Appendix H
Emissions Calculations

National Grid Renewables
Summit Lake Solar Facility and BESS
Construction Emission Calculations

Summary of Potential Construction Emissions (tons)

	Emissions							
	Criteria Pollutants						HAPs	
Description	NOx	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$	Formaldehyde	Total
SOLAR FARM								
Off-Road Engine Emissions	83.23	18.26	4.30	0.04	2.88	2.87	0.51	0.76
Unpaved Roads	--	--	--	--	0.75	0.08	--	--
Earthmoving	--	--	--	--	183.22	19.33	--	--
Solar Farm Subtotal	83.23	18.26	4.30	0.04	186.84	22.28	0.51	0.76
BESS								
Off-Road Engine Emissions	21.87	4.51	0.99	0.01	0.69	0.69	0.12	0.17
Unpaved Roads	--	--	--	--	0.01	0.00	--	--
Earthmoving	--	--	--	--	0.00	0.00	--	--
BESS Subtotal	21.87	4.51	0.99	0.01	0.70	0.69	0.12	0.17
GEN-TIE LINE								
Off-Road Engine Emissions	25.16	5.76	1.88	0.01	0.99	0.99	0.22	0.33
Unpaved Roads	--	--	--	--	0.00	0.00	--	--
Earthmoving	--	--	--	--	0.00	0.00	--	--
Gen-tie Line Subtotal	25.16	5.76	1.88	0.01	0.99	0.99	0.22	0.33
Off-Road Engine Emissions	130.26	28.52	7.16	0.06	4.55	4.55	0.85	1.26
Unpaved Roads	--	--	--	--	0.76	0.08	--	--
Earthmoving	--	--	--	--	183.22	19.33	--	--
PROJECT TOTAL	**130.26**	**28.52**	**7.16**	**0.06**	**188.53**	**23.96**	**0.85**	**1.26**

National Grid Renewables
Summit Lake Solar Facility and BESS
Construction Emission Calculations

