Modifying How Energy Costs Are Treated for Business Tax Purposes in Order to Decrease Subsidies and Increase Energy Efficiency

Steven Nadel and Kate Farley

March 2012

An ACEEE Working Paper

529 14th Street, N.W., Suite 600, Washington, D.C. 20045
(202) 507-4000 phone, (202) 429-2248 fax, aceee.org

CONTENTS

ACEEE TAX REFORM WORKING PAPERS

This is the second in a series of working papers on tax reform issues related to energy efficiency that ACEEE is preparing in 2012. We welcome feedback on this working paper. Send comments to taxreform@aceee.org. We also welcome suggestions on other topics to cover.

UPDATE: A summary report on this and the other working papers was published in February 2013 and is available at http://aceee.org/research-report/e132.

ACKNOWLEDGMENTS

Support for ACEEE's tax reform work is provided by several foundations—the Energy Foundation, Kresge Foundation, and one wishing to remain anonymous. We thank them for their support. We also thank two ACEEE colleagues who provided helpful ideas and comments as this paper took shape, and who helped with production—Neal Elliott and Renee Nida.

ABOUT ACEEE

ACEEE is a nonprofit organization that acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors. For more information, see http://www.aceee.org. ACEEE fulfills its mission by:

- Conducting in-depth technical and policy assessments
- Advising policymakers and program managers
- Working collaboratively with businesses, public interest groups, and other organizations
- Organizing conferences and workshops
- Publishing books, conference proceedings, and reports
- Educating consumers and businesses

Projects are carried out by staff and selected energy efficiency experts from universities, national laboratories, and the private sector. Collaboration is key to ACEEE's success. We collaborate on projects and initiatives with dozens of organizations including federal and state agencies, utilities, research institutions, businesses, and public interest groups.

ACEEE is not a membership organization. Support for our work comes from a broad range of foundations, governmental organizations, research institutes, utilities, and corporations.

INTRODUCTION

There is growing bipartisan interest in tax reform. Our tax code is widely criticized as being too complicated, and it has been more than 25 years since the tax code has had a major overhaul. Many proposals call for fewer tax brackets and eliminating many current tax breaks, creating a simpler code with lower tax rates. For example, the Republican House Budget Committee's 2012 budget resolution called for simplifying "the broken tax code" and removing the "burdensome tangle of loopholes" (House Budget Committee 2011). Simplification is also a key element of more comprehensive proposals for tax reform, such as the Bipartisan Policy Council's "Restoring America's Future" proposal (BPC 2010). In addition, by lowering marginal tax rates for businesses, it is hoped that tax reform will make U.S. businesses more competitive.

In considering tax reform, it is important to consider how the current code, and potential changes to the code, influence investment decisions. We want to remove disincentives for desirable actions. Ideally the code should encourage societally useful actions. For example, the current tax code includes incentives for home ownership (e.g., home interest costs are deductible) and there have been various reforms and proposed reforms to eliminate disincentives to marriage (e.g., removing the "marriage penalty").

Among the actions we would like to encourage, and not discourage, are cost-effective energy efficiency investments. There is an enormous amount of potential for individuals and businesses to reduce energy consumption through currently available energy efficiency measures, as well as innovative technologies in the future. For example, a January 2012 ACEEE study on long-term efficiency opportunities estimated available energy savings average about 52-69% in the residential sector, 45-62% in the commercial sector, and 36-51% in the industrial sector (Laitner et al. 2012). Realization of these energy savings will help make American businesses more productive, improve their competitive position relative to foreign firms, and reduce the security, cost and environmental impacts of high energy use.

Both individual and business taxes are slated for reform. In this paper we focus on business taxes, and in particular on how businesses account for energy costs when computing their taxes. About half of the primary energy in the United States is consumed by commercial and industrial entities, not including energy used for transportation (EIA 2010).

This paper is the second in a multi-part series of working papers by ACEEE on tax reform. We plan to issue a revised version in late 2012. We welcome any comments or feedback, which may be sent to Kate Farley at taxreform@aceee.org.

