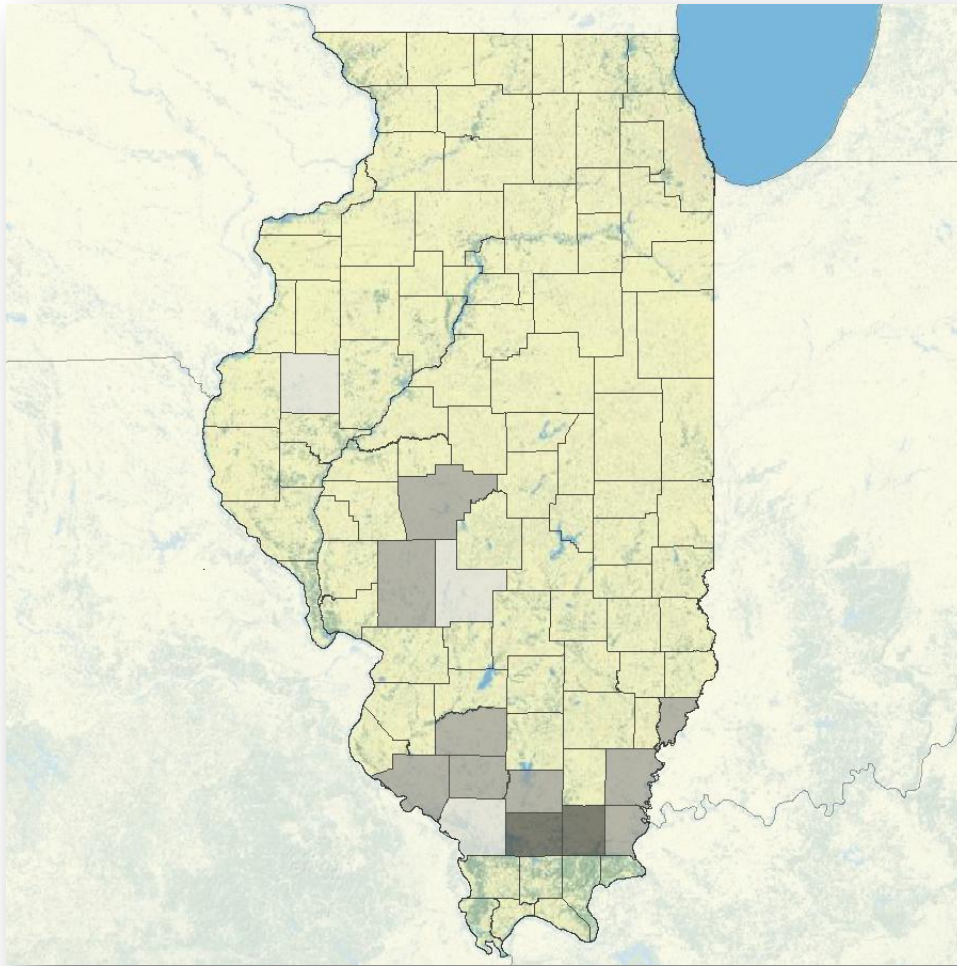


The Impact of Coal on the Illinois State Budget, FY2011



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The Impact of Coal on the Illinois State Budget, FY2011

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COVER MAP

The map on the front cover, produced by Downstream Strategies, depicts the coal-producing counties in Illinois. The coal-producing counties are shaded blue, with the darkness of the shading representing the relative production of coal by county for 2010. Darker counties produced more coal than the lighter counties.

SUGGESTED REFERENCE

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ABBREVIATIONS

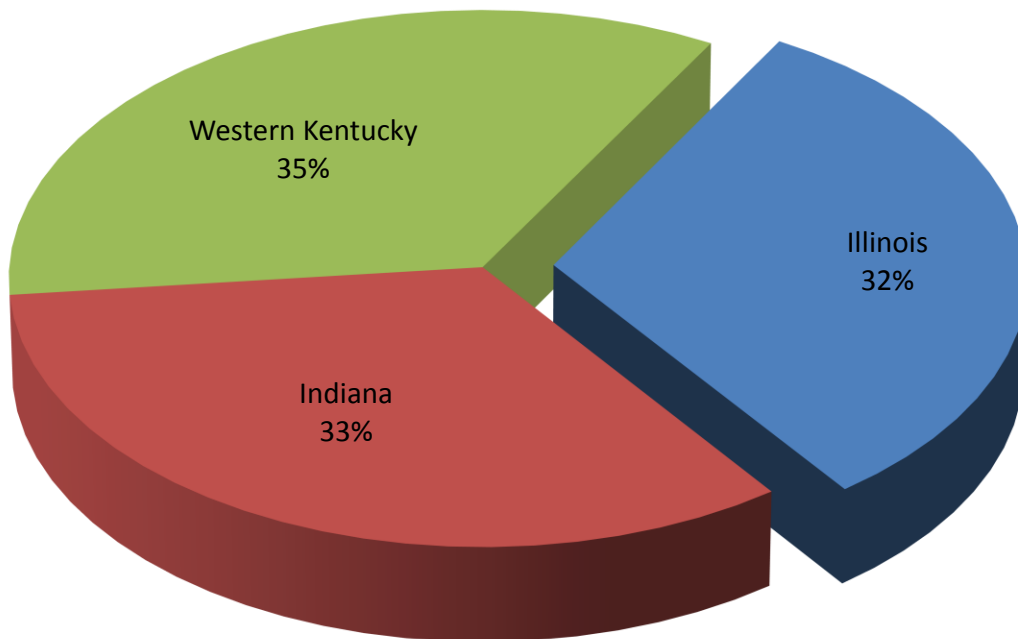
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
CAA	Clean Air Act
CAPP	Central Appalachia
CGFA	Commission on Government Forecasting and Accountability
CTDAF	Coal Technology and Development Assistance Fund
DCEO	Department of Commerce and Economic Opportunity
E. INT	Eastern Interior
EIA	Energy Information Administration
FY	Fiscal Year
GDP	Gross Domestic Product
GF	General Fund
GO	General Obligation
GOMB	Governor's Office of Management and Budget
HF	Highway Funds
HIB	High Impact Business
ICCI	Illinois Clean Coal Institute
IDNR	Illinois Department of Natural Resources
IDOR	Illinois Department of Revenue
IDOT	Illinois Department of Transportation
IECC	Illinois Eastern Community Colleges
ISGS	Illinois State Geological Survey
ITEP	Institute on Taxation and Economic Policy
kWh	kilowatt-hour
LLC	Limited Liability Company
MACED	Mountain Association for Community Economic Development
MFTF	Motor Fuel Tax Fund
NAICS	North American Industry Classification System
NAPP	Northern Appalachia
OCD	Office of Coal Development
PRB	Powder River Basin
REC	Renewable Energy Resources and Coal Technology Development Assistance Charge
RF	Road Fund
SIC	Standard Industrial Classification
SIU	Southern Illinois University
US	United States
USGS	United States Geological Survey

EXECUTIVE SUMMARY

Coal mining and support activities play a relatively insignificant role in the Illinois economy, representing only 0.17% of private industry economic activity in 2010.¹ However, the industry does pay taxes that contribute to the state budget and provides or supports well-paying jobs for thousands of Illinois residents. Despite these benefits, the coal industry and coal-related industries also impose a cost on the state and its taxpayers.

Illinois' coal reserves are situated in the Eastern Interior (Illinois) coal basin, which includes eastern Kentucky, Indiana, and Illinois, and is characterized primarily as containing high-energy content, high-sulfur bituminous coal. In 2010, coal production from the Eastern Interior basin accounted for 10% of all coal produced in the United States. Of the 102 counties in Illinois, 13 counties produced approximately 35 million tons of coal in 2010 and directly supported employment for 3,481 miners, managers, and upper-level staff. Of the coal-producing counties, production in only five counties—Saline, Williamson, Perry, Randolph and Sangamon—accounted for nearly 75% of total state production. Overall, Illinois coal accounted for 32% of all coal produced in the Eastern Interior basin in 2010.

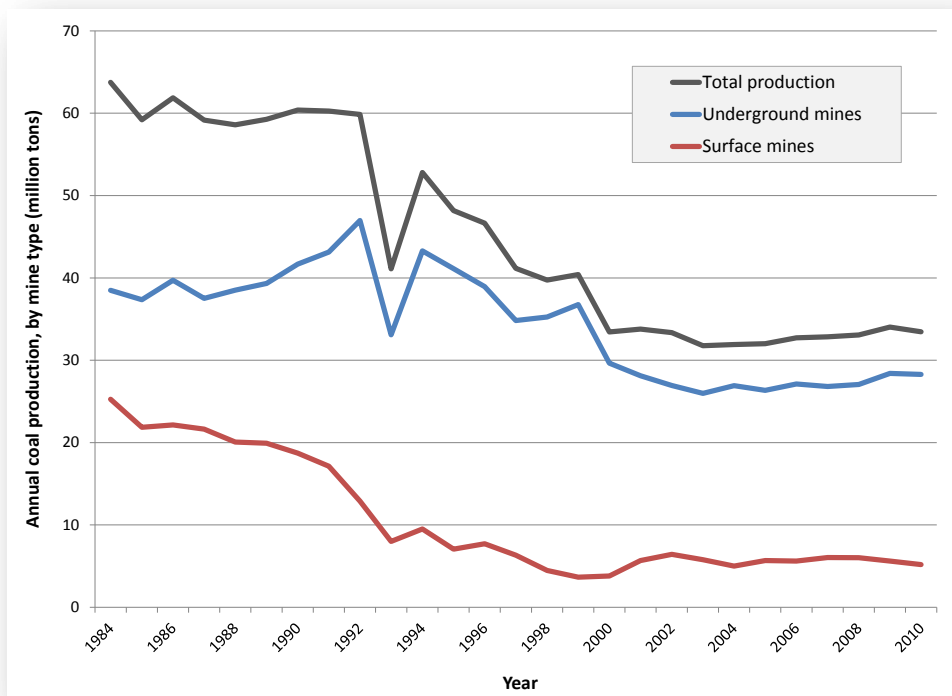
Figure ES-1: Eastern Interior basin coal production by state, 2010



Illinois coal production last peaked in 1984 at nearly 64 million tons, representing 7.2% of total United States production at that time. Since then, Illinois' share has fallen to 3.1%, and annual production has declined by 48% overall, reflected by the loss of over 20 million tons of surface mine production and 10 million tons of underground production. Due to the sharp decline in coal production, direct coal employment in Illinois fell by 75% between 1984 and 2010, representing a loss of over 10,000 mining-related jobs. Most of the decline is the result of the passage of the federal Clean Air Act Amendments of 1990; however, these same amendments have bolstered coal production in Illinois in recent years as more power plants have installed systems for capturing emissions of sulfur dioxide, thereby allowing them to burn more high-sulfur coal.

¹ The coal industry, identified as North American Industry Classification System (NAICS) industry 2121, comprises establishments primarily engaged in one or more of the following: (1) mining bituminous coal, anthracite, and lignite by underground mining, auger mining, strip mining, culm bank mining, and other surface mining; (2) developing coal mine sites; and (3) beneficiating coal (e.g., cleaning, washing, screening, and sizing coal) (Illinois Workforce Info Center, 2012a).

Figure ES-2: Coal production in Illinois, by mine type, 1984-2010



Coal's importance for Illinois is expected to grow somewhat as demand for its coal increases as a result of new regulations on power plant emissions, which are negatively impacting demand for coal from other basins. Should this occur, coal's contribution to Illinois' state and local budgets and economies will likely grow to some extent. However, as coal's contribution grows, so will its costs. This reality raises questions about Illinois' priorities as they relate to economic policy and energy development, particularly for the coal-producing counties throughout the state.

In this report, we examine the net impact of the coal industry and related activities on the Illinois state budget by compiling data on and estimating both the tax revenues and the expenditures attributable to the industry for Fiscal Year 2011: July 1, 2010 through June 30, 2011. In cases where we calculate our own estimates, there is an inherent degree of uncertainty associated with the results. We do not claim that our estimates are precise; in fact, we round them in order to avoid a false impression of precision.

Overall, taking all revenues and expenditures into account, we estimate that the coal industry's impact on the Illinois state budget in Fiscal Year 2011 amounted to a net cost of \$19.8 million (see Table ES-1 and Figure ES-3).

It is important to note that the impacts of coal extend beyond traditional accountings of revenues and expenditures. While the focus of this report is on the industry's net impact on the state budget for a single year, legacy costs resulting from past and future coal industry activity must also be considered. These are important both for their potential impact on the availability of funds that are used to pay for basic services—like healthcare and education—and for their future impact on the economy, the environment, and the health of Illinois residents.

Following is a summary of findings for each of the revenues and expenditures examined in this report:

Direct coal industry: Revenues. The coal industry benefits the state budget through the payment or remittance of taxes that contribute to the General Funds. In Fiscal Year 2011, the coal industry provided an estimated \$2.1 million in revenues from corporate income tax and sales and use tax remittances. These revenues amounted to approximately 0.01% of total state-generated revenues for the General Funds.²

Direct coal industry: On-budget expenditures for discretionary spending. The Illinois state budget includes a variety of expenditures that exist only because of the coal industry. We focus on coal-related expenditures paid for through the General Funds, which include, for example, units of government within the Department of Natural Resources. We estimate that on-budget coal-related expenditures amounted to \$1.4 million for Fiscal Year 2011. Comparing only the on-budget expenditures to the direct revenues generated by the coal industry, we estimate that the industry directly resulted in a net benefit of \$0.7 million in Fiscal Year 2011.

Direct coal industry: Tax incentives and grant programs. In addition to on-budget expenditures, we estimate the cost to the General Funds of tax incentives and grant programs that support Illinois coal. Tax incentives represent foregone revenues, while the grant programs result in a statutory transfer and debt service on General Obligation Bonds. The General Assembly does not have discretion over statutory transfers or debt service on bonds, and because of this, we have categorized these items as hard costs.³

While hard costs are on-budget expenditures, it is important to distinguish them from discretionary spending, and as such we have not included such expenditures in the on-budget expenditure section of this report. In total, tax incentives and grant programs for the coal industry cost the Illinois state budget \$12.6 million in Fiscal Year 2011. Grants provided through the Coal Technology and Development Assistance Fund accounted for virtually 100% of this cost. New incentives may increase the cost of coal on the state budget in future years.

Direct coal employment: Revenues and expenditures. While the coal industry generates business-related tax revenues for the General Funds, the state budget also benefits through the collection of taxes paid by those directly and indirectly employed as a result of the Illinois coal industry. Therefore, a complete accounting of the impact of the coal industry on the state budget requires a calculation of the revenues and expenditures associated with coal-related employment.

A reported 3,481 Illinois residents were directly employed in the coal industry in 2010. We estimate that total tax revenues related to direct employment in the coal industry amounted to \$15.9 million, while state expenditures to support those employees amounted to \$16.1 million. Therefore, we estimate that tax benefits for the state budget contributed by direct employees of the coal industry fell short of state expenditures for supporting those employees by approximately \$0.2 million for Fiscal Year 2011.

Indirect employment supported by coal: Revenues and expenditures. When discussing the total economic impact of any industry, it is necessary to include the indirect and induced impacts of the industry. The coal industry, like other industries, relies on other companies that generate economic activity and employment. To calculate the indirect impacts, we used the Regional Input-Output Modeling System economic impact multipliers for the coal industry in Illinois. For Fiscal Year 2011, we estimate that indirect employment attributable to coal industry activity amounted to 7,826 jobs and generated approximately \$28.4 million in state revenues. State expenditures to support those employees amounted to approximately \$36.1 million. We therefore estimate that employment indirectly supported by the Illinois coal industry resulted in a net cost of \$7.8 million for Fiscal Year 2011.

² By "state-generated revenue" we mean only revenue to the General Funds via taxes and fees, which totaled approximately \$22.9 billion in Fiscal Year 2011.

³ Part of the grant programs revenue, however, comes directly from a ratepayer fee, which is a revenue source that has no direct impact on the General Funds.

Conclusions and recommendations. Every job and every dollar of revenue generated by the coal industry provides an economic benefit for Illinois and the counties where the coal is produced; however, the net impact of the Illinois coal industry on the Illinois state budget, when taking all revenues and expenditures into account, amounted to a net cost of \$19.8 million in Fiscal Year 2011. While this number is a reasonable and plausible first approximation, it cannot be represented as a precise calculation. However, the estimates provided in this report are based on the data that are available and provide a useful first step toward considering not just the industry’s revenues, but its costs as well.

The process of thinking through and estimating revenues and expenditures as they pertain to the coal industry should assist state policymakers by offering a more complete understanding of the role of the coal industry in Illinois. We encourage the generation of additional data and the calculation of refined estimates to help move this dialog forward.

The following policy recommendations address the direct and indirect costs attributable to coal industry activity in Illinois, with the overall goal being to ensure that the costs are covered through revenues collected from the industry rather than being paid for by the public.

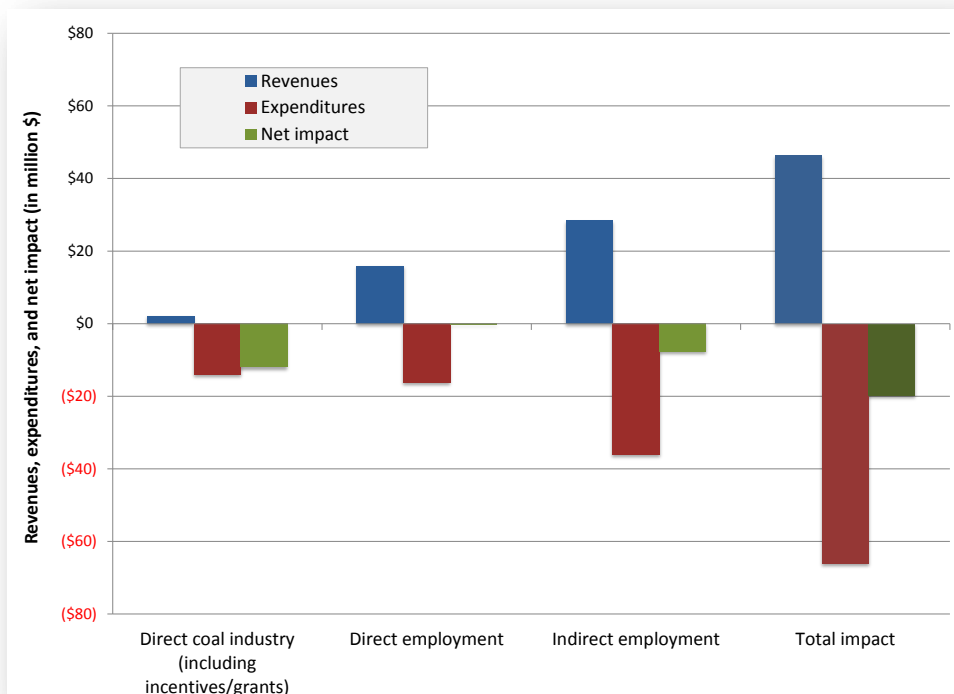
- Implement a state severance tax on coal and distribute a portion of the revenues to local governments.
- Create a permanent mineral trust fund.
- Conduct a detailed analysis of the full costs and benefits of grant programs supporting coal-related projects, and implement greater transparency and oversight.

Whether coal mining expands or declines in the future, state policy related to energy and economic development—to the extent that it supports the coal industry—should be examined and reconsidered, and new policies should be enacted that reflect a recognition of the costs associated with coal industry activity.

Table ES-1: The estimated impact of the coal industry on the Illinois state budget, Fiscal Year 2011

Item	General Funds	Highway Funds	Total
Direct coal industry			
Revenues (including support activities)	\$2,070,000	\$0	\$2,070,000
On-budget discretionary expenditures	(\$1,400,000)	n/a	(\$1,400,000)
Estimated net impact	\$670,000	\$0	\$670,000
Tax incentives and grant programs			
Tax incentives	(\$35,000)	n/a	(\$35,000)
Hard cost (statutory transfer)	(\$12,530,000)	\$0	(\$12,530,000)
Estimated net impact	(\$12,565,000)	\$0	(\$12,565,000)
Direct coal employment			
Revenues	\$14,590,000	\$1,290,000	\$15,880,000
Expenditures	(\$14,860,000)	(\$1,200,000)	(\$16,060,000)
Estimated net impact	(\$270,000)	\$90,000	(\$180,000)
Indirect employment supported by coal			
Revenues	\$25,450,000	\$2,900,000	\$28,350,000
Expenditures	(\$33,420,000)	(\$2,700,000)	(\$36,120,000)
Estimated net impact	(\$7,970,000)	\$200,000	(\$7,770,000)
Total impact			
Revenues	\$42,110,000	\$4,190,000	\$46,300,000
Expenditures	(\$62,245,000)	(\$3,900,000)	(\$66,145,000)
Estimated net impact	(\$20,135,000)	\$290,000	(\$19,845,000)

Figure ES-3: Net impact of the coal industry on the Illinois state budget, FY2011 (summary)



1. INTRODUCTION

Coal plays a relatively insignificant role in the overall Illinois economy; however, the industry contributes millions of dollars in state and local revenue and provides well-paying jobs to thousands of Illinois residents. Previous accountings of the industry's impact on the state economy have only presented coal's benefits for Illinois (DCEO, 2012a); our estimates provide an initial accounting of both benefits and costs. Such an accounting is important, for despite projections that demand for Illinois coal is likely to increase substantially in the coming decade, a continued reliance on coal for energy and economic development may actually result in net costs to the state budget and will leave local economies vulnerable to alternating periods of growth and decline. In addition, should coal production expand, the negative impacts resulting from coal industry activity may continue, resulting in ongoing costs to Illinois and its citizens.

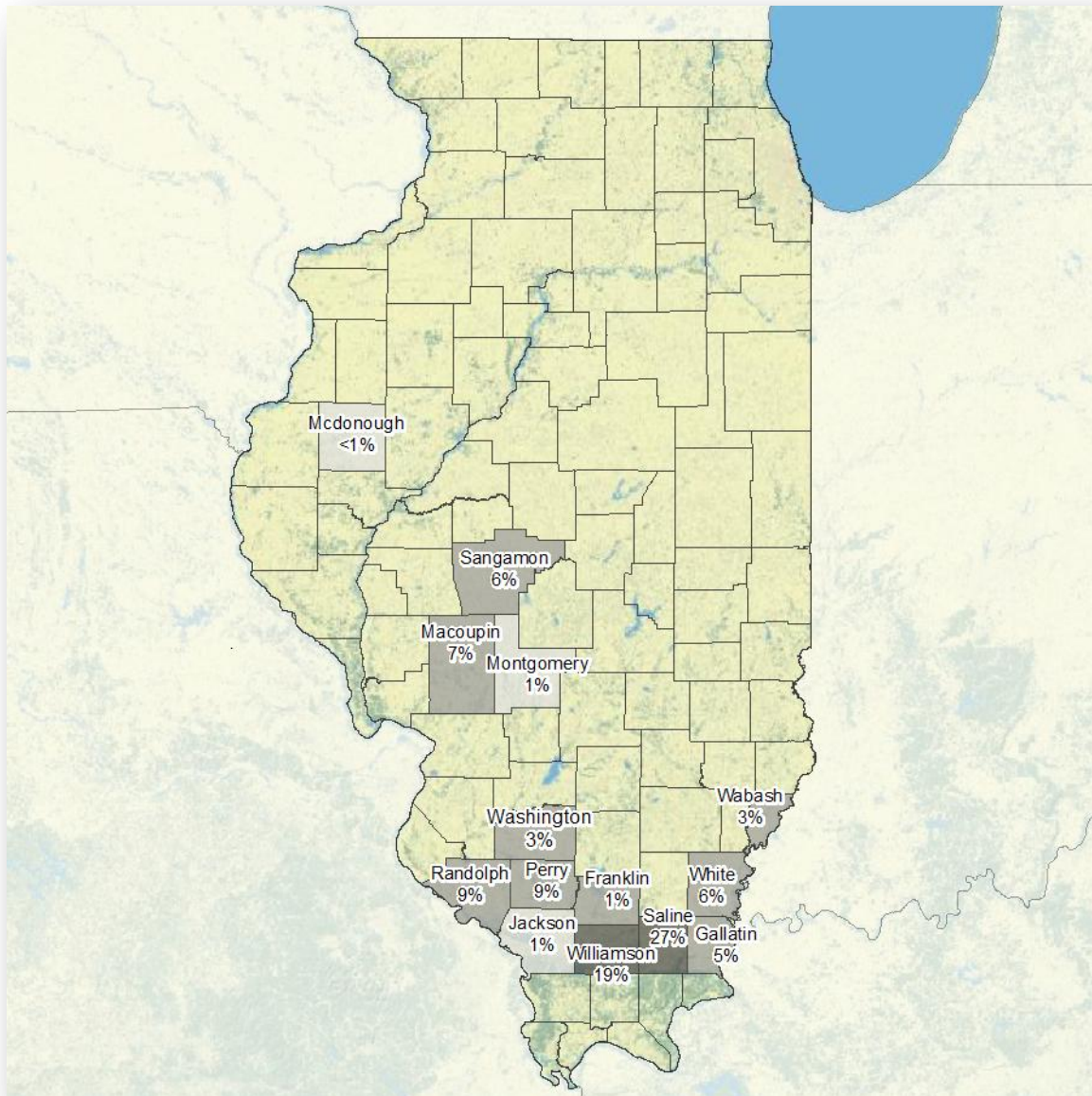
The structure of this report is modeled after a similar report for Kentucky released by the Mountain Association for Community Economic Development (MACED), which examined the coal industry's impact on the Kentucky state budget (Konty and Bailey, 2009), as well as previous reports on West Virginia (McIlmoil et al., 2010a), Tennessee (McIlmoil et al., 2010b), Pennsylvania (McIlmoil et al., 2012a) and Virginia (McIlmoil et al., 2012b) released by Downstream Strategies.

