The State Taxation of Natural Gas Severance in the United States:

A Comparative Analysis of Tax Base, Rate, and Fiscal Importance

Niyazi Ozpehriz[1]

A Summer 2010

Independent Study Class

Supervised by

Professor Robert P. Strauss

Heinz School of Public Policy

Heinz College, Carnegie Mellon University

July 31, 2010

[1] Candidate, Masters of Public Management, Heinz School of Public Policy, Heinz College, Carnegie Mellon University, and Senior Tax Inspector, on leave from the Ministry of Finance, Turkey. The author wishes to thank the Eden-Hall Foundation and the Knowledge Renewal Fund of the University's Hunt Library for underwriting the cost of Commerce Clearing House's OmniTax Service which was heavily relied upon in this paper. The author benefited from the comments on an earlier draft by Mr. Mark Muchow, Associate Revenue Commissioner, West Virginia. The views and findings in this paper are solely those of the author and do not reflect those of Carnegie Mellon University, the Heinz College, or the Ministry of Finance of Turkey.

1. Introduction

The Marcellus Shale is a rock formation that underlies approximately two-thirds of Pennsylvania and portions of the states of New York and West Virginia at a depth of 5,000 to 8,000 feet and is believed to hold trillions of cubic feet of natural gas and has long been considered prohibitively expensive to access. Recent advances in drilling technology and rising natural gas prices have attracted new interest in this previously untapped formation. The geology of the Marcellus formation suggests that areas in the southwest, north central and northeastern regions of Pennsylvania that have not traditionally seen much gas well drilling may be especially productive. Recently, Professor John Deutch of Massachusetts Institute of Technology estimates US natural gas reserve on Marcellus Shale as 500 trillion cubic feet.[2]

This economic and revenue potential of the Marcellus Shale naturally has precipitated discussions on the application of severance taxation in the state of Pennsylvania since early 2009. Currently, Pennsylvania is the only major fossil fuel producing state that does not levy a severance tax which might then be used to recover some of the external infrastructure costs (water and transportation) borne by residents. Royalties and lease payments to surface owners to permit access and to the owners of mineral rights typically compensate such private interests both for the loss of a finite natural resource; however, whether or not payments to governmental entities by those who explore and produce natural gas are sufficient to compensate for damage to road and contamination of various water sources remain issues of contention. In 2009 and 2010, a number of different proposals have been developed for natural gas severance

[2] John Deutch, The Natural Gas Revolution, 07/15/2010, *The Wall Street Journal*.

taxation in Pennsylvania, and the nature of these tax instruments---not the potential uses of such revenues--- are the subject of this comparative investigation.[3]

The United States Census Bureau reports that 34 states have some kind of severance tax; 31 of those states have both corporation and severance taxes; and 29 states have a severance tax levied on value and/or volume natural gas that is extracted.

In this project, we will identify and analyze on a comparative state by state basis as well as for major Pennsylvania state proposals[4], the kinds of severance tax and fee institutions comparison states have adopted in terms of:

1. the definition of base (essentially dollar value of what is severed or tax/cubic feet of what is severed)[5] ,
2. tax rate[s], and
3. amounts of taxes collected.

2. Scope and Nature of Severance Taxes in the U.S in General[6].

Severance taxes are excise taxes on natural resources that are severed from the earth. The severance of coal, oil, gas, ores and other minerals is subject to tax in 34 states in the U.S. In some states, a tax is imposed on every person[7] severing natural resources from the soil or water of the state. However, in the majority of states, the severance taxes are limited to certain specified industries, such as coal or iron mining, natural gas or oil production, etc. where the nature of each commodity is carefully specified. While the tax is usually payable by the severer or producer, a few states provide that payment is to be made by the first purchaser, unless the product is not sold within a specified period following severance, in which case the tax is to be paid by the producer. When the tax is imposed on the producer, the question sometimes arises as to what constitutes production. The statutes may provide definitions about production and define some acts necessary to separate, refine[8] or finish a product as part of the production. If the production is carried on by more than one person, the tax will be allocated to the value

[3] How such monies should be used is the subject of planned investigations by Professor Strauss and other students at the Heinz School of Public Policy.

[4] Based on the recommendations of Pennsylvania Senate legislative staff, I examine SB 1254 and HB 1489. There are many other House and Senate proposals which can be found online at, for example, http://www.legis.state.pa.us/cfdocs/legis/home/session.cfm.

[5] See Appendix 1 of this paper for a state by state review of the definition of natural gas in state tax statutes, and the definitions proposed in Pennsylvania Senate Bill 1254 and House Bill 1489.

[6] This section is based primarily on information drawn from the Commerce Clearing House. *Oil and Gas Tax Reporter*.

[7] The term "person" includes incorporated and unincorporated business as well as various kinds of partnerships and other cooperative business agreements among individuals or groups of various types.

[8] There are essentially two types of Marcellus Shale gas that are severed: "clean" gas which is suitable immediately for shipping across interstate pipelines, and gas which must go through an extensive cleaning or refining process to separate various impurities, which may their own economic value, so that the gas, once cleaned, meets the standards specified by pipeline companies and the Federal Energy Regulatory Commission (FERC). Ethane, propane, and methane are examples of such impurities that are separated and have economic value.

of the product in each stage. The U.S. Supreme Court has upheld the constitutionality of a severance tax imposed by an Indian tribe on non-Indian oil companies for the privilege of severing oil and gas from reservation lands[9].

In the U.S severance taxes usually are held to be excise taxes rather than property taxes. Therefore, they are not subject to constitutional restrictions applicable to property taxes and do not constitute double taxation when imposed in addition to ad valorem taxes.

Severance Tax Rates

Generally, severance taxes are based on the monetary value of the coal, ore, gas or oil mined or produced. However, in some states the amount of production, measured by physical volume such as cubic feet of gas of a given quality at a constant temperature, is taken as the base for severance taxation. With the exception of coal mining taxes, which are often based on the amount of production, the taxes are usually imposed at a fixed percentage of the value of the products severed. "Value" is often defined to mean market value. In some states gross value is used in computing the tax, while in others net value or net proceeds, which are determined by deducting certain items of cost from the gross value or gross proceeds. Such deductions may include specified costs of production, ad valorem tax and royalties paid and losses for evaporation in the case of gas wells. When based on the amount of production, the taxes are imposed at a flat rate per unit of measure. Coal and ore mining taxes are usually levied on a tonnage basis, oil production taxes on a per-barrel basis, and gas production taxes on a per—cubic-foot basis. In some states taxes are graduated according to the value of the products or according to the volume of production. Pipeline or transportation expenses, that are often substantial, can also be part of the costs deducted in arriving at a net value.

Reports

Producers or severers who are liable for payment of taxes are typically required to file reports regularly. Those reports show all items and calculations used in computing the amount of the taxes. As a rule, such reports are required to be filed monthly. However, some states provide for the filing of semiannual or annual reports. Where a taxpayer fails to file a return, the tax administrator is empowered to examine the books and records of the taxpayer and, with such other information as may be available, make an assessment of the tax. Some states may require that returns be filed electronically.

Payment

In a majority of the states, tax payment must accompany the required report. Some statutes provide, however, that payment is to be made within a specified time after the filing of the report or after receipt of a tax bill. Usually, payment is made to the official with whom the report is filed.

3. Natural Gas Severance Tax Base State by State

In this section, the natural gas severance tax base of each state is identified. The table below was confirmed by a check of state statutes. According to the Table 1, 20 states currently have value based severance taxation, 7 states have volume based severance taxation and only two states have both value and volume based severance taxation on natural gas.

States that have severance tax revenue over $ 1 billion, such as Alaska, Texas, Wyoming and Oklahoma apply value based taxation on natural gas. In the same way, states that have a share of severance tax

[9] Merrion & Bayless v. Jicarilla Apache Tribe ('82), U.S. Supreme Court, January 25, 1982.

revenue more than 10% of total tax revenue, such as New Mexico and Montana, apply value based taxation on natural gas.