THE CURRENT TAX CODE

Under the current tax code, individuals pay taxes on their income, and most expenses are not deductible. Exceptions include interest on home mortgages and high medical expenses, but not energy expenses. Businesses, on the other hand, are taxed on their profits and virtually all expenses are deductible, including energy costs. However, capital expenditures must be depreciated, meaning they are recovered over a multiyear period—as much as 39 years in the case of commercial buildings. Equipment is an integral component of buildings. As a result, the current tax code creates three disincentives to energy efficiency investments:

1. Since energy bills count as a business expense and are subtracted from the total amount of taxable income, effectively, the federal government is typically "paying" 25% of business energy costs (based on the average effective business tax rate of about 25%) (Markle and Shackelford 2011) and sometimes as much as 35% of a business's energy costs (the maximum business tax rate). Subsidizing energy costs enables higher energy consumption.

2. When businesses do invest in energy efficiency, a portion of the energy savings goes to the federal government in the form of higher taxes (e.g., 25% for a business with the typical effective tax rate of 25%, before adjusting for the effects of depreciation). When the full value of the savings does not accrue to the firm, the incentive to make investments goes down.

3. When a firm makes capital investments, these expenses must be depreciated, meaning they are only recovered gradually. In the meantime the firm must carry the un-depreciated value on their books, which can reduce the incentive to make investments.

These three disincentives are illustrated by an example:

The Acme Corporation[1] produces widgets. Acme has sales of $10 million per year, energy costs of 2% of revenue, other costs of 88% of revenue, and a 10% profit margin,[2] resulting in profits of $1,000,000. If they currently pay an effective tax rate of 25% (as discussed above), their federal income taxes total $250,000 and their net cashflow after taxes is $750,000 (see Table 1). If they invested $120,000 in energy efficiency improvements that reduced their energy use by 20%, they would save $40,000 per year in energy costs. Under the current tax system, such an investment would increase their taxes by $10,000 before the effects of depreciation are included, and by $8,000 even after the effects of depreciation are included (assuming the investment has a 3-year simple payback and a 15-year depreciation period). Furthermore, if the efficiency investment were funded out of cash flow, instead of the $1 million profit shown for tax purposes, the net cash flow would be only $662,000 after counting the effects of the investment and the energy savings. These effects are also illustrated in Table 1. Cashflow improves substantially in year two and beyond since the investment is paid and the energy savings are significant.

Table 1. Effects of Energy Costs and Energy Efficiency Investments on Acme Corporation Taxes Under Current Tax Code

		Efficiency Investment	
	Baseline	Before Depreciation	With Depreciation
Annual sales	$ 10,000,000	$ 10,000,000	$ 10,000,000
Investment in EE	$ -	120,000	120,000
Energy expenses	200,000	160,000.0	160,000.0
Other expenses	8,800,000	8,800,000	8,800,000
Depreciation of EE	-	0	8,000
Profit for tax purposes	$ 1,000,000.00	$ 1,040,000.00	$ 1,032,000.00
Federal tax rate	25%	25%	25%
Federal taxes	$ 250,000	$ 260,000	$ 258,000
Net cashflow	$ 750,000	$ 660,000	$ 662,000
Note: Energy efficiency investment saves 20%, has a 3-year simple payback, and is depreciated over 15 years. Net cashflow is profits minus taxes and un-depreciated investmennts.			

[1] With apologies to Road Runner, Wile E. Coyote, and any real company named Acme.
[2] Average corporate net income of U.S. firms appears to be about 9.2% (derived from data in Markle and Shackelford 2011) but we use 10% because it makes the calculations easier to understand.

ALTERNATIVES

We believe that the tax code can be structured to encourage businesses to reduce energy consumption in a cost-effective manner, instead of encouraging energy waste. In this paper we focus on how energy costs are treated. Forthcoming companion papers will address depreciation and revenue-neutral (or nearly neutral) tax incentives.

In this paper we propose three possible new ways to treat business energy costs in the tax code. One is simple but radical—it would shift business taxes to focus on income, not expenses, just like the individual income tax. The second is also simple but more surgical in that it would just apply to energy costs and would reduce incentives for energy waste. The third is more complicated and would reward businesses that operate with below-average energy costs, while penalizing businesses that continue to consume large amounts of energy. At this point we are not advocating for any of these three options, but instead propose that they be subject to serious examination and discussion. This working paper is intended to begin this discussion.

While these should not be the sole policies in place for addressing U.S. energy consumption, they can be an elegant tool for encouraging businesses to reduce energy waste. Additionally, one of the primary goals of tax reform is the simplification of the tax code. Several of our options would simplify the code. Also, all three options could reduce the need for specialized tax incentives currently in place to encourage energy efficiency. Another goal of tax reform held by many is to reduce marginal tax rates by broadening the tax base—two out of three of our options would do this.