1.1 Overview of the Illinois coal industry

Illinois' coal reserves are situated in the Eastern Interior (E. INT) coal basin, which is characterized primarily as containing high-energy content, high-sulfur bituminous coal. The federal Energy Information Administration (EIA) estimates that, as of 2010, Illinois had 37.9 billion tons of total recoverable reserves, with 1.6 billion tons of recoverable reserves at actively producing mines (EIA, 2011a). At 2010 production rates, that is enough coal to last for approximately 47 years without opening any new mines.

EIA also reports that 13 of the 102 counties in Illinois produced coal in 2010, totaling approximately 35 million tons of coal production (EIA, 2011b). These counties employed 3,481 miners, managers, and upper-level staff (MSHA, 2012). As shown in Figure 1, only five counties accounted for nearly 75% of total state production: Saline County (30%), Williamson County (17%), Perry County (10%), Randolph County (10%), and Sangamon County (7%) (EIA, 2011b).

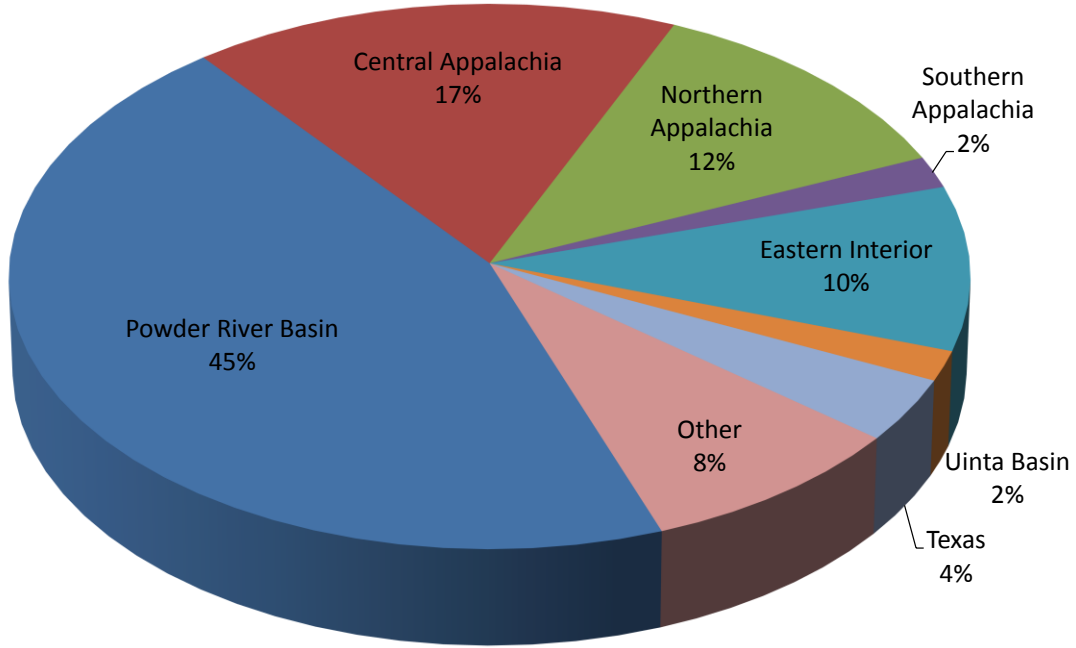
Figure 1: Illinois' coal-producing counties and percent of total production by county, 2010



Source: EIA (2011b). Note: The darkness of the shading indicates relative coal production, by volume.

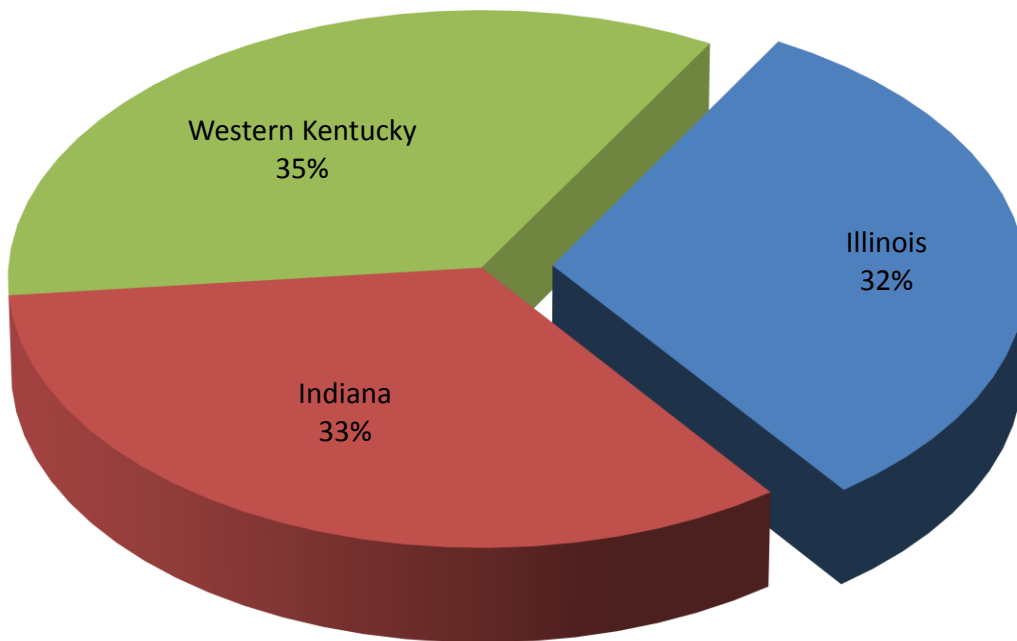
To put Illinois coal production into perspective, in 2010, the E. INT coal basin—which includes Illinois, Indiana and western Kentucky—accounted for 10% of total coal production in the United States (US) (see Figure 2). Of the 105.8 million tons of coal produced in the basin, Illinois contributed 33.5 million tons, or approximately 32% of the total (see Figure 3). Overall, Illinois accounted for approximately 3% of all coal produced in the US in 2010 (EIA, 2011c).

Figure 2: United States coal production by major basin, 2010



Source: EIA (2011c).

Figure 3: Eastern Interior basin coal production by state, 2010



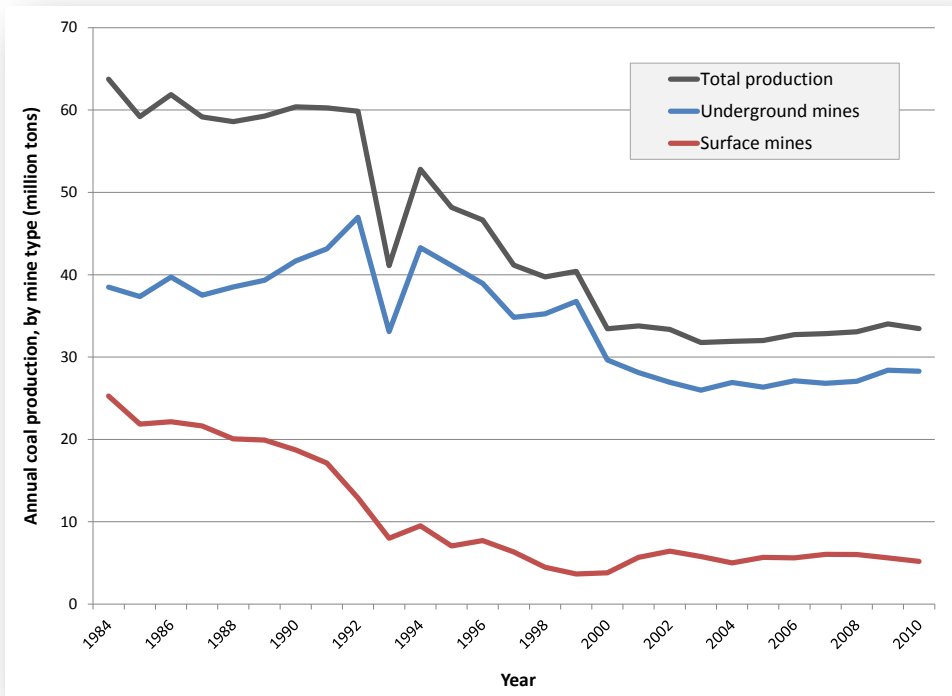
Source: EIA (2011c).

In terms of Illinois coal markets, in 2010 a total of 31.8 million tons of Illinois coal was shipped out-of-state either to domestic or foreign end-users. Domestic exports accounted for 89%, and involved shipments to 19 different states. The top consumers of Illinois coal (other than Illinois) included Indiana (5.2 million tons), Ohio (5.0 million tons), Tennessee (4.4 million tons), Kentucky (3.6 million tons), and Florida (3.0 million tons). These five states accounted for 75% of total domestic shipments of Illinois coal in 2010 (EIA, 2011d). In the same year, roughly 3.5 million tons were exported internationally (EIA, 2011e). In total, approximately 87% of all Illinois coal shipments (by volume) in 2010 were to out-of-state consumers, while only 4.8 million tons were shipped to consumers in Illinois. Interestingly, even though nearly 35 million tons of coal was produced in-state, Illinois imported 51.1 million tons from other states in 2010, mostly from Wyoming (97%) and primarily for electricity generation (95%).

1.2 Trends in coal production and employment

Illinois coal production least peaked in 1984 at nearly 64 million tons, representing 7.2% of total US production (Mellish, 2012). Since then, its share has fallen to 3.1%, and annual production has declined by nearly half (48%). The decline reflects a loss of 20.1 million tons of surface mine production and 10.2 million tons of underground mine production (see Figure 4). Most of the decline has occurred since 1990 and is largely the result of the passage of the Clean Air Act (CAA) amendments of 1990. These amendments imposed restrictions on sulfur dioxide emissions from 110 of the nation's coal-fired power plants, largely due to concerns about acid rain, while leaving it up to electric utilities as to how they achieved the required emission reductions. The two primary options were to install flue-gas scrubbing technology or to burn coal with less sulfur. Phase I of the amendments took effect in 1995, and by that year, 75% of utilities across the US had chosen the latter, least expensive option (USGS, 2009). This resulted in a strong shift in demand—as a percent of total US coal production—from high-sulfur coal to low-sulfur coal, strongly impacting demand for Illinois coal.

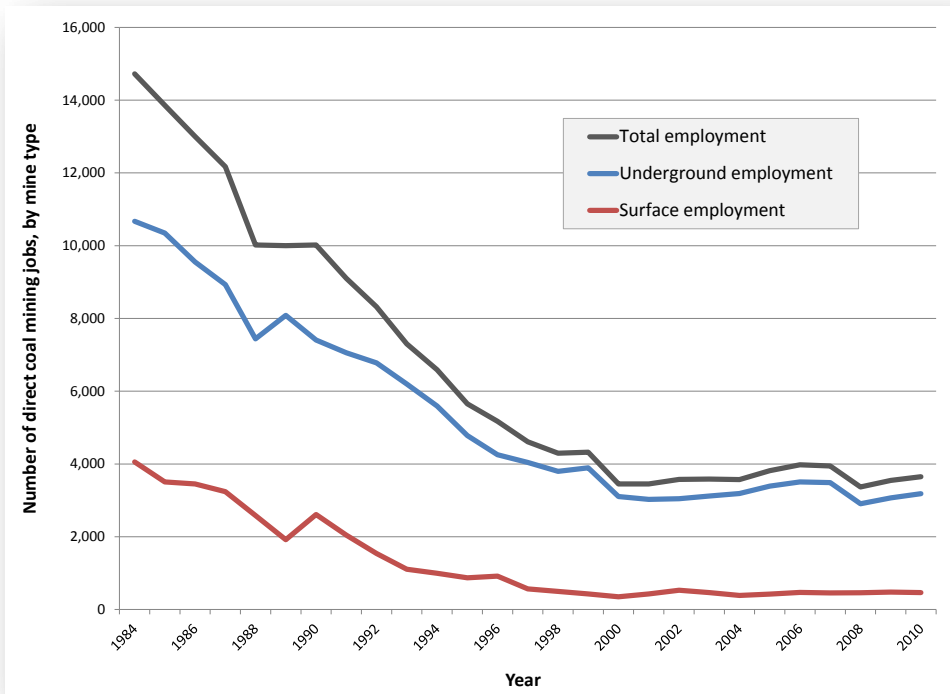
Figure 4: Coal production in Illinois, by mine type, 1984-2010



Source: Mellish (2012).

Due to the sharp decline in coal production, direct coal employment in Illinois fell by 75% between 1984 and 2010, representing a loss of over 10,000 mining-related jobs (see Figure 5). Declines in underground mining accounted for the majority of the drop in employment levels. Since reaching an all-time low for coal mining employment in 2001 at approximately 3,500 jobs, employment has rebounded slightly (MSHA, 2012).

Figure 5: Coal employment by mine type, 1984-2010



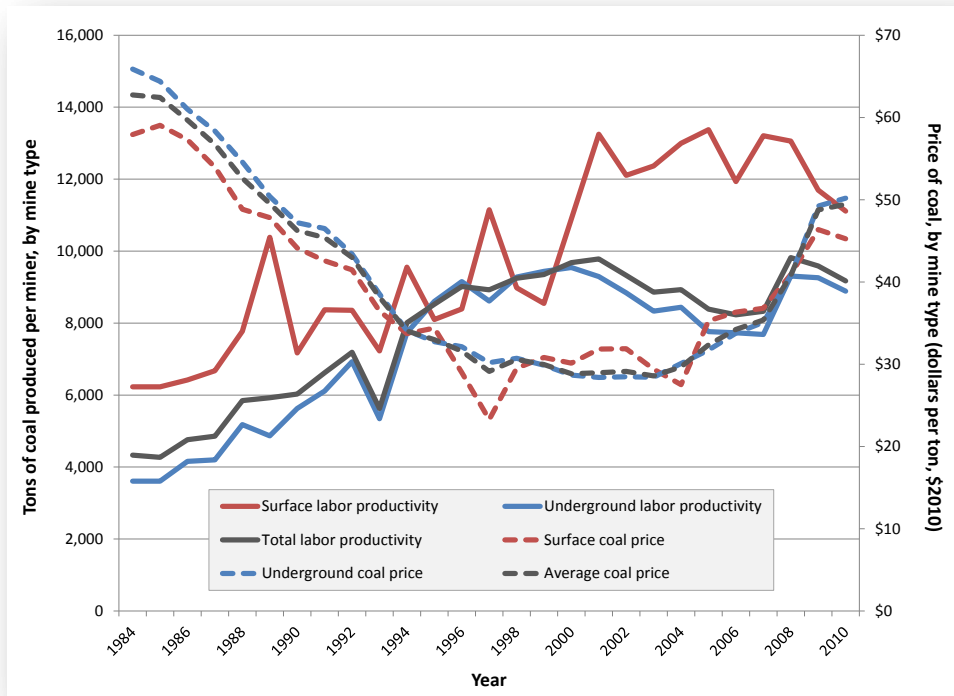
Source: MSHA (2012).

The steady decline in Illinois coal production since 1990 coincided with a sharp drop in both surface and underground coal prices through 2000 (see Figure 6) (Mellish, 2012). At the same time, labor productivity (expressed as the tons of coal produced per miner) increased for both mining types, peaking in 2001 (Mellish, 2012; MSHA, 2012). Combined with the decline in production, these trends suggest—as might be expected—that the more costly, less productive mines were shut down as demand shifted to sources of low-sulfur coal from 1990 to 2000.

From 2000 to 2007, despite virtually no change in total production and a small shift toward more productive surface mining, labor productivity declined by 14% while the real price of Illinois coal rose by 23%. The fact that the onset of the price increase closely corresponds with the beginning of the decline in labor productivity is significant because trends in labor productivity provide an indication of the accessibility and therefore the economic recoverability of the coal seams being mined (McIlmoil and Hansen, 2010).

Since 2007, even though production has changed very little, both productivity and prices have risen significantly, increasing by 10% and 40%, respectively, from 2007 to 2010 (see Figure 6). The data suggest that the increase in productivity is the result of a sharp increase in production from longwall mining, which is typically a more productive form of underground mining than continuous or conventional room-and-pillar mining (EIA, 1995; 2000). Overall, production from longwall mining increased by 3 million tons from 2007 to 2010, while production from continuous mining fell by 4 million tons (EIA, 2011f).

Figure 6: Labor productivity and average coal prices, by mine type, 1984-2010



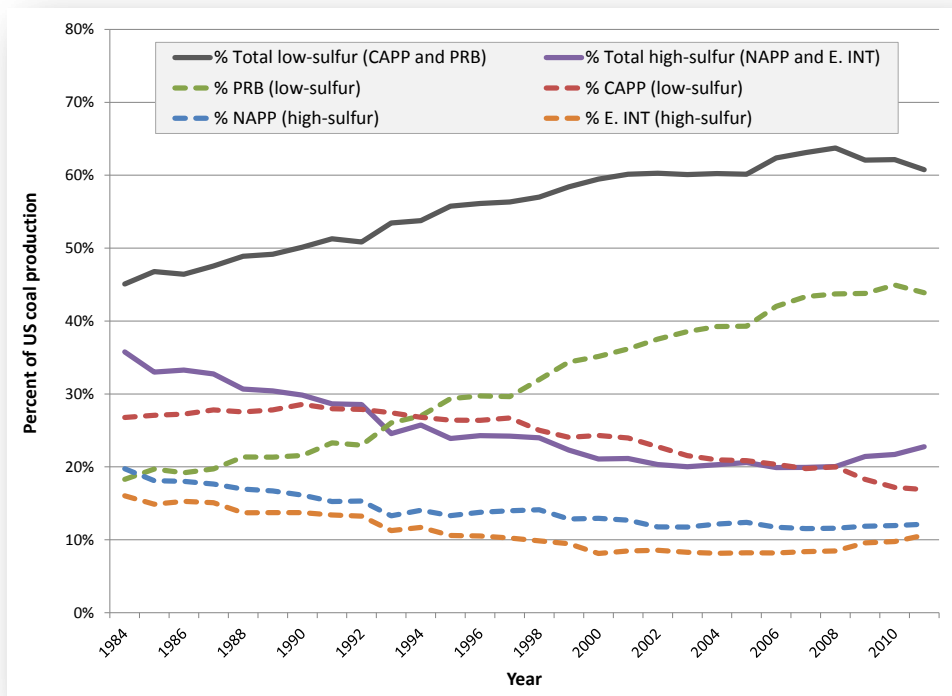
Source: Mellish (2012); MSHA (2012).

1.3 Projected increase in demand for Illinois coal

The overall increase in demand for low-sulfur coal from 1990 to 2008 was dominated by a sustained increase in demand for coal from the Powder River Basin. From 2008 to 2010, the US experienced an overall 6.5% drop in US coal production—amounting to a decline of 87.4 million tons—largely resulting from the economic recession and a decline in electricity demand. However, during this time there has been a trend toward increasing demand for high-sulfur coal. Over the three-year period, while production of low-sulfur coal fell by 73.1 million tons (10% overall), production of high-sulfur coal from Northern Appalachia fell by only 6.1 million tons—and actually increased from 2009 to 2010, while E. INT basin production increased by 6.5 million tons (Mellish, 2012). The end result was an overall 2% decline in demand for low-sulfur coal through 2010 relative to total US coal production as illustrated in Figure 7, and a 2% increase in demand for high-sulfur coal.

The transition to high-sulfur coal since 2008 predominantly reflects the ability of coal-fired power plants to capture a greater amount of their sulfur dioxide emissions, which has allowed electric utilities to purchase and burn the lowest-priced coal regardless of chemical content while continuing to meet limits on air pollution. This is the result of the passage of the 1990 CAA amendments described earlier, which, as the price of low-sulfur coal has continued to rise relative to high-sulfur coal, has led an even greater number of electric utilities to install equipment on their power plants that can capture and dispose of more pollutants. This will allow power plants to burn more high-sulfur coal in the future (USGS, 2009).

Figure 7: Production of low- and high-sulfur coal as a percent of US coal production, 1984-2010

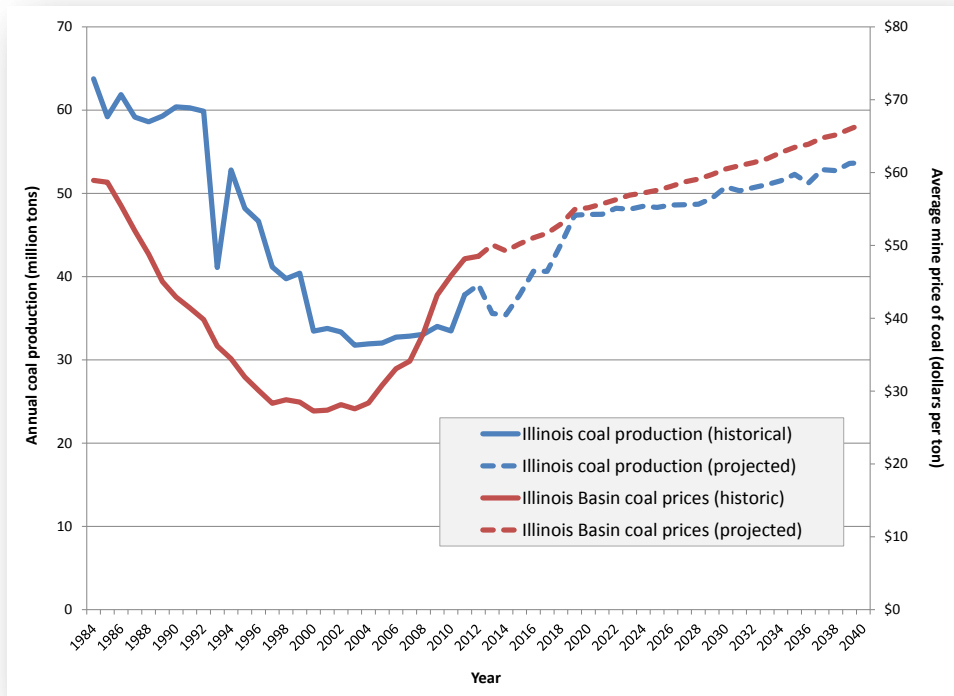


Source: Compiled from data provided by Mellish (2012). Note: The coal production represented in the chart accounted for approximately 85% of all US production in 2010. Acronyms are used to represent the different coal basins. These are as follows: US—United States, CAPP—Central Appalachia, PRB—Powder River Basin, NAPP—Northern Appalachia, E. INT—Eastern Interior.

In summary, coal production and employment has diminished substantially in Illinois since 1990, and recent trends in price and productivity suggest that the mining and use of Illinois coal in the future may be more expensive. EIA projects that E. INT coal prices will continue to rise, although less sharply than in recent years. Despite the rise in prices, demand for E. INT coal is expected to increase by over 40% through 2020 as demand shifts away from sources of low-sulfur coal (Central Appalachia and the Powder River Basin) toward sources of high-sulfur coal (EIA, 2012a). As shown in Figure 7, this trend already began in 2008. Given that approximately one-third of all E. INT production comes from Illinois, it is possible that total state production could increase by 40% as well, through 2020 (see Figure 8).

Despite the projected increase in production, demand for Illinois coal is not expected to recover quite to 1990 levels. Also, EIA projections are uncertain, particularly over the long-term, and changes in the price of Illinois coal, increasing demand for natural gas, new regulatory restrictions on coal-related pollutants, the strength of the US economy or a number of other factors could change the outlook for E. INT coal production.

Figure 8: Historical and projected coal production and price for Illinois coal, 1984-2040



Source: Mellish (2012); EIA (2012a). Note: Future projections for Illinois coal production were produced by multiplying the annual EIA projections for E. INT production by the percent of total E. INT production in 2010 that was produced in the State of Illinois (approximately 32%).

1.4 Focus and methodology

In this report, we examine the net impact of the coal industry on the Illinois state budget by compiling data on and estimating both the tax revenues and the expenditures attributable to the industry for Fiscal Year (FY) 2011 (July 1, 2010 to June 30, 2011).⁴ We rely heavily on official data sources, although in many cases it is necessary to generate our own estimates using what we determine to be the most appropriate methodology. For this report, we rely heavily on previous studies that addressed the same topic (Konty and Bailey, 2009; McIlmoil et al., 2010a and b, 2012a and b). However, where previous methodologies are not applicable or where the data are limited, we construct the best possible methodology for estimating revenues or expenditures with available resources.

