

## Appendix F. Arkansas DEQ - BART and Reasonable Progress Determination Cost Evaluation

From the first regional haze implementation period, the BART and reasonable progress determinations that included cost-effectiveness was one source of cost data used to inform the MPCA's decision making process. The MPCA was also asked to provide input on a similar effort conducted by the Arkansas Department of Energy and Environment's Division of Environmental Quality (Arkansas DEQ). The Arkansas DEQ compiled the costs of control determinations for BART and reasonable progress in the first planning period and scaled the cost per ton values in each determination to 2019 dollars using the Chemical Engineering Plant Cost Index (CEPCI). The analysis excluded any BART-alternatives because many BART alternatives were either trading programs or were operational changes made by facilities instead of technology-specific changes with associated cost data. This analysis found that the cost-effectiveness of controls installed as a result of the first regional haze implementation period were generally \$5,200 per ton of pollutant reduced.

The tables below provides a summary statistics for cost-effectiveness by emission unit type created by the Arkansas DEQ for the second implementation period.

**Table F-1. Cost effectiveness in \$2019 (\$/ton)**

Equipment Type	Capacity	MIN	MAX	MEAN	STDEV	STD ERROR	Mean + 2STDEV	Median	98th Percentile Value
EGU Boiler	<200 MW	-\$57	\$5,193	\$2,311	\$1,372	\$246	\$5,055	\$2,654	\$4,911
	200 - 500 MW	\$259	\$5,149	\$2,166	\$1,494	\$249	\$5,154	\$1,863	\$5,028
	>500 MW	\$141	\$5,137	\$1,742	\$1,368	\$194	\$4,478	\$1,434	\$4,713
	Any	-\$57	\$5,193	\$2,023	\$1,419	\$131	\$4,861	\$1,989	\$5,086
Industrial Boiler	<100 MMBtu/hr	\$751	\$751	\$751	\$0	\$0	\$751	\$751	\$751
	100 - 250 MMBtu/hr	\$1,466	\$1,834	\$1,650	\$260	\$184	\$2,170	\$1,650	\$1,826
	>250 MMBtu/hr	\$428	\$3,732	\$1,474	\$920	\$265	\$3,313	\$1,296	\$3,436
	Any	\$428	\$3,732	\$1,406	\$833	\$208	\$3,071	\$1,296	\$3,328
Kiln	Any	\$514	\$4,774	\$1,567	\$1,143	\$330	\$3,853	\$1,131	\$4,194
Smelter	Any	\$912	\$1,044	\$978	\$93	\$66	\$1,164	\$978	\$1,041
All	Any	-\$57	\$5,193	\$1,905	\$1,353	\$112	\$4,610	\$1,601	\$4,989

**Table F-2. Observation data**

Equipment Type	Capacity	Observations	Observations < Mean + 2 STDEV	Observations (%) < Mean + 2 STDEV
EGU Boiler	<200 MW	31	30	97%
	200 - 500 MW	36	36	100%
	>500 MW	50	46	92%
	Any	117	112	96%
Industrial Boiler	<100 MMBtu/hr	2	2	100%
	100 - 250 MMBtu/hr	2	2	100%
	>250 MMBtu/hr	12	11	92%
	Any	16	15	94%

Equipment Type	Capacity	Observations	Observations < Mean + 2 STDEV	Observations (%) < Mean + 2 STDEV
Kiln	Any	12	11	92%
Smelter	Any	2	2	100%
All	Any	147	137	93%

**Table F-3. CEPCI Index values and ratios**

Year (n)	CEPCI Index Value	Cost Index Ratio (Value <sub>2019</sub> /Value <sub>n</sub> )
1998	389.5	1.559691913
1999	390.6	1.555299539
2000	394.1	1.541486932
2001	394.3	1.540705047
2002	395.6	1.535642063
2003	402	1.51119403
2004	444.2	1.367627195
2005	468.2	1.297522426
2006	499.6	1.215972778
2007	525.4	1.156261896
2008	575.4	1.055787278
2009	521.9	1.164016095
2010	550.8	1.102941176
2011	585.7	1.03722042
2012	584.6	1.039172083
2013	567.2	1.071050776
2014	576.1	1.054504426
2015	556.8	1.091056034
2016	541.7	1.121469448
2017	567.5	1.070484581
2018	603.1	1.007295639
2019	607.5	1

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
AK	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Golden Valley Electric Association, Healy Power Plant	221112	Fossil Fuel Electric Power Generation	Unit 1	25-MW boiler	SNCR	EGU Coal-Fired Boiler
AR	<a href="https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-19497.pdf">https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-19497.pdf</a>	Carl E. Bailey	221112	Fossil Fuel Electric Power Generation	Unit 1	122 megawatt wall-fired oil/natural gas-fired boiler	0.5% sulfur content fuel	EGU Oil-Fired Boiler
AR	<a href="https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-19497.pdf">https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-19497.pdf</a>	McClellan	221112	Fossil Fuel Electric Power Generation	Unit 1	122 megawatt wall-fired oil/natural gas-fired boiler	0.5% sulfur content fuel	EGU Oil-Fired Boiler
AZ	<a href="https://www.regulations.gov/doctype?D=EPA-R09-OAR-2012-0904">https://www.regulations.gov/doctype?D=EPA-R09-OAR-2012-0904</a>	Apache Generating Station	221112	Fossil Fuel Electric Power Generation	Unit 2	Riley TURBO wall-fired boiler - 20.4 MW	SCR with LNB and OFA	EGU Coal-Fired Boiler
AZ	<a href="https://www.regulations.gov/doctype?D=EPA-R09-OAR-2012-0905">https://www.regulations.gov/doctype?D=EPA-R09-OAR-2012-0905</a>	Apache Generating Station	221112	Fossil Fuel Electric Power Generation	Unit3	Riley TURBO wall-fired boiler - 78.8 MW	SCR with LNB and OFA	EGU Coal-Fired Boiler
AZ	<a href="https://www.regulations.gov/doctype?D=EPA-R09-OAR-2013-0590">https://www.regulations.gov/doctype?D=EPA-R09-OAR-2013-0590</a>	TEP Sundt Generatin Station	221112	Fossil Fuel Electric Power Generation	Unit 4	Tangentially-fired	SNCR	EGU Coal-Fired Boiler
AZ	<a href="https://www.regulations.gov/doctype?D=EPA-R09-OAR-2013-0590">https://www.regulations.gov/doctype?D=EPA-R09-OAR-2013-0590</a>	TEP Sundt Generatin Station	221112	Fossil Fuel Electric Power Generation	Unit 4	Tangentially-fired	DSI	EGU Coal-Fired Boiler
CO	<a href="https://beta.regulations.gov/doc">https://beta.regulations.gov/doc</a>	Hayden Station	221112	Fossil Fuel Electric Power Generation	Hayden Unit 1 (NOx)	Dry bottom coal front-fired - 190 MW	SCR	EGU Coal-Fired Boiler
CO	<a href="https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document">https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document</a>	Drake Plant	221112	Fossil Fuel Electric Power Generation	Drake Unit 7 (NOx)	Dry-bottom, Front-fired coal and natural gas - 142 MW	Ultra Low Nox Burners	EGU Coal and Gas Boiler
CO	<a href="https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document">https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document</a>	Colorado Energy Nations	221112	Fossil Fuel Electric Power Generation	CENC (TriGen) Unit 5 (NOx)	Dry bottom coal tengentially-fired - 65 MW	LNB w/SOFA and SNCR	EGU Coal-Fired Boiler
CO	<a href="https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document">https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document</a>	Drake Plant	221112	Fossil Fuel Electric Power Generation	Drake Unit 6 (SO2)	Dry-bottom, Front-fired coal and natural gas -85 MW	FGD	EGU Coal and Gas Boiler
CO	<a href="https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document">https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document</a>	Drake Plant	221112	Fossil Fuel Electric Power Generation	Drake Unit 7 (SO2)	Dry-bottom, Front-fired coal and natural gas - 142 MW	FDG	EGU Coal and Gas Boiler
CO	<a href="https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document">https://beta.regulations.gov/document/EPA-R08-OAR-2011-0770/document</a>	Hayden Station	221112	Fossil Fuel Electric Power Generation	Hayden - Unit 1 (SO2)	Dry bottom coal front-fired - 190 MW	Tighten Emission Limit to 0.13	EGU Coal-Fired Boiler
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar Gordon Evans	221112	Fossil Fuel Electric Power Generation	Unit 2	136 megawatt fuel-oil wall-fired boiler	natural gas only	EGU Oil-Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
AK	25	MW	\$3,125	2009	BART	State found that it was 4028 Based on 8 year RUL, however, there was no enforceable shutdown date. Based on a 15 year life, EPA determined that it was 3125	1.16	\$3,638	EGU BOILER <200 MW
AR	122	MW	\$2,559	2011	BART		1.04	\$2,654	EGU BOILER <200 MW
AR	122	MW	\$4,553	2011	BART		1.04	\$4,722	EGU BOILER <200 MW
AZ	20.4	MW	\$3,450	2011	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.04	\$3,578	EGU BOILER <200 MW
AZ	78.8	MW	\$2,973	2011	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.04	\$3,084	EGU BOILER <200 MW
AZ	156	MW	\$3,222	2013	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$3,451	EGU BOILER <200 MW
AZ	156	MW	\$1,857	2013	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$1,989	EGU BOILER <200 MW
CO	190	MW	\$3,385	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$3,574	EGU BOILER <200 MW
CO	142	MW	\$662	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$699	EGU BOILER <200 MW
CO	65	MW	\$4,919	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$5,193	EGU BOILER <200 MW
CO	85	MW	\$2,816	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$2,973	EGU BOILER <200 MW
CO	142	MW	\$2,544	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$2,686	EGU BOILER <200 MW
CO	190	MW	\$2,318	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$2,447	EGU BOILER <200 MW
KS	136	MW	-\$37	2002	RP		1.54	-\$57	EGU BOILER <200 MW