Finally we note that potential tax changes need to be reviewed from the prospective of the average firm, but also from the perspective of firms with high energy costs, particularly those that need to compete internationally. These latter firms might need special attention so that we don't undercut American firms in international competition. A good discussion of some of these issues can be found in a 2009 Interagency report (Interagency Report 2009) as well as articles by Resources for the Future (Morgenstern 2010).

A Radical Idea

It is a matter of significant debate among historians as to why policymakers in the 1890s and 1910s set up two separate tax systems—one for corporations, one for individuals—with the former based on profits and the latter based on income. As a consequence, according to Gordon (2011), "there has since been a sort of evolutionary arms race, as tax lawyers and accountants came up with ever new ways to game the system ('playing the two systems against each other'), and Congress endlessly added to the tax code to forbid or regulate the new strategies." Switching the corporate tax to be based on gross income instead of profits could reduce this gaming, simplify the tax code, allow dramatically reduced marginal tax rates, and remove many of the current distortions with regards to energy efficiency investments.

A business tax that was based on only gross income would be far simpler, as the many pages of law and regulations related to expenses and how to account for them would no longer be needed. It could allow marginal tax rates to be decreased to around 2.3% as it would increase the tax base by about an order of magnitude. Specifically, as noted above, Markle and Shackelford (2011) provide data that indicate that corporate profits average about 9.2% of income and effective corporate tax rates average about 25%. If income is taxed and expenses ignored, the tax base would increase 10.9 times (1/.092), allowing the tax rate to decrease to approximately 2.3% (25% current rate divided by 10.9) and still collect the same revenues.

Such an approach would provide incentives to reduce all costs, not just energy costs, improving economic efficiency.

As with any change to the tax code, there would be winners and losers. Most obviously, this approach would reduce taxes on firms with above-average profit margins while increasing taxes on firms with low profit margins. The government would no longer share in gains or losses. For firms with very low profit margins (e.g., grocery stores), prices might go up to pay for the higher taxes. On the other hand, lower taxes on high profit firms could reduce the prices they charge.

A tax on just revenues could benefit integrated firms that produce parts as well as final products. They would pay taxes on just their selling price. Firms that buy parts from others would have taxes included in the price of the parts they purchase. To address this, the amount of taxes included in the cost of goods purchased could be credited against a firm's tax bill. Many other developed countries have value-added taxes that only tax the incremental value added, showing how such costs and taxes could be tracked. As a rough estimate, as shown in Table 2, if such a credit were provided, the marginal tax rate might increase to 3.25%. Alternatively, perhaps the cost of components could be ignored, since the marginal tax rate is so low.

Table 2. Effects of Energy Costs and Energy-Efficiency Investments on Acme Corporation Taxes Under a Tax System Where No Costs Are Deductible

	Baseline	Efficiency Investment	
Annual sales	$ 10,000,000	$ 10,000,000	
Investment in EE	$ -	120,000	
Energy expenses	200,000	160,000	
Other expenses	8,800,000	8,800,000	
Depreciation of EE	NA	NA	
Profit for tax purposes	$ 10,000,000	$ 10,000,000	
(nothing is deductible)			
Federal tax rate	3.25%	3.25%	
GrossFederal taxes	$ 325,000	$ 325,000	
Credit for taxes in purchased goods & services	$ 75,000	$ 75,000	
Net Federal taxes	$ 250,000	$ 250,000	
Net cashflow	$ 750,000	$ 670,000	
Notes: To prevent cascading of taxes, we provide a credit for prior taxes included in goods and services			
purchased by the firm. The 3.25% tax rate is designed to for simplicity and to permit comparison with			
Table 1 and is based on a rough guess that 30% of an average firm's costs might be from goods and			
services subject to a prior federal tax.			

From an energy efficiency point of view, such an approach would eliminate many of the disincentives for energy efficiency investments discussed above. Taxes would not change as energy use goes up or down, and taxes would not change with energy efficiency investments. Net cash flow goes down due to the energy efficiency investment, but not as much as in the example in Table 1. These trends are illustrated in Table 2, which uses all of the same assumptions as in Table 1, except for the tax treatment. Acme's federal taxes are identical in

Tables 1 and 2, but now it has simpler taxes and more incentive to reduce energy (and other) expenses.

