

# EMPLOYABILITY OF SOLAR ENERGY TO MINIMIZE THE ENERGY LOSSES OF INVERTER FOR ACCOMPLISHING SCALABILITY AND ENERGY SELF- SUFFICIENCY

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## GRATITUDE

I want to thank Prof. Mandeep Singh for all he has taught me. The knowledge and wisdom he has imparted upon me has been a great help and support throughout my research. I believe my success of research is at least in part due to his sincere support and mentorship. I want to express my deepest gratitude to him for believing in me. He has always been there for me providing moral support, God-given wisdom and the patience of a saint. Sometimes he said nothing and only listened, other times he spoke the exact words that I needed to hear at the right moment. I am ever grateful for the knowledge he has so gracefully shared with me. The tenderness with which he imparted his advice has been greatly appreciated. I thank him for the encouragement when I needed it the most.

He has been an excellent friend, teacher, mentor and a great inspiration for me. He has inspired me to pursue my goals with hard work and dedication.

I truly appreciate and value everything I have learned from him. It will forever remain a major contributor behind my success and achievements. I really look forward to the day I can do the same for someone else.

I would like to express my indebtedness to Mr. Subhash Tyagi (Electrical Engineer) for extending his valuable guidance and cooperation in analyzing the data collected.

## ABSTRACT

*The research dissertation attempts to provide a feasible solution by using solar energy to charge the 'Inverter' to minimize the impact of inverter induced energy 'losses' and provision the energy preservation by saving 'avoidable losses' thereby envisioning a feasible solution to the nagging problem of 'power deficit' in rural areas.*

*The paper sheds light on the usage of 'surplus solar energy' for optimum utilization to run 'AC load' connected to inverter, by respective users, in order to economize on exorbitant electricity bills.*

*Further, scholar approaches the underpinning usage of the solution to a socio-politically sensitive problem of **Power Deficiency in the state of Haryana.***

*Thus, this pioneering study takes upon the question, of using solar energy to minimize the impact of energy losses during charging and discharging cycles of regular modes inverter and its positive effect on larger scale in power deficient areas of Haryana.*

## INTRODUCTION

An inverter is an electronic device or circuitry that changes direct current (DC) to alternating current (AC) and vice versa.

Inverter is a basic need of every house and commercial establishments particularly in northern part of India because of frequent power cuts in urban areas and 10-12 hours power availability in rural areas. In case of power failure, the residential and commercial setups depend heavily on power inverter for uninterrupted power supply. There is huge energy losses due to frequent charging and discharging cycle of battery connected with inverter.

This detailed study has been conducted to estimate how solar energy can be helpful to minimize the impact of inverters energy-losses and an affordable solar solution for this problem has been worked out.

## SCOPE OF RESEARCH STUDY

The energy losses of inverter during charging and discharging cycle are around 30% and these losses can be minimized by using solar energy. For this a solar setup is required to charge the existing battery of inverter setup. Through this solar application inverter losses can be minimize/harness, which occurs due to frequent charging/discharging cycle of inverter. The extra generated solar power can be used to run the AC load connected to inverter during day time. Research study aims for the cost effective solution and ROI of 1.5-2 years.

This research also targets to measure the impact of saving for the population of 100,000 inverters and then apply the researched study aspect to rural areas of Haryana. Saving from energy losses and saving from “**Own Power Generation**”, with the help of solar energy, will lead to huge positive impact on power requirement of the state (Haryan) and the power requirement of the state may reduce to 40% for the load connected to inverter.

This will help to improve power deficiency in state of Haryana and the administration can get rid of the power theft problem, particularly in villages. The commercial saving should be around 30% on the electricity bill of the house/commercial establishment for the load connected to inverter. In, Nutshell the energy requirement will be on lesser side and will result to less dependency on Electricity Department. An assumption of one Lac inverters as the base number is taken for the sake of convenience of this study (In the urban and rural areas of karnal)

The frequent power outages, wrong promises by Political Parties literally cripple the economy of Haryana (**Annexure - III**), so through this innovative research solution the expected contribution will be:-

1. The demand of power requirement will be reduced to 40%.
2. 24 hours power supply to rural villages.

### **Power Saving of 488,000 Units (488MW) Per Day from Karnal Circle(Urban and Rural)**

## **OBJECTIVE OF THE RESEARCH STUDY**

The objective of this study is:

- To estimate the positive **impact** of solar application, when it is used to charge the existing inverter setup in urban areas and power deficit rural areas of Haryana.
- To explore the positive impact of covering energy losses, using solar energy, caused by charging and discharging cycle of inverter on a larger scale. It also aims to generate own electricity from solar to become self dependent at least for the basic need of the house.
- To attempt an in-depth feasibility of the reduction of electricity bills and dependency on traditional power utility company.

### **GEOGRAPHICAL PARAMETERS: – Current Electricity Status in Rural & Urban Area of Haryana**

#### **Rural Areas**

In the era of 21st century, developed countries targeting the solar setup on Lunar surface and researching the ways of transmitting the produced solar energy from Lunar surface to Earth but the situation is very different in villages of the northern state of Haryana. The electricity is available for 12-14 hours in a day in rural areas. This hard fact forces the villagers to believe that that **electricity is not meant to be available for 24 hours a day in villages**. The below mentioned schedule table of UHBVN (Government Electricity Department) clearly states that the electricity supply to rural area is 12-14 hours a day and the timing is from 7pm to 6AM plus 3 hours for water supply. (**Annexure- VI**)

#### **Urban Areas**

In urban areas the availability of electricity is better in comparison to rural areas but the power cuts are very frequent and due to this reason inverter setup is required as a backup option to every house/commercial office setup. Because of very frequent power cuts, the charging and discharging process occurs many times. Due to frequent energy conversion process the energy losses are bound

to exist. The data clearly states that the average power failure frequency is 17 times per month and the average power failure duration is 8.9 hours in a month as per below Table 1.

Table – 1

	Feeder A	Feeder B	Feeder C	Feeder D	Feeder E	Feeder F	Feeder G	Feeder H	Feeder I	Feeder J	Feeder K	Feeder L	Average
<b>Average Power Failure Frequency</b>	22.05	18.91	6.91	11.91	8.0	42.5	20.08	12	14.54	14.83	23.16	9.83	17
<b>Average Power Failure Duration</b>	10.95	12.35	4.79	8.08	5.1	7.45	3.45	9.32	7.70	11.57	16.92	9.33	8.9

**Power Feeder Summary of Annexure 1– Tripping, Break Down and Shutdown from 1-4-2015 to 31-3-2016**

## RESEARCH METHODOLOGY

### A. Resources and Tools

Solar panels	– 600Wp (Cosmic)
Charge Controller/SMU	- 12V (Solarcon)
Inverter	- 1000VA (Birla Epro)
Battery	- 12 V, 150AH(Copper Wires Kirancab)

- Solar Panels used are of Cosmic Make
- The inverter in this study used was the Birla Eapro (1000VA rating) Sine wave UPS.
- The battery used for the study was cosmic sense Tall Tubular battery.
- The Charge Controller /SMU used was Sucam.
- The AC electricity meter used was Avon single phase 2 wire 240 volts (10-40 A) static Watt-Hour Meter.