Table 1: Natural Gas Severance Tax Base by State

State	Tax Base
Alabama	Gross value. Gross value is the value of natural gas produced at the point of production. Value is the sale price or market value at the mouth of the well. If the oil or gas is exchanged for something other than cash, if there is no sale at the time of severance or if the relation between the buyer and the seller is such that the consideration paid, if any, is not indicative of the true value or market price, then the department shall determine the value of the oil or gas subject to the tax hereinafter provided for, considering the sale price for cash of oil or gas of like quality.
Alaska	Production tax value. Production tax value is the gross value at the point of production of the natural gas less the producer's lease expenditures. Gross value at the point of production means the value of the gas at its point of production without deduction of any costs upstream of that point of production. A producer's lease expenditures for a calendar year are costs that are incurred by the producer during the calendar year after March 31, 2006, to explore for, develop, or produce oil or gas deposits located within the producer's leases or properties in the state or, in the case of land in which the producer does not own an operating right, operating interest, or working interest, to explore for oil or gas deposits within other land in the state; and allowed by the department by regulation, based on the department's determination that the costs satisfy the following three requirements: (1) the costs must be incurred upstream of the point of production of oil and gas; (2) the costs must be ordinary and necessary costs of exploring for, developing, or producing, as applicable, oil or gas deposits; and (3) the costs must be direct costs of exploring for, developing, or producing, as applicable, oil or gas deposits; and a reasonable allowance for that calendar year, as determined under regulations adopted by the department, for overhead expenses that are directly related to exploring for, developing, or producing, as applicable, the oil or gas deposits.
Arkansas	Market value. Market value means the producer's actual cash receipts from the sale of natural gas to the first purchaser less the actual costs to the producer of dehydrating, treating, compressing, and delivering the gas to the purchaser.
California	Volume of natural gas produced (2009-2010)
Colorado	Gross income. It is the net amount realized by the taxpayer for sale of the oil or gas, whether the sale occurs at the wellhead or after transportation, manufacturing, and processing of the product. Net amount shall be calculated on the basis of the gross lease revenues, less deductions for any transportation, manufacturing, and processing costs borne by the taxpayer. Where the parties to the sale are related parties and the sales price is lower than the price for which that oil or gas could otherwise have been sold to a ready, willing, and able buyer and where the taxpayer was legally able to sell the oil or gas to such a buyer, gross income shall be determined by reference to comparable arms-length sales of like kind, quality, and quantity in the same field or area, less deductions for transportation, manufacturing, and processing done prior to the sale.

State	Tax Base
Florida	Volume of natural gas produced.
Idaho	Market value and volume of natural gas produced.
Indiana	Volume of natural gas produced.
Kansas	Gross value of gas. Gross value means the sale price of oil or gas at the time of removal of the oil or gas from the lease or production unit and if oil or gas is exchanged for something other than cash, or if no sale occurs at the time of removal or if the director determines that the relationship between the buyer and the seller is such that the consideration paid, if any, is not indicative of the true value or market price, then the director shall determine the value of the oil or gas subject to tax based on the cash price paid to one or more producers for the oil or gas or based on the cash price paid to producers for like quality oil or gas in the vicinity of the lease or production unit at the time of the removal of the oil or gas from the lease or production unit.
Kentucky	Gross value of natural gas. Gross value is to be reported as follows: (1) for natural resources severed and/or processed and sold during a reporting period, gross value is the amount received or receivable by the taxpayer; (2) for natural resources severed and/or processed, but not sold during a reporting period, if the natural resource is to be sold under the terms of an existing contract, the contract price is used in computing gross value; if there is no existing contract, the fair market value for that grade and quality of the natural resource is used in computing gross value; (3) in a transaction involving related parties, gross value is not less than the fair market value for natural resources of similar grade and quality; (4) in the absence of a sale, gross value is the fair market value for natural resources of similar grade and quality; (5) if severed natural resources are purchased for the purpose of processing and resale, the gross value is the amount received or receivable during the reporting period reduced by the amount paid or payable to the taxpayer actually severing the natural resource; (6) if severed natural resources are purchased for the purpose of processing and consumption, the gross value is the fair market value of processed natural resources of similar grade and quality reduced by the amount paid or payable to the taxpayer actually severing the natural resource; (7) the gross value may not be reduced by any taxes, royalties, sales commissions, or any other expense.
Louisiana	Volume of natural gas produced.
Michigan	Market value.
Mississippi	Market value.
Montana	Gross taxable value of production based on the type of well and type of production. The total gross value of all oil or natural gas produced and sold each quarter must be determined by taking the total number of barrels or cubic feet of oil or natural gas produced and sold each month at the average value at the mouth of the well during the month that the oil or natural gas is produced and sold, as determined by the department. However, in computing the total number of barrels of oil or cubic feet of gas produced and sold, there must be deducted the amount of oil or gas used by the person in connection with the operation of the well from which the oil or gas is produced or for pumping the oil or gas from the well to a tank or pipeline. For the purposes of determining average value at the mouth of a well, a fee of up to 25 cents a barrel paid to the operator or producer to administer royalty payments, whether or not the fee is payable on a per barrel basis, may not be considered a part of the value of the oil.

State	Tax Base
Nebraska	Market value.
Nevada	Net proceeds. The net proceeds are ascertained and determined by subtracting from the gross yield the deductions given in the statute for costs incurred during that period.
New Mexico	Taxable value of natural gas severed and sold. Value means the actual price received for products at the production unit, except as otherwise provided in the Oil and Gas Severance Tax Act. Royalties paid or due the United States or the state of New Mexico; royalties paid or due any Indian tribe, Indian pueblo or Indian that is a ward of the United States of America; and the reasonable expense of trucking any product from the production unit to the first place of market are deducted from the value of products.
North Carolina	State does not impose severance tax on oil or gas. However, oil and gas production tax is authorized for conservation purposes. The tax is not currently levied because there are no oil or gas producers in the state. Gas: Not to exceed ½ mill on each 1,000 cubic feet of gas.
North Dakota	Volume of natural gas produced.
Ohio	Volume of natural gas produced.
Oklahoma	Gross value.
Oregon	Gross value. Gross value means the actual cash price prevailing for gas of the kind, character and quality of the gas subject to the tax imposed under this chapter at the time such gas is produced, as determined by the department.
South Dakota	Taxable value of natural gas. Taxable value of natural gas that has been sold is the sale price of such mineral less any rental or royalty payment belonging to the United States or South Dakota or its political subdivisions and the "taxable value" of any severed and saved natural gas that has not been sold is the market value of such mineral less any rental or royalty payment belonging to the United States or South Dakota or its political subdivisions.
Tennessee	Sale price.
Texas	Market value. The market value of gas is its value at the mouth of the well from which it is produced. The value of gas at the mouth of the well is determined by ascertaining the producer's actual marketing costs and subtracting those costs from the producer's gross cash receipts from the sale of the gas. Marketing costs are the costs incurred by the producer to get the gas from the mouth of the well to the market, including: costs for compressing the gas sold; costs for dehydrating the gas sold; costs for sweetening the gas sold; and costs for delivering the gas to the purchaser. Marketing costs do not include: costs incurred in producing the gas; costs incurred in normal lease separation of the oil or condensate; or insurance premiums on the marketing facility.
Utah	Market value. The fair market value of oil or gas is determined at the well by a sale pursuant to an arm's-length contract or, in the absence of an arm's-length contract, by comparison to other sales. A deduction is allowed for processing costs and transportation costs that do not exceed 50% of the value of the oil or gas.
West Virginia	Gross value and volume of natural gas produced. For natural gas, gross value is the value of the natural gas at the wellhead immediately preceding transportation and transmission.
Wisconsin	Market value. Market value means the sales price or market value of gas at the mouth of the well, except that if the gas is exchanged for something other than cash, if there

State	Tax Base
	is no sale between the time of severance and the due date of the tax or if the department determines that the gas was not sold in an arm's-length transaction, "market value" means the value determined by the department based upon a consideration of the sales price of gas of similar quality.
Wyoming	Market value. Effective July 1, 2008, a specific valuation method known as the "modified netback" method has been provided for the valuation of producer-processed natural gas. Under the modified netback method, the fair market value is determined by computing the total amount received from the sale of natural gas and subtracting (1) the total direct processing and transportation costs, (2) any arm's-length transportation fees from the point of valuation to the point of arm's-length sale, (3) overhead costs directly related to facility operations, (4) exempt royalties, and (5) return on investment incurred by the taxpayer from the point of valuation to the point of arm's-length sale. The overhead costs directly related to facility operations should not exceed 10% of the total direct processing and transportation costs.
Pennsylvania Senate Bill 1254	Gross value of units severed at the wellhead. Gross value is the volume-weighted average market price for all arms-length transactions that a producer receives at the sales meter for natural gas during a reporting period.
Pennsylvania House Bill 1489	Volume of units severed at the wellhead.