Emission Factors for Construction Engines

Equipment	Quantity [a]	Total Hours Used	Max Power (HP)	Load Factor [b]	Loaded Power (HP)	Emission Factors [c,d] (g/hp-hr) VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2	CO_2	CH_4	N_2O
Air Compressor	5	920	80	1	80	0.367	2.366	4.700	0.240	0.240	0.002	188.262	0.008	0.002
ATV	44	44,064	20	0.5	10	0.438	2.161	4.440	0.267	0.267	0.002	188.262	0.008	0.002
Backhoe	6	5,220	75	0.8	60	0.367	2.366	4.700	0.240	0.240	0.002	188.262	0.008	0.002
Bulldozer	5	2,340	250	1	250	0.309	0.748	4.000	0.132	0.132	0.002	188.262	0.008	0.002
Compactor	6	1,492	300	1	300	0.167	0.843	4.335	0.132	0.132	0.002	188.262	0.008	0.002
Compactor, Vibratory	6	4,924	100	1	100	0.338	0.867	4.100	0.180	0.180	0.002	188.262	0.008	0.002
Fork Lift	14	11,916	120	1	120	0.167	0.843	4.335	0.132	0.132	0.002	188.262	0.008	0.002
Concrete Mixer Truck	16	7,440	325	1	325	0.338	0.867	4.100	0.180	0.180	0.002	188.262	0.008	0.002
Concrete Pump	1	450	300	1	300	0.338	0.867	4.100	0.180	0.180	0.002	188.262	0.008	0.002
Dump Truck	5	1,522	325	0.8	260	0.338	0.867	4.100	0.180	0.180	0.002	188.262	0.008	0.002
Excavator	6	6,140	138	1	138	0.309	0.748	4.000	0.132	0.132	0.002	188.262	0.008	0.002
Front End Loader	5	3,660	196	1	196	0.309	0.748	4.000	0.132	0.132	0.002	188.262	0.008	0.002
Generator	19	16,580	250	0.5	125	0.167	0.843	4.335	0.132	0.132	0.002	188.262	0.008	0.002
Guided Bore Machine	8	2,480	150	0.8	120	0.637	2.366	4.700	0.240	0.240	0.002	188.262	0.008	0.002
Light Tower	2	1,800	50	1	50	0.309	0.748	4.000	0.132	0.132	0.002	188.262	0.008	0.002
Manlift	4	6,000	50	1	50	0.338	0.867	4.100	0.180	0.180	0.002	188.262	0.008	0.002
Pickup Truck	31	41,500	150	0.25	38	0.167	0.843	4.335	0.132	0.132	0.002	188.262	0.008	0.002
Piping Truck	0	0	300	1	300	0.309	0.748	4.000	0.132	0.132	0.002	188.262	0.008	0.002
Skid steer loader	6	5,588	50	1	50	0.309	0.748	4.000	0.132	0.132	0.002	188.262	0.008	0.002
Water truck	6	8,812	100	0.5	50	0.637	2.366	4.700	0.240	0.240	0.002	188.262	0.008	0.002
Welding machine	3	2,056	35	0.8	28	0.367	2.366	4.700	0.240	0.240	0.002	188.262	0.008	0.002
Grader	4	5,368	35	0.8	28	0.438	2.161	4.44	0.267	0.259	0.002	188.262	0.008	0.002
Large Crane	0	0	15	0.21	3	0.438	2.161	4.44	0.267	0.259	0.002	188.262	0.008	0.002
Medium Crane	7	1,476	450	0.7	315	0.3085	0.7475	4.0	0.132	0.128	0.002	188.262	0.008	0.002
Fuel Truck	3	4,020	200	0.59	118	0.3085	0.7475	4.0	0.132	0.128	0.002	188.262	0.008	0.002
Hydrovac Truck	3	420	200	0.59	118	0.3085	0.7475	4.0	0.132	0.128	0.002	188.262	0.008	0.002
Road Bore Machine	1	80	260	0.79	205	0.3085	0.7475	4.0	0.132	0.128	0.002	188.262	0.008	0.002
6-inch Water Pump	2	320	30	0.69	21	0.438	2.161	4.44	0.267	0.259	0.002	188.262	0.008	0.002
4-inch Water Pump.	2	240	10	0.69	7	0.438	2.161	4.44	0.267	0.259	0.002	188.262	0.008	0.002
2-inch Water Pump	0	0	5	0.69	3	0.438	2.161	4.44	0.267	0.259	0.002	188.262	0.008	0.002
Pile Driver	7	6,944	49	1	49	0.2789	1.5323	4.7279	0.3389	0.3389	0.002	188.262	0.008	0.002
100 HP Tractor	5	6,400	100	0.21	100	0.338	0.867	4.1	0.18	0.18	0.002	188.262	0.008	0.002
Semitruck/Trailer	49	6,900	500	0.59	500	0.167	0.843	4.335	0.132	0.132	0.002	188.262	0.008	0.002

[a] Equipment counts include construction equipment for the solar farm, BESS, and gen-tie line.

[b] Load Factors from Appendix A of EPA 420_P-04-005, Median Life, Annual Activity, and Load Factor Values for

[c] EPA 420-P-04-009, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling - Compression Ignition, USEPA, April 2004 - Tier 2 Engines.

[d] GHG emission factors from EPA's 2024 GHG Emission Factors Hub. Available online at https://www.epa.gov/climateleadership/ghg-emission-factors-hub.

Assumption:

393.5

453.6

National Grid Renewables
Summit Lake Solar Facility and BESS
Construction Emission Calculations

