

Solar Project Pricing Index

November, 2012

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DGEP Project Pricing Index

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.

October Round Up

- **Closing out 2012 and Gearing up for 2013**

- The number of projects seeking investment for Q1, 2013 is gradually increasing. These projects are likely carryovers from 2012.
- EPC pricing has remained fairly steady heading into 2013 with the expiration of bonus MACRS. We're seeing roughly a 10% decrease in turnkey pricing.
- The investment community remains agnostic on Cash Grant versus ITC in Q4 2012.
- The sale of operating assets has increased in Q4, and we expect the trend to continue into next year.

- **CO Solar Gardens**

- Xcel auction prices are expected to be between \$.06/kWh and \$.08/kWh. The anticipated PPA pricing is in the same range.
- There are some challenges in financing these deals both logistically and economically, but they do provide reasonable returns when structured properly.

- **NC Progress Standard Offers**

- The 35% state tax credit (received over 5 years) remains steady between 65%-75% of face value per credit, resulting in a total investment of 23%-26% of total project cost.

- **SREC Market Adjustments (3 year contract pricing; 2013 - 2015)**

- New Jersey SREC prices held mostly steady at .090/kWh.
- Both Maryland and Massachusetts 3 year pricing decreased for the 4th straight month; \$.10/kWh and \$.150/kWh respectfully.

General Assumptions

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 (2013 – 2015)
PPA	PPA prices are based on market information and retail power prices and escalate at 2.5% per year, unless otherwise noted in the footnotes.
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	Period 1 of project is a full year starting 3/1/2013.

Timing and Tax Assumptions

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
ITC	Realized in Period 1
Depreciation	Realized in Period 1 (MACRS schedule). The bonus feature has been removed from our analysis in order to reflect 2013 pricing.
State and Local Taxes	No Income, sales or property taxes are assumed in this analysis