According to The World Bank, in Guatemala businesses are taxed either 5% of revenues or 31% of net income, so there is a modest precedent.[3] We are not advocating for such a system, but instead raising the concept for further consideration.

A More Surgical Approach Addressing Just Energy Costs

One more limited way to address the fact that all taxpayers share in high business energy costs is to reduce the amount of energy costs that can be deducted. For example, the tax code could be amended to not allow businesses to deduct energy costs from revenues except the portion of energy costs that exceed 4% of revenues, and even then to only deduct 80% of energy costs. The 4% threshold misses most businesses, but allows energy-intensive industries to receive some deduction. Energy-intensive industries include trucking, chemicals, primary metal manufacturing, electric utilities, mining, and many types of farming (specific data are provided later in this paper). This is mathematically similar to how health care costs can only be deducted on personal income taxes when they exceed 7.5% of adjusted gross income (rising to 10% as of Jan. 1, 2013).[4] The 80% figure is based on a typical U.S. corporate effective tax rate of about 25% (Markle and Shackelford 2011) minus the roughly 5% reduction in the tax rate that this proposal would allow.[5] By allowing only 80% of energy costs to be deducted, we account for the fact that the other 20% is effectively subsidized through the tax code.

Scaling back deductions for business energy costs would increase corporate tax receipts unless other adjustments were made. Most likely corporate tax rates would be lowered—an example is provided below. A second option would be to use at least some of the revenue to fund popular tax credits such as the credit for Research and Development (R&D) investments that Congress keeps extending each year and/or improvements in depreciation schedules for energy-consuming equipment (the topic of a forthcoming ACEEE tax reform working paper).

Table 3 illustrates how this change might affect the Acme Corporation. They have modest energy costs so the reduction in the tax rate to 20% more than compensates for the fact that energy costs are not deductible. Furthermore, unlike with the present system, reductions in energy costs fully flow through to Acme's bottom line and their federal taxes do not go up with the energy efficiency investment. On the other hand, since depreciation rules remain in place, their taxes go down slightly when depreciation is included and their net cashflow after an energy efficiency investment is higher than in either of the previous approaches.

[3] See http://www.doingbusiness.org/data/exploreeconomies/guatemala/paying-taxes/. The article does not specify whether the business gets to choose or whether there are rules indicating which firm gets to use which approach.
[4] See http://www.irs.gov/taxtopics/tc502.html.
[5] This proposal would increase the amount of income subject to taxation, allowing the same revenue to be collected by charging a lower percentage of this broader base. Our estimate of a 20% rate is rough and preliminary and needs further analysis. We use it in this paper for illustrative purposes.

Table 3. Effects of Energy Costs and Energy-Efficiency Investments on Acme Corporation Taxes Under a Tax System Where Energy Costs Are Not Deductible

	Current	New	Efficiency Investment	
	Baseline	Basecase	Before Depreciation	With Depreciation
Annual sales	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000
Investment in EE	$ -	$ -	120,000	120,000
Energy expenses	200,000	200,000	160,000.0	160,000.0
Other expenses	8,800,000	8,800,000	8,800,000	8,800,000
Depreciation of EE	-		0	8,000
Profit for tax purposes	$ 1,000,000.00	$ 1,200,000.00	$ 1,200,000.00	$ 1,192,000.00
Federal tax rate	25%	20%	20%	20%
Federal taxes	$ 250,000	$ 240,000	$ 240,000	$ 238,400
Net cashflow	$ 750,000	$ 760,000	$ 680,000	$ 681,600

An example for an energy-intensive industry is also useful. Consider Intensive Chemical, a small chemical firm with the same annual revenues and profit margin as the Acme Corporation, but paying 7% of revenues for energy and 83% for other expenses. Its situation is illustrated in Table 4. For Intensive Chemical, because it has high energy costs that are only partially deductible, its taxes go up $42,000 per year. Essentially, if taxes go down for average companies such as Acme Corporation, then the lost revenue is made up elsewhere—in this case by energy-intensive firms. Taxes also go up modestly with an investment in energy efficiency since we've retained a deduction for high energy costs. Net cash flow is down substantially with the efficiency investment as the cost of the investment is higher in this example given the 3-year payback assumption. As with many of other examples, beginning in year 2, cash flow will improve substantially due to the large energy savings.

