
Appendix B7

Energy Calculations

| Lassen Feedstock Energy | | | | |
|--|---------------|---------------|------------------|------------------|
| Operation - Unmitigated/Mitigated | | | | |
| Lassen Feedstock | | | | |
| Source | Percent | Total MTCO2 | Diesel | Gallons Gasoline |
| 2026 | | | | |
| Off-road | 54.3% | 14,718 | 1,441,535 | |
| Electricity | 0.0% | 0 | | |
| Worker | 2.9% | 786 | | 89,527 |
| Vendor | 12.2% | 3,307 | 323,881 | |
| Hauling | 27.2% | 7,373 | 722,095 | |
| Onsite Truck | 3.4% | 922 | 90,262 | |
| <i>Total</i> | <i>100.0%</i> | <i>27,105</i> | <i>2,577,773</i> | <i>89,527</i> |

27,105

| Tuolumne Feedstock Energy | | | | |
|--|---------------|---------------|------------------|------------------|
| Operation - Unmitigated/Mitigated | | | | |
| Tuolumne Feedstock | | | | |
| Source | Percent | Total MTCO2 | Diesel | Gallons Gasoline |
| 2026 | | | | |
| Off-road | 53.8% | 6,361 | 622,990 | |
| Electricity | 0.0% | 0 | | |
| Worker | 4.4% | 520 | | 59,249 |
| Vendor | 7.6% | 899 | 88,006 | |
| Hauling | 31.9% | 3,772 | 369,394 | |
| Onsite Truck | 2.3% | 272 | 26,633 | |
| <i>Total</i> | <i>100.0%</i> | <i>11,823</i> | <i>1,107,023</i> | <i>59,249</i> |

11,823

Lassen Facility Energy

Construction - Unmitigated & Mitigated (no change)

| Source | Percent | Total MTCO2 | Diesel | Gasoline |
|--------------|--------------|-------------|---------------|--------------|
| 2024 | | | | |
| Off-road | 59.8% | 144 | 14,117 | |
| Electricity | 0.0% | 0 | | |
| Worker | 6.8% | 16 | | 1,867 |
| Vendor | 15.0% | 36 | 3,541 | |
| Hauling | 18.1% | 44 | 4,273 | |
| Onsite Truck | 0.2% | 0 | 47 | |
| Total | 99.9% | 241 | 21,978 | 1,867 |

241

23,845

| Source | Percent | Total MTCO2 | Diesel | Gasoline |
|--------------|--------------|--------------|----------------|---------------|
| 2025 | | | | |
| Off-road | 51.8% | 2,495 | 244,355 | |
| Electricity | 0.0% | 0 | | |
| Worker | 14.1% | 679 | | 77,347 |
| Vendor | 32.5% | 1,565 | 153,311 | |
| Hauling | 1.5% | 72 | 7,076 | |
| Onsite Truck | 0.0% | 0 | 0 | |
| Total | 99.9% | 4,816 | 404,742 | 77,347 |

4,812

482,089

Operation - Unmitigated & Mitigated (no change)

| Source | Percent | Total MTCO2 | Diesel | Gallons | |
|------------------------------|---------------|---------------|---------------|---------------|------------------|
| | | | | Gasoline | Propane |
| Mobile Exhaust | 6% | 817 | 8,005 | 83,778 | |
| Electricity | 89% | 13,196 | | | |
| Natural Gas Energy | 0% | 0 | | | |
| Water and Wastewater | 0% | 15 | | | |
| Solid Waste | 2% | 312 | | | |
| Off-road equipment | 4% | 520 | 50,940 | | |
| Stationary Sources (diesel) | | 16 | 1,533 | | |
| Stationary Sources (propane) | | 10,677 | | | 1,866,645 |
| Total | 100.0% | 14,860 | 60,478 | 83,778 | 1,866,645 |

14,860

| Type | Total | Units |
|-------------|-------------|--------------|
| Petroleum | 2,010,901 | gallons/year |
| Electricity | 142,677,840 | kWh/year |
| Natural Gas | 0 | kBTU/year |
| Propane | 1,866,645 | gallons/year |

