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A critical analysis of the cost structure and the policies of solar energy products in Delhi

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Abstract
Solar power systems provide significant environmental benefits over traditional energy sources, and thus contribute significantly to the long-term development of human activities. This property is especially important in a city like Delhi, India's capital. Delhi is one of the world's most polluted areas, so much so that it has been claimed that residents of this area have already lost ten years of their lives due to pollution in the last few years. The proposed study looks in to the insight of demand, investment, policy support and competitive advantage.in solar energy products in Delhi. Further, Analyses various solar energy plans of the central and state government in addition to investigate the cost structure and benefits consumers who use solar products are satisfied with.

Keywords: solar power, environmental, demand, investment and cost & benefits

Introduction

India as a nation has one of the world's largest populations of approximately 1.7 billion people which is second only to China. This fast-growing population has called for an equally fast-growing demand for energy. The country has become the world's third-largest energy-consuming country owing to the fact that this increase in population has been accompanied by an increase in per capita income and improved living standards. An expanding economy, population, urbanization and industrialization mean that India has in recent years seen the largest increase in energy demand of any country, across the board. The services sector has historically been the main driver of India's economic growth rather than the more energy-intensive industrial sector, and the country has urbanised at a slower rate than other comparable nations. However, India's sheer size implies that 270 milliosn more people are expected to move into cities over the next 20 years, even at the comparatively low anticipated rate of urbanisation.It has been noted that in India, energy use has doubled since 2000 but 80% of that increase is still met by coal, oil and solid biomass. On the other side, India's energy consumption and emission is only half of the world average. As the country recovers from the COVID-induced slump as of 2020, it is expected to enter a dynamic period in its energy development. Over the coming few years' Indian households would be seen needing various appliances, vehicles etc. and to meet this surge in demand India would be required to add appropriate power systems which are also environmentally sustainable. The increasing urgency driving the global response to climate change is a pivotal theme in today's environmentally conscious populous. India has so far made a negligible dent in the total global emissions of greenhouse gases, but the nation is already seeing their repercussions. In the context of the increased demand for energy, it is pivotal to note that electricity production has expanded over the years but it is insufficient to meet the growing needs of an ever-expanding population. The majority of the electricity used in the nation is generated from coal for lighting and firewood for heating and cooking. Both of these resources are quite close to their end as some studies have predicted that the country's coal reserves won't last beyond the year 2040-50. In order to meet this surge in demand and closing the gap between the demands and supply of energy it's important that we look at other alternative resources. The sun, as we all know, is a huge source of energy which has only been recently tapped into. It offers abundant resources that can be used to produce clean, sustainable, and non-polluting electricity with no associated greenhouse gas emissions. In recent years, it was discovered that the power of the sun can be collected and stored, to be used on a global scale with the purpose of eventually replacing the conventional sources of energy. As the world is turning its focus to cleaner power, solar energy has seen a significant rise in importance. Solar energy is a renewable free source of energy that is sustainable and totally inexhaustible, unlike fossil fuels that are finite. It is also a non-polluting source of energy and it does not emit any greenhouse gases, i.e., H2O (water vapor), CO2 (carbon dioxide), etc. when producing electricity. Solar power systems offer significant environmental benefits in comparison to the conventional energy sources, thus they greatly contribute to the sustainable development of human activities. This property is of special consequence for an urban area such as the Delhi NCR region. Delhi NCR is one of the world's most polluted areas in the world so much so that it has been said that people residing in this area have already lost 10 years of their life in the past few years owing to this pollution. Owing to the Delhi government's solar power policy the region has somewhat seen an increase in the installed capacity but it is only a fraction of the ambitious targets set by the Delhi government. According to an article published in the Times of India clean energy consulting firm Mercom India has established through data that the cumulative rooftop solar power installations as of July 31, 2021, was 184MW which rose to 201MW by September 2021 which is far less than the target of 1000MW for 2020 and 2762MW by 2022 (Dixit, 2022). Regardless of the setback, it is important to keep in mind that solar power is clean, pure energy from the sun. A reduction in our societal

reliance on fossil fuels is achieved by installing solar panels. Coal and natural gas are two fossil fuels that are the primary sources of conventional power. Burning fossil fuels releases toxic chemicals into the atmosphere that are the main contributors to air pollution and global warming. By the use of sustainable energy like solar energy, we can be assured that our environment is safe and clean for the survival of mankind. India has 20% of the world's population but 40% of the world's population without electricity.