Source: http://www.intelliconnect.cch.com (accessed 07/16/2010)

3.1. Natural Gas Severance Tax Base Summary

The summary table (Table 2) below indicates that most of the states prefer value based severance taxation rather than volume based taxation; 20 states base their severance taxation on the value of natural gas. The definition of value varies among states but the essential base of taxation remains the same. In 7 states there is severance taxation on the basis of volume of natural gas. There are only two states, West Virginia and Idaho, which apply both value and volume basis on natural gas severance taxation.

Table 2: Severance Tax Base Summary

	Value Based	Volume Based	Value and Volume Based
States	AL, AK, AR, CO, KS, KY, MI, MS, MT, NE, NM, NV, OK, OR, SD, TN, TX, UT, WI, WY.	CA, FL, IN, LA, NC, ND, OH.	WV, ID.
Number of States	20	7	2

Source: CCH Omnitax Database and Review of State Statutes.

4. Natural Gas Severance Tax Exemptions and Credits State by State

The states have a wide range of tax exemptions and credits against severance tax on natural gas. The most common exemption is for the natural gas which is used in producing operations, for repressuring or recycling or lawfully vented or flared. Some of them aim to encourage exploration and production of natural gas. Some exemptions provide using natural gas for personal consumption. The most common exemptions and credits are as follows:

a- The natural gas which is used in producing operations, for repressuring or recycling or lawfully vented or flared is exempted in Idaho, Indiana, Kansas, Louisiana, Mississippi, Montana, Nebraska, North Dakota, Oregon and Texas.

b- The severer or producer who use natural resources for their own use and not for sale or commercial gain is exempted in Arkansas, Indiana, Kansas, Ohio, Tennessee and West Virginia.

c- Severance and production of gas from an inactive well for at least a certain period after the date of receipt of such certification. In general, inactive years are defined as two or three years of inactivity. Kansas, Kentucky, Louisiana, New Mexico, Oklahoma and Texas have such an exemption.

d- The wells that do not have a substantial amount of production. This amount is defined in the Statutes and differs from state to state. Colorado, Kansas, Nebraska, Texas, Utah and West Virginia have this exemption.

Table 3: State by State Tax Exemptions and Credits against the Severance Tax

State	Tax Exemptions and Credits
Alabama	Natural gas lawfully injected into oil or gas pools or reservoirs in the soil or beneath the soil or waters of Alabama, natural gas injected into the earth for the purpose of lifting oil or gas in Alabama, or natural gas lawfully vented or flared in connection with the production, treatment, or processing of oil or gas is exempt. A credit against the privilege tax on the conservation and production tax and the tax on the production or severance of natural gas is available to producers or people in charge of production of natural gas who sell their product to a direct reduced iron (DRI) manufacturer or an intermediate supplier who supplies gas to a DRI manufacturer. In order to claim the credit, the taxpayer must enter into an agreement to reduce the cost of the natural gas sold by the taxpayer to the DRI manufacturer or intermediate supplier by the amount of the severance tax credit. The credit equals 7.4% of the deemed taxable value multiplied by the gas consumption volume.
Alaska	A credit is allowed for cash contributions accepted for direct instruction, research, and educational support purposes and contributions to endowment by a qualified Alaska college, university or university foundation equal to (1) 50% of contributions of not more than $100,000 and (2) 100% of the next $100,000 of contributions. The total credit taken against this tax or specified income, insurance, fisheries, or property taxes cannot exceed $150,000, and any contribution taken as a credit against one tax cannot be otherwise claimed as a credit. The Commissioner of Natural Resources may provide for an exploration incentive credit under which a lessee of state land drilling an exploratory well on the land may earn credits based upon the footage drilled and the region in which the well is situated. The Commissioner may also provide for credits to be earned by persons performing geophysical work on state land if it is performed during the two seasons immediately preceding an announced lease sale and on land included within the sale area and the geophysical information is made public following the sale. Credits may not exceed 50% of the cost of the drilling or geophysical work. Credits may be applied against up to 50% of oil and gas royalty and rental payments payable to the state or the oil and gas properties production tax.

State	Tax Exemptions and Credits
	A credit against oil and gas production tax is allowed for qualifying exploration expenditures resulting in the production of oil and gas. The credit is equal to 20% of exploration expenditures or 40% of exploration expenditures, as described below. A tax is levied upon the producer of gas for all gas produced from each lease or property in the state, less any gas the ownership of or right to which is exempt from taxation.
Arkansas	Severer who use natural resources for their own use and not for sale or commercial gain are exempt. Tax also does not apply to natural gas returned to any formation in recycling, repressuring, pressure maintenance operation or other operation for the production of oil or other liquid hydrocarbon. Oil producers who dispose of salt water produced by their oil wells through an approved underground salt water disposal system are allowed a severance tax credit equal to the cost of maintaining the system but not in excess of the tax due.
California	No exemption or credit.
Colorado	Gas wells producing 90,000 cubic feet or less per day are exempt from the tax. A credit is allowed against 87.5% of all ad valorem taxes assessed or paid during the tax year on leaseholds and leasehold interests and royalties and royalty interests, excluding ad valorem taxes upon equipment and facilities. A credit is allowed against the tax on the severance of minerals or mineral fuels from or for a new operation from or for which first severance occurs after June 30, 1979, or from or for an operation that has an increase in production after June 30, 1980. The credit is equal to the value of approved contributions by the taxpayer made to assist in solving the impact problems of units of local government resulting from the initiation of the new operation. An additional credit is allowed in an amount equal to 0.75% of approved contributions for local impact assistance for each month that any approved contribution precedes the month in which the approved contribution is credited against a taxpayer's severance tax liability. The total amount of approved contributions by a taxpayer may not exceed 50% of the severance tax liability that the taxpayer anticipates will be incurred during the first 10 years of severance from a new operation or 50% of the increased severance tax liability that the taxpayer anticipates will be incurred during the first 10 years of severance from an expanded existing operation plus the amounts of any additional credit
Florida	Gas production used for lease operations on the lease or unit where produced; gas returned to a horizon or horizons in the field where produced, either through wells on the lease from which produced, or wells on other leases; and gas vented or flared directly into the atmosphere, provided such gas is not otherwise sold is exempt.
Idaho	The tax does not apply to interests of the United States, and Idaho and its political subdivisions, interests of any Indian or Indian tribe, and oil and gas used in producing operations or for repressuring or recycling.
Indiana	If gas from any well is used to pump or treat the same or if such gas is piped to landowner's private building for his own use, such gas is not subject to tax.
Kansas	An exemption is allowed for the severance and production of gas that is (1) injected into the earth for the purpose of lifting oil, recycling or repressuring; (2) used for fuel in connection with the operation and development for, or production of, oil or gas in the lease or production unit where severed; (3) lawfully vented or flared; (4) severed from a well having an average daily production during a calendar month having a gross value of not more than $87 per day, which well has not been significantly curtailed by disruption of production; (5) inadvertently lost on the lease or production