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar - Lawrence	221112	Fossil Fuel Electric Power Generation	Unit 3	49 megawatt tangential coal-fired boiler	0.18 lb/MMBTU NOx	EGU Coal-Fired Boiler
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar - Lawrence	221112	Fossil Fuel Electric Power Generation	Unit 4	114 megawatt tangential coal-fired boiler	0.18 lb/MMBTU NOx	EGU Coal-Fired Boiler
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar Tecumseh	221112	Fossil Fuel Electric Power Generation	7/9	82 megawatt tangential coal-fired boiler	0.18 lb/MMBTU NOx	EGU Coal-Fired Boiler
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar Tecumseh	221112	Fossil Fuel Electric Power Generation	8/10	150 megawatt tangential coal-fired boiler	0.18 lb/MMBTU NOx	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation">https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation</a>	Stanton Station	221112	Fossil Fuel Electric Power Generation	1	188 MW dry bottom front-wall-fired configuration and is permitted to burn both lignite and sub-bituminous Powder River Basin (PRB) coal	spray dryer with fabric filter	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation">https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation</a>	Stanton Station	221112	Fossil Fuel Electric Power Generation	1	188 MW dry bottom front-wall-fired configuration and is permitted to burn both lignite and sub-bituminous Powder River Basin (PRB) coal	LNB + OFA + SNCR	EGU Coal-Fired Boiler
NV	<a href="https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal">https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal</a>	Fort Churchill	221112	Fossil Fuel Electric Power Generation	1	113 MW front wall-fired nat gas steam boilers to drive turbine generators	LNB with FGR	EGU Natural-Gas Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
KS	49	MW	\$989	2002	RP		1.54	\$1,519	EGU BOILER <200 MW
KS	114	MW	\$989	2002	RP		1.54	\$1,519	EGU BOILER <200 MW
KS	82	MW	\$450	2002	RP		1.54	\$691	EGU BOILER <200 MW
KS	150	MW	\$450	2002	RP		1.54	\$691	EGU BOILER <200 MW
ND	188	MW	\$1,330	2006	BART		1.22	\$1,617	EGU BOILER <200 MW
ND	188	MW	\$3,052	2006	BART		1.22	\$3,711	EGU BOILER <200 MW
NV	113	MW	\$580	2007	BART		1.16	\$671	EGU BOILER <200 MW

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
NV	<a href="https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal">https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal</a>	Fort Churchill	221112	Fossil Fuel Electric Power Generation	2	113 MW nat gas steam boilers to drive turbine generators	LNB with FGR	EGU Natural-Gas Fired Boiler
NV	<a href="https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal">https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal</a>	Tracy	221112	Fossil Fuel Electric Power Generation	1	55 MW nat-gas	LNB with FGR	EGU Natural-Gas Fired Boiler
NV	<a href="https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal">https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal</a>	Tracy	221112	Fossil Fuel Electric Power Generation	2	83 MW nat-gas	LNB with FGR	EGU Natural-Gas Fired Boiler
NV	<a href="https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal">https://www.federalregister.gov/documents/2012/08/23/2012-20503/approval-and-promulgation-of-air-quality-implementation-plans-nevada-regional-haze-state-and-federal</a>	Tracy	221112	Fossil Fuel Electric Power Generation	3	113 MW front wall-fired nat gas	LNB with SNCR	EGU Natural-Gas Fired Boiler
NV	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Reid Gardner	221112	Fossil Fuel Electric Power Generation	1	100 MW wall-fired coal-fired boiler	SNCR+LNB+OFA	EGU Coal-Fired Boiler
NV	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Reid Gardner	221112	Fossil Fuel Electric Power Generation	2	100 MW wall-fired coal-fired boiler	SNCR+LNB+OFA	EGU Coal-Fired Boiler
NV	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Reid Gardner	221112	Fossil Fuel Electric Power Generation	3	100 MW wall-fired coal-fired boiler	SNCR+LNB+OFA	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for">https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for</a>	AEP/PSO Comanche	221112	Fossil Fuel Electric Power Generation	1	94 MW gas-fired turbine	dry LNB	EGU Natural-Gas Fired Boiler
OK	<a href="https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for">https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for</a>	AEP/PSO Comanche	221112	Fossil Fuel Electric Power Generation	2	94 MW gas-fired turbine	dry LNB	EGU Natural-Gas Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
NV	113	MW	\$653	2007	BART		1.16	\$755	EGU BOILER <200 MW
NV	55	MW	\$3,050	2007	BART		1.16	\$3,527	EGU BOILER <200 MW
NV	83	MW	\$3,050	2007	BART		1.16	\$3,527	EGU BOILER <200 MW
NV	113	MW	\$3,050	2007	BART		1.16	\$3,527	EGU BOILER <200 MW
NV	100	MW	\$1,021	2011	BART	FIP; did not see non-EGU sources	1.04	\$1,059	EGU BOILER <200 MW
NV	100	MW	\$928	2011	BART	FIP	1.04	\$963	EGU BOILER <200 MW
NV	100	MW	\$1,321	2011	BART	FIP	1.04	\$1,370	EGU BOILER <200 MW
OK	94	MW	\$2,600	2011	BART		1.04	\$2,697	EGU BOILER <200 MW
OK	94	MW	\$2,600	2011	BART		1.04	\$2,697	EGU BOILER <200 MW