Criteria Pollutant Emission Estimates from Construction Engines						
	Potential Emissions (ton)					
Equipment	**VOC**	**CO**	**NOx**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**
Air Compressor	2.98E-02	0.192	0.381	0.019	0.019	0.000
ATV	2.13E-01	1.050	2.157	0.129	0.129	0.001
Backhoe	1.27E-01	0.817	1.623	0.083	0.083	0.001
Bulldozer	1.99E-01	0.482	2.579	0.085	0.085	0.001
Compactor	8.23E-02	0.416	2.139	0.065	0.065	0.001
Compactor, Vibratory	1.84E-01	0.470	2.225	0.098	0.098	0.001
Fork Lift	2.63E-01	1.328	6.833	0.207	0.207	0.003
Concrete Mixer Truck	9.02E-01	2.310	10.928	0.480	0.480	0.005
Concrete Pump	5.04E-02	0.129	0.610	0.027	0.027	0.000
Dump Truck	1.48E-01	0.378	1.788	0.079	0.079	0.001
Excavator	2.88E-01	0.698	3.736	0.123	0.123	0.002
Front End Loader	2.44E-01	0.591	3.163	0.104	0.104	0.002
Generator	3.81E-01	1.925	9.904	0.301	0.301	0.005
Guided Bore Machine	2.09E-01	0.776	1.542	0.079	0.079	0.001
Light Tower	3.06E-02	0.074	0.397	0.013	0.013	0.000
Manlift	1.12E-01	0.287	1.356	0.060	0.060	0.001
Pickup Truck	2.86E-01	1.445	7.437	0.226	0.226	0.003
Piping Truck	0.00E+00	0.000	0.000	0.000	0.000	0.000
Skid steer loader	9.50E-02	0.230	1.232	0.041	0.041	0.001
Water truck	3.09E-01	1.149	2.283	0.117	0.117	0.001
Welding machine	2.33E-02	0.150	0.298	0.015	0.015	0.000
Grader	7.26E-02	0.358	0.736	0.044	0.043	0.000
Large Crane	0.00E+00	0.000	0.000	0.000	0.000	0.000
Medium Crane	1.58E-01	0.383	2.050	0.068	0.066	0.001
Fuel Truck	1.61E-01	0.391	2.092	0.069	0.067	0.001
Hydrovac Truck	1.69E-02	0.041	0.219	0.007	0.007	0.000
Road Bore Machine	5.59E-03	0.014	0.072	0.002	0.002	0.000
6-inch Water Pump	3.20E-03	0.016	0.032	0.002	0.002	0.000
4-inch Water Pump.	8.00E-04	0.004	0.008	0.000	0.000	0.000
2-inch Water Pump	0.00E+00	0.000	0.000	0.000	0.000	0.000
Pile Driver	1.05E-01	0.575	1.773	0.127	0.127	0.001
100 HP Tractor	2.38E-01	0.612	2.892	0.127	0.127	0.001
Semitruck/Trailer	2.23E+00	11.235	57.772	1.759	1.759	0.027
TOTAL	**7.16**	**28.52**	**130.26**	**4.55**	**4.55**	**0.06**

National Grid Renewables
Summit Lake Solar Facility and BESS
Construction Emission Calculations

Fugitive Dust Emissions from Unpaved Roads								
					Emission Factor (lb/VMT) [c]		Project Total Emissions (ton)	
Equipment	**Quantity [a]**	**Total Days Used**	**VMT [b]**	**W**	**PM_{10}**	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**
ATV	44	274	137	20	1.88	0.19	0.06	0.01
Backhoe	6	350	175	50	2.83	0.28	0.17	0.02
Bulldozer	5	180	90	20	1.88	0.19	0.02	0.00
Fork Lift	14	318	159	20	1.88	0.19	0.07	0.01
Concrete Mixer Truck	16	90	45	20	1.88	0.19	0.01	0.00
Dump Truck	5	112	56	21	1.92	0.19	0.03	0.00
Excavator	6	310	155	22	1.96	0.20	0.08	0.01
Front End Loader	5	260	130	23	2.00	0.20	0.04	0.00
Pickup Truck	31	490	245	24	2.04	0.20	0.12	0.01
Piping Truck	0	0	0	25	2.07	0.21	0.00	0.00
Skid steer loader	6	394	197	26	2.11	0.21	0.07	0.01
Water truck	6	364	182	20	1.88	0.19	0.09	0.01
Welding Machine	3	207	104	20	1.88	0.19	0.00	0.00
TOTAL	**--**	**--**	**--**	**--**	**--**	**--**	**0.76**	**0.08**

[a] Equipment counts are estimated based current construction plan.

[b] Each vehicle is assumed to travel 0.5 mile per day on site.

[c] AP-42 Section 13.2.2 Unpaved Roads, dated November 2006, Equations 1a and 2 TOTALS 11.19 1.12 Surface Silt content based on Table 13.2.2-1 - construction sites.

