Description of "11 state EGU analysis" Spreadsheet
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General

This spreadsheet examines existing sources only. Projections for new sources expected by 2018 will be presented separately. There are five worksheets in the spreadsheet (click on tabs at bottom of screen to move between worksheets). I have set each worksheet to print the most relevant information, though in most cases there are additional columns that you may want to examine (including some that are hidden for display purposes).

Tab 1 – 1998 Data

This data is straight out of EPA's database, except that the NOx tons are calculated based on the emission rate and heat input provided. The 1998 data does not really factor into our current analysis since we are using a 2002 base case for the SIPs, however, I think it is a useful point of reference in evaluating the progress made towards reducing SO2 from EGUs in the West.

Tab 2 – Base Data and 2018 Projections

Provides 2002 – 2004 base data along with other information on each unit. The following is a description of how this data was used to project 2018 emissions which are also shown on this tab. Assumes no retirements of existing coal units.

Step 1: Calculate 2002 capacity factor (Column J)

2002 MWh (column I) / MW (column H) *8760

Step 2: Calculate 2002-2018 Growth Factor (Column K)

0.85 / 2002 capacity factor (Column J)

All units grown to 85% capacity. If 2002 capacity factor is greater than 85%, used 2002 capacity factor (i.e., growth factor = 1)

Step 3: Calculate 2018 heat input (Column J)

2002-2018 growth factor (Column K) * 2002 heat input (column U)

Step 4: Set 2018 Emission Rates for SO2 and NOx (columns O and P)

Excepted as noted below, 2004 emission rates (columns AC and AI) were used for the 2018 projections. In this way, reductions achieved in or prior to 2004 are incorporated in the 2018 base case.

In the cases listed below, the 2004 emission rates were reduced for additional controls that will occur between 2004 and 2018. (Columns M and N note additional controls and the control efficiencies applied.)

- Springerville 1 and 2: SO2 cap = 7,550 tpy; NOx cap = 6,300 tpy
- Cherokee, Arapahoe and Valmont: SO2 cap = 10,500.
- Commanche 1: SO2 cap = 1,856 tpy; NOx cap = 3,093 tpy
- Commanche 2: SO2 cap = 1,830 tpy; NOx cap = 3,050 tpy
- San Juan 1-4: SO2 emission rate = 0.195 and NOx emission rate reduced 35% from 2004 (per consent decree)
- Mohave 1 and 2: SO2 emissions = 8700 and NO x emissions = 19,600 per consent (consent decree requires low NOx burners). Mohave ceased operation at the end of 2005, but could restart at some future date.
- Jim Bridger 2 – Low NOx burners installed and operating.

Step 5: Calculate 2018 Emissions in Tons for SO2 and NOx (Columns Q and R):

2018 heat input * 2018 Emission Rates for SO2 and NOx
2018 Tons for non-CAMD units (highlighted in blue) = 2002 emissions

Step 6: Calculate 2018 Emissions Using 02-04 Avg Emission Rate (Columns S&T)

Same as above except 2018 emission rate =
sum (2002, 2003, 2004 emission rates for SO2 and NOx) / 3

For units with additional controls listed above, the same 2018 emission rate was used instead of the 3 yr average rate.

Also, the 2004 emission rate was used for the following units due to emission reductions over the 2002–04 period which make the 3 yr average rate unrepresentative of current operations.

SO2

- Apache 2,3
- Coronado 1,2
- Craig 1,2
- Four Corners 1-5
- Reid Gardner 1-4
- Centralia 1

NOx

- Craig 1,2
- Reid Gardner 1-4

Net difference between using 2004 emission rate (Step 5 method) and 3 yr average emission rate (Step 6 method) is less than 1% for both NOx and SO2.

Tab 3 – No Further Reductions Assumed

For the units listed on this page, no further reductions are assumed in Scenario A or Scenario B. Column B shows a number for each of these units that corresponds to the following key (which is also shown at the bottom of the worksheet).

Category 1: BART eligible; >200 MW; permit or consent decree that is presumed to satisfy BART
Category 2: Not BART eligible; <200 MW. Some are controlled. No further controls evaluated.
Category 3: Not BART elibible; >200 MW; well controlled with enforceable limits
Category 4: BART <200 MW and Non BART >200 that already meet presumptive limits

Tab 4 – Scenario A

Scenario A: Presumptive limits for all BART eligible units > 200 MW (columns S-V). APS (Cholla) and P Corp (UT and WY) commitments shown in columns W-Z.

Tab 5 – Scenario B

Presumptive limits @ non-BART units > 200 MW and BART units < 200 MW

Emissions Summary

	SO2	**NOx**
1998	**572,923**	**519,267**
2002	**428,056**	**485,067**
2004	**376,332**	**473,645**
2018 base case	**334,470**	**469,629**
Scenario A reductions	**-113,806**	**-104,909**
Scenario B reductions (additional to Scenario A)	**- 25,127**	**- 29,490**