State	Tax Exemptions and Credits
	unit by reason of leaks, blowouts or other accidental losses; (6) used or consumed for domestic or agricultural purposes on the lease or production unit from which it is severed; or (7) placed in underground storage for recovery at a later date and which was either originally severed outside the state or as to which the tax has been paid. The severance and production of gas from any pool from which gas was first produced on or after April 1, 1983, are exempt for a period of 24 months from the month in which oil or gas was first produced from such pool. The severance and production of gas which results from a production enhancement project that begins on or after July 1, 1998, is exempt for a period of seven years from the startup date of such project. An exemption is granted for the severance and production of gas from a three-year inactive well for a period of 10 years after the date of receipt of such certification. The exemptions are not applicable for 12 months beginning July 1 of the year subsequent to any calendar year during which the secretary of revenue determines that the weighted average of Kansas gas at the wellhead has exceeded $2.50 per Mcf. Taxpayers liable for property taxes on gas property are allowed a severance tax credit in an amount equal to 3.67% of the gross value of gas severed and taxable and in which the taxpayer has a beneficial interest.
Kentucky	Taxpayers engaged in severing or processing natural gas are allowed a credit equal to 4.5% of the gross value of natural gas produced from a recovered inactive well that has been inactive for two years consecutively or that has been plugged and abandoned, and that resumes producing natural gas.
Louisiana	Tax is not due on the severance of gas which is subsequently injected into a formation in the state of Louisiana for the purpose of storing by the producer; originally produced without the state of Louisiana which has been injected into the earth within the state of Louisiana; when produced from oil wells and vented or flared directly into the atmosphere, provided such gas is not otherwise sold; used for drilling fuel in the field where produced; consumed in the production of natural resources in the state of Louisiana; when produced from gas wells and vented or flared directly into the atmosphere, provided such gas is not otherwise sold; and used in the manufacture of carbon black. When water is injected into a gas reservoir in order to increase recovery, the tax on 1,000 cubic feet of gas incrementally produced therefrom is reduced by 20% of the tax that would otherwise be due. All severance tax is suspended for 24 months or until payout of the well cost is achieved, whichever occurs first, on any horizontally drilled well or horizontally drilled recompletion well from which production commences after July 31, 1994. Production from oil and gas wells is exempt from severance tax for a period of five (previously, two) years when the wells are returned to service after being inactive for two or more years or having 30 days or less production during the past two years. The period of exemption will be extended by the length of any inactivity of a well that has commenced production when such inactivity is caused by a force majeure. Production of natural gas, gas condensate, and oil from any well drilled to a true vertical depth of more than 15,000 feet and where production starts after July 31, 1994, is exempt from severance tax for 24 months or until payout of the well cost, whichever occurs first. All severance taxes on the production from certified newly discovered oil and natural gas wells are suspended from the date of completion for 24 months or until recovery of payout of the well cost, whichever occurs first.

State	Tax Exemptions and Credits
Michigan	No exemption or credit.
Mississippi	The gas severance tax is not levied on carbon dioxide lawfully injected into the earth for cycling, repressuring, lifting, or enhancing the recovery of oil, gas lawfully vented or flared in connection with the production of oil or gas condensed into liquids on which the oil severance tax of 6% is paid. However, gas injected into the earth that is sold is excluded when computing the tax, unless the gas is carbon dioxide and is sold to be used and is used in Mississippi in an enhanced oil recovery method.
Montana	In computing the total number of cubic feet of gas produced and sold, a deduction is allowed for the amount of gas used by the person in connection with the operation of the well from which the gas is produced or for pumping the gas from the well to a tank or pipeline. Each producer engaged in the business of mining, extracting or producing a mineral may claim an exemption of $5,000 per calendar year. Also, an exemption is allowed for royalties received by (1) an Indian tribe with respect to on-reservation oil and gas production under a lease entered into under the Indian Mineral Leasing Act of 1938; (2) the United States as trustee for individual Indians; and (3) the United States, the state of Montana, or a county or municipal government in Montana.
Nebraska	Gas used only in severing operations or for repressuring or recycling purposes is exempt.
Nevada	No exemption or credit.
New Mexico	Natural gas severed and sold from a production restoration project during the first ten years of production following the restoration of production is exempted, provided that the annual average price of west Texas intermediate crude oil, determined by the department by averaging the posted prices in effect on the last day of each month of the twelve-month period ending on May 31 prior to each fiscal year in which the tax exemption is to be effective, was less $24.00 per barrel.
North Carolina	No exemption or credit.
North Dakota	Royalty interests in gas that are owned by the federal government or its instrumentalities, the state of North Dakota or its subdivisions, or an Indian tribe are exempt. Gas that is taken directly from the wellhead or returned to the lease from a processing or treating plant and that is used in the production of oil or gas is also exempt. Effective July 1, 2009, gas burned at a well site to power an electrical generator that consumes at least 75% of the gas from the well is exempt. Shallow gas produced during the first 24 months of production is exempt. The exemption period begins on the date of the first sale of gas from a well completed or recompleted in a shallow gas zone after June 2003. Gas produced from such a well during testing prior to well completion or connection to a pipeline is also exempt.
Ohio	The tax does not apply to resources severed in Ohio from land or water owned by the severer if used on the land from which taken as part of the improvement of, or use in, his homestead, provided such resources have a yearly cumulative market value not greater than $1,000.
Oklahoma	The gross production tax does not apply to the production of gas or gas from a horizontally drilled well producing prior to July 1, 2002 if production commenced after July 1, 1995, until project payback is achieved but not to exceed 24 months. For a horizontally drilled well producing after July 1, 2002, and prior to July 1, 2012, the production of oil or gas or oil and gas is exempt from the project beginning date until project payback is achieved or for a period of 48 months from the month of initial production from the horizontally drilled well. The exemption is given in the form of a

State	Tax Exemptions and Credits
	refund; however, the refund may not be claimed or paid for severance or production of oil and gas upon which the 1% tax rate has been imposed. The gross production tax does not apply to inactive wells for a period of 28 months from the date upon which production is reestablished, effective July 1, 1994, and is applicable to wells for which work to reestablish or enhance production began on or after July 1, 1994, and for which production is reestablished prior to July 1, 2012. Any incremental production attributable to the working interest owners that results from a production enhancement project is exempt from the gross production tax for a period of 28 months from the date of completion of the production enhancement project, effective July 1, 1994, and applicable to projects beginning before July 1, 1994, and prior to July 1, 2012. The gross production tax does not apply to the production of oil, gas, or oil and gas from any well for which drilling is commenced after July 1, 2000, and prior to July 1, 2012, located within the boundaries of a three-dimensional seismic shoot and drilled based on three-dimensional seismic technology from the date of first sales as follows: (a) if the three-dimensional seismic shoot is shot prior to July 1, 2000, for a period of 18 months, and (b) if the three-dimensional seismic shoot is shot on or after July 1, 2000, for a period of 28 months. The production of oil and gas from wells spudded between July 1, 1997, and July 1, 2005, and drilled to a depth of 12,500 feet or greater and wells spudded between July 1, 2005, and July 1, 2012, and drilled to a depth between 12,500 and 14,999 feet is exempt from the gross production tax from the date of first sales for a period of 28 months. The production of oil and gas from wells spudded between July 1, 2002, and July 1, 2005, and drilled to a depth of 15,000 feet or greater and wells spudded between July 1, 2005, and July 1, 2011, and drilled to a depth between 15,000 and 17,499 feet is exempt from the gross production tax from the date of first sales for a period of 48 months. The production of oil and gas from wells spudded between July 1, 2002, and July 1, 2011, and drilled to a depth of 17,500 feet or greater is exempt from the gross production tax from the date of first sales for a period of 60 months. The production of oil and gas from new discovery wells spudded or re-entered beginning on or after July 1, 1995, through June 30, 2012, is exempt from the gross production tax. For calendar years 2005 through 2010, production from an economically at-risk oil or gas lease is eligible for an exemption from the gross production tax.
Oregon	An exemption is granted upon the first $3,000 in gross sales value of the gross production each calendar quarter from each well. Any royalty or other interest in gas owned by the state, counties, cities, towns, school districts, or other municipal corporations or political subdivisions is exempt. A credit is allowed for all property taxes on any property rights attached to, or inherent in, the right to produce gas, upon producing gas leases, upon machinery, appliances and equipment used in and around any well producing gas and actually used in the operation of the well, upon gas produced in the state, and upon any investment in any of the above-mentioned property. The amount of gas produced and used for fuel or otherwise used in the operation of any lease or premises in the drilling for, or production of, oil or gas, or for repressuring, is not considered as gas actually produced and saved.
South Dakota	No exemption or credit.
Tennessee	No tax is imposed on the following: (1) free gas used by a property owner or tenant under terms of a lease, unless in lieu of cash payment, and (2) gas injected into the