Eq 1a: $E = k * (s/12)^a * (W/3)^b$

Eq 2: $E_{ext} = E * [(365-P)/365]$

where:

VMT = Vehicle Miles Traveled

W = Mean Vehicle Weight, tons

S = Mean Vehicle Speed, mph

P = 100 days with at least 0.01 inches rain, EPA's AP-42 Figure 13.2.2-1

s = 8.5 surface material silt content (%) for construction sites, EPA's AP-42 Table 13.2.2-1

E = size-specific emission factor, lb/ VMT

E_{ext} = annual size-specific emission factor extrapolated for natural migration, lb/VMT

Constants	**PM**	**PM_{10}**	**$PM_{2.5}$**
k (lb/VMT)	4.9	1.5	0.15
a	0.7	0.9	0.9
b	0.45	0.45	0.45

National Grid Renewables
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Construction Emission Calculations

Fugitive Dust Emissions From Earthmoving Activities							
	Daily Material Handling						
Construction Activity	Construction Rate [a] (ton/day)	Handling Time [b] (days)	Average Exposed Area (acres)	Emission Factors [b - f] (lb/ton) PM_{10}	$PM_{2.5}$	Emissions (ton) PM_{10}	$PM_{2.5}$
Solar Farm							
Topsoil removed by scraper [g]	13,167.2	240	---	0.058	0.0061	91.64	9.64
Project excavation and loading to storage piles	196.6	240	---	0.037	0.0039	0.87	0.09
Backfilling excavations	196.6	240	---	0.012	0.0013	0.28	0.03
Topsoil replacement	13,167.2	240	---	0.012	0.0013	18.96	2.05
Wind erosion of exposed areas	--	240	1,567.00	0.38	0.03999	71.46	7.52
Solar Farm Subtotal						**183.22**	**19.33**
BESS							
Topsoil removed by scraper [g]	0.0	120	---	0.058	0.0061	0.00	0.00
Project excavation and loading to storage piles	0.0	120	---	0.037	0.0039	0.00	0.00
Backfilling excavations	0.0	120	---	0.012	0.0013	0.00	0.00
Topsoil replacement	0.0	120	---	0.012	0.0013	0.00	0.00
Wind erosion of exposed areas	--	120	0.00	0.38	0.03999	0.00	0.00
BESS Subtotal						**0.00**	**0.00**
Gen-Tie Line							
Topsoil removed by scraper [g]	0.0	200	---	0.058	0.0061	0.00	0.00
Project excavation and loading to storage piles	0.0	200	---	0.037	0.0039	0.00	0.00
Backfilling excavations	0.0	200	---	0.012	0.0013	0.00	0.00
Topsoil replacement	0.0	200	---	0.012	0.0013	0.00	0.00
Wind erosion of exposed areas	--	200	0.00	0.38	0.03999	0.00	0.00
Gen-Tie Line Subtotal						**0.00**	**0.00**
PROJECT TOTAL							
Topsoil removed by scraper [g]	13,167.2	240	---	0.058	0.0061	91.64	9.64
Project excavation and loading to storage piles	196.6	240	---	0.037	0.0039	0.87	0.09
Backfilling excavations	196.6	240	---	0.012	0.0013	0.28	0.03
Topsoil replacement	13,167.2	240	---	0.012	0.0013	18.96	2.05
Wind erosion of exposed areas	--	240	1,567.00	0.38	0.03999	71.46	7.52
PROJECT TOTAL						**183.22**	**19.33**

Notes and Assumptions:
[a] Soil density: 1.25 tons per yard
[b] Conservatively assumes handling time is the maximum amount of days a construction equipment is used on the portion of the project.
[c] Backfilling and topsoil replacement emission factor: AP-42 Section 11.9 Western Surface Coal Mining, Table 11.9-4, July 1998, overburden replacement
[d] As worst case, PM_{10} is set equal to Total Particulate Matter. $PM_{2.5}$ is set to 0.105 times PM_{10} per Table 11.9-1
[e] Emission factor: AP-42 Section 11.9 Western Surface Coal Mining, Table 11.9-4, July 1998, topsoil removal by scraper
[f] Wind Erosion Exposed Areas emission factor: AP-42 Section 11.9 Western Surface Coal Mining, Table 11.9-4, July 1998, wind erosion of exposed areas (ton/yr/acre)
[g] Assumes the entire workspace is cleared to 1 foot deep, 1.25 tons per cubic yard.

