

PROJECT ALLOCATIONS UNDER THE NATIONAL SOLAR MISSION PHASE II BATCH I: AN OVERVIEW



Sunrise at Dal Lake, Srinagar

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Abbreviations

JNNSM	Jawaharlal Nehru National Solar Mission
SECI	Solar Energy Corporation of India
NVVN	National Thermal Power Corporation's (NTPC) Vidyut Vyapar Nigam Limited
LCOE	Levelized Cost of Energy
DCR	Domestic Content Requirement
VGf	Viability Gap Funding
PV	Photovoltaic
CSP	Concentrated Solar Power
MNRE	Ministry of New and Renewable Energy
P1 B1	Phase 1 Batch 1
P1 B2	Phase 1 Batch 2
P2 B1	Phase 2 Batch 1

Solar Energy Corporation of India (SECI), the governing body of the second phase of the National Solar Mission, released the details of shortlisted project developers on February 25, 2014 for the first batch of this phase, after opening the financial bids on February 21, 2014. The total capacity targeted under this phase is 750 MW and all of the projects will use photovoltaic technology. The winners were the project developers who sought the minimum possible funds to make their projects viable to sell power to SECI at a tariff of INR 5.45/kWh (INR 4.75/kWh for projects claiming accelerated depreciation) for 25 years. With an objective to promote local manufacturing, SECI invited bids in two separate categories, reserving half of the projects under domestic content requirement (DCR) restrictions. INR 18.75 billion was earlier approved for viability gap funding (VGF) of all the projects under National Solar Mission P2 B1.

Compared to the results of previous stages, the latest allocation results demonstrate evolution of the utility scale solar landscape in India (see the table below).

	NSM Phase I Batch I	NSM Phase I Batch II	NSM Phase II Batch I
Managed by	NVVN	NVVN	SECI
Capacity allocation	PV: 150 MW (PPA signed only for 140MW) ¹ CSP: 470 MW	PV: 350 MW (PPA signed only for 340 MW) ¹ CSP: Nil	PV: 750 MW ² CSP: Nil
Minimum and maximum project capacity	PV: Min: 5 MW, Max: 5 MW. CSP: Min: 5MW, Max:100 MW (Max. of 3 project locations) ³	Min: 5 MW, Max: 20 MW ³	Min: 10 MW, Max: 50 MW ²
Domestic content requirement (DCR)	PV: For projects based on c-Si technology, the modules must have been manufactured in India CSP: 30% domestic content mandatory ¹	For Projects based on c-Si technology, the modules must have been manufactured in India ¹	Separate bids for 375 MW capacity under DCR category and remaining 375 MW under open category ²
Policy mechanism	Preferential feed-in tariff ³	Preferential feed-in tariff ³	Funding support by the govt. (VGF) to make project viable at INR 5.45/kWh tariff (INR 4.75/kWh for projects claiming accelerated depreciation) ²
Allocation method	Reverse bidding on benchmark tariff (per kWh): PV: INR 17.91/kWh, CSP: INR 15.31/kWh ¹	Reverse bidding on benchmark tariff (per kWh): INR 15.39/kWh ¹	Reverse bidding for viability gap funding demand. Maximum VGF: INR 25 million/MW ²
Required bank guarantee	INR 5 million/MW ³	INR 5 million/MW ³	INR 1 million/MW ¹
Required net worth of the bidder	INR 30 million/MW (up to 20 MW), INR 20 million addition/MW (>20 MW) ³	INR 30 million/MW (up to 20 MW), INR 20 million addition/MW (>20 MW) ³	INR 20 million/MW (up to 20 MW), INR 10 million addition/MW (>20 MW) ²

