

EPA'S 111(D) PROPOSAL AND FEDERAL HYDROPOWER IN SD

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EPA CALCULATIONS

South Dakota's 2012 Carbon Rates

Energy Source	2012		
	Tons CO2	Megawatts	Rates (lbs/MWh)
Ben French-coal	142,309	92,798	3,067
Big Stone-coal	3,169,636	2,830,363	2,240
Deer Creek-NGCC	15,326	27,096	1,131
Fossil Fuels Combined			2,256

EPA CALCULATIONS

Emission Rate=	$\frac{(\text{Coal Rate} * \text{Gen}) + (\text{OG Steam Rate} * \text{Gen}) + (\text{NGCC Rate} * \text{Gen})}{\text{Coal Gen} + \text{OG Steam Gen} + \text{NGCC Gen}}$
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EPA APPLICATION OF BUILDING BLOCKS (SD)

Numerator ->	Adj. Coal Rate (less 6%) (lbs/MWh)	Coal Gen. after redispatch (MWh)	O/G steam Gen. after Redispatch (MWh)	O/G rate (lb/MWh)	NGCC Rate (lb/MWh)	Redispatched NGCC Gen. (MWh)	Other Emissions (lbs)2					
	(2,130.40)	x 958,045.80) + (-)	x -) + (1,132.23)	x 1,992,211.20) + 0.00					
Divided By:												
Denominator ->	Coal Gen. after redispatch (MWh)	O/G steam Gen. after Redispatch (MWh)	Redispatched NGCC Gen. (MWh)	Other Gen. (MWh)	Nuclear Generation Under Construction and "At Risk" (MWh)	2029 Existing and Incremental RE (MWh)	2029 EE Potential (%)	2012 Total MWh (sales x 1.0751)	2029 EE Potential (%)	2012 Total MWh (sales x 1.0751)	State Generation as % of sales	
	(958,045.80)	+ -	+ 1,992,211.20	+ 0.00	+ 0.00	+ 1,818,849.89	+ Minimum of (9.91%)	x 12,615,449.17) or (9.91%)	x 12,615,449.17	x 82.32%)	
Numerator	4,296,662,059.30	2012 Fossil only rate	2,255.58									
Denominator	5,798,264.13	2030 Rate(lb/MWh):	741.03									



2012 lbs CO2/MWh rate	2,256 lb/MWh
2030 lbs CO2/MWh rate	741 lb/MWh

INCLUDING HYDRO IN EPA GENERATION FIGURES LOWERS SD GOAL MORE

- 2012 WAPA Generation: 6,738,607 MWh
- 2012 Fossil Only rate: 2,256 lb/MWh
- 2012 Fossil + Hydro rate: 1,446 lb/MWh
- 2030 Goal Fossil Only: 741 lb/MWh
- 2030 Goal Fossil + Hydro: 343 lb/MWh
- Ratepayers would be worse off if hydro included in denominator

VALUE OF SD HYDRO: COMPLIANCE

- Post 2020 compliance: Building Block 3
 - Renewable Energy – redefine to include large hydro generation in state during calendar year
 - Introduces hydrology risk
 - If include WAPA Generation, it would reduce
 - 2012: 2,256 lbs CO₂/MWh to
 - 2012: 1,446 lbs CO₂/MWh hydro only
- Ratepayers would be better off if hydro generation could be used for compliance purposes