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**STATE OF NEW MEXICO**  
**BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD**

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**IN THE MATTER OF PROPOSED NEW REGULATION,**  
20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions*      **No. EIB 10 -04 (R)**

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**TESTIMONY OF MICHAEL SCHNEIDER**

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Good morning, Madam Chair and members of the Board. My name is Michael Schneider and I have been employed as an Environmental Scientist with the Air Quality Bureau of the New Mexico Environment Department since February of 1993. During my time at the Bureau, I have worked in the Enforcement, Permitting, and now the Emissions Inventory sections. The purpose of my testimony is to provide you with information about greenhouse gas (GHG) emission sources that may be subject to the proposed cap and trade regulation. I am familiar with the source categories and many of the sources discussed in my testimony as a result of my role managing the Bureau's GHG emission inventory work.

**INTRODUCTION**

I am here today to provide some perspectives regarding the emission sources likely to fall under the proposed cap, based on data reported to the Department under the Board's existing reporting rules. Specifically my testimony describes:

- Comparative examples of activities emitting 25,000 metric tons of carbon dioxide;
- A timeline of GHG reporting under current rules;

- 1 • A table of sources that reported 2008 GHG emissions greater than 25,000 metric
- 2 tons; and
- 3 • Pie charts depicting GHG emissions by industrial sector, county and ownership.

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### COMPARATIVE STATISTICS

6 To facilitate understanding regarding the significance of a source emitting 25,000  
7 metric tons of carbon dioxide (CO<sub>2</sub>), I queried EPA's carbon equivalency tool to provide  
8 some comparative examples:

- 9 • The annual GHG emissions from 4,780 passenger cars with an average fuel
- 10 economy of 20.4 miles per gallon travelling for 11,700 miles;
- 11 • 2.8 million gallons of gasoline consumed;
- 12 • 334 tanker trucks of gasoline;
- 13 • 131 rail cars of coal consumed; and
- 14 • 58,140 barrels of oil consumed.

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### GHG REPORTING TIMELINE

17 Before I describe the distribution of GHG emissions in New Mexico, we should review  
18 the chronology of the Board's reporting rules which generated these data. In December  
19 of 2007, the Board required phased GHG emissions reporting by adopting 20.2.87  
20 NMAC - *Greenhouse Gas Emissions Reporting*, and modified 20.2.73 NMAC - *Notice*  
21 *of Intent and Emissions Inventory Requirements*. Emissions in 2008 were the first to be  
22 reported, and for that year, the largest regulated sources - defined as Title V sources -  
23 were limited to CO<sub>2</sub>. Emission reports in 2009 added methane (CH<sub>4</sub>). For emission

1 reports in 2010, Part 73 expands coverage to include nearly every oil and gas facility  
 2 subject to a permitting requirement.

3 The Department recently received the 2009 emission reports, but has not  
 4 completed its analysis. Therefore, the following discussion is based on the 2008 emission  
 5 reports.

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 7 **DISTRIBUTION OF GHG EMISSIONS**

8 **A. Emissions by facility and industrial sector**

9 In 2008, 63 facilities reported emitting 25,000 or more metric tons of CO<sub>2</sub>. These  
 10 facilities emitted a total of 23.4 million metric tons (MMTCO<sub>2</sub>), approximately 97  
 11 percent of the total reported emissions. Of these facilities, the 25 largest emitters  
 12 (highlighted in red in the table below) accounted for approximately 90 percent of the  
 13 reported emissions.

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 15 **FACILITIES REPORTING 2008 CO<sub>2</sub> EMISSIONS**  
 16 **EXCEEDING 25,000 METRIC TONS PER YEAR**  
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<b>Facility Owner/Operator</b>	<b>MTCO<sub>2</sub> Emissions</b>	<b>Percent of Total</b>
<b><i>Electricity Generation</i></b>		
<b>Public Service Co of New Mexico</b>		51.53%
San Juan Generating Station	10,797.5	
Luna Energy Facility	905.8	
Afton Generating Station	329.2	
Lordsburg Generating Station	29.9	
<b>Tri -State Generating</b>		7.50%
Prewitt Escalante Generating Station	1,755.1	
<b>Xcel Energy</b>		5.09%
Cunningham Station	881.4	