In calculating estimates for the items considered in this report that require an independent estimate, there is an inherent degree of uncertainty. In such cases, we do not claim that our accounting of revenues and expenditures is precise; in fact, we round calculation-based estimates so as not to create a false impression of precision. While these estimates certainly can and should be refined, they still provide an important starting place to examine the industry's costs and benefits.

⁴ While this report is being released during FY2013, it focuses on the impact of the coal industry on the Illinois state budget for FY2011. This is a result of the unavailability of certain 2011 and 2012 data that are essential for various sections of the report. Analyzing a more recent FY was not possible without making numerous additional assumptions based on recent trends.

In general, budget appropriations determine which programs, initiatives, and projects will receive state funding. More specifically, legislators distribute funds from the Illinois state budget or provide tax and other subsidies based on politically and economically determined priorities, thereby impacting economic development in the state, availability of educational opportunities, distribution and quality of infrastructure, and development of energy resources. As state revenues increase, more funds are available for supporting a wider variety of priorities; conversely, as revenues decline, funding for certain projects and services may be eliminated. Given these considerations, it is up to legislators to determine Illinois' true needs and priorities and ensure that revenues are sufficient for maintaining funding for vital social, environmental, and economic programs.

The need to ensure the availability of funds for vital programs is an important consideration when examining the net impact of a particular industry and when determining whether support for the industry results in a net positive or negative impact on the state budget. In examining the net impact of the coal industry on the Illinois state budget, we focus primarily on revenues and expenditures that are part of the General Funds (GF) and Highway Funds (HF). We exclude non-discretionary funds that are earmarked for a specific purpose and only consider those that are applicable to the coal industry and its direct and indirect employees. We choose to focus on these two funds because they include revenues and appropriations from general state tax sources, while generally excluding revenues and appropriations from dedicated taxes and fees, federal revenues, and all other departmental revenue streams. This limitation allows us to accurately estimate the net impact of coal by excluding flows of money that (1) do not originate from the collection of general taxes applicable to all industries or citizens operating or living in Illinois and (2) are not expended on pre-determined priorities. The report excludes an analysis of the impact of the coal industry on county budgets; however, an initial accounting of county-level coal-related revenues is provided in Appendix A.

1.5 Structure of the report and initial findings

The body of this report is divided into five main chapters, each focused on a separate type of revenue or expenditure. These include:

- direct revenues generated by the coal industry from taxes paid or remitted;
- on-budget expenditures supporting the coal industry, representing expenditures by state agencies and institutions that support and/or regulate the coal industry;
- tax incentives and grant programs that subsidize coal-related activity;
- revenues and expenditures related to direct coal industry employment; and
- revenues and expenditures related to employment indirectly supported by the coal industry.

In general, we find that the relative importance of the coal industry to the state budget and economy is not substantial: The industry directly accounted for less than 0.01% of state-generated revenues and less than 0.1% of total employment in FY2011. **Further, we find that the industry imposed a net cost on the Illinois state budget of approximately \$19.8 million.**

This report aims to help develop a clear understanding of the full range of fiscal costs and benefits related to coal industry activity in Illinois in order to help inform future policy related to energy and economic development for Illinois. However, it is important to note that the impacts of coal extend beyond traditional accountings of revenues and expenditures. While the focus of this report is on the industry's net impact on the state budget for a single year, legacy costs resulting from past and future coal industry activity must also be considered. Understanding these costs is important because of their potential impact on the availability of funds for various beneficial priorities, and because of their future impact on local and state economies, the environment, and the health of Illinois residents.

2. DIRECT COAL INDUSTRY: REVENUES

The coal industry generates revenue for the Illinois state budget through the payment of taxes that contribute to the GF. Such taxes include the corporate income tax and remittances of state sales and use taxes. Coal companies also contribute to other state funds through the payment of fees and licenses, which, in addition to the GF, are used for funding individual agency budgets. While GF revenue is used for a variety of services—education, public safety, debt service—revenue that goes into other state funds is dedicated for a specific expenditure. For example, the Coal Mining Regulatory Fund is a special state fund in which the revenue sources are fees and civil penalties paid by the coal industry that are mandated by the Surface-Mined Land Conservation and Reclamation Act and the Surface Coal Mining Land Conservation and Reclamation Act.⁵ That revenue is then used solely for expenditures relating to the enforcement of coal mining regulations. In contrast, GF spending is at the discretion of the Governor and General Assembly. Since the General Assembly may only make discretionary appropriations from the GF, revenues for other non-GF funds are excluded from Section 1.

In FY2011, total GF revenues from state taxes amounted to \$22.9 billion. The largest sources of revenue for the GF include the individual income tax, the corporate income tax, and sales and use taxes. As reported by the Governor’s Office of Management and Budget (GOMB), these three sources combined accounted for approximately 86.9% of GF state-sourced revenue in FY2011 (not including lottery and other transfers) (GOMB, 2012a). In this section we only consider the latter two taxes since the individual income tax does not apply to coal companies.

In total, we estimate that coal-related activities contributed approximately \$2.1 million to the GF in FY2011, accounting for approximately 0.02% of total revenue from the corporate income and sales and use taxes (see Table 1). The total consists of approximately \$1.1 million in corporate income tax revenue and \$1.0 million from sales and use tax remittances.⁶

Table 1: Illinois General Funds revenues attributable to coal-related activities, FY2011

Tax item	Total revenue (million \$)	Direct coal (million \$)	Percent of coal revenues	Percent of tax revenue
Corporate income tax (net of refunds)	\$1,851.0	\$1.1	52%	0.06%
State sales and use tax remittances	\$6,833.0	\$1.0	48%	0.01%
Total	\$8,684.0	\$2.1	100%	0.02%

Source: GOMB (2012a); Illinois Department of Revenue (IDOR) (2011).⁷

2.1 Corporate income tax

The Illinois corporate income tax is imposed on a corporation’s net income earned or received within the state. The tax is collected by the Illinois Department of Revenue (IDOR) and deposited into the GF.⁸ A portion of the revenue is statutorily transferred to the Local Government Distributive Fund.⁹ However, the majority of corporate income tax revenue is not dedicated to a specific spending purpose, and spending is instead determined by appropriation legislation passed by the General Assembly, which is in turn subject to the Governor’s veto power.

⁵ 225 ILCS 715; 720

⁶ Tax “remittances” are transfers to the state of taxes paid by a purchaser and collected by a dealer. In the case of coal, coal companies sell products or services to a purchaser, collect the sales tax from the purchaser, and “remit” the tax revenues to the state. Therefore, the remittances do not reflect taxes paid by coal companies; such data is unavailable. The sales tax remittances are included in this report since they remain attributable to the coal industry.

⁷ Total sales tax revenue is from GOMB (2012a). The reported value (\$6.8 billion) differs from the total state sales and use tax reported by IDOR (2011) (\$6.6 billion). The figures differ for two reasons: 1) Cash flow—the IDOR report is capturing disbursements while GOMB reports collections; and 2) the GOMB figure includes amnesty payments while the IDOR figure does not (IDOR, 2012a). However, in order to place coal sales and use tax remittances in context of the GF’s total FY2011 revenue, the sales tax figure reported by GOMB is used.

⁸ 35 ILCS 5/901(a)

⁹ 35 ILCS 5/901(b)

Illinois has a flat income tax rate structure, meaning that all taxpayers pay the same rate regardless of income level. On January 1, 2011, the corporate income tax rate increased from 4.8% to 7%. As this increase occurred in the middle of the 2011 fiscal year, corporate income tax revenue collected during our period of study represents a blended rate. In FY2011, total corporate income tax revenue amounted to approximately \$1.9 billion, accounting for 8.1% of total state tax GF revenue (GOMB, 2012a).

To estimate the tax revenue directly attributable to the Illinois coal industry, we assume that the industry share of total private industry Gross Domestic Product (GDP) in Illinois serves as a proxy for coal's share of corporate income tax revenues. Using data from the federal Energy Information Administration (EIA) and United States Geological Survey (USGS), we first estimate the coal industry share of total gross production value for Illinois' mining industries in 2010, which includes coal, natural gas, oil, and non-fuel mineral mining/extraction.¹⁰ As shown in Table 2, the coal industry accounted for 51% of total gross production value for the mining industries.

Table 2: Estimated production value for Illinois mining industries, 2010

	Production	Unit	Unit price	Gross production value (million \$)	Percent total
Coal	33,464,665	short tons	\$49.46	\$1,655	51%
Non-fuel minerals	n/a	n/a	n/a	\$910	28%
Natural gas	1,203,000	thousand cubic feet	\$5.52	\$7	0%
Oil	9,067,000	barrels	\$73.18	\$664	21%
Total				\$3,235	100%

Source(s): Production and price for coal: Mellish (2012); production and price for natural gas and oil: EIA (2012b through e); total production value for non-fuel minerals: USGS (2011). Note: Totals may not equal the sum of individual values due to rounding. Natural gas prices reflect the "city gate price" for Illinois reported by EIA, instead of the wellhead price. Wellhead prices would be more appropriate for our calculations since they more closely reflect the raw price of the natural gas; however, wellhead prices for Illinois are not available.

Next, we apply coal's percent of total mining value to total reported GDP for all "Mining" industries as reported by the Bureau of Economic Analysis (BEA) for 2010 to estimate total coal industry GDP in 2010, including support activities for coal mining.¹¹ This results in a coal industry GDP of approximately \$970.5 million, which amounts to approximately 0.17% of total private industry GDP in Illinois for 2010 (see Table 3).

Table 3: Estimate of the coal industry share of private industry GDP in Illinois, 2010

Item	Value (million \$/percent)
Total "Mining" GDP	\$1,897
Percent coal	51%
Coal industry GDP (including support activities)	\$971
Total Illinois private industry GDP	\$581,049
Percent coal	0.17%

Sources: Values for total private industry GDP, "Mining" GDP and GDP for individual mining-related sectors from BEA (2012a).

To estimate the total corporate income tax revenue the state could have received from the coal industry in FY2011, we apply the coal industry share of total private industry GDP—representing taxable activity—to total corporate income tax revenues. This results in a coal-related revenue of approximately \$3.1 million. However, one final adjustment is required.

¹⁰ We calculate a gross production value for calendar year 2010 instead of FY2011 because monthly production and price values for each of the four extractive industries evaluated—from which a FY2011 value could be calculated—are not available. An alternative would be to average 2010 and 2011 values and represent the average as an approximation of FY2011 production value. However, it is safer to assume that calendar year values more closely approximate a company's tax year, during which taxable activity is conducted, and from which tax revenues for FY2011 are generated.

¹¹ We follow the same logic for GDP as for gross production value. See footnote 7.

Of the 17 companies operating coal mines in Illinois in 2010, only three are required to pay the corporate income tax (DCEO, 2012a). The remaining 14 companies are structured as Limited Liability Companies (LLCs), which do not pay that tax. As a result, only 34% of all coal produced in 2010 was produced by companies with corporate income tax liability (DCEO, 2012a). Therefore, to generate a final estimate of coal’s contribution to corporate income tax revenues, we multiply the total potential coal contribution of \$3.1 million by 34%.

Using this method, we estimate that coal mining and support activities generated approximately \$1.1 million in corporate income tax revenues for the GF in FY2011.

2.2 Sales and use tax

The Illinois state sales and use tax is a tax on sales of tangible personal property for use or consumption, and it represents a combination of “occupation” taxes imposed on sellers’ receipts and “use” taxes imposed on amounts paid by purchasers (IDOR, 2012b). The total sales and use tax rate in Illinois is 6.25%; however, only 5% is allocated to the state government, and the remaining 1.25% is allocated to local governments. Local governments can also levy additional sales taxes above the 1.25% rate. The sales and use tax is the second largest source of revenue for the GF. In FY2011, sales and use tax revenues amounted to approximately \$6.8 billion, accounting for 29.8% of total GF state-sourced revenue (not including transfers) (GOMB, 2012a).

In FY2011, coal company purchases were not exempt from sales and use taxes. However, IDOR does not collect data on those taxes paid by industry. As such, data to estimate sales and use taxes paid by the coal industry is not available. Instead, IDOR collects information on taxes collected by the coal industry on the purchase of products and services from coal mining and related service companies. Table 4 provides an overview of the sales and use taxes remitted to IDOR by the coal industry in FY2011.

In total, coal-related companies remitted approximately \$1.0 million in sales and use tax revenues to the state in FY2011.

Table 4: Coal industry sales and use tax remittances, FY2011

SIC Code	Description	State sales tax	State use tax	Totals
1221	Bituminous coal and lignite-surface mining	(\$373,460)	\$76,790	(\$296,670)
1222	Bituminous coal-underground mining	\$891,250	\$135,910	\$1,027,160
1241	Coal mining services	(\$381,620)	\$515,360	\$133,740
5052	Coal and other minerals and ores	\$30,000	\$120,000	\$150,000
Totals		\$166,170	\$848,060	\$1,014,230

Source: IDOR (2011). Note: Revenues for Standard Industrial Classification (SIC) code 2999, “Petroleum and coal products,” were excluded since coal-related revenues amount to less than \$5,000. Revenues for SIC code 5052, “Coal and other minerals and ores,” were adjusted to estimate a coal-only revenue using the percent of “Mining” activity attributable to coal (51%) (see section 2.1). Estimated values for SIC 5052 are rounded to the nearest \$10,000. Negative values for SIC 1221 and 1241 indicate a prior year adjustment, meaning that a vendor overpaid in a previous year, and was refunded in the following FY (IDOR, 2012c).

3. DIRECT COAL INDUSTRY: ON-BUDGET EXPENDITURES

The Illinois state budget includes expenditures that exist only because of the state’s coal industry. These expenditures include a wide range of activities and include, for example, environmental protection and oversight of mining activities. Some coal-related expenditures are paid for using state GF revenues, while others are paid for using federal funds, special funds, or other funding sources. In this section, we focus on expenditures from the GF over which the Governor and General Assembly have discretionary authority.¹²

Teasing out the precise amount of state coal-related expenditures from the GF would be possible only with a detailed breakdown of the programs funded by each state agency and the revenue sources for each program. Such a breakdown is not available. Therefore, we can only estimate coal-related expenditures using available information. While this method is rough for several agencies, it is a valuable first step toward including not just revenues, but expenditures as well when discussing the impact of the coal industry in Illinois. Our estimates can—and should—be refined in future analyses.

In some cases, units of state government exist only because the coal industry exists; in these cases, on-budget expenditures can be calculated relatively easily. In other cases, however, a unit of government might spend only part of its expenditures on the coal industry, but agency expenditure data is not organized in such a way as to make it easy to separate out this portion, nor do departmental accounts provide industry-specific expenditures. Therefore, while our estimates are based on actual FY2011 expenditure data, in some cases we must use available data and information to estimate a percentage of each unit’s GF expenditures that are attributable to coal, and apply that percentage to produce a FY2011 coal-related expenditure.

In FY2011, the enacted GF budget totaled \$25.7 billion, with an actual expenditure of \$25.2 billion (GOMB, 2012a).¹³ Only two agencies have calculable coal-related GF expenditures: the Department of Natural Resources and the Department of Revenue. **As shown in Table 5, we estimate that the total on-budget expenditure for coal-related activities in FY2011 was \$1.4 million, which accounts for less than 0.01% of total GF expenditures.**

Table 5: On-budget coal-related expenditures by agency, FY2011

Department/program	General Funds expenditure for coal
<u>Department of Natural Resources</u>	
Abandoned mined lands reclamation	\$191,070
Mine safety and training	\$979,790
Department total	\$1,170,860
<u>Department of Revenue</u>	
Department total	\$230,000
Total on-budget coal expenditure	\$1,400,860

Note: Values are rounded to the nearest \$10,000 when estimated.

¹² The GF comprises the bulk of the state operating budget. Most of the GF budget represents discretionary spending, which is subject to appropriations by the General Assembly and the Governor’s veto power. Prior to the spring legislative session, the Governor releases the budget for the upcoming FY that begins on July 1. Lawmakers subsequently pass appropriation bills, which together make up the enacted budget. The GF is comprised of the General Revenue Fund, the Common School Fund, the Education Assistance Fund, and the General Revenue-Common School Special Account Fund. This report discusses appropriations and expenditures only in terms of the GF and does not delineate between the specific funds that make up the GF.

¹³ This expenditure excludes hard costs (pension contributions, debt service, and statutory transfers), which are also paid using general revenue sources—like the state income tax and sales tax.

3.1 Department of Natural Resources

The Illinois Department of Natural Resources (IDNR) is in charge of protecting all of Illinois’ natural, recreational, and cultural resources (GOMB, 2012a). IDNR has several activities that are either in part or wholly related to the coal mining industry. The office within IDNR that is responsible for coal-related support, regulation, and oversight is the Office of Mines and Minerals. There are four divisions within this office: Land Reclamation, Oil and Gas, Mine Safety and Training, and Abandoned Mined Lands.¹⁴ The only division unrelated to the coal industry is the Oil and Gas division.

3.1.1 Abandoned Mined Lands and Reclamation

The Abandoned Mined Lands Division is in charge of reclaiming coal mines that were abandoned prior to the implementation of federal coal mine reclamation standards in 1977 (IDNR, 2012a). The Land Reclamation Division functions as Illinois’ regulatory authority for the federal Surface Mining Control and Reclamation Act, and is in charge of issuing permits for all coal mining operations in the state (IDNR, 2012b). Together these two divisions administer the Abandoned Mined Lands and Reclamation program. **As such, the entire FY2011 GF expenditure of \$191,070 for the Abandoned Mined Lands and Reclamation program is attributable to the coal industry.**

3.1.2 Mine Safety and Training

The Mine Safety and Training division is in charge of overseeing the health and safety of Illinois coal mines and miners. In addition, since 2004, the division has also been in charge of regulating and permitting the use of blasting and explosives (IDNR, 2012c). **The entire FY2011 GF expenditure of \$979,790 for the Mine Permitting and Safety program is attributable to the coal industry.**

Table 6 summarizes IDNR’s coal-related expenditures by program and funding source for FY2011, and shows that the majority of the coal-related program funding comes from non-GF sources. While this report focuses specifically on the coal industry’s impact on the GF, the non-GF, on-budget expenditures are highlighted to provide a comprehensive overview of the coal industry’s impact on the overall state budget. **For FY2011, GF expenditures for coal-related programs amounted to approximately \$1.2 million, comprising 2.2% of IDNR’s total GF expenditure (\$53.8 million) and 9.8% of IDNR’s total coal-related expenditures (GOMB, 2012b).**

Table 6: Department of Natural Resources coal-related expenditures, FY2011

Department Program	General Funds	Other Funds	Federal Funds	Total
Abandoned mined lands reclamation	\$191,070	\$220,880	\$3,216,630	\$3,628,580
Mine safety and training	\$979,790	\$4,529,170	\$2,821,040	\$8,330,000
Total	\$1,170,860	\$4,750,040	\$6,037,680	\$11,958,580

Source: GOMB (2012b).

IDNR has two other programs that may relate to the coal industry. These include the Dam Management and Flood Protection program¹⁵ and the Endangered Species Protection program.¹⁶ However, there is not enough information available to estimate what portion of expenditures for these programs are attributable to the coal industry.

¹⁴ While Land Reclamation and Abandoned Mine Lands are distinct divisions within IDNR’s Office of Mines and Minerals, appropriations and expenditures are reported in the Governor’s budget as programs rather than office divisions. This report uses appropriations and expenditures as reported by GOMB (2012a).

¹⁵ As potentially related to coal mining activities, the Office of Water Resources “administers regulatory programs over construction in the floodways of rivers, lakes, and streams...construction and operation of dams...(and) construction in public bodies of water” (IDNR, 2012c).

¹⁶ The Office of Realty and Environmental Planning administers IDNR’s endangered species consultation program. State agencies and local units of government are required to consult with IDNR prior to undertaking any activities that will change the existing environment. Coal mining companies may choose to utilize the consultation program but they are not required to do so. However, permitting agencies are required to consult (IDNR, 2012d).

3.2 Illinois Department of Revenue

IDOR is responsible for collecting taxes for both the state and local governments in Illinois (GOMB, 2012). As such, IDOR is responsible for collecting all taxes and fees remitted and paid by the coal industry. In FY2011, the General Assembly appropriated \$139.1 million to IDOR for tax administration, and actual expenditures totaled \$133.6 million (GOMB, 2012b).

Using BEA data for GDP by industry in 2010, the latest data available, we estimate that approximately 0.17% of Illinois' total non-governmental GDP is attributable to the coal mining industry (see Section 2.1).¹⁷ We use this percentage as a proxy for IDOR's workload related to the coal industry, and apply it to IDOR's total GF expenditure for tax administration. **Using this method, we estimate IDOR's GF expenditure attributable to the coal industry was \$230,000 for FY2011.**

3.3 Department of Commerce and Economic Opportunity

The Department of Commerce and Economic Opportunity (DCEO) is in charge of enhancing Illinois' economic well-being (GOMB, 2012a). As such, DCEO is involved in a wide range of activities, which include overseeing several programs that provide grants or tax expenditures to the coal mining and coal-related industries. Within DCEO, the Office of Coal Development (OCD) administers several grant programs that are financed by ratepayer fees (see Section 4). The FY2011 expenditure for programs administered by OCD was \$16.0 million (GOMB, 2012b); however, the Office's funding comes from the Coal Technology and Development Assistance Fund (CTDAF) and the Coal Development Fund it is not considered a direct, on-budget expenditure for the purposes of this report. Despite that, part of the CTDAF revenue comes from sources that do have an impact on the GF. This impact and the CTDAF grant programs are described in detail in Section 4.

The Coal Development Board oversees OCD activity. The Board's duties include authorizing CTDAF and Coal Development Fund expenditures.¹⁸ The Board is to be made up of 17 members: eight public figures appointed by the Governor;¹⁹ the President of the University of Illinois or designee; four legislators appointed by the Speaker of the House, House Minority Leader, Senate President, and Senate President Leader; the DCEO Director; the DCEO Deputy Director of Business Development; the IDNR Director or designee; and the IDNR Director of the Office of Mines and Minerals.²⁰ However, in 2009, legislation was passed that changed the state statute regarding the Coal Development Board from requiring that, "There *shall* be established as an advisory board to the Department, the Illinois Coal Development Board" to "There *may* be established as an advisory board to the Department, the Illinois Coal Development Board" (emphases added).²¹ The legislation also changed the requirement for the Board to meet at least annually to making the annual meetings an option. The Board does not receive any funding from the GF. Given that the existence of the Board is discretionary, it is unclear whether it existed in FY2011 (or today). It is also unclear how the statutory change to the Coal Development Board has affected OCD's process for awarding grants.

¹⁷ This calculation was performed using state GDP for calendar year 2010. The BEA did not have GDP by industry for Illinois for 2011, and as such, a fiscal year estimate was not calculable.

¹⁸ 20 ILCS 1105/8(b)(9) and (13)

¹⁹ State statute (20 ILCS 1105/8) says that the eight persons are appointed by the Governor "with the advice and consent of the Senate, including representatives of Illinois industries that are involved in the extraction, utilization or transportation of Illinois coal, persons representing financial or banking interests in the State, and persons experienced in international business and economic development. These members shall be chosen from each person's recognized ability and experience in their designated field."

²⁰ 20 ILCS 1105/8(a)

²¹ P.A. 96-739, effective January 1, 2010.

3.4 Academic institutions

In FY2011, GF appropriations for higher education in Illinois totaled approximately \$2.2 billion, with a total expenditure of approximately \$2.1 billion (GOMB, 2012b).²² This section provides an overview of the higher education institutions in Illinois that receive GF appropriations and have significant academic and research activities related to coal mining, technology, and safety. The lack of detailed program expenditure information for public universities and community colleges precludes our ability to estimate the impact of such expenditures on the overall GF budget. However, Appendix A shows OCD coal grants that have been awarded to academic institutions for FY2007-FY2012. It is important to note that funding for these grants do not come from the GF, and as such are not on-budget expenditures.

3.4.1 *University of Illinois at Urbana-Champaign*

The University of Illinois at Urbana-Champaign does not have any coal-specific programs or research centers. However, housed within the University's Prairie Research Institute is the Illinois State Geological Survey (ISGS). ISGS's stated mission is to "provide the citizens and institutions of Illinois with earth science research and information that are accurate, objective, and relevant to our State's environmental quality, economic prosperity, and public safety" (ISGS, 2012). In carrying out this mission, the Institute has a number of different research areas, one of which is coal. The ISGS has a wide range of coal-related activities that include providing basic information about Illinois coal to researching carbon sequestration. In addition to its location on the University of Illinois' campus, the ISGS is also a tenant at the Illinois Coal Development Park, which is part of Southern Illinois University (ISGS, 2012).