Table 4. Effects of Energy Costs and Energy Efficiency Investments on Intensive Chemical Taxes Under a Tax System Where Energy Costs Are Only Partially Deductible

	Current	New	Efficiency Investment	
	Baseline	Basecase	Before Depreciation	With Depreciation
Annual sales	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000
Investment in EE	$ -	$ -	420,000	420,000
Energy expenses	700,000	700,000	560,000	560,000
Deductible energy (80% of costs above 4% of revenues)	700,000	240,000	128,000	128,000
Other expenses	8,300,000	8,300,000	8,300,000	8,300,000
Depreciation of EE	-	-	0	28,000
Profit for tax purposes	$ 1,000,000.00	$ 1,460,000.00	$ 1,572,000.00	$ 1,544,000.00
Federal tax rate	25%	20%	20%	20%
Federal taxes	$ 250,000	$ 292,000	$ 314,400	$ 308,800
Net cashflow	$ 750,000	$ 708,000	$ 405,600	$ 411,200

Of course these are simple examples meant to illustrate concepts. While they are based on typical data, the experience of individual taxpayers will vary.

A More Complex but Perhaps More Elegant Approach

Another option is to develop a standard deduction for energy costs for businesses, with the deduction varying by type of business. Businesses with above-average energy costs would have to pay taxes on their extra energy expenditures. Conversely, businesses with below-average energy costs would be able to claim higher business expenses than they actually had, and would pay lower taxes. This system penalizes the energy "hogs" and rewards the energy "sippers." The acceptable level of energy costs would be re-evaluated on a regular basis, such as every five years.

For example, Waste-A-Lot Manufacturing Co. also produces widgets. Like the Acme Corporation, they also make $10 million in revenue and have a 10% profit margin but they spend 3% on energy, or $300,000, 50% more than what Acme Corporation pays for energy. However, the "standard deduction" for the widget sector is 2%. Waste-A-Lot would only be able to claim $200,000 as a business expense and would have to pay taxes on the $100,000 difference. On the other hand, the Fuel Sipper Corporation, also in the widget business and with a similar revenue and profit margin, only spends 1.5% of revenues on energy. They would still be able to claim $200,000 as a business expense for energy costs, thus reducing their tax bill, even though their actual energy costs are lower. This comparison is shown in Table 5. Essentially, this approach would create incentives to reduce energy use to below averages within a sector. This approach does not affect depreciation, so the same impacts on investment apply as with the current tax system.

Table 5. Effects of Energy Costs on Taxes Under a Tax System Where There Is a "Standard Deduction" for Energy Costs

	Acme Corporation	Waste-A-Lot	Fuel Sipper
Annual sales	$ 10,000,000	$ 10,000,000	$ 10,000,000
Investment in EE	$ -	$ -	$ -
Energy expenses	200,000	300,000	150,000
Energy Deduction	200,000	200,000	200,000
Other expenses	8,800,000	8,800,000	8,800,000
Profit for tax purposes	$ 1,000,000.00	$ 1,000,000.00	$ 1,000,000.00
Federal tax rate	25%	25%	25%
Federal taxes	$ 250,000	$ 250,000	$ 250,000
Net cashflow	$ 750,000	$ 650,000	$ 800,000

Since energy costs vary substantially by type of business, a single standard deduction would not be fair. It takes a lot more energy to make a dollar's worth of chemicals than it does to provide a dollar's worth of legal services. Specific factors would need to be developed by the Treasury, Commerce, or Energy Departments and updated periodically. For some sectors, such as chemicals and primary metals, factors may need to be at the 4- or 5-digit NAICS code level since, for example, it is misleading to combine aluminum and steel manufacturing in the same code. As a rough ballpark, based on data in a paper by Bollman (2008), standard deductions might be on the order of the values shown in Table 6.

The advantage of this approach is that it more directly rewards firms with below-average energy use for their sector and penalizes firms with above-average energy use. Also, since energy

deductions are preset, changes in energy use flow directly to the business; there are no tax impacts. On the other hand, if the standard deduction approach is used and averages are used for each sector, there is no impact on tax levels—in other words, this approach would not contribute to lowering tax rates unless standard deductions were systematically reduced. Also, while the standard deduction approach can work well for firms that are in a single business, for firms in multiple businesses, more complicated calculations would be required to figure out their standard deduction across all businesses.