<b>Facility Owner/Operator</b>	<b>MTCO<sub>2</sub> Emissions</b>	<b>Percent of Total</b>
<b>Maddox Station</b>	310.0	
<b>El Paso Electric</b> Rio Grande Generating Station	461.7	1.97%
<b>City of Farmington</b> Bluffview Power Plant Animas Plant	135.7 63.1	0.85%
<b>Oil and Gas</b>		
<b>Williams Four Corners</b> Milagro Cogeneration and Gas Plant Kutz Gas Plant El Cedro Gas Plant La Jara Compressor Station Lybrook Gas Plant Dogie Canyon Compressor Station 32-8 No2 CDP Compressor Station 32-7 CDP Compressor Station Trunk L Compressor Station Laguna Seca Compressor Station	1,500.5 141.2 100.5 82.2 58.6 42.5 40.9 40.3 37.2 29.8	9.20%
Chaco Compressor Station Cedar Hill Compressor Station Middle Mesa CDP Compressor Station	26.3 25.7 27.8	
<b>TEPPCO NGL Pipeline</b> Val Verde Treater Pump Canyon Compressor Station Frances Mesa Compressor Station Gobernador/Manzanares Compressor Station	1,340.2 41.7 30.5 44.9	6.23%
<b>Enterprise Field Services</b> Chaco Gas Plant Blanco Compressor C and D Station Rattlesnake Canyon Compressor Station South Carlsbad Compressor Station	395.3 263.5 47.0 32.9	3.16%
<b>Navajo Refining</b> Artesia Refinery Lovington Refinery	624.2 93.8	3.07%
<b>Versado Gas Processors</b> Eunice Gas Plant	187.8	1.68%

<b>Facility Owner/Operator</b>	<b>MTCO<sub>2</sub> Emissions</b>	<b>Percent of Total</b>
Monument Gas Plant	96.4	
Saunders Gas Plant	67.0	
North Eunice Compressor Station	42.5	
<b>DCP Midstream</b>		1.61%
Artesia Gas Plant	66.1	
Eunice Gas Plant	146.1	
Linam Ranch Gas Plant	164.2	
<b>Western Refining</b>		1.57%
Ciniza Refinery	264.5	
Bloomfield Refinery	103.5	
<b>Conoco Phillips</b>		1.48%
San Juan Gas Plant	244.1	
East Vacuum Liquid Recovery	65.4	
Wingate Fractionation Plant	36.8	
<b>El Paso Natural Gas</b>		1.30%
Lordsburg Compressor Station	61.3	
Florida Compressor Station	45.8	
Eunice A Compressor Station	41.5	
Monument Compressor Station	38.6	
Afton Compressor Station	35.0	
Pecos River Compressor Station	81.1	
<b>Southern Union Gas</b>		0.97%
Jal No. 3 Gas Plant	226.8	
<b>OXY USA WTP</b>		0.48%
Indian Basin Gas Plant	111.3	
<b>Intrepid Potash New Mexico</b>		0.46%
East KCI Compaction	106.6	
<b>Freeport-McMoRan - Chino Mines</b>		0.38%
Chino Mine - Hurley Facility	87.8	
<b>Davis Gas Processing</b>		0.27%
Denton Gas Plant	64.3	
<b>Western Gas Resources</b>		0.27%
San Juan River Gas Plant	62.1	
<b>Mosaic Potash</b>		0.19%
Carlsbad Plant	43.6	

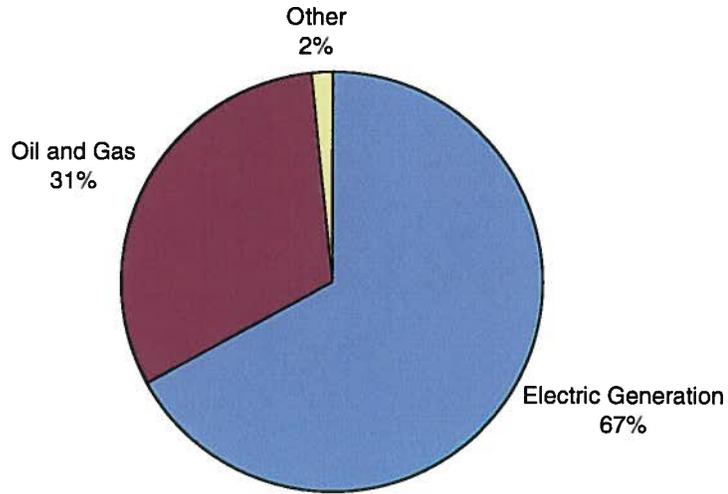
<b>Facility Owner/Operator</b>	<b>MTCO<sub>2</sub> Emissions</b>	<b>Percent of Total</b>
<b>Frontier Field Services</b> Empire Abo Gas Plant	40.6	0.17%
<i>Other</i>		
<b>DairiConcepts</b> Portales	50.7	0.22%
<b>American Gypsum</b> Bernalillo Plant	32.1	0.14%
<b>U.S. Department of Energy</b> Los Alamos National Laboratory	31.2	0.13%
<b>State of New Mexico</b> New Mexico State University	26.8	0.11%
<b><i>Total from sources ≥ 25K metric tons</i></b>	23,408.9	100.00%

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2 Overall, the primary source of CO<sub>2</sub> emissions in New Mexico is the combustion  
3 of coal, natural or refinery fuel gas, and processes such as the removal of CO<sub>2</sub> from field  
4 gas.