State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
WY	<a href="https://www.govinfo.gov/conten/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/conten/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	PacifiCorp Naughton	221112	Fossil Fuel Electric Power Generation	Unit 1	Tangentially-fired 160 megawatt coal-fired boiler	LNBS/OFA	EGU Coal-Fired Boiler
AR	<a href="https://www.govinfo.gov/conten/pkg/FR-2019-09-27/pdf/2019-19497.pdf">https://www.govinfo.gov/conten/pkg/FR-2019-09-27/pdf/2019-19497.pdf</a>	Flint Creek	221112	Fossil Fuel Electric Power Generation	Unit 1	558 megawatt dry bottom wall-fired coal-fired boiler	Dry flue gas desulfurization	EGU Coal-Fired Boiler
AR	<a href="https://www.govinfo.gov/conten/pkg/FR-2019-09-27/pdf/2019-19497.pdf">https://www.govinfo.gov/conten/pkg/FR-2019-09-27/pdf/2019-19497.pdf</a>	Independence	221112	Fossil Fuel Electric Power Generation	Unit 1	Tangentially-Fired 880 MW Coal-Fired Boiler	low sulfur coal	EGU Coal-Fired Boiler
AR	<a href="https://www.govinfo.gov/conten/pkg/FR-2019-09-27/pdf/2019-19497.pdf">https://www.govinfo.gov/conten/pkg/FR-2019-09-27/pdf/2019-19497.pdf</a>	Independence	221112	Fossil Fuel Electric Power Generation	Unit 2	Tangentially-Fired 880 MW Coal-Fired Boiler	low sulfur coal	EGU Coal-Fired Boiler
AR	<a href="https://www.govinfo.gov/conten/pkg/FR-2019-09-27/pdf/2019-19497.pdf">https://www.govinfo.gov/conten/pkg/FR-2019-09-27/pdf/2019-19497.pdf</a>	White Bluff	221112	Fossil Fuel Electric Power Generation	Units 1 and 2	Tangentially-Fired 880 MW Coal-Fired Boiler	low sulfur coal	EGU Coal-Fired Boiler
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar Jeffery	221112	Fossil Fuel Electric Power Generation	Unit 3	720 megawatt coal-fired tangential boiler	0.15 lb/MMBTU	EGU Coal-Fired Boiler
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar Jeffery	221112	Fossil Fuel Electric Power Generation	Unit 3	720 megawatt coal-fired tangential boiler	0.15 lb/MMBTU	EGU Coal-Fired Boiler
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar Energy Jeffery	221112	Fossil Fuel Electric Power Generation	Unit 1	720 megawatt tangential coal-fired boiler	low NOx burners	EGU Coal-Fired Boiler
KS	<a href="https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze">https://www.federalregister.gov/documents/2011/12/27/2011-32998/approval-and-promulgation-of-implementation-plans-state-of-kansas-regional-haze</a>	Westar Energy Jeffery	221112	Fossil Fuel Electric Power Generation	Unit 2	720 megawatt tangential coal-fired boiler	low NOx burners	EGU Coal-Fired Boiler
KY	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Mill Creek	221112	Fossil Fuel Electric Power Generation	unit 4	543.6 megawatt wall-fired coal boiler	sorbent injection	EGU Coal-Fired Boiler
LA	<a href="https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0520-0008">https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0520-0008</a>	Nelson	221112	Fossil Fuel Electric Power Generation	Unit 6	614 megawatt coal-fired boiler	low sulfur coal	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Milton R. Young Station	221112	Fossil Fuel Electric Power Generation	2	517 MW Babcock & Wilcox cyclone boilers burning lignite coal	Upgrade Existing Scrubber (SO2, 95% control eff.)	EGU Coal-Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
WY	160	MW	\$444	2014	BART		1.05	\$468	EGU BOILER <200 MW
AR	558	MW	\$3,845	2016	BART		1.12	\$4,312	EGU BOILER >500MW
AR	880.00	MW	\$2,437	2017	RP	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$2,609	EGU BOILER >500MW
AR	880.00	MW	\$2,345	2017	RP	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$2,510	EGU BOILER >500MW
AR	880.00	MW	\$1,149	2017	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$1,230	EGU BOILER >500MW
KS	720	MW	\$1,437	2002	RP		1.54	\$2,207	EGU BOILER >500MW
KS	720	MW	\$1,695	2002	RP		1.54	\$2,603	EGU BOILER >500MW
KS	720	MW	\$432	2006	BART	Note, NOx only for Cost-effectiveness calculations. Relied upon BART presumptive costs 400 - 2000 for SO2 rather than quantifying for these units	1.22	\$525	EGU BOILER >500MW
KS	720	MW	\$312	2006	BART	Note, NOx only for Cost-effectiveness calculations. Relied upon BART presumptive costs 400 - 2000 for SO2 rather than quantifying for these units	1.22	\$379	EGU BOILER >500MW
KY	543.6	MW	\$4,443	2007	BART		1.16	\$5,137	EGU BOILER >500MW
LA	614	MW	\$2,957	2016	BART		1.12	\$3,316	EGU BOILER >500MW
ND	517	MW	\$522	2006	BART		1.22	\$635	EGU BOILER >500MW

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
ND	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Coal Creek Station	221112	Fossil Fuel Electric Power Generation	1	550 MW Combustion Engineering boilers that tangentially fire pulverized lignite coal	upgrade wet scrubber (SO2) + coal dryer	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Coal Creek Station	221112	Fossil Fuel Electric Power Generation	2	550 MW Combustion Engineering boilers that tangentially fire pulverized lignite coal	upgrade wet scrubber (SO2) + coal dryer;	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Milton R. Young Station	221112	Fossil Fuel Electric Power Generation	2	517 MW Babcock & Wilcox cyclone boilers burning lignite coal	SNCR + ASOFA	EGU Coal-Fired Boiler
NE	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	OPPD NEBRASKA CITY STATION	221112	Fossil Fuel Electric Power Generation	Unit 1	652 MW wall-fired coal-fired boiler	LNB (with existing OFA)	EGU Coal-Fired Boiler
NE	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	NPPD GERALD GENTLEMAN STATION	221112	Fossil Fuel Electric Power Generation	Unit 1	681 MW wall-fired coal-fired boiler	LNB+OFA	EGU Coal-Fired Boiler
NV	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Mohave	221112	Fossil Fuel Electric Power Generation	1	790 MW pulverized coal-fueled, tangentially fired boilers	LNB+OFA	EGU Coal-Fired Boiler
NV	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Mohave	221112	Fossil Fuel Electric Power Generation	2	790 MW pulverized coal-fueled, tangentially fired boilers	LNB+OFA	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	OG&E Seminole	221112	Fossil Fuel Electric Power Generation	1	567 MW, dry wall-fired gas-fired boiler	LNB with OFA and FGR	EGU Natural-Gas Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	OG&E Seminole	221112	Fossil Fuel Electric Power Generation	2	567 MW, dry wall-fired gas-fired boiler	LNB with OFA and FGR	EGU Natural-Gas Fired Boiler
OK	<a href="https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for">https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for</a>	OG&E Seminole	221112	Fossil Fuel Electric Power Generation	3	567 MW, dry wall-fired gas-fired boiler	LNB with OFA and FGR	EGU Natural-Gas Fired Boiler
OK	<a href="https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for">https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for</a>	OG&E Sooner	221112	Fossil Fuel Electric Power Generation	1	570 MW, tangentially-fired coal-fired	LNB with OFA	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	OG&E Sooner	221112	Fossil Fuel Electric Power Generation	1	570 MW, tangentially-fired coal-fired	dry scrubber install	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for">https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for</a>	OG&E Sooner	221112	Fossil Fuel Electric Power Generation	2	570 MW, tangentially-fired coal-fired	LNB with OFA	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	OG&E Sooner	221112	Fossil Fuel Electric Power Generation	2	570 MW, tangentially-fired coal-fired	dry scrubber install	EGU Coal-Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
ND	550	MW	\$824	2007	BART		1.16	\$953	EGU BOILER >500MW
ND	550	MW	\$824	2007	BART		1.16	\$953	EGU BOILER >500MW
ND	517.00	MW	\$1,269	2006	BART		1.22	\$1,543	EGU BOILER >500MW
NE	652	MW	\$166	2011	BART		1.04	\$172	EGU BOILER >500MW
NE	681	MW	\$198	2011	BART		1.04	\$205	EGU BOILER >500MW
NV	790	MW	\$122	2007	BART		1.16	\$141	EGU BOILER >500MW
NV	790	MW	\$122	2007	BART		1.16	\$141	EGU BOILER >500MW
OK	567	MW	\$2,120	2011	BART		1.04	\$2,199	EGU BOILER >500MW
OK	567	MW	\$2,120	2011	BART		1.04	\$2,199	EGU BOILER >500MW
OK	567	MW	\$2,120	2011	BART	<a href="https://www.federalregister.gov/documents/2011/03/22/2011-5799/approval-and-promulgation-of-implementation-plans-oklahoma-regional-haze-state-implementation-plan">https://www.federalregister.gov/documents/2011/03/22/2011-5799/approval-and-promulgation-of-implementation-plans-oklahoma-regional-haze-state-implementation-plan</a>	1.04	\$2,199	EGU BOILER >500MW
OK	570	MW	\$785	2011	BART	FIP	1.04	\$814	EGU BOILER >500MW
OK	570	MW	\$2,048	2011	BART		1.04	\$2,124	EGU BOILER >500MW
OK	570	MW	\$758	2011	BART	FIP	1.04	\$786	EGU BOILER >500MW
OK	570	MW	\$2,048	2011	BART		1.04	\$2,124	EGU BOILER >500MW

