

# Solar Project Pricing Index

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# Disclaimer

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- The provision of a report by DG Energy Partners (DGEP) does not obviate the need for potential investors to make further appropriate inquiries as to the accuracy of the information included there in, or to undertake an analysis of its own,
- This report is not intended to be a complete and exhaustive analysis of the subject issues and therefore will not consider some factors that are important to a potential investor's decision making, and
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# DGEP Project Pricing Index

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## Purpose

- The **Project Pricing Index** represents the respective turnkey costs (\$/Watt) to develop PV projects in various regions across the United States.
- This **DGEP** offering is intended to provide guidance on current project pricing. It is based on both internal financial modeling as well as actual market data.
- The **Project Pricing Index** should be used as a preliminary guide to assist in establishing expectations for baseline turnkey prices for a given region or incentive.
- Each state places a different level of importance on the implementation of renewable energy sources. The result is a contrast in the amount and breadth of PV solar incentives at the state and local level.

# Assumptions

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## Assumptions

The **DGEP Project Pricing Index** does not account for any unique conditions associated with a particular project unless otherwise noted in the footnotes. The following are assumed in development of the project pricing matrices:

Assumption	Description
Capacity	Pricing is based on a one megawatt (1 MW, DC) capacity project.
SREC Pricing	All SREC prices are based on current market levels for 3 year contracts.
PPA	PPA prices are based on market information and retail power prices and escalate at 2.5% per year.
FIT Pricing	FITs are reflected in the PPA price (along the y-axis) where applicable. Specific FIT incentives are noted in the footnotes.
Unlevered	Projects are modeled on an all equity basis; (60% sponsor/40% tax equity).
No Soft Costs	Project prices do not include various soft costs associated with building a project.
Operating Expenses	\$30/kW, 2.5% escalator; includes O&M, insurance and accounting costs.

# Timing and Tax Assumptions

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## Assumptions

The **DGEP Project Pricing Index** does not account for any unique conditions associated with a particular project unless otherwise noted in the footnotes. The following are assumed in development of the project pricing matrices:

Assumption	Description
Construction Start Date	June 1, 2012
Placed in Service Date (PIS)	September 1, 2012
ITC	Realized 90 days from PIS, December 2012
Depreciation	Bonus MACRS assumed, realized 180 days from PIS, March 2013
State and Local Taxes	No Income, sales or property taxes are assumed in this analysis

# Solar Radiation Levels

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Solar Radiation levels impact system output and the economic viability of the project. To reflect this, states have been grouped into 4 matrices according to solar radiation levels.

## 1. Solar Radiation: Low

Output: 1200 kWh/kW Installed



## 2. Solar Radiation: Medium

Output: 1300 kWh/kW Installed



## 3. Solar Radiation: High

Output: 1400 kWh/kW Installed



## 4. Solar Radiation: Very High

Output: 1500 kWh/kW Installed



# EPC Pricing Grid

Solar Radiation: Low



State	kWh/kW	Incentive	Price	Unit
Connecticut	1176	FIT	\$0.35	kWh
Delaware	1240	-	-	-
Indiana	1189	FIT	\$ .20 - \$0.26 <sup>(1)</sup>	kWh
Kentucky	1190	-	-	-
Maryland	1228	SREC	\$0.20	kWh
Massachusetts	1233	SREC	\$0.20	kWh
Michigan	1130	-	-	-
New Hampshire	1236	-	-	-
New Jersey	1217	SREC	\$0.14	kWh
New York	1154	Rebate / PBI <sup>(2)</sup>	***	-
Ohio	1127	SREC	\$0.19	kWh
Oregon	1131	-	-	-
Pennsylvania	1132	SREC	\$0.04	kWh
Rhode Island	1248	FIT	\$ .2895 - \$.3335 <sup>(3)</sup>	kWh
Vermont	1167	-	-	-
Washington	1045	-	-	-
West Virginia	1130	-	-	-
Wisconsin	1214	-	-	-