5 As shown in the pie chart below, the reported emissions in 2008 are dominated by  
6 facilities in the electric generation sector, which emitted approximately 67 percent (15.7  
7 MMTCO<sub>2</sub>) of total emissions. Facilities in the oil and gas sector are the second largest  
8 category, emitting approximately 31 percent (7.4 MMTCO<sub>2</sub>) of total emissions. Of these  
9 emissions, removal of CO<sub>2</sub> from field gas accounts for nearly 30 percent of total  
10 emissions. Facilities combusting natural gas for process heat or utilities accounted for the  
11 remaining 2 percent of total emissions.

**GHG Emissions by Sector (23.4 MMT CO<sub>2</sub>)**



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2 **B. Emissions by County**

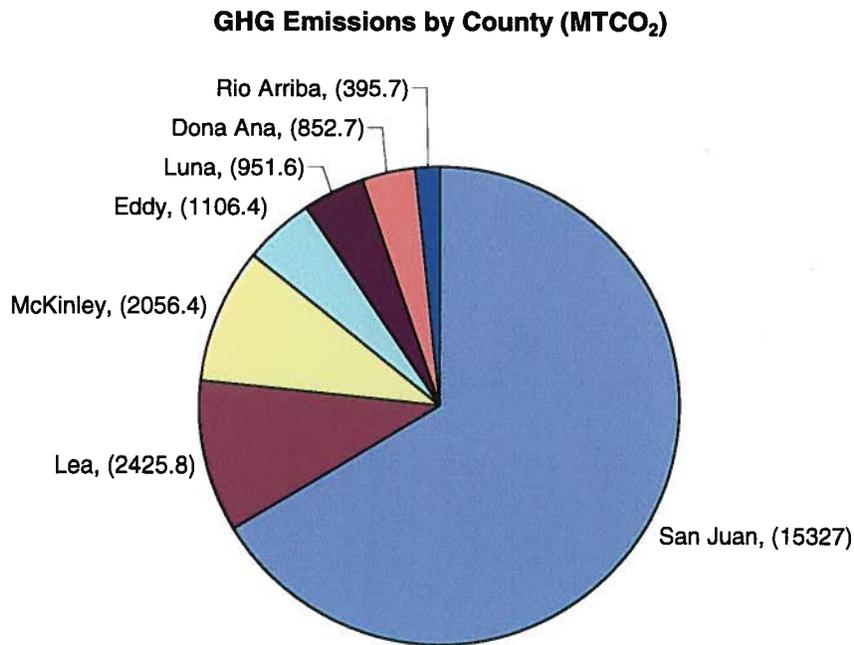
3 The following table shows a geographic distribution of reported GHG emissions  
4 by number of facilities and county.

<b>County</b>	<b>Facilities</b>	<b>10<sup>3</sup> Metric Tons</b>
San Juan	19	15327
Lea	14	2426
McKinley	3	2056
Eddy	8	1106
Luna	2	952
Dona Ana	4	853
Rio Arriba	7	396
Hidalgo	2	91
Grant	1	88
Roosevelt	1	51
Sandoval	1	32
Los Alamos	1	31
<b>Total</b>	<b>63</b>	<b>23409</b>

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1            Approximately 89 percent of total reported emissions in 2008 were emitted in  
2 Eddy, Lea, McKinley and San Juan counties. This distribution reflects the significance of  
3 oil and gas development in the Permian and San Juan Basins, as well as coal-fired electric  
4 generation in McKinley and San Juan counties. Emissions in Luna and Doña Ana  
5 counties also resulted from electric generation, but the facilities in those counties use  
6 natural gas, rather than coal. Finally, Rio Arriba county accounted for a significant share  
7 of emissions because it hosts extensive oil and gas development in the southern part of  
8 the San Juan Basin. A pie chart showing emissions by county further illustrates the  
9 distribution of GHG emissions.

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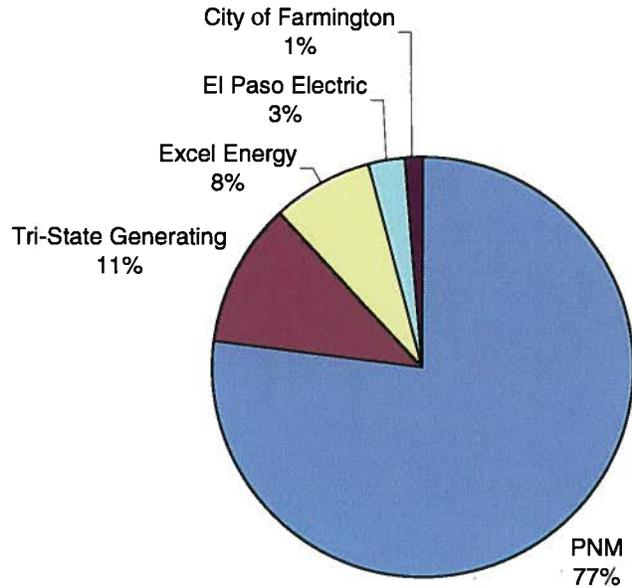
1 **C. Emissions by Ownership**

