

**APPENDIX B: CITY OF SONORA BUSINESS-AS-USUAL (BAU) ENERGY USE FORECAST**

*Appendix B summarizes the 2035 business-as-usual energy use forecast used in the development of the Energy Action Plan to determine projected energy use if no new energy efficiency measures are taken.*

Business-as-usual (BAU) community-wide energy usage was forecast using the Statewide Energy Efficiency Collaborative ClearPath California forecasting tool. Municipal energy use is included in non-residential energy use, thus was not forecasted separately. Residential energy use and potable water and wastewater energy use was forecast using the California Department of Transportation (CALTrans Long-Term Socio-Economic Forecast of households for Tuolumne County<sup>1</sup>. Non-residential energy use was forecast using the estimated 2010 and 2015 employment in Tuolumne County reported by the California Employment Development Department (EDD) <sup>2</sup> and the projected 2015 to 2035 employment in Tuolumne County from the CALTrans Long-Term, Socio-Economic Forecast.<sup>3</sup> Annualized growth rates for each time period were calculated using the standard formula.

<b>Annualized Growth Rate = ( X / Y )^( 1 / Z ) – 1</b>	
<b>Where:</b>	<b>X = Forecast End Year Energy Use</b>
	<b>Y = Baseline Year Energy Use</b>
	<b>Z = Number of Years in the Forecast</b>

**Table B-1: BAU Residential Energy Use Forecast Growth Indicators and Annualized Growth Rates**

<b>Year</b>	<b>Occupied Households</b>	<b>Growth Indicator Source</b>
2010	22,152	CALTrans Household Projections
2015	22,266	CALTrans Household Projections
2020	22,614	CALTrans Household Projections
2025	22,912	CALTrans Household Projections
2030	23,132	CALTrans Household Projections
2035	23,360	CALTrans Household Projections
<b>Time Period</b>	<b>Annualized Growth Rate</b>	
2010-2015	0.10%	CALTrans Household Projections
2015-2020	0.27%	CALTrans Household Projections
2020-2025	0.27%	CALTrans Household Projections
2025-2030	0.21%	CALTrans Household Projections
2030-2035	0.20%	CALTrans Household Projections

<sup>1</sup> Caltrans Long-Term Socio-Economic Forecasts by County – Tuolumne County 2016  
[http://www.dot.ca.gov/hq/tpp/offices/eab/socio\\_economic.html](http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html) Households

<sup>2</sup> California Employment Development Department, Labor Market Information Division Industry Employment & Labor Force – by Annual Average (March 2016 Benchmark) <http://www.labormarketinfo.edd.ca.gov/county/tuolu.html> In-County Number of Employed, All Industries

<sup>3</sup> Caltrans Long-Term Socio-Economic Forecasts by County – Tuolumne County 2016  
[http://www.dot.ca.gov/hq/tpp/offices/eab/socio\\_economic.html](http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html) In-County Total Employment, All Industries

**Table B-2: BAU Non-Residential Energy Use Forecast Growth Indicators and Annualized Growth Rates**

Year	Employment	Growth Indicator Source
2010	16,040	CA EDD Employment Estimates
2015	17,350	CA EDD Employment Estimates
2015	17,240	CALTrans Employment Projections
2020	17,797	CALTrans Employment Projections
2025	18,243	CALTrans Employment Projections
2030	18,658	CALTrans Employment Projections
2035	19,059	CALTrans Employment Projections
Time Period	Annualized Growth Rate	
2010-2015	1.58%	CA EDD Employment Estimates
2015-2020	0.64%	CALTrans Employment Projections
2020-2025	0.50%	CALTrans Employment Projections
2025-2030	0.45%	CALTrans Employment Projections
2030-2035	0.43%	CALTrans Employment Projections

**Table B-3: ClearPath California BAU Energy Use Forecast Annualized Growth Rates.**

Growth Indicator	2010-2014	2015-2019	2020-2024	2025-2029	2030-2034	2035-2040
Occupied Households	0.1027%	0.2689%	0.2719%	0.2058%	0.1955%	0.1955%
Employment	1.5825%	0.8259%	0.5244%	0.4603%	0.4308%	0.4308%

Annualized growth rates for City of Sonora occupied households and employment are recalculated for the time periods required for forecasting in ClearPath California.

**Table B-4: BAU Energy Use Forecast by Energy Source**

Energy Source	2010 Energy Use	2035 Energy Use	2010-2035 Change
Residential Electricity Use (kWh)	18,539,471	19,550,718	1,011,247
Residential Propane Use (Gallons)	1,143,480	1,205,848	62,368
Residential Wood Use (Cords)	1,529	1,612	83
Non-Residential Electricity Use (kWh)	41,072,137	49,115,004	8,042,867
Non-Residential Propane Use (Gallons)	760,471	909,391	148,920
Potable Water Electricity Use (kWh)	457,164	481,985	24,821
Wastewater Electricity Use (kWh)	238,023	251,101	13,078