Tuolumne Facility Energy

Construction - Unmitigated & Mitigated (no change)

| Source | Percent | Total MTCO2 | Diesel | Gasoline |
|--------------|---------------|-------------|---------------|--------------|
| 2024 | | | | |
| Off-road | 35.9% | 164 | 16,024 | |
| Electricity | 0.0% | 0 | | |
| Worker | 5.1% | 23 | | 2,647 |
| Vendor | 3.7% | 17 | 1,652 | |
| Hauling | 54.4% | 248 | 24,282 | |
| Onsite Truck | 1.0% | 5 | 446 | |
| Total | 100.1% | 456 | 42,404 | 2,647 |

456

45,051

| Source | Percent | Total MTCO2 | Diesel | Gasoline |
|--------------|---------------|--------------|----------------|---------------|
| 2025 | | | | |
| Off-road | 46.1% | 1,502 | 147,104 | |
| Electricity | 0.0% | 0 | | |
| Worker | 15.1% | 492 | | 56,031 |
| Vendor | 16.9% | 551 | 53,927 | |
| Hauling | 21.5% | 700 | 68,606 | |
| Onsite Truck | 0.4% | 13 | 1,276 | |
| Total | 100.0% | 3,258 | 270,913 | 56,031 |

3,258

326,945

Operation - Unmitigated

| Source | Percent | Total MTCO2 | Gallons | | |
|------------------------------|---------------|---------------|---------------|---------------|------------------|
| | | | Diesel | Gasoline | Propane |
| Mobile Exhaust | 8% | 784 | 3,071 | 85,694 | |
| Electricity | 85% | 8,776 | | | |
| Natural Gas Energy | 0% | 0 | | | |
| Water and Wastewater | 0% | 10 | | | |
| Solid Waste | 2% | 165 | | | |
| Off-road equipment | 6% | 588 | 57,572 | | |
| Stationary Sources (diesel) | | 16 | 1,533 | | |
| Stationary Sources (propane) | | 7,169 | | | 1,253,267 |
| Total | 100.1% | 10,312 | 62,175 | 85,694 | 1,253,267 |

10,323

| Type | Total | Units |
|-------------|-----------|--------------|
| Petroleum | 1,401,136 | gallons/year |
| Electricity | 94807680 | kWh/year |
| Natural Gas | 0 | kBTU/year |
| Propane | 1,253,267 | gallons/year |

Port of Stockton Energy

Construction - Unmitigated/Mitigated

| Source | Percent | Total MTCO2 | Diesel | Gasoline |
|--------------|---------------|-------------|---------------|------------|
| 2024 | | | | |
| Off-road | 83.2% | 120 | 11,792 | |
| Electricity | 0.0% | 0 | | |
| Worker | 3.1% | 4 | | 511 |
| Vendor | 2.4% | 3 | 340 | |
| Hauling | 11.3% | 16 | 1,602 | |
| Onsite Truck | 0.0% | 0 | 0 | |
| Total | 100.0% | 145 | 13,733 | 511 |

145

14,244

2025

| | | | | |
|--------------|---------------|--------------|----------------|--------------|
| Off-road | 95.2% | 1,764 | 172,780 | |
| Electricity | 0.0% | 0 | | |
| Worker | 2.2% | 41 | | 4,643 |
| Vendor | 2.6% | 48 | 4,719 | |
| Hauling | 0.0% | 0 | 0 | |
| Onsite Truck | 0.0% | 0 | 0 | |
| Total | 100.0% | 1,853 | 177,498 | 4,643 |

1,853

182,142

Operation - Unmitigated/Mitigated

| Source | Percent | Total MTCO2 | Gallons | |
|----------------------|---------------|--------------|---------------|--------------|
| | | | Diesel | Gasoline |
| Mobile Exhaust | 2% | 59 | 1,152 | 5,357 |
| Electricity | 91% | 2,232 | | |
| Natural Gas Energy | 0% | 0 | | |
| Water and Wastewater | 0% | 10 | | |
| Solid Waste | 0% | 7 | | |
| Off-road equipment | 6% | 142 | 13,916 | |
| Stationary sources | | 5 | 511 | |
| Total | 100.0% | 2,450 | 15,578 | 5,357 |