Solar Radiation Levels

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



Retail Power Prices

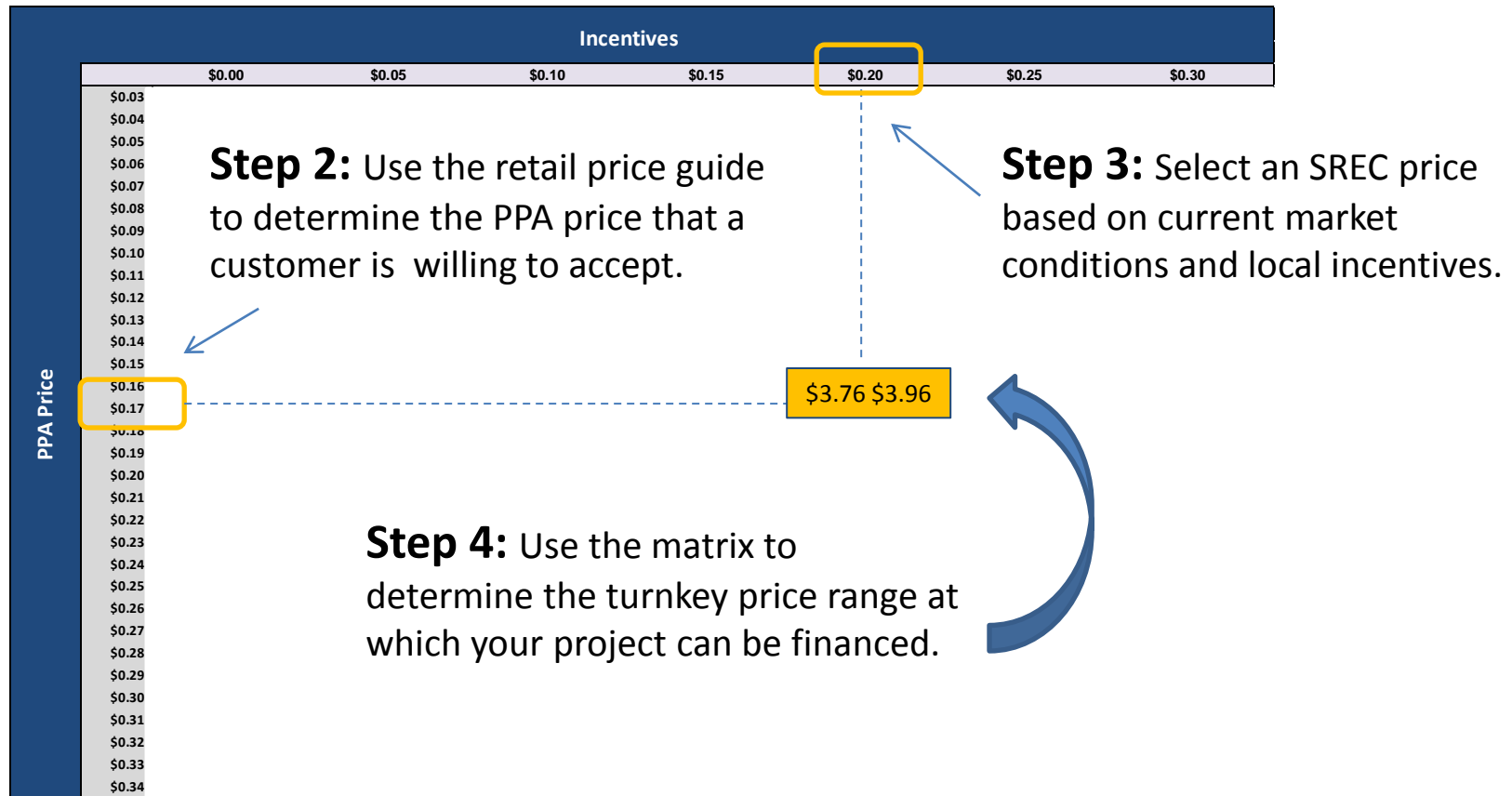
SOLAR RADIATION: LOW		SOLAR RADIATION: MEDIUM		SOLAR RADIATION: HIGH		SOLAR RADIATION: VERY HIGH	
State	Retail Power Price	State	Retail Power Price	State	Retail Power Price	State	Retail Power Price
Connecticut*	\$0.16	Alabama	\$0.10	Florida	\$0.10	California*	\$0.14
Delaware	\$0.11	Arkansas	\$0.07	Hawaii*	\$0.26	Colorado	\$0.09
Indiana*	\$0.08	Georgia	\$0.09	Idaho	\$0.07	Texas	\$0.09
Kentucky	\$0.08	Illinois	\$0.09	Kansas	\$0.08	Wyoming	\$0.07
Maryland	\$0.12	Iowa	\$0.08	Nebraska	\$0.08	Arizona	\$0.09
Massachusetts	\$0.15	Louisiana	\$0.08	Oklahoma	\$0.07	Nevada	\$0.10
Michigan	\$0.10	Maine	\$0.12	South Dakota	\$0.08	New Mexico	\$0.09
New Hampshire	\$0.14	Minnesota	\$0.08	Utah	\$0.07		
New Jersey	\$0.14	Mississippi	\$0.09				
New York	\$0.16	Missouri	\$0.07				
Ohio	\$0.10	Montana	\$0.09				
Oregon	\$0.08	North Carolina	\$0.08				
Pennsylvania	\$0.10	North Dakota	\$0.07				
Rhode Island*	\$0.13	South Carolina	\$0.09				
Vermont	\$0.13	Tennessee	\$0.10				
Washington	\$0.07	Virginia	\$0.08				
West Virginia	\$0.08						
Wisconsin	\$0.10						

*Represents states with Feed-in Tariffs, which are not based on local retail power prices.

EPC Pricing Grid

How to Use this Tool

Step 1: Choose a matrix based on State where project is located.