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Construction Schedule		
Work Hours:	12	7 am - 7 pm
Work Days	6	Monday through Saturday
Hours per week	72	
Crews:	3	
Weeks:	35	
Total Days:	240	

Topsoil Removed by Scraper [a]

County/Facility	Total (Acres)	Soil Volume (yd^3)	Soil Weight (ton)	Daily Material Handling Rate (ton/day)
Land Control Area	1567	2,528,093	3,160,117	13,167
		0	0	0
		0	0	0
TOTAL	**1567**	**2,528,093**	**3,160,117**	**13,167**

[a] Acreages from SPA, Section 4.3

Project Excavation and Loading to Storage Piles

Project Section	Length (ft)	Depth (ft)	Total Volume (ft^3)	Total Volume (yd^3)	Soil Weight (ton)	Daily Material Handling Rate (ton/day)
Cable Trench (at 2 feet wide)	127,368	4	1,018,944	37,739	47,173	196.6
Excavation Area 2			0	0	0	0.0
Excavation Area 3			0	0	0	0.0
TOTAL			**1,018,944**	**37,739**	**47,173**	**196.6**

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Greenhouse Gas Emissions Summary (tons)				
	CO_2	**CH_4**	**N_2O**	**CO_2e [a]**
Off-Road Engine Emissions	5,732.58	0.23	0.05	5,751.42
Commuters and Delivery Vehicles	1,429.39	0.00	0.00	0.00
PROJECT TOTAL	**7,161.97**	**0.23**	**0.05**	**5,751.42**

National Grid Renewables
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Greenhouse Gas Emissions from On Road Construction Traffic					
	Vehicles per day	**Miles per vehicle**	**Number of Days**	**Fuel Used (gallons)**	**CO_2 Emissions [a] (tons)**
Commuter Vehicles - Gasoline [b,c]	180	60	222	100,000	979.62
Delivery Trucks - Diesel [d]	49	60	58	26,308	295.27
Concrete Mixer Trucks - Diesel [e]	16	60	49	13,765	154.49
PROJECT TOTAL					**1,429.39**

[a] Assumes 1 gallon of gasoline = 8,887 grams CO_2 and 1 gallon of diesel = 10,180 g CO_2, per US EPA's "Greenhouse Gas Emissions from a Typical Passenger Vehicle," available online at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100U8YT.pdf

[b] Assumes commuters travel 30 miles each way (60 miles round trip) per day, with a fuel economy of 24 miles per gallon, per US EPA and US Department of Energy Fuel Economy data for combined city and highway driving in 2023, available online at: https://www.fueleconomy.gov/feg/download.shtml.

[c] Commuter counts include the solar farm, BESS, and gen-tie line. Number of days is a weighted average of the three project components.

[d] Assumes delivery trucks travel 30 miles each way (60 miles round trip) per day, with a fuel economy of 6.5 miles per gallon, industry average.

[e] Assumes concrete mixer trucks travel 30 miles each way (60 miles round trip) per day, with a fuel economy of 3.4 miles per gallon, industry average.
http://ascpro0.ascweb.org/archives/cd/2012/paper/CPRT221002012.pdf#:~:text=The%20National%20Ready%20Mix%20Concrete%20Association%20%28NRMCA%29%20in,average%203.4%20miles%20per%20gallon%20of%20diesel%20fuel.

National Grid Renewables
Summit Lake Solar Facility and BESS
Construction Emission Calculations

Greenhouse Gas Emission Factors for Construction Engines								
Equipment	Quantity [a]	Total Hours Used	Max Power (HP)	Load Factor [b]	Loaded Power (HP)	Emission Factors [c,d] (g/hp-hr) CO_2	CH_4	N_2O
Air Compressor	5	920	80	1	80	188.262	0.008	0.002
ATV	44	44,064	20	0.5	10	188.262	0.008	0.002
Backhoe	6	5,220	75	0.8	60	188.262	0.008	0.002
Bulldozer	5	2,340	250	1	250	188.262	0.008	0.002
Compactor	6	1,492	300	1	300	188.262	0.008	0.002
Compactor, Vibratory	6	4,924	100	1	100	188.262	0.008	0.002
Fork Lift	14	11,916	120	1	120	188.262	0.008	0.002
Concrete Mixer Truck	16	7,440	325	1	325	188.262	0.008	0.002
Concrete Pump	1	450	300	1	300	188.262	0.008	0.002
Dump Truck	5	1,522	325	0.8	260	188.262	0.008	0.002
Excavator	6	6,140	138	1	138	188.262	0.008	0.002
Front End Loader	5	3,660	196	1	196	188.262	0.008	0.002
Generator	19	16,580	250	0.5	125	188.262	0.008	0.002
Guided Bore Machine	8	2,480	150	0.8	120	188.262	0.008	0.002
Light Tower	2	1,800	50	1	50	188.262	0.008	0.002
Manlift	4	6,000	50	1	50	188.262	0.008	0.002
Pickup Truck	31	41,500	150	0.25	38	188.262	0.008	0.002
Piping Truck	0	0	300	1	300	188.262	0.008	0.002
Skid steer loader	6	5,588	50	1	50	188.262	0.008	0.002
Water truck	6	8,812	100	0.5	50	188.262	0.008	0.002
Welding machine	3	2,056	35	0.8	28	188.262	0.008	0.002
Grader	4	5,368	35	0.8	28	188.262	0.008	0.002
Large Crane	0	0	15	0.21	3	188.262	0.008	0.002
Medium Crane	7	1,476	450	0.7	315	188.262	0.008	0.002
Fuel Truck	3	4,020	200	0.59	118	188.262	0.008	0.002
Hydrovac Truck	3	420	200	0.59	118	188.262	0.008	0.002
Road Bore Machine	1	80	260	0.79	205	188.262	0.008	0.002
6-inch Water Pump	2	320	30	0.69	21	188.262	0.008	0.002
4-inch Water Pump.	2	240	10	0.69	7	188.262	0.008	0.002
2-inch Water Pump	0	0	5	0.69	3	188.262	0.008	0.002
Pile Driver	7	6,944	49	1	49	188.262	0.008	0.002
100 HP Tractor	5	6,400	100	0.21	100	188.262	0.008	0.002
Semitruck/Trailer	49	6,900	500	0.59	500	188.262	0.008	0.002