### B. Experimental Setup

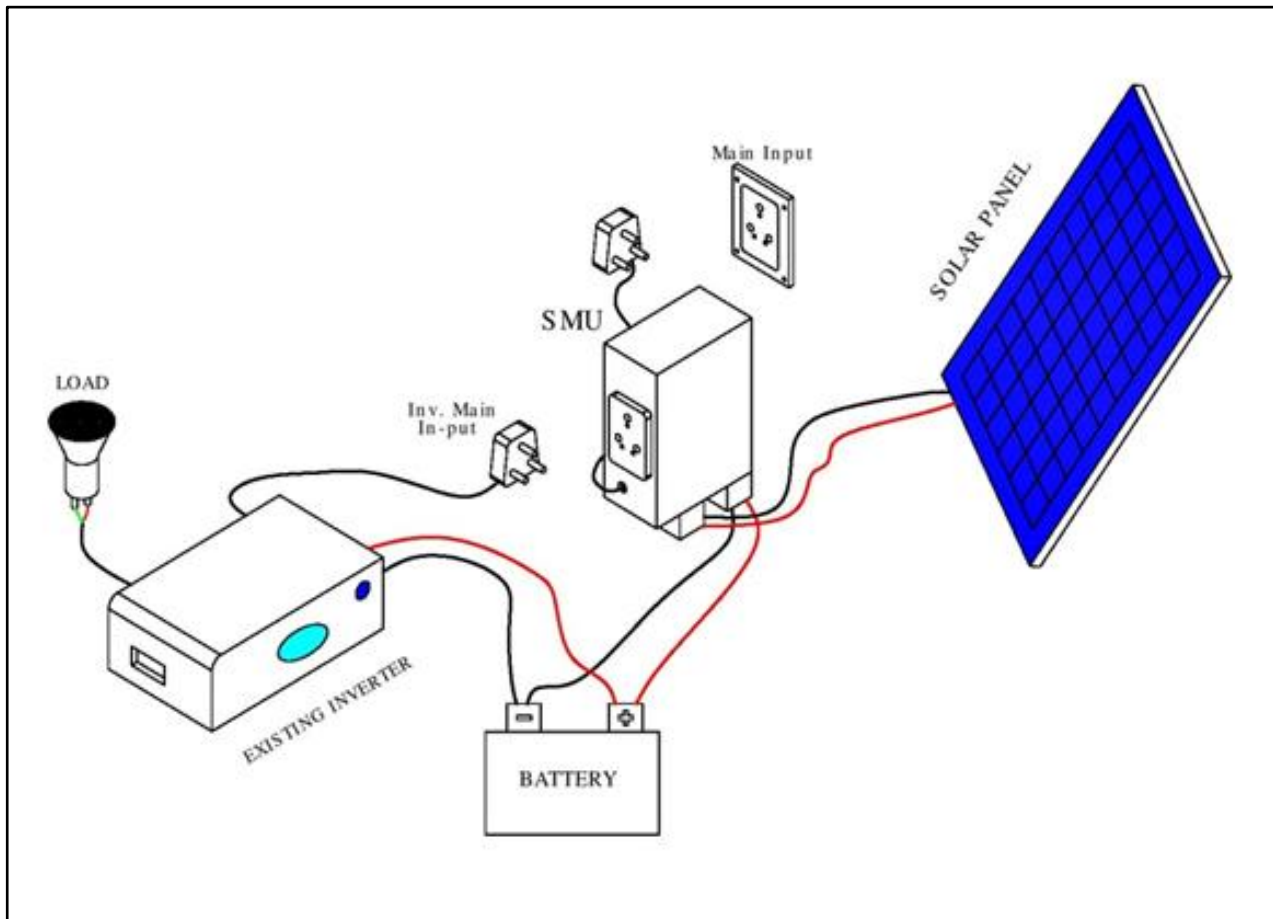
For the experimental setup the requirements are as under (**Annexure IV**)

- Solar Panel: - Solar panel is required to absorb the sun's energy and produce a distorted DC voltage (electricity).The DC voltage produced from solar panel will be used to charge the battery of inverter.
- Charge Controller/SMU: - This unit gives priority to solar charging of battery instead from AC mains and run the load connected to inverter through solar.
- Inverter: - Inverter converts AC to DC for the purpose of storing energy in to battery and converts DC to AC to run the AC load connected to inverter, when power supply fails.
- Battery: - Battery acts as an energy storage device, so that stored energy can be used when needed. Inverter converts energy from one form to another. During the availability of power, AC Mains or Solar Power, the energy is stored into battery and this energy is again converted to AC with the help of inverter, when the power is needed.
- Electricity meter to measure the energy (units) consumed.

### C. Research Procedure

Solar panel output is connected to PV connection of Charge Controller/SMU (Solar Management Unit). The battery terminal, which was connected to the inverter, also terminated to PV battery points of Charge Controller/SMU for charging the battery through solar power. Connect the Charge Controller/SMU to grid and connect the inverter to Charge Controller /SMU. When the solar panel starts producing DC voltage the Charge Controller/SMU disconnects the grid supply and the load

started running through solar via inverter setup. Simultaneously the solar DC voltage charges the battery. Target to use Grid power only from 7.30 PM to 6.00 AM.



**(Research Setup Design)**

The output DC voltage of solar panel is connected to PV connection of charge controller/solar management unit. The battery terminal which was already connected to the inverter was also connected to the PV battery points of solar management units. This was done for two reasons. Primary reason is to charge battery through solar power and secondary purpose is to sense the battery terminal voltage. The Charge Controller/solar management unit helps to run the load from the battery through inverter when the battery is fully charged. Secondly Charge Controller or solar management unit gives priority to charge the battery through instead of Grid.

The procedure used to measure the inverter losses, inverter on consumption and saving with the help of solar energy is as follows:

1. The load was run from AC mains without using inverter and solar power. Then the consumed units were measured each day for 5 days. We took the average of unit consumed in 5 days.
2. Now, the same amount of load was run through the inverter setup and measure the units consumed on per day basis for 10 days. We took the average of unit consumed in 10 days.