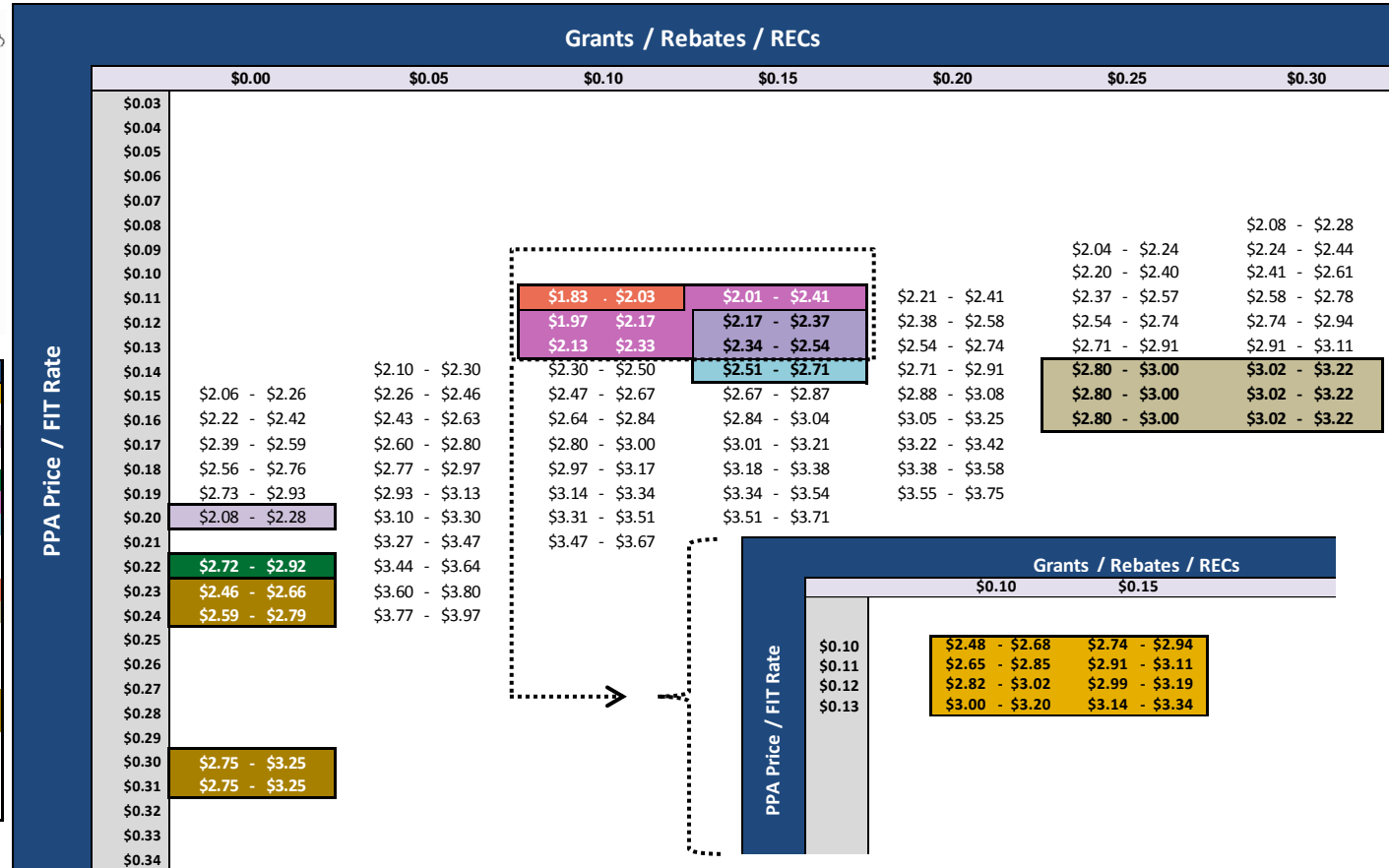


EPC Pricing Grid

Solar Radiation: Low



State	kWh/kW	Incentive	Price	Unit
Connecticut	1176	ZREC	\$0.12 ⁽¹⁾	kWh
Delaware	1240	-	-	-
Indiana	1189	FIT	\$0.20 ⁽²⁾	kWh
Kentucky	1190	-	-	-
LIPA	1154	FIT	\$0.22 ⁽³⁾	kWh
Maryland	1228	SREC	\$0.12	kWh
Massachusetts	1233	SREC	\$0.15	kWh
Michigan	1130	-	-	-
New Hampshire	1236	-	-	-
New Jersey	1217	SREC	\$0.085	kWh
NYSERDA	1154	Rebate/REC ⁽⁴⁾	***	-
Ohio	1127	-	-	-
Oregon	1131	-	-	-
Pennsylvania	1132	-	-	-
Rhode Island	1248	FIT (500+ kW)	\$0.237 ⁽⁵⁾	kWh
Rhode Island	1248	FIT (<500 kW)	\$0.316 ⁽⁵⁾	kWh
Vermont	1167	-	-	-
Washington	1045	-	-	-
West Virginia	1130	-	-	-
Wisconsin	1214	-	-	-



**Assumptions: 1 MW, DC capacity - 3 yr SREC pricing - 20 yr PPA, 2.5% escalator - No State Tax - Unlevered Basis - No Soft Costs - IN: 15 yr FIT, no escalation - RI: 20 yr FIT, no escalation - CT: 20 yr PPA, 2.5% escalator and 15 yr ZREC, no escalation - LIPA: 20 yr FIT

EPC Pricing Grid

Solar Radiation: Medium



State	kWh/kW	Incentive ⁽⁶⁾	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 ⁽⁷⁾	\$0.10	kWh
Minnesota	1250	-	-	-
Mississippi	1282	TVA	Ret + \$0.12	kWh
Missouri	1295	-	-	-
Montana	1317	-	-	-
North Carolina	1303	State Tax Credit ⁽⁸⁾	-	-
North Dakota	1316	-	-	-
South Carolina	1321	-	-	-
Tennessee	1242	TVA	Ret + \$0.12	kWh
Virginia	1278	TVA	Ret + \$0.12	kWh

PPA Price / FIT Rate	Grants / Rebates / REC's						
	\$0.00	\$0.05	\$0.10	\$0.15	\$0.20	\$0.25	\$0.30