¹ MNRE

² SECI

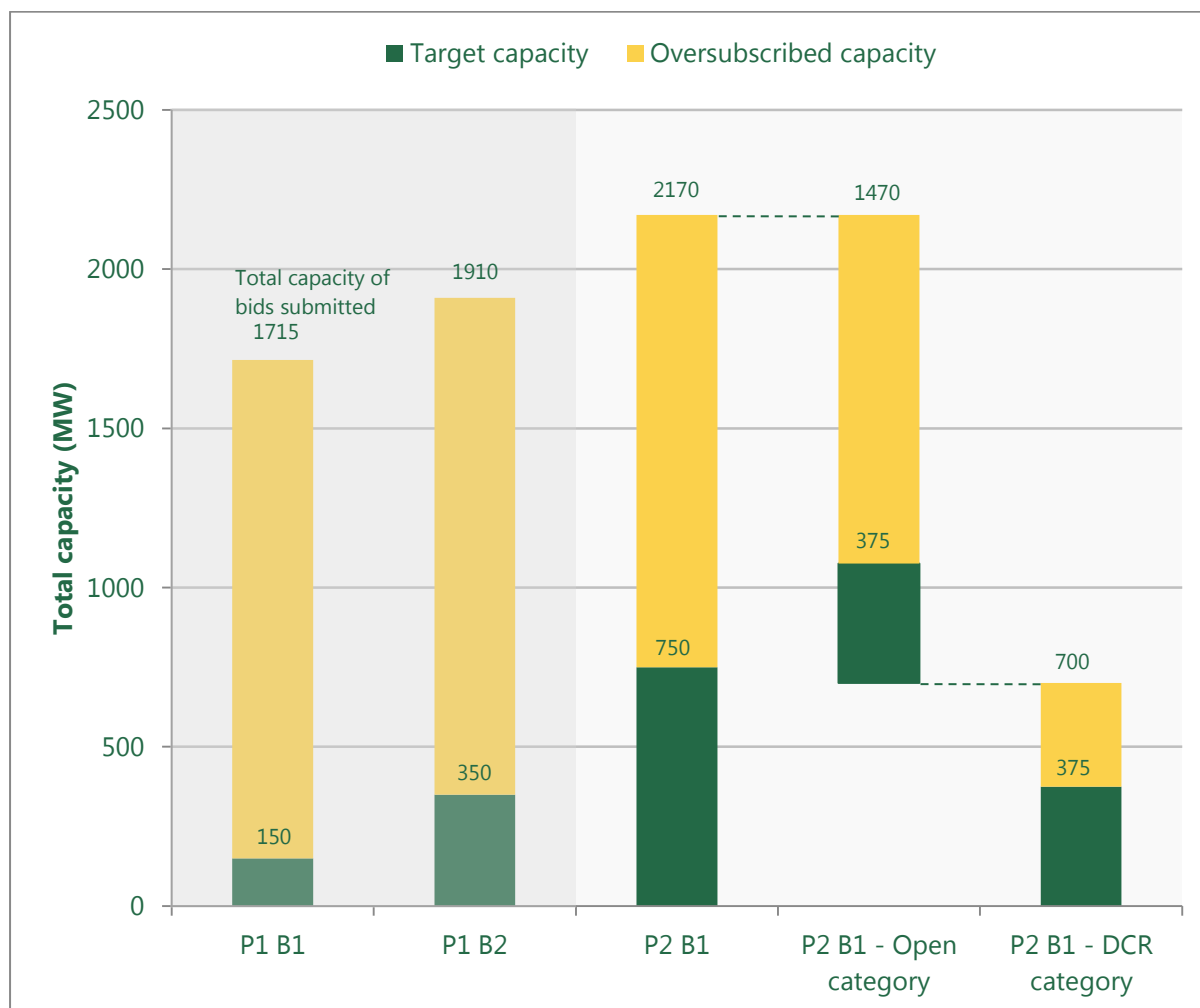
³ NVVN

Commissioning time period	PV: 12 months, CSP: 28 months ³	13 months ³	13 months ²
Project allocation	Dec' 2010 ⁴	Dec' 2011 ⁴	Feb' 2014 ²
No. of bids submitted	PV: 343, CSP: 55	PV: 183	PV: 122
Total capacity of the bids submitted	PV: 1715 MW	PV: 1890 MW	PV: 2170 MW ²
No. of projects selected	PV: 30, CSP: 8 ¹	PV: 26 ¹	PV: 47 ²
Maximum capacity by a bidder	PV: 5 MW, CSP: 100 MW ³	50 MW ³	100 MW ²
Range of the winning bids	PV: INR 10.95/kWh - 12.76/kWh, CSP: INR 10.49/kWh - 12.24/kWh ¹	PV: INR 7.49kWh - 9.44/kWh ¹	DCR: INR 13.5 million/MW - INR 24.56 million/MW. Open: INR 1.7 million/MW - INR 13.5 million/MW ²
Weighted average of the winning bids	PV: INR 12.16/kWh, CSP: 11.48/kWh ¹	PV: INR 8.77 / kWh ¹	DCR: INR 20.19 million/MW, Open: INR 10.67 million/MW ²
Projects commissioned	PV: 140 MW, CSP: 50 MW ¹	PV: 330 MW ¹	Yet to be commissioned
Photovoltaic technology breakdown	Thin film: 55% ⁴ , rest: polycrystalline	Thin film: 75% ⁴ , rest: polycrystalline	
Total investment for the projects	PV: INR 15.4 billion (INR 110 million/MW), CSP: INR 56.4 billion (INR 120 million/MW) ⁴	PV: INR 34 billion (INR 100 million/MW) ⁴	
Prominent project developers	PV: All project developers allocated 5 MW, CSP: Rajasthan sun technique energy pvt. ltd, KVK energy ventures private limited - each 100 MW	PV: Welspun Solar - 50MW, Azure Power - 35MW, Green Infra Solar: 35MW	PV: Azure power - 100 MW, Acme - 60 MW, Waaree energies Pvt. Ltd - 50 MW, Today homes and infrastructure Pvt. Ltd- 50 MW

