay growing debt, often taken from local moneylenders and microcredit banks to pay for high priced high yield seeds marketed by MNCs and the non-implementation of minimum support price (MSP) by central government and state governments. During the duration from 1998 to 2018, it has resulted in the suicides of 300,000 farmers in the country. [1]



Figure1.1 Farmer's Suicide Picture by Google [2]

Madhya Pradesh -21% jump farm suicides in Madhya Pradesh: Every eight hours, a farmer committed suicide in Madhya Pradesh in 2016. It was a year that saw 1321 farmer suicides, the highest since 2013. And while farm suicides dropped by up to 10% elsewhere in the country between 2014 and 2016, MP saw a rise.

This grim information was provided by union agriculture minister Mr. Purushottam Rupala in Lok Sabha on March 20, 2018. National crime records on accidents and suicide for 2016, but the minister data says Madhya Pradesh is the third in the country in term of farm suicides. There has seen a 21% jump in farm suicides since 2013. The state, which claims double-digit agricultural growth for five year and was recently given its fifth "Krishi Karman Award" reported a horrifying 6,071 farmer suicides between 2011 and 2016. And from 2016 to 2018 this figure cannot be estimated how much this figure could have been. This incident is very sad for us. [3]

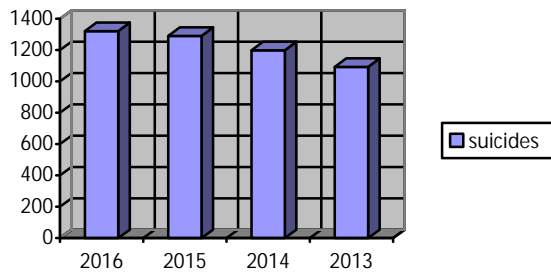


Figure1.2 Scenario of Farmer's Suicide in MP [3]

1.2 Solar Energy - Solar energy is the energy produced and radiated by the sun, more specifically, the sun's energy that reaches to the earth. Solar energy is primary source of all kind of energy on the earth. Solar energy has the chief potential of all the sources of non-conventional energy and if only a lesser amount of this form of energy could be used, it will be one of the best important supplies of energy especially when other sources in the country have short. The applications of solar energy are very wide. It is used for solar water pump for farmer, solar power plant for electricity generation, heating and cooling of residential building, solar cookers, solar drying of agricultural and animal products, and solar water heating, salt production by evaporation of sea water of inland brines and solar water distillations etc.

In our country, 2.25 lakh solar cookers, 10000 and 5000 industrial solar water heating systems and 10000 solar stills are in operation. Department of Metallurgy, College of Engineering, Pune designed a solar furnace that can generate a temperature of 2000 and can be used for surface Hardening of steel and cast iron, etc. A solar power plant of 22kw, capacity using focus collectors and steam turbines, is in operation at Solaji pally village in Andhra Pradesh. Another plant of 50kw is under installation at Twal Pahari Premises of the Solar Energy Centre, Gurgaon and Haryana. [4]



Figure1.3 Solar Power Plant for Farmer

1.3 Application of Solar Energy

The applications of solar energy very wide area are discuses below:

1. Heating and cooling of residential building
2. Solar cookers
3. Solar drying of agricultural and animal products
4. Solar furnaces
5. Salt production by evaporation of sea water of inland brines.
6. Solar water heating
7. Solar engines for water pumping
8. Food refrigeration
9. Bioconversion and wind energy which are indirect source of solar energy.
10. Solar distillations on a small community scale. [4]

1.4 Scenario of Agricultural Debt Waiver - 2008 agricultural debt waiver and debt relief scheme in India: On 29 Feb 2008 Mr. P. Chidambaram, at the time finance minister of India, announced a relief package for bestiality farmers. This included the complete waiver of loans given to small and marginal farmers. [5]

The agricultural debt waiver and debt relief scheme, the 600 billion rupee package included the total value of the loan to be waived for 30 million small and marginal farmers (estimated at 500 billion rupees) and a onetime settlement scheme (OTS) for another 10 million farmers (estimated at 100 billion rupees).[6]

Farm relief

Since April, farm loan waivers totalling Rs85,024 crore have been announced to bring relief to 14.9 million farmers.