In FY2011, the Prairie Research Institute's total GF expenditure was \$15.6 million (Prairie Research Institute, 2011). The majority of the Institute's funding, however, comes from non-GF, federal, local, and private sources. Data on what portion of the Institute's total GF expenditure is specific to the ISGS and coal-related activities is not readily available. ISGS does receive funding through the CTDAF. Details of CTDAF grants to ISGS are provided in Appendix A.

3.4.2 *Southern Illinois University-Carbondale*

Southern Illinois University (SIU) at Carbondale offers numerous academic programs associated with coal, conducts academic research on coal-related topics through the Advanced Energy Institute and Coal Research Center, and houses the Clean Coal Review Board. The three topic areas associated with coal include coal extraction, coal utilization, and carbon management. The first two are covered by a total of 10 academic departments, three of which are mining-specific. Carbon management is covered by 12 departments, three of which are mining-specific (SIU, 2012b). Research through these programs is conducted through both the Advanced Energy Institute and the Coal Research Center.

The Coal Research Center at SIU was created in 1974 to "stimulate and coordinate efforts to improve the efficiency of coal mining and coal" (SIU, 2012b). The Center is in charge of a wide range of services and activities, including supporting clean coal research, supporting the Illinois Clean Coal Review Board, and operating the Coal Development Park.

The Clean Coal Review Board funds projects and provides technical oversight for a \$25 million grant program funded by the electric utility, Commonwealth Edison. As such, it does not impact the GF budget, and no new projects have been funded since 2009. Table 7 provides examples of projects the Board has funded.

²² These expenditures exclude pension contributions.

Table 7: Projects funded by the Clean Coal Review Board

Project Name	Developer	Contract years	Description
Prairie State Energy Campus	Prairie State Generating Company, LLC	2006-2012	This grant is for “supporting the costs associated with the purchase and installation of wet electrostatic precipitators” for a 1,600-megawatt power plant in Washington County.
Southern Illinois coal to synthetic natural gas project	Power Holdings of Illinois, LLC	2005-2006	Examined “the technological and economic feasibility of developing a coal to synthetic gas facility in Jefferson County.”
Ashworth combustor retrofit	ClearStack Combustion Corporation	2000-2001; 2004-2005	Examined the commercial viability of ClearStack Combustion Corporation’s Ashworth Combustor™, a combustion technique.
Central processing and coal handling	Arclar Company	2001-2002	Supported advanced coal preparation circuits in the Willow Lake Central Preparation Plant at Arclar’s Willow Lake Mine complex.

Source: SIU (2012c).

The Coal Development Park, located in Carterville, Illinois, is a research and development complex. The Park houses SIU Automotive Technology, the Illinois Mining Institute, CoalTec Energy USA, the Illinois Clean Coal Institute, and ISGS (SIU, 2012d).

SIU’s total GF expenditure in FY2011 was \$220.8 million (GOMB, 2012b). Of this, \$104.1 million was expended for instructional programs, \$14.1 million for organized research, and \$8.7 million for public service programs (Illinois Board of Higher Education, 2011). These three functions are the most likely to be coal-related to some extent. However, additional detailed information is not available for generating an estimate of SIU’s coal-related expenditures. As with the ISGS at the University of Illinois at Urbana-Champaign, SIU has received a significant amount of funding through the CTDAF. Details of CTDAF grants to SIU are provided in Appendix A.

3.4.3 *Community colleges*

In FY2011, the total GF appropriation to the Illinois Community College Board was \$358.4 million, and the total expenditure was \$357.6 million (GOMB, 2012b). In all, four community colleges offer or house programs and/or degrees specifically related to coal. These include Illinois Eastern Community Colleges (IECC), Southeastern Illinois College, Rend Lake College, and Richland Community College. It is possible that each of these colleges expends GF monies to administer coal-related programs. However, lacking additional information, we cannot estimate coal-related GF expenditures for community colleges. Additionally, other than Southeastern Illinois College, the community colleges described in this section have all received CTDAF funds (see Appendix A).

Illinois Eastern Community Colleges and Southeastern Illinois College

IECC is located in southeastern Illinois and houses four college campuses. It offers several different programs specifically for coal-related jobs. For instance, the technical degree in Coal Mining Technology is a cooperative program through both IECC and Southeastern Illinois College. The two-year degree in Coal Mining Technology can also be applied to SIU’s Industrial Technology program (Southeastern Illinois College, 2012). Southeastern Illinois College also offers a coal mining maintenance technical certification. Table 8 summarizes IECC’s coal-related programs and their corresponding credentials.

Table 8: Coal-related programs offered by Illinois Eastern Community Colleges and Southern Illinois College

Name	Certification/degree
Coal Mining Technology	Technical Degree
Coal Mining Technology	Technical Certification
Coal Mining Maintenance I	Technical Certification
Coal Mining Maintenance II	Technical Certification
Coal Mining Technology Production Management	Technical Certification

Source: Southern Illinois College (2012).

Rend Lake College

Rend Lake College, located in Ina, Illinois, offers over 100 different degree and certification programs. Among these are several different coal-specific degrees and certifications. These include a technical degree in mining technology and occupational certifications in advanced mining, mine supervision, mine electricity, mine mechanics, and mine operations (Rend Lake College, 2012). Details on CTDAF grants to Rend Lake College are provided in Appendix A.

Richland Community College

Located in Richland, Illinois, Richland Community College offers multiple program and degree options, many of which focus on education, workforce training, business, and technology, among other program areas. The college does not have any coal-specific programs. However, it did receive one CTDAF grant “to support Illinois’ coal competitiveness by increasing elementary and secondary student and teacher awareness of technology and careers” (DCEO, 2012b).

4. TAX INCENTIVES AND GRANT PROGRAMS SUPPORTING THE COAL INDUSTRY

4.1 Overview

This section describes and analyzes tax incentives and grant programs available in Illinois for supporting coal-related companies and projects. The tax incentives supporting the coal industry and coal-fired electricity generation are part of broader programs intended to promote economic development and job creation. As for grant programs, there are multiple programs available through DCEO and IDOT that either directly or indirectly support coal-related projects. **In total, tax incentives supporting coal-related companies and projects cost the state budget approximately \$12.6 million in FY2011 (see Table 9).**

Table 9: Summary of the cost of tax incentives and grants supporting coal in FY2011

Expenditure group/item	Cost to General Funds (in million \$)
Tax incentives	< \$0.1
Statutory transfer to Coal Technology and Development Assistance Fund	\$12.5
Total	\$12.6

4.2 Tax incentives available to the coal industry

The State of Illinois specifically defines a tax incentive as “any exemption, exclusion, deduction, allowance, credit, preferential tax rate, abatement or other device that reduces the amount of tax revenue that would otherwise accrue to the State” (State of Illinois Comptroller, 2012a, p. 1). Tax incentives, which may also be referred to as tax subsidies or expenditures, are used to support a certain sector of the economy, an industry, or an activity, thereby reflecting policy priorities. While traditional accountings of state budgetary expenditures do not directly account for subsidies, they are explicitly recognized as a cost to the State. In total, tax incentives cost the State an estimated \$6.8 billion in lost revenue for FY2011; of this, approximately \$1.6 billion benefited businesses (State of Illinois Comptroller, 2012a). This section describes off-budget tax incentives supporting coal in Illinois and estimates the cost of the actual incentives benefiting coal for FY2011.

In Phase I, we identified the two most prominent state tax incentive programs potentially benefitting the coal industry as the Enterprise Zone program and the High Impact Business (HIB) program. No other tax incentives were found in Phase I that financially supported the mining or combustion of Illinois coal in FY2011. However, incentives were identified during the Phase II research that are or were previously available for supporting coal and coal-related projects. Even though these programs did not benefit the coal industry in FY2011, we discuss them briefly in this section.

During the research conducted for Phase II, we found that despite the fact that coal companies were eligible for the HIB program, no coal companies or coal-generating facilities had obtained HIB designation since the onset of the program. Therefore, while the HIB program and HIB-related incentives are available to coal-related projects, these incentives did not benefit the coal industry in FY2011 and are excluded from this report.

As a result of research conducted for Phase II, we found that only one of the Enterprise Zone tax incentives previously described during Phase I actually benefitted a coal-related company in FY2011. The value of the incentive amounted to \$35,000. **Therefore, we report that tax incentives supporting coal-related companies and projects amounted to a cost to the GF of only \$35,000 in FY2011.**

4.2.1 Expired tax incentives

For Phase II, we found three tax incentives previously available for incentivizing the mining and use of Illinois coal for electric power generation and pollution control. These include the coal machinery and equipment sales tax exemption, the pollution control facilities and low sulfur dioxide emission coal-fueled device tax exemptions, and the coal research and coal utilization investment tax credit. The machinery and equipment exemption expired after FY2003, the pollution control facilities and low sulfur dioxide exemption expired after FY2004, and the coal research and utilization credit expired in 2005 (State of Illinois Comptroller, 2004; Gauss, 2012; State of Illinois Comptroller, 2005). The last reported value for the machinery and equipment exemption (which was also available for oil and distillation) was \$715,000 in FY2003 (State of Illinois Comptroller, 2004). A revised version of this exemption was passed in 2012 in Senate Bill 3241, and the exemption will be effective starting January 1, 2013 (see Section 4.2.3). The cost of the latter two incentives was never reported.

4.2.2 Enterprise Zone tax incentives

The Illinois Enterprise Zone program “is designed to stimulate economic growth and neighborhood revitalization in economically depressed areas of the state” (DCEO, 2012c). According to DCEO, this is accomplished in part through state and local tax incentives. To qualify for the incentives, a business must be located or choose to locate in a designated Enterprise Zone.

The basic incentives available to all Enterprise Zone businesses are a sales tax exemption on building materials and an investment tax credit of 0.5% for qualified property that can be applied to the state income tax. Two additional exemptions from state taxes require eligible companies to meet specific investment and job creation or retention requirements: the manufacturing and assembling machinery and equipment exemption from the sales tax (which includes pollution control equipment) and an exemption from two utility taxes—the electricity excise tax exemption and the gas revenue tax exemption. The eligibility requirements are specific to each individual exemption. A summary of the available incentives is provided in Table 10. Table 10 also summarizes the total cost of each incentive for all industries in FY2011, including those related to coal.

In addition to the state incentives, each zone offers distinct local incentives to enhance business development projects. Local incentives are not discussed in this report.

Table 10: Tax expenditures supporting the coal industry in FY2011

Expenditure	Applicable tax(es)	Related statute(s)	Total FY2011 cost (all industries) (million \$)
Manufacturing and assembling machinery and equipment exemption	Sales tax	35 ILCS 120/1d-1f	\$184.0
Utility tax exemption	Electricity excise tax, Gas revenue tax	220 ILCS 5/9-222.1A; 35 ILCS 630/2(a)(5)	\$57.1
Investment tax credit	Corporate income tax	35 ILCS 5/201	\$6.0
Building materials exemption	Sales tax	35 ILCS 120/2-6	\$4.1

Sources: State of Illinois Comptroller (2012a); DCEO (2012d). Note: The cost for the manufacturing and assembling machinery and equipment exemption and utility tax exemption reflects the full value of the exemption for both Enterprise Zone and HIB-qualified businesses. It is uncertain whether the building materials exemption value includes the total value of the exemption for both programs.

In 2011, only two coal-related companies were certified as Enterprise Zone businesses, and therefore eligible for the incentives. These were Electric Energy, Inc—certified in Massac County—and Prairie State Generating Company, LLC—certified in Washington County (Gauss, 2012). As described below, only Prairie State Generating Company, LLC benefited from available incentives in FY2011.

Manufacturing and assembling machinery and equipment sales tax exemption

Any business that is certified by DCEO and meets one of two sets of criteria may be eligible for a 5% state sales tax exemption “on all tangible personal property which is used or consumed within an Enterprise Zone in the process of manufacturing or assembly of tangible personal property for wholesale or retail sale or lease” (DCEO, 2012d, p. 5). The exemption applies to repair and replacement parts for machinery and equipment, as well as equipment, manufacturing fuels, materials and supplies used for the maintenance, repair or operation of manufacturing or assembling machinery or equipment. The exemption also applies to pollution control equipment and facilities. The two sets of criteria for being eligible for the exemption are:

- an investment of at least \$5 million in an Enterprise Zone and the creation of a minimum of 200 full-time equivalent jobs, or
- an investment of at least \$40 million in an Enterprise Zone and the retention of a minimum of 2,000 full-time equivalent jobs (or 90% of the jobs in place on the date of Enterprise Zone certification) (DCEO, 2012d).

The total value of the manufacturing and assembling machinery and equipment sales tax exemption for both Enterprise Zone and HIB-certified businesses is reported as \$184 million for FY2011 (State of Illinois Comptroller, 2012a). Based on a review of project progress reports for calendar year 2011, we found that only one coal-related company—Prairie State Generating Company, LLC—benefited from this exemption. The value of the exemption for Prairie State amounted to only \$35,000 (DCEO, 2012e). **Therefore, we report the total cost of the exemption associated with supporting a coal-related company as \$35,000 for FY2011.**

Utility tax exemption

Businesses located in an Enterprise Zone are also eligible for a 5% state tax exemption on gas and electricity, an exemption from the Illinois Commerce Commission’s 0.1% administrative charge, and an exemption from excise taxes on the origination or receipt of telecommunications. The requirements for eligibility include:

- an investment of at least \$5 million in an Enterprise Zone and the creation of a minimum of 200 full-time equivalent jobs,
- an investment of at least \$20 million in an Enterprise Zone and the retention of a minimum of 1,000 full-time equivalent jobs, or
- an investment of at least \$175 million in an Enterprise Zone and the creation of a minimum of 150 full-time equivalent jobs.

The taxes most affected by the utility tax exemption are the electricity excise tax and the gas revenue tax. The total value of the utility tax exemption is reported as \$57.1 million for FY2011 (State of Illinois Comptroller, 2012a). However, this value reflects the full value of the exemption for both Enterprise Zone and HIB-qualified businesses. Based on a review of project progress reports for 2011, we found that no coal-related companies benefited from this exemption in FY2011. **Therefore, we report the total cost of the exemption associated with supporting coal-related companies as \$0 for FY2011.**

Investment tax credit

Taxpayers who invest in qualified property in an Enterprise Zone or River Edge Redevelopment Zone may take an investment tax credit of 0.5% from their corporate income tax liability.²³ Qualified property includes machinery, equipment, and buildings. The credit may carry forward for five years and is in addition to the standard 0.5% investment credit available throughout the state as well as the 0.5% credit available for businesses that increase their employment by 1% from the preceding year (DCEO, 2011). Examples of qualified property include buildings, structural components of buildings, elevators, materials, tanks, boilers, and major computer installations. Examples of non-qualifying property include land and inventories.

For FY2011, the total value of the Enterprise Zone and River Edge Redevelopment Zone investment credit is reported as \$6.0 million (State of Illinois Comptroller, 2012a). A breakdown of the credit into the two component parts is not readily available. Regardless, this exemption is reported by companies on their 1299 tax form, and since companies do not identify their industry sector on the tax form, data on the cost of this incentive for supporting coal-related projects is not readily available (Harris, 2012). **Therefore, we report the total cost of the exemption associated with supporting coal-related companies as \$0 for FY2011.**

Sales tax exemption on building materials

According to DCEO, retailers who make qualified sales of building materials to be incorporated into real estate remodeling, rehabilitation, or new construction projects within an Enterprise Zone may deduct the receipts from such sales when calculating the overall state sales tax liability, which is 5% of the sales price of the materials (DCEO, 2011).²⁴ The total value of this exemption for FY2011 is reported as \$4.1 million (State of Illinois Comptroller, 2012a). This exemption is available to coal-related businesses located in Enterprise Zones. However, according to DCEO, for coal companies to benefit from the exemption they must receive a certificate from the local Enterprise Zone administrator (Harris, 2012). The certificate is then presented at the time of purchase and the sales tax is waived. As a result, a record is not available that reports the value of the exemption for each individual zone or for each industrial sector. **Therefore, we report the total cost of the exemption associated with supporting coal-related companies as \$0 for FY2011.**

4.2.3 *New incentives for coal from the elimination of use and occupation taxes*

In 2012, the General Assembly passed SB3241 (PA 97-0767). The legislation amended the Use Tax Act, Service Use Tax Act, Service Occupation Tax Act, and Retailers' Occupation Tax Act so that "coal and aggregate exploration [instead of only coal exploration], mining, off-highway hauling, processing, maintenance, and reclamation equipment, including replacement parts and equipment, and including equipment purchased for lease, but excluding motor vehicles required to be registered under the Illinois Vehicle Code, are exempt from the specified taxes." The standard state sales and use tax rate is 5%. Therefore, the value of this exemption will be 5% of the total sales value of all applicable activities and materials.

As noted, the last reported value for this incentive, in its previous form as the Coal, Oil and Distillation Machinery and Equipment sales tax exemption, was \$715,000 for FY2003. Illinois coal production in 2002 and 2003 averaged 33.6 million tons (MSHA, 2012). Reported production for 2011 amounted to 37.8 million tons (EIA, 2012f). **Therefore, it can be expected that the future cost of this incentive for the state budget will likely be higher than the FY2003 cost.** However, insufficient information is available to estimate the potential cost.

²³ According to DCEO, the River Edge Redevelopment Zone program is intended to revive and redevelop environmentally-challenged properties adjacent to Illinois rivers (DCEO, 2012d).

²⁴ The overall sales tax rate in Illinois is 6.25%; however, the state receives 5% while local government entities receive the remaining 1.25%. Additionally, the 1.25% local tax represents a minimum tax rate. Locales with home rule are authorized to impose higher tax rates.

4.2.4 *State incentives for the FutureGen Alliance*

With the passage of the Clean Coal FutureGen for Illinois Act of 2011, the General Assembly codified, although did not clarify, “certain incentives” for promoting and supporting the FutureGen clean coal project. Specifically, the legislation states that, “The State of Illinois has offered certain incentives to the FutureGen Alliance to make the State of Illinois the most attractive location for the FutureGen Project.”²⁵ One news article describes the potential package as consisting of \$80 million in incentives, including \$17 million in sales tax exemptions on materials needed to build the near-zero-emission demonstration coal plant as well as \$50 million in low-interest loans (PennEnergy, undated). As of the writing of this report, the FutureGen project has yet to benefit from either of the Enterprise Zone or HIB programs (Gauss, 2012). However, the project and its partners have received a number of CTDAF grants (DCEO, 2012b), none of which were provided for the project in FY2011.

4.3 Coal Technology and Development Assistance Fund grants

This section provides an overview of existing grant programs whose specific purposes are to support the Illinois coal industry. All of the coal-related grant programs are managed by OCD, which is an office within DCEO (see Section 3.3). Funding for the grant programs comes from several distinct sources, but in general, the programs can be grouped together as either ratepayer- or General Obligation Bond-financed.

Coal-related grants have been awarded for such disparate activities as improving miner safety and research into carbon dioxide sequestration. Funding for the OCD comes from two funds—the CTDAF and the Coal Development Fund. The CTDAF is a special state fund, and the Coal Development Fund is a bond-financed fund. These funds are not part of the GF, and as such, we have not categorized revenue and expenditures for the OCD as on-budget expenditures. However, a portion of the ratepayer-financed CTDAF grants does impact the GF.

This section addresses only the ratepayer-financed CTDAF grant programs, while Section 4.5 covers the bond-financed programs. OCD oversees several ratepayer-financed grant programs that support the coal industry. The programs’ expenditures all come from the CTDAF, which was created by the Illinois Coal Technology Development Assistance Act.²⁶ In FY2011, the General Assembly appropriated \$23.9 million for that Act, which represents the maximum possible expenditure (see Section 4.3.3) (State of Illinois Comptroller, 2012b).

In all there are four CTDAF programs: the Illinois Coal Development Program, Illinois Coal Research Program, Illinois Coal Education Program, and Illinois Coal Competitiveness Program (DCEO, 2012a). The Illinois Coal Education Program is depicted as a service that OCD provides for the coal industry rather than a grant program. Additionally, OCD directly administers grants for the Coal Competitiveness Program while the Illinois Clean Coal Institute (ICCI) administers grants for the Coal Development and Coal Research Programs.

Examining actual CTDAF grant expenditures is complicated because DCEO’s Grant Tracker, which provides detailed information on grants awarded, uses different program names. The names used in Grant Tracker are: Coal Education & Marketing Program, Coal Competitiveness Program, and Coal Research & Development Program (see Table 11). To examine grants awarded, this report uses the Grant Tracker program names. In addition to the name issue, Grant Tracker does not include CTDAF expenditures for OCD’s administrative costs or statutory transfers required by state statute.

²⁵ 20 ILCS 1108/43 and 20 ILCS 1108/45.

²⁶ 30 ILCS 730.

Table 11: Name association of ratepayer-financed grant programs supporting coal

OCD Program Summary	DCEO Grant Tracker
Illinois Coal Education Program	Coal Education & Marketing Program
Illinois Coal Competitiveness Program	Coal Competitiveness Program
Illinois Coal Research Program	Coal Research & Development Program
Illinois Coal Development Program	Coal Research & Development Program

Note: See Appendix B for descriptions of programs from both the Program Summary and Grant Tracker.

4.3.1 Source of authority and legislative intent

Ratepayer-financed grants are authorized via the Illinois Coal Technology Development Assistance Act, which first became law in 1984. The stated intent of the legislation is to preserve and enhance markets for Illinois coal.²⁷ The Act created a special state fund, the CTDAF. The Illinois Coal Technology Development Assistance Act specifies that CTDAF expenditures are subject to appropriation by the General Assembly. While the General Assembly annually appropriates a maximum aggregate dollar amount—the amount appropriated for FY2011 was \$23.9 million—actual grant expenditures (limited by the maximum amount) are at the discretion of OCD, as advised by the Coal Development Board.²⁸

The Act contains three terms that detail its programmatic intent:

1. **Coal Demonstration and Commercialization:** “projects for the construction and operation of facilities to prove the scientific and engineering validity or the commercial application of a coal extraction, preparation, combustion, gasification, liquefaction or other synthetic process, environmental control, or transportation method.”^{29,30}
2. **Coal Research:** “scientific investigations conducted for the purpose of increasing the utilization of coal resources and includes investigations in the areas of extraction, preparation, characterization, combustion, gasification, liquefaction and other synthetic processes, environmental control, marketing, transportation, procurement of sites, and environmental impacts.”³¹
3. **Public awareness and Education:** “programs of education, curriculum development, public service announcements, informational advertising and informing the news media on issues related to the use of Illinois coal, the coal industry and related developments. Public awareness and education shall be directed toward school age residents..., the citizens of the State and other interested parties.”³²

Figure 9 summarizes the total number of grants awarded per program for FY2007-2012. As Figure 1 demonstrates, 76% of CTDAF-funded grants have been awarded for the Coal Competitiveness Program, 16% for the Coal Research & Development Program, and the remaining 8% for the Coal Education & Marketing Program.

²⁷ 30 ILCS 730.

²⁸ 30 ILCS 730/4

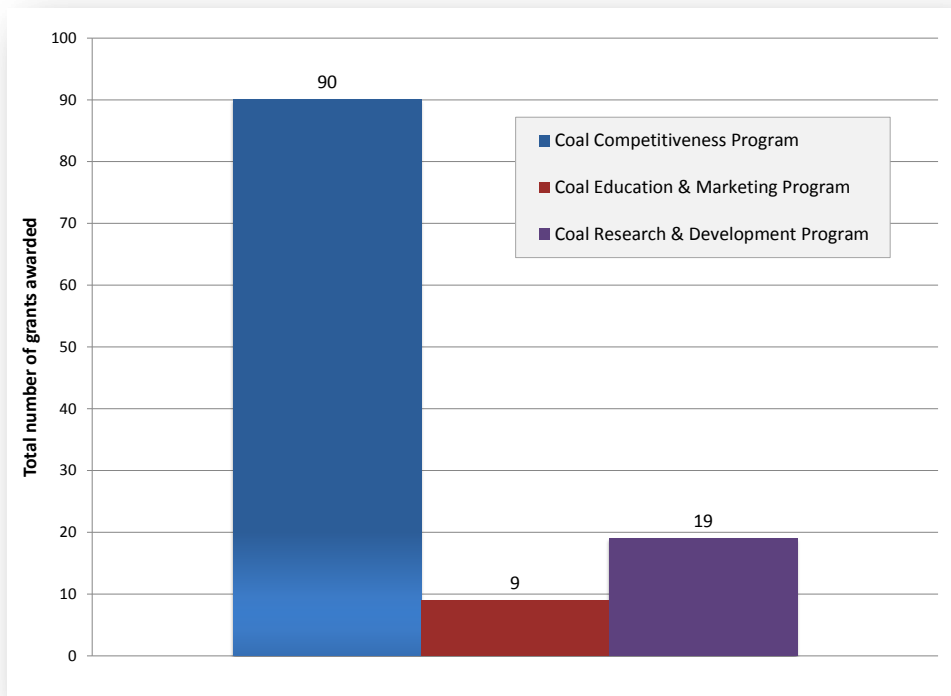
²⁹ While the Coal Technology Development Assistance Act uses the term “Coal Demonstration,” DCEO’s Coal Demonstration Program was created by a different piece of legislation, and is financed through General Obligation Bond sales, not the CTDAF.