\$0.03							
\$0.04							
\$0.05							
\$0.06							\$1.97 - \$2.17
\$0.07						\$1.93 - \$2.13	\$2.16 - \$2.36
\$0.08	\$2.15 - \$2.35				\$1.89 - \$2.09	\$2.12 - \$2.32	\$2.34 - \$2.54
\$0.09				\$2.58 - \$2.78	\$2.08 - \$2.28	\$2.30 - \$2.50	\$2.52 - \$2.72
\$0.10				\$2.75 - \$2.95	\$2.03 - \$2.23	\$2.26 - \$2.46	\$2.48 - \$2.68
\$0.11				\$2.93 - \$3.13	\$2.21 - \$2.41	\$2.44 - \$2.64	\$2.66 - \$2.86
\$0.12		\$1.95 - \$2.15	\$2.18 - \$2.38	\$2.40 - \$2.60	\$2.62 - \$2.82	\$2.84 - \$3.04	\$3.07 - \$3.27
\$0.13		\$2.12 - \$2.32	\$2.36 - \$2.56	\$2.58 - \$2.78	\$2.80 - \$3.00	\$3.02 - \$3.22	\$3.25 - \$3.45
\$0.14		\$2.31 - \$2.51	\$2.54 - \$2.74	\$2.76 - \$2.96	\$2.98 - \$3.18	\$3.21 - \$3.41	\$3.43 - \$3.63
\$0.15	\$1.86 - \$2.06	\$2.49 - \$2.69	\$2.72 - \$2.92	\$2.94 - \$3.14	\$3.17 - \$3.37	\$3.39 - \$3.59	
\$0.16	\$1.98 - \$2.18	\$2.67 - \$2.87	\$2.90 - \$3.10	\$3.12 - \$3.32	\$3.35 - \$3.55		
\$0.17	\$2.11 - \$2.31	\$2.85 - \$3.05	\$3.09 - \$3.29	\$3.30 - \$3.50			
\$0.18	\$2.25 - \$2.45	\$3.04 - \$3.24	\$3.27 - \$3.47				
\$0.19	\$2.28 - \$2.48	\$3.21 - \$3.41					
\$0.20	\$2.28 - \$2.48	\$3.40 - \$3.60					
\$0.21	\$2.28 - \$2.48	\$3.58 - \$3.78					
\$0.22	\$2.28 - \$2.48						
\$0.23	\$2.28 - \$2.48						
\$0.24							
\$0.25							
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\$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, 2.5% Escalator - No State Tax - Unlevered Basis - No Soft Costs – NC: 15 yr PPA, no escalation