3. Now, the same amount of load was run through the inverter setup and solar power was connected to the charge controller or SMU. Then the consumed were measured on per day basis for 16 days. We took the average of unit consumed in 16 days.
4. To calculate the inverter's own consumption of electricity, we subtract the unit consumed when the load was connected directly to Grid (without inverter and solar in picture) from the units consumed when the load was connected through inverter.
5. To calculate the saving with the help of solar energy we subtract the unit consumed when the solar power was connected with the inverter from the unit consumed when only the inverter was connected to the load.

To get the best utilization of the energy stored in the battery and solar energy produced, the experimental setup was operated manually. The main supply of the inverter was cut off at around 6.00AM so that the energy stored in the battery can be utilized till the time the solar panels starts generating energy required to run the load connected with the inverter and to charge the battery. For the whole day the load runs through solar energy and simultaneously the battery was also charged to its fullest capacity by solar energy with the help of charge controller or SMU. When the solar panels stops generating the DC electricity the load connected to the inverter continues to run by using energy stored in the battery, till the time battery voltage comes to 11.5 volts, a low cut sensed by charge controller/SMU.

The low cut happens around 7.30 PM and at this time the grid power was again connected to the inverter manually to run the load through Grid and also to charge the battery. The Grid power was used to run the load connected to the inverter from 7.30 PM to 6.00 AM. This way a lot of energy was saved as far as energy consumption is concerned for the load connected to the inverter. The most concern issues of inverter own energy consumption and inverter losses have been addressed. However the manual process of operating the experimental setup can be avoided by using a good quality Solar Management Unit.

This research procedure applies to urban and rural areas as in both cases the Grid supply is not required for the load connected to the inverter between 6.00 AM to 7.30 PM. For urban areas the saving is huge (424MW per day) as it takes care for the energy requirement for the inverter load for 14 hours during day time, harnesses the inverters losses during this period and also covers the loss due to inverter's own energy consumption. In rural area the Grid supply is only available for 12 hours; hence this unique research solution provides 24 hours power to rural areas and saving of 64000 units(64MW) per day.

**OBSERVATION AND ANALYSIS – (Experimental Setup in Urban Areas of Karnal)**

1. When the load is connected directly to AC mains “**without inverter and solar power**”

Average unit consumed per day = **6.30 units (Annexure-II)**

2. When the load is connected through inverter but “**without solar power.**”

Average unit consumed per day = **7.20 units (Annexure-II)**

3. When the load is connected through inverter “**with solar power**”

Average unit consumed per day = **2.96 units (Annexure-II)**

The first observation from the above data is that inverter consumes certain amount of energy for own consumption, when the load was connected through inverter i.e. the 900 Watt inverter consumes 0.9 units (7.20 – 6.30). This reading holds true as far as rating of inverter is concerned.

The second observation from the above data is that, we save approximately 4.24 units per day (7.20 – 2.96). This unique invention helps to a net saving of 4.24 units per day per inverter, which includes the inverter losses, inverter own consumption and savings on electricity bills.

If we calculate the total saving for the population of 100,000 inverters in Karnal urban Area, the saving is 424,000 Units (424mw) per day, which is huge!!!!!!!!!!

**OBSERVATION AND ANALYSIS – (Experimental Setup in Rural Areas of Karnal)****(Availability of Grid for 12 hours in a day)**

1. When the load is connected directly to AC mains “**without inverter and solar power**”

Average unit consumed per day = **3.15 units (Annexure-II)**

2. When the load is connected through inverter but “**without solar power**”

Average unit consumed per day = **3.60 units (Annexure-II)**

3. When the load is connected through inverter “**with solar power**”

Average unit consumed per day = **2.96 units (Annexure-II)**

The first observation from the above data is that when the load was connected through inverter, inverter consumes certain amount of energy for its own consumption. The 900 Watt inverter’s consumption is 0.45 units (3.60 – 3.15). This reading holds true as far as the rating of the inverter is concerned.



The second observation on the above data is that, we save approximately 0.64 units per day (3.60 – 2.96). This unique invention helps to a net saving of 0.64 units per day per inverter, which includes the inverter losses, inverter's own consumption and savings on electricity bills.

If we calculate the total saving for the population of 100,000 inverters in rural Area of Karnal, the saving is 64000 Units (64 MW) per day, which is considerably high!!!!

## RESEARCH FINDINGS

We can safely conclude that with the help of this unique innovation, we can save approximately 488 MW power per day and 24 hours power supply to rural areas. This solution will certainly help to generate employment to youth and finally contribute to Nation Energy Saving and helps to reduce the pollution majorly caused by burning coal to generate the power.

1. This research makes major breakthrough with regard to the technically feasible solution to the power deficiency problem that has persistently plagued the Northern Indian State of Haryana. This problem exists since the creation of Haryana in 1966.
2. This findings clearly point in the direction of the self sufficient and surplus generation of power in the Karnal County of the state Haryana. The paper contents that if solar are used to charge the battery of inverter, then the power requirement of karnal will be reduced to 40% of the load connected to existing referenced population of inverters.
3. This research is a watershed in the providing of a practical solution is applied to the rural and urban area then the total saving will be of 488 MW per day and availability of power supply to rural areas for 24 hours. The frequent power outages literally cripple the rural agrarian economic and make the farmers dependent on the Government Energy for a solution. This is the real finding in comparison to today's situation of 12 hours supply of rural villages.

If this solution is implemented properly then the “**Inverter**” will be known as “**Converter**” in future and power is required from electricity department when there is no sun.

For the basic need of every person, the Researcher proposes the slogan

**“Sun On-Grid Off: Sun Off-Grid On”.**

## PRESENT APPLICATION(S) AND FUTURE SCOPE OF RESEARCH

The research has highlighted the central factors in the generation of power, not by the conventional means, but by taking a cue from the adage – “A Penny saved is a Penny earned” (or simply put – “Power saver is Power earned/Generated”). Many of the socio-economic problem being faced by the Indian masses have a direct co-relation with the availability of power in the society/community – there is a close nexus between the power generation, transmission losses, power pilferage, default on electricity bills (whether Industrial, Agricultural or Domestic) with the Political powers that lead any state in India. This research shed light on the most efficacious use of electricity/power losses incurred by the inverters in the urban, semi-urban areas of Karnal. There is an ample scope to further study the overall benefits, cumulatively culled, when the power/electricity losses by Inverters are controlled to the extent possible. As a matter of fact, the Indian Government agencies, both the Central as well as State can initiate talks with the manufacturers of Inverters to improve the efficiency of the devices and harness the ‘losses’ by the method suggested in this research and innovate it further to maximize the energy saving and generation techniques in India. While the Government agencies like, HAREDA who are supposed to be exploring ways to improve the power situations in the country by using solar energy

The researcher proposes to send a viable plan to such agencies, so that this issue of pivotal importance is immediately taken care of. The doors are wide open and the stage is set, by virtue of the data collated, observations recorded, statistical analysis done and findings reported for the acclaimed Indian and overseas Research Institutes specializing in Energy, to probe deeper and ‘fix’ the problems of acute energy crisis being faced at global level.

