

GOVERNMENT OF INDIA  
MINISTRY OF NEW AND RENEWABLE ENERGY  
**LOK SABHA**  
**UNSTARRED QUESTION NO-688**  
TO BE ANSWERED ON-13.12.2018  
**GREEN BUILDING**

688. SHRI RAVNEET SINGH

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:-

- (a) whether the Government is aware that a study jointly conducted by the Ministry of New and Renewable Energy found that less than 2 per cent of buildings in India are green buildings, if so, the details thereof;
- (b) the details of the number of publically owned buildings that utilize renewable energy in any capacity, Statewise especially for Punjab;
- (c) the steps that have been taken to increase awareness of the positive effects of energy efficient buildings; and
- (d) whether any regulations/policy document have been created to incentivize greener buildings, if so, the details thereof, if not, the reasons therefor?

**ANSWER**

THE MINISTER OF STATE FOR NEW & RENEWABLE ENERGY AND POWER (I/C)  
(SHRI R.K. SINGH)

(a) Ministry have sanctioned two studies on Green Buildings so far, but the final reports on the same have not been received. The two studies and the status are as follows:

1. Concept note of “Integrated Renewable Energy Buildings” to Confederation of India Industries (CII), Hyderabad (Draft report has been prepared).
2. Development and publication of a book on Green Building Case Studies to The Energy Resources Institute (TERI), New Delhi (Study is in process).

(b) As reported in SPIN portal of MNRE, the Statewise details of the number of publically owned buildings that utilize renewable energy through solar photovoltaic installations is given at Annexure-I. However, there may be other publically owned buildings in states which are utilizing renewable energy and whose details have not been captured since they may have been installed independent of ministry or state renewable energy nodal agencies.

(c) & (d) A ‘Green Rating for Integrated Habitat Assessment’ (GRIHA) rating system has been developed to measure environmental performance of a building through its life cycle. The ‘GRIHA Council’, an independent society, provides GRIHA Ratings to buildings constructed in India.

Under scheme of “Energy Efficient/Green Building”, which got over in March, 2017, about 225 capacity building programmes including trainings, seminar, conferences, workshops for Evaluators and Trainers on GRIHA Ratings and awareness programmes on Green Buildings/GRIHA Ratings/Green Architecture were organized across the country by various technical institutes for creating awareness of the positive effects of energy efficient buildings. Over 1000 GRIHA evaluators and trainers were also developed. Also, 97 building projects of Govt. with 3.05 million square meters built-up area had been sanctioned for the exemption from the registration cum rating fees for acquiring GRIHA rating. So far, 11 Government buildings have been awarded GRIHA Ratings.

Details of the regulation/policy documents created to incentivize greener buildings are at Annexure-II.

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**Annexure 1**

**Annexure I refers to reply to part (b) of Lok Sabha unstarred Question No.688 to be answered on 13-12-2018 regarding ‘Green Buildings’ by SHRI RAVNEET SINGH.**

State-wise, number of publically owned buildings (POBs) having rooftop solar installations.

Sr. No.	State/UT	Subsidized		Non-subsidized		Total	
		POBs	Capacity (in kW)	POBs	Capacity (in kW)	POBs	Capacity (in kW)
1.	ANDAMAN and NICOBAR ISLANDS	13	1000	-	-	13	1000
2.	ANDHRA PRADESH	19	881	44	1625	63	2506
3.	ARUNACHAL PRADESH	--	--	--	--	--	--
4.	ASSAM	2	1250	15	1493.6	17	2743.6
5.	BIHAR	2	1223.4	11	356	13	1579.4
6.	CHANDIGARH	285	17965	16	2732.5	301	20697.5
7.	CHHATTISGARH	49	4519.7	6	873	55	5392.7
8.	DADRA and NAGAR HAVELI	---	---	5	360	5	360
9.	DAMAN and DIU	--	--	14	292	14	292
10.	GOA	---	--	3	257	3	257
11.	GUJARAT	43	6973.19	77	6609.9	120	13583.09
12.	HARYANA	22	7838.5	24	1302.3	46	9140.75
13.	HIMACHAL PRADESH	--	--	--	---	--	--
14.	JAMMU and KASHMIR	13	812.4	11	499	24	1311.4
15.	JHARKHAND	49	1832	19	691	68	2523
16.	KARNATAKA	3	760	123	3447.9	126	4207.88
17.	KERALA	63	8268.6	24	2229.5	87	10498.1
18.	LAKSHADWEEP	--	--	--	--	-	--
19.	MADHYA PRADESH	293	13958.07	23	628	316	14586.07
20.	MAHARASHTRA	23	4006	89	5589.1	112	9595.09
21.	MANIPUR	2	75	1	1300	3	1375
22.	MEGHALAYA	--	--	1	50	1	50
23.	MIZORAM	3	300	1	100	4	400
24.	NAGALAND	--	--	--	--	--	--
25.	NCT OF DELHI	311	32508.93	18	1504.1	329	34013
26.	ORISSA	33	2725	13	385	46	3110
27.	PUDUCHERRY	1	20	--	--	1	20
28.	PUNJAB	3	2490	22	5215.7	25	7705.7
29.	RAJASTHAN	31	1592	47	2273.8	78	3865.82
30.	SIKKIM	--	--	1	10	1	10
31.	TAMIL NADU	274	9066.85	191	4817	465	13883.85
32.	TELANGANA	53	5199.64	46	2515	99	7714.67
33.	TRIPURA	-	-	--	--	--	--
34.	UTTAR PRADESH	31	4857.94	108	8949.5	139	13807.44
35.	UTTARAKHAND	4	725	7	326	11	1051
36.	WEST BENGAL	25	3782.3	109	4976	134	8758.34
	<b>Total</b>	<b>1650</b>	<b>134630.52</b>	<b>1069</b>	<b>61408</b>	<b>2719</b>	<b>196038.4</b>