Robust demand

According to Prime Minister Mr. Narendra Modi's declaration in June 2021, India's capacity for renewable energy expanded by 250% between 2014 and 2021.

India's electricity consumption is expected to increase to 817 GW by 2030, according to the Central Electricity Authority. The real estate and transportation sectors will generate the majority of the demand.

Demand for solar panels and geysers have been on a rise across the country with cities like Delhi, Bengaluru, and Pune generating maximum demand for solar panels and geysers, according to the latest Just Dial Consumer Insights.

On the search engine Just Dial, demand for solar equipment in India increased by 14% year over year in the previous month. Demand increased by 13% in Tier-1 cities and by 11% in Tier-II cities during the same time period.

Solar lights, inverters, and fences rounded out the top-5 most-searched solar products in the nation. Solar panels and geysers were the two most popular solar equipment items. Pune, Bengaluru, and Delhi were the top three cities in the world for solar energy adoption.

Increasing investment

Between April 2000 and March 2022, the non-conventional energy sector attracted US$11.62 billion in FDI.

Growing foreign investment (like the US$75 billion investment from the UAE) in the renewables industry is anticipated to encourage other investments in the nation.

Policy support

The government provided Rs.19,500 crores ($2.57 billion) in the Union Budget 2022–23 for a PLI scheme to promote the production of high-efficiency solar modules.

India started the Mission Innovation CleanTech Exchange, a global programme to hasten the development of renewable energy.

Competitive advantage

India is fifth in the world for solar power capacity, fourth for wind power, and fourth for renewable energy capacity.

India maintained its third-place finish on the EY Renewable Energy Country Attractive Index for 2021 in October.

Table 1: Power utilities in the states/uts located in the northern region, installed capacity (in mw) as on 31.12.2021