[a] Equipment counts include construction equipment for the solar farm, BESS, and gen-tie line.

[b] Load Factors from Appendix A of EPA 420_P-04-005, Median Life, Annual Activity, and Load Factor

[c] EPA 420-P-04-009, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling - Compression Ignition, USEPA, April 2004 - Tier 2 Engines.

[d] GHG emission factors from EPA's 2024 GHG Emission Factors Hub. Available online at https://www.epa.gov/climateleadership/ghg-emission-factors-hub.

National Grid Renewables
Summit Lake Solar Facility and BESS
Construction Emission Calculations

Greenhouse Gas Emission Estimates from Construction Engines				
	Potential Emissions (ton)			
Equipment	CO_2	CH_4	N_2O	CO_2e [a]
Air Compressor	15.27	0.00	0.00	15.32
ATV	91.44	0.00	0.00	91.74
Backhoe	65.00	0.00	0.00	65.21
Bulldozer	121.40	0.00	0.00	121.80
Compactor	92.89	0.00	0.00	93.19
Compactor, Vibratory	102.18	0.00	0.00	102.52
Fork Lift	296.74	0.01	0.00	297.72
Concrete Mixer Truck	501.79	0.02	0.00	503.44
Concrete Pump	28.02	0.00	0.00	28.11
Dump Truck	82.12	0.00	0.00	82.39
Excavator	175.84	0.01	0.00	176.42
Front End Loader	148.87	0.01	0.00	149.36
Generator	430.09	0.02	0.00	431.50
Guided Bore Machine	61.76	0.00	0.00	61.96
Light Tower	18.68	0.00	0.00	18.74
Manlift	62.26	0.00	0.00	62.46
Pickup Truck	322.96	0.01	0.00	324.02
Piping Truck	0.00	0.00	0.00	0.00
Skid steer loader	57.98	0.00	0.00	58.17
Water truck	91.43	0.00	0.00	91.74
Welding machine	11.95	0.00	0.00	11.99
Grader	31.19	0.00	0.00	31.29
Large Crane	0.00	0.00	0.00	0.00
Medium Crane	96.49	0.00	0.00	96.80
Fuel Truck	98.44	0.00	0.00	98.76
Hydrovac Truck	10.28	0.00	0.00	10.32
Road Bore Machine	3.41	0.00	0.00	3.42
6-inch Water Pump	1.37	0.00	0.00	1.38
4-inch Water Pump.	0.34	0.00	0.00	0.34
2-inch Water Pump	0.00	0.00	0.00	0.00
Pile Driver	70.61	0.00	0.00	70.84
100 HP Tractor	132.81	0.01	0.00	133.25
Semitruck/Trailer	2,508.96	0.10	0.02	2,517.20
TOTAL	5,732.58	0.23	0.05	5,751.42

[a] Calculated using global warming potentials from EPA's 2024 GHG Emission Factors Hub.

Global Warming Potentials		
CO_2	CH_4	N_2O
1	28	265