PPA Price	Incentives						
	\$0.00	\$0.05	\$0.10	\$0.15	\$0.20	\$0.25	\$0.30
	\$0.03						\$1.58 - \$1.78
\$0.04							\$1.77 - \$1.97
\$0.05					\$1.55 - \$1.75	\$1.72 - \$1.92	\$1.95 - \$2.15
\$0.06					\$1.50 \$1.70 \$1.73 \$1.93	\$1.91 - \$2.11	\$2.13 - \$2.33
\$0.07					\$1.69 \$1.89 \$1.92 \$2.12	\$2.09 - \$2.29	\$2.32 - \$2.52
\$0.08				\$1.65 \$1.85	\$1.87 \$2.07 \$2.10 \$2.30	\$2.28 - \$2.48	\$2.50 - \$2.70
\$0.09		\$1.61 \$1.81	\$1.83 - \$2.03	\$2.06 - \$2.26	\$2.28 - \$2.48	\$2.46 - \$2.66	\$2.69 - \$2.89
\$0.10	\$1.56 \$1.76	\$1.79 \$1.99	\$2.02 \$2.22	\$2.24 - \$2.44	\$2.47 - \$2.67	\$2.64 - \$2.84	\$2.87 - \$3.07
\$0.11	\$1.75 - \$1.95	\$1.97 - \$2.17	\$2.20 \$2.40	\$2.43 \$2.63	\$2.65 - \$2.85	\$2.82 - \$3.02	\$3.05 - \$3.25
\$0.12	\$1.93 - \$2.13	\$2.16 - \$2.36	\$2.38 - \$2.58	\$2.61 - \$2.81	\$2.83 - \$3.03	\$3.01 - \$3.21	\$3.23 - \$3.43
\$0.13	\$2.11 - \$2.31	\$2.34 - \$2.54	\$2.56 - \$2.76	\$2.79 - \$2.99	\$3.02 - \$3.22	\$3.20 - \$3.40	\$3.42 - \$3.62
\$0.14	\$2.30 - \$2.50	\$2.53 - \$2.73	\$2.75 - \$2.95	\$2.97 - \$3.17	\$3.20 - \$3.40	\$3.55 - \$3.75	\$3.66 - \$3.86
\$0.15	\$2.48 - \$2.68	\$2.71 - \$2.91	\$2.93 - \$3.13	\$3.16 - \$3.36	\$3.38 - \$3.58	\$3.73 - \$3.93	\$3.84 \$4.00
\$0.16		\$2.89 - \$3.09	\$3.12 - \$3.32	\$3.34 - \$3.54	\$3.57 - \$3.77	\$3.91 - \$4.00	
\$0.17		\$3.08 - \$3.28	\$3.30 - \$3.50	\$3.53 - \$3.73	\$3.76 - \$3.96		
\$0.18		\$3.26 - \$3.46	\$3.49 - \$3.69	\$3.71 - \$3.91	\$3.94 - \$4.00		
\$0.19		\$3.44 - \$3.64	\$3.67 - \$3.87	\$3.90 - \$4.00			
\$0.20	\$2.51 - \$2.71	\$3.63 - \$3.83	\$3.85 - \$4.00				
\$0.21	\$2.65 - \$2.85	\$3.81 - \$4.00					
\$0.22	\$2.78 - \$2.98						
\$0.23	\$2.92 - \$3.12						
\$0.24	\$3.06 - \$3.26						
\$0.25	\$3.20 - \$3.40						
\$0.26	\$3.34 - \$3.54						
\$0.27							
\$0.28	\$3.50 - \$3.70						
\$0.29	\$3.50 - \$3.70						
\$0.30	\$3.50 - \$3.70						
\$0.31	\$3.50 - \$3.70						
\$0.32	\$3.50 - \$3.70						
\$0.33	\$3.50 - \$3.70						
\$0.34	\$3.50 - \$3.70						

\*\*Assumptions: 1 MW, DC capacity - 3 yr SREC pricing - 20 yr PPA, 3% Escalator - No State Tax - Unlevered Basis - No Soft Costs - 20 yr FIT (CT & RI), no escalation and 15 yr FIT (IN), no escalation.

