



Special Study Report

2008 PSCo Solar RFP

Supplemental Report – Detailed Cost Estimates

Solar Bids in San Luis Valley

Bid S013 - 23 MW (Poncha – Sargent 115 kV)

Bid S014 - 23 MW (Moffat – Mosca 69 kV)

Bid S016 - 16 MW (Mosca 69 kV Substation)

PSCo Transmission Planning

October 10, 2008

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Table 1a – S013 Interconnection Costs (23 MW of Solar), PSCo Owned/Customer Funded

Element	Description	Cost Est. Millions
Sargent-Poncha 115 kV	Interconnect Customer to tap the bus at the new 115 kV substation. The new equipment includes: <ul style="list-style-type: none"> • One (1) 115 kV bidirectional metering • Three (3) 115 kV combination CT/PT instrument transformers • Associated foundations and structures • Associated transmission line communication, relaying, and testing 	\$0.183
	Re-route transmission line into new substation.	\$0.070
	Customer Generator Communication to Lookout	\$0.010
	Siting and Land Rights for required easements, reports, permits and licenses.	\$0.010
	Total Cost Estimate for PSCo Owned – Customer Funded Interconnection Facility	\$0.273
Time Frame		24 Mo.

Table 1b – S013 Interconnection Costs (23 MW of Solar), PSCo Owned/PSCo Funded

Element	Description	Cost Est. Millions
Sargent-Poncha 115 kV	Interconnect Customer to tap the bus at the new 115 kV substation. The new equipment includes: <ul style="list-style-type: none"> • Three (3) 115 kV, 3000 A, circuit breakers • Six (6) 115 kV, 2000 A, gang switches • Associated communications and SCADA equipment • Line relaying and testing • Electrical bus work • Associated foundations and structures • Associated yard surfacing, landscaping, fencing, and grounding 	\$1.863
		Total Cost Estimate for PSCo Owned – PSCo Funded Interconnection Facility
Time Frame		24 Mo.

Table 2a – S014 Interconnection Costs (23 MW of Solar), PSCo Owned/Customer Funded

Element	Description	Cost Est. Millions
Moffat-Mosca 69 kV	Interconnect Customer to tap the bus at the new 69 kV substation. The new equipment includes: <ul style="list-style-type: none"> • One (1) 69 kV bidirectional metering • Three (3) 69 kV combination CT/PT instrument transformers • Associated foundations and structures • Associated transmission line communication, relaying, and testing 	\$0.132
	Re-route transmission line into new substation.	\$0.020
	Customer Generator Communication to Lookout	\$0.010
	Siting and Land Rights for required easements, reports, permits and licenses.	\$0.010
	Total Cost Estimate for PSCo Owned – Customer Funded Interconnection Facility	\$0.172
Time Frame		24 Mo.

Table 2b – S014 Interconnection Costs (23 MW of Solar), PSCo Owned/PSCo Funded

Element	Description	Cost Est. Millions
Moffat-Mosca 69 kV	Interconnect Customer to tap the bus at the new 69 kV substation. The new equipment includes: <ul style="list-style-type: none"> • Three (3) 69 kV, 2000 A, circuit breakers • Six (6) 69 kV, 2000 A, gang switches • Associated communications and SCADA equipment • Line relaying and testing • Electrical bus work • Associated foundations and structures • Associated yard surfacing, landscaping, fencing, and grounding 	\$1.458
		Total Cost Estimate for PSCo Owned – PSCo Funded Interconnection Facility
Time Frame		24 Mo.

Table 3a – S016 Interconnection Costs (16 MW of Solar), PSCo Owned/Customer Funded

Element	Description	Cost Est. Millions
Mosca 69 kV Substation	Interconnect Customer to tap the bus at the Mosca substation. The new equipment includes: <ul style="list-style-type: none"> • One (1) 69 kV bidirectional metering • Three (3) 69 kV combination CT/PT instrument transformers • Associated foundations and structures • Associated transmission line communication, relaying, and testing 	\$0.132
	Re-route transmission line into new substation.	\$0.020
	Customer Generator Communication to Lookout	\$0.010
	Siting and Land Rights for required easements, reports, permits and licenses.	\$0.010
	Total Cost Estimate for PSCo Owned – Customer Funded Interconnection Facility	\$0.172
Time Frame		24 Mo.

Table 3b – S016 Interconnection Costs (16 MW of Solar), PSCo Owned/PSCo Funded

Element	Description	Cost Est. Millions
Mosca 69 kV Substation	Interconnect Customer to tap the bus at the new 69 kV substation. The new equipment includes: <ul style="list-style-type: none"> • One (1) 69 kV, 2000 A, circuit breakers • One (1) 69 kV, 2000 A, gang switches • Associated communications and SCADA equipment • Line relaying and testing • Electrical bus work • Associated foundations and structures • Associated yard surfacing, landscaping, fencing, and grounding 	\$0.318
	Total Cost Estimate for PSCo Owned – PSCo Funded Interconnection Facility	\$0.318
Time Frame		24 Mo.