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
OK	<a href="https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for">https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for</a>	OG&E Muskogee	221112	Fossil Fuel Electric Power Generation	4	572 MW, tangentially-fired coal-fired	LNB with OFA	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	OG&E Muskogee	221112	Fossil Fuel Electric Power Generation	4	572 MW, tangentially-fired coal-fired	dry scrubber install	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for">https://www.federalregister.gov/documents/2011/12/28/2011-32572/approval-and-promulgation-of-implementation-plans-oklahoma-federal-implementation-plan-for</a>	OG&E Muskogee	221112	Fossil Fuel Electric Power Generation	5	572 MW, tangentially-fired coal-fired	LNB with OFA	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	OG&E Muskogee	221112	Fossil Fuel Electric Power Generation	5	572 MW, tangentially-fired coal-fired	dry scrubber install	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Sandow	221112	Fossil Fuel Electric Power Generation	4	600 MW Coal-fired	Scrubber upgrades=upgraded to perform at a 95% control level	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Martin Lake	221112	Fossil Fuel Electric Power Generation	1	750 MW Coal-fired boiler	Scrubber upgrades=upgraded to perform at a 95% control level	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Martin Lake	221112	Fossil Fuel Electric Power Generation	2	750 MW Coal-fired boiler	Scrubber upgrades=upgraded to perform at a 95% control level	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Martin Lake	221112	Fossil Fuel Electric Power Generation	3	750 MW Coal-fired boiler	Scrubber upgrades=upgraded to perform at a 95% control level	EGU Coal-Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
OK	572	MW	\$281	2011	BART	FIP	1.04	\$291	EGU BOILER >500MW
OK	572	MW	\$2,366	2011	BART		1.04	\$2,454	EGU BOILER >500MW
OK	572	MW	\$281	2011	BART	FIP	1.04	\$291	EGU BOILER >500MW
OK	572	MW	\$2,366	2011	BART		1.04	\$2,454	EGU BOILER >500MW
TX	600	MW	\$600	2014	RP	Because those calculations depended on information claimed by the companies as CBI we cannot present it here, except to note that in all cases, the cost effectiveness was less than \$600/ton.	1.05	\$633	EGU BOILER >500MW
TX	750	MW	\$600	2014	RP	Because those calculations depended on information claimed by the companies as CBI we cannot present it here, except to note that in all cases, the cost effectiveness was less than \$600/ton.	1.05	\$633	EGU BOILER >500MW
TX	750	MW	\$600	2014	RP	Because those calculations depended on information claimed by the companies as CBI we cannot present it here, except to note that in all cases, the cost effectiveness was less than \$600/ton. FACILITY INFO WAS NOT AVAILABLE in docket that I could find; some found online through Google searches. need to check in eGRID data.	1.05	\$633	EGU BOILER >500MW
TX	750	MW	\$600	2014	RP	Because those calculations depended on information claimed by the companies as CBI we cannot present it here, except to note that in all cases, the cost effectiveness was less than \$600/ton.	1.05	\$633	EGU BOILER >500MW

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Monticello	221112	Fossil Fuel Electric Power Generation	3	coal-fired	Scrubber upgrades=upgraded to perform at a 95% control level	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Limestone	221112	Fossil Fuel Electric Power Generation	2		Scrubber upgrades=upgraded to perform at a 95% control level	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Limestone	221112	Fossil Fuel Electric Power Generation	1		Scrubber upgrades=upgraded to perform at a 95% control level	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Big Brown	221112	Fossil Fuel Electric Power Generation	1	tangentially-fired coal-fired boiler 572.9 MW	Wet FGD retrofit;	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Big Brown	221112	Fossil Fuel Electric Power Generation	2	tangentially-fired coal-fired boiler 572.9 MW	Wet FGD retrofit;	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Monticello	221112	Fossil Fuel Electric Power Generation	1	tangentially-fired coal-fired boiler 562.9	Wet FGD retrofit;	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Monticello	221112	Fossil Fuel Electric Power Generation	2	tangentially-fired coal-fired boiler 562.9	Wet FGD retrofit;	EGU Coal-Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
TX	795	MW	\$600	2014	RP	Because those calculations depended on information claimed by the companies as CBI we cannot present it here, except to note that in all cases, the cost effectiveness was less than \$600/ton.	1.05	\$633	EGU BOILER >500MW
TX	858	MW	\$600	2014	RP	Because those calculations depended on information claimed by the companies as CBI we cannot present it here, except to note that in all cases, the cost effectiveness was less than \$600/ton.	1.05	\$633	EGU BOILER >500MW
TX	831	MW	\$600	2014	RP	Because those calculations depended on information claimed by the companies as CBI we cannot present it here, except to note that in all cases, the cost effectiveness was less than \$600/ton.	1.05	\$633	EGU BOILER >500MW
TX	572.9	MW	\$1,255	2014	RP		1.05	\$1,323	EGU BOILER >500MW
TX	572.9	MW	\$1,257	2014	RP		1.05	\$1,326	EGU BOILER >500MW
TX	562.9	MW	\$1,937	2014	RP		1.05	\$2,043	EGU BOILER >500MW
TX	562.9	MW	\$2,170	2014	RP		1.05	\$2,288	EGU BOILER >500MW