For photovoltaic projects, while the average project capacity has increased progressively - 5 MW during the P1 B1, approximately 14 MW during the P1 B2 and 15 MW in the latest allocations under the P2 B1. Oversubscription for the bids has gone down from approximately 12 times during the P1 B1 to 5 times during the P1 B2 to 2 times during the P2 B1. In the P2 B1, while the Open category was oversubscribed by approximately 3 times, DCR category was oversubscribed by 50%.

⁴ ESMAP-World Bank Publication - Paving the Way for a Transformational Future - Lessons from JNNSM Phase I

Figure 1: Oversubscription of target capacity in various bids of National Solar Mission

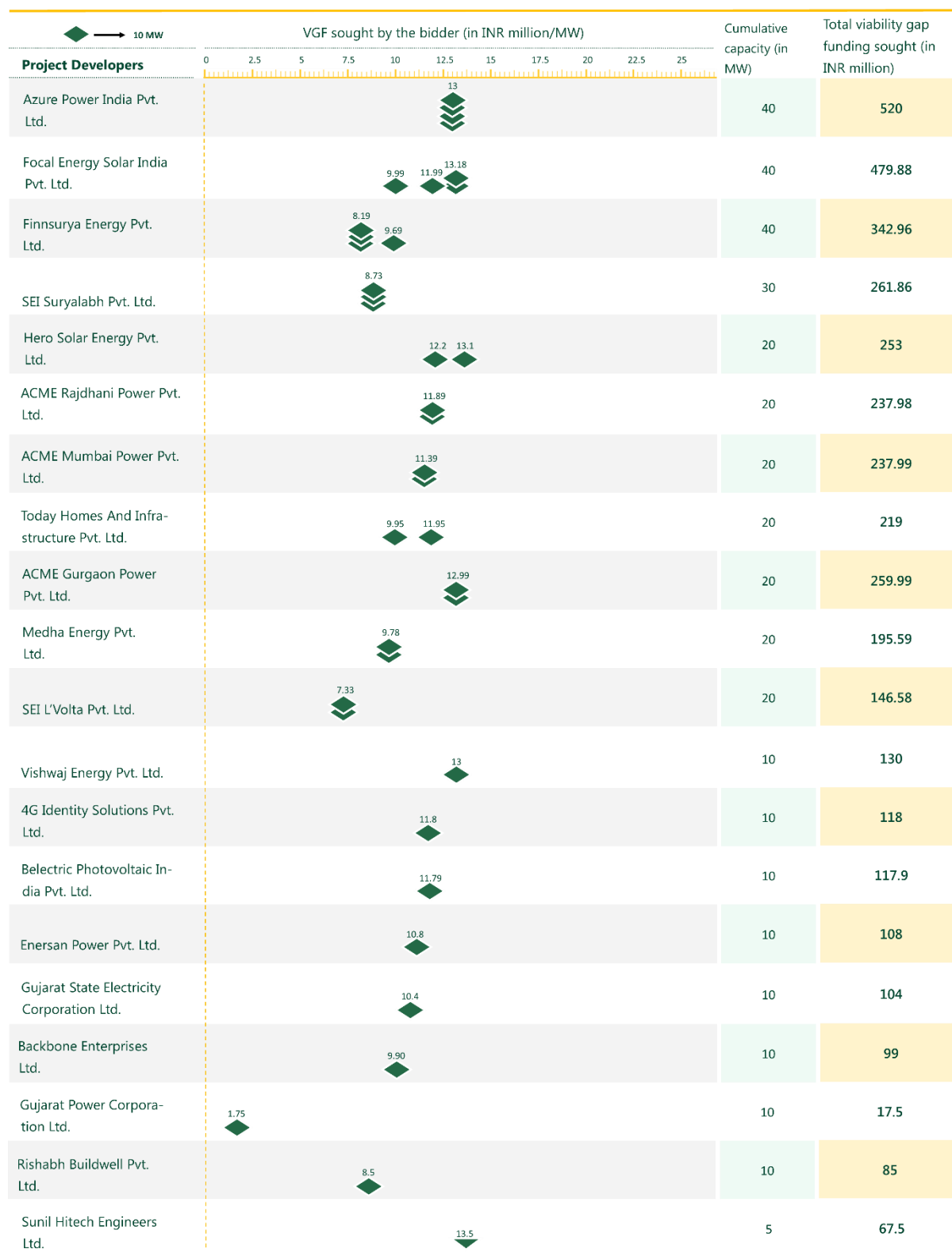


While the range of winning bids seeking viability gap funding under the DCR category is INR 13.6 million/MW to INR 24.56 million/MW (with weighted average of INR 21.31 million/MW), the range of winning bids seeking viability gap funding under the open category is INR 1.7 million/MW to INR 13.5 million/MW (with weighted average of INR 10.07 million/MW⁵).

⁵ SECI

National Solar Mission phase II batch I project allocations under open category

Viability Gap Funding sought by project developers shortlisted under the phase-II of India's National Solar Mission, for photovoltaic projects to be implemented under Open category



