Appendix F

Energy Model

ON SITE EQUIPMENT ENERGY USE						
Phase	**Offroad BTU**	**Onsite Onroad BTU**	**Total BTU**	**Billion BTU**	**kWh**	**MWh**
Construction						
PV Site Prep	25,669,278,683	3,181,681,440	28,850,960,123	28.85	8,453,255	8,453
PV System Installation	18,032,718,977	3,601,601,280	21,634,320,257	21.63	6,338,799	6,339
PV Inverters Substation Connection	2,978,707,344	13,616,640	2,992,323,984	2.99	876,743	877
ESS Site Prep	-	820,752,120	820,752,120	0.82	240,478	240
ESS Foundation, Structures, DC	-	102,441,600	102,441,600	0.10	30,015	30
ESS Inverters, Substation, AC	-	851,040	851,040	0.00	249	0
CONSTRUCTION TOTAL	46,680,705,004	7,720,944,120	54,401,649,124	54.40	15,939,540	15,940
Operation (Annual)	674,938,519	N/A	674,938,519	0.67	197,755	198
Decommissioning	1,504,588,567	245,099,520	1,749,688,087	1.75	512,654	513

ON ROAD VEHICLE ENERGY USE					
Phase	**VMT**	**BTU**	**Billion BTU**	**kWh**	**MWh**
Construction					
Gas Vehicles	7,427,946	39,952,377,367	40	11,705,941	11,706
Diesel Vehicles	3,168,299	44,938,118,469	45	13,166,750	13,167
TOTAL	10,596,245	84,890,495,836	85	24,872,691	24,873
Operation (Annual)					
Gas Vehicles	143,040	769,363,167	1	225,421	225
Diesel Vehicles	111,680	1,584,032,653	2	464,117	464
TOTAL	254,720	2,353,395,820	2	689,539	690
Decommissioning					
Gas Vehicles	1,259,280	6,773,235,800	7	1,984,540	1,985
Diesel Vehicles	630,960	8,949,330,612	9	2,622,130	2,622
TOTAL	1,890,240	15,722,566,413	16	4,606,670	4,607

Notes/assumptions:

VMT and equipment use data is from:

HELIX Environmental Planning, Inc. 2019. RE Slate Solar Project Air Quality and Greenhouse Gas Emissions Technical Report. January.

Data presented above is a summary of detailed calculations prepared for the RE Slate Solar Project.

BTU Conversion Assumptions

	BTU/gallon	Fuel Economy (mpg)	Fuel consumption (BTU/mile)
Gas vehicles	125,000	23.24	5,379
Diesel vehicles	139,000	9.8	14,184