States that have announced loan waiver	Date of an- nouncement	No. of farmers covered (in million)	Debt waived (in Rs crore)
Uttar Pradesh	4 April	8.6	36,359
Maharashtra	11 June	3.1	30,500
Punjab	19 June	1	10,000
Karnataka	21 June	2.2	8,165
TOTAL		14.9	85,024

Source: State government official releases

Figure1.4 Scenario of Farm Relief 2018 [6]

The figures given in this figure are extremely worth thinking. This figure is released by state government of India on his official site.

The state government has apologized for 34 lakh farmers of Madhya Pradesh for about 38 thousand crore.one and a half hours after taking oath of chief minister, a Kamal Nath signed the first file for farmers debt waiver.[7]

If government install a solar power plant of 38 thousand cores, it will probably be very beneficial for our country, so that farmers will be benefitted too much.

2. SURVEY

Before writing this case study, I went to some village in Madhya Pradesh; one of them was the name of the village Marora Khalsa. Marora khalsa is a village in Phori Tehsil in Shivpuri district in Madhya Pradesh state, India. It belongs to Gwalior division. It is located 34 km towards north from district head quarters Shivpuri, 10 km from Pohri and 308 km from state capital Bhopal. Total 50 to 60 houses in this village. Whose main basis of livelihood is only farming?

2.1 Survey Result: the following important results are fund in this survey.

1. I found that after talking to the people there only 3 to 4 solar power plants install in this village at 2020. The capacity of this solar power plant is depends upon the horse power of motor according to their requirement.

2. Electricity has always been a problem in the village.

3. One the bill of the people of the village came to high and they didn't pay bill. After that the government cut the light of the village for 1 to 2 year.

4. Due to this, some people were ruined there and some people left the farming of that village and settled in the city to find employment.

5. Till 2018, people did not know about solar energy benefits.

6. People do not even know about the scheme being run by the government for solar panel.

7. Even today some people do not get the information about it properly.

8. For this, the planning and scheme given by me will have to be implemented properly so that it can spread awareness among the people.

3. PLANNING AND PROCESS OF SCHEME

3.1 Planning: To make any scheme run by the government it's planning is very important. Thought this case study, we want to create a scheme with proper planning that will create a good relationship between government and farmer with the help of solar power plant. As we all know, how many schemes are being run by the government to promote solar energy and how much debt the government pays for farmers every year? There is some fear within the farmers regarding solar energy power plants installation. Unless farmers get the right information with proper planning, this fear will not go away.

If the government is replaced by the debt waiver by putting solar power plants on the government or motivating to set up a solar power plant, then it will be a great job for our India.

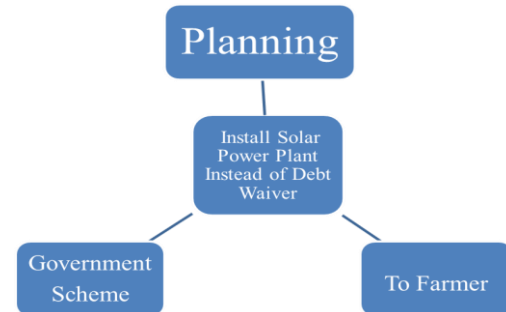


Figure1.5 Planning Of Scheme

The following planning is required to this scheme:

1. First of all, the government will have to collect the data of all villages of India and their farmers, which will have to forgive the debt and other issue?

2. After that there will be a strong team that can go to the farmers and tell them that is the cost of this solar power plant more than your total debt waiver and the life of this plant is 15 to 20 year with proper maintenance.