2 The Department also evaluated reported GHG emissions by facility ownership. In  
3 addition to the San Juan Generating Station, PNM owns and operates three natural gas  
4 fired electric generators (Afton, Lordsburg and Luna) for a combined total of 12.1  
5 MMTCO<sub>2</sub>, or fifty-two (52) percent of reported emissions. The next four highest GHG  
6 emissions by ownership are Williams Four Corners (2.2 MMTCO<sub>2</sub>, or 9.2 percent), Tri-  
7 State Generation (1.8 MMTCO<sub>2</sub>, or 7.5 percent), TEPPCO NGL Pipeline (1.5 MMTCO<sub>2</sub>,  
8 or 6.2 percent), and Excel Energy (1.2 MMTCO<sub>2</sub>, or 5.1 percent). These five companies  
9 emitted approximately 18.6 MMTCO<sub>2</sub>, or 80 percent of total emissions.

10 The following pie charts provide a graphic representation of emissions by facility  
11 ownership in the electric generation and oil and gas sectors.

12 In the electric generation sector, PNM, Tri-State, Excel, El Paso Electric and the  
13 City of Farmington contributed 77, 11, 8, 3 and 1 percent respectively of total GHG  
14 emissions.

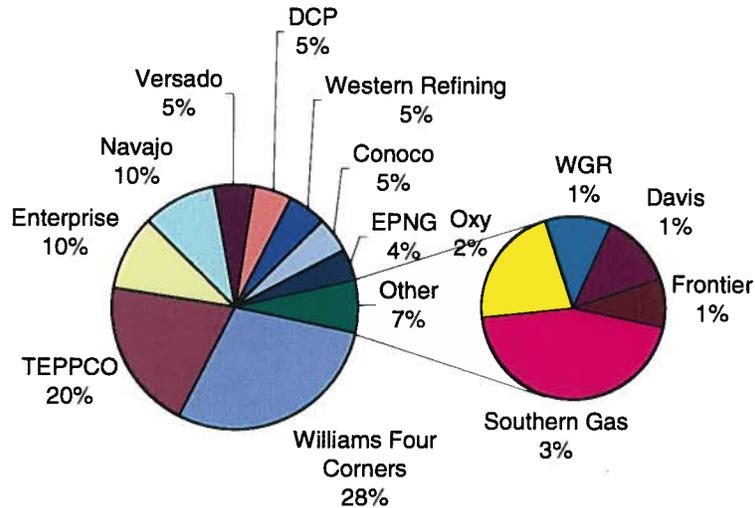
**Electric Sector GHG Emissions (15.7 MMT CO<sub>2</sub>)**



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2           The oil and gas sector emitted 7.4 MMTCO<sub>2</sub>, distributed over 14 different  
3 owners, with Williams Four Corners, TEPPCO, Enterprise, and Navajo Refining  
4 contributing the largest fraction at 28, 20, 10 and 10 percent respectively. The balance of  
5 emissions came from 9 different companies, each of which emitted 5 percent or less of  
6 total emissions.

### Oil and Gas Sector GHG Emissions (7.4 MMT CO<sub>2</sub>)



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### CONCLUSIONS

3 The electric generation and oil and gas sectors dominated GHG emissions reported by  
4 Title V facilities in 2008. Within these sectors, the majority of emissions came from a  
5 small number of facilities and companies. One company - PNM - emitted more than 50  
6 percent of the total emissions.

7 The GHG emissions reported by Title V facilities in 2008 resulted primarily from  
8 fossil fuel combustion, but CO<sub>2</sub> emissions vented during coal bed methane processing  
9 constituted a significant share of emissions in the San Juan Basin. Among the counties,  
10 San Juan, Lea, Eddy and McKinley contributed nearly 90 percent of total emissions,  
11 largely because of their extensive coal and oil and gas resources.

12 Notably, the emission reports in 2008 did not include some emissions covered by  
13 the Department's proposed rule. Specifically, methane and nitrous oxides emitted during  
14 combustion were not included. However, the Department has calculated that adding these

1 pollutants would increase combustion emissions by less than 0.5 percent. Additionally,  
2 there may be a small number of non-Title V sources that emit more than 25,000 metric  
3 tons. Finally, the 2008 reporting may have underestimated the CO<sub>2</sub> vented by acid gas  
4 removal units at natural gas processing plants, but this adjustment is not expected to  
5 change the number of facilities covered by the Department's rule.