# EPC Pricing Grid

Solar Radiation: Medium



State	kWh/kW	Incentive <sup>(4)</sup>	Price	Unit
Alabama	1278	TVA	Ret + \$0.12	kWh
Arkansas	1314	-	-	
Georgia	1314	TVA	Ret + \$0.12	kWh
Illinois	1227	-	-	
Iowa	1296	-	-	
Louisiana	1285	-	-	
Maine	1235	SREC <sup>(5)</sup>	\$0.10	kWh
Minnesota	1250	-	-	
Mississippi	1282	TVA	Ret + \$0.12	kWh
Missouri	1295	-	-	
Montana	1317	-	-	
North Carolina	1303	TVA	Ret + \$0.12	kWh
North Dakota	1316	-	-	
South Carolina	1321	-	-	
Tennessee	1242	TVA	Ret + \$0.12	kWh
Virginia	1278	TVA	Ret + \$0.12	kWh

PPA Price	Incentives						
	\$0.00	\$0.05	\$0.10	\$0.15	\$0.20	\$0.25	\$0.30
	\$0.03	\$0.04	\$0.05	\$0.06	\$0.07	\$0.08	\$0.09
\$0.03							\$2.19 - \$2.39
\$0.04							\$2.39 - \$2.59
\$0.05							\$2.59 - \$2.79
\$0.06					\$2.10 - \$2.30	\$2.35 - \$2.55	\$2.79 - \$2.99
\$0.07				\$2.06 - \$2.26	\$2.30 - \$2.50	\$2.55 - \$2.75	\$2.99 - \$3.19
\$0.08				\$2.26 - \$2.46	\$2.50 - \$2.70	\$2.75 - \$2.95	\$3.19 - \$3.39
\$0.09			\$3.06 - \$3.26	\$2.46 - \$2.66	\$2.70 - \$2.90	\$2.94 - \$3.14	\$3.39 - \$3.59
\$0.10			\$3.25 - \$3.45	\$2.65 - \$2.85	\$2.90 - \$3.10	\$3.14 - \$3.34	\$3.59 - \$3.79
\$0.11		\$2.16 - \$2.36	\$3.45 - \$3.65	\$2.85 - \$3.05	\$3.10 - \$3.30	\$3.34 - \$3.54	\$3.79 - \$3.99
\$0.12	\$2.11 - \$2.31	\$2.36 - \$2.56	\$2.61 - \$2.81	\$2.85 - \$3.05	\$3.10 - \$3.30	\$3.34 - \$3.54	\$3.59 - \$3.79
\$0.13	\$2.31 - \$2.51	\$2.55 - \$2.75	\$2.81 - \$3.01	\$3.05 - \$3.25	\$3.30 - \$3.50	\$3.54 - \$3.74	\$3.79 - \$3.99
\$0.14	\$2.51 - \$2.71	\$2.76 - \$2.96	\$3.01 - \$3.21	\$3.25 - \$3.45	\$3.50 - \$3.70	\$3.74 - \$3.94	\$3.99 - \$4.00
\$0.15	\$2.72 - \$2.92	\$2.95 - \$3.15	\$3.20 - \$3.40	\$3.45 - \$3.65	\$3.70 - \$3.90	\$3.94 - \$4.00	
\$0.16	\$2.91 - \$3.11	\$3.16 - \$3.36	\$3.41 - \$3.61	\$3.65 - \$3.85	\$3.90 - \$4.00		
\$0.17	\$2.91 - \$3.11	\$3.35 - \$3.55	\$3.61 - \$3.81	\$3.85 - \$4.00			
\$0.18	\$2.91 - \$3.11	\$3.56 - \$3.76	\$3.81 - \$4.00				
\$0.19	\$2.91 - \$3.11	\$3.75 - \$3.95					
\$0.20	\$3.11 - \$3.31	\$3.95 - \$4.00					
\$0.21	\$3.31 - \$3.51						
\$0.22	\$3.51 - \$3.71						
\$0.23	\$3.71 - \$3.91						
\$0.24							
\$0.25							
\$0.26							
\$0.27							
\$0.28							
\$0.29							
\$0.30							
\$0.31							
\$0.32							
\$0.33							
\$0.34							