State	Tax Exemptions and Credits
	ground for storage and later withdrawn.
Texas	Tax does not apply to (1) gas injected into the earth unless sold for that purpose; (2) gas produced from oil wells with oil and lawfully vented or flared; or (3) gas used for lifting oil unless sold for that purpose. Royalty interests owned by the following governmental entities are not subject to the tax on gas production: (1) cities, towns, and villages; (2) counties; (3) independent school districts and common school districts; (4) public colleges and universities; and (5) political subdivisions of the federal government. Gas produced from Texas wells that have been inactive for at least three years is exempt from the gas production tax. An exemption from the gas production tax is also provided for "two-year inactive wells."A "two-year inactive well" is a well that has not produced oil or gas in more than one month in the two years that precede the date of an application for a severance tax exemption. A two-year inactive well is entitled to a 10-year severance tax exemption if it is so designated by the Commission. Hydrocarbons that are produced in Texas from a well that is subject to a Texas Experimental Research and Recovery Activity (TERRA) agreement and that are produced under a license issued under that agreement qualify for an exemption from the gas production tax and oil production tax if the Texas Comptroller approves the exemption. Effective September 1, 2009, an exemption is allowed for gas production that is incidentally produced in association with the production of geothermal energy. Three levels of tax credits are provided for gas production from qualified low-producing gas wells for any given month. The level depends on average taxable gas prices, adjusted to 2005 dollars, based on applicable price indices of the previous three months. The credits apply to gas produced on or after September 1, 2005. An operator of a qualifying low-producing well is entitled to a 25% credit if the average taxable gas price is more than $3 per mcf but not more than $3.50 per mcf; a 50% credit if the price is more than $2.50 but not more than $3 per mcf; and 100% if the price is not more than $2.50 per mcf. A "qualifying low-producing well" is a well that averaged, over a three-month period, 90 mcf per day or less.
Utah	No tax is imposed on: (1) stripper wells, unless the exemption prevents the severance tax from being treated as a deduction for federal tax purposes; (2) the first 12 months of production for wildcat wells started after 1989; or (3) the first six months of production for development wells started after 1989. Applicable through June 30, 2016, gas derived from coal-to-liquids technology, oil sA working interest owner who pays for all or part of the expenses of a recompletion or workover is entitled to a tax credit equal to 20% of the amount paid, but the credit may not exceed $30,000 per well during each calendar year (Sec. 59-5-102, Utah Code Ann.; Sec. 59-5-115, Utah Code Ann.). A 50% reduction in the tax rate is allowed on the incremental production achieved from an enhanced recovery project. hale, and tar sands is exempt from tax.
West Virginia	Severance tax is not imposed on (1) free natural gas provided to any surface owner; (2) natural gas from any well that produced an average of less than 5,000 cubic feet of natural gas per day during the calendar year immediately preceding a given tax period; and (3) for a maximum period of 10 years, all natural gas from any well that has not produced marketable quantities of natural gas for five consecutive years immediately preceding the year in which a well is placed back into production and thereafter produces marketable quantities of natural gas. Every taxpayer is allowed an annual credit of $500 against the taxes due, to be applied

State	Tax Exemptions and Credits
	at the rate of $41.67 per month for each month the taxpayer was engaged in business in the state exercising a taxable privilege.
Wisconsin	No exemption or credit.
Wyoming	Tertiary production resulting from projects certified by the Wyoming Oil and Gas Conservation Commission before March 31, 2008, is exempt from the severance tax for a period of five years from the date of first tertiary production. However, no exemption is allowed in those months when the price received by the producer for tertiary production equals or exceeds $27.50 per barrel. A credit is allowed against the excise tax and additional excise tax on the production of natural gas equal to 50% of the amount certified by the Gas Research Review Committee as a qualifying investment in gas research projects in Wyoming. The total tax credit for any calendar year for all projects cannot exceed more than $2 million, and not more than 50% of this credit can be received by any one taxpayer in any one calendar year.
Pennsylvania Senate Bill 1254	No exemption or credit.
Pennsylvania House Bill 1489	The tax shall not be imposed on the following: (1) units severed, sold and delivered by a producer at or within five miles of the producing site for the processing or manufacture of tangible personal property within this Commonwealth; or (2) Units provided free of charge to the owner of the surface under which the gas is severed if the surface owner is the end user of the gas. A company may claim a tax credit of $2,500 per new job created and up to the maximum job creation tax credit amount specified in the commitment letter. A company may be eligible for tax credit for three years immediately preceding the date on which the company may begin creating new jobs. A company may apply the tax credit to 100% of the company's corporate net income tax, capital stock and franchise tax or the capital stock and franchise tax of a shareholder of the company if the company is a Pennsylvania S corporation, personal income tax or the personal income tax of shareholders of a Pennsylvania S corporation or any combination thereof.

Source: http://www.intelliconnect.cch.com (accessed 07/16/2010)

5. Natural Gas Severance Tax Rates State by State

The States have a wide range of tax rates both on value and volume of natural gas. Severance tax rates on value ranged from 0.76 % to 22.5 %, while severance tax rates on volume ranged from 1.062988 ¢ to 285 ¢ per mcf.

Alaska has the highest rate with 22.5 % of net value of gas while Montana applies the lowest rate of 0.76 % on the gross taxable value of gas production.

In terms of volume based taxation, California applies the lowest rate which is 1.062988 ¢ per mcf. On the other hand, Florida has the highest rate that is 285 ¢ per mcf.

Table 4: State by State Severance Tax Rates

State	Tax Rate
Alabama	8% of the gross value at the point of production; 4% of gross value at the point of production of incremental gas production resulting from a qualified enhanced recovery project; 4% of the gross value at the point of production for all wells producing 200,000 cubic feet or less of gas per day; 6% of gross value at point of production (for a 5-year period from the date production begins) for gas produced from onshore discovery wells, for gas produced from onshore development wells on which drilling began within 4 years of the completion date of the discovery well and producing from a depth of 6,000 feet or more, and for gas produced from onshore development wells on which drilling began within 2 years of the completion date of the discovery well and producing from a depth less than 6,000 feet; and 6% of gross value at point of production for gas produced by offshore production at depths greater than 18,000 feet below mean sea level.
Alaska	The oil and gas production tax has a base rate of 22.5% of net value of oil and gas ("production tax value") and includes a progressivity factor under which the tax rate increases by 0.25% for each dollar the production tax value rises above $40 per barrel.
Arkansas	New-discovery gas: 1.5% of market value, applicable to first 24 consecutive months beginning on date of first production from new-discovery gas well, regardless of whether production commenced prior to 2009 (all production attributable to period prior to 2009, will be taxed at rate in effect prior to January 1, 2009) High-cost gas: 1.5% of market value, applicable to first 36 consecutive months beginning on date of first production from high-cost gas well, regardless of whether production commenced prior to 2009 (all production attributable to period prior to 2009, will be taxed at rate in effect prior to January 1, 2009) Marginal gas: 1.25% of market value Other natural gas: 5%
California	$0.0880312 per 10,000 cubic feet of natural gas produced (2009-2010) $0.1062988 per 10,000 cubic feet of natural gas produced (2010-2011)
Colorado	Under $25,000 gross income: 2% $25,000 - $99,999: $500 + 3% of excess over $24,999 $100,000 - $299,999: $2,750 + 4% of excess over $99,999 $300,000 and over: $10,750 + 5% of excess over $299,999
Florida	285 ¢ per mcf. (Effective July 1, 2010)
Idaho	2% of market value of gas produced or sold in Idaho and additional tax not to exceed 5 mills per barrel of oil or per 50,000 cubic feet of gas. The Oil and Gas Conservation Commission fixes the amount of the tax annually.
Indiana	$0.03 per 1,000 mcf of natural gas.
Kansas	8% of gross value of gas.
Kentucky	4.5% of gross value of natural gas, less transportation expenses.
Louisiana	16.4¢ per thousand cubic feet (July 1, 2010 - June 30, 2011) The tax rate is subject to an annual rate adjustment, but to not less than 7¢ per 1,000 cubic feet, on July 1 and for the ensuing 12 months.
Michigan	5% of market value. An additional fee not to exceed 1% is levied upon the gross cash market value of oil and gas produced in Michigan. This fee is determined by December