**ANNEXURE - I****Detail Study of the Power Interruption in the Karnal City at Urban & Rural Feeder****Name of Sub Station:- KARNAL – I****Name of 11KV Feeder:- KARAN VIHAR FEEDER, URBAN**

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	11	01.00	7	00.53	12	02.30	15	02.05	13	01.40	9	00.55	5	00.25	7	00.50	18	01.52	23	02.15	24	02.00	12	01.45	20	01.40
B/DOWNS	4	03.00	3	03.00	06	09.15	8	15.55	7	08.15	4	05.05	3	01.50	2	04.10	3	04.05	8	10.00	6	06.35	6	04.55	2	01.20
S/DOWNS	1	03.00	1	00.35	NIL	NIL	3	06.30	1	01.00	2	02.30	2	02.00	3	04.10	3	02.35	5	05.30	2	04.30	2	01.50	4	06.15
TOTAL	16	7	11	3.88	18	11.45	26	23.9	21	10.55	15	7.9	10	3.75	12	8.7	24	7.92	36	17.45	32	12.65	20	7.5	26	8.75

**Name of Sub Station:- KARNAL – I****Name of 11KV Feeder:- VIKASH NAGAR FEEDER, URBAN**

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	8	00.45	9	00.45	10	00.50	23	01.15	21	01.45	15	01.15	6	00.30	9	00.45	4	00.55	1	00.05	7	01.20	18	02.20	13	01.50
B/DOWNS	NIL	NIL	5	20.45	7	08.20	11	22.15	11	12.40	2	02.10	2	03.15	3	01.50	NIL	NIL	1	01.30	NIL	NIL	4	03.45	5	05.20
S/DOWNS	3	04.15	2	03.10	2	02.25	03	09.20	05	10.20	2	02.50	3	04.10	2	03.50	1	02.30	NIL	NIL	2	05.10	NIL	NIL	7	10.55
TOTAL	11	4.6	16	24	19	10.95	37	32.5	37	24.05	19	5.75	11	7.55	14	5.45	5	2.85	2	1.35	9	6.3	22	5.65	25	17.25

**Name of Sub Station:- KARNAL – I****Name of 11KV Feeder:- PARTAP FEEDER, URBAN**

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	2	00.10	01	00.05	5	00.25	1	00.05	5	00.25	2	00.30	4	00.50	1	00.05	3	00.15	9	01.00	6	00.50	NIL	NIL	7	00.35
B/DOWNS	NIL	NIL	NIL	NIL	NIL	NIL	3	02.10	4	03.30	1	01.30	NIL	NIL	NIL	NIL	NIL	NIL	1	00.45	NIL	NIL	1	00.30	1	01.40
S/DOWNS	1	03.00	01	01.35	2	00.50	2	06.15	NIL	NIL	1	02.00	1	00.45	3	07.25	1	00.13	4	04.35	3	07.40	2	02.40	5	10.10
TOTAL	3	3.1	2	1.4	7	0.75	6	8.3	9	3.55	4	3.6	5	0.95	4	7.3	4	0.28	14	5.8	9	7.9	3	2.7	13	11.85

Name of Sub Station:- KARNAL – I

Name of 11KV Feeder:- GREEN BELT FEEDER, URBAN

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	2	00.10	6	00.30	15	01.15	8	01.00	11	00.55	7	00.40	3	00.15	4	00.20	3	00.15	5	00.25	8	00.40	8	00.40	9	01.10
B/DOWNS	2	01.30	2	00.45	8	10.20	3	09.55	4	07.30	1	01.35	1	00.45	NIL	NIL	1	01.10	4	05.35	NIL	NIL	2	02.25	1	01.00
S/DOWNS	3	07.10	2	01.35	3	04.20	2	09.10	3	04.00	2	01.55	2	04.00	1	02.30	NIL	NIL	2	02.30	4	12.00	NIL	NIL	1	03.05
TOTAL	7	8.5	10	2.1	26	15.55	13	19.65	18	11.85	10	3.3	6	4.6	5	2.5	4	1.25	11	7.9	12	12	10	2.65	11	5.15

**ANNEXURE - I**

**Detail Study of the Power Interruption in the Karnal City at Urban & Rural Feeder**

Name of Sub Station:- KARNAL – I

Name of 11KV Feeder:- TAGORE FEEDER, URBAN

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	3	00.05	4	00.20	4	00.20	3	00.15	2	00.10	1	00.05	2	00.10	9	01.05	8	01.00	5	00.35	4	00.20	8	00.40	7	00.40
B/DOWNS	NIL	NIL	2	01.15	1	01.10	NIL	NIL	NIL	NIL	NIL	NIL	1	00.50	1	03.25	NIL	NIL	3	02.50	1	00.35	3	02.55	NIL	NIL
S/DOWNS	1	03.00	4	05.20	NIL	NIL	2	06.15	NIL	NIL	1	01.30	NIL	NIL	1	02.30	1	02.30	4	06.35	2	05.30	2	03.20	6	11.20
TOTAL	4	3.05	10	6.55	5	1.3	5	6.3	2	0.1	2	1.35	3	0.6	11	6.6	9	3.3	12	9.2	7	5.9	13	6.15	13	11.6

Name of Sub Station:- KARNAL – I

Name of 11KV Feeder:-SHAM NAGAR FEEDER, URBAN

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	22	00.44	23	00.46	40	01.22	60	02.00	44	01.28	26	00.52	19	00.38	25	00.50	18	00.36	20	00.40	30	01.00	28	00.56	42	01.24
B/DOWNS	3	02.10	5	03.05	7	02.20	14	06.00	7	04.05	5	02.20	5	04.05	3	02.05	4	02.00	5	06.35	3	01.454	13	08.55	6	06.55
S/DOWNS	2	03.30	1	01.40	2	01.35	6	05.05	1	00.30	4	03.20	2	01.20	2	01.50	1	02.00	6	05.25	2	02.15	1	00.30	3	01.50
TOTAL	27	5.84	29	4.91	49	4.77	80	13.05	52	5.63	35	5.92	26	5.63	30	4.05	23	4.36	31	12	35	4.6	42	9.41	51	9.2

Name of Sub Station:- KARNAL – I

Name of 11KV Feeder:-NOVELTY FEEDER, URBAN

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	12	00.24	18	00.36	17	00.34	13	00.46	19	00.38	14	00.28	8	00.16	8	00.16	15	00.30	24	00.48	13	00.26	15	00.30	10	00.20
B/DOWNS	2	00.50	1	01.00	4	01.45	3	04.40	2	02.00	3	02.25	2	00.40	3	02.50	2	00.35	8	05.35	1	00.20	8	03.30	NIL	NIL
S/DOWNS	NIL	NIL	NIL	NIL	1	00.25	7	07.05	1	00.35	2	00.55	NIL	NIL	NIL	NIL	1	01.20	NIL	NIL	NIL	NIL	1	01.30	3	03.15
TOTAL	14	0.74	19	1.36	22	2.04	23	11.91	22	2.73	19	3.08	10	0.56	11	2.66	18	1.85	32	5.83	14	0.5	24	4.9	13	3.35