State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Coletto Creek	221112	Fossil Fuel Electric Power Generation	1	tangentially-fired coal-fired boiler 629.5 MW	Wet FGD retrofit;	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Tolk	221112	Fossil Fuel Electric Power Generation	172B	tangentially-fired coal-fired boiler 542.9 MW	install SDA dry scrubbers	EGU Coal-Fired Boiler
TX	<a href="https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state">https://www.federalregister.gov/documents/2016/01/05/2015-31904/approval-and-promulgation-of-implementation-plans-texas-and-oklahoma-regional-haze-state</a>	Tolk	221112	Fossil Fuel Electric Power Generation	171B	tangentially-fired coal-fired boiler 533 MW	install SDA dry scrubbers	EGU Coal-Fired Boiler
WA	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	TransAlta Centralia Generation, LLC	221112	Fossil Fuel Electric Power Generation	Unit A	tangentially-fired wet bottom 700 MW coal-fired boiler (now 670 MW)	new SNCR and the use of a sub-bituminous PRB coal	EGU Coal-Fired Boiler
WA	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	TransAlta Centralia Generation, LLC	221112	Fossil Fuel Electric Power Generation	Unit B	tangentially-fired wet bottom 700 MW coal-fired boiler (now 670 MW)	new SNCR and the use of a sub-bituminous PRB coal	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	Basin Electric Power Cooperative Laramie River Station	221112	Fossil Fuel Electric Power Generation	Unit 1	550 MW dry bottom, wall-fired pulverized coal-fired boiler	LNBS/OFA and SCR	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	Basin Electric Power Cooperative Laramie River Station	221112	Fossil Fuel Electric Power Generation	Unit 2	550 MW dry bottom, wall-fired pulverized coal-fired boiler	LNBS with OFA and SCR	EGU Coal-Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
TX	629.5	MW	\$2,278	2014	RP		1.05	\$2,402	EGU BOILER >500MW
TX	542.9	MW	\$2,998	2014	RP		1.05	\$3,161	EGU BOILER >500MW
TX	533	MW	\$3,178	2014	RP		1.05	\$3,351	EGU BOILER >500MW
WA	700	MW	\$2,258	2011	BART	Flex Fuels Project is \$3,563/ton of NOx reduced. Since the Flex Fuels Project also reduces SO2 emissions by an estimated 1,287 tons/year, the cost effectiveness of the Flex Fuels Project is \$2,526/ton of NOx plus SO2 reduced. One unit must cease burning coal by December 31, 2020, and the other coal unit cease burning coal by December 31, 2025 (state agreement)	1.04	\$2,342	EGU BOILER >500MW
WA	700	MW	\$2,258	2011	BART	Flex Fuels Project is \$3,563/ton of NOx reduced. Since the Flex Fuels Project also reduces SO2 emissions by an estimated 1,287 tons/year, the cost effectiveness of the Flex Fuels Project is \$2,526/ton of NOx plus SO2 reduced. One unit must cease burning coal by December 31, 2020, and the other coal unit cease burning coal by December 31, 2025 (state agreement)	1.04	\$2,342	EGU BOILER >500MW
WY	550	MW	\$4,461	2014	BART		1.05	\$4,704	EGU BOILER >500MW
WY	550	MW	\$4,424	2014	BART		1.05	\$4,665	EGU BOILER >500MW

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	Basin Electric Power Cooperative Laramie River Station	221112	Fossil Fuel Electric Power Generation	Unit 3	550 MW dry bottom, wall-fired pulverized coal-fired boiler	LNBS with OFA and SCR	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	Jim Bridger	221112	Fossil Fuel Electric Power Generation	Unit 1	Tangentially-fired 530 megawatt coal-fired boiler	LNBS/OFA	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	Jim Bridger	221112	Fossil Fuel Electric Power Generation	Unit 2	Tangentially-fired 530 megawatt coal-fired boiler	LNBS/OFA	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation">https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation</a>	Leland Olds Station	221112	Fossil Fuel Electric Power Generation	1	216 MW Babcock & Wilcox wall-fired, dry-bottom, pulverized coal-fired boiler	Wet Scrubber (SO2)	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation">https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation</a>	Leland Olds Station	221112	Fossil Fuel Electric Power Generation	1	216 MW Babcock & Wilcox wall-fired, dry-bottom, pulverized coal-fired boiler	SNCR + basic SOFA	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	PacifiCorp Naughton	221112	Fossil Fuel Electric Power Generation	Unit 2	Tangentially-fired 210 megawatt coal-fired boiler	LNBS/OFA	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	PacifiCorp Dave Johnston	221112	Fossil Fuel Electric Power Generation	Unit 3	230 MW pulverized coal-fired boiler, cell configuration burners	low-NOX burners (LNBS) with overfire air (OFA) and shut down in 2027	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	PacifiCorp Dave Johnston	221112	Fossil Fuel Electric Power Generation	Unit 3	230 MW pulverized coal-fired boiler, cell configuration burners	new LNBS with OFA and SCR	EGU Coal-Fired Boiler
AZ	<a href="https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0906">https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0906</a>	Cholla Power Plant	221112	Fossil Fuel Electric Power Generation	Unit 2	Tangentially-fired - 288.9 MW	SCR with LNB and OFA	EGU Coal-Fired Boiler
AZ	<a href="https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0907">https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0907</a>	Cholla Power Plant	221112	Fossil Fuel Electric Power Generation	Unit 3	Tangentially-fired - 312.3 MW	SCR with LNB and OFA	EGU Coal-Fired Boiler
AZ	<a href="https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0908">https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0908</a>	Cholla Power Plant	221112	Fossil Fuel Electric Power Generation	Unit 4	Tangentially-fired - 414 MW	SCR with LNB and OFA	EGU Coal-Fired Boiler
AZ	<a href="https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0909">https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0909</a>	Coronado Generating Station	221112	Fossil Fuel Electric Power Generation	Unit 1	Riley TURBO wall-fired boiler - 410.9 MW	SCR with LNB and OFA	EGU Coal-Fired Boiler
AZ	<a href="https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0909">https://www.regulations.gov/document?D=EPA-R09-OAR-2012-0909</a>	Coronado Generating Station	221112	Fossil Fuel Electric Power Generation	Unit 2	Riley TURBO wall-fired boiler -410.9 MW	SCR +LNB + OFA withLow load temperature control system	EGU Coal-Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
WY	550	MW	\$4,375	2014	BART		1.05	\$4,613	EGU BOILER >500MW
WY	530	MW	\$256	2014	BART		1.05	\$270	EGU BOILER >500MW
WY	530	MW	\$308	2014	BART		1.05	\$325	EGU BOILER >500MW
ND	216	MW	\$1,135	2005	BART		1.30	\$1,473	EGU BOILER 200 - 500 MW
ND	216	MW	\$2,487	2005	BART		1.30	\$3,227	EGU BOILER 200 - 500 MW
WY	210	MW	\$342	2014	BART		1.05	\$361	EGU BOILER 200 - 500 MW
WY	230	MW	\$644	2014	BART	<a href="https://www.federalregister.gov/documents/2014/01/30/2014-00930/approval-disapproval-and-promulgation-of-implementation-plans-state-of-wyoming-regional-haze-state#h-25">https://www.federalregister.gov/documents/2014/01/30/2014-00930/approval-disapproval-and-promulgation-of-implementation-plans-state-of-wyoming-regional-haze-state#h-25</a>	1.05	\$679	EGU BOILER 200 - 500 MW
WY	230	MW	\$2,635	2014	BART		1.05	\$2,779	EGU BOILER 200 - 500 MW
AZ	288.9	MW	\$2,979	2011	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.04	\$3,090	EGU BOILER 200 - 500 MW
AZ	312.3	MW	\$2,838	2011	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.04	\$2,944	EGU BOILER 200 - 500 MW
AZ	414	MW	\$3,083	2011	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.04	\$3,198	EGU BOILER 200 - 500 MW
AZ	410.9	MW	\$2,135	2011	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.04	\$2,214	EGU BOILER 200 - 500 MW
AZ	410.9	MW	\$1,900	2011	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.04	\$1,971	EGU BOILER 200 - 500 MW