State	Tax Rate
	1 each year by the Department of Treasury.
Mississippi	6% of value at point of production.
Montana	Gross taxable value of production based on the type of well and type of production according to the following schedule for working interest and nonworking interest owners: Primary recovery production: First 12 months of production (working interest) 0.76%(nonworking interest) 15.06% Pre-1999 wells after first 12 months of production (working interest) 15.06% (nonworking interest) 15.06% Post-1999 wells after first 12 months of production (working interest) 9.26% (nonworking interest) 15.06% Pre-1999 stripper well (working interest) 11.26%(nonworking interest) 15.06% horizontally completed well production first 18 months of qualifying production (working interest) 0.76% (nonworking interest) 15.06% after 18 months (working interest) 9.26% (nonworking interest) 15.06%.
Nebraska	3% of the value of natural gas (non-stripper natural gas).
Nevada	Net Proceeds as Percentage of Gross Proceeds followed by Rate of Tax as Percentage of Net Proceeds: Less than 10%: 2% 10% but less than 18: 2.5% 18% but less than 26: 3% 26% but less than 34: 3.5% 34% but less than 42: 4% 42% but less than 50: 4.5% 50% or more: 5%
New Mexico	3.75% of taxable value of natural gas severed and sold. 2.45% of the taxable value on the natural gas from a well workover project that is certified by the oil conservation division of the energy, minerals and natural resources department provided that the annual average price of west Texas intermediate crude oil, determined by the department by averaging the posted prices in effect on the last day of each month of the twelve-month period ending on May 31 prior to the fiscal year in which the tax rate is to be imposed, was less than $24.00 per barrel. 1.875 % of the taxable value on the natural gas from a stripper well property, provided the average annual taxable value of natural gas was equal to or less than $1.15 per thousand cubic feet in the calendar year preceding July 1 of the fiscal year in which the tax rate is to be imposed. 1.8125% of the taxable value on the natural gas from a stripper well property, provided that the average annual taxable value of natural gas was greater than $1.15 per thousand cubic feet but not more than $1.35 per thousand cubic feet in the calendar year preceding July 1 of the fiscal year in which the tax rate is to be imposed.
North Carolina	State does not impose severance tax on oil or gas. However, oil and gas production tax is authorized for conservation purposes. Gas: Not to exceed 1/2 mill on each 1,000 cubic feet of gas.

State	Tax Rate
North Dakota	18.31¢ per mcf. (for fiscal year July 1, 2009 - June 30, 2010)
Ohio	2.5¢ per 1,000 cubic feet.
Oklahoma	7% of the gross value of production of gas.
Oregon	6% of gross value at well.
South Dakota	4.5% of taxable value of natural gas.
Tennessee	3% of sale price.
Texas	7.5% of market value of gas produced and saved in Texas.
Utah	3% of value of natural gas up to first $1.50 per MCF 5% of value of natural gas from $1.51 and above per MCF 4% of value of natural gas liquids.
West Virginia	5% of the gross value plus 4.7 cents per thousand cubic feet severed. The 4.7 cents tax will expire when the workers' compensation debt reduction revenue bonds are retired or when the debt service is paid for.
Wisconsin	7% of the market value.
Wyoming	6% of the market value.
Pennsylvania Senate Bill 1254	5% of the gross value of units severed at the wellhead during a reporting period, plus 4.7 cents per unit severed.
Pennsylvania House Bill 1489	35¢ per unit severed at the wellhead.

Source: http://www.intelliconnect.cch.com (accessed 07/16/2010)

Table 5: Severance Tax Rate Summary

State	Value Based Tax Rate	Volume Based Tax Rate (per 1,000 cubic feet (mcf) of gas)
Alabama	4% - 8%	-
Alaska	22.5%	-
Arkansas	1.25% - 5%	-
California	-	1.062988 ¢
Colorado	2% - 5%	-
Florida	-	28.5 ¢
Idaho	2%	0.01 ¢
Indiana	-	3 ¢
Kansas	8%	-
Kentucky	4.5%	-
Louisiana	-	16.4¢
Michigan	5%	-
Mississippi	6%	-
Montana	0.76% - 15.06%	-
Nebraska	3%	-
Nevada	2% - 5%	-
New Mexico	1.8125% – 3.75%	-
North Carolina	-	0.05 ¢
North Dakota	-	18.31¢

State	Value Based Tax Rate	Volume Based Tax Rate (per 1,000 cubic feet (mcf) of gas)
Ohio	-	2.5¢
Oklahoma	7%	-
Oregon	6%	-
South Dakota	4.5%	-
Tennessee	3%	-
Texas	7.5%	-
Utah	3% - 5%	-
West Virginia	5%	4.7 cents
Wisconsin	7%	-
Wyoming	6%	-
Number of States	**22**	**9**

Source: http://www.intelliconnect.cch.com (accessed 07/16/2010)

6. State by State Fiscal Importance of Natural Gas Severance Taxes

An important issue that each state must address annually is the balancing of revenues and expenditures. States that rely heavily on severance taxes to fund their budgets are able to export to non-residents the costs of financing government, but may also be subject to fiscal uncertainty because energy prices have been quite volatile in recent years. According to the Governments Division of U.S. Census Bureau, 34 states collected severance tax revenue in 2009. Total severance tax revenue was $ 13.4 billion ors 1.88 % of total 2009 tax revenue collected in all of the states.

While severance taxes are thus not, in the aggregate, as important as state and local income, sales, or property taxes, they can be very important for individual states. Alaska raises the most in severance taxes; in 2009 it was $3.8 billion. Texas was next in rank and raised $ 2.3 billion. Other states that collected severance tax above $ 1 billion were Wyoming at $ 1.1 billion and Oklahoma at $ 1 billion.

In terms of severance tax share in total tax revenue of the states, Alaska relied most heavily on such taxes; fully 77% of its total taxes were from severance taxation. In Wyoming the severance tax share was 43 % and in North Dakota it was 34 %. Other states that relied on severance tax above 10 % are New Mexico at 19 %, Montana at 14 % and Oklahoma at 13 %.

Table 6: State by State Severance and Total Tax Collections

State Government Tax Collections (2009) (Amounts in $ thousands)			
State	**Severance Tax**	**Total Tax**	**Share of Severance Tax in Total Tax Revenue (%)**
Alabama	115,374	8,306,446	1.39
Alaska	3,829,564	4,953,342	**77.31**
Arizona	19,481	11,249,830	0.17
Arkansas	33,547	7,467,679	0.45
California	27,105	101,007,459	0.3
Colorado	285,015	8,682,822	3.28
Connecticut	0	12,927,619	0
Delaware	0	2,806,031	0

State Government Tax Collections (2009) (Amounts in $ thousands)			
State	**Severance Tax**	**Total Tax**	**Share of Severance Tax in Total Tax Revenue (%)**
Florida	81,300	31,956,841	0.25
Georgia	0	16,077,948	0
Hawaii	0	4,712,651	0
Idaho	4,952	3,171,863	0.16
Ilinois	0	29,268,349	0
Indiana	162	14,900,123	0
Iowa	0	6,984,279	0
Kansas	142,658	6,694,630	2.13
Kentucky	355,985	9,755,544	3.65
Louisiana	911,433	10,014,637	**9.1**
Maine	0	3,489,105	0
Maryland	0	15,126,893	0
Massachusetts	0	19,482,884	0
Michigan	59,343	23,556,988	0.25
Minnesota	45,820	17,161,299	0.27
Mississippi	113,762	6,514,769	1.75
Missouri	18	10,345,250	0
Montana	349,714	2,407,400	**14.53**
Nebraska	4,718	4,000,939	0.12
Nevada	145,450	5,564,170	2.61
New Hampshire	0	2,125,722	0
New Jersey	0	27,186,553	0
New Mexico	931,832	4,851,689	**19.21**
New York	0	65,029,871	0
North Carolina	1,740	20,496,106	0.01
North Dakota	827,417	2,414,010	**34.28**
Ohio	11,052	23,952,422	0.05
Oklahoma	1,067,182	8,160,670	**13.08**
Oregon	13,038	7,419,494	0.18
Pennsylvania	0	30,071,179	0
Rhode Island	0	2,586,184	0
South Carolina	0	7,146,034	0
South Dakota	7,668	1,333,835	0.57
Tennessee	2,413	10,442,552	0.02
Texas	2,338,481	40,786,857	**5.73**
Utah	102,121	5,422,858	1.88

State Government Tax Collections (2009) (Amounts in $ thousands)			
State	**Severance Tax**	**Total Tax**	**Share of Severance Tax in Total Tax Revenue (%)**
Vermont	0	2,505,665	0
Virginia	1,997	16,199,102	0.01
Washington	29,681	16,408,838	0.18
West Virginia	376,677	4,788,926	**7.87**
Wisconsin	4,211	14,490,714	0.03
Wyoming	1,197,540	2,763,610	**43.33**
United States Total	**13,438,451**	**715,170,681**	**1.88**

Source: U.S. Census Bureau, Governments Division, http://www.census.gov/govs/statetax (accessed 07/06/2010)

7- Comparison of Major Pennsylvania Bills to Current Legislations of Other States

There are 27 states that have natural gas severance taxation in the U.S. As we have seen above, the tax statutes in these states vary widely in terms of definitions, tax base, tax rate, exemptions and credits. Hence, it is not easy to choose the states to compare with current Pennsylvania proposals on natural gas severance taxation. One approach could be to take the states that have the largest tax revenues from severance taxation. The amount of tax revenue demonstrates the importance of severance taxation in that state. However, the share of severance tax revenue in total tax revenues is also important. Therefore, another approach could be to choose the states that have a larger share of severance tax revenue in their total tax revenues.