Region	Ownership/ Sector	Mode wise breakup							Grand Total
		Thermal					Nuclear	Renewable	
		Coal	Lignite	Gas	Diesel	Total		Hydro	RES * (MNRE)Total
Delhi	State	0.00	0.00	1800.40	0.00	1800.40	0.00	0.00	0.000.00 1800.40
	Private	878.22	0.00	108.00	0.00	986.22	0.00	0.00	263.12263.12 1249.34
	Central	3527.29	0.00	207.01	0.00	3734.31	102.83	723.09	0.00723.09 4560.23
	Sub Total	4405.51	0.00	2115.41	0.00	6520.93	102.83	723.09	263.12986.21 7609.97
Haryana	State	2510.00	0.00	150.00	0.00	2660.00	0.00	200.00	69.30269.30 2929.30
	Private	4561.78	0.00	0.00	0.00	4561.78	0.00	539.00	1012.581551.58 6113.36
	Central	1564.80	0.00	535.61	0.00	2100.41	100.94	1579.52	5.001584.52 3785.86
	Sub Total	8636.58	0.00	685.61	0.00	9322.19	100.94	2318.52	1086.883405.40 12828.52
Himachal Pradesh	State	0.00	0.00	0.00	0.00	0.00	0.00	805.60	256.611062.21 1062.21
	Private	0.00	0.00	0.00	0.00	0.00	0.00	1039.40	774.131813.53 1813.53
	Central	151.69	0.00	62.01	0.00	213.70	28.95	1223.88	0.001223.88 1466.53
	Sub Total	151.69	0.00	62.01	0.00	213.70	28.95	3068.88	1030.744099.62 4342.27
Jammu & Kashmir and Ladakh	State	0.00	0.00	175.00	0.00	175.00	0.00	1230.00	136.821366.82 1541.82
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	102.17102.17 102.17
	Central	577.14	0.00	129.07	0.00	706.22	67.98	1091.88	0.001091.88 1866.08
	Sub Total	577.14	0.00	304.07	0.00	881.22	67.98	2321.88	238.992560.87 3510.07
Punjab	State	1760.00	0.00	150.00	0.00	1910.00	0.00	1243.40	127.801371.20 3281.20
	Private	5115.50	0.00	0.00	0.00	5115.50	0.00	288.00	1638.311926.31 7041.81
	Central	1440.00	0.00	264.01	0.00	1704.01	196.81	2277.72	0.002277.72 4178.55
	Sub Total	8315.50	0.00	414.01	0.00	8729.51	196.81	3809.12	1766.115575.23 14501.56
Rajasthan	State	7580.00	250.00	603.80	0.00	8433.80	0.00	433.00	23.85456.85 8890.65
	Private	2957.00	1080.00	0.00	0.00	4037.00	0.00	104.00	14178.8614282.86 18319.86
	Central	1062.59	250.00	221.10	0.00	1533.69	556.74	1402.19	344.001746.19 3836.62
	Sub Total	11599.59	1580.00	824.90	0.00	14004.49	556.74	1939.19	14546.7116485.90 31047.13
Uttar Pradesh	State	5469.00	0.00	0.00	0.00	5469.00	0.00	724.10	49.10773.20 6242.20
	Private	8814.33	0.00	0.00	0.00	8814.33	0.00	842.40	4274.025116.42 13930.75
	Central	5470.51	0.00	549.49	0.00	6020.00	289.48	1857.53	30.001887.53 8197.01
	Total	19753.84	0.00	549.49	0.00	20303.33	289.48	3424.03	4353.127777.15 28369.96
Uttarakhand	State	0.00	0.00	0.00	0.00	0.00	0.00	1252.15	67.871320.02 1320.02
	Private	99.00	0.00	450.00	0.00	549.00	0.00	248.20	838.691086.89 1635.89
	Central	392.60	0.00	69.66	0.00	462.26	31.24	475.54	0.00475.54 969.04
	Sub Total	491.60	0.00	519.66	0.00	1011.26	31.24	1975.89	906.562882.45 3924.95
Chandigarh	State	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000.00 0.00
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.4553.45 53.45
	Central	44.83	0.00	15.03	0.00	59.86	8.01	101.71	0.00101.71 169.57

	Total	44.83	0.00	15.03	0.00	59.86	8.01	101.71	53.45155.16 223.02
Central – Unallocated		1431.03	0.00	291.05	0.00	1722.08	237.03	751.45	0.00751.45 2710.57
Total (Northern Region)	State	17319.00	250.00	2879.20	0.00	20448.20	0.00	5888.25	731.356619.60 27067.80
	Private	22425.83	1080.00	558.00	0.00	24063.83	0.00	3061.00	23135.3326196.33 50260.16
	Central	15662.48	250.00	2344.06	0.00	18256.54	1620.00	11484.52	379.0011863.52 31740.06
	Sub Total	55407.31	1580.00	5781.26	0.00	62768.57	1620.00	20433.77	24245.6844679.45 109068.02

Review literature

Connecting perceived product benefits to consumer's purchase intention

Benefits offered by an element have been recommended as a factor in what the buyer can expect (Nik Abdul Aziz and Abdul wahid,2015) [4]. Customers, for instance, believe that environmentally friendly materials offer advantages over conventional materials. The concentrates discovered that ecologically friendly electrical energy would help to mitigate global temperature fluctuations, reduce air pollution, and manage energy consumption issues. (saw element advantage) (Roe *et al*.,2001; Clark *et al*. 2003). Quader's (2008) take into account the benefits of the approved element as one of the factors influencing the customer's decision to purchase green electrical elements. In essence, it was established that consumers are prepared to pay for environmentally friendly products if they are beneficial to them. (Diamantopoulos *et al*.,2003; Ali *et al*.,2012;Roe *et al*.,2001), like economic and ecological benefits (Mendonca *et al*., 2009; Zoellner er al.(2015) nevertheless argued that consumer choice of solar board does not solely depend on element benefits.