Name of Sub Station:- KARNAL – I

Name of 11KV Feeder:-KUTIA FEEDER, URBAN

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS			16	00.35	3	00.06	5	00.56	NIL	NIL																
B/DOWNS			10	19.27	3	03.05	4	04.40	2	01.10																
S/DOWNS			6	05.45	5	07.35	1	00.55	5	04.50																
TOTAL			32	25.07	11	10.46	10	5.51	7	5.6																

**ANNEXURE - I**

**Detail Study of the Power Interruption in the Karnal City at Urban & Rural Feeder**

Name of Sub Station: - KARNAL – I

Name of 11KV Feeder:-SBTC FEEDER, URBAN

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS			6	00.12	7	00.15	18	00.36	10	00.20	6	00.12	4	00.08	4	00.08	NIL	NIL	3	00.06	20	00.53	12	00.47	16	00.30
B/DOWNS			2	04.45	5	13.43	6	09.42	07	06.23	2	03.50	1	01.10	2	01.37	NIL	NIL	NIL	NIL	10	13.35	1	03.00	1	02.20
S/DOWNS			NIL	NIL	2	02.37	6	16.15	2	01.20	2	01.55	NIL	NIL	1	00.40	2	00.45	NIL	NIL	2	02.40	NIL	NIL	NIL	NIL
TOTAL			8	4.57	14	15.95	30	25.93	19	7.63	10	5.17	5	1.18	7	1.85	2	0.45	3	0.06	32	16	13	3.47	17	2.5

Name of Sub Station: - KARNAL – I

Name of 11KV Feeder:-G.R. DOMESTIC, RURAL

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	12	00.24	6	00.12	18	00.36	12	00.24	14	00.28	23	00.46	5	00.10	1	00.02	2	00.04	17	00.34	5	00.10	11	00.22	6	00.12
B/DOWNS	2	10.00	NIL	NIL	7	09.25	3	04.55	3	07.00	6	25.45	7	23.10	7	31.50	3	05.25	3	02.35	1	01.25	2	14.05	1	00.50
S/DOWNS	1	02.00	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
TOTAL	15	12.2	6	0.12	25	9.61	15	4.79	17	7.28	29	25.91	12	23.2	8	31.52	5	5.29	20	2.69	6	1.4	13	14.27	7	0.62

Name of Sub Station: - KARNAL – I

Name of 11KV Feeder:-AMRITPUR DOMESTIC, RURAL

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	10	00.20	14	00.28	20	00.40	33	00.63	25	00.50	10	00.20	15	00.30	11	00.22	13	00.26	16	00.32	7	00.14	21	00.42	8	00.16
B/DOWNS	7	23.30	1	02.20	8	19.20	7	09.55	3	01.45	5	07.30	6	15.10	1	00.35	4	25.30	5	16.40	1	02.15	13	42.20	11	29.30
S/DOWNS	1	02.20	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	1	01.00	NIL	NIL	NIL	NIL	1	02.00
TOTAL	18	25.7	15	2.48	28	19.6	40	10.18	28	1.95	15	7.5	21	15.4	12	0.57	17	25.56	22	17.72	8	2.3	34	42.62	20	31.46

Name of Sub Station: - KARNAL – I

Name of 11KV Feeder: -MODIPUR DOMESTIC, RURAL

	Apr-15		May-15		Jun-15		Jul-15		Aug-15		Sep-15		Oct-15		Nov-15		Dec-15		Jan-16		Feb-16		Mar-16		Apr-16	
	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
TRIPPINGS	1	00.02	7	00.14	12	00.24	7	00.14	3	00.06	7	00.14	9	00.18	2	00.04	4	00.08	7	00.14	5	00.10	9	00.18	7	00.14
B/DOWNS	2	04.25	2	02.45	6	14.30	2	11.00	NIL	NIL	2	06.50	8	30.05	4	14.30	1	05.20	NIL	NIL	2	05.35	4	03.40	2	09.30
S/DOWNS	1	02.00	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	1	00.25	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	1	02.00	NIL	NIL
TOTAL	4	6.27	9	2.59	18	14.54	9	11.14	3	0.06	9	6.64	18	30.48	6	14.34	5	5.28	7	0.14	7	5.5	14	5.58	9	9.44

**ANNEXURE - II****Meter Reading without Inverter and without Solar Power (Average 6.30)**

Date	Time	Meter Reading	Units Consumed
16-9-2016	10.55 AM	29830.38	5.62
17-9-2016	11.00 AM	29836.00	
17-9-2016	11.00 AM	29836.00	6.0
18-9-2016	11.00 AM	29842.00	
18-9-2016	11.00 AM	29842.00	6.88
19-9-2016	11.00 AM	29848.88	
19-9-2016	9.23 AM	29848.85	6.70
20-9-2016	9.38 AM	29855.55	
20-9-2016	9.38 AM	29855.55	6.30
21-9-2016	9.27 AM	29861.80	

**Meter Reading With Inverter and without Solar Power (Average 7.2)**

Date	Time	Meter Reading	Units Consumed
21-9-2016	9.32 PM	29864.90	8.2
22-9-2016	9.06 PM	29873.10	
22-9-2016	8.20 AM	29868.70	7.6
23-9-2016	8.20 AM	29876.30	
23-9-2016	8.20 AM	29876.40	7.2
24-9-2016	8.30 AM	29883.60	
24-9-2016	8.51 AM	29883.60	7.5
25-9-2016	8.31 AM	29890.50	
25-9-2016	8.31 AM	29890.50	7
26-9-2016	8.29 AM	29897.50	
26-9-2016	8.29 AM	29897.50	6.85
27-9-2016	8.34 AM	29904.35	
27-9-2016	8.34 AM	29904.35	6.85
28-9-2016	8.05 AM	29911.20	
28-9-2016	8.05 AM	29911.20	7.7
29-9-2016	8.05 AM	29918.90	
2-10-2016	9.46 AM	29934.40	6.6
3-10-2016	9.47 AM	29941.00	
3-10-2016	8.15 AM	29940.80	7.2
4-10-2016	8.09 AM	29948.00	

