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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\My Documents\De Novo Planning Group\Projects\ENV 007 - Shasta Cogen EIR\shastacogen_revised_urbemis.urb924

Project Name: Shasta Co-generation Power Plant Project

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5
2010 TOTALS (tons/year unmitigated)	0.19	1.23	0.75	0.00	0.70	0.07	0.77	
2010 TOTALS (tons/year mitigated)	0.19	1.09	0.75	0.00	0.16	0.04	0.20	
Percent Reduction	0.00	11.04	0.00	0.00	77.29	44.19	74.26	

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (tons/year, unmitigated)	0.01	0.00	0.14	0.00	0.00	0.00
TOTALS (tons/year, mitigated)	0.01	0.00	0.14	0.00	0.00	0.00
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (tons/year, unmitigated)	0.11	1.62	0.71	0.00	0.19	0.08

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

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	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (tons/year, unmitigated)	0.12	1.62	0.85	0.00	0.19	0.08

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PI
2010	0.19	1.23	0.75	0.00	0.70	0.07	0.77	
Demolition 04/15/2010-05/01/2010	0.01	0.05	0.04	0.00	0.00	0.00	0.00	
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Demo Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00	
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
Mass Grading 05/01/2010-07/01/2010	0.07	0.55	0.31	0.00	0.52	0.03	0.55	
Mass Grading Dust	0.00	0.00	0.00	0.00	0.52	0.00	0.52	
Mass Grading Off Road Diesel	0.07	0.55	0.27	0.00	0.00	0.03	0.03	
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Mass Grading Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	
Fine Grading 07/01/2010-07/21/2010	0.02	0.19	0.11	0.00	0.18	0.01	0.19	
Fine Grading Dust	0.00	0.00	0.00	0.00	0.18	0.00	0.18	
Fine Grading Off Road Diesel	0.02	0.19	0.09	0.00	0.00	0.01	0.01	
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
Trenching 07/21/2010-08/01/2010	0.01	0.07	0.04	0.00	0.00	0.00	0.00	

Trenching Off Road Diesel	0.01	0.07	0.03	0.00	0.00	0.00	0.00
Trenching Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Building 08/01/2010-10/01/2010	0.08	0.37	0.25	0.00	0.00	0.03	0.03
Building Off Road Diesel	0.08	0.37	0.25	0.00	0.00	0.03	0.03
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating 10/01/2010-10/07/2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Demolition 4/15/2010 - 5/1/2010 - Demolition and site prep

Building Volume Total (cubic feet): 0

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 7/1/2010 - 7/21/2010 - Fine site grading

Total Acres Disturbed: 4.75

Maximum Daily Acreage Disturbed: 1.19

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

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1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2010 - 7/1/2010 - Mass site grading

Total Acres Disturbed: 4.75

Maximum Daily Acreage Disturbed: 1.19

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 7/21/2010 - 8/1/2010 - Trenching

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Building Construction 8/1/2010 - 10/1/2010 - Building construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

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Phase: Architectural Coating 10/1/2010 - 10/7/2010 - coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PI
2010	0.19	1.09	0.75	0.00	0.16	0.04	0.20	
Demolition 04/15/2010-05/01/2010	0.01	0.03	0.04	0.00	0.00	0.00	0.00	
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Demo Off Road Diesel	0.01	0.03	0.03	0.00	0.00	0.00	0.00	
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
Mass Grading 05/01/2010-07/01/2010	0.07	0.55	0.31	0.00	0.12	0.03	0.15	
Mass Grading Dust	0.00	0.00	0.00	0.00	0.12	0.00	0.12	
Mass Grading Off Road Diesel	0.07	0.55	0.27	0.00	0.00	0.03	0.03	
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Mass Grading Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	
Fine Grading 07/01/2010-07/21/2010	0.02	0.19	0.11	0.00	0.04	0.01	0.05	
Fine Grading Dust	0.00	0.00	0.00	0.00	0.04	0.00	0.04	
Fine Grading Off Road Diesel	0.02	0.19	0.09	0.00	0.00	0.01	0.01	
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Trenching 07/21/2010-08/01/2010	0.01	0.05	0.04	0.00	0.00	0.00	0.00
Trenching Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00
Trenching Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Building 08/01/2010-10/01/2010	0.08	0.27	0.25	0.00	0.00	0.00	0.00
Building Off Road Diesel	0.08	0.27	0.25	0.00	0.00	0.00	0.00
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating 10/01/2010-10/07/2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 4/15/2010 - 5/1/2010 - Demolition and site prep

For Concrete/Industrial Saws, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Concrete/Industrial Saws, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Concrete/Industrial Saws, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

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NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Fine Grading 7/1/2010 - 7/21/2010 - Fine site grading

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 5/1/2010 - 7/1/2010 - Mass site grading

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Trenching 7/21/2010 - 8/1/2010 - Trenching

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

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For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 8/1/2010 - 10/1/2010 - Building construction

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 10/1/2010 - 10/7/2010 - coating

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.01	0.00	0.14	0.00	0.00	0.00
Consumer Products	0.00					
Architectural Coatings	0.00					
TOTALS (tons/year, unmitigated)	0.01	0.00	0.14	0.00	0.00	0.00

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Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Power Plant	0.11	1.62	0.71	0.00	0.19	0.08
TOTALS (tons/year, unmitigated)	0.11	1.62	0.71	0.00	0.19	0.08

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VM
Power Plant		58.00	unknown	1.00	58.00	392.2
					58.00	392.2

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst
Light Auto	20.5	1.0	98.8
Light Truck < 3750 lbs	4.5	1.8	93.6

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Light Truck 3751-5750 lbs	0.0	0.5	99.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	76.5
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	42.9
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	20.0
Heavy-Heavy Truck 33,001-60,000 lbs	75.0	0.0	0.0
Other Bus	0.0	0.0	0.0
Urban Bus	0.0	0.0	0.0
Motorcycle	0.0	62.9	37.1
School Bus	0.0	0.0	0.0
Motor Home	0.0	0.0	90.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	C
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	
Rural Trip Length (miles)	16.8	7.1	45.0	14.7	6.6	
Trip speeds (mph)	35.0	35.0	45.0	35.0	35.0	
% of Trips - Residential	25.0	0.0	75.0			
% of Trips - Commercial (by land use)						
Power Plant				2.0	1.0	

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Ambient summer temperature changed from 85 degrees F to 90 degrees F

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Ambient winter temperature changed from 40 degrees F to 50 degrees F

Home-based other average speed changed from 35 mph to 45 mph

Home-based other rural trip length changed from 7.9 miles to 45 miles

CO2
120.29
120.29
0.00

CO2
120.29
5.18
0.00
4.20
0.00
0.98
53.04
0.00
49.44
0.00
3.60
18.08
0.00
16.85
0.00
1.23
7.51

6.86

0.65

36.48

36.48

0.00

0.00

0.00

0.00

0.00

CO2
120.29
5.18
0.00
4.20
0.00
0.98
53.04
0.00
49.44
0.00
3.60
18.08
0.00
16.85
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1.23

7.51

6.86

0.65

36.48

36.48

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