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
CO	<a href="https://beta.regulations.gov/doc">https://beta.regulations.gov/doc</a>	Hayden Station	221112	Fossil Fuel Electric Power Generation	Hayden Unit 2 (NOx)	Dry bottom coal tangentially-fired 275.4 MW	SCR	EGU Coal-Fired Boiler
CO	<a href="https://beta.regulations.gov/doc">https://beta.regulations.gov/doc</a>	Craig	221112	Fossil Fuel Electric Power Generation	Craig Unit 1 - (NOx)	Wall-fired coal 446.4 MW	SNCR	EGU Coal-Fired Boiler
CO	<a href="https://beta.regulations.gov/doc">https://beta.regulations.gov/doc</a>	Craig	221112	Fossil Fuel Electric Power Generation	Craig Unit 2 (NOx)	Wall-fired coal 446.4 MW	SNCR	EGU Coal-Fired Boiler
CO	<a href="https://beta.regulations.gov/doc">https://beta.regulations.gov/doc</a>	Hayden Station	221112	Fossil Fuel Electric Power Generation	Hayden - Unit 2 (SO2)	Dry bottom coal tangentially-fired 275.4 MW	Tighten Emission Limit to 0.14	EGU Coal-Fired Boiler
KY	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Mill Creek	221112	Fossil Fuel Electric Power Generation	unit 3	462.6 megawatt wall-fired coal boiler	sorbent injection	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation">https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation</a>	Leland Olds Station	221112	Fossil Fuel Electric Power Generation	2	440 MW Babcock & Wilcox cyclone-fired unit burning crushed coal	Wet Scrubber (SO2)	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Leland Olds Station	221112	Fossil Fuel Electric Power Generation	2	440 MW Babcock & Wilcox cyclone-fired unit burning crushed coal	SOFA and SNCR	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation">https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation</a>	Milton R. Young Station	221112	Fossil Fuel Electric Power Generation	1	277 MW Babcock & Wilcox cyclone boilers burning lignite coal	Wet Scrubber (SO2)	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation">https://www.federalregister.gov/documents/2012/04/06/2012-6586/approval-and-promulgation-of-implementation-plans-north-dakota-regional-haze-state-implementation</a>	Milton R. Young Station	221112	Fossil Fuel Electric Power Generation	1	277 MW Babcock & Wilcox cyclone boilers burning lignite coal	SNCR + ASOFA (Nox)	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Antelope Valley Station	221112	Fossil Fuel Electric Power Generation	1	435 MW tangentially-fired coal-fired boiler	LNB + SOFA	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Antelope Valley Station	221112	Fossil Fuel Electric Power Generation	2	435 MW tangentially-fired coal-fired boiler	LNB + SOFA	EGU Coal-Fired Boiler
ND	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Coyote Station	221112	Fossil Fuel Electric Power Generation	Main	450 MW cyclone coal-fired boiler	ASOFA	EGU Coal-Fired Boiler
NH	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	PSNH Merrimack Station	221112	Fossil Fuel Electric Power Generation	MK2	320 MW cyclone coal-fired EGU	FGD	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	AEP/PSO Northeastern	221112	Fossil Fuel Electric Power Generation	2	495 MW gas-fired boiler	LNB with OFA	EGU Natural-Gas Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
CO	275.4	MW	\$4,064	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$4,291	EGU BOILER 200 - 500 MW
CO	446.4	MW	\$4,877	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$5,149	EGU BOILER 200 - 500 MW
CO	446.4	MW	\$4,713	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$4,976	EGU BOILER 200 - 500 MW
CO	275.4	MW	\$3,629	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$3,831	EGU BOILER 200 - 500 MW
KY	462.6	MW	\$4,293	2007	BART		1.16	\$4,964	EGU BOILER 200 - 500 MW
ND	440	MW	\$839	2005	BART		1.30	\$1,089	EGU BOILER 200 - 500 MW
ND	440	MW	\$1,659	2005	BART		1.30	\$2,153	EGU BOILER 200 - 500 MW
ND	277	MW	\$1,105	2006	BART		1.22	\$1,344	EGU BOILER 200 - 500 MW
ND	277	MW	\$1,424	2006	BART		1.22	\$1,732	EGU BOILER 200 - 500 MW
ND	435	MW	\$586	2011	RP		1.04	\$608	EGU BOILER 200 - 500 MW
ND	435	MW	\$661	2011	RP		1.04	\$686	EGU BOILER 200 - 500 MW
ND	450	MW	\$305	2011	RP		1.04	\$316	EGU BOILER 200 - 500 MW
NH	320	MW	\$1,591	2010	BART	State law required FGD for Hg removal (not fed requirement)	1.10	\$1,755	EGU BOILER 200 - 500 MW
OK	495	MW	\$303	2011	BART		1.04	\$314	EGU BOILER 200 - 500 MW

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	AEP/PSO Southwestern	221112	Fossil Fuel Electric Power Generation	3	332 MW gas-fired boiler	LNB with OFA	EGU Natural-Gas Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	AEP/PSO Northeastern	221112	Fossil Fuel Electric Power Generation	3	490 MW tangentially-fired coal-fired	LNB with OFA	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	AEP/PSO Northeastern	221112	Fossil Fuel Electric Power Generation	3	490 MW tangentially-fired coal-fired	dry scrubber install	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	AEP/PSO Northeastern	221112	Fossil Fuel Electric Power Generation	4	490 MW tangentially-fired coal-fired	LNB with OFA	EGU Coal-Fired Boiler
OK	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	AEP/PSO Northeastern	221112	Fossil Fuel Electric Power Generation	4	490 MW tangentially-fired coal-fired	dry scrubber install	EGU Coal-Fired Boiler
SD	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Otter Tail Power Company, Big Stone I (Unit 1)	221112	Fossil Fuel Electric Power Generation	#1 Babcock boiler	474 MW, coal-fired boiler	SOFA + SCR	EGU Coal-Fired Boiler
UT	<a href="https://www.regulations.gov/co">https://www.regulations.gov/co</a>	PacifiCorp Hunter	221112	Fossil Fuel Electric Power Generation	Unit 1	Tangentially-fired 430MW coal-fired boiler	LNB and SOFA with SCR	EGU Coal-Fired Boiler
UT	<a href="https://www.regulations.gov/co">https://www.regulations.gov/co</a>	PacifiCorp Hunter	221112	Fossil Fuel Electric Power Generation	Unit 2	Tangentially-fired 430MW coal-fired boiler	LNB and SOFA with SCR	EGU Coal-Fired Boiler
UT	<a href="https://www.regulations.gov/co">https://www.regulations.gov/co</a>	PacifiCorp Huntington	221112	Fossil Fuel Electric Power Generation	Unit 1	Tangentially-fired 430MW coal-fired boiler	LNB and SOFA with SCR	EGU Coal-Fired Boiler
UT	<a href="https://www.regulations.gov/co">https://www.regulations.gov/co</a>	PacifiCorp Huntington	221112	Fossil Fuel Electric Power Generation	Unit 2	Tangentially-fired 430MW coal-fired boiler	LNB and SOFA with SCR	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/conter">https://www.govinfo.gov/conter</a>	PacifiCorp Dave Johnston	221112	Fossil Fuel Electric Power Generation	Unit 4	Tangentially-fired 330 MW pulverized coal-fired boiler	LNBS/OFA	EGU Coal-Fired Boiler
WY	<a href="https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf">https://www.govinfo.gov/content/pkg/FR-2014-01-30/pdf/2014-00930.pdf</a>	PacifiCorp Wyodak	221112	Fossil Fuel Electric Power Generation	Unit 1	335 megawatt dry bottom wall-fired coal-fired boiler	LNBS/OFA with SCR	EGU Coal-Fired Boiler
MN	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Northshore Mining	212210	Iron Ore Mining	1	Process boiler, 79 MMBtu/hr	Low NOX burners	Industrial Process Boiler Natural Gas
MN	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Northshore Mining	212210	Iron Ore Mining	2	Process boiler, 79 MMBtu/hr	Low NOX burners	Industrial Process Boiler Natural Gas
ID	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	TASCO-NAMPA Sugar company	311313	Beet Sugar Manufacturing	Riley boiler	350 million BTU per hour, coal-fired boiler	spray dry FGD	Industrial Coal-Fired Boiler
ID	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	TASCO-NAMPA Sugar company	311313	Beet Sugar Manufacturing	Riley boiler	350 million BTU per hour, coal-fired boiler	LNB/OFA	Industrial Coal-Fired Boiler