**Meter Reading With Inverter and with Solar Power (Average 2.96)**

Date	Time	Meter Reading	Units Consumed
4-10-2016	9.18 AM	29948.25	3.6
5-10-2016	8.25 AM	29951.90	
5-10-2016	5.42 AM	29951.35	4
6-10-2016	6.30 AM	29955.35	
6-10-2016	7.43 AM	29955.70	4
7-10-2016	7.25 AM	29959.70	
7-10-2016	9.10 AM	29959.80	3.2
8-10-2016	8.10 AM	29963.00	
14-10-2016	8.42 AM	29990.20	3.15
15-10-2016	8.15 AM	29993.35	
15-10-2016	8.15 AM	29993.35	3.35
16-10-2016	8.15 AM	29996.70	
16-10-2016	8.15 AM	29996.70	3.30
17-10-2016	6.00 AM	30000.00	
17-10-2016	6.00 AM	30000.00	2.75
18-10-2016	7.01 AM	30002.75	
18-10-2016	7.01 AM	30002.75	3.75
19-10-2016	8.49 AM	30006.50	
19-10-2016	8.49 AM	30006.50	4.6
20-10-2016	7.09 AM	30011.10	
24-10-2016	6.15 AM	30026.50	1.8
25-10-2016	6.15 AM	30028.30	
25-10-2016	6.15 AM	30028.30	1.525
29-10-2016	6.43 AM	30034.40	
29-10-2016	6.43 AM	30034.40	2.15
30-10-2016	6.00 AM	30036.55	
30-10-2016	6.00 AM	30036.55	2.775
31-10-2016	6.00 AM	30039.30	
31-10-2016	9.00 AM	30039.30	2.0
1-11-2016	10.47 AM	30041.30	
1-11-2016	10.47 AM	30041.30	1.43
4-11-2016	10.16 AM	30045.60	



**ANNEXURE - III****Hooda's power bill waiver leaves Haryana in debt****Chandigarh, Feb 29, 2012, (IANS):**

Populist scheme started in 2005 when Hooda just became CM

**A populist scheme in 2005 by Chief Minister Bhupinder Singh Hooda to waive electricity bills worth nearly Rs 1,600 crore has left Haryana in the red.**

Fresh figures suggest defaulters have piled up arrears of another nearly Rs 3,900 crore. The scheme, which was aimed at roping in non-paying electricity consumers to become regular at paying bills in the future, after 2005, has not only flopped but has left power corporations staring at arrears of nearly Rs 3,900 crore, audit reports have revealed.

Hooda's largesse to the power bill defaulters was made in March 2005, just days after he became chief minister for the first time. Though the government had promised to waive arrears of Rs 1,600 crore, in the end arrears of only around Rs 950 crore were waived as the rest of the defaulters did not even bother to join the populist scheme.

Under the scheme, defaulters were asked to pay up the next 10 bills, spread over 20 months, regularly to get their arrears of past bills of over a decade waived.

Sources in Haryana's power corporations, the Uttar Haryana Bijli Vitran Nigam (UHBVN) and Dakshin Haryana Bijli Vitran Nigam (DHBVN), say the scheme not only failed to achieve the desired results but led to a situation in which thousands more power consumers stopped paying bills in various districts of the state.

"The new defaulters have stopped paying the bills in anticipation of another scheme by some other government that comes to power, waiving the arrears later. The new arrears are nearly Rs 3,900 crore," said a senior power corporation official.

Sources say hundreds of consumers, particularly in rural areas and smaller towns, refuse to pay electricity bills leading to the arrears. The worst defaulters are the Jat-dominated districts of Jind, Bhiwani, Hisar and Rohtak. Hooda himself comes from the Jat community.

Jind district alone accounts for fresh arrears of nearly Rs 785 crore followed by Bhiwani -- Rs 526 crore, Hisar -- Rs 407 crore and Rohtak -- Rs 406 crore. Rohtak is the home district of the chief minister.

"It is true that the arrears of electricity bills have run into Rs 3,900 crore. There are some districts where bills are not being paid. We are filing cases against defaulters in revenue courts. The power corporations are autonomous. We have also set up police stations to deal with power theft,"

Haryana's power minister Ajay Singh Yadav said.

While the UHBVN has accumulated arrears worth nearly Rs 2,100 crore, the DHBVN has arrears of over Rs 1,800 crore. Sources say the arrears of domestic consumers alone run into nearly Rs 2,500 crore. Though the corporations have become strict and disconnected the power supply of defaulters and those stealing power in recent years, the arrears have kept going up.

**Power bill waiver: Rs 3,900 crore arrears for Haryana****Jaideep Sarin, IANS, Chandigarh****Updated: Feb 29, 2012 13:37 IST**

A populist scheme in 2005 by Chief Minister Bhupinder Singh Hooda to waive off electricity bills worth nearly Rs 1,600 crore has left Haryana in the red. Fresh figures suggest defaulters have piled up arrears of another nearly Rs 3,900 crore.

The scheme which was aimed at roping in non-paying electricity consumers to become regular at paying bills in the future (after 2005) has not only flopped but has left power corporations staring at arrears of nearly Rs 3,900 crore, audit reports have revealed.

Hooda's largesse to the power bill defaulters was made in March 2005 just days after he became chief minister for the first time. Though the government had promised to waive off arrears of Rs 1,600 crore in the end, arrears of only around Rs 950 crore were waived as the rest of the defaulters did not even bother to join the populist scheme.

Under the scheme, defaulters were asked to pay up the next 10 bills (spread over 20 months) regularly to get their arrears of past bills of over a decade waived off.

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"The new defaulters have stopped paying the bills in anticipation of another scheme by some other government that comes to power, waiving off the arrears later. The new arrears are nearly Rs 3,900 crore " a senior power corporation official told IANS.

Sources say hundreds of consumers particularly in rural areas and smaller towns refuse to pay electricity bills leading to the arrears.

The worst defaulters are the Jat-dominated districts of Jind, Bhiwani, Hisar and Rohtak. Hooda himself comes from the Jat community.

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Sources say the arrears of domestic consumers alone run into nearly Rs 2,500 crore.

THOUGH THE CORPORATIONS HAVE BECOME STRICT AND DISCONNECTED THE POWER SUPPLY OF DEFAULTERS AND THOSE STEALING POWER IN RECENT YEARS, THE ARREARS HAVE KEPT GOING UP

### Hooda govt waives off Rs 1600 crore power dues of farmers, rural consumers in Haryana

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**June 17, 2005 18:27 IST**

In a populist move, the Congress government in Haryana on Friday announced to waive off Rs 1600 crore outstanding power arrears of farmers and rural consumers.

However, it did not clearly spell out measures the government will adopt to cover the deficit.

After announcing in the State Assembly in Chandigarh the decision of his three-month-old government, which enjoys a two-third majority in the House, Chief Minister Bhupinder Singh Hooda told reporters that the state government had taken a 'historic decision' and blamed the previous Indian National Lok Dal regime of misleading the farming community into not paying the bills by promising them free power.