Connecting perceived government policies to consumer's purchase intention

Government policies encourage carpooling and provide incentives to manufacturers of environmentally friendly products. (Ooi *et al*.,2012). Lee's (2011) focus on determining whether government sponsorships are advancing the development of efficient power. The administration's effort to finance the consumer through private feed-in taxes, which were introduced in 2011, by large energy suppliers like Tenaga National Berhad, Sabah Electricity Sdn. Bhd (SESB), and Sarawak Electricity Supply Corp., dominated Malaysia's energy selection. (SESCO). This is due to the fact that a larger selection of solar panels has been observed in western countries like the US and Europe when more aggressive government policies-which include at least 30% expense credits in the US-have been connected. Comparative government strategies have also noted a significant increase in green features in Taiwan. (Chang *et al*., 2011). In Malaysia, Qader (2008 claimed that the administrative action accelerated green buy behavior and was meant to catch clients on the run. Results of investigations conducted under their direction in 2012, Sinnappan, and Rahman (2011) just as Tsen *et al*. (2006) [7] described how apparent government action had a significant impact on Malaysian purchasers' expectations for green purchases. Their findings also suggested that many believe the government should be responsible for promoting and assisting with natural practices. However, the findings from Qader and Zainuddin (2011) showed that apparent government action had little impact on people's innate mindset or expectations.

Objectives of the study

- To evaluate various solar energy plans of the central and state governments in Delhi.
- To investigate the cost structure and benefits consumers who use solar products are satisfied with.

Data & methodology

How do we pick Delhi's top solar installer?

Connecting solar buyers with the top solar companies is important to us at Loom Solar Business. As a result, all of the solar installers we've listed above are working with Loom Solar in DELHI and have been carefully vetted by our staff.

What does the term "pre-screened" mean? We assess each solar installer to make sure they will offer home and business owners a high-quality service. These top-notch installers are chosen based on their credentials, reputation, and years of experience.

Customer reviews and market performance are two additional factors that relate to each installer's activity and are used to determine their ranking on this page.

Price of solar panels in Delhi in 2022

Over the past few years, solar panel prices have increased by up to 50% due to ongoing technological advancements, changes in tax laws, and other factors. Despite rising costs, solar panels' improved efficiency has in some ways contributed to maintaining the value proposition. The most popular renewable energy source is still solar power.

Every customer in Delhi has access to one of the 150 solar solutions shops, 50 inverter battery shops, or 100 electrical shops. The cost of solar panels varies depending on the technology used, the type,

Top five solar companies in Delhi

Geo solar

These are the top solar panel manufacturers in Delhi. They create individualized rooftop solar panels. They have been providing high-quality solar panel solutions for the past seven years. Both mono PERC and polycrystalline solar panels are available from them. Additionally, they have been producing BLDC fans, solar DC air conditioners, and street lighting. Along with all the services, they also provide solar panels with a 25-year warranty. They can choose to buy things with 0% EMI.

Enkay solar power and infrastructure Pvt. Ltd

Enkay Solar Power and infrastructure Pvt. Ltd., a leading manufacturer of solar panels in the world, is a leading solar solution provider in India. The solar company Enkay Solar Power and Infrastructure Pvt. Ltd. has a sizable branch in Noida.

They offer a huge selection of solar batteries, solar investors, and solar panels. They offer personnel with expertise in solar project installation.

Solaris

In 2013, Solaris was established. The business sought to promote the use of renewable energy by offering green technology. It is a Delhi-based EPC firm for solar energy. It is one of the well-known solar companies in Ghaziabad and has numerous branches around Delhi-National Capital Region.

Street lights and solar tubular batteries are the areas of expertise for Solaris. They also offer maintenance and installation services for solar systems.

My sun
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Avian power tech
This is the Solar company in Gurgaon (Delhi NCR) with years of experience in manufacturing Solar panels. They manufacture 3W to 300 W solar panels, 1kW to 1MW solar power plants, and solar power heaters of various capacities.[1] In their years of experience, Avian Power Tech has installed millions of tons of solar water heaters and solar plants in cities like Faridabad Ghaziabad, Reading, Panipat, etc. Other products by them include solar water pumps, solar light, and solar AC.

Cost structure of solar panel in India, 2023
Solar panel-related difficulties, such as poor performance, shadow problems, or panel failure, are often in the news. We will provide crucial information about solar panel installation in this blog. According to many knowledgeable installers, if a solar panel is not installed correctly, you may experience too many problems within a few days, months, or years.
Let's examine the best practices for installing solar panels to ensure their longevity and long-term advantages. We shall first discuss the various varieties and fundamental components of a solar system.