*** NC State Tax Credit pricing reflects \$.085/kWh flat for 15 years and a 30% discount applied to the credit price, resulting in a total investment of 24.5%.

EPC Pricing Grid

Solar Radiation: High



State	kWh/kW	Incentive	Price	Unit
Florida	1331	-		
Hawaii	1377	FIT	\$.197 - \$.218 ⁽⁹⁾	kWh
Idaho	1353	-		
Kansas	1438	-		
Nebraska	1397	-		
Oklahoma	1383	-		
South Dakota	1363	-		
Utah	1485	-		

PPA Price / FIT Rate	Grants / Rebates / RECs						
	\$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				\$1.83 - \$2.03	\$1.88 - \$2.08	\$1.92 - \$2.12	\$1.97 - \$2.17
\$0.09				\$2.03 - \$2.23	\$2.07 - \$2.27	\$2.12 - \$2.32	\$2.16 - \$2.36
\$0.10			\$1.98 - \$2.18	\$2.22 - \$2.42	\$2.27 - \$2.47	\$2.31 - \$2.51	\$2.36 - \$2.56
\$0.11		\$1.93 - \$2.13	\$2.18 - \$2.38	\$2.42 - \$2.62	\$2.46 - \$2.66	\$2.51 - \$2.71	\$2.55 - \$2.75
\$0.12	\$1.89 - \$2.09	\$2.13 - \$2.33	\$2.37 - \$2.57	\$2.60 - \$2.80	\$2.66 - \$2.86	\$2.70 - \$2.90	\$2.75 - \$2.95
\$0.13	\$2.09 - \$2.29	\$2.32 - \$2.52	\$2.56 - \$2.76	\$2.81 - \$3.01	\$2.85 - \$3.05	\$2.90 - \$3.10	\$2.94 - \$3.14
\$0.14	\$2.28 - \$2.48	\$2.52 - \$2.72	\$2.76 - \$2.96	\$3.00 - \$3.20	\$3.04 - \$3.24	\$3.09 - \$3.29	\$3.14 - \$3.34
\$0.15	\$2.47 - \$2.67	\$2.71 - \$2.91	\$2.95 - \$3.15	\$3.20 - \$3.40	\$3.24 - \$3.44	\$3.28 - \$3.48	\$3.33 - \$3.53
\$0.16	\$2.67 - \$2.87	\$2.91 - \$3.11	\$3.15 - \$3.35	\$3.39 - \$3.59	\$3.44 - \$3.64		
\$0.17	\$2.87 - \$3.07	\$3.11 - \$3.31	\$3.35 - \$3.55	\$3.59 - \$3.79			
\$0.18	\$3.06 - \$3.26	\$3.30 - \$3.50	\$3.54 - \$3.74				
\$0.19	\$3.26 - \$3.46	\$3.50 - \$3.70					
\$0.20	\$3.26 - \$3.46						
\$0.21	\$3.26 - \$3.46						
\$0.22	\$3.26 - \$3.46						
\$0.23							
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\$0.33							
\$0.34							

**Assumptions: 1 MW, DC capacity - 3 yr SREC pricing - 20 yr PPA, 2.5% Escalator - No State Tax - Unlevered Basis - No Soft Costs