³⁰ 30 ILCS 730/2(b)

³¹ 30 ILCS 730/2(c)

³² 30 ILCS 730/2(g)

Figure 9: Number of CTDAF grants awarded by program, FY2007-2012



Source: DCEO (2012b).

Grants awarded for the Coal Research & Development Program have almost exclusively gone to SIU for ICCI.³³ Coal Research and Development grants have been used for the administrative costs associated with ICCI and for maintaining the Illinois Coal Development Park. An additional Coal Research and Development grant is annually awarded to SIU for ICCI, and that grant is then used by ICCI to award research and development grants to subgrantees. DCEO's Grant Tracker website does not provide information on these subgrants; however, ICCI's website does provide a database that allows for a search of grants by funding year. The database does not provide information on the amount awarded to individual projects, nor does it indicate whether the funds are disbursed over multiple years. A summary of all projects awarded ICCI grants in FY2011 is provided in Appendix C.

4.3.2 *Collection of revenues*

CTDAF's revenue comes from three ratepayer taxes and fees: the electricity excise tax, the gas revenue tax, and the Renewable Energy Resources and Coal Technology Development Assistance Charge. On the first of each month, IDOR is required to certify to the Treasurer an amount equal to 1/64 of revenue collected from the taxes imposed by both the Electricity Excise Tax Law and Section 2 of the Gas Revenue Tax Act. The certified amount is then transferred from the GF to the CTDAF.^{34,35} The monthly transfer shall not take place, however, if the CTDAF's balance equals \$10 million, excluding any deposits from the Renewable Energy Resources and Coal Technology Development Assistance Charge (REC).

³³ Of the 19 grants awarded, 17 went to SIU. The remaining two grants went to the University of Illinois to support ISGS. Both the ICCI and ISGS are located in the Illinois Coal Development Park at SIU and are listed as state agencies on the Park's website.

³⁴ 30 ILCS 730/3

³⁵ The original statute also included Section 2 of Public Utilities Revenue Act and Section 2 of the Messages Tax Act. However, those pieces of legislation were repealed in 1998. The Illinois state statute for the electricity excise tax is 35 ILCS 640, and the state statute for the gas revenue tax is 35 ILCS 615.

The REC is a fee imposed on the delivery of electricity or distribution of natural gas.³⁶ Imposing the fee is at the discretion of the public utility, municipal gas or electric utility, or electric or gas cooperative. Ratepayers who do not pay the REC are ineligible for REC-financed renewable energy programs.

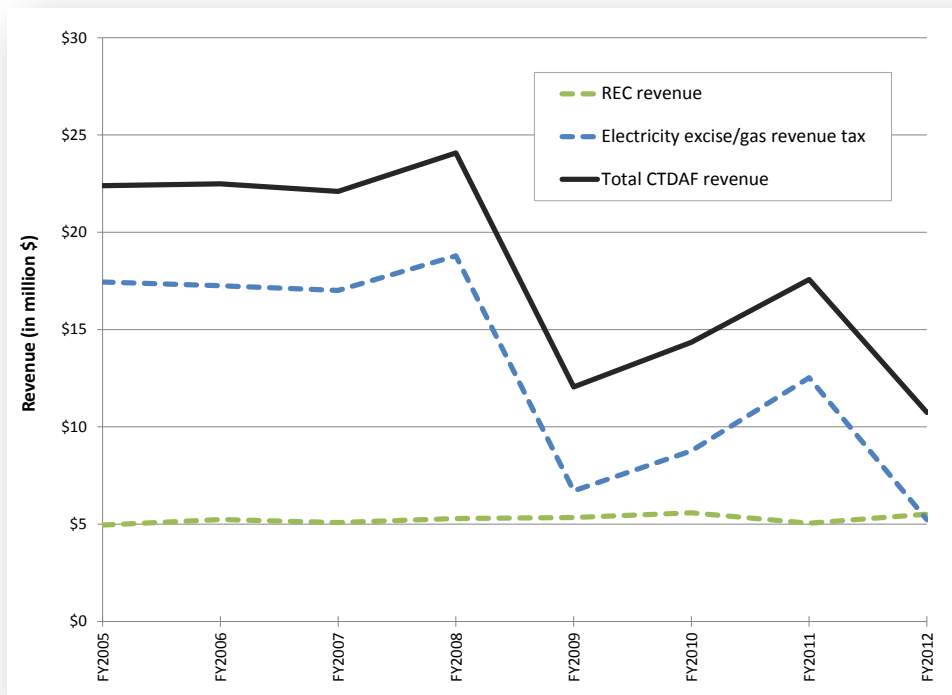
IDOR is required to distribute 50% of the money collected under the REC to the CTDAF for the exclusive purposes of: (1) capturing or sequestering carbon emissions produced by coal combustion, (2) supporting research on the capture and sequestration of carbon emissions produced by coal combustion, and (3) improving coal miner safety.³⁷ The remaining 50% is deposited in the Renewable Energy Resources Trust Fund.³⁸ The REC is scheduled to expire on December 12, 2015.

While the REC was designed specifically as a revenue stream for the CTDAF and the Renewable Energy Resources Trust Fund, the electricity excise tax and gas revenue tax are not. Revenue from the electricity excise tax and gas revenue tax is first deposited into the GF, and then transferred into the CTDAF. In other words, CTDAF revenue that comes from the electricity excise tax and gas revenue tax may have a net impact on the state budget because without the Illinois Coal Technology Development Assistance Act, that money could remain in the GF and be available to pay for the delivery of public services.

4.3.3 Actual revenues and expenditures for FY2011

In FY2011, the CTDAF received \$17.6 million in total revenue. Of that, approximately \$12.5 million came from the electricity excise tax and gas revenue tax and \$5.1 million came from the REC (see Figure 10).

Figure 10: CTDAF revenue and grants (actual cash flow), FY2005-2012



Sources: State of Illinois Comptroller (2012c through e). Note: The values in this figure represent actual cash flow and not merely appropriations.

³⁶ 20 ILCS 687/6-5

³⁷ 20 ILCS 687/6-5(c)

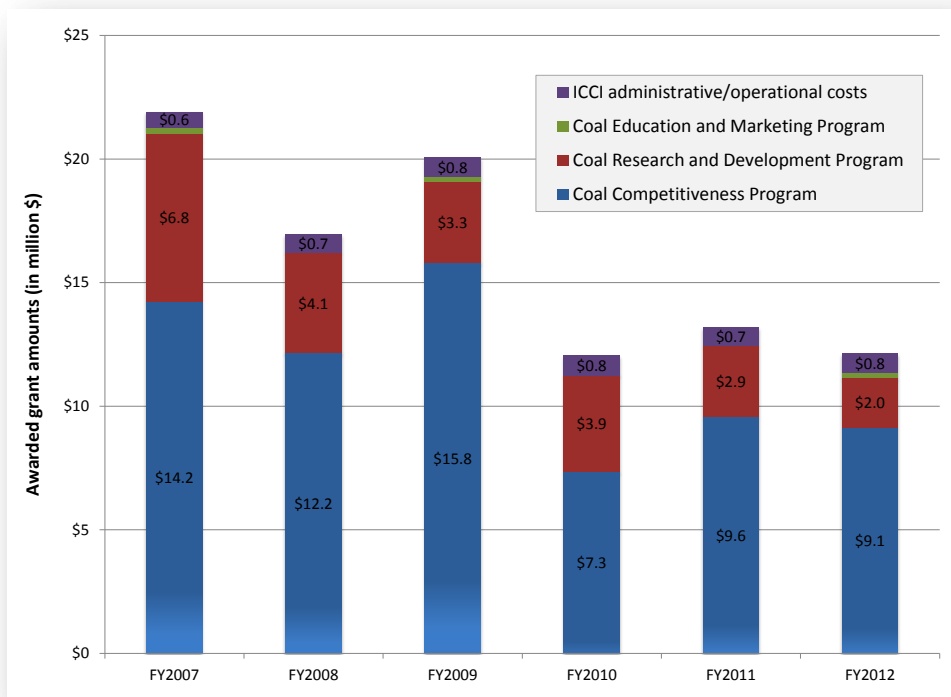
³⁸ Ibid.

For the purposes of this report, we represent the total transfer from the two utility taxes to the CTDAF as a hard cost to the GF amounting to approximately \$12.5 million for FY2011.³⁹ This amounts to a large share of total CTDAF revenue.

As stated previously, lawmakers appropriated \$23.9 million for the CTDAF in FY2011. However, CTDAF expenditures were significantly less than the appropriated amount. The total CTDAF expenditure for FY2011 was approximately \$16.1 million (State of Illinois Comptroller, 2012d). Of that, \$16.0 million was spent on the grant programs previously discussed and OCD’s operational expenses, and \$60,580 was spent on statutory transfers (State of Illinois Comptroller, 2012d).

Of the \$16.0 million, OCD awarded \$13.9 million to grant recipients (DCEO, 2012b). From the \$13.9 million in awarded grants, \$742,900, or nearly 6%, went towards the administrative and operational costs of ICCI and the Illinois Clean Coal Park. ICCI also received an additional \$2.9 million, or 22% of all awarded grant funds, that was used for awarding research and development grants to subgrantees. The remaining \$9.6 million, 73% of all awarded money, went to ten grantees of the Coal Competitiveness Program. In FY2011, no Education and Marketing Program grants were awarded. Figure 11 shows the annual amount awarded to each program for FY2007-2012, with money awarded for operational and administrative costs for ICCI differentiated from the grant money ICCI subsequently distributes to subgrantees.

Figure 11: CTDAF grants awarded by program, FY2007-2012



Source: DCEO (2012b).

³⁹ While we represent this cost as a cost to the GF, it is different from other GF expenditures supporting coal in that the CTDAF expenditure represents a hard cost, whereas other expenditures represent discretionary costs. Hard costs are represented by statutory transfers, transfers payable, debt service on bonds, and interfund borrowing repayments. In total, these hard costs from the GF amounted to a GF expenditure of \$4.8 billion (GOMB, 2012a). For the CTDAF expenditures from the utility tax transfers, we assume that without the CTDAF, these revenues would remain in the GF and be available for discretionary spending along with the remainder of the public utility tax revenues.

4.4 Other available grant programs

In addition to the CTDAF grant programs, two other grant programs are available to coal companies. These are the Economic Development Program through the Illinois Department of Transportation (IDOT) and the Employer Training Investment Program through DCEO. Neither of these programs benefitted the coal industry in FY2011; however, these programs have provided substantial benefits to the industry in previous years.

4.4.1 IDOT's Economic Development Program

As described by IDOT (2012), the purpose of the Economic Development Program is “to provide state assistance in improving highway access to new or expanding industrial distribution or tourism developments” and to support the creation or retention of permanent full-time jobs. Funding through the program is available for constructing or improving roadways, and is provided as a 50% state match for locally-owned roadways or a 100% state grant for improvements on state-owned routes (IDOT, 2012). The total amount of funds set aside each year amounts to \$10 million, and the maximum amount of funding available for individual projects is \$2 million (IDOT, 2012).

As stated, no coal-related projects benefited from this program in FY2011. However, since annual reporting began, a total of nearly \$5.5 million has been granted to support coal-related developments (DCEO, 2012e).

Table 12: IDOT Economic Development Program grants benefitting coal, 2006-2011

Grant year	Recipient	NAICS industry	Amount
2006	Knight Hawk Coal, LLC	Bituminous coal underground mining	\$390,554
2006	Mach Mining, LLC	Bituminous coal underground mining	\$476,090
2007	Prairie State Generating Company, LLC	Fossil fuel electric power generation	\$2,000,000
2009	ICG Illinois, LLC	Bituminous coal underground mining	\$2,000,000
2009	Ameren Energy Generating	Fossil fuel electric power generation	\$585,500
Total			\$5,452,144

Source: DCEO (2012e). Note: No new grants were provided to coal-related companies after 2009. The years represented are calendar years, not FYs.

4.4.2 DCEO's Employer Investment Training Program

The Employer Training Investment Program is described as “a competitive application program for Illinois based manufactures and service companies to facilitate upgrading the skills of their workers in order to remain current in new technologies and business practices” (DCEO, 2012f). The grants may be used to reimburse companies for up to 50% of the eligible cost of training their employees. Grants may be awarded to individual businesses, intermediary organizations operating multi-company training projects, and original equipment manufacturers sponsoring multi-company training projects for employees of their Illinois supplier companies (DCEO, 2012f).

As stated, no coal-related projects benefited from this program in FY2011. However, historically, only one coal-related company, Precision Mine Repair, Inc., has been provided an employer training grant. That grant was awarded in 2007 and amounted to \$37,500 (DCEO, 2012e).

4.5 Bond-financed grant programs

In addition to OCD's ratepayer-financed programs (see Section 4.2), OCD has two additional coal-related grant programs: the Coal Demonstration Program and the Coal Revival Program. Both programs are funded via the Coal Development Fund, which is a bond-financed fund.⁴⁰ To date, OCD has not awarded any Coal Revival Program grants. Both programs are funded through the sale of General Obligation (GO) Bonds. Debt service on GO Bonds is paid using general revenue sources, which is the same pool of money used for the GF budget. Debt service on GO bonds is a hard cost, meaning that while it is part of the overall GF budget, neither the Governor nor the General Assembly have discretion over that spending.

4.5.1 Source of authority and legislative intent

Coal Demonstration Program

The General Obligation Bond Act, Energy Conservation and Coal Development Act, and Illinois Coal and Energy Development Bond Act all provide legislative authority for the Coal Demonstration Program.⁴¹ According to OCD, the purpose of the program is to provide partial funding for large-scale projects that advance the use of coal for utility and industrial purposes (DCEO, 2012g). The program is funded through the sale of GO bonds. Bond sales to fund the Coal Demonstration Program are authorized in Section 7 of the General Obligation Bond Act and Section 7 of the Illinois Coal and Energy Development Bond Act.^{42,43} While these statutes authorize the bonds, the Governor and GOMB decide when to actually issue and sell them.

To receive a Coal Demonstration grant, a project must receive a recommendation from DCEO. However, "Final approval of the project, the terms of the grant agreement, and allocation of funds for the project are subject to approval by the Governor and the Governor's Office of Management and Budget" (DCEO, 2012h, p. 3). To fund the program, OCD is authorized to use up to \$185 million worth of GO bonds (DCEO, 2012g).

Coal Revival Program

The Illinois Resource Development Energy Security Act of 2001 created the Coal Revival Program.⁴⁴ The purpose of program is to assist with the development of new, coal-fired electric generation capacity or coal gasification facilities in Illinois (DCEO, 2012g). There are two different sets of criteria for project eligibility:

- 1. Construction of a "new electric generating facility." Construction on a facility's foundation must have commenced on or after July 1, 2001, and the facility will:**
 - a. use coal or coal-derived gas as the primary fuel source, create at least 150 new coal mining jobs, and have an aggregate rated generating capacity of at least 400 megawatts for all new units at a single site;
 - b. support the creation of Illinois coal-mining jobs and have federal funding before December 31, 2010; or
 - c. support the creation of Illinois coal-mining jobs and use coal gasification or integrated gasification-combined cycle units that generate electricity or chemicals or both.⁴⁵

⁴⁰ The Coal Development Fund is also used for expenditures not related to the Coal Demonstration and Coal Revival Programs (see 30 ILCS 330/7(c) and 30 ILCS 330/7(e)).

⁴¹ 30 ILCS 330, 20 ILCS 1105, and 20 ILCS 1110.

⁴² 30 ILCS 330

⁴³ 20 ILCS 1110

⁴⁴ PA 92-0012. Unlike other Acts discussed in this report, the Illinois Resource Development Energy Security Act affected numerous chapters of Illinois compiled statutes. The Coal Revival Program is specifically detailed in Section 605-332 of 20 ILCS 605, the Civil Administrative Code of Illinois and 20 ILCS 688. 20 ILCS 688 is titled the Illinois Resource Development and Energy Security Act. DCEO's Program Summary states that the final rules for the Coal Revival Program were adopted on August 23, 2002.

⁴⁵ See sub-subsections 1-3 of 20 ILCS 605-332 (a)

2. **Construction of a “new gasification facility.”** A new gasification facility is defined as a “newly constructed coal gasification facility that generates chemical feedstocks or transportation fuels derived from coal (which may include, but are not limited to, methane, methanol, and nitrogen fertilizer), that supports the creation or retention of Illinois coal-mining jobs, and that qualifies for financial assistance from [DCEO] before December 31, 2010.”⁴⁶

The grant amount awarded is to be based on the anticipated state retail occupation taxes that will be paid on the new facility’s future coal purchases. More specifically, the grant is to roughly equal the present value of future sales taxes paid on Illinois coal over a 25-year period, up to a maximum amount of \$100 million (DCEO, 2012g). To fund the program, up to \$500 million worth of GO bonds are authorized.⁴⁷ **However, OCD has yet to award a single Coal Revival Program grant (Wheeler, 2012).**

In addition to OCD’s coal grant programs, the General Obligation Bond Act authorizes an additional \$50 million for the Illinois Power Agency Act.⁴⁸ The \$50 million bond authorization is specifically for costs related to electricity generated from coal.

Table 13 summarizes the total amount of bond sales authorized that are related to the coal industry, and the specific purposes those funds are authorized for in state statute. Not all bonds related to the Coal Development Fund are shown. Figures shown in Table 13 are the maximum amounts authorized, and do not reflect bonds actually issued or grants awarded for the programs.

Table 13: Maximum authorized amount and specified purpose of bond programs

Program	Specific purpose	Amount authorized (million \$)
Coal Demonstration	Acquisition, development, construction, reconstruction, improvement, financing, architectural and technical planning and installation of capital facilities consisting of buildings, structures, durable equipment, and land for the purpose of capital development of coal resources within the State and for the purposes specified in Section 8.1 of the Energy Conservation and Coal Development Act [20 ILCS 1105] ⁴⁹	\$115
Coal Demonstration	Purposes specified in Section 8.1 of the Energy Conservation and Coal Development Act [20 ILCS 1105] and making grants to generating stations and coal gasification facilities within... Illinois and to the owner of a generating station located in Illinois and having at least three coal-fired generating units with accredited summer capability greater than 500 megawatts each at such generating station as provided in Section 6 of that Bond Act [20 ILCS 1110]	\$35
Coal Demonstration	\$33 million is to be used for capital development projects, while the remaining \$2 million is for “research, development and demonstration of other forms of energy.”	\$35
Coal Revival	Providing financial assistance to new electric generating facilities as provided in Section 605-332 of the [DCEO] Law of the Civil Administrative Code of Illinois [20 ILCS 605]	\$500

Note: This table shows only bonds authorized for the Coal Demonstration and Coal Revival Programs. Subsections (c) and (e) of 30 ILCS 330/7 authorize additional bond sales in which the proceeds of the sales would be deposited into the Coal Demonstration Fund.

⁴⁶ 20 ILCS 605/605-332(a). Coal gasification plants built in Jefferson County, IL are specifically prohibited from qualifying for the Coal Revival Program. Power Holdings LLC proposed building a coal gasification plant in Jefferson County, which would convert coal into synthetic natural gas. Governor Quinn signed legislation supporting that effort, Senate Bill 2169, into law in 2011. However, since that legislation was passed Power Holdings LLC has halted that project due the project no longer being financially advantageous.

⁴⁷ 30 ILCS 330/7(c)

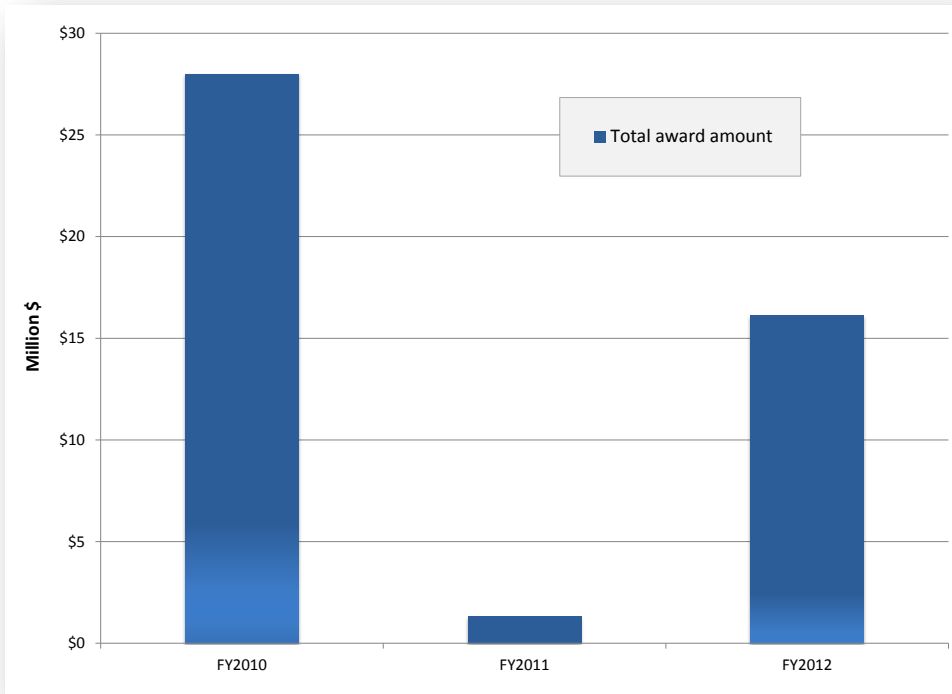
⁴⁸ 30 ILCS 330/7(e)

⁴⁹ The purposes outlined in Section 8.1 of the Energy Conservation and Coal Development Act are: “(1) To assist in the reopening of closed Illinois mines. (2) To assist in allowing existing Illinois coal mines to remain operating. (3) To assist in developing new markets (both domestic and foreign) for Illinois coal. (4) To assist in funding the cost of transportation of Illinois coal to new markets and the development of related infrastructure. (5) To assist in funding the cost of construction and development of coal conversion parks in Illinois. (6) To assist in providing incentives to attract new businesses that use coal or by-products developed from coal or its conversion to relocate in Illinois. (7) To assist in hiring consultants, engineers, and other experts to assist in providing feasibility work in connection with projects whose funding would otherwise be authorized under this Act” (20 ILCS 1105/8.1).

4.5.2 Grants awarded

In FY2011, a \$1.3 million Coal Demonstration grant was awarded to Power Holdings of Illinois, LLC for construction of a coal-to-synthetic natural gas facility in Jefferson County, Illinois (DCEO, 2012b). Figure 12 shows the annual aggregate dollar amount of Coal Demonstration grants awarded.

Figure 12: Awarded Coal Demonstration Program grants, FY2010-2012



Source: DCEO (2012b).

Data on grants awarded prior to FY2010 are not provided in the Grant Tracker. However, the Program Summary reports that since 1981, 34 projects have received Coal Demonstration grants, with a total of \$151.3 million awarded (DCEO, 2012g).

4.5.3 *General fiscal impact of bonds*

The Coal Revival Program is designed to have a neutral effect on the state budget. Debt service on GO bonds issued for the program are to be paid using the taxes collected from the new facility's purchases of Illinois-mined coal.⁵⁰ The program is expected to be revenue-neutral because the taxes used to pay the debt service would be "new" revenue generated by the increased purchase of Illinois-mined coal. In other words, it is assumed that without the program, the new facility would not have been built, and thus, the new revenue would not be realized. In this way, new sales tax revenue would offset the debt service on the bonds issued to finance the program, and the overall state budget would not be affected.

On the other hand, bonds sold to finance the Coal Revival Program are GO bonds, which are backed by the full faith and credit of the State. The debt service on GO bonds is paid via the General Obligation Bond Retirement and Interest Fund, which is paid from the same taxes that fund the GF. Therefore, the actual impact of the Coal Revival Program may not be revenue-neutral unless the bond-financed projects actually generate the anticipated amount of new sales tax revenue for the GF. Unfortunately, the Coal Revial Program does not create any reporting requirements that would easily allow an analysis of whether the tax revenue generated actually offset the debt service on the underlying GO bonds. **Since no project has received a Coal Revival Program grant, it has not yet impacted the GF budget.**

Debt service on the bonds issued under both the Coal Revival and Coal Demonstration programs is paid via the General Obligation Bond Retirement and Interest Fund. However, the Coal Demonstration Program differs from the Coal Revival Program in that there is no anticipated offset of debt service costs that will be generated by new tax revenues generated from the funded projects. **In other words, the Coal Demonstration Program has a direct impact on the state budget because debt service on bonds issued under the program are paid using general revenue sources.** Therefore, the GF revenue used for debt service could have been spent on other public services covered by the GF.