Table 6. Illustrative Standard Deductions for Energy Costs

NAICS Code and Business Type	Energy as a % of Revenue
Commercial	
484 Truck Transportation	6.7%
492 Couriers and Messengers	5.5
721 Accommodation	4.3
622 Hospitals	2.5
All other commercial	1.0
Manufacturing	
331 Primary Metal Manufacturing	8.2%
325 Chemical Manufacturing	7.0
327 Non-Metallic Mineral Product Manufacturing	4.8
313 Textile Mills	3.5
Etc.	
Construction	2.4%
Electric Generation	9.6%
Mining	
212 Mining Except Oil and Gas	7.1%
213 Support Activities for Mining	2.7
211 Oil and Gas Extraction	2.1
Agriculture	
1111 Oilseed and Grain Farming	5.5%
11212 Dairy Cattle and Milk Production	8.1
Other	16.0

Derived by ACEEE from data in Bollman 2008. He reports data separately for small and large firms and we average these figures together for each NAICS code.

NEXT STEPS

This is a working paper and we invite comments on the concepts as well as suggestions on further research and details.

Clearly, much more work is needed to develop these concepts.

For the radical change that would focus on taxing revenues, not profits, some historic research is in order. The concept has surely come up before and it would be useful to understand why it was not adopted. Also, additional work is needed on how to address the potential for cascading taxes. In our example, we allow a credit for prior taxes and estimate that to be revenue neutral a 3.25% marginal tax rate would be needed. This rate needs to be further researched, based on available real-world data.

For the second approach, not deducting energy costs, more work is needed to use real-world data to better estimate what the new average tax rate would be if revenue neutrality were the goal. The lower the marginal rate, in the current political environment, the more attractive the approach might be. Further exploration is also needed on the impacts of this approach on industries with high energy use. While we want to discourage high energy use, we don't want to drive away energy-intensive industries.

For the standard deduction approach, further work is needed to access available data sources and explore ways to calculate the standard deductions. Further research and debate is needed on the pros and cons of having a simpler system with a limited number of categories, versus a more complex system with standard deductions for most 4- and 5-digit NAICS codes. Further consideration is also needed on how often to revise the standard deductions (every 5 years?) and a process to accommodate new industries.

REFERENCES

[BPC] Bipartisan Policy Center. 2010. *Restoring America's Future: Reviving the Economy, Cutting Spending and Debt, and Creating a Simple, Pro-Growth Tax System.* http://www.bipartisanpolicy.org/library/report/restoring-americas-future.

Bollman, Andy. 2008. *Characterization and Analysis of Small Business Energy Costs.* http://archive.sba.gov/advo/research/rs322tot.pdf. Washington, D.C.: Small Business Administration Office of Advocacy.

[EIA] Energy Information Agency. 2010. http://www.eia.gov/totalenergy/data/annual/diagram1.cfm. Accessed January 26, 2012. Washington, D.C.: Energy Information Agency.

Gordon, John Steele. 2011. "A Short History of the Income Tax." *Wall Street Journal*, Opinion, Sept. 27. http://online.wsj.com/article/SB10001424052970204422404576594471646927038.html .

House Budget Committee. 2011. *Summary of the Fiscal Year 2012 Budget Resolution.* http://budget.house.gov/UploadedFiles/KeyFactsSummary.pdf. Accessed February 9, 2012.

Interagency Report. 2009. *The Effects of H.R. 2454 on International Competitiveness and Emission Leakage in Energy-Intensive Trade-Exposed Industries.* http://epa.gov/climatechange/economics/pdfs/InteragencyReport_Competitiveness-EmissionLeakage.pdf. Washington, D.C.: U.S. Environmental Protection Agency.

Laitner. John A. "Skip," Steven Nadel, R. Neal Elliott, Harvey Sachs, and A. Siddiq Khan. *The Long-Term Energy Efficiency Potential: What the Evidence Suggests.* Washington, D.C.: American Council for an Energy-Efficient Economy.

Markle, Kevin and Douglas Shackelford. 2011. *Cross-Country Comparisons for Corporate Income Taxes.* Working Paper 16839. Cambridge, Mass.: National Bureau of Economic Research. http://www.nber.org/papers/w16839 .

Morgenstern, Richard. 2010. "The Potential Impact on Energy-Intensive Trade-Exposed Industries of Clean Air Act Regulation of GHGs." *Resources* 176, Fall 2010. http://www.rff.org/Publications/Resources/Pages/The-Potential-Impact-on-Energy-Intensive-Trade-Exposed-176.aspx. Washington, D.C.: Resources for the Future.