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
OK	332	MW	\$947	2011	BART		1.04	\$982	EGU BOILER 200 - 500 MW
OK	490	MW	\$313	2011	BART		1.04	\$325	EGU BOILER 200 - 500 MW
OK	490	MW	\$1,544	2011	BART		1.04	\$1,601	EGU BOILER 200 - 500 MW
OK	490	MW	\$313	2011	BART		1.04	\$325	EGU BOILER 200 - 500 MW
OK	490	MW	\$1,544	2011	BART		1.04	\$1,601	EGU BOILER 200 - 500 MW
SD	474	MW	\$825	2011	BART		1.04	\$856	EGU BOILER 200 - 500 MW
UT	430.00	MW	\$2,697	2016	BART	FIP	1.12	\$3,025	EGU BOILER 200 - 500 MW
UT	430.00	MW	\$2,774	2016	BART	FIP	1.12	\$3,111	EGU BOILER 200 - 500 MW
UT	430.00	MW	\$2,871	2016	BART	FIP	1.12	\$3,220	EGU BOILER 200 - 500 MW
UT	430.00	MW	\$2,928	2016	BART	FIP	1.12	\$3,284	EGU BOILER 200 - 500 MW
WY	330	MW	\$246	2014	BART		1.05	\$259	EGU BOILER 200 - 500 MW
WY	335	MW	\$4,036	2014	BART		1.05	\$4,256	EGU BOILER 200 - 500 MW
MN	79	MMBtu/hr	\$723	2012	BART	FIP--NOTE, from the State at time of this analysis: those controls and supporting analyses were evaluated as part of a FIP. This FIP is still working through revisions (EPA and the taconite companies are in the middle of settlement discussions), so EPA may have better information.	1.04	\$751	INDUSTRIAL BOILER < 100 MMBtu/hr
MN	79	MMBtu/hr	\$723	2012	BART	FIP	1.04	\$751	INDUSTRIAL BOILER < 100 MMBtu/hr
ID	350.00	MMBtu/hr	\$2,163	2010	BART	Control Tech approved by EPA in 2012, but State had to revise SIP once on-the-ground inspection revealed the techs were not feasible b/c of plant and unit layout. Subsequent SIP revision established new permit limits to provide the same benefits.	1.10	\$2,386	INDUSTRIAL BOILER >250 MW
ID	350.00	MMBtu/hr	\$1,270	2010	BART	Control Tech approved by EPA in 2012, but State had to revise SIP once on-the-ground inspection revealed the techs were not feasible b/c of plant and unit layout. Subsequent SIP revision established new permit limits to provide the same benefits.	1.10	\$1,401	INDUSTRIAL BOILER >250 MW



State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
AL	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	International Paper Co- Courtland Mill	322110	Kraft pulp and paper mill	X015	#2 Combination boiler	Low Nox burners	Industrial Power Boiler Coal, Wood , and gas
GA	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	GP Brunswick Cellulose	322110	Kraft pulp and paper mill	Power Boiler U700 (F1)	Fuel-oil and wood waste power boiler	1% sulfur fuel oil	Industrial Power Boiler Fuel Oil and Wood Waste
GA	<a href="https://www.federalregister.gov/articles/2012/06/28/2012-15691/approval-and-promulgation-of-implementation-plans-state-of-georgia-regional-haze-state">https://www.federalregister.gov/articles/2012/06/28/2012-15691/approval-and-promulgation-of-implementation-plans-state-of-georgia-regional-haze-state</a>	GP Brunswick Cedar Springs	322110	Kraft pulp and paper mill	Power Boiler No. 1 (U 500)	784 MMBtu/hr boiler that burns coal, wood waste, and fuel oil	70% reduction based on duct sorbent injection	Industrial Power Boiler Coal, Wood Waste, and Fuel Oil
GA	<a href="https://www.federalregister.gov/articles/2012/06/28/2012-15691/approval-and-promulgation-of-implementation-plans-state-of-georgia-regional-haze-state">https://www.federalregister.gov/articles/2012/06/28/2012-15691/approval-and-promulgation-of-implementation-plans-state-of-georgia-regional-haze-state</a>	GP Brunswick Cedar Springs	322110	Kraft pulp and paper mill	Power Boiler No. 2 (U 501)	784 MMBtu/hr boiler that burns coal, wood waste, and fuel oil	70% reduction based on duct sorbent injection	Industrial Power Boiler Coal, Wood Waste, and Fuel Oil
GA	<a href="https://www.federalregister.gov/articles/2012/06/28/2012-15691/approval-and-promulgation-of-implementation-plans-state-of-georgia-regional-haze-state">https://www.federalregister.gov/articles/2012/06/28/2012-15691/approval-and-promulgation-of-implementation-plans-state-of-georgia-regional-haze-state</a>	Interstate Paper	322110	Kraft pulp and paper mill	Power Boiler (F1)	power boiler that combusts gas and TRS containing waste streams	combustion of natural gas except during periods of curtailment	Industrial Power Boiler Natural Gas and Waste
ME	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Verso Androscoggin	322110	Kraft pulp and paper mill	Power Boiler #1	fuel-oil fired boilers	low sulfur fuel < 0.7 % sulfur	Industrial Power Boiler Fuel-Oil Fired
ME	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Verso Androscoggin	322110	Kraft pulp and paper mill	Power Boilers # 2	fuel-oil fired boilers	low sulfur fuel < 0.7 % sulfur	Industrial Power Boiler Fuel-Oil Fired
AL	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Solutia, Inc	325998	Chemical Manufacturer	005	Boiler #5- 290 MMBTU/hr w/ESP	Low sulfur coal	Industrial Power Boiler
AL	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Solutia, Inc	325998	Chemical Manufacturer	006	Boiler #6- 320 MMBTU/hr w/ESP	Low sulfur coal	Industrial Power Boiler
AL	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Solutia, Inc	325998	Chemical Manufacturer	X015	Boiler #7- 536 MMBTU/hr w/ESP	rotating opposed fired air system/furnace sorben injection	Industrial Power Boiler
WI	<a href="https://www.govinfo.gov/conter">https://www.govinfo.gov/conter</a>	Georgia-Pacific	322110	Kraft pulp and paper mill	S10	76.3MW coal-fired boiler, 50 MW coal-fired boiler with same stack	dry circulating fluidized bed FGD	Industrial Power Boiler - Coal