However, determining the exact fiscal impact of bonds sold that directly relate to the coal industry is difficult for a number of reasons. First, DCEO's Grant Tracker provides incomplete information as to the exact amount of grant monies that have been awarded per FY since the program's inception. Second, the state typically sells a series of GO bonds, the proceeds of which are used for multiple purposes that have nothing to do with the coal industry. For example, in June 2007, the state sold \$108 million worth of GO bonds. Of that, \$10.2 million went to the Coal Development Fund, while the remaining \$97.8 million went to capital development, transportation, and school construction (Office of the Auditor General, 2009). OCD never used the \$10.2 million, though, and it was subsequently reallocated to the Transportation Bond Series B Fund to be used by IDOT for mass transportation purposes (Office of the Auditor General, 2009).

Therefore, to analyze the fiscal impact of coal-related bonds, a number of key sources of information are required. The necessary sources include: (i) the exact GO bond sales in which proceeds were deposited into the Coal Development Fund; (ii) whether bond sale proceeds deposited into the Fund were ultimately spent on coal-related expenditures; (iii) the debt service schedule for the relevant GO bond sales; and (iv) the exact revenue sources used for debt service. This information is not readily available, and as such the FY2011 fiscal impact of GO bond debt service related to the coal industry has not been estimated.

⁵⁰ The statute specifically says "An eligible business shall file a monthly report with [IDOR] stating the amount of Illinois-mined coal purchased during the previous month for use in the new facility, the purchase price of that coal, the amount of state occupation and use taxes paid on that purchase to the seller of the Illinois-mined coal, and such other information as that Department may reasonably require. In sales of Illinois-mined coal between related parties, the purchase price of the coal must have been determined in an arms-length transaction. The report shall be filed with [IDOR] on or before the 20th day of each month on a form provided by that Department. However, no report need be filed by an eligible business in a month when it made no reportable purchases of coal in the previous month. [IDOR] shall provide a summary of such reports to [GOMB]. Upon granting financial assistance to an eligible business, the Department shall certify the name of the eligible business to [IDOR]. Beginning with the receipt of the first report of state occupation and use taxes paid by an eligible business and continuing for a 25-year period, [IDOR] shall each month pay into the Energy Infrastructure Fund 80% of the net revenue realized from the 6.25% general rate on the selling price of Illinois-mined coal that was sold to an eligible business." 20 ILCS 605-332

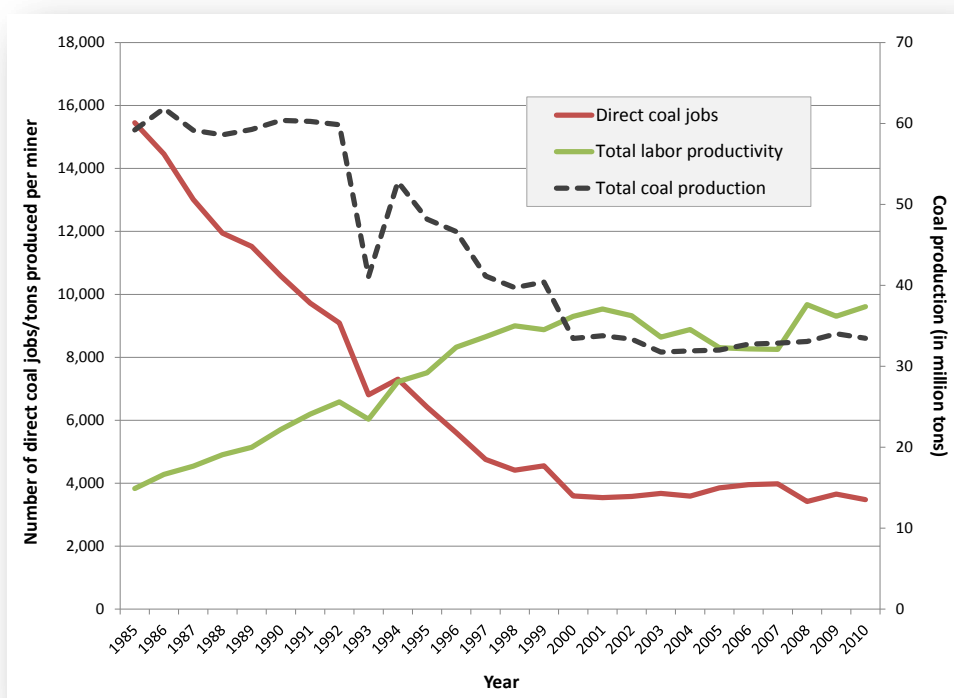
5. DIRECT COAL EMPLOYMENT: REVENUES AND EXPENDITURES

Sections 1 through 4 estimate GF revenues and expenditures associated directly with the coal industry itself. A balanced total accounting of coal's impact must also include revenues and expenditures related to coal employment. This section focuses on direct employment, and Section 6 focuses on indirect employment. Direct employment in the coal industry includes those working in the mining, processing, and transportation of coal, as well as office workers, managers, and executive company officers.

Direct employment in the Illinois coal industry totaled 3,481 workers in 2010 (see Figure 13). While employment has increased somewhat since 2008, direct coal jobs have remained relatively stable since 2000, and the current number of employees is significantly lower than it was in 1985, when direct coal-related jobs totaled 15,452 (MSHA, 2012).⁵¹

Coal mining employment is related to total coal production, labor productivity (tons produced per miner), and the mining method (see Figure 13). Over 80% of coal production in Illinois comes from underground mining.

Figure 13: Direct coal employment, production, and labor productivity, 1985-2010



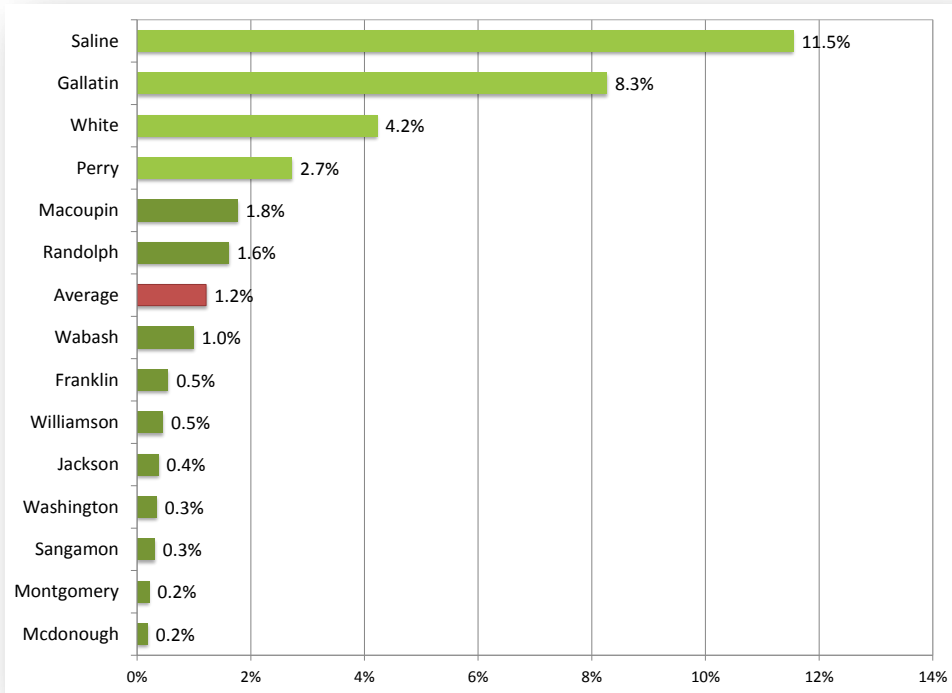
Sources: Mellish (2012); MSHA (2012). Note: Labor productivity calculated by authors using production and employment data.

Total employment across all sectors in Illinois in 2010 amounted to 5.9 million (Illinois Workforce Info Center, 2012b). **Therefore, direct employment in the coal industry accounted for less than 0.1% of total employment in Illinois in 2010.**

⁵¹ Data for 2011 production and employment are available. However, we use 2010 data for this report based on the reasoning described in footnote 11. Total reported coal production in Illinois in 2011 was 37.8 million tons (EIA, 2012f), while total direct employment amounted to 4,149 (MSHA, 2012).

Jobs in the coal industry account for a greater portion of total employment in some of Illinois' 14 coal-producing counties (see Figure 14); however, on average coal still only accounts for 1.2% of countywide employment in these counties. The coal employment rate is highest in Saline County, which relied on direct coal jobs for 12% of countywide employment in 2010. Gallatin County ranks second at 8% of total county employment (MSHA, 2012; Illinois Workforce Info Center, 2012c). Overall, half of Illinois' coal-producing counties rely on coal for less than 1% of total employment.

Figure 14: Direct coal employment as a share of total jobs in coal-producing counties, 2010



Sources: Total county-level employment from the Illinois Workforce Info Center (2012c); county coal employment from MSHA (2012).

To calculate total coal wages earned by direct employees of the Illinois coal industry in 2010, we use the reported average wage of \$76,191 for all coal mining employees as identified by NAICS code 2121 (BLS, 2012a).

Using this average wage, we estimate that the 3,481 direct employees of the Illinois coal industry earned approximately \$265.2 million in total wages in 2010.⁵²

⁵² BLS (2012a) reports a total wage for NAICS 2121 of \$260.9 million. However, this value is based on a total direct employment of 3,424, slightly less than that reported by MSHA (2012). Our total estimated wages of \$265.2 reflects an adjustment of that reported by BLS using the BLS-reported average wage and the MSHA-reported number of direct coal employees.

5.1 Revenues

Coal industry employees contribute tax revenues to the GF and HF. The specific HF's relevant for this analysis are the Road Fund (RF) and the Motor Fuel Tax Fund (MFTF).⁵³ GF revenues are generated from the payment of the individual income tax, state sales and use taxes, and public utility taxes. HF revenues for the RF and MFTF come from the motor fuel tax, motor vehicle and operators licenses and fees, and other transportation-related licenses and fees (GOMB, 2012a).

This section estimates GF and HF revenues generated from direct employees of the Illinois coal industry. Precise data showing tax revenues paid by employees of the coal industry is not available, so for each tax, we use available data to generate estimates, and the specific methods for calculating each estimate is described in subsequent subsections.

We estimate a total of approximately \$15.9 million in direct revenues generated from coal industry employees in FY2011 (see Table 14). Of that, approximately \$14.6 million went to the GF—representing less than 0.1% of total state-sourced GF revenues, not including transfers. The remaining \$1.3 million went to the RF and MFTF—representing less than 0.1% of total state-sourced HF revenues.

Table 14: Direct coal employment-related revenues

Revenue	Amount	Percent of revenues
To General Funds		
Sales and use taxes	\$7,430,000	47%
Individual income tax	\$6,600,000	42%
Public utility taxes	\$560,000	4%
Subtotal	\$14,590,000	92%
To Highway Funds		
Motor fuel tax	\$720,000	5%
Motor vehicle and operator license fees	\$500,000	3%
Other licenses and fees	\$70,000	<1%
Subtotal	\$1,290,000	8%
Total	\$15,880,000	100%

Note: Amounts are rounded to \$10,000 when estimated. The total is also rounded because it includes specific amounts that are rounded.

5.1.1 Sales and use tax

As discussed in Section 2.2, the Illinois state sales and use tax rate is 5% on sales of tangible personal property for use or consumption, and represents a combination of “occupation” taxes imposed on sellers’ receipts and “use” taxes imposed on amounts paid by purchasers (IDOR, 2012e). In FY2011, state sales and use tax revenue totaled \$6.8 billion (GOMB, 2012a). Coal industry employees generate sales and use tax revenue when they spend their income. The effective sales tax rate—representing the percent of an individual’s income spent on sales and use taxes—is not equal to the full state tax rate of 5% because employees do not spend all of their income on consumption, do not purchase products solely in Illinois, and purchased some non-taxable products and services.

⁵³ The GF is a fund category/grouping, comprised of multiple individual funds. It is not an actual fund. The RF and MFTF are actual funds and are both part of the “highway funds” category. Additionally, there are multiple individual funds that are categorized as MFTF funds, some of which are for transfers to local governments. In our employment expenditure subsection, we exclude these local funds from our expenditure calculations.

To estimate total sales and use taxes paid by direct coal employees in FY2011, we rely on calculated effective rates as reported by the Institute on Taxation and Economic Policy (ITEP) in their report “Who Pays? A Distributional Analysis of the Tax Systems in All 50 States.” In the report, ITEP calculates effective rates by state and income group for sales and excise taxes, property taxes and income taxes. Here we use ITEP’s combined effective tax rate for “general sales-individuals” and “other sales and excise—individuals” for the \$58,000 to \$95,000 income range in Illinois. The average wage for direct coal employees in 2010, \$76,191, falls within this range. The combined effective rate for the selected income range is 2.8% for 2007 (ITEP, 2009). We assume for this report that the effective rate changed little from 2010 to 2011. **Applying this rate to total wages, we estimate that Illinois sales and use tax revenue attributable to direct coal industry employees amounted to \$7.4 million in FY2011.**

5.1.2 *Individual income tax*

Illinois authorizes an individual income tax on “the privilege of earning or receiving income in or as a resident of [Illinois],” the revenues from which are deposited into the GF.⁵⁴ Taxable income includes compensation, net profits, interest, dividends, income from the disposition of property, rents and royalties, income from estates and trusts, and other sources. The individual income tax is the largest source of tax revenues for the GF, generating \$11.2 billion in FY2011 (GOMB, 2012a). To estimate the revenue generated from individual income taxes paid by direct coal employees, we apply the effective tax rate for calendar year 2010 (2.5%) (IDOR, 2012f) to total wages earned by those employees in 2010 (\$265.2 million).^{55,56} **This results in an estimated \$6.6 million in individual income tax receipts generated from coal industry employees in FY2011.**

5.1.3 *Public utility taxes*

Non-exempt individuals and businesses pay public utility taxes on their use of electricity, gas, and telecommunications services. The three public utility taxes that apply to direct coal mining employees are the electricity excise tax, the gas revenue tax, and the telecommunications excise tax. In total, and including the electricity distribution and invested capital tax and the telecommunications infrastructure maintenance fees—which only apply to the servicing utilities—public utility taxes generated over \$1.1 billion in revenue for the GF in FY2011 (GOMB, 2012a).⁵⁷ **Overall, as detailed below, we estimate that direct employees of the Illinois coal industry paid approximately \$560,000 in public utility tax revenues in FY2011.**

Electricity excise tax

The electricity excise tax is imposed on “the privilege of electric use” as measured by the kilowatt-hours (kWh) delivered to the customer. The rate of tax on electricity provided by municipal systems and electric cooperatives is the lesser of 5% of gross charges or \$0.0032 per kWh. For electricity sold by investor-owned utilities and other delivering suppliers, the rate varies depending on total consumption. For instance, the tax rate is \$0.0033 per kWh for the first 2,000 kWh, \$0.00319 per kWh for the next 48,000 kWh, and so on, with the tax rate declining with increased consumption levels (IDOR, 2012e). The tax is collected by the utility producing, distributing, furnishing, or selling the electricity to the end-user.⁵⁸

⁵⁴ 35 ILCS 5

⁵⁵ The effective tax rate was calculated using values for total tax and adjusted gross income as reported by IDOR (2012f) for tax year 2010.

⁵⁶ The individual income tax rate was increased to 5% effective January 1, 2011. However, we use 2010 data for this report based on the reasoning described in footnote 11.

⁵⁷ IDOR (2012g) is the only collections/revenues report that provides detailed information on the revenues generated by the individual public utility taxes. However, the sum of the individual revenues as reported by IDOR amounts to more than \$1.4 billion in total utility taxes as reported by GOMB (2012a), which includes the fees that apply to utilities. This is due to the fact that IDOR reports total collections, while GOMB reports actual cash flow net of transfers and refunds. Therefore, the estimated tax contributions for direct coal employees likely overestimate the true contribution.

⁵⁸ 35 ILCS 640

Total electricity excise tax collections are reported as approximately \$408.0 million for FY2011 (IDOR, 2012g). We use 2010 EIA data for electricity sales by sector and type of utility and the excise tax rates to estimate the amount of revenues generated from coal employees based on reported sales. We then calculate the percent of estimated revenues from the residential sector (63.3%) and apply that percent to the total reported collections for FY2011. This results in an aggregate residential sector payment of \$258.1 million.

Finally, as it represents a proxy for the share of residential electricity customers, we then apply the percent of total employment representing direct coal mining jobs (0.06%) to the estimated residential amount. **This results in an estimated tax revenue collected from direct coal employees of \$150,000 for FY2011.**

Gas taxes

Gas taxes include both the gas revenue tax and the gas use tax, which are imposed on the distribution, supply, furnishing, or selling of natural gas for use or consumption.⁵⁹ The gas revenue tax is collected from consumers at a rate of 5% of gross charges or \$0.024 per therm, whichever is less. The gas use tax rate is \$0.0024 per therm for delivering suppliers and 5% of gross charges or \$0.024 per therm for self-assessing purchasers. For FY2011, total reported collections from the gas taxes amounted to approximately \$159.4 million (IDOR, 2012g).

To estimate the tax revenue generated from the consumption of gas by direct coal employees, we use a similar method as that for the electricity excise tax. Using EIA data for natural gas consumption by sector, we calculate the residential share of total taxable gas consumption at 47.7% for 2010.⁶⁰ Therefore, we estimate the residential sector generated approximately \$76.0 million for FY2011. **Applying the direct coal employment factor of 0.06%, we estimate that direct coal employees paid approximately \$50,000 in gas taxes in FY2011.**

Telecommunications excise tax

The telecommunications excise tax is imposed on both intrastate and interstate messages or information transmitted through use of local, toll, or wide area telephones; private lines; channels; telegraph; cellular mobile communications; and other means.⁶¹ The tax is collected from the consumer at a rate of 7% of gross charges. For FY2011, total reported collections from the telecommunications excise tax amounted to approximately \$670.3 million (IDOR, 2012g).⁶²

To estimate the tax revenue generated from the use of telecommunication services by direct coal employees, we first assume that the percent of total electricity customers represented by the residential sector (91%) serves as a proxy for the residential share of total telecommunication charges. Using this method, we estimate that the residential sector generated \$610.3 million in telecommunication excise tax revenues in FY2011. **We then apply the direct coal employment factor of 0.06% and estimate that direct coal employees paid approximately \$360,000 in telecommunications excise taxes in FY2011.**

⁵⁹ 35 ILCS 615 (gas revenue tax) and 35 ILCS 173 (gas use tax)

⁶⁰ To calculate this value, we first had to convert EIA gas consumption data, reported in million cubic feet, to therms. There are 10.3 therms per thousand cubic feet of natural gas.

⁶¹ 35 ILCS 630

⁶² Some locales in Illinois impose an additional local tax, resulting in a higher total tax rate. IDOR (2012f) reports the total amount collected, which includes both the state share and local share. We are unable to delineate between the two; therefore, our estimated telecommunications excise tax revenue attributable to direct coal employees likely represents an overestimate.

5.1.4 *Highway Funds revenues*

The state portion of Illinois' HF includes the Road Fund (RF), the Motor Fuel Tax Fund (MFTF), and the State Construction Account Fund. Since the Construction Account Fund is funded through transfers from the MFTF and motor vehicle licenses, each of which are accounted for in the RF and MFTF, only the RF and MFTF are considered in this report. The RF is funded through revenues from the motor fuel tax via transfers from the MFTF, as well as other transportation-related revenues such as licenses and fees. Monies from the fund are used to operate IDOT, the Illinois State Police, and the Secretary of State's office and to build and maintain roads, bridges, and other transportation facilities (GOMB, 2012a).

The MFTF is funded solely by the motor fuel tax (GOMB, 2012a). The monies from the MFTF are used to help fund the RF, the State Construction Account Fund, local MFTFs, other special funds and administrative costs for IDOT, the Secretary of State, and IDOR (GOMB, 2012a). The total amount of net (post-refund) highway revenue that comes from state funding sources, of which a portion could be attributable to direct coal employees, amounts to approximately \$2.2 billion for FY2011 (GOMB, 2012a).⁶³

Just as for individual income and sales taxes, employees of the coal industry pay taxes and fees related to transportation. To calculate the coal industry and employment share of transportation-related taxes and fees, we again apply the percent of total employment directly employed by the coal industry (approximately 0.1%) to total state-sourced highway fund revenues. **Using this method, we estimate that total transportation revenues for the RF and MFTF attributable to those directly employed by the coal industry amounted to \$1.3 million in FY2011.**

5.1.5 *Total revenues*

Direct employment in the coal industry generated an estimated \$15.9 million in tax revenues for the Illinois state budget in FY2011 (see Table 14). This consisted of approximately \$14.6 million for the GF and \$1.3 million for the HF.⁶⁴

This may reflect either an overestimate or underestimate of these employees' true contribution to the state budget, but, given data constraints, this estimate is based on one of the best methods available.

In any case, direct employment in the coal industry generates tax revenues for the GF and HF from various tax sources, including the individual income tax, sales and use tax, and others. These revenues are then spent on government administration, education, infrastructure, health care, and other services required to support industries and residents operating and living within Illinois. Those employed in the coal industry consume their share of these state expenditures. Therefore, the impact of coal on the state budget requires an accounting of the share of state expenditures attributable to supporting the coal industry's employees.

⁶³ This value was calculated by summing the revenues from motor vehicle and operators license fees (\$852.7 million), net receipts of the motor fuel tax after refunds (\$1.2 billion), and other RF revenue sources (\$110.1 million).

⁶⁴ The sum of the individual values do not equal total revenues due to rounding.

5.2 Expenditures

Estimating state expenditures for supporting direct coal industry employment first requires an estimate of total state expenditures from the GF and HF. Total expenditures of state-sourced monies from these funds amounted to approximately \$27.3 billion for FY2011, of which \$25.2 billion came from the GF and \$2.0 billion came from the HF (GOMB, 2012a). These funds were spent mostly on education, health and human services, protection of persons and property (including environmental protection), and transportation and infrastructure. As such, these expenditures benefited all of Illinois' residents including those employed in the coal industry.

For the purpose of estimating the portion of state expenditures necessary for supporting those directly employed by the coal industry, we adopt the methodology used by the Mountain Association for Community Economic Development (MACED) in its 2009 report on the impact of the coal industry on the Kentucky state budget (Konty and Bailey, 2009). MACED's methodology assumes that those expenditures are proportional to the direct coal employment share of total state employment.⁶⁵

As noted, direct coal employment accounted for only 0.06% of total state employment in 2010. Following MACED's methodology, we estimate direct coal-related employment expenditures by subtracting on-budget coal industry expenditures⁶⁶ (\$1.4 million) from total GF and HF expenditures (of state-generated revenues) and multiplying the remainder by coal's direct share of total state employment. **As shown in Table 15, this calculation results in a total estimated state expenditure in support of direct coal industry employees and their dependents of \$16.1 million in FY2011.**

Table 15: Calculation of state expenditures supporting direct coal employees

Item	Amount
Total expenditures from state-sourced revenues	\$27,278,313,000
Minus on-budget expenditures supporting coal	(\$1,400,860)
Net expenditures of state revenues	\$27,276,912,140
Percent total employment, direct coal employees	0.06%
Estimated expenditures, direct coal employees	\$16,070,000

Note: Expenditure values represent total expenditures from the GF and HF.

Applying the relative proportions of FY2011 state expenditures from the GF (93%) and HF (7%), we estimate that expenditures from the GF attributable to direct coal employment amounted to approximately \$14.9 million, while those from the HF amounted to approximately \$1.2 million (see Table 16).

⁶⁵ One possible criticism is that this method uses a per-employee factor instead of a per-capita factor and thereby overestimates state expenditures for supporting coal-related employment. This requires assuming that the only people receiving benefits from state expenditures are those who are employed, when in fact all citizens receive benefits from state expenditures. While we recognize that there is more than one possible method for calculating state expenditures for coal employees, we defer to the precedent for estimating expenditures based on a per-employee factor. For instance, this method uses the same approach that a 1980 study titled *The Fiscal Impact of the Kentucky Coal Industry* uses (Sims, 1980). That study was commissioned by the Kentucky Legislative Research Commission and conducted by respected economist Richard G. Sims. Sims's underlying assumption is that a coal miner's income supports more than just the miner, as the miner is most probably the primary income earner in the family. Calculating an employment-related expenditure based on a per-capita factor ignores this altogether. Therefore, the Sims methodology, upon which the MACED calculation is based, serves as a precedent that we choose to follow in conducting our analysis.

⁶⁶ The on-budget industry expenditures include those spent supporting and/or regulating the coal industry through administrative government.

5.3 Summary

Nearly 3,500 Illinois residents were directly employed in the coal industry in 2010. These jobs support families and local economies in 14 counties (MSHA, 2012). As shown above in Figure 13, employment in the coal industry declined sharply from 1985 through 2000, but has stabilized since then. However, absent a proportional increase in average mining wages, any future declines in employment, should they occur (as they have in the past), would result in smaller employment-related revenues from coal. Conversely, coal industry employees require support and services from the state that are paid for directly from the state budget, so any change in employment could affect a change in the amount the state spends to support the coal industry and its employees.

