

# Appendix E

## **Energy Data**



**Energy - Fuel Usage Calculations**

<b>Construction</b>					
<b>Scenario</b>	<b>Fuel Type</b>	<b>Fuel Type %*</b>	<b>Factor (kgCO2/gal)**</b>	<b>CalEEMod CO2 (Total MT)</b>	<b>Gallons</b>
<b>Full Master Plan</b>	Diesel	95%	10.15	6705	627,561.58
	Gasoline	5%	8.91	6705	37,626.26
<b>Phase 1 &amp; 2</b>	Diesel	95%	10.15	4599	430,448.28
	Gasoline	5%	8.91	4599	25,808.08

NOTES: \* Fuel type: diesel for trucks and off-road equipment, gasoline for worker vehicles  
 Since majority of emissions from diesel sources, default assumption is 100% diesel  
 \*\* Conversion 1 MT = 1,000 kg. Unit volume fuel factors (kg CO2/gallon)  
 for gasoline and diesel are from the U.S. Energy Information Administration  
 Frequently Asked Questions, located here:  
<https://www.eia.gov/tools/faqs/faq.php?id=307&t=11>

**Operations**

Scenario	Fuel Type	Fuel Type %*	Factor (kgCO <sub>2</sub> /gal)**	CalEEMod CO <sub>2</sub> (MT/yr)	Gallons
Full Master Plan	Diesel	1%	10.15	37902	37,341.87
	Gasoline	99%	8.91	37902	4,211,333.33
Phase 1 & 2	Diesel	1%	10.15	17818	17,554.68
	Gasoline	99%	8.91	17818	1,979,777.78

NOTES: \* Fuel type: gasoline for majority of vehicles, diesel for majority of trucks and buses  
Since majority of emissions from gasoline sources, default assumption is 100% gas  
\* Conversion 1 MT = 1,000 kg. Unit volume fuel factors (kg CO<sub>2</sub>/gallon)  
for gasoline and diesel are from the U.S. Energy Information Administration  
Frequently Asked Questions, located here:

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\*\*\* Mitigation r 1. Electricity and None

LCFS and Pavley assumed for on-road vehicles after year 2011

**Full Master Plan Operational Energy Use**

Land Use	Amount	Units	Electricity <sup>1</sup>	Natural Gas <sup>1</sup>
			Megawatt-hours/year	Million Btu/year
Multi-Family Residential	758	Dwellings	3,672	12,070
Active Park	59	Acres	0	0
Elementary School	615	Students	371	1,297
Light Industrial	230	KSF	2,068	4,819
Office	224	KSF	2,083	2,932
Manufacturing	230	KSF	2,068	4,819
Community Commercial	391	KSF	3,265	4,199
Single-Family Residential	1,754	Dwellings	16,518	56,313
Neighborhood Commercial	82	KSF	687	884
<b>Total</b>			<b>30,732</b>	<b>87,333</b>

1. Electricity and natural gas consumption estimates were generated using CalEEMod 2016.3.1. See Appendix F for model outputs.

**Newkom/Kells East Ranch Operational Energy Use**

Land Use	Amount	Units	Electricity <sup>1</sup>	Natural Gas <sup>1</sup>
			Megawatt-hours/year	Million Btu/year
Multi-Family Residential	338	Dwellings	1,638	5,382
Active Park	59	Acres	0	0
Office	109	KSF	1,011	1,424
Community Commercial	391	KSF	3,265	4,199
Single-Family Residential	574	Dwellings	5,405	18,429
<b>Total</b>			<b>11,319</b>	<b>29,434</b>

1. Electricity and natural gas consumption estimates were generated using CalEEMod 2016.3.1. See Appendix F for model outputs.