2,450

Type

| Type | Total | Units |
|-------------|------------|--------------|
| Petroleum | 20,935 | gallons/year |
| Electricity | 24,120,000 | kWh/year |
| Natural Gas | 0 | kBTU/year |

Line Haul Energy

| <u>Unmitigated</u> | | |
|--------------------|-------------|----------------|
| Source | Total MTCO2 | Gallons Diesel |
| 2025 | | |
| Total Emissions | 5234.28 | 512,662 |

Lassen Switcher Locomotive Energy

| <u>Unmitigated</u> | | |
|--------------------|-------------|----------------|
| Source | Total MTCO2 | Gallons Diesel |
| 2025 | | |
| Total Emissions | 17.54 | 1,718 |

| <u>Mitigated</u> | | |
|------------------|-------------|----------------|
| Source | Total MTCO2 | Gallons Diesel |
| 2025 | | |
| Total Emissions | 12.81 | 1,255 |

Port Switcher Energy

| <u>Unmitigated</u> | | |
|--------------------|-------------|----------------|
| Source | Total MTCO2 | Gallons Diesel |
| 2025 | | |
| Total Emissions | 61.53 | 6,026 |

SJVAPCD

Unmitigated

| Source | Total MTCO2 | Gallons Diesel |
|--------|-------------|----------------|
|--------|-------------|----------------|

2025

| | | |
|-----------------|---------|--------|
| Total Emissions | 1010.11 | 98,933 |
|-----------------|---------|--------|

BAAQMD

Unmitigated

| Source | Total MTCO2 | Gallons Diesel |
|--------|-------------|----------------|
|--------|-------------|----------------|

2025

| | | |
|-----------------|--------|--------|
| Total Emissions | 869.80 | 85,191 |
|-----------------|--------|--------|

| | | |
|-------|--|---------|
| Total | | 184,124 |
|-------|--|---------|

Beyond CA

2025

| Source | Total MTCO2 | Diesel |
|-----------------|-------------|------------|
| Total Emissions | 174,298 | 17,071,333 |

Pellet Energy

| Source | Fuel Consumption | |
|----------------------------------|----------------------|-------------------|
| | Diesel (gal/yr) | Gasoline (gal/yr) |
| Lassen Facility | 60,394.97 | 82,342.32 |
| Lassen Facility (construction) | 14,224.00 | 2,640.47 |
| Tuolumne Facility | 62,222.00 | 85,760.00 |
| Tuolumne Facility (construction) | 10,443.90 | 1,949.93 |
| Port of Stockton | 15,578.00 | 3,537.00 |
| Port of Stockton (construction) | 6,374.37 | 171.80 |
| Lassen Feedstock | 2,577,773.00 | 89,527.00 |
| Tuolumne Feedstock | 1,107,023.00 | 26,633.00 |
| Rail | 520,406.00 | - |
| Ships | 184,124.00 | - |
| Ships - Beyond CA | 17,071,332.52 | |
| Total | 21,629,895.76 | 292,561.52 |

| Source | Energy Consumption | |
|--------------|---------------------------|-------------------------|
| | Energy Consumed (MBtu/yr) | Energy Consumed (MJ/yr) |
| Diesel | 2,995,524.26 | 3,160,445,847.24 |
| Gasoline | 36,377.10 | 38,379,876.62 |
| Propane | 285,222.37 | 300,925,568.52 |
| Electricity | 851,948.41 | 898,853,276.68 |
| Total | 4,169,072.13 | 4,398,604,569.06 |

| | Propane (gal/yr) | Electricity (kWh/yr) | | |
|--------------|------------------|----------------------|--------------|-----------------------|
| 142,737.29 | 1,866,645.12 | 142,677,840.00 | 2,009,382.41 | Energy Fuel Densities |
| 16,864.47 | - | - | | Diesel 138490 |
| 147,982.00 | 1,253,267.00 | 94,807,680.00 | 1,401,249.00 | Gasoline 124340 |
| 12,393.83 | - | - | | Propane 91,420 |
| 19,115.00 | - | 12,060,000.00 | | Electricity 3414 |
| 6,546.17 | - | - | | |
| 2,667,300.00 | - | - | | |
| 1,133,656.00 | - | - | | |
| | - | - | | |
| | - | - | | |

| | |
|---------------------|-----------------------|
| 3,119,912.12 | 249,545,520.00 |
|---------------------|-----------------------|