EPC Pricing Grid

Solar Radiation: Very High



State	kWh/kW	Incentive	Price	Unit
California	1429	PBI	\$0.04	kWh
Colorado	1450	SREC ⁽¹¹⁾	\$0.10	kWh
Colorado	1450	Solar Gardens ⁽¹¹⁾	\$0.06 - \$0.08	kWh
Texas	1463	-		
Wyoming	1449	-		
Arizona	1637	-		
Nevada	1545	-		
New Mexico	1631	-		

PPA Price / FIT Rate	Grants / Rebates / RECs						
	\$0.00	\$0.05	\$0.10	\$0.15	\$0.20	\$0.25	\$0.30
	\$0.03						
\$0.04							\$2.01 - \$2.21
\$0.05							\$2.22 - \$2.42
\$0.06							\$2.44 - \$2.64
\$0.07							\$2.66 - \$2.86
\$0.08							\$2.87 - \$3.07
\$0.09							\$3.09 - \$3.29
\$0.10	\$1.71 - \$1.91						\$3.30 - \$3.50
\$0.11	\$1.93 - \$2.13						
\$0.12	\$2.14 - \$2.34						
\$0.13	\$2.35 - \$2.55						
\$0.14	\$2.57 - \$2.77						
\$0.15	\$2.79 - \$2.99						
\$0.16	\$3.00 - \$3.20						
\$0.17	\$3.06 - \$3.26						
\$0.18							
\$0.19							
\$0.20							
\$0.21							
\$0.22							
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\$0.28							
\$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, 2.5% Escalator - No State Tax - Unlevered Project - No Soft Costs

Footnotes

State	Incentive	Description
⁽¹⁾ Connecticut	ZREC & LREC:	United Illuminating (UI) and Connecticut Light and Power (CL&P) offer 15-year REC contracts. ZREC: Capacity of 100-1000 kW, DC: \$0.13+ / kWh based on award DGEP Pricing Index assumes a 15-year flat REC, in addition to a 20-year escalating PPA.
⁽²⁾ Indiana	Feed-in Tariff:	Indianapolis P&L offers the following 15-year FIT program: 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.
⁽³⁾ New York (LIPA)	Feed-in Tariff:	LIPA offers a 20-year feed-in tariff of \$0.22.
⁽⁴⁾ New York (NYSERDA)	PBI:	NYSERDA 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% of bid price paid based on performance of system
⁽⁵⁾ 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: \$0.237 / kWh based on award
⁽⁶⁾ Various	Tennessee Valley Authority Generation Partners Program:	TVA pays \$0.12/kWh above the retail base power rate for first 10 years of project The maximum system capacity allowed in this program is 50 kW, DC. DGEP Pricing Index assumes TVA purchase program for years 1-10, and a \$.119 (escalating) PPA for years 11-20
⁽⁷⁾ Maine	SREC:	Pricing Index based on 20-year SREC contract with no escalation (Maine PUC).
⁽⁸⁾ North Carolina	State Tax Credit	35% state tax credit (received over 5 years) is currently valued between 65%-75% of face value per credit, resulting in a total investment of 23%-26% of total project cost.
⁽⁹⁾ 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)
⁽¹⁰⁾ California	PBI:	CPUC offers upfront rebates based on expected performance. Currently, the PBI payments are \$0.044 / kWh, and will ultimately drop to \$0.025 / kWh.
⁽¹¹⁾ Colorado	SREC:	Xcel has offered \$.09-\$.11 20-year RECs, each round consisting of 8 MWs (DC) of awards. These are likely oversubscribed, however DGEP is seeing deals in the market with these awards attached to them. Xcel Solar Garden auction prices are expected to be between \$.06/kWh and \$.08/kWh. The anticipated PPA pricing is in the same range.

Solar Project Exchange

The **Project Pricing Index** is a free information tool provided by DG Energy Partners as a compliment to the **Solar Project Exchange** service.

DGEP works with EPC firms to connect projects with financing partners. For PPA providers, the service acts as a pipeline of quality projects specific to their investment criteria.

Additional services include deal structuring, financial modeling, project development, foreign investment and market research.



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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