\*\*Assumptions: 1 MW, DC capacity - 3 yr SREC pricing - 20 yr PPA, 3% Escalator - No State Tax - Unlevered Basis - No Soft Costs



# EPC Pricing Grid

Solar Radiation: High



State	kWh/kW	Incentive	Price	Unit
Florida	1331	-		
Hawaii	1377	FIT	\$ .197 - \$.218 <sup>(6)</sup>	kWh
Idaho	1353	-		
Kansas	1438	-		
Nebraska	1397	-		
Oklahoma	1383	-		
South Dakota	1363	-		
Utah	1485	-		

PPA Price	Incentives						
	\$0.00	\$0.05	\$0.10	\$0.15	\$0.20	\$0.25	\$0.30
\$0.03							\$2.17 - \$2.37
\$0.04							\$2.38 - \$2.58
\$0.05						\$2.12 - \$2.32	\$2.38 - \$2.58
\$0.06					\$2.07 \$2.27	\$2.33 - \$2.53	\$2.60 - \$2.80
\$0.07				\$2.02 \$2.22	\$2.28 \$2.48	\$2.55 - \$2.75	\$2.81 - \$3.01
\$0.08				\$2.23 \$2.43	\$2.50 \$2.70	\$2.76 - \$2.96	\$3.03 - \$3.23
\$0.09			\$2.19 - \$2.39	\$2.45 - \$2.65	\$2.71 - \$2.91	\$2.97 - \$3.17	\$3.24 - \$3.44
\$0.10		\$2.13 - \$2.33	\$2.40 \$2.60	\$2.66 - \$2.86	\$2.93 - \$3.13	\$3.19 - \$3.39	\$3.45 - \$3.65
\$0.11	\$2.09 - \$2.29	\$2.34 - \$2.54	\$2.61 \$2.81	\$2.87 \$3.07	\$3.14 - \$3.34	\$3.40 - \$3.60	\$3.67 - \$3.87
\$0.12	\$2.29 - \$2.49	\$2.56 - \$2.76	\$2.82 - \$3.02	\$3.08 - \$3.28	\$3.35 - \$3.55	\$3.62 - \$3.82	\$3.88 - \$4.00
\$0.13	\$2.51 - \$2.71	\$2.77 - \$2.97	\$3.04 - \$3.24	\$3.30 - \$3.50	\$3.57 - \$3.77	\$3.83 - \$4.00	
\$0.14	\$2.73 - \$2.93	\$2.99 - \$3.19	\$3.25 - \$3.45	\$3.52 - \$3.72	\$3.78 - \$3.98		
\$0.15	\$2.94 - \$3.14	\$3.20 - \$3.40	\$3.47 - \$3.67	\$3.73 - \$3.93			
\$0.16	\$3.15 - \$3.35	\$3.42 - \$3.62	\$3.68 - \$3.88	\$3.95 - \$4.00			
\$0.17	\$3.37 - \$3.57	\$3.63 - \$3.83	\$3.90 - \$4.00				
\$0.18	\$3.58 - \$3.78	\$3.85 - \$4.00					
\$0.19	\$3.58 - \$3.78						
\$0.20	\$3.58 \$3.78						
\$0.21	\$3.58 \$3.78						
\$0.22	\$3.58 \$3.78						
\$0.23							
\$0.24							
\$0.25							
\$0.26							
\$0.27							
\$0.28							
\$0.29							
\$0.30							
\$0.31							
\$0.32							
\$0.33							
\$0.34							