25,042,369.39

Energy Consumed (GJ/yr)

MJ/yr Produced by Pellets
 1000000 MT/yr pellets
 17 GJ/ton
 1.10231131 ton/MT
15,422,140.59 GJ/yr

4,398,604.57

net 11,023,536.02

[Source: US DOE Energy Efficiency and Renewable Energy Alt Fuels Data Center](#)

Btu/gal

Btu/gal

Btu/gal

Btu/kWh



Sample ID:
Species
Sample Type
Origin

Total Moisture (%) - AR
Ash (%) - AR
Ash (%) - Dry
GCV (GJ/Tonne) - AR
GCV (GJ/Tonne) - Dry
NCV cV (GJ/Tonne) - AR
NCV cV (GJ/Tonne) - Dry
NCV cP (GJ/Tonne) - AR
NCV cP (GJ/Tonne) - Dry
Energy Density @ Finished Pellet MC (%)

5.00

| Specifications (AEBIOM I2 Spec) | |
|------------------------------------|-----|
| Min | Max |
| | 1.5 |
| 5.00 | |

| WTC-PP-STF-021021-01 | WTC-PP-SNF-012921-02 | WTC-LO-STF-012621-03 | WTC-BO-STF-012621-04 | WTC-IC-STF-020421-05 | WTC-MX-SPI-012821-06 |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Ponderosa Pine | Ponderosa Pine | Oak (Live) | Oak (Black) | Incense Cedar | Mixed Conifer |
| Whole Tree Chips | Whole Log Chips | Whole Tree Chips | Whole Tree Chips | Whole Tree Chips | Whole Tree Chips |
| Stanislaus NF | Sierra NF | Stanislaus NF | Stanislaus NF | Stanislaus NF | Sierra Pacific Ind |
| 49.61 | 20.07 | 44.56 | 47.37 | 30.84 | 55.84 |
| 0.35 | 0.31 | 1.37 | 1.16 | 0.89 | 0.9 |
| 0.69 | 0.39 | 2.47 | 2.2 | 1.28 | 2.03 |
| 10.31 | 16.5 | 10.56 | 10.15 | 14.53 | 8.92 |
| 20.46 | 20.65 | 19.05 | 19.29 | 21.01 | 20.21 |
| gx | 15.05 | 8.87 | 8.44 | 12.97 | 7.1 |
| 19.23 | 19.41 | 17.85 | 18.1 | 19.78 | 19 |
| 8.44 | 14.97 | 8.77 | 8.33 | 12.88 | 7 |
| 19.16 | 19.34 | 17.78 | 18.03 | 19.71 | 18.93 |
| 18.08 | 18.25 | 16.77 | 17.01 | 18.60 | 17.86 |