The third approach for choosing comparison states is to examine both tax revenue amount and share of tax revenue together. This approach indicates better the importance of severance taxation for a state. For example, Texas is the second state in terms of severance tax revenue by $ 2.3 billion. However, it is the ninth state in terms of severance tax revenue share by 5.73%.

Below I report comparisons using this third approach, and choose Alaska, Wyoming and North Dakota as comparison states. Alaska has both the highest severance tax revenue at $ 3.8 billion and highest severance tax revenue share at 77%. Wyoming is the third state in terms of severance tax revenue at $ 1.1 billion and the second state in terms of severance tax revenue share at 43%. North Dakota is the seventh state in terms of severance tax revenue by $ 0.8 billion and the third state in terms of severance tax revenue share by 34%.

7.1. Severance Tax Base Comparisons

Alaska and Wyoming, like other 18 states, apply value based severance taxation while North Dakota, on the other hand, applies volume based taxation on natural gas. Pennsylvania Senate Bill 1254 (PA 1254) chooses both value and volume based taxation together. Pennsylvania House Bill 1489 (PA 1489), on the other hand, proposes just volume based severance taxation on natural gas.

For the states that apply value based taxation, the definition of value is important. Alaska defines value as gross value at the point of production of the natural gas less the producer’s lease expenditures. Lease expenditures are costs that are incurred by the producer to explore for, develop, or produce oil or gas deposits located within the producer's leases or properties in the state or, in the case of land in which the producer does not own an operating right, operating interest, or working interest, to explore for oil or gas deposits within other land in the state.

Wyoming also applies value based severance taxation and the value is the fair market value. Fair market value is determined by computing the total amount received from the sale of natural gas and subtracting the total direct processing and transportation costs, any arm's-length transportation fees from the point of valuation to the point of arm's-length sale, overhead costs directly related to facility operations, exempt royalties, and return on investment incurred by the taxpayer from the point of valuation to the point of arm's-length sale.

Overall, both Alaska and Wyoming apply the severance tax on the amount (arms-length price) received from the sale of natural gas and they allow taxpayer to deduct exploration and operation costs.

SB 1254 defines the value as the volume-weighted average market price for all arms-length transactions that a producer receives at the sales meter for natural gas during a reporting period. In the Bill there is no allowance for deduction of exploration and operation costs. This means that PA 1254 proposes a severance tax to a much larger base than both Alaska and Wyoming.

HB 1489, on the other hand, proposes the same base with the base of North Dakota. Both of them apply severance tax on the base of mcf (thousand cubic feet) of natural gas.

7.2. Comparison of Severance Tax Rates

Alaska applies a progressive tax rate on natural gas severance tax. The base rate is 22.5 % on net value of gas which is the highest rate in terms of natural gas severance taxation in the U.S..[10] Under this structure, the tax rate increases by 0.25% for each dollar the production tax value rises above $40 per barrel.

Wyoming imposes a 6% tax rate on natural gas severance tax.

PA Bill 1254 proposes both value and volume based taxation together. Currently there are only two states, West Virginia and Idaho, which apply value and volume based taxation together. PA Bill 1254 proposes the same rates as West Virginia: a 5% severance tax on the gross value of units severed plus 4.7 cents per unit severed.

The proposed 5% is less than the rates of Alaska and Wyoming but there is also an additional tax of 4.7 cents per unit severed. In addition to this, tax base of PA Bill 1254 is larger than Alaska and Wyoming. Therefore, it seems that effective tax rate of proposed PA Bill 1254 is higher than Wyoming.

PA Bill 1489, on the other hand, proposes 35¢ per mcf severed at the wellhead. This rate is 18.31¢ per mcf in North Dakota.

7.3. Comparison of Severance Tax Exemptions and Credits

Alaska provides a tax credit against its severance tax for the exploration of natural gas. There is also a tax credit for cash contributions accepted for direct instruction, research, and educational support purposes and contributions to an endowment by a qualified Alaska college, university or university foundation. However, the total credit taken against this tax cannot exceed $150,000, and any contribution taken as a credit against one tax cannot be otherwise claimed as a credit. Another tax credit is allowed for qualifying

[10] However, Alaska provides significant tax credits as discussed in Section 7.3 below.

exploration expenditures resulting in the production of gas. The credit is equal to 20% of exploration expenditures or 40% of exploration expenditures as described in the Statute.

Wyoming provides severance tax credit equal to 50% of the amount certified by the Gas Research Review Committee as a qualifying investment in gas research projects in Wyoming. However, the total tax credit for any calendar year for all projects cannot exceed more than $2 million, and not more than 50% of this credit can be received by any one taxpayer in any one calendar year. There is also an exemption for tertiary production resulting from projects certified by the Wyoming Oil and Gas Conservation Commission before March 31, 2008, for a period of five years from the date of first tertiary production.

North Dakota exempts royalty interests in gas that are owned by the federal government or its instrumentalities, the state of North Dakota or its subdivisions, or an Indian tribe. Gas that is taken directly from the wellhead or returned to the lease from a processing or treating plant and that is used in the production of oil or gas is also exempt. In addition, gas burned at a well site to power an electrical generator that consumes at least 75% of the gas from the well is exempt. Moreover, shallow gas produced during the first 24 months of production is exempt. Gas produced from such a well during testing prior to well completion or connection to a pipeline is also exempt.

Pennsylvania Senate Bill 1254 does not provide any exemption or credit for natural gas severance taxation.

Pennsylvania House Bill 1489, on the other hand, proposes a number of exemptions. The proposed statute provides an exemption for units severed, sold and delivered by a producer at or within five miles of the producing site for the processing or manufacture of tangible personal property within this Commonwealth; or units provided free of charge to the owner of the surface under which the gas is severed if the surface owner is the end user of the gas. In addition, a company may claim a tax credit of $2,500 per new job created and up to the maximum job creation tax credit amount specified in the commitment letter.

7.4. Comparison of the Definition of Producer

In some states the term “producer” includes the receiving of money or other valuable consideration as royalty or rental for oil or gas produced.

For example, in Alabama, producer is any person engaging or continuing in the business of oil or gas production, which includes the owning, controlling, managing, or leasing of any oil or gas property or oil or gas well, and producing in any manner any oil or gas by taking it from the soil or waters, or from beneath the soil or waters, of the State of Alabama, and further includes receiving money or other valuable consideration as royalty or rental for oil or gas produced or because of oil or gas produced, whether produced by him or by some other person on his behalf, either by lease, contract or otherwise, and whether the royalty consists of a portion of the oil or gas produced being run to his account or a payment in money or other valuable consideration.

In PA Senate Bill 1254 and House Bill 1489, producer is defined exactly the same as follows: A person who engages or continues within the Commonwealth of Pennsylvania in the business of severing natural gas for sale, profit or commercial use. The term does not include a person who severs natural gas from a storage field.

8- Outstanding Research Questions:

This comparative analysis of severance taxation among the American States has reviewed many of the characteristics of their statutes. There remain, however several outstanding research questions that the limitations of time precluded for investigation. The matters listed below are important, and their answers should inform the ongoing debate in Pennsylvania about whether and how it should tax the severance of natural gas.