Table 1.1 Estimation Cost

S.NO.	Total cost of Debt Waiver for one farmer (Area wise)	Price of Small Power plant for one farmer
1.	3 Lakh	2 to 4 Lakh (15 Year)
2.	5 Lakh	4 to 6 Lakh
3.	6 Lakh	5 to 7 Lakh

3. The government will have to promote it at a bigger level. We can tell about the benefits and utility of solar energy in it and can also tell you electricity by giving electricity to other with good cost.

4. The government should also tell the farmers about the subsidy on solar power plant because the farmers do not know about this thing.

5. Government should make a plan to install solar power plant by including both debt waiver and subsidy.

6. Farmers will also have to tell us about the fact that by generating solar power plants, we can generate electricity and this electricity can generate an employment by looking at others.

3.2 Process of Scheme – As soon as the agreement between the farmers and the government is done and the farmers as well aware of this thing. The following process is required to success this scheme:

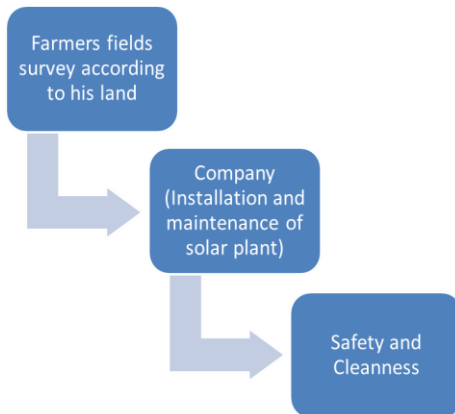


Figure1.6 Process

This scheme is not so simple for this, both the farmers and the government will have to work together and mediators will have to use it can tell them that this solar power plant work for 15 to 20 year and its cost is more than your debt waiver. It can also generate an employment for farmers.

4. RESULTS AND DISCUSSION

Overall result and discussion, I would like to tell you that if this scheme is implemented and it has been plan and process success. So India’s boom will come out of solar energy and our county economic situation will improve. We will be able to use the money left out of the debt waiver and use it anytime and never take a loan from the World Bank.

5. CONCLUSION

Overall conclusion of this survey and case study is the government does not have to pay farmers loans every year and neither government will need to make any such types of fund. Because life of a solar power plant is 15 to 20 year old if it gets equal maintenance. As we all know, 20 to 25 years later we come to solar energy. With the help of this scheme, the prevalence of solar energy will increase in the village within India and also solar energy jobs will be created insides India. The most importantly, this scheme will help in preventing the killing of farmers due to farmer’s debt.

6. FUTURE SCOPE

Solar power plant needs to low grade energy which is freely, easily available and also there is no greenhouse pollutant. In future it can be used in remote places where there is no electricity. Future scope of solar energy is very helpful for farmers.

REFERENCES

- [1] https://en.m.wikipedia.org/wiki/farmer%27_suicides_in_india.
- [2] <https://www.google.com>
- [3] Amarjeet Singh “The Times of India City” Bhopal, 22 March, 2018, 10:56 IST.
- [4] G.D Rai., “Non- conventional energy sources”, Khanna Pub., 4th Edition, 2000.
- [5] The Indian Express, 29 Feb, 2008 “RS 60,000 crore loan waiver package for farmer” Achieved 2088-2009 at the Wayback Machine.
- [6] Ministry of Finance Indian, National Informatics Centre “Key Feature of Budget 2008-2009”.
- [7] News Paper “Denik Bhaskar” Indore, 18 Dec, 2018, Page No.-01.

BIOGRAPHIES



Atul Dhakar, is presently working as Assistant Professor in M.E. Dept., S.V.C.E., Indore. He has over 8 years of teaching experience in Mechanical Engineering. He has completed his Bachelor of Engineering from S.D. Bansal College, Indore in Mechanical Engineering and Master’s Degree from Shri Ram College of Engineering, Gwalior in Thermal System and Design. His areas of interest are mainly Solar Energy and Thermal Engineering. He is also is a permanent member of International Association of Engineers and a professional member of Ignited Minds Professional and Academic Research Consortium (IMPARC). He has published 3 research papers in Mechanical Engineering Discipline.