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
AL	679	MMBtu/hr	\$585	2006	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.22	\$711	INDUSTRIAL BOILER >250 MW
GA	800.00	MMBtu/hr	\$3,228	2007	RP		1.16	\$3,732	INDUSTRIAL BOILER >250 MW
GA	784.00	MMBtu/hr	\$1,663	2007	RP	addition of caustic at 1675 also found to be reasonable	1.16	\$1,923	INDUSTRIAL BOILER >250 MW
GA	784.00	MMBtu/hr	\$1,663	2007	RP	addition of caustic at 1675 also found to be reasonable	1.16	\$1,923	INDUSTRIAL BOILER >250 MW
GA	400.00	MMBtu/hr	\$370	2007	BART		1.16	\$428	INDUSTRIAL BOILER >250 MW
ME	680.00	MMBtu/hr	\$631	2007	BART	Year based on FLM excel spreadsheets listing 2007 for evaluation of a different control at the same source	1.16	\$730	INDUSTRIAL BOILER >250 MW
ME	680.00	MMBtu/hr	\$631	2007	BART	Year based on FLM excel spreadsheets listing 2007 for evaluation of a different control at the same source	1.16	\$730	INDUSTRIAL BOILER >250 MW
AL	290.00	MMBtu/hr	\$1,066	2006	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.22	\$1,296	INDUSTRIAL BOILER >250 MW
AL	320.00	MMBtu/hr	\$1,066	2006	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.22	\$1,296	INDUSTRIAL BOILER >250 MW
AL	536.00	MMBtu/hr	\$931	2006	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.22	\$1,132	INDUSTRIAL BOILER >250 MW
WI	186.90	MMBtu/hr	\$1,768	2011	BART	<a href="https://dnr.wi.gov/topic/AirQuality/documents/HazeSIPBARTAttachment4.pdf">https://dnr.wi.gov/topic/AirQuality/documents/HazeSIPBARTAttachment4.pdf</a>	1.04	\$1,834	INDUSTRIAL BOILER 100 - 250 MMBtu/hr

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
WI	<a href="https://www.govinfo.gov/conter">https://www.govinfo.gov/conter</a>	Georgia-Pacific	322110	Kraft pulp and paper mill	S10	76.3MW coal-fired boiler, 50 MW coal-fired boiler	OFA/Flue Gas Recirculation (FGR)/SNCR	Industrial Power Boiler - Coal
ID	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Monsanto/P4 Production	325180	Other Basic Inorganic Chemical Manufacturing (Phosphorus)	#5 Rotary Kiln		wet-FGD with lime	Kiln
AZ	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Phoenix Cement Company Clarkdale Plant	327310	Cement Manufacturing	Kiln 4	Precalciner	SNCR	Kiln
AZ	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Calpoertland Cement	327310	Cement Manufacturing	Rillito Kiln 4	Precalciner	SNCR	Kiln
CO	<a href="https://beta.regulations.gov/doc">https://beta.regulations.gov/doc</a>	CEMEX Lyons	327310	Cement manufacturing	CEMEX - Kiln (NOx)		SNCR	Kiln
ME	<a href="https://www.regulations.gov/do">https://www.regulations.gov/do</a>	Dragon Products	327310	Cement manufacturing	lime kiln	single dry process rotary kiln	additional sncr reagent	Kiln
MI	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	St. Mary's Cement	327310	Cement Manufacturing		cement kiln; indirect firing system; kiln system includes a pre-heater and pre-calciner	SNCR	Kiln
MT	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Ash Grove Cement	327310	Cement Manufacturing	long wet kiln	coal and petroleum coke	LNB + SNCR	Kiln
MT	<a href="https://www.federalregister.gov">https://www.federalregister.gov</a>	Holcim (US) Inc. Trident cement plant	327310	Cement Manufacturing	long wet kiln	no info found	LNB + SNCR	Kiln
AZ	<a href="https://www.regulations.gov/ducket?D=EPA-R09-OAR-2013-0591">https://www.regulations.gov/ducket?D=EPA-R09-OAR-2013-0591</a>	Lhoist North America Nelson Lime Plant	327410	Lime Manufacturing	Kiln 1 (SO2)		SNCR + Low sulfur fuel	Kiln
AZ	<a href="https://www.regulations.gov/ducket?D=EPA-R09-OAR-2013-0592">https://www.regulations.gov/ducket?D=EPA-R09-OAR-2013-0592</a>	Lhoist North America Nelson Lime Plant	327410	Lime Manufacturing	Kiln 2 (NOx)		SNCR + Low sulfur fuel	Kiln
AZ	<a href="https://www.regulations.gov/ducket?D=EPA-R09-OAR-2013-0593">https://www.regulations.gov/ducket?D=EPA-R09-OAR-2013-0593</a>	Lhoist North America Nelson Lime Plant	327410	Lime Manufacturing	Kiln 1 (SO2)		SNCR + Low sulfur fuel	Kiln
AZ	<a href="https://www.regulations.gov/ducket?D=EPA-R09-OAR-2013-0594">https://www.regulations.gov/ducket?D=EPA-R09-OAR-2013-0594</a>	Lhoist North America Nelson Lime Plant	327410	Lime Manufacturing	Kiln 2 (NOx)		SNCR + Low sulfur fuel	Kiln

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
WI	186.90	MMBtu/hr	\$1,413	2011	BART	<a href="https://dnr.wi.gov/topic/AirQuality/documents/HazeSIPBARTAttachment4.pdf">https://dnr.wi.gov/topic/AirQuality/documents/HazeSIPBARTAttachment4.pdf</a>	1.04	\$1,466	INDUSTRIAL BOILER 100 - 250 MMBtu/hr
ID			\$466	2010	BART		1.10	\$514	KILN
AZ			\$1,162	2013	RP	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$1,245	KILN
AZ			\$1,850	2014	RP	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.05	\$1,951	KILN
CO			\$1,934	2008	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.06	\$2,042	KILN
ME			\$4,101	2009	BART	Cost in spreadsheet based on SIP cost estimate. Dragon suggested that cost effectiveness would be ~300/ton more than Maine DEP reported	1.16	\$4,774	KILN
MI			\$980	2012	BART	The five non-EGU BART-eligible sources include two Portland cement plants, one taconite plant, and two paper products plants. Table 9.2.d of Michigan's regional haze plan includes a summary of the BART analysis submitted by the sources and Michigan's evaluation of potential BART options and proposed BART control strategies. More detailed information of BART controls and analysis submitted by the sources can be found in appendices 9C through 9J of Michigan's plan.	1.04	\$1,018	KILN
MT			\$2,058	2012	BART	FIP	1.04	\$2,139	KILN
MT			\$1,528	2012	BART	FIP	1.04	\$1,588	KILN
AZ			\$856	2013	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$917	KILN
AZ			\$817	2013	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$875	KILN
AZ			\$819	2013	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$877	KILN
AZ			\$807	2013	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.07	\$864	KILN

State	Link to final approved action	Facility Name	Facility NAICS Code	Facility NAICS Description	Emission Unit	Emission Unit Description	Control Technology Selected	Unit Type
AZ	<a href="https://www.regulations.gov/doctype?D=EPA-R09-OAR-2013-0588">https://www.regulations.gov/doctype?D=EPA-R09-OAR-2013-0588</a>	ASARCO Inc. Hayden Smelter	331410	Nonferrous Metal (except Aluminum) Smelting and Refining		Copper Smelter	Amine Scrubber	Smelter
AZ	<a href="https://www.regulations.gov/doctype?D=EPA-R09-OAR-2013-0589">https://www.regulations.gov/doctype?D=EPA-R09-OAR-2013-0589</a>	Freeport-McMoRan Miami Smelter	331410	Nonferrous Metal (except Aluminum) Smelting and Refining		Copper Smelter	Improve primary and new secondary capture systems, additional controls as needed	Copper Smelter

State	Size	Size Unit	Cost-effectiveness (\$/ton)	Year basis for Cost-effectiveness	BART or RP?	Notes	CEPCI Conversion Factor to 2019	Cost-effectiveness (\$2019/ton)	Equipment Type Category
AZ			\$865	2014	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.05	\$912	SMELTER
AZ			\$990	2014	BART	They did not provide a year for their dollar basis, therefore it is assumed to be the year the analysis occurred	1.05	\$1,044	SMELTER