For FY2011, those directly employed in the coal industry supported the state budget through the payment of various tax revenues, most notably the individual income tax and state sales and use tax. At the same time, those employees consumed state support in various forms. For FY2011, we estimate that the tax revenues generated by direct coal industry employees amounted to approximately \$15.9 million, while state expenditures to support those employees amounted to approximately \$16.1 million.

In other words, the estimated impact on the Illinois state budget of direct employment in the coal industry amounted to a net cost of approximately \$0.2 million. This means that the expenditures from the state budget for supporting direct coal industry employees were slightly greater than the tax benefits resulting from that employment (see Table 16).

Table 16: Estimated net impact of direct coal employment on the state budget

Item	General Funds	Highway Funds	Total
Revenues from direct coal employment	\$14,590,000	\$1,290,000	\$15,880,000
Expenditures supporting direct coal employees	(\$14,860,000)	(\$1,200,000)	(\$16,060,000)
Net impact of direct coal employment	(\$270,000)	\$90,000	(\$180,000)

Note: Totals may not equal sum of parts due to rounding.

Coal industry activity also supports employment indirectly by requiring, for example, machinery and services to support the mining, processing, and transportation of coal. The next chapter estimates the revenues and expenditures attributable to indirect employment.

6. INDIRECT EMPLOYMENT SUPPORTED BY COAL: REVENUES AND EXPENDITURES

When discussing the total economic impact of any industry, it is necessary to include not only the direct impacts in terms of employment, tax revenues, and expenditures, but also the indirect and induced impacts of the industry. Like any industry, the coal industry relies on other industries and also generates economic activity and employment through this interdependence. This is the “indirect” impact of the coal industry. For example, in order to mine coal, companies must purchase machinery and supplies. These supply industries and their employees support the coal industry and are included in estimates of indirect employment impact.

“Induced” impacts are those generated and supported by spending in the economy. In the case of coal, coal employees earn income from their labor, and they spend that income on goods and services. Their spending creates and/or supports other industries and businesses. For example, coal miners earn income from mining coal, and they buy food and other items from a local grocery store. In this case, employment at the grocery store is supported by coal, to the extent that coal employees (and/or family members supported by their income) account for a certain percentage of the total spent by all customers.

For the purpose of simplifying the language used in this report, we combine indirect and induced impacts under the category of “indirect” impact. Employment indirectly supported by the coal industry results in the generation of employment-related tax revenues, just as outlined for direct employment in the previous chapter. However, just as for direct employment, the jobs that are indirectly supported by coal require general government support and services from the state.

To calculate indirect impacts, we use the Regional Input-Output Modeling System (RIMS-II) economic impact multipliers for the coal industry in Illinois for 2008 (the most recent data year available). Despite some potential pitfalls, multipliers such as those provided by RIMS-II are often used by the coal industry and by researchers to estimate the industry’s indirect impacts. We perform the calculations in this section with the recognition that, while imperfect, these multipliers allow us to clarify key issues and to establish initial estimates.

6.1 Revenues

As discussed, coal industry activity in Illinois creates and supports economic activity and employment in supply and mining support industries. These other industries may include companies from the construction, manufacturing, and distribution sectors that provide goods and services used for the production, processing, and transportation of coal. Each of these industries and their employees then pay taxes on their income, purchases of goods and services, and fuel and other items. These revenues benefit the state budget by contributing to the GF and HF.

As shown in Table 17, we estimate that the Illinois coal industry indirectly supported 7,826 employees in 2010, representing 0.13% of total state employment, including both full- and part-time employees. Total indirect wages amounted to \$425.3 million, for an average wage for indirect employees of \$54,347.⁶⁷ By comparison, the average reported wage for direct employees of the coal industry is \$76,191 (BLS, 2012a).

⁶⁷ This value is less than the average wage of workers in the “support activities for coal mining” industry, reported to be \$59,897 for 2010 (BLS, 2012b). However, this value reflects not only the average wage of those whose employment is indirectly supported by coal mining—such as support activities—but it also reflects the average wage of those who fall under the category of induced impacts, which include lower wage workers.

Table 17: RIMS-II multipliers applied to employment and wages

	Direct impact	RIMS-II impact multiplier	Total impact	Indirect impact
Employment	3,481	3.2483	11,307	7,826
Wages	\$265,220,000	2.6037	\$690,560,000	\$425,330,000

Source: Direct employment from MSHA (2012); direct wages calculated using data from BLS (2012a); total and indirect impacts calculated using multipliers produced by BEA (2012b).

For the state sales and use tax contribution from indirect employment, we again apply ITEP’s combined effective tax rate for “general sales-individuals” and “other sales and excise—individuals.” However, based on the average wage of indirect coal-supported workers, we use the combined rate for the \$36,000 to \$58,000 income range, which is reported as 3.2% (ITEP, 2009). Applying this effective rate to the total income/wages for indirect coal-related employees results in an estimated state sales and use tax revenue attributable to indirect coal-related employment of approximately \$13.6 million in FY 2011.

Indirect coal employment generates tax revenue for the GF through payment of each of the same taxes considered in Section 5.1 for direct employment. For individual income taxes generated by indirect employment, we again use the effective tax rate of 2.5% and apply it to total wages earned.⁶⁸ Based on this method, we estimate that individual income tax revenues generated by employment indirectly supported by coal amounts to \$10.6 million for FY2011.

For public utility taxes, using the same methods as for direct coal employment, we estimate that employees indirectly supported by the Illinois coal industry contributed approximately \$1.3 million in public utility tax revenues in FY2011.

Using the same methodology as for direct employment, we further estimate that revenue generated for the RF and MFTF from indirect coal employment totaled \$2.9 million in transportation-related taxes, licenses, and fees.

Therefore, we estimate that employment indirectly attributable to coal industry activity generated a total of approximately \$28.4 million in tax revenues for FY2011 (see Table 18). This consisted of contributions of \$25.5 million to the GF and \$2.9 million to the HF.

Table 18: Revenues related to employment indirectly supported by coal

Revenue	Amount	Percent of revenues
<u>To General Funds</u>		
Sales and use taxes	\$13,610,000	48%
Individual income tax	\$10,590,000	37%
Public utility taxes	\$1,250,000	4%
Subtotal	\$25,450,000	90%
<u>To Highway Funds</u>		
Motor fuel tax	\$1,620,000	6%
Motor vehicle and operator license fees	\$1,130,000	4%
Other licenses and fees	\$150,000	<1%
Subtotal	\$2,900,000	10%
Total	\$28,350,000	100%

Note: Amounts are rounded to \$10,000 when estimated. The total is also rounded because it includes specific amounts that are rounded.

⁶⁸ The individual income tax rate was increased to 5% effective January 1, 2011. However, we use 2010 data for this report based on the reasoning described in footnote 11. As reported by IDOR, the effective tax rate for tax year 2010 was approximately 2.5% (IDOR, 2012f).

6.2 Expenditures

Indirect coal industry employment generates a significant amount of revenues that benefit the state budget; however, just as the state budget provides services consumed by direct employees like health, education, public safety, transportation and infrastructure and other services, it provides services to indirect employees.

To estimate the total state expenditures supporting indirect employment attributable to the coal industry, we apply the same method that we use to estimate expenditures for direct industry employees (see Section 5.2 for a detailed explanation of the methodology). Indirect employment attributable to coal accounts for a little over 0.1% of total state employment (0.13%). After subtracting state expenditures for supporting the coal industry directly, we multiply 0.1% by the remaining state expenditures from the GF and HF that were paid for with state-generated revenues.

As shown in Table 19, based on this methodology we estimate that the state expenditure on employees indirectly supported by the coal industry amounted to approximately \$36.1 million in FY2011.

Table 19: Calculation of state expenditures supporting indirect coal employees

Item	Amount
Total expenditures of state revenues	\$27,278,313,000
Minus on-budget expenditures supporting coal	(\$1,400,860)
Net expenditures of state revenues	\$27,276,912,140
Percent total employment, indirect coal employees	0.13%
Estimated expenditures, indirect coal employees	\$36,120,000

Note: Reported employment percentage is rounded to the nearest tenth of a percent.

Applying the relative proportions of FY2011 state expenditures from the GF (93%) and HF (7%), we estimate that expenditures from the GF attributable to employment indirectly supported by the coal industry amounted to \$33.4 million, while those from HF amounted to \$2.7 million (see Table 20).

6.3 Summary

As summarized in Table 20, we estimate that employment indirectly supported by the Illinois coal industry resulted in a net cost to the state of \$7.8 million for FY2011.

Table 20: Net impact of indirect coal-related employment on the state budget

Item	General Funds	Highway Funds	Total
Revenues from indirect coal employment	\$25,450,000	\$2,900,000	\$28,350,000
Expenditures supporting indirect coal employees	(\$33,420,000)	(\$2,700,000)	(\$36,120,000)
Net impact of indirect coal employment	(\$7,970,000)	\$200,000	(\$7,770,000)

Note: Totals may not equal sum of parts due to rounding.

Like direct employees, indirect employees also generated a net cost. This is due to the fact that indirect employees make lower wages than do direct coal employees. The employees of the support industries then pay fewer taxes and contribute less, per person, to state revenues than do direct employees. However, each of these indirect employees benefits from the same proportional share of state expenditures, regardless of their wages. Consequently, the revenues generated from indirect coal-related employment through the payment of taxes and fees fail to make up for state expenditures in support of those employees.

The same is true when the impacts of both direct and indirect employment are summed together. **For Illinois, we estimate that the net fiscal impact of direct and indirect coal-related employment amounts to an overall cost to the state of approximately \$8.0 million for FY2011.**

We conclude that the overall benefits of employment supported directly and indirectly by coal industry activity are outweighed by the cost to the state for supporting those employees. In other words, when examining employment alone, coal-related employment costs Illinois more than is contributed in revenues from taxes and fees.

The significance of the employment analysis is not in the calculation of the net impact, however. In fact, even though our estimates are the best available estimates given data constraints, they are merely estimates, and should only be regarded as such. The significance of the analysis lies in the fact that while direct and indirect employees benefit the state through the payment of various taxes, those employees in turn rely on state expenditures for services and support, the costs of which must be included in any analysis of the net impact of the coal industry in Illinois.

7. CONCLUSIONS AND RECOMMENDATIONS

The Illinois coal industry provides jobs and generates revenues that benefit citizens and the state budget. These benefits are generated directly through coal industry activity, such as the mining, processing, and transportation of coal. The industry also indirectly benefits the state by supporting supply sectors and other businesses, which generate additional jobs and state revenues. The revenues in turn benefit the public through the funding of various services such as education, infrastructure improvements, health support, environmental protection, and government administration.

However, as detailed in this report, the revenues generated directly by the coal industry did not constitute a substantial portion of state tax revenues for either the GF or HF in FY2011, and coal industry employment accounts for only a small portion of total state employment. There are various costs associated with the coal industry as well, and traditional accountings of the economic impact of the industry for Illinois have not accounted for these costs. In this report, we provide a thorough and detailed accounting of the net fiscal impact of the coal industry on the Illinois state budget by considering both the benefits and the associated costs of the industry, direct employment, and indirect employment.

7.1 Jobs

The Illinois coal industry directly provided 3,481 jobs and supported another 7,826 jobs indirectly in 2010, representing a total of approximately 0.2% of total employment in the state. This is a small portion of the state workforce. For most coal-producing counties, the impact was more significant: Direct coal industry employees comprised 12% of total county employment in Saline County, 8% in Gallatin County, 4% in White County, and 3% in Perry County, for instance. Overall, direct employment in the coal industry accounted for an average of 1.2% of total employment for Illinois' coal-producing counties in 2010.

Total wages for direct coal industry employees amounted to an estimated \$265.2 million in 2010, with an average wage of \$76,191. Those indirectly employed as a result of coal industry activity earned a total of \$425.3 million, with an average wage of \$54,347.

7.2 State revenues and expenditures

The coal industry and its employees benefit the Illinois state budget through the payment of taxes and fees, which are deposited into the GF and HF. Despite our efforts to obtain official data and estimates for each revenue and expenditure, the lack of data and information for a number of items requires that we generate estimates. Despite these uncertainties, we regard these figures as plausible estimates calculated with the best available data and methods, and they are instructive to understand the scale of coal's impact and to provide a foundation for future refinements.

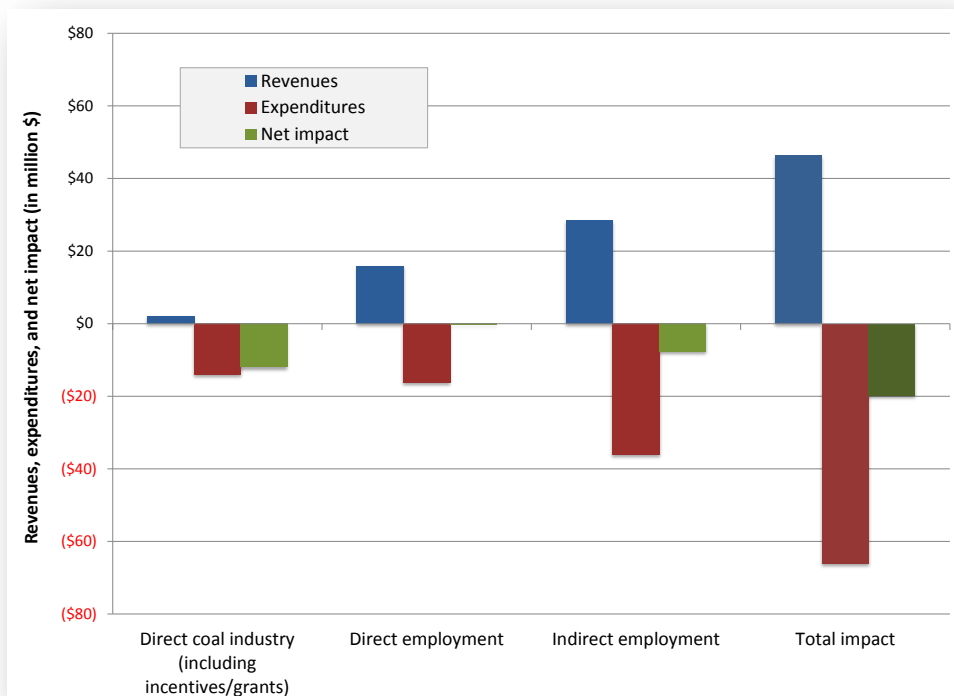
With these caveats in mind, we report the revenues, expenditures, and net impact figures estimated in this report (see Table 21 and Figure 15). The industry alone contributed \$2.1 million to the GF from the direct payment of taxes in FY2011. The largest source of direct revenues for the state was the industry's payment of the corporate income tax, which accounted for 52% of all state revenues generated from coal industry activity. In total, taxes generated by coal accounted for less than 0.01% of total GF revenues in FY2011. The low revenue contribution is largely due to the fact that Illinois does not collect a severance tax.

In terms of the costs to the state attributable to the coal industry, we estimate that total on-budget expenditures supporting the industry amounted to \$1.4 million in FY2011. The greatest agency expenditure from the GF was for IDNR. Comparing the on-budget expenditures to the direct industry revenues, we estimate that the direct impact of the coal industry amounted to a net benefit for Illinois of \$0.7 million in FY2011. However, the total cost associated with coal is even greater, as this estimate does not account for the impact of tax incentives and grant programs supporting the coal industry.

Table 21: Summary of revenues, expenditures, and net impact of coal for FY2011

Item	General Funds	Highway Funds	Total
Direct coal industry			
Revenues (including support activities)	\$2,070,000	\$0	\$2,070,000
On-budget discretionary expenditures	(\$1,400,000)	n/a	(\$1,400,000)
Estimated net impact	\$670,000	\$0	\$670,000
Tax incentives and grant programs			
Tax incentives	(\$35,000)	n/a	(\$35,000)
Hard cost (statutory transfer)	(\$12,530,000)	\$0	(\$12,530,000)
Estimated net impact	(\$12,565,000)	\$0	(\$12,565,000)
Direct coal employment			
Revenues	\$14,590,000	\$1,290,000	\$15,880,000
Expenditures	(\$14,860,000)	(\$1,200,000)	(\$16,060,000)
Estimated net impact	(\$270,000)	\$90,000	(\$180,000)
Indirect employment supported by coal			
Revenues	\$25,450,000	\$2,900,000	\$28,350,000
Expenditures	(\$33,420,000)	(\$2,700,000)	(\$36,120,000)
Estimated net impact	(\$7,970,000)	\$200,000	(\$7,770,000)
Total impact			
Revenues	\$42,110,000	\$4,190,000	\$46,300,000
Expenditures	(\$62,245,000)	(\$3,900,000)	(\$66,145,000)
Estimated net impact	(\$20,135,000)	\$290,000	(\$19,845,000)

Figure 15: Net impact of the coal industry on the Illinois state budget, FY2011 (summary)



Tax incentives and grants supporting coal-related activity cost Illinois approximately \$12.6 million in FY2011. Grants accounted for virtually all of this cost. Therefore, the grant programs supporting the coal industry represent a significant cost to the state budget, a cost which far exceeds the amount of GF revenues contributed by the coal industry.

Direct employment in the coal industry also benefited the state budget through contributions of \$14.6 million to the GF and \$1.3 million to the HF, for a total estimated benefit to the state budget of approximately \$15.9 million for FY2011. These revenues were from the payment of sales and use taxes—which accounted for 47% of revenues—as well as individual income taxes (42%), public utility taxes (4%), and transportation-related taxes and fees (8%). State expenditures for supporting those employees through the provision of various services amounted to approximately \$16.1 million, resulting in an estimated net cost to the state of \$0.2 million.

Employment indirectly supported by the coal industry generated an estimated \$25.5 million for the GF and \$2.9 million for the HF, for a total estimated benefit to the state budget of approximately \$28.4 million in FY2011. Again, sales and use taxes accounted for the greatest share at 48%. Estimated state expenditures supporting indirect coal-related employment amounted to approximately \$36.1 million. Therefore, indirect coal-related employment resulted in a net cost to the state of approximately \$7.8 million. This result differs from that for direct coal employees because the average wage of indirect employees was significantly lower than the average wage of direct employees.

Overall, when taking all revenues and expenditures into account, we estimate that the impact of the coal industry on the Illinois state budget in FY2011 amounted to a net cost to the state of \$19.8 million, resulting from a net cost to the GF of \$20.1 million and a net benefit for the MLF of \$0.3 million.

7.3 Recommendations

We provide several recommendations aimed at minimizing future costs to the state attributable to the coal industry and incentivizing new forms of economic development that will help strengthen local economies in Illinois' coal-producing counties. Some of the policy recommendations presented below complement others, in that the fiscal impact of one recommendation may support the financing of another. Additionally, other policy changes may be required beyond those suggested here in order to address other problems associated with the coal industry. Our recommendations are as follows:

Implement a state severance tax on coal and distribute a portion of the revenues to local governments.

The severance tax is a tax on the privilege of severing (extracting) natural resources such as coal, natural gas, oil, timber, or other minerals. Severance taxes are usually structured to tax either the gross value of the resource after it is extracted or the volume of production. In many coal-producing states, severance taxes play an important role in funding education, health care, infrastructure, and other services provided at the state and local level. A total of 38 states have some type of severance tax (O'Leary, 2011). To better capture a portion of the wealth generated from coal extraction in Illinois, while supporting state and local funding for education, health care, infrastructure, environmental protection, and economic development initiatives, Illinois should implement a state severance tax on coal and distribute a portion of the revenues to local governments. West Virginia and Kentucky provide good models. The West Virginia severance tax is 5% of gross revenues, of which 4.65% is deposited into the state's General Revenue Fund while the remaining 0.35% is distributed to local governments. Kentucky collects the tax at a rate of 4.5% of gross revenues, and distributes 50% of the revenue collected to local governments and coalfield economic development projects. The potential benefits of an Illinois coal severance tax are presented in a white paper being published as a companion to this report.

Create a permanent mineral trust fund. Coal is a finite resource, and its extraction is prone to periods of growth and decline. To expand and sustain the economic benefits of coal mining (and other natural resource industries), Illinois should create a permanent mineral trust fund that would support short-term and long-term economic development goals and protect against any future decline in jobs and revenues provided by the coal industry. The Fund could be financed by a portion of revenues from any new severance tax imposed on coal (1% of a 5% severance tax, for instance). Monies from the Fund could be dedicated toward supporting economic diversification efforts in Illinois' coal-producing counties, used to fund education and health care initiatives, or set aside to cover any future funding shortfalls for reclaiming abandoned mine lands. Several western states have created permanent funds with dedicated severance tax dollars, and more recently, both an Economic Diversification Trust Fund and a West Virginia Future Fund were proposed in West Virginia (Boettner et al., 2012). The potential benefits of an Illinois permanent mineral trust fund are presented in a white paper being published as a companion to this report.

Conduct a detailed analysis of the full costs and benefits of grant programs supporting coal-related projects, and implement greater transparency and oversight. With both the CTDAF and bond-financed grant programs, an underlying goal is that the state's investment in the coal industry will have a positive economic impact on the Illinois economy. However, it is not readily apparent how outcomes of grants awarded are evaluated, or whether they are evaluated at all. There is also a lack of transparency in the criteria for how and to whom grants are awarded. For example, DCEO's Grant Tracker lists ICCI as the grant recipient for Coal Research & Development awards. However, ICCI actually distributes its awarded money to sub-grantees, which are not reported in the Grant Tracker. In the case of bond-financed grant programs, the full cost of those programs are not known because the debt service schedules used for the bonds are not readily available. The core problem is a lack of complete and consolidated information that is readily available, which in turn obscures the grant programs' full cost to the state.



To conclude, in this report we provide initial estimates of the benefits and costs of the Illinois coal industry. We invite refinements of this analysis, and recognize that revised agency accounting practices that generate data on the impact of each industry would help facilitate these calculations for the coal industry, and indeed, any industry operating in the State of Illinois. We conclude that Illinois' coal industry presents a net cost to the state budget, and we offer recommendations that would help the industry pay for its current state-level expenditures and cover any potential long-term costs associated with coal-related activities. Even if mining expands in the near future, the coal industry's small contribution to state revenues may be insufficient to cover all past and future costs associated with coal industry activity. Therefore state grant programs that support the coal industry should be re-considered within the context of the findings of this report.

