

APPENDIX A: CITY OF SONORA 2010 BASELINE AND 2015 RE-INVENTORY ENERGY USE

Appendix A summarizes the 2010 baseline and 2015 re-inventory energy use data used in the development of the Energy Action Plan.

PG&E provided the majority of electricity used in the City of Sonora in 2010 and 2015 with Tuolumne Public Power Association (TPPA) providing electricity to public agencies. The 2010 and 2015 aggregated electricity consumption data was provided by PG&E and TPPA for all accounts within the City of Sonora. Note that due to meter change outs in 2010, TPPA electricity usage records for 2010 do not accurately reflect the actual amount of electricity used by TPPA accounts, so 2011 records are used as a proxy year. Independent energy service providers provided a small percentage as direct-access electricity. Direct-access electricity is energy supplied by a competitive energy service provider other than a utility, but uses a utility's transmission lines to distribute the energy. The 2010 and 2015 direct-access electricity consumed in city was estimated from county-level, direct-access electricity data provided by the California Energy Commission (CEC). Additionally, transmission and distribution losses associated with electricity consumed in the city was estimated based on the Environmental Protection Agency's Emissions & Generation Resource Integrated Database (eGRID) Western Grid average loss factors for 2010 and 2014, respectively.

Residential and non-residential propane use was estimated using data from the 2010 Tuolumne County GHG inventory and scaled based on the number of occupied households and employer establishments in the City, and weighted using heating degree days. Wood use was estimated from state level average use per household from the U.S. Energy Information Agency (EIA) and U.S. Census Bureau American Community Survey. Propane used by municipal facilities for 2010 and 2015 was provided by regional suppliers serving municipal customers in Sonora.

Potable water and wastewater electricity use for 2010 and 2015 was estimated by scaling electricity use data provided by Tuolumne Utilities District for Tuolumne County wastewater and potable water facilities to the city based on population. The potable water and wastewater electricity use was subtracted from each utility's reported non-residential electricity use in order to provide additional context and develop potable water and wastewater electricity specific reduction strategies.

Table A-1: City of Sonora Community-Wide Residential Energy Use

Energy Source	Electricity Use (kWh)		Data Source
	2010	2015	
Electricity Use - PG&E	18,521,847	17,052,395	Pacific Gas and Electric Company
Electricity Use - Direct Access	17,624	9,318	California Energy Commission
Total Electricity Use	18,539,471	17,061,713	
Transmission & Distribution Losses	1,361,206	858,372	U.S. EPA's 2010 and 2014 eGRID
Energy Source	Propane Use (gallons)		Data Source
	2010	2015	
Total Propane Use	1,143,480	883,074	2010 Tuolumne County GHG Inventory
Energy Source	Wood Use (Cords)		Data Source
	2010	2015	
Total Wood Use	1,529	1,902	U.S. EIA and U.S. Census Bureau

Table A-2: City of Sonora Community-Wide Non-Residential Energy Use

Energy Source	Electricity Use (kWh)		Data Source
	2010	2015	
Electricity Use - PG&E	29,670,837	28,331,889	Pacific Gas and Electric Company
Electricity Use - TPPA	9,875,912	8,385,675	Tuolumne Public Power Agency
Electricity Use - Direct Access	1,525,388	4,463,016	California Energy Commission
Total Electricity Use	41,072,137	41,180,580	
Transmission & Distribution Losses	3,015,601	2,071,788	U.S. EPA's 2010 and 2014 eGRID
Energy Source	Propane Use (gallons)		Data Source
	2010	2015	
Propane Use - Special Districts	69,271	47,772	Regional Propane Providers
Propane Use - Business Establishments	691,200	697,600	2010 Tuolumne County GHG Inventory, US Census Bureau # of employer establishments.
Total Propane Use	760,471	745,372	

Table A-3: City of Sonora Community Wide Potable Water and Wastewater Operations Electricity Use

Energy Source	Electricity Use (kWh)		Data Source
	2010	2015	
Potable Water Operations	457,164	267,373	Tuolumne Utilities District
Wastewater Operations	238,023	254,942	Tuolumne Utilities District
Total Electricity Consumption	695,187	522,315	
Transmission & Distribution Losses	51,042	26,278	U.S. EPA's 2010 and 2014 eGRID

Table A-4: City of Sonora Municipal-Operations Energy Use

Facility	Electricity Use (kWh)		Propane Use (gallons)		Data Source
	2010	2015	2010	2015	
Sonora Police Department	91,413	83,699	304	149	Tuolumne Public Power Agency
Sonora Fire Department 201 S. Shepherd	87,467	105,920	2,154	1,483	Tuolumne Public Power Agency
Sonora Fire Museum 125 N Washington	33,214	26,440	0	0	Tuolumne Public Power Agency
Sonora City Hall	87,662	87,040	0	0	Tuolumne Public Power Agency
Sonora Public Works 111 School St	42,269	29,520	1,506	987	Tuolumne Public Power Agency
Sonora Opera Hall	19,200	21,280	1,456	1,168	Tuolumne Public Power Agency
Minor Facilities – TPPA	6,562	9,797	0	0	Tuolumne Public Power Agency
Minor Facilities – PG&E	6,596	1,735	0	0	Pacific Gas & Electric Company
Traffic Signals and Outdoor Lighting	45,967	49,643	0	0	Pacific Gas & Electric Company
LS-1 Street and Highway Lighting	220,385	219,782	0	0	Pacific Gas & Electric Company
Total Municipal Facilities Energy Use	640,735	634,856	5,420	3,787	Includes PG&E Owned Street Lights
Transmission and Distribution Losses	47,044	31,940	0	0	U.S. EPA's 2010 and 2014 eGRID