## Annexure II

**Annexure II refers to reply to part (d) of Lok Sabha unstarred Question No.688 to be answered on 13-12-2018 regarding 'Green Buildings' by SHRI RAVNEET SINGH.**

Details of the regulation/policy documents created to incentivize greener buildings.

Sr.No.	REGULATORY BODY	INCENTIVES																				
1.	Urban Development & Housing Department, Government of Jharkhand	Incentivizes GRIHA Rated projects by awarding additional FAR of up to 7%. 3%, 5% & 7% additional FAR shall be awarded to all building uses (except plotted residential) for achieving a 3-star, 4-star or 5-star GRIHA Rating respectively.																				
2.	Uttar Pradesh Housing and Urban Planning Department	Free of cost 5% additional FAR for projects for complying with 4 or 5 Star GRIHA Rating.																				
3.	Haryana Government	The Haryana Building Code 2017 incentivizes GRIHA Rated projects by awarding additional FAR of up-to 15%. 3%, 6%, 9%, 12% or 15% additional FAR shall be awarded to all building uses (except plotted residential) for achieving a 1-star, 2-star, 3-star, 4-star or 5-star GRIHA Rating respectively																				
4.	Government of West Bengal, Department of Municipal Affairs	GRIHA incentives: 10% additional Floor Area Ratio (FAR) for "Green Building" shall be allowed on the basis of pre-certification by the agencies.																				
5.	Pune Municipal Corporation (PMC)	Discount in premium charges for developers: The developers coming up with new construction projects in the jurisdiction of Pune Municipal Corporation will get the following discounts on the premium charges payable to the corporation, as per the star rating awarded by GRIHA Council. <table><tr><td>Rating</td><td colspan="2">Points scored</td><td>Discount in Premium</td></tr><tr><td></td><td>GRIHA</td><td>SVA GRIHA</td><td>GRIHA/ SVAGRIHA</td></tr><tr><td>***</td><td>71-80</td><td>36-40</td><td>5%</td></tr><tr><td>****</td><td>81-90</td><td>41-45</td><td>10%</td></tr><tr><td>*****</td><td>91-100</td><td>46-50</td><td>15%</td></tr></table>	Rating	Points scored		Discount in Premium		GRIHA	SVA GRIHA	GRIHA/ SVAGRIHA	***	71-80	36-40	5%	****	81-90	41-45	10%	*****	91-100	46-50	15%
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6.	Government of Sikkim	Sikkim has adopted GRIHA for all the Government and semi-Government structures.  All the Government and semi-Government structures in the State (Residential, Non-residential, Healthcare, Institutional, Industrial, Recreational etc.) including those belonging to autonomous bodies like Boards,																				

