

Economic Impact Analysis South Dakota Petroleum and Propane Marketers Association

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SOUTH DAKOTA PETROLEUM AND PROPANE ECONOMIC IMPACT REPORT EXECUTIVE SUMMARY ANALYSIS — AUGUST 1010

South Dakota's petroleum and propane retailers and wholesalers provide our state with the fuels necessary in a modern economy. Fuel for commuter vehicles, farm equipment, construction machinery, and heating for homes is an essential part of our way of life. Sales of petroleum and propane contribute to the state's economy and workforce. This report focuses on the economic impacts of South Dakota's petroleum and propane marketers.

Highlights of the State Fiscal Year 2009 economic activity in the petroleum and propane industries include:

- \$4.4 billion in sales of fuel and other goods by gas stations, convenience stores, fuel dealers, and other sellers.
- \$132 million in state fuel tax revenues.¹
- \$154 million in state lottery revenue generated in gas stations and convenience stores through 'online,' instant, and video lottery sales.
- Nearly 7,100 full-time equivalent (FTE) South Dakota jobs provided by retailers and wholesalers of petroleum and propane.

In addition to these kinds of direct impacts, the economic activity of SDP₂MA reverberates through the rest of the state's economy. We use a regional economic model (known as REMI) that takes into account how the economic activities of the petroleum and propane industries affect other sectors of the economy both in and out of South Dakota. Absent the petroleum and propane industries, other businesses would see differences in both revenues and costs, and firms may relocate to and/or from other states. These differences in revenues and costs come at a multiple of the revenue generated by having the Petroleum and Propane Industries in South Dakota.

Our estimates indicate that economic activity in South Dakota is **\$4.82 billion**² higher as a result of the petroleum and propane industries. This represents the economic activity of the petroleum and propane marketers, as well as the resulting economic activity in other industries. Correspondingly, we find that over **48,500 jobs** in South Dakota are directly or indirectly attributable to the economic activities of petroleum and propane marketers. We also estimate the resident population attributable to the petroleum and propane industries at just over **124,000** statewide.

¹ Please see explanation for discrepancy between South Dakota Department of Revenue and Regulation total and this figure in Model Inputs section of the report.

² Gross state product (2010 dollars).

SOUTH DAKOTA PETROLEUM AND PROPANE MARKETERS ASSOCIATION BACKGROUND

The South Dakota Petroleum and Propane Marketers Association (SDP₂MA), which is located in Pierre, SD, was founded in 1918. In April 1918, a national convention of independent oil jobbers, titled Western Oil Jobbers Association, was held in Chicago, IL. At this meeting, it was suggested that state should organize their own associations in order to deal with unfavorable legislation, freight rates and major competitive situations which only organized groups of independent oil men could deal with successfully. At a meeting held in Sioux Fall, SD in November 1918, a motion was made and adopted unanimously that an association be organized. And thus the “South Dakota Independent Oil Jobbers Association” was born.

In September 1984, the name was changed to the “South Dakota Petroleum Marketers Association.” Over the past 92 years, the association has grown and seen many changes. The most recent change occurred in 2000, when South Dakota became the first, and remains the only state in the United States, to merge with the state propane association. South Dakota Petroleum and Propane Marketers Association reflects the diversity of the membership.

The association represents petroleum wholesalers and bulk dealers, propane wholesalers and bulk dealers, convenience stores, gas stations, truck stops and car wash facilities. The association proudly represents 500+ locally owned South Dakota businesses. The association associate members consist of oil companies, equipment companies, environmental companies, grocery wholesalers, and many other businesses who directly support its members. The association is the only one in South Dakota to represent petroleum and propane issues.

The motto of the SDP₂MA, “An Organization Serving Its Members by Coordinating Their Common Interest Though Group Efforts,” signifies the dedication to all petroleum, propane and convenience store marketers in the state.

RESEARCH BACKGROUND

The Government Research Bureau (GRB) at the University of South Dakota was asked to complete an economic impact analysis for the SDP₂MA. The GRB team—comprised of Dr. Michael Allgrunn, Assistant Professor of Economics at the Beacom School of Business, and Dr. William Anderson, GRB Director and Assistant Professor of Political Science—gathered model inputs from a variety of state and federal sources to inform the economic impact analysis to follow.