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## पहली बार आईपीएस अफसर के जिम्मे बिजली निगम, शत्रुजीत बने सीएमडी

महज 48 घंटे में फिर प्रशासनिक फेरबदल, 6 आईएएस अफसर भी इधर से उधर



**भारत न्यूज़** राजधानी हरियाणा  
 प्रदेश सरकार ने महज 48 घंटे में फिर प्रशासनिक फेरबदल किया है। चीकने वाला बदलाव है कि पहली बार आईपीएस अफसर को बिजली निगमों को जिम्मेदारी दी गई है। एडीजीपी (ब्राह्म) शत्रुजीत सिंह कपूर को उत्तर हरियाणा बिजली वितरण

निगम का चेयरमैन कम मैनेजिंग डायरेक्टर बनाया गया है। उनके पास दक्षिण हरियाणा बिजली वितरण निगम के चेयरमैन का भी कार्यभार होगा।  
 इससे पहले यह जिम्मेदारी आईएएस नितिन यादव संभाल रहे थे। यादव को गृह विभाग-1 में सचिव लगाया गया है। वहीं नई, एक दिन पहले ही बिजली महकमे के

एडिशनल चीफ सेक्रेटरी राजन गुप्ता को भी बदल दिया गया था। इन दो बड़े अप्पॉइंटमेंट से तबादलों को बिजली कंपनियों की परफॉर्मंस से जोड़कर देखा जा रहा है। तमाम प्रशासों के बावजूद बिजली कंपनियों का ना तो घाटा कम हो रहा है और ना ही लाइन लॉस। बिजली महकमा सुपुर्णजीत मनोहर लाल खुर देव रहे हैं।  
 रोष | पृष्ठ 7 पर

कासनी ने सुबह कार्यभार संभाला, शाम को तबादला



राजधानी हरियाणा | आईएएस अधिकारी प्रवीण कासनी का महज 48 घंटे में ही फिर तबादल कर दिया गया है। बुधवार सुबह ही उन्होंने पति विभाग में कार्यभार संभाला था और शाम तक उन्हें अज्ञुचित जाति पत्नी विद्या दानो कल्याण (एलसी-बीसी टैलेंटकेड) विभाग में सचिव लगा दिया गया। 32 साल की कासनी को कस्बों का यह 66वां तबादला है। वो थिन पहले सोमवार को ही सेक्टर में 26 आईएएस अधिकारियों के तबादले किए थे। इनमें कासनी को सेंट्रल एंड टैकनॉलॉजी विभाग से हटाकर पति विभाग में लगाया था। इनके अलावा पांच अन्य अप्पॉइंटमेंट के कार्यभार में बदलाव किया गया है। सुभाष चंद्र को पति विभाग में सचिव का अतिरिक्त कार्यभार सौंपा गया है।  
 रोष | पृष्ठ 7 पर

**शत्रुजीत बिजली...**  
 न ग्राहक हो रहे जगमग, न रिक्वेस्ट में सुधार : तमाम प्रशासों के बावजूद बिजली वितरण कंपनियों की बकया राशि की वसूली में कोई खास सुधार नहीं हो पा रहा है। विश्वासघात में दो गैर जानकारी के अप्पॉइंटमेंट बिजली वितरण की बकया राशि कम होने के बजाय बढ़ती ही जा रही है। करीब एक साल पहले ही सीएम मनोहर लाल ने 'म्याग गांव, जगमग गांव' स्कीम लागू की थी। इसके तहत बिजली बिल का समय से पूरा भुगतान करने वाले गांवों को 24 घंटे बिजली उपलब्ध कराया जाना है। साथ ही मीटर घटों के बाहर लगाने का काम चल रहा है, लेकिन लोग इसका बिरोध कर रहे हैं। अब आईपीएस अफसर को बिजली निगम में लाने के पीछे यह मकसद हो सकता है कि इन योजनाओं को सख्ती से लागू कराया जा सके। बिजली कंपनियों पर करीब 80000 करोड़ रुपए का कर्ज है। केंद्र की उदय स्वामी के तहत राज्य सरकार ने इसे ओपन ऊपर तो लिया है। इससे उसका खुद का बजट भी गुड़बुड़ा रहा है।  
 जाट आंदोलन के दौरान वे सीआईडी चीफ, लया नाकामी का आरोप : वरिष्ठ आईपीएस अफसर कपूर आस्था आंदोलन के दौरान सीआईडी में एडीजीपी पद थे। आरोप है कि हिसक आंदोलन को लेकर सीआईडी समय रहते खूफिया सूचनाएं जुटाने में नाकाम रही थी। पुलिस-प्रशासनिक अफसरों की काताही की जांच करने वाले प्रकाश कपटी की रिपोर्ट में अंगुली उठाने पर उन्हें सीआईडी से हटाया था।

For the first Time a Senior is being IPS given responsibility to recover pending electricity bills in the state of Haryana.

## सद्भावना रैली | चौ. देवीलाल के 103वें और डॉ. भीमराव आम्बेडकर के 125वें जन्मदिन पर समारोह

### चौ.देवीलाल के कामों को गिनवा इनेलो ने जनता से मांगा समर्थन, तीसरे मोर्चे की तैयारी

कुरुनाल | इनेलो ने सीएम मनोहर लाल के गढ़ में चौधरी देवीलाल के 103वें जन्म दिन और डॉ. भीमराव आम्बेडकर के 125वें जन्म दिवस समारोह के उपलक्ष्य में सद्भावना दिवस एवं सम्मान समारोह आयोजित कर अपनी शक्ति का प्रदर्शन किया। इनेलो नेताओं ने सीएम मनोहर लाल पर कम प्रधानमंत्री नरेंद्र मोदी पर अधिक निशाना सादा। प्रदेश व राष्ट्र के लिए चौधरी देवीलाल के कार्यों को जनता के सामने रखकर अपने पक्ष में समर्थन मांगा और तीसरे मोर्चे को कांग्रेस व भाजपा के विकल्प के रूप में मजबूत बनाने की पर जोर दिया। जाट आरक्षण आंदोलन के दौरान हुए जान-माल के नुकसान के लिए प्रदेश के सीएम को भी आड़े हाथों लिया। इधर देर शाम रैली के बाद कैथल रोड प्लाईओवर जाम लग गया। इससे शहर के लोगों को काफी परेशानी हुई।