Total capacity allocated = 375MW
Total VGF sought = INR 4001.73 million

Source: SECI

National Solar Mission phase II batch I project allocations under DCR category

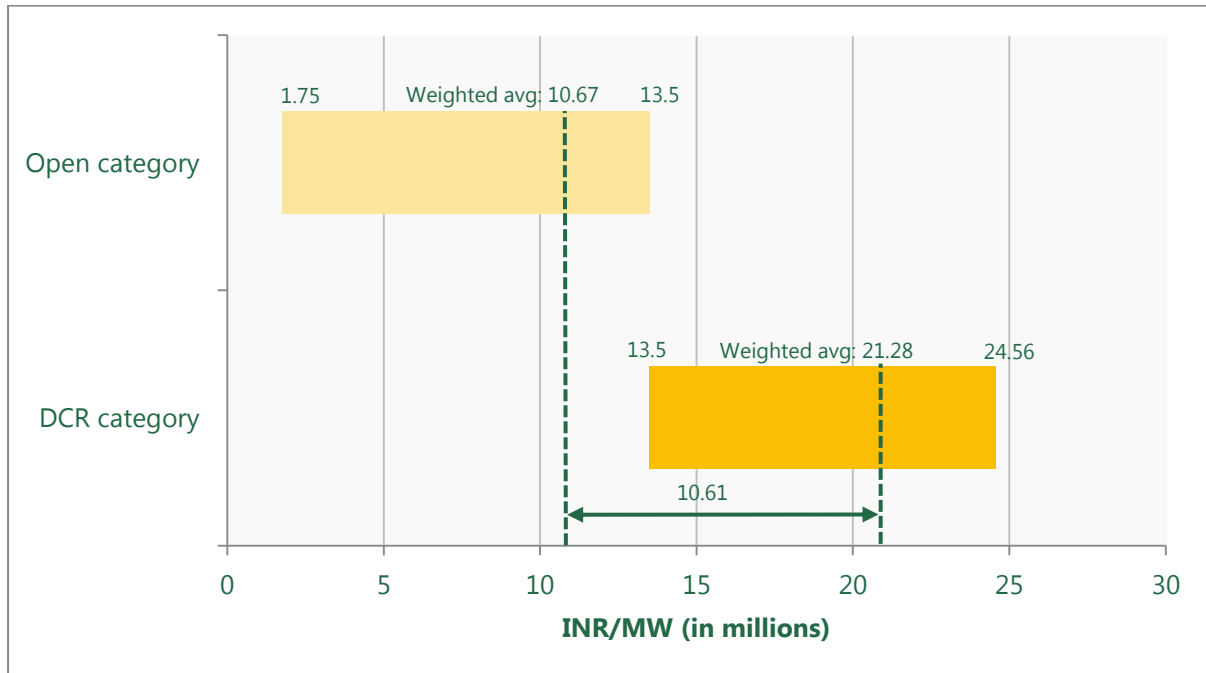
Viability Gap Funding sought by project developers shortlisted under the phase-II of India's National Solar Mission, for photovoltaic projects to be implemented under Domestic Content Requirement category



Total capacity allocated = 375MW
Total VGF sought = INR 7984.67 million

Source: SECI

Figure 2: Range of VGF per MW sought by the winning bids in the two categories of NSM phase II batch I bid⁶



According to the allocations, 25 projects will be developed under the open category, requiring approximately INR 4 billion from the government body to fund the viability gap. Similarly, 22 projects will be developed under the DCR category, requiring a total of INR 8 billion, twice the fund requirements of the open category.

While INR 18.75 billion was reserved by the government, INR 12 billion will be required to fund the projects to make them viable, thereby leaving the fund surplus with 36% of the initial allocation.

⁶ SECI

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