The economic impact analysis reported here and the models that support this analysis asks a simple question: What would South Dakota’s economy look like without the presence of the petroleum and propane industries in the state? To answer this question, the GRB focused its attention on gathering a series of model inputs, including:

- Gross retail and wholesale revenues from the convenience store, gasoline station, petroleum and propane retail, and wholesale bulk petroleum and petroleum terminal business codes;
- Motor fuel tax and related tank inspection fee revenues;
- Estimates of state sales tax revenues for taxable retail sales;
- Estimates of state video lottery revenues generated for the State of South Dakota by scratch tickets, online lottery (Powerball, for example) and video lottery sources;

- Total employment figures in both the retail and wholesale petroleum and propane industries in the state.

METHODOLOGY AND INPUT DETAIL

We use a regional economic model developed by REMI for the state of South Dakota. The model uses computational general equilibrium modeling and time-series econometric techniques to supplement a traditional input/output framework. The model takes into account the flow of goods and services both within South Dakota and between South Dakota and other states. The model creates a baseline prediction for economic activity in South Dakota which can then be altered to show the effect a particular firm or industry has on the state.

The model works by assessing all of the inputs specified by the researchers and then assuming that the state would have none of these inputs—or the associated benefits in additional jobs, tax revenue, or general business—were the inputs to become unavailable to the State of South Dakota. For the purposes of the SDP₂MA, the REMI model accepts inputs and then determines how the State of South Dakota would look without the revenues and jobs generated by the SDP₂MA and its member and affiliated businesses.

The GRB team worked closely with officials at the South Dakota Department of Revenue and the South Dakota Lottery to gather a series of inputs for the models. Revenue- and tax-based inputs were either gathered or estimated for the past three years (2007 through 2009). The GRB team then examined trends in those data and excluded 2008 data because of the anomalous revenues generated in the petroleum- and propane-related during that year. The GRB made this decision primarily because of the unusually high per-barrel crude oil prices that were specific to the 2008 period. The results from the models thus report inputs representing the average revenues and estimated taxes generated during 2009 and 2007.

The model inputs—including sources and dates of receipt for data (as appropriate)—are noted below:

RETAIL REVENUE

- **Gas Station Revenue.** Gas station revenues were gathered from the State Department of Revenue and Regulation's 2008 through 2010 "South Dakota Sales and Use Tax" reports.³ Gas station revenues were drawn from Major SIC Code 55 and Major SIC Subcode 5541. All dollars were normed to 2008 dollars for input into the REMI model.
- **Convenience Store Revenues.** Convenience stores selling gasoline in South Dakota are classified as grocery stores (SIC Code 5411). South Dakota's use of SIC codes rather than updated Federal NAICS codes prohibited the GRB research team from separating convenience store revenues from other grocery stores. To obtain gross revenue figures for convenience stores selling gasoline, the GRB enlisted the Business Tax Division of the State Department of Revenue and Regulation. Ms. Jane Page, Assistant Director of the Business Tax Division in South Dakota's

³ The 2010 report is available at <http://www.state.sd.us/drr2/businesstax/statistics/2010/FY/FY10StatebyDiv-MG-SIC.pdf>; the 2009 report is available at <http://www.state.sd.us/drr2/businesstax/statistics/2009/CY/CY09StatebyDiv-MG-SIC.pdf>; and the 2008 report is available at <http://www.state.sd.us/drr2/businesstax/statistics/2008/December/CY08State-StatebyDiv-MG-SIC.pdf>.

Department of Revenue and Regulation, and her staff separated and provided to the GRB team the gross revenues of convenience stores selling gasoline during the years 2007 through 2009.