REFERENCES

- Boettner, Ted, Jill Kriesky, Rory McIlmoil and Elizabeth Paulhus. 2012. Creating an Economic Diversification Trust Fund. West Virginia Center on Budget and Policy and Downstream Strategies. Jan.
http://downstreamstrategies.com/documents/reports_publication/ds_economic_diversification_trust_fund.pdf
- Bureau of Economic Analysis (BEA). 2012a. Regional data: GDP and personal income. Query: Gross Domestic Product, NAICS classification, Illinois, "Private industries," "Mining," "Oil and gas extraction," "Mining (except oil and gas)," and "Support activities for mining," 2010. Accessed Nov 12.
<http://bea.gov/iTable/iTable.cfm?ReqID=70&step=1&isuri=1&acrdrn=1>
- _____. 2012b. Regional Multipliers from the Regional Input-Output Modeling System (RIMS II): A Brief Description. Accessed Jul 19. <http://www.bea.gov/regional/rims/brfdesc.cfm>
- Bureau of Labor Statistics (BLS). 2012a. Quarterly Census of Employment and Wages: State and county employment and wages, multi-screen data search. Query: Industry—2121 NAICS 2121 Coal mining, Illinois—Statewide, Private industries, "All employees," "Total wages (in thousands)," and "Average annual pay," 2010. Accessed Nov 9. <http://www.bls.gov/data/#employment>
- _____. 2012b. Quarterly Census of Employment and Wages: State and county employment and wages, multi-screen data search. Query: Industry—213113 NAICS 213113 Support activities for coal mining, Illinois—Statewide, Private industries, "Average annual pay," 2010. Accessed Nov 9.
<http://www.bls.gov/data/#employment>
- Department of Commerce and Economic Opportunity (DCEO). 2012a. The Illinois Coal Industry, 2012. Report of the Office of Coal Development. Jun.
<http://www2.ildceo.net/coal/2012/theillinoiscoalindustry2012.pdf>
- _____. 2011. Enterprise Zone Fiscal Year 2011 Annual Report. Oct.
<http://www.ildceo.net/NR/rdonlyres/AA056579-8893-404F-8D89-7D91EC29F7A0/0/EZAnnRept20112.pdf>
- _____. 2012b. "DCEO Grant Tracker." Accessed Aug. <http://granttracker.ildceo.net/>
- _____. 2012c. Enterprise Zone Program. Online. Accessed Sept 2012.
http://www.ildceo.net/dceo/Bureaus/Business_Development/Tax+Assistance/Enterprise-Zone.htm
- _____. 2012d. Enterprise Zone program tax questions and answers. Aug 9.
<http://www.ildceo.net/NR/rdonlyres/2B87CB05-3163-46E9-8FE4-652008D8723E/0/ezqa20120809.pdf>
- _____. 2012e. Illinois Corporate Accountability progress reports.
<http://www.ilcorpacct.com/corpacct/ProgressReport.aspx>
- _____. 2012f. Employer Training Investment Program—Competitive Component. Accessed Nov 17.
http://www.ildceo.net/dceo/Bureaus/Business_Development/Grants/ETIP.htm
- _____. 2012g. Office of Coal Development Program Summary.
<http://www.commerce.state.il.us/NR/rdonlyres/1F29B4AE-DE65-433C-94CC-2BF0B65914A2/0/OCDProgramSummaryFY2012.pdf>
- _____. 2012h. Coal Demonstration Grant Program application.
<http://www.commerce.state.il.us/NR/rdonlyres/1AA32AF3-5C68-4E59-AFA2-50F41D07DC6D/0/CoalDemonstrationProgramApplication08072012.doc>

- Energy Information Administration (EIA). 2011a. Table 15. Recoverable Coal Reserves at Producing Mines, Estimated Recoverable Reserves, and Demonstrated Reserve Base by Mining Method, 2010. Annual Coal Report, 2010. <http://www.eia.gov/coal/annual/archive/05842010.pdf>
-
- _____ 1995. Longwall mining. Mar. <ftp://ftp.eia.doe.gov/coal/tr0588.pdf>
-
- _____ 2000. Impacts of technological change and productivity on the coal market. <http://www.eia.gov/oiaf/analysispaper/coal.html>
-
- _____ 2011b. Table 2. Coal Production and Number of Mines by State, County, and Mine Type, 2010. Annual Coal Report, 2010. <http://www.eia.gov/coal/annual/archive/05842010.pdf>
-
- _____ 2011c. Table 1. Coal Production and Number of Mines by State and Mine Type, 2010, 2009. Annual Coal Report, 2010. <http://www.eia.gov/coal/annual/archive/05842010.pdf>
-
- _____ 2011d. Annual coal distribution report. Domestic distribution of US coal by origin State, consumer, destination and method of transportation. Nov 30. http://www.eia.gov/coal/distribution/annual/pdf/o_10state.pdf
-
- _____ 2011e. Annual coal distribution report. Domestic and foreign distribution of U.S. coal by origin State. Nov 30. http://www.eia.gov/coal/distribution/annual/pdf/o_10foreign.pdf
-
- _____ 2011f. Table 3. Underground Coal Production by State and Mining Method, 2010. Annual coal report, 2010 and archives. <http://www.eia.gov/coal/annual/archive/archive.html>
-
- _____ 2012a. Table: Coal production by region and type, Reference case. Annual Energy Outlook 2013, Early release. Dec 5. <http://www.eia.gov/forecasts/aeo/er/>
-
- _____ 2012b. Independent statistics and analysis, Natural gas: Natural gas gross withdrawals and production, Illinois, Annual, 2010. Accessed Nov 12. http://www.eia.gov/dnav/ng/ng_prod_sum_dcu_sil_a.htm
-
- _____ 2012c. Independent statistics and analysis, Natural gas: Natural gas prices, Illinois and United States, Annual, 2010. Accessed Nov 12. http://www.eia.gov/dnav/ng/ng_pri_sum_dcu_SIL_a.htm
-
- _____ 2012d. Independent Statistics and Analysis, Petroleum and other liquids: Crude oil production, Annual—thousand barrels, 2010. Accessed Nov 12. http://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbbbl_a.htm
-
- _____ 2012e. Independent Statistics and Analysis, Petroleum and other liquids: Domestic Crude Oil First Purchase Prices by Area, Annual, 2010. Accessed Nov 12. http://www.eia.gov/dnav/pet/pet_pri_dfp1_k_a.htm
-
- _____ 2012f. Table1: Coal production and number of mines by State and mine type, 2011, 2010. Annual coal report 2011. <http://www.eia.gov/coal/annual/pdf/table1.pdf>
- Gauss, Mark. 2012. Acting Deputy Director for Business Development, Department of Commerce and Economic Opportunity. Email correspondence with author McIlmoil. Nov 2.
- Governor's Office of Management and Budget (GOMB). 2012a. Illinois State Budget, Fiscal Year 2013. Feb 22. <http://www.state.il.us/budget/FY2013/FY13OperatingBudget.pdf>
-
- _____ 2012b. Response to Freedom of Information Request submitted by author Kass in June 2012. Response received on June 7, 2012, via electronic mail.
- Harris, Mickey. 2012. Telephone correspondence with author McIlmoil. Nov 1.

- Illinois Board of Higher Education. 2010. Fiscal Year 2011 appropriations for higher education, Governor's action. Updated to incorporate August 3rd reserve announcements. Aug 3.
<http://www.ibhe.org/Board/agendas/2010/August/Item3a.pdf>
-
- _____ 2011. Annual report on public university revenues and expenditures: Fiscal Year 2011. Oct 28. <http://www.ibhe.org/Fiscal%20Affairs/PDF/FY11PublicRevExpRpt.pdf>
- Illinois Commission on Government Forecasting and Accountability (ICGFA). 2012. 3-year budget forecast, FY2013-FY2015. Mar.
<http://www.ilga.gov/commission/cgfa2006/Upload/2012ThreeYearBudgetForecastFY2013-FY%202015.pdf>
- Illinois Department of Natural Resources (IDNR). 2012a. Abandoned Mine Lands. Accessed Nov 1. Online:
<http://dnr.state.il.us/mines/aml/index.htm>
-
- _____ 2012b. Land Reclamation. Accessed Nov 1. Online:
<http://dnr.state.il.us/mines/lrd/index.htm>
-
- _____ 2012c. Office of Water Resources Programs. Accessed Nov 1. Online:
<http://www.dnr.illinois.gov/WaterResources/Pages/Programs.aspx>
-
- _____ 2012d. Endangered Species Consultation: Frequently asked questions about consultation. Accessed Nov 1. Online: <http://www.dnr.state.il.us/orep/ee/brief.htm>
- Illinois Department of Revenue (IDOR). 2011. Sales tax Fiscal Year report (2011). Accessed Nov 2012.
<http://www.revenue.state.il.us/AboutIdor/TaxStats/PriorYears/SICF11.xlsx>
-
- _____ 2012a. Email correspondence with author Kass. Nov. 5.
-
- _____ 2012b. Sales and Use Taxes. Accessed Nov 6. Online:
<http://www.revenue.state.il.us/businesses/taxinformation/sales/rot.htm>
-
- _____ 2012c. Telephone correspondence with author Kass. Oct 9.
-
- _____ 2012d. Email correspondence with author Kass. Oct 18.
-
- _____ 2012e. Tax rate database: Excise taxes. Accessed Nov 7. Online:
<http://tax.illinois.gov/Publications/Sales/SalesTaxRates/FixedRatesExcise.htm>
-
- _____ 2012f. Individual income tax returns filed by adjusted gross income—tax year: 2010, preliminary. Mar 29. <http://www.revenue.state.il.us/AboutIdor/TaxStats/2010/IIT-AGI-2010-Preliminary.pdf>
-
- _____ 2012g. Annual report of collections and distributions, 2011. Accessed Nov 7.
<http://tax.illinois.gov/Publications/AnnualReport/2011-Table-1.pdf>
- Illinois Department of Transportation (IDOT). 2012. Economic Development Program. Accessed Oct 30.
<http://www.dot.state.il.us/edp/edp.html#Purpose>
- Illinois State Geological Survey (ISGS). 2012. About ISGS. Accessed Nov 5. Online:
<http://www.isgs.illinois.edu/about-isgs/about.shtml>
- Illinois Workforce Info Center. 2012a. Virtual Labor Market Information database. Query: Industry profile, Industry details, Industry by sector, Coal mining (2121), Industry description. Accessed Nov 15.
<http://illinois.virtuallmi.com/vosnet/menulandingpage.aspx>

-
- 2012b. Virtual Labor Market Information database. Query: Employment and wage data, Labor force data, Labor force employment and unemployment, State (Illinois), Annual (2010). Accessed Nov 9. <http://illinois.virtuallmi.com/vosnet/menulandingpage.aspx>
-
- 2012c. Virtual Labor Market Information database. Query: Employment and wage data, Labor force data, Labor force employment and unemployment, County, Annual (2010). Accessed Nov 9. <http://illinois.virtuallmi.com/vosnet/menulandingpage.aspx>
- Institute on Taxation and Economic Policy (ITEP). 2009. Who Pays? A distributional analysis of the tax systems in all 50 states. Nov. <http://www.itepnet.org/whopays3.pdf>
- Konty, Melissa Fry and Jason Bailey. 2009. The Impact of Coal on the Kentucky State Budget. MACED. Jun 25. <http://maced.org/coal/summary.htm>
- McIlmoil, Rory and Evan Hansen. 2010. The decline of Central Appalachian coal and the need for economic diversification. Thinking Downstream: White Paper #1. Morgantown, West Virginia: Downstream Strategies. Jan 19. http://downstreamstrategies.com/Documents/reports_publication/DownstreamStrategies-DivisionOfCentralAppalachianCoal-FINAL-1-19-10.pdf
- McIlmoil, Rory, Evan Hansen, Ted Boettner, and Paul Miller (2010a) The Impact of Coal on the West Virginia State Budget. Downstream Strategies and West Virginia Center on Budget & Policy. Jun 22. http://downstreamstrategies.com/Documents/reports_publication/DownstreamStrategies-coalWV.pdf
- McIlmoil, Rory, Evan Hansen, and Ted Boettner. 2010b. The Impact of Coal on the Tennessee State Budget. Downstream Strategies and West Virginia Center on Budget & Policy. Jun 22. http://downstreamstrategies.com/Documents/reports_publication/DownstreamStrategies-coalTN.pdf
- McIlmoil, Rory, Evan Hansen, Meghan Betcher, Anne Hereford, and Jason Clingerman. 2012a. The Impact of Coal on the Pennsylvania State Budget. Downstream Strategies. Oct 3. http://downstreamstrategies.com/documents/reports_publication/ds_penncoal_budget_final.pdf
- McIlmoil, Rory, Laura Hartz, Anne Hereford, and Evan Hansen. 2012b. The Impact of Coal on the Virginia State Budget. Downstream Strategies. Dec 12. http://downstreamstrategies.com/documents/reports_publication/ds_impact_of_coal_on_virginia_state_budget_final_12-10-12.pdf
- Mellish, Michael. 2012. Long-term analysis and forecasting expert: coal supply and prices. Energy Information Administration. Excel spreadsheets provided via email to author McIlmoil. Jun 26.
- Mine Safety and Health Administration (MSHA). 2012. Part 50 Data, Address/Employment Files. Sept. Obtained from: <http://www.msha.gov/STATS/PART50/P50Y2K/AETABLE.HTM>
- Office of the Auditor General. 2009. Performance Audit of the Coal Development Fund. Feb. Accessed Aug 2012. <http://www.auditor.illinois.gov/Audit-Reports/Performance-Special-Multi/Performance-Audits/09-Coal-Dev-Fund-Perf-full.pdf>
- PennEnergy. Undated. I'll see that and raise you. Online article. <http://www.pennenergy.com/index/power/display.articles.power-engineering.volume-111.issue-3.departments.startup.irsquoll-see-that-and-raise-you.html>
- Prairie Research Institute. 2011. 2011 report. <http://www.prairie.illinois.edu/pdf-files/annual-rept-fy11.pdf>
-

- Rend Lake College. 2012. Academic Resources, Departments: Mining Technology. Accessed Nov 6. Online: <http://cms.rlc.edu/asat/mining-technology>
- Sims, Richard G. (1980) The Fiscal Impact of the Kentucky Coal Industry. A report prepared by the Kentucky Legislative Research Commission. Sep.
- Southeastern Illinois College. 2012a. Coal mining technology degree requirements. Accessed Nov 6. http://www.sic.edu/files/uploads/global/Academic_Services/Curriculum_Guides/COAL_MINING_TECHNOLOGY.pdf
- Southern Illinois University (SIU). 2012a. Illinois Coal Development Park. Accessed Nov 5. Online: <http://www.cdp.siu.edu/>
- _____ 2012b. Energy interests. Accessed Nov 5. Online: <http://advancedenergy.siu.edu/energy-at-siu/departments.html>
- _____ 2012c. Coal Research Center: Clean Coal Review Board Projects Funded. Accessed Nov 5. Online: <http://www.crc.siu.edu/ccrb/projects.html>
- _____ 2012d. Illinois Coal Development Park. Accessed Nov 5. Online: <http://www.cdp.siu.edu/>
- State of Illinois Comptroller. 2012a. Tax expenditure report, Fiscal Year 2011. Aug. <http://www.ioc.state.il.us/?LinkServID=B0F39EC1-1CC1-DE6E-2F48E706F850E182&showmeta=0>
- _____ 2004. Tax expenditure report, Fiscal Year 2003. Jun. <http://www.ioc.state.il.us/?LinkServID=74564292-2BE1-418E-8257016D260A2211&showmeta=0>
- _____ 2005. Tax expenditure report, Fiscal Year 2004. Sept. <http://www.ioc.state.il.us/?LinkServID=71B36240-D0EA-4F3A-A01DD916DA688E3B&showmeta=0>
- _____ 2012b. Fiscal Year 2011 Appropriations Report. Accessed Aug 2012. <http://www.ioc.state.il.us/index.cfm/linkservid/ADE7C99C-1CC1-DE6E-2F48F22028418685/showMeta/0/>
- _____ 2012c. Revenues, Statewide Fund Agency, Object of Detailed Expenditure Object. Accessed Aug 2012. <http://www.wh1.ioc.state.il.us/Expert/Rev/ERControl.cfm?Control=Fund&Reset=Y&GroupBy=Agcy&SortName=No&CFID=449770&CFTOKEN=87845288>
- _____ 2012d. Expenditures, Statewide Fund Agency, Object of Detailed Expenditure Object. Accessed Aug 2012. <http://www.wh1.ioc.state.il.us/Expert/Exp/EEControl.cfm?Control=Fund&Reset=Y&GroupBy=Agcy&SortName=No&CFID=449770&CFTOKEN=87845288>
- _____ 2012e. SB15 report for the #925 fund from 2007-2012. Facsimile provided to author Kass via email. Oct 12.
- United States Geological Survey (USGS). 2009. Chapter H: Production and depletion of Appalachian and Illinois Basin coal resources. The National Coal Resource Assessment Overview. Milici, Robert C and Kirstin O Dennen. <http://pubs.usgs.gov/pp/1625f/downloads/ChapterH.pdf>
- _____ 2011. Mineral commodity summaries, 2011. Jan 21. <http://minerals.usgs.gov/minerals/pubs/mcs/2011/mcs2011.pdf>
- Wheeler, Dan. 2012. Telephone correspondence with author McIlmoil. Nov 7.

APPENDIX A: OFFICE OF COAL DEVELOPMENT GRANTS AWARDED TO ACADEMIC INSTITUTIONS, FY2007-2012

Fiscal Year	Opportunity	Organization	Award amount	Project description
2007	Coal Competitiveness Program	Illinois Eastern Community Colleges	\$36,000	Purchase equipment to train miners quarterly in the proper procedures for donning self-rescuers.
2007	Coal Competitiveness Program	Illinois Eastern Community Colleges	\$90,000	Purchase Computer Based Training systems for operating different types of mining machines.
2008	Coal Competitiveness Program	Illinois Eastern Community Colleges	\$186,000	To purchase training equipment and a mobile training gallery to train SCSR users in donning the breathing devices in smoke-related environments.
2010	Coal Competitiveness Program	Illinois Eastern Community Colleges	\$260,000	To purchase a mobile maintenance learning lab that can be used to provide a state of the art training program at each mine site in Illinois.
2008	Coal Competitiveness Program	Rend Lake College	\$1,072,500	To construct a 20,000 square foot facility on campus equipped with simulation capability to provide training for new miners and miner refresher training.
2009	Coal Competitiveness Program	Rend Lake College	\$285,000	To construct a 20,000 square foot facility on campus equipped with simulation capability to provide training for new miners and miner refresher training.
2012	Coal Education & Marketing Program	Richland Community College	\$76,000	For increasing elementary and secondary student and teacher awareness of coal-related technology and careers, highlighting Illinois as a clean-coal and carbon capture and storage technology innovation corridor, and facilitating awareness of the new, emerging CCS industry in Illinois.
2007	Coal Competitiveness Program	SIU at Carbondale	\$200,000	To conduct a feasibility study on the construction and operation of a coal gasification power plant.
2007	Coal Research & Development Program	SIU at Carbondale	\$609,727	For supporting ICCI's administrative costs for managing the Coal Research and Development program.
2007	Coal Research & Development Program	SIU at Carbondale	\$6,790,254	For supporting the Coal Research and Development program. Funds will be used to support laboratory and development scale advancement of clean coal technology.
2008	Coal Research & Development Program	SIU at Carbondale	\$645,542	For supporting ICCI's administrative costs for managing the Coal Research and Development program.
2008	Coal Research & Development Program	SIU at Carbondale	\$3,008,292	For supporting the Coal Research and Development program. Funds will be used to support laboratory and development scale advancement of clean coal technology.
2008	Coal Research & Development Program	SIU at Carbondale	\$100,000	For providing funds for the operation and maintenance of the Illinois Coal Development Park.
2009	Coal Research & Development Program	SIU at Carbondale	\$679,280	For supporting ICCI's administrative costs for managing the Coal Research and Development program.
2009	Coal Research & Development Program	SIU at Carbondale	\$3,280,505	For supporting the Coal Research and Development program. Funds will be used to support laboratory and development scale advancement of clean coal tech.

2009	Coal Research & Development Program	SIU at Carbondale	\$100,000	For providing funds for the operation and maintenance of the Illinois Coal Development Park.
2010	Coal Research & Development Program	SIU at Carbondale	\$680,500	For supporting ICCI's administrative costs for managing the Coal Research and Development program.
2010	Coal Research & Development Program	SIU at Carbondale	\$3,917,867	For supporting the Coal Research and Development program. Funds will be used to support laboratory and development scale advancement of clean coal technology.
2010	Coal Research & Development Program	SIU at Carbondale	\$100,000	For providing funds for the operation and maintenance of the Illinois Coal Development Park.
2011	Coal Research & Development Program	SIU at Carbondale	\$642,900	For supporting ICCI's administrative costs for managing the Coal Research and Development program.
2011	Coal Research & Development Program	SIU at Carbondale	\$100,000	For supporting the Coal Research and Development program. Funds will be used to support laboratory and development scale advancement of clean coal technology.
2011	Coal Research & Development Program	SIU at Carbondale	\$2,863,025	For providing funds for the operation and maintenance of the Illinois Coal Development Park.
2012	Coal Research & Development Program	SIU at Carbondale	\$658,932	For supporting ICCI's administrative costs for managing the Coal Research and Development program.
2012	Coal Research & Development Program	SIU at Carbondale	\$2,000,000	For supporting the Coal Research and Development program. Funds will be used to support laboratory and development scale advancement of clean coal technology.
2012	Coal Research & Development Program	SIU at Carbondale	\$100,000	For providing funds for the operation and maintenance of the Illinois Coal Development Park.
2007	Coal Education & Marketing Program	SIU at Carbondale	\$80,000	Assistance for improving the marketing and development of Illinois coal resources.
2008	Coal Research & Development Program	SIU at Carbondale	\$386,059	For supporting ISGS'S Midwest Geological Sequestration forum and research into the geological sequestration of carbon dioxide.
2008	Coal Research & Development Program	SIU at Carbondale	\$660,107	For funding technical needs in areas essential to the development of carbon sequestration and coal gasification. To support FutureGen and other low-carbon projects.
2009	Coal Competitiveness Program	Board of Trustees of University of Illinois	\$240,000	To purchase computer equipment and technology in support of coal research & carbon sequestration.
2009	Coal Education & Marketing Program	Board of Trustees of University of Illinois	\$170,000	To support the DCEO Clean Coal Programs, FutureGen project, and sequestration inquiries by and for industry.
2011	Coal Competitiveness Program	Board of Trustees of University of Illinois	\$105,150	To upgrade an existing facility to store rock cores from coal, petroleum, and other non-fuel mineral industries. Ongoing support for mapping and performing site characterization as part of USDOE's regional carbon sequestration partnership.
2012	Coal Education & Marketing Program	Board of Trustees of University of Illinois	\$116,845	To conduct a program evaluation of educational activities of DCEO's Coal Education & Marketing Program (Coal Education Program).

APPENDIX B: DESCRIPTION OF RATEPAYER-FINANCED GRANT PROGRAMS

B.1 Grant Tracker Descriptions

The Coal Competitiveness Program “encourages communities and businesses to improve the coal extraction, transportation and utilization systems within Illinois. The program is aimed at improving the efficiency of the Illinois coal industry, enhancing the competitive position of Illinois coal in domestic and international markets, and opening new markets for Illinois coal and coal byproducts.”

The Coal Research and Development Program “provides funds to universities and other research institutions engaged in coal research activities focusing on clean coal technology development, coal chemistry, mining productivity and coal combustion byproduct utilization. The program is administered by DCEO and is under the technical oversight of ICCI in Carterville, Illinois. Application is made directly to ICCI at <http://www.icci.org>.”

The Coal Education and Marketing Program “works to increase public awareness of the benefits of Illinois coal and to maintain and improve domestic and foreign markets for Illinois coal. The Program educates Illinois students on coal issues through the development and distribution of classroom curricula that specifically addresses coal and energy issues in Illinois.”

B.2 Program Summary Descriptions

The Coal Competitiveness Program encourages communities and businesses to improve miner safety and the coal extraction, preparation and transportation systems within Illinois. The program is aimed at improving the efficiency of the Illinois coal industry, enhance the competitive position of Illinois coal in domestic and international markets, and open new markets for Illinois coal and coal byproducts.”

The Coal Research Program is “the largest state-sponsored coal research program in the United States. The program is administered by DCEO and is under the technical oversight of ICCI.”

The Coal Development Program “seeks to advance promising clean coal technologies beyond the research stage towards commercialization. The program provides a 50/50 match with private industry dollars to support market-driven needs of the industry. Development processes include technology maturation, technology transfer and related studies.” Like the Coal Research Program, the grants are administered by ICCI.

DCEO’S Coal Education Program strives to preserve and enhance the marketability of Illinois coal; heighten awareness and understanding of the importance of the coal industry to the socioeconomic structure of Illinois; and promote the mining and utilization of coal in Illinois. Program activities include the development and distribution of comprehensive coal education resource materials for use in Illinois classrooms. DCEO also maintains databases on the characteristics of Illinois coal, coal production and consumption, industry contacts and many other aspects of the coal industry for use by government, industry, and utility officials.”

APPENDIX C: CTDAF GRANTS AWARDED BY THE ILLINOIS CLEAN COAL INSTITUTE, FY2011

Institution	Project name	Project completion date
Illinois State Geological Survey	Bench-scale development of a hot carbonate absorption process with crystallization-enabled high-pressure stripping for post-combustion CO ₂ capture (Phase II)	December 31, 2013
Illinois State Geological Survey	Bench-scale development of a hot carbonate absorption process with crystallization-enabled high-pressure stripping for post-combustion CO ₂ capture	June 30, 2012
Illinois State Geological Survey	Evaluation of dry sorbent technology for pre-combustion CO ₂ capture (Phase II)	March 31, 2013
University of North Dakota Energy & Environmental Research Center	Recovery of chemicals and fuels from Illinois coal-derived process streams	September 30, 2013
Southern Illinois University	Development and field demonstration of alternate stable mining geometries for set-up and recovery rooms in Illinois	August 31, 2013
Southern Illinois University	Mechanical behavior of Illinois coal and risk assessment of sequestered CO ₂	May 31, 2012
Southern Illinois University	Wetting behavior and control of quartz and coal dusts from E. INT mines—Phase III	December 31, 2012
Southern Illinois University	Computational workbench for dry beneficiation of coal by tribo-electrostatic separation	November 30, 2012
Southern Illinois University	The effect of mineral content and maceral composition on Illinois coal gasification	October 31, 2012
Southern Illinois University	Recycle integrated process design of supercritical phase FT synthesis	October 30, 2012
Southern Illinois University	Development of a dry preparation plant flowsheet for cleaning Illinois coal	August 31, 2012
Southern Illinois University	Changes in coal properties with exposure to CO ₂	July 31, 2012
Southern Illinois University	Noise control study at a coal handling plant in southern Illinois	November 30, 2012
Southern Illinois University	Wetting characteristics of respirable coal and silica dust from E. INT mines—Phase II	December 31, 2011
University of Illinois at Urbana-Champaign	Lime-softening sludge—a potentially important source for sorbents for wet FGD systems	December 31, 2012
Illinois Institute of Technology	CFD modeling of a regenerative MCO-based process for CO ₂ capture in IGCC (Year 2)	December 31, 2012
Illinois Institute of Technology	CFD modeling of a regenerative MCO-based process for CO ₂ capture in IGCC	December 31, 2012
Gas Technology Institute	Hybrid membrane/absorption process for post-combustion CO ₂ capture—Phase II	December 31, 2012
Gas Technology Institute	Hybrid membrane/absorption process for post-combustion CO ₂ capture—Phase I	January 31, 2012