1- Are there any other taxes on natural gas such as conservation tax?
2- How do states distribute and spend severance tax revenue?
3- Are natural gas severance taxes deductible or creditable for corporate income tax, property tax, business franchise tax etc.?
4- Are royalty interests subject to severance tax?
5- Who is responsible for severance tax collection, producer or purchaser?
6- What are the effective severance tax rates on natural gas in the States? To answer this question, one needs information about tax base amount and natural gas severance tax paid in each state to calculate this.
7- When are severance taxes reported to the administrations and when are they paid?
8- In states which have severance taxation on volume of natural gas, how do they annually adjust the tax rate in order to meet state budgetary needs? Does the Commissioner of Revenue have a right to make adjustment or is it a statutory matter?

9. Bibliography:

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2- Wood, M. & Ward, S. (2009, April). Responsible growth: Protecting the public interest with a natural gas severance tax. The Pennsylvania Budget and Policy Center from http://pennbpc.org/sites/pennbpc.org/files/Responsible%20Growth%20%20PA%20Severance%20a.pdf

3- U.S. Census Bureau, State Government Tax Collections 2009 from http://www.census.gov/govs/statetax

4- CCH Omnitax and CCH Oil and Gas Reporter, accessed from http://www.intelliconnect.cch.com

Appendix 1

Table 7: State by State Definition of Natural Gas

State	Definition of Natural Gas
Alabama	Gas. All natural gas, including casing-head gas, and all other hydrocarbons not defined as oil in the law.
Alaska	Gas means all natural, associated, or casing-head gas; all hydrocarbons that are recovered by mechanical separation of well fluids or by gas processing in a gas processing plant; and exist in a gaseous phase at the completion of mechanical separation and any gas processing in a gas processing plant; and all other hydrocarbons produced from a well not defined as oil.
Arkansas	"High-cost gas" means natural gas that is: (1) Produced from any gas well completed within a shale formation, including, but not limited to, the Fayetteville Shale, the Woodford Shale, the Moorefield Shale and the Chattanooga Shale Formations, or their stratigraphic equivalents, as described in published stratigraphic nomenclature recognized by the Arkansas Geological Survey; (2) Produced from any gas well in which the production is from a completion that is located at a depth of more than 12,500 feet below the surface of the earth, where the term "depth" means the length of the maximum continuous drilling string of drill pipe used between the drill bit face and the drilling rig's kelly bushing; (3) Produced from a tight gas formation; (4) Produced from geopressured brine; or (5) Occluded natural gas produced from coal seams. "Marginal gas", when used in reference to a conventional gas well, means all natural gas produced from the conventional gas well beginning on the date the conventional gas well is incapable of producing more than 250 mcf per day, as determined by the Director of the Arkansas Oil and Gas Commission using the current wellhead deliverability rate methodology utilized by the Oil and Gas Commission, during the calendar month for which the severance tax report is filed. "Marginal gas", when used in reference to a high-cost gas well, means all natural gas produced from the high-cost gas well beginning on the date the high-cost gas well is incapable of producing more than 100 mcf per day, as determined by the Director of the Oil and Gas Commission using the current wellhead deliverability rate methodology utilized by the Oil and Gas Commission, during the calendar month for which the severance tax report is filed. "Marginal gas" shall include production from all zones and multilateral branches at a single well without regard to whether the production is separately metered. "Marginal gas" shall not include gas produced from: A high-cost gas well during the thirty-six (36) month period provided in Section 26-58-

	127(b)(1); A high-cost gas well during any allowed extension provided in Section 26-58-127(b)(2); or A new discovery gas well during the twenty- four (24) month period provided in Section 26-58-127(a).
California	Gas means any natural hydrocarbon gas coming from the earth.
Colorado	Gas means natural gas, coalbed methane, and carbon dioxide.
Florida	Gas means all natural gas, including casing-head gas, and all hydrocarbons not defined as oil, but exclude any hydrogen sulfide gas or sulfur contained, produced, or recovered from such hydrogen sulfide gas. Casing-head gas means gas produced with oil from oil wells, the gas being taken from the well through the casing-head, or the liquid hydrocarbons in solution which may be separated in part by a reduction in pressure at the wellhead and separated more completely in a separator or absorption plant or by another manufacturing process.
Idaho	No definition.
Indiana	Natural gas means petroleum that maintains a gaseous state at atmospheric conditions.
Kansas	Gas means natural gas taken from below the surface of the earth or water in this state, regardless of whether from a gas well or from a well also productive of oil or any other product.
Kentucky	No definition.
Louisiana	No definition.
Michigan	Gas as used in this act does not include methane gas extracted from a landfill.
Mississippi	No definition.
Montana	Natural gas or gas means natural gas and other fluid hydrocarbons, other than oil, produced at the wellhead.
Nebraska	Gas shall mean all natural gas and all other fluid hydrocarbons not defined as oil.
Nevada	No definition.
New Mexico	Product or products means oil, natural gas or liquid hydrocarbon, individually or any combination thereof, carbon dioxide, helium or a non-hydrocarbon gas.
North Carolina	Gas shall mean all natural gas, including casing-head gas, and all other hydrocarbons not defined as oil in the Act.
North Dakota	Gas means natural gas and casing-head gas.
Ohio	No definition.
Oklahoma	Gas means natural gas or casing-head gas. The terms gas, natural gas or casing-head gas when used in this article are interchangeable, and any provisions relating to any one of these shall relate to all gas, natural gas or casing-head gas.
Oregon	Gas means natural gas and casing-head gas.
South Dakota	Gas means all natural gas and all other fluid hydrocarbons not defined in subdivision (4) as oil, including condensate because it originally was in the gaseous phase in the reservoir. Condensate is liquid hydrocarbons that were originally in the gaseous phase in the reservoir.
Tennessee	Gas means all natural gas and all other fluid hydrocarbons not defined as oil, including condensate because it originally was in a gaseous phase in the reservoir. Casing-head gas means any gas or vapor, or both, indigenous to an oil stratum and produced from such stratum with oil. It shall be treated as gas, if sold, for the purpose of paying

	privilege tax.
Texas	Gas means natural gas, casing-head gas, or other gas taken from the earth or water, whether produced from a gas well or a well also producing oil, distillate or condensate or both, or other products. Casing-head gas means gas or vapor indigenous to an oil stratum and produced from the stratum with oil. Condensate means liquid hydrocarbon that is or can be recovered from gas by a separator, but does not include liquid hydrocarbon recovered from gas by refrigeration or absorption and separated by a fractionating process.
Utah	Gas means natural gas; natural gas liquids; or any mixture of natural gas and natural gas liquids. Gas does not include solid hydrocarbons. Natural gas means those hydrocarbons, other than oil and other than natural gas liquids separated from natural gas that occur naturally in the gaseous phase in the reservoir and are produced and recovered at the wellhead in gaseous form. Natural gas liquids means those hydrocarbons initially in reservoir natural gas, regardless of gravity, that are separated in gas processing plants from the natural gas as liquids at the surface through the process of condensation, absorption, adsorption, or other methods.
West Virginia	Gas means either natural gas unmixed or any mixture of natural and artificial gas or any other gas.
Wisconsin	No definition.
Wyoming	Gas shall mean all natural gases and all hydrocarbons not defined herein as oil.
Pennsylvania Senate Bill 1254	Natural gas is a fossil fuel consisting of a mixture of hydrocarbon gases, primarily methane, possibly including ethane, propane, butane, pentane, carbon dioxide, oxygen, nitrogen and hydrogen sulfide and other gas species. The term includes natural gas from oil fields known as associated gas or casing head gas, natural gas fields known as non-associated gas, coal beds, shale beds and other formations.
Pennsylvania House Bill 1489	Natural gas is a fossil fuel consisting of a mixture of hydrocarbon gases, primarily methane, possibly including ethane, propane, butane, pentane, carbon dioxide, oxygen, nitrogen and hydrogen sulfide and other gas species. The term includes natural gas from oil fields known as associated gas or casing head gas, natural gas fields known as non-associated gas, coal beds, shale beds and other formations. The term does not include "coalbed methane" which, for the purpose of this bill, shall mean gas which can be produced from coal beds, coal seams, mined out areas or gob wells.

Source: http://www.intelliconnect.cch.com (accessed 07/19/2010)