- **Fuel Oil Sales Revenue.** Fuel oil sales revenue figures were gathered from the Department of Revenue and Regulation's 2008 through 2010 "South Dakota Sales and Use Tax" reports. The relevant reports are cited in the footnote below and the fuel sales revenue figures were drawn from SIC Subcode 5983 in those reports.
- **Liquid Petroleum Revenue.** Liquid petroleum sales revenue figures were gathered from the Department of Revenue and Regulation's 2008 through 2010 "South Dakota Sales and Use Tax" reports. The relevant reports are cited in the footnote below and the fuel sales revenue figures were drawn from SIC Subcode 5984 in those reports.
- **Fuel Dealers, Not Explicitly Categorized (NEC).** Referred to as "Other" in the tables to follow, Fuel Dealer NEC figures were drawn from the Department of Revenue and Regulation's 2008 through 2010 "South Dakota Sales and Use Tax" reports. The relevant reports are cited in the footnote on the previous page. The revenue figures were drawn from SIC Subcode 5985 in those reports.

WHOLESALE REVENUE

- **Wholesale Petroleum Bulk Stations/Terminals.** As before, these revenue figures were drawn from the Department of Revenue and Regulation's 2008 through 2010 "South Dakota Sales and Use Tax" reports. The relevant reports are cited in the footnote on the previous page. The revenue figures were drawn from SIC Subcode 5171 in those reports. The GRB team included only 25% of wholesale sales as an input to the economic impact models to prevent double-counting of a single petroleum product in a single sales chain. The 25% of wholesale sales included in the economic impact analysis assume that some wholesale sales in South Dakota do not make it to the retail sales chain and that some of those wholesale sales are sold to consumers in neighboring states. **This assumption can be updated should better data from SDP₂MA suggest a different percentage distribution is more appropriate.**
- **Wholesale Petroleum Products, NEC.** As before, these revenue figures were drawn from the Department of Revenue and Regulation's 2008 through 2010 "South Dakota Sales and Use Tax" reports. The relevant reports are cited in the footnote on the previous page. The revenue figures were drawn from SIC Subcode 5172 in those reports. As before, the GRB team included only 25% of these wholesale sales according to the rationale noted above.

FUEL TAX REVENUE

- **Motor Fuel Taxes (minus collection agreements).** These inputs (for State Fiscal Years 2007 through 2009) were drawn from page 5 of the Department of Revenue and Regulation's "2009 Annual Report".⁴ Motor fuel taxes vary in South Dakota according to the type of fuel and range from \$0.22/gallon for midgrade gasoline to \$0.08/gallon for 100% ethanol. The GRB team chose

⁴ http://www.state.sd.us/drr2/publications/annrpt/2009_annual%20_report.pdf

to include motor fuel taxes collected at the point of sale, while excluding any motor fuel tax collection agreements. The GRB team made this choice because the motor fuel tax collection agreements could not easily correspond to the actual motor fuel sales in the State of South Dakota nor to the revenues accrued from those motor fuel sales.⁵ The exclusion of collection agreements means that the economic impact models exclude approximately \$3 million per year in motor fuel tax revenues. This exclusion, however, has minimal (read: no) effect on the overall economic impact numbers reported here.

- **Tank Fees.** The state of South Dakota charges \$0.02 per gallon as a tank inspection fee. The tank inspection fee inputs for this analysis were drawn from page 5 of the Department of Revenue and Regulation's "2009 Annual report", which is cited in the footnote on the previous page.
- **Exclusions.** The GRB team excluded the Interstate Fuel Users Tax, which averages tax revenues of approximately \$2.4 million per year. As with the exclusion of motor fuel tax collection agreements, the exclusion of the Interstate Fuel Users Tax has minimal (read: no) effect on the overall economic impact numbers reported here.

ESTIMATED SALES TAX REVENUE

Because the State of South Dakota does not maintain records of sales tax revenue generated by specific SIC Subcode, the GRB team estimated the sales tax revenue generated by the industries noted. The GRB team used the following steps to do so:

- **Summed the Gross Retail Sales Revenue.** This includes gross retail sales from gas stations, convenience stores, fuel oil, liquid petroleum, and "fuel dealers, NEC". For 2009, the sum of these gross sales was \$3.75 billion and for 2007, \$4.23 billion.
- **Subtracted Gross Motor Fuel Sales Revenue from the Gross Retail Sales Revenue.** To calculate the gross motor fuel sales revenue, the GRB multiplied gross fuel sales in the state by the average price per gallon of fuel during the calendar year of interest. To do so, the GRB team first gathered gross fuel sales figures, by type of fuel (e.g. gasoline, gasohol, undyed diesel, and 100% ethanol). Those figures were provided to the GRB on 9 June 2010 via e-mail from Ms. Debra Hillmer, Director of the State Department of Revenue and Regulation's Motor Vehicles Division. The GRB team separately received LPG sales data via e-mail from the Motor Vehicles Division on 9 July 2009.