\*\*Assumptions: 1 MW, DC capacity - 3 yr SREC pricing - 20 yr PPA, 3% Escalator - No State Tax - Unlevered Basis - No Soft Costs

# EPC Pricing Grid

**Solar Radiation: Very High**



State	kWh/kW	Incentive	Price	Unit
California	1429	FIT <sup>(7)</sup>	\$0.15 - \$0.17	kWh
California	1429	PBI	\$0.04	kWh
Colorado	1450	SREC <sup>(8)</sup>	\$0.10	kWh
Texas	1463	-		
Wyoming	1449	-		
Arizona	1637	-		
Nevada	1545	-		
New Mexico	1631	-		

PPA Price	Incentives						
	\$0.00	\$0.05	\$0.10	\$0.15	\$0.20	\$0.25	\$0.30
\$0.03			\$2.20 - \$2.40				\$2.19 - \$2.39
\$0.04			\$2.40 - \$2.60				\$2.43 - \$2.63
\$0.05			\$2.60 - \$2.80				\$2.66 - \$2.86
\$0.06			\$2.80 - \$3.00	\$2.03 \$2.23	\$2.32 \$2.52	\$2.61 - \$2.81	\$2.90 - \$3.10
\$0.07				\$2.27 \$2.47	\$2.56 \$2.76	\$2.85 - \$3.05	\$3.14 - \$3.34
\$0.08			\$2.21 \$2.41	\$2.50 \$2.70	\$2.80 \$3.00	\$3.09 - \$3.29	\$3.38 - \$3.58
\$0.09		\$1.88 - \$2.08	\$2.45 - \$2.65	\$2.74 - \$2.94	\$3.03 - \$3.23	\$3.32 - \$3.52	\$3.62 - \$3.82
\$0.10	\$2.10 - \$2.30	\$2.12 - \$2.32	\$2.69 \$2.89	\$2.98 - \$3.18	\$3.27 - \$3.47	\$3.56 - \$3.76	\$3.85 - \$4.05
\$0.11	\$2.34 - \$2.54	\$2.35 - \$2.55	\$2.92 \$3.12	\$3.21 \$3.41	\$3.51 - \$3.71	\$3.80 - \$4.00	
\$0.12	\$2.57 - \$2.77	\$2.86 - \$3.06	\$3.16 - \$3.36	\$3.45 - \$3.65	\$3.74 - \$3.94		
\$0.13	\$2.81 - \$3.01	\$3.10 - \$3.30	\$3.39 - \$3.59	\$3.69 - \$3.89	\$3.98 - \$4.18		
\$0.14	\$3.04 - \$3.24	\$3.34 - \$3.54	\$3.63 - \$3.83	\$3.93 - \$4.13			
\$0.15	\$3.04 - \$3.24	\$3.58 - \$3.78	\$3.87 - \$4.07				
\$0.16	\$3.04 - \$3.24	\$3.82 - \$4.02					
\$0.17	\$3.04 - \$3.24						
\$0.18							
\$0.19							
\$0.20							
\$0.21							
\$0.22							
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\$0.29							
\$0.30							
\$0.31							
\$0.32							
\$0.33							
\$0.34							

\*\*Assumptions: 1 MW, DC capacity - 20 yr REC (CO), 5 yr PBI (CA), 3 yr SREC for all other pricing - 20 yr PPA, 3% Escalator - No State Tax - Unlevered Project - No Soft Costs