| WTC-GP-STF-022221-07 | WTC-WF-STF-030321-08 | CMR-WF-SFP-030121-09 | CMR-PP-SFP-030121-10 | CMR-IC-SFP-030121-11 | WLC-WF-SNF-022621-12 |
|----------------------|----------------------|------------------------|------------------------|------------------------|----------------------|
| Gray (Bull) Pine | White Fir | White Fir | Ponderosa Pine | Incense Cedar | White Fir |
| Whole Tree Chips | Whole Tree Chips | 100% clean chip | 100% clean chip | 100% clean chip | Whole Log Chips |
| Stanislaus NF | Stanislaus NF | Sierra Forest Products | Sierra Forest Products | Sierra Forest Products | Sierra NF |
| 56.35 | 36.39 | 53.76 | 41.53 | 13.96 | 30.7 |
| 0.23 | 0.6 | 0.29 | 0.35 | 0.51 | 0.7 |
| 0.52 | 0.94 | 0.62 | 0.59 | 0.59 | 1.02 |
| 9.01 | 12.95 | 9.39 | 11.99 | 17.71 | 14.47 |
| 20.64 | 20.36 | 20.31 | 20.51 | 20.58 | 20.88 |
| 7.16 | 11.33 | 7.6 | 10.32 | 16.32 | 12.9 |
| 19.39 | 19.14 | 19.11 | 19.29 | 19.35 | 19.63 |
| 7.06 | 11.24 | 7.49 | 10.23 | 16.24 | 12.8 |
| 19.32 | 19.07 | 19.04 | 19.22 | 19.28 | 19.56 |
| 18.23 | 17.99 | 17.97 | 18.14 | 18.19 | 18.46 |

| GBC-JP-MNF-031021-13 | DBC-JP-MNF-031021-14 | WLC-JP-MNF-031021-15 | WLC-JP-MNF-031021-16 | WTC-AL-SJC-041321-17 | WTC-WA-SJC-041321-18 |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Juniper | Juniper | Juniper | Juniper | Almond Wood | Walnut Wood |
| Green Branch Chip | Dry Branch Chip | Whole Log Chips | Whole Log Chips | Whole Tree Chip | Whole Tree Chip |
| Modoc NF | Modoc NF | Modoc NF | Modoc NF | N/A | N/A |
| 42.06 | 12.48 | 44.25 | 11.1 | 23.6 | 7.97 |
| 2.11 | 0.53 | 0.96 | 0.82 | 2.9 | 2.66 |
| 3.65 | 0.6 | 1.71 | 0.92 | 3.8 | 2.89 |
| 11.92 | 18.06 | 11.59 | 18.67 | 14.5 | 17.61 |
| 20.58 | 20.63 | 20.78 | 21 | 18.98 | 19.14 |
| 10.25 | 16.69 | 9.89 | 17.34 | 12.96 | 16.25 |
| 19.36 | 19.4 | 19.56 | 19.79 | 17.71 | 17.87 |
| 10.15 | 16.61 | 9.79 | 17.26 | 13.04 | 16.33 |
| 19.29 | 19.33 | 19.49 | 19.72 | 17.78 | 17.94 |
| 18.20 | 18.24 | 18.39 | 18.61 | 16.77 | 16.92 |

| WLC-RW-SR-051021-19 | CMR-RW-SR-051021-20 | CCP-TO-SR-051021-21 | HFB-TO-SR-051021-22 | CMR-DF-SR-051021-23 | FSL-DF-SR-051021-24 |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Redwood | Redwood | Tan Oak | Tan Oak | Doug Fir | Doug Fir |
| Sawmill Residuals | Slash Pile / Bark | Clean Chips | Hog Fuel / Bark | Sawmill Residuals | Forest Slash |
| Six Rivers | Six Rivers | Six Rivers | Six Rivers | Six Rivers | Six Rivers |
| 51.87 | 61.77 | 29.48 | 36.71 | 43.92 | 42.83 |
| 0.11 | 7.01 | 0.67 | 2.35 | 0.15 | 0.35 |
| 0.23 | 18.33 | 0.95 | 3.72 | 0.27 | 0.61 |
| 9.9 | 6.48 | 13.71 | 12.25 | 11.39 | 11.7 |
| 20.57 | 16.94 | 19.44 | 19.36 | 20.3 | 20.47 |
| 8 | 4.59 | 12.07 | 10.58 | 9.57 | 9.92 |
| 19.25 | 15.95 | 18.14 | 18.14 | 18.98 | 19.18 |
| 8.11 | 4.7 | 12.17 | 10.68 | 9.67 | 10.02 |
| 19.33 | 16.01 | 18.22 | 18.21 | 19.06 | 19.25 |
| 18.24 | 15.09 | 17.19 | 17.18 | 17.98 | 18.17 |