The GRB team next separately gathered average fuel price data for the Midwest region from U.S. Department of Energy.⁶ The data were normed on constant 2008 dollars. The product of the total number of gallons sold by the average fuel prices in the Midwest region provided an estimate of the total gross motor fuel sales revenue.

By subtracting the total gross motor fuel sales revenue from the gross retail sales revenue, the GRB has calculated a remainder that is an estimate of the gross sales taxable revenue. The GRB's estimate of average

⁵ The latter of which had to be estimated because the non-taxable revenue attributable to motor fuel sales is unavailable via the State of South Dakota.

⁶ The Excel spreadsheet with this data can be downloaded from the Department of Energy at http://www.eia.doe.gov/oiaf/aeo/excel/aeotab_12.xls.

gross sales-taxable revenue between the two years included in the GRB's models (2009 and 2007) is approximately \$2.6 billion.

- **Multiply the gross sales taxable revenue generated by SDP₂MA-affiliated industries by 4% to determine an estimate of state sales taxes generated by these industries.** The average estimated sales tax revenue generated by SDP₂MA-affiliated industries across the two years included in the GRB's models is \$157 million. The figures noted in Tables 1 and 2 are \$139 million for 2009 and \$175 million for 2007.

LOTTERY REVENUE

The lottery revenue noted below is the revenue collected by the State of South Dakota resulting from lottery-related sales at SDP₂MA-affiliated businesses.

- **Online Lottery Revenue.** The State of South Dakota's reported online lottery revenue comes from the purchase of Powerball and similar online lottery game tickets at convenience stores and gasoline stations. The State of South Dakota shares equally with the retailer in the sales of these tickets. The data for this model input were provided via e-mail from the South Dakota Lottery to the GRB on 9 July 2010. State estimates indicate that approximately $\frac{3}{4}$ of all online lottery revenue was generated by SDP₂MA-affiliated businesses.
- **Instant Lottery Ticket Revenue.** The State of South Dakota's reported instant lottery ticket revenue comes from the purchase of scratch ticket games and similar State Lottery products at convenience stores and gasoline stations around South Dakota. The State of South Dakota shares equally with the retailer in the sales of these tickets. The data for this model input were provided from the South Dakota Lottery to the GRB on 9 July 2010. State estimates indicate that approximately $\frac{3}{4}$ of all lottery ticket revenue was generated by SDP₂MA-affiliated businesses.
- **Estimated Video Lottery Revenue.** The State of South Dakota does not maintain records of video lottery revenue gathered by location. This required the GRB team to estimate the video lottery revenue generated by SDP₂MA-affiliated businesses. To do so, the GRB team obtained data from the South Dakota Lottery enumerating the number of video lottery machines located in SDP₂MA-affiliated businesses (1,720 in 2009) as a proportion of all video lottery machines in the state (9,010 in 2009). This proportion equals 19%. The GRB then estimated the average revenue per video lottery machine by dividing the total video lottery revenue in 2009 by the total number of machines in the state in the same year. Finally, the GRB team multiplied the average per-machine video lottery revenue in 2009 by the total number of video lottery machines located in SDP₂MA-affiliated businesses such as convenience stores and gas stations. The GRB estimates that, in 2009, SDP₂MA-affiliated businesses generated approximately \$124 million in video lottery revenues for the State of South Dakota.

EMPLOYMENT

All employment data comes from the U.S. Census Bureau's 2008 County Business Patterns (NAICS) data.⁷ According to these data, SDP₂MA-affiliated businesses employ 7,077 workers in the State of South Dakota. The following serve as the foundation for this total employment figure:

- **Retail Sector Employment.** The GRB team gathered data on the total number of retail sector employees working in SDP₂MA-affiliated firms in South Dakota. These retail firms employ 6,344 workers in South Dakota across two separate NAICS Subcodes: 447 (Gasoline Stations, which employ 6,066 workers) and 45431 (which includes fuel oil, heating oil, and LPG dealers and employs 278 workers).
- **Wholesale Sector Employment.** The GRB team gathered data on the total number of wholesale sector employees working in SDP₂MA-affiliated firms in South Dakota. These wholesale firms employ 733 workers in South Dakota, all in NAICS Subcode 4247 (Petroleum and Petroleum Products Merchant Wholesalers).