An explanation of solar energy systems.
Four essential elements make up a solar energy system, and these elements determine how well it functions.
- Solar Panel
- Solar Battery
- Solar Inverter
- Panel Stand, and
- Solar panel installation Accessories

Depending on your needs and location, you can employ a variety of solar energy solutions. The following are the two types of solar power systems:
- Solar Panel with Battery (off Grid Solar System)
- Solar Panel with Battery (on Grid Solar System)

Solar panel
The main element of a solar energy system is a solar panel. It is used to turn sunlight into electricity.

Solar panel costs
Depending on the style and model, solar panels typically cost between 36,000 and 44,000 rupees, or roughly Rs. 40,000. Despite the fact that solar panels can help you save money on energy prices, it's crucial to understand the whole setup costs of solar panels so you can create a budget.

Table 2

Average cost of 1kW Solar Panels	
Average Cost	Rs 40000
Lowest Cost	Rs 32000
Highest Cost	Rs 44000

Monocrystalline solar panels
In order to outfit a 3kW solar panel system, also known as a solar system, it costs between Rs. 2,00,000 and Rs. 3,00,000 for a grid-connected solar system and Rs. 2,50,000 to Rs. 3,50,000 for a standalone solar system. Monocrystalline solar panels, the most energy-efficient option, typically cost between Rs. 43 and Rs. 63 per watt. [2]

Bifacial solar panels
The most energy-efficient alternative, bifacial solar panels, typically cost between Rs. 37 and Rs. 52 per watt, which translates to a 3kW solar panel system costing between Rs. 2,00,000 and Rs. 2,10,000 to be outfitted with bifacial solar panels.

Vstalline solar panels
A 5kW solar panel system would cost between Rs. 2,90,000 and Rs. 3,00,000 to outfit, making it a more cost-effective alternative while being less energy-efficient than monocrystalline solar panels at Rs. 30 to Rs. 36 per watt.

Solar inverter
The key element of a solar energy system that transforms DC into AC is a solar inverter.

Solar battery
The energy storage device, a solar battery, keeps the grid's power on while storing electricity to power loads.

Solar Charger Controller
The converters that turn a regular inverter into a solar inverter are called solar charge controllers.

Panel stand
The Solar Panel Stand is a balancing device that secures solar panels to rooftops and shields them from extreme weather conditions, animal attacks, and other perils. The solar panels are at a suitable angle because of it.

Installation series
When installing solar panels, both tiny and large components are used. One at a time, we will lead you.

ACDB
The AC current side of the solar inverter is protected by the ACDB. Typically, it works with a grid-tied solar inverter.

DCDB
Solar panels are shielded from the side of DC currents by DCDB. Both an off-grid and a grid-tied solar inverter are commonly used with it.

Lighting arrester
The Lighting Arrester (LA) shields electrical devices like solar panels from thunder. It works with solar inverters that are connected to the grid as well as off-grid systems.

DC wire
PVC pipe (of less than 3kW) and a cable tray should be used (of 3kW and above).

Ac wire
The inverter's connection to the grid and to household loads is made using AC wire.

Central government

The government has developed a number of programmes

The Indian government has developed a number of solar panel programmes to offer to businesses that are fostering growth.

Regarding solar parks and mega-solar power projects:

30% of the project's cost, or INR 2 M/MW, was covered by CFA. Costs related to grid connectivity are also included.

Detailed Project Reports and performing surveys are also available for INR 2.5 M per plant (DRPs).

Rooftop with grid connection

70% of CFA costs will be provided for residential, social, and institutional sectors, while 30% of benchmark costs would be provided.

In order to build grid-connected PV facilities on canal banks and tops

This is a commercial solar panel subsidy. 30% of the project cost for projects at the canal's top and 15% of the project cost for projects along its bank are granted as financial assistance CFA will allocate a total of INR 2.25 billion for 100 MW for a maximum of two years. It must pay a 1% service charge to the Solar Energy Corporation of India.