		Corporation, Companies and Public Sector Undertaking (PSU) shall conform to minimum 3 Stars GRIHA rating for propagating sustainable development in the State.																																				
7.	Jaipur Development Authority, Department of Urban Development and Housing, Government of Rajasthan	Buildings constructed on plot area more than 5,000 m <sup>2</sup> will be eligible for an additional 5% floor area ratio (FAR) free of charge if they get 4 or 5 star rating from GRIHA.																																				
8.	NOIDA and Greater NOIDA Authorities	NOIDA and Greater NOIDA have incentivized GRIHA projects (on a plot of more than 5000 m <sup>2</sup> and above) with free of cost 5% additional FAR for projects for complying with 4 or 5 Star GRIHA Rating.																																				
9.	Pimpri Chinchwad Municipal Corporation	<p>Discount in premium for developers: The developers in Pimpri Chinchwad Municipal Corporation will get the following discounts on the premium amount of building permission charges, as per the level of rating awarded by GRIHA.</p> <p>Discount in premium</p> <table border="1"> <thead> <tr> <th>Points Scored</th><th>Rating</th><th>Discount in Premium</th></tr> </thead> <tbody> <tr> <td>50-60</td><td>1 Star</td><td>10%</td></tr> <tr> <td>61-70</td><td>2 Star</td><td>20%</td></tr> <tr> <td>71-80</td><td>3 Star</td><td>30%</td></tr> <tr> <td>81-90</td><td>4 Star</td><td>40%</td></tr> <tr> <td>91-100</td><td>5 Star</td><td>50%</td></tr> </tbody> </table> <p>Discount in property tax for home owners: Once the construction is complete, the developer will hand over the green building to the flat owners, and henceforth, the flat owners of the green building will get a discount of 10% on property tax.</p> <p>SVA GRIHA Incentives: Depending on the level of SVA GRIHA star rating, the developer can avail discount in the premium as mentioned in the table below:</p> <p>Discount in premium for developers:</p> <table border="1"> <thead> <tr> <th>Points Scored</th><th>Rating</th><th>Discount in Premium</th></tr> </thead> <tbody> <tr> <td>25-30</td><td>1 Star</td><td>10%</td></tr> <tr> <td>31-35</td><td>2 Star</td><td>20%</td></tr> <tr> <td>36-40</td><td>3 Star</td><td>30%</td></tr> <tr> <td>41-45</td><td>4 Star</td><td>40%</td></tr> <tr> <td>46-50</td><td>5 Star</td><td>50%</td></tr> </tbody> </table> <p>Discount in property tax for home owners: The SVA</p>	Points Scored	Rating	Discount in Premium	50-60	1 Star	10%	61-70	2 Star	20%	71-80	3 Star	30%	81-90	4 Star	40%	91-100	5 Star	50%	Points Scored	Rating	Discount in Premium	25-30	1 Star	10%	31-35	2 Star	20%	36-40	3 Star	30%	41-45	4 Star	40%	46-50	5 Star	50%
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		<p>GRIHA linked property tax benefit is in addition to the existing discounts that are offered by the Municipal Corporation like the 10% discount to early tax payers and 10% discount for females. All residential buildings, commercial complexes, individual houses, bungalows which comply with the SVA GRIHA criteria shall be eligible for the rebates.</p> <table> <tr> <th>Points Scored</th><th>Rating</th><th>Discount in Property tax</th></tr> <tr> <td>25-30</td><td>*</td><td>5%</td></tr> <tr> <td>31-35</td><td>**</td><td>8%</td></tr> <tr> <td>36-40</td><td>***</td><td>10%</td></tr> <tr> <td>41-45</td><td>****</td><td>12%</td></tr> <tr> <td>46-50</td><td>*****</td><td>15%</td></tr> </table>	Points Scored	Rating	Discount in Property tax	25-30	*	5%	31-35	**	8%	36-40	***	10%	41-45	****	12%	46-50	*****	15%
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10.	The Department of Housing and Urban Development, Government of Punjab	<p>The Department of Housing and Urban Development, Government of Punjab has notified that an additional 5% floor area ratio free of charges shall be permissible to buildings that provide “Green Building” certificate from the agencies i.e. GRIHA, LEED and IGBC.</p> <p>In case of building compliance with the Punjab Energy Conservation Building Code, the incentive of 15% rebate in property tax shall be granted to the building till the time building is Punjab ECBC complied.</p>																		
11.	Public Works Department, Government of Maharashtra mandates GRIHA for all government projects	Public Works Department, Government of Maharashtra issues a notification mandating all the upcoming government buildings and proposed retrofitting work of the existing buildings in Maharashtra, to comply with the ‘Green building concept’ and further get it rated from GRIHA Council.																		
12.	UPCL in Uttarakhand	UPCL (a DISCOM of Uttarakhand) according with UERC Regulations is providing rebate on the electricity bill @ Rs 100 per “100 liter per day capacity” for the installation of the solar water heater.																		
13.	Small Industries Development Bank of India (SIDBI)	SIDBI has been providing financial assistance to Green Buildings certified by Accredited Rating Agencies including GRIHA by offering concessional rate of interest, presently 50 basis points.																		
14.	Ministry of Urban Development, Government of India	Ministry of Urban Development issues a notification for local authorities to incentivize and provide 1% to 5% extra ground coverage and FAR for projects of more than 3000 m <sup>2</sup> plot size on basis of GRIHA evaluation.																		
15.	The Ministry of Environment and Forests (MoEF), Government of India	The Ministry of Environment and Forests (MoEF), Government of India issued a memorandum to facilitate fast track environmental clearance for GRIHA pre-certified projects.																		
16.	Bureau of Energy Efficiency, Ministry of	Ministry of Power has notified Energy Conservation Building Code Rules 2018, which shall be applicable																		

	Power.	<p>to buildings used or intended to be used for commercial purposes, having a connected load of 100 kilo-Watt (kW) or above or a contract demand of 120 kilo-Volt Ampere (kVA). These rules shall promote energy efficiency in the buildings.</p> <p>A State Energy Conservation Building Code Implementation Committee in each state will promote energy efficiency standards through optimization of parameters in the various components and systems of the building in line with the provisions of these rules to enhance the building performance and provide every support to make it an effective instrument of promoting energy conservation and energy efficiency in the commercial buildings or establishment.</p>
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