चौ. देवीलाल की जीवनी आधारित पुस्तक का विमोचन



कुरुनाल, इनेलो रैली में उपस्थित जनसमूह।

**जितना कठिन संघर्ष होगा उतनी शानदार जीत होगी**

इनेलो नेता संजय सुवंत चौधान ने कहा कि कने जेठे जनसमूहों को चौधरी देवीलाल लाल व डॉ. भीमराव आम्बेडकर ने देश में बदलाव लाने के लिए कठिन संघर्ष की लड़ाई लड़ी। कने ने गरीब, किसान व मजदूर की बात सुनी और उनके बिरोध कायम किया। फलतः बीजप चौधान के जन्म पर किसानों को लूट जा रहा है। अब चौधरी के नेता केदार ने युवकों को की टैरिफ दे रहे हैं। प्रकाश कपटी ने उनका नाम सरकार उरी बकायन करने का प्रयास किया।

**गांव स्तर पर रुठों को मनाएं**  
 सुवंत चौधान ने कहा कि उनको पार्टी गांव स्तर पर अपने रुठे कार्यकर्ताओं को मनायें। लोग कने को इनेलो का अतिरिक्त कार्य नहीं जानना। लेकिन यह पार्टी अने कार्य लोगों में बदलाव लाने का काम करेगी। वे हरियाणा का एक नहीं छोडेंगे। एकमात्र एक फैसला हरियाणा के विकास में आगला तो संभव करण होगा।

**बिजली मीटरों को गंगा में बहाएं**  
 इनेलो प्रदेशभरिका अनेक उद्योग के कार्यरत युवकों ने लगे ही इनेलो युवा कि रूठों के बाहर नींद खाना थिए हैं। बड़ी भरकान बिल आ रहे हैं। उनको सरकार आने पर वे क्या करेंगे। उन्होंने कहा है कि ये इनेलो की सरकार आने पर इन मीटरों को गंगा में फेंकेगे।

**राजनीति की यूनिवर्सिटी वे चौधरी देवीलाल**  
 इनेलो के जिला प्रभु राजेश शर्मा ने कहा कि चौधरी देवीलाल राजनीति की यूनिवर्सिटी थे। वे अर्थी बात के हवी थे। कुछ शर्मा ने कहा कि चौधरी देवीलाल रूठों को खय लेकर चले। शरीर के पूरु शिवायक अनेक संख्यान ने कहा कि चौधरी देवीलाल ने प्रदेश को अपना राज्य का वर्ना बिलखाया। कुकुली के बिरोध पेशन लागू की, जबकि बंसी लाल व भजनलाल जैसे नेता कने दे टिक ऐसी पेशन देते का कोई ककना नहीं है। उन्होंने लोगों को कर्ज सुगत किया।

**इलाकियां**  
 • शरीर इनेलो के 103 डेकदों के खय देवी स्वयं पर पहुंचे सुवंत चौधान।  
 • रैली में पहुंचे देवी कन्याओं ने जाट देवीलाल व डॉ. भीमराव आम्बेडकर को लेकर दण्डिणी के साथ सद्भावना बरकर रखने का संदेश दिया।

**अधिकतर वॉलंटियर बाहरी थे**  
 • रैली में इनेलो पार्टी के कार्यकर्ताओं में जोश दिखया पड़ा।  
 • इनेलो ने पूरी तरह से अपने वॉलंटियर नेजल किए हुए थे, जिनमें अधिकतर कुरुनाल से बाहर के थे।  
 • मंच के उपर बना था मंच, डांस भी उपर नीचे दोनों जगह  
 • रैली का टीवी चैनल व फेसबुक पर लाइव प्रसारण कराया गया  
 • महिलाओं ने रैली के अंदर ही जकरत जताई रखी  
 • महिलाओं ने अंदाई हुई वी हरी फुल और

**रहे लोग**  
 • पंजल के अंदर उड़त ड्रोन बन आकर्षण  
 • पंजल के अंदर उड़त ड्रोन बन आकर्षण का श्रमण सुनेने से पहले व जाने के बिरो लगेने से अवाह किया, लेकिन लोग जाने लगे थे।

Again false and Misleading statements issued by political fronts to make public enr on the payment of electricity bills/dues.

**ANNEXURE – IV**





### ANNEXURE – V

#### KEYWORDS

Unit (kWh), Inverter, Solar energy, Battery, Charge Controller, SMU (Solar Management Unit), Electricity Meter/Energy Meter, Inverter Losses, Electricity Bills, UHBVN (Uttar Haryana Bijli Vitran Nigam), Feeders, AC, DC

**ANNEXURE – VI**  
**PRM (POWER REGULATORY MEASURE) IN R/O KARNAL CIRCLE**

PRM Schedule w.e.f. 23.06.2016					
Rural Domestic Feeder	Evening/Night/Morning	Day Hrs.	Total Hrs.	Industry	
Group-I	19:15-5:15 Hrs.	11:00-13:00 Hrs.	12	Running Hour (20.30 Hrs.)	22:00-18:30 (20.30 Hrs.)
Group-II		13:00-15:00 Hrs.			
11 KV RDS feeders which covered under Mhara Gaon Jagmag Gaon Scheme (Bazida, GR Domestic, Old Sarfabad Majra, Kalampura, Jhimerheri, Muradgarh, Ramba, Takhana, Unispur-2, Panori, Jundia, Kutana & Staundi RDS feeders)	19:00 to 6:00 Hrs.	11:00 to 15:00 Hrs.	16	Peak load Hours	18:30 – 22:00
11 KV RDS feeders which work completed under Mhara Gaon Jagmag Gaon Scheme (Dabri, Galibkheri, Jalmana, Balna & Lalyani RDS feeders)	18:00 to 8:00 Hrs.	11:00 to 15:00 Hrs.	18		
Rural Agriculture Feeder	3 Phase Supply Rural Agriculture feeders				
	Morning/Night time Running Hrs.				
Group-I	02:00 Hrs – 10:00 Hrs.		8:00 Hrs.		
Group-II	10:00 Hrs. – 18:00 Hrs.				
Group-III	18:00 Hrs. – 02:00 Hrs.				
Power Cut/LR on Urban/Mixed Urban Feeders (4 Hours)					
06.00 Hrs. to 07.00	12.00 to 13.00 Hrs.	19.00 to 20.00 Hrs.	01.00 Hrs. to 02.00 Hrs.		
Running Schedule for PAT installed 11 KV AP feeders					
PAT T/F	Times period of 3 phase Power supply (in Hrs.)		Times period of 1 phase Power supply (in Hrs.)		Total running Hrs. (3 phase + 1 phase)
Group-I	02.00 to 10.00 Hrs.		13:00 – 15:00 Hrs.	19.30 to 21.30 Hrs.	8 + 4 = 12 Hrs.
Group-II	10.00 to 18.00 Hrs.		05:00 – 07:00 Hrs.	19.30 to 21.30 Hrs.	
Group-III	18.00 to 02.00 Hrs.		05:00 – 07:00 Hrs.	13.00 to 15.00 Hrs.	
Both the groups will be interchanged as deemed fit by the respective SE(OP)					