For PV lightining systems

The benchmark price for lights, lanterns, streetlights, and lead-acid batteries will be INR 340/W and CFA- INR 102/W. for lithium ferrophosphate batteries used in street lights. Comparable costs are INR 475/W and INR 142.5/W for CFA.

Delhi government

The Delhi government has unveiled a plan to encourage the use of solar power in the region. The government would offer an incentive of Rs. 2 per unit of power under the Mukhyamantri Solar Power Scheme (MSPS), which will assist household consumers in installing solar panels. The plan has received approval from the Delhi cabinet, and it will launched soon.

As earlier goals are not met, the Delhi government revisits

Solar power installations at homes have failed to pique the interest of home owners despite significant subsidies and other incentives from the Delhi government. The city has only been able to add 220 megawatts (MW) of power through this method, less than 1/10th the target of generating 2,762MW by the end of this year.

In February of last year, 184MW of solar energy was produced using rooftop installations. Discoms anticipate Delhi's peak power demand to surpass 8,000 MW for the first time this summer as a result of the heat coming early this year, placing a heavy burden on the city's current electricity infrastructure.

Discoms claimed that there is sufficient public knowledge of solar rooftops, but Covid-19 was to blame for the halt in installation.

Rooftop installations in Delhi have been impacted by the pandemic. Many group housing societies were hesitant to allow solar sellers access to their societies or locations over the past two years. Interest is increasing again as infections decline, according to a discom official who declined to provide his name.

The lengthy process of installing and commissioning solar rooftops, according to experts, is to blame for the general public's lack of enthusiasm.

Conclusion

Demands for power consumption in the residential sector decline, allowing them to provide more in the commercial sector. We are aware that commercial spaces require more electricity than do homes. The consumer is pleased because he received financial assistance, the channel partner is pleased because he acquired a new client, and the government is pleased because it is now one step closer to achieving its goal of installing solar power. A wider customer base and greater business are advantageous to channel partners. Even though the average individual wants the subsidy very much, it is challenging for him to understand the procedures for receiving it. The channel partner enters the picture at this point. He makes an effort to collaborate with the client and the relevant government agencies in order to hasten the client's eligibility for a subsidy. Recent state policies concentrate on a unified single-window state portal run by the Delhi Solar Cell that would provide details on the advantages of solar PV systems as well as timelines and process-related guidelines. The government will offer a variety of incentives, including generation-based incentives (GBI) and capital subsidies, to encourage people to utilise solar energy. Customers will have access to community solar and peer-to-peer trading for the first time in the nation. For the first time in the nation, "Additional Community Solar" will be put into practice. The statement claims that it will enable users without a roof that can accommodate a solar system to buy a share of a bigger solar system. On a piece of land in Delhi, a developer has installed this mechanism.

References

1. Bridge to India. The Indian Solar Handbook, New Delhi: Bridge to India, 2013.
2. Burney. March 6th.Inductive & Deductive research Approach.[Retrieved 4th August,2013.]Available at: http://www.druburney.net
3. A Schlegelmilch BB, Sinkovices RR, Bohlen GM. Can socio demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. Journal of Business Research,2003:56:465-480
4. Nik Abdul Aziz, NS, Abdul Wahid N. Review on consumer purchase intention of solar panel in Malaysia.Elixer international journal ISSN 2229, 2015.
5. Saunders M, Lewis P, Thorn hill A." Research Methods for Business students "New York: Prentice Hall, 2007.
6. Tian SS. Factors influencing the green purchase behavior of environmental related volunteers in penang.MBA Dissertion. University of Sains Malaysia, 2010.
7. Tsen CH, Phang G, Hasan H, Buncha MR.Going green: A Study of consumer willingness to pay for green products in Kota Kinabalu.International Journal of Business Society,2006:7:40-5.
8. https://nise.res.in/
9. https://www.c40.org/case-studies/solar-policy-delhi-2016.
10. https://www.ibef.org/industry/renewable-energy-presentation.
11. India's chaotic and messy use of energy (worldbank.org)
12. https://mnre.gov.in/solar/current-status/
13. https://www.quicksearchindia.in/top-10-solar-companies-in-delhi-ncr/