⁷ Available at: <http://censtats.census.gov/cgi-bin/cbpnaic/cbpsel.pl>

SUMMARY

The inputs detailed above are listed for 2009 and 2007—with accompanying dollar or personnel figures—in Tables 1 and 2 below and on the next page.

TABLE 1: ECONOMIC IMPACT MODEL INPUT DATA, 2009	
SALES REVENUE	
Retail: Gas Stations	\$1,575,317,160
Retail: Convenience stores	\$1,053,662,184
Retail: Fuel Oil	\$1,011,455,753
Retail: Liquid Petroleum	\$86,139,658
Retail: Fuel Dealers/Other	\$25,862,596
Wholesale Petroleum Bulk Stations/Terminals	\$543,467,306.00
Wholesale Petroleum Products NEC	\$147,977,416.00
Total	\$4,443,882,073
FUEL TAX REVENUE	
Motor Fuel Taxes (minus collection agreements)	\$116,653,798
Tank Fees	\$15,355,349
Total	\$132,009,147
ESTIMATED SALES TAX REVENUE	
Total	\$139,496,791
ESTIMATED LOTTERY REVENUE	
Online	\$14,237,459
Instant	\$15,286,638
Video	\$124,650,380
Total	\$154,174,477
EMPLOYMENT	
Retail	6,344
Wholesale	733
Total	7,077

TABLE 2: ECONOMIC IMPACT MODEL INPUT DATA, 2007

SALES REVENUE	
Retail: Gas Stations	\$1,797,540,732
Retail: Convenience stores	\$1,021,522,480
Retail: Fuel Oil	\$1,330,882,252
Retail: Liquid Petroleum	\$77,477,804
Retail: Fuel Dealers/Other	\$874,192
Wholesale Petroleum Bulk Stations/Terminals	\$116,879,073
Wholesale Petroleum Products NEC	\$677,237,379
Total	\$5,022,413,912
FUEL TAX REVENUE	
Motor Fuel Taxes (minus collection agreements)	\$120,218,051
Tank Fees	\$15,252,916
Total	\$135,470,967
Estimated Sales Tax Revenue	
Total	\$175,040,263
ESTIMATED LOTTERY REVENUE⁸	
Online	\$14,237,459
Instant	\$15,286,638
Video	\$124,650,380
Total	\$154,174,477
INDUSTRY EMPLOYMENT⁹	
Retail	6,344
Wholesale	733
Total	7,077

⁸ 2009 figures used.

⁹ 2009 figures used.

CONCLUSION: ECONOMIC IMPACT MODEL OUTPUTS

When entered into USD's REMI modeling software, the GRB team finds that the inputs—as detailed above—produce an overall economic impact in South Dakota of \$4.82 billion; 48,500 jobs that are directly or indirectly related to petroleum- and propane-related retail and wholesale firms; and 124,000 people who, because of the direct and indirect effects of petroleum- and propane-related retail and wholesale firms, live in South Dakota.

It is important to note three important clarifying points about these results. First, the results do not suggest that the petroleum and propane industries are, by themselves, responsible for 48,500 jobs or 124,000 residents in the state. They instead suggest that, absent the petroleum and propane industries, the State of South Dakota would suffer significant employment and population drops. Those employment drops are due to the absence of the petroleum and propane industries as a critical node in a complex and networked economy consisting of thousands of indirectly-related businesses.

Second, the GRB team has, in general, been as conservative as possible in the inputs that it has chosen to include in the models. The economic model outputs thus reflect a likely “close to lower bound” for what the petroleum and propane industries contribute to South Dakota's economy.

Finally, the results underscore how centrally located the petroleum and propane industries are in South Dakota's economy. The impact that the GRB team has calculated is unsurprising given the breadth of service that the petroleum and propane industries have in South Dakota's agricultural, industrial, and tourism economies.

Report produced by:



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