# Footnotes

State	Incentive	Description
<sup>(1)</sup> Indiana	Feed-in Tariff:	NIPSCO offers a 15-year FIT of \$0.26 / kWh for projects between 10-2000 kW, DC. Indianapolis P&L offers the following 15-year FIT program: Capacity of 20-100 kW, DC: \$0.24 / kWh Capacity of 101-10,000 kW, DC: \$0.20 / kWh  DGEP Pricing Index assumes a 15-year flat FIT, and a PPA of \$0.10 / kWh for years 16-20, and a land lease expense of \$.02-\$.04 / kWh.
<sup>(2)</sup> New York	PBI:	NYSDA PON 2156 & 2484 (max. of 50% of installed cost) 15% upfront, paid when equipment procured/transported to project site 15% upfront, paid when project is interconnected to grid and can provide performance data 70% paid based on performance of system
<sup>(3)</sup> Rhode Island	Feed-in Tariff:	National Grid FIT: Capacity of 10-150 kW, DC: \$0.3335 / kWh Capacity of 151-500 kW, DC: \$0.316 / kWh Capacity of 501-5000 kW, DC: \$0.2895 / kWh, awarded via a bid process, not to exceed \$.02895
<sup>(4)</sup> Various	Tennessee Valley Authority Generation Partners Program:	TVA pays \$0.12/kWh above the retail base power rate. The maximum system capacity allowed in this program is 50 kW, DC.
<sup>(5)</sup> Maine	SREC:	Pricing Index based on 20-year SREC contract with no escalation (Maine PUC).
<sup>(6)</sup> Hawaii	Feed-in Tariff:	HECO, MECO, HELCO FIT: Capacity of <20 kW, DC: \$0.218 / kWh (Tier 1) Capacity of 21-500 kW, DC: \$0.189 / kWh (Tier 2) Capacity of 501-5000 kW, DC: \$0.197 / kWh (Tier 3)
<sup>(7)</sup> California	State Feed-in Tariff:  Palo Alto Feed-in Tariff:  PBI:	CPUC offers 10, 15 or 20-year FITs and is based on CPUC market price referent. Recent contracts have been in the \$0.10-\$0.12 / kWh range.  The City offers the following FIT programs: 20-year contract: \$0.14003 / kWh 15-year contract: \$0.13216 / kWh 10-year contract: \$0.12360 / kWh  CPUC offers upfront rebates based on expected performance. Currently, the PBI payments are \$0.044 / kWh, and will ultimately drop to \$0.025 / kWh.
<sup>(8)</sup> Colorado	SREC:	Xcel Energy has offered a REC program for PV projects. It is currently on hold, but is expected to resume shortly. REC pricing is expected to be for two rounds of 8MW, DC at \$.10/kWh and \$.09/kWh. Xcel has awarded a round of RECs at \$.11/kWh in April 2012.

# DGEP Client Services

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## DG Energy Partners Services

<b>Project &amp; Capital Sourcing</b>	DGEP provides PPA and lease financing options to EPC, integrator and installer clients through our network of developers, investors and equipment leasing firms. For PPA providers, the DGEP Solar Project Exchange serves as a pipeline of quality projects specific to your investment criteria.
<b>Deal Structuring</b>	Structuring deals to maximize the benefit of tax incentives yet remain within IRS guidelines requires a fundamental understanding of the intricacies of tax advantaged financing structures. DGEP works with our clients to select and implement the most appropriate financing structure.
<b>Financial Modeling</b>	DGEP provides custom financial modeling for solar power projects. Our team is skilled in developing complex project and portfolio level models. DGEP has a portfolio of tax equity models and can customize models to your needs in as little as a few days.
<b>Market Research</b>	The DGEP Market Research team constantly monitors and investigates new markets and incentives; enabling our clients to stay ahead of the curve and profit from an early mover advantage. Beyond simply understanding regulations, programs and demand, the solar finance experts at DGEP inform our clients about qualitative measures including barriers to entry and regulatory and political risk.
<b>Project Development</b>	DGEP works with our clients to efficiently and effectively manage the development process including financial analysis, capital sourcing, contract negotiations and creation of proposal documents.
<b>Foreign Investment</b>	For foreign firms seeking to invest in solar projects in the United States and US investors seeking to expand into international markets, DGEP guides our clients through the international development process; identifying and explaining unique regulatory, legislative, tax, and political environments in your chosen market.



Advisory | Brokerage | Research



Contact DG Energy Partners for pricing of a specific project  
and for full access